Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20001**
Date of Report: 2020-Jan-03
Filed By: FWC EC Field Station

FWC Case # 0163 **FWC Region:** NE

Sex: Male **Length:** 269 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-04 **By:** FWC-WDG

DATE NECROPSIED: 2020-Jan-04 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 27.91221 **N**

County: Brevard **Longitude:** -80.51648 **W**

Waterway: Indian River

Location description: Grant, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Hemorrhagic muscle; Torn muscle; Hemothorax; Hemoabdomen; Blood clots; Torn lung(s); Torn parietal pleura; Fractured kidney(s); Organ pallor; Collapsed lung(s); Bloody eye, urogenital opening; Hemobladder; Congested colon serosa; Macroalgae in mouth; Black specks abdominal fat.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Bleached epidermis; Macroalgae in GI tract.

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Necropsy Report	
Lat/Long	

Field ID #: MEC20001

MORPHOMETRICS:

Total length:	269 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20001
SPECIES *T. manatus latirostris*
RECOVERY DATE 04 January 2020
NECROPSY DATE 04 January 2020
GENDER Male **TL** 269 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 03 January 2020, at 1731 hrs, FWC on-call biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a manatee carcass in the Indian River near 6415 South Highway US-1 in Grant, Brevard County. FWC case number 0163 was assigned. The complainant, David (772-321-1437), stated that the carcass was fresh, gray, approximately 8 to 9 feet long, and dorsum-up. At 1726 hrs, NJG received a photo of the carcass and requested FWC LE assistance to tow it. FWC LE confused this call with a different alert from Marion County, and the call was incorrectly marked as completed. **04 January**, FWC biologist-William D. Greer and FWC volunteer-B. Bennett arrived at Christenson's Landing boat ramp at 1005 hrs, launched the Key West boat, and located the carcass at 1020 hrs. The carcass was towed to a nearby spoil island where a field necropsy was completed at 1222 hrs. The remains were left onsite.

EXTERNAL All of the epidermis was present. The carcass was distended with gas. There was a fresh, superficial watercraft-related wound series on the cranial left aspect which consisted of a wide linear wound (#1) perpendicular and cranial to parallel wounds #2 – 4. Wounds #2 and 3 were through the caudal aspect of wound #1. There was an additional superficial long linear wound (#5) on the mid dorsum which was parallel to wound #1. Watery red fluid exuded from the urogenital opening and the right eye. The epidermis of the flippers, head, and ventral body creases was bleached. There was a mild infestation of barnacles and barnacle scars on the ventral aspect. A thin brown algal mat was present on the dorsal aspect. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, omental, and mesenteric fat. There were black specks on the abdominal fat. The abdominal cavity contained 1 L of loose, well-formed blood clots and dark red fluid (see photos).

STOMACH The stomach contained 10.25 L of very moist, well-chewed, red, green, and yellow macroalgae (see photo). The contents were coated in white mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 6.2 L of wet, well-chewed, green and yellow macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained moist, moderately chewed, fibrous, green to brown ingesta. The mid small intestine contained moist, moderately chewed, fibrous, black ingesta. The distal small intestine contained moist, moderately chewed, fibrous, brown ingesta. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 1.3 L of very moist, poorly digested, homogeneous, dark green digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon serosa was mildly congested. The colon contained very moist, poorly formed, poorly digested, slightly stringy, green to brown feces throughout. The mucosa was unremarkable. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The liver was soft and friable. Serosal surfaces were purple to blue and cut surfaces were brown.

GALLBLADDER The gallbladder contained a scant amount of watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The seminal vesicles were small and empty of contents. The testes were large. There was no fluid on cut surfaces of the epididymides.

KIDNEYS There was moderate perirenal fat. The kidneys were light tan on serosal surfaces (pallor, see photos). On cut surfaces, the cortices were tan and the medullae were pink to red. The corticomedullary boundaries were distinct. Both kidneys had multiple fractures, which were deep to wound #5. There were loose, well-formed blood clots in the left kidney capsule and on cut surfaces of the left kidney (see photos).

URINARY BLADDER The urinary bladder contained 750 mL of loose, well-formed blood clots and watery red urine (see photo). The mucosa was unremarkable.

HEART There was abundant epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left pleural cavity contained 2.8 L of loose, well-formed blood clots and bloody fluid. The left lung was collapsed, tan to pink on serosal surfaces, and dark red on cut surfaces. The left lung was torn near the caudal end due to fractured left rib 14 and was surrounded by loose, well-formed blood clots (see photos). The right lung was pink to purple on serosal surfaces and dark red on cut surfaces. The primary airways of both lungs contained a mild amount of white to yellow mucus. There was a mild infection of dead trematodes (see photo).

HEAD & NECK REGIONS The mouth contained a small thatch of brown macroalgae (see photo). The trachea contained white to yellow mucus. There was a mild infection of dead trematodes (see photo).

SKELETON Left rib 12 had oblique fractures at the proximal one-quarter, mid one-third, and the distal one-third (see photo). Left rib 13 had oblique fractures at the proximal one-quarter and mid one-third (see photo). Left rib 14 had oblique fractures at the proximal one-third and the distal one-third (see photo) which tore the parietal pleura. The proximal fracture also tore the left lung. Left rib 15 had an oblique fracture at the mid one-third. The fractures were surrounded by loose, well-formed blood clots and were associated with wound #5 (see photo).

OTHER There was torn, hemorrhagic tissue deep to wound #5 (see photos).

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wounds
- Bloody eye, urogenital opening
- Fractured ribs
- Torn, hemorrhagic tissue
- Hemothorax
- Hemoabdomen
- Blood clots
- Hemobladder

- Torn lung, parietal pleura
- Collapsed lung
- Fractured kidneys
- Kidney pallor
- Macroalgae in mouth, GI tract
- Congested colon serosa
- Bleached epidermis
- Black specks abdominal fat

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

William D. Greer
Brittiny Bennett (FWC volunteer)

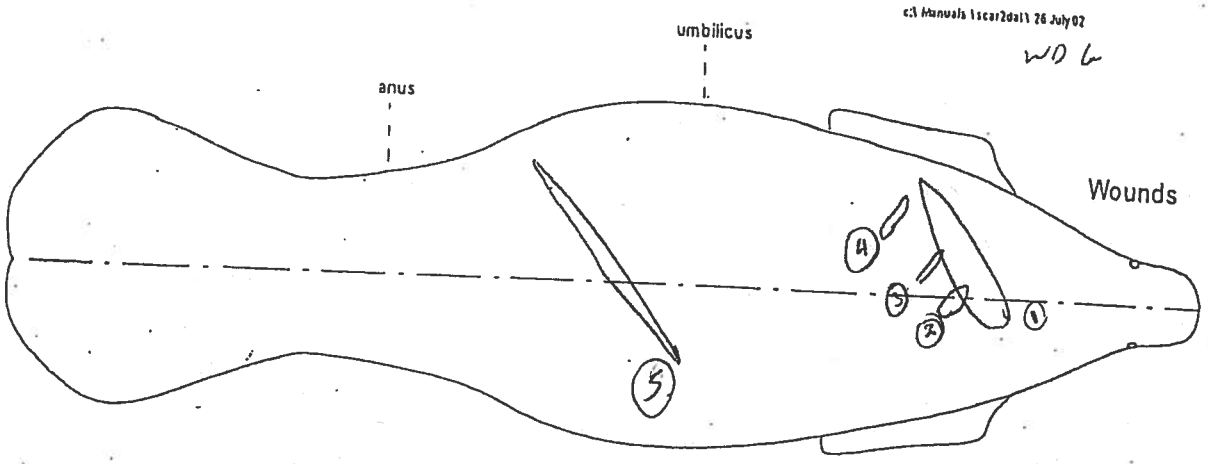
REPORT FILED BY Greer

Date 04 JAN 2019

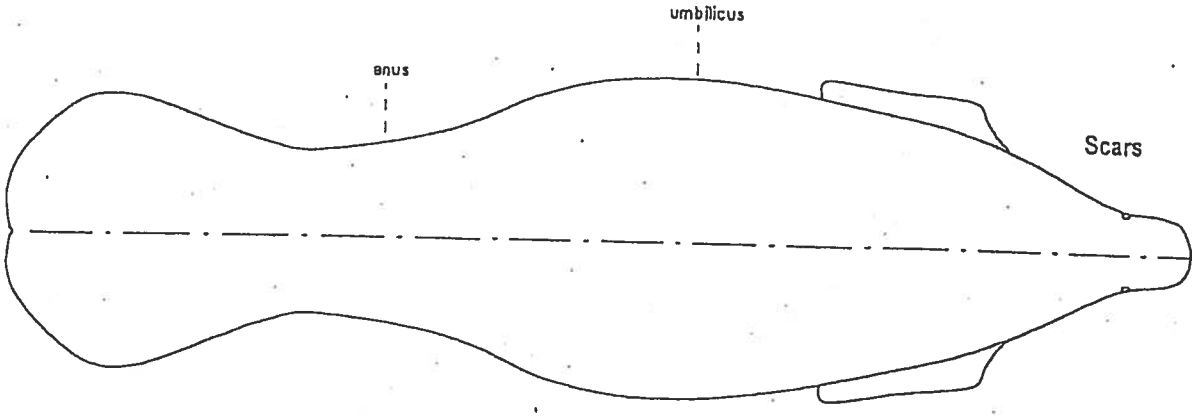
Field I.D. MLC 20001

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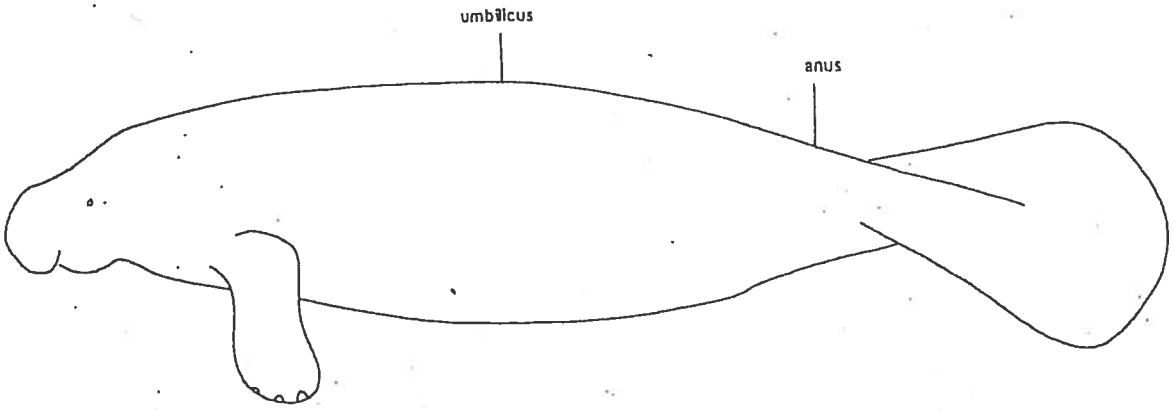
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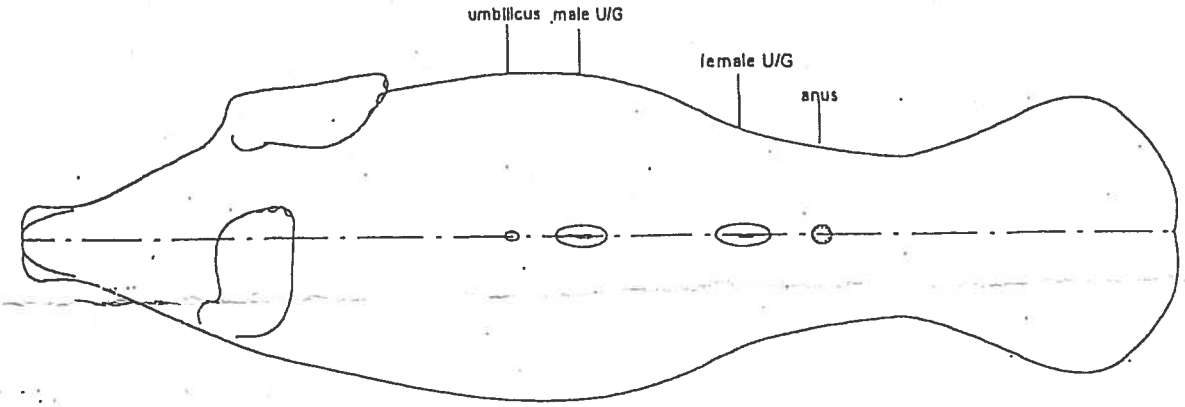


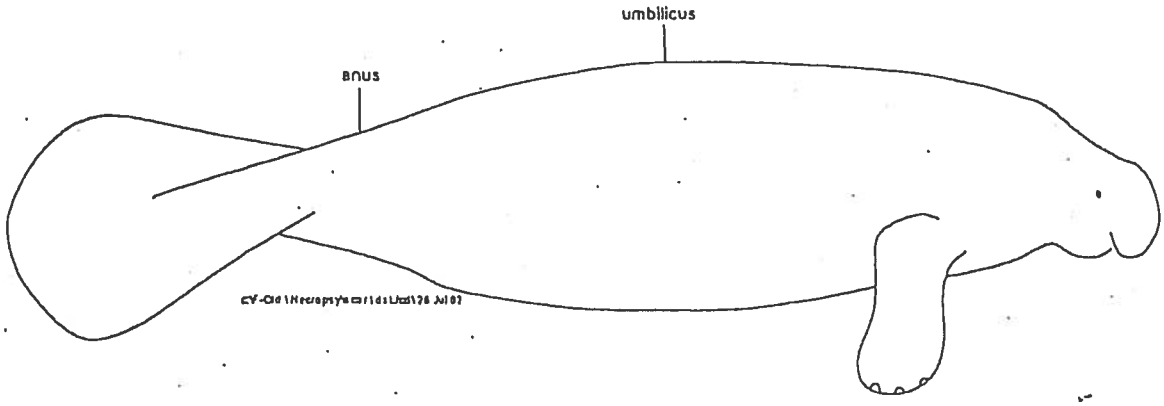
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Width	11.4	2.3	1.0	4.0	3.0															
Depth	–	–	–	–	–															
Distance		–	10	11	–															



FIELD I.D. MCc20 001



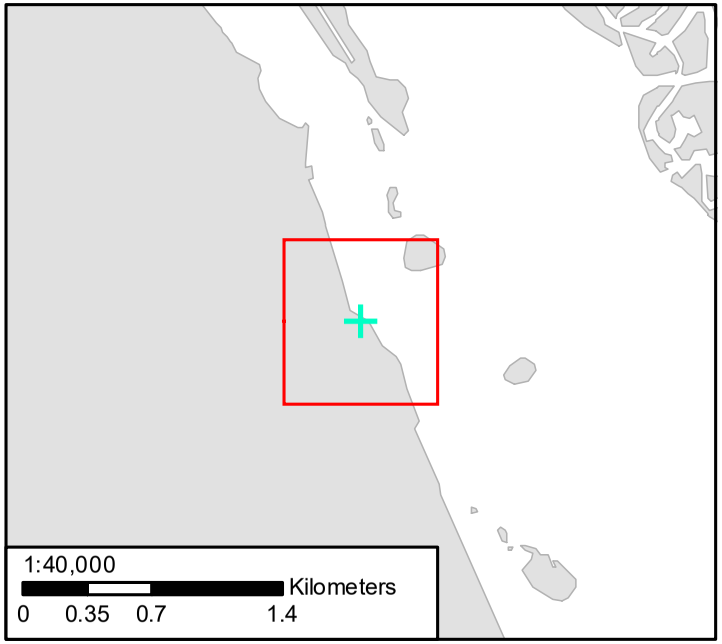


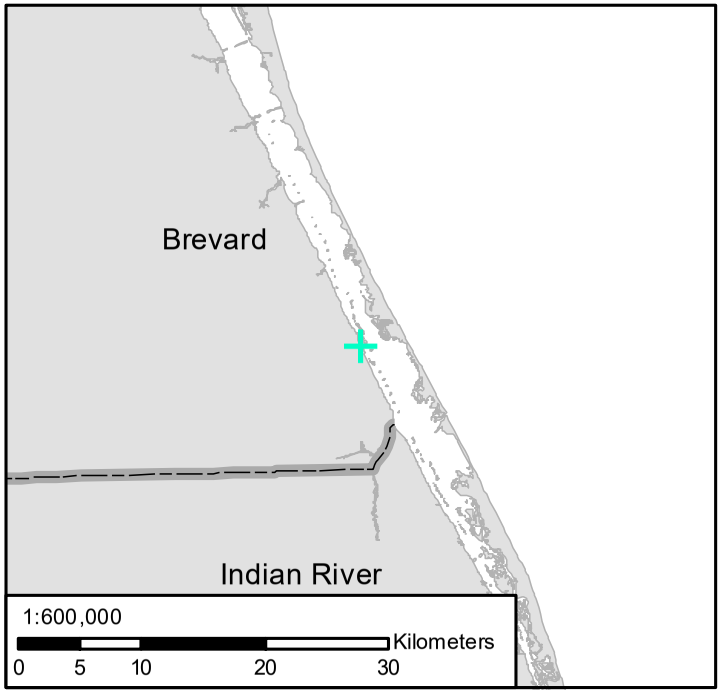


Verified Location of Manatee Carcass MEC20001

Report Date: 1/3/2020 **Received Date:** 1/4/2020 **Received By:** FWC-WDG







Location: Grant, Brevard County

Latitude: 27.91221°N **Longitude:** -80.51648°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20001
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 163 **FWC District**: Northeast
Sex: Male **Length (cm)**: 269 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 Jan 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 04 Jan 2020 **By**: FWC-WDG, FWC vol- B. Bennett
Date necropsied: 04 Jan 2020 **By**: FWC-WDG, FWC vol- B. Bennett

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Grant, approximately 30 m ENE of 6415 South Highway US1

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☑ Watercraft Collision: Impact; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered

Explain: Linear wound on dorsum, hemorrhagic tissue under wound deep to ribs, 4 fractured ribs, punctured lung, fractured kidneys, well formed blood clots

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20002**
Date of Report: 2020-Jan-07
Filed By: FWC MMPL

FWC Case # 0352 **FWC Region:** NE

Sex: Female **Length:** 259 **cm** **Weight:** 330.0 **kg**

DATE REPORTED: 2020-Jan-07 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-07 **By:** FWC-SMW,WDG

DATE NECROPSIED: 2020-Jan-08 **By:** MMPL-MdW,BLB,ALP,BDB,SMT,CMF

LOCATION: **State:** FL **Latitude:** 28.1787 **N**
County: Brevard **Longitude:** -80.62483 **W**
Waterway: Indian River
Location description: Merritt Island, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Depleted fat(s); Serous fat(s); Pneumothorax; Bloody lung(s); Dark line kidney(s); Bloody nares; Serous tissue; Firm region in right lung with microabscesses; Caseous material right lung serosa; Fluid in pleural cavities, abdomen; Red fluid in duodenum, small intestine; Congested mesenteries, peritoneum, stomach serosa, GI wall, urinary bladder mucosa, parietal pleura; Petechiae neck muscle, omentum, mesenteries, epicardial fat; Ecchymoses neck muscle, mesenteries; Enlarged lymph nodes; Black specks on fat.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Cold stress lesions, Bloody fluid from nares).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Histology. Stomach contents in alcohol. Sedimentation sample of small intestine for parasitology.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Histology report. Bacterial PCR report from frozen lung ELISA sample.

REMARKS:

PIT tag scan negative. Bleached epidermis; Spongy epidermis; Cold stress lesions; Macroalgae in GI tract.

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Necropsy Report	
Lat/Long	

Field ID #: MEC20002

MORPHOMETRICS:

Total length:	259 cm	**Fluke base:**	73 cm	**Girth at axillae:**	**cm**
Snout to anus:	173 cm	**Fluke width:**	67 cm		
Snout to U/G:	158 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	91 cm	**Girth at anus:**	cm		
Flipper width:	15 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	0.8 cm	2.2 cm		
Outer Blubber Thickness:	0.9 cm	0.2 cm	**Abdominal Fat Thickness:**	0.9 cm
Inner Blubber Thickness:	0.3 cm	0.4 cm	**Epidermis Thickness:**	0.1 cm

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Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20002 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 07 January 2020 **NECROPSY DATE** 08 January 2020
GENDER Female **TL** 259 **cm WT** 330 **kg** **CONDITION** Moderately Decomposed

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HISTORY 07 January 2020, at 1454 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River near Merritt Island, Brevard County. FWC case number 0352 was assigned. The complainant, Jeanette Soucy (321-720-9673), stated that the carcass was gray, near an old boat ramp, and sent a photo at 1508 hrs. SMT arrived at the boat ramp at 1552 hrs, loaded the carcass via Ezy-Lift at 1620 hrs, and transported it to the EC Field Station at 1655 hrs. **08 January**, FWC biologist-William D. Greer transported the carcass to the MMPL arriving at 1125 hrs,

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EXTERNAL All of the epidermis was present. Copious bloody fluid exuded from the nares. The epidermis had numerous bleached spots, which were mostly associated with hair follicles. Many of the bleached spots had pitted lesions in the center around the follicles. There were several circular ulcerating lesions in the epidermis not associated with hair follicles. The epidermis was bleached on the face, axillae, flippers, and ventral aspect. There were numerous small ulcerating cold stress lesions on the ventral fluke. The epidermis was slightly spongy close to the caudal ventral fluke margin. No watercraft-related wounds were observed. There was a minimum of three well-healed watercraft-related scar patterns on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal fat, and a small amount of mesenteric and omental fat. The abdominal fat and peritoneum had streaks of severe congestion. The abdominal fat also had black specks. The abdomen contained 1.5 L of watery, dark red fluid.

STOMACH The omentum had regions of petechiae and black specks. The stomach serosa had bands of severe congestion. The stomach was distended with gas and contained 7.5 L of moist, well-chewed, slightly stringy, leafy, dark red to brown macroalgae. The mucosa had a region of moderate congestion at the esophageal inlet and was otherwise pink. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 3.5 L of moist, well-chewed, slightly stringy, leafy, dark red to brown macroalgae mixed with watery dark red fluid. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested and had numerous petechiae and ecchymoses. The distal small intestine contained a small amount of watery, opaque, green fluid. The proximal small intestine contained a large amount of watery, cloudy, red fluid and a moderate amount of well-chewed, fibrous, leafy, red vegetation. The mucosa was autolyzed throughout. There was a moderate infection of pinpoint trematodes. *Nudacotyle undicola* was identified on microscopic examination of a distal small intestine scrape sedimentation sample.

CECUM The cecum contained 1.75 L of moist, moderately digested, slightly fibrous, slightly leafy, green, yellow, and brown digesta. The mucosa was autolyzed. No parasites were observed.

COLON The mesentery was severely congested and had numerous petechiae and ecchymoses. The proximal colon contained a small amount of moist, moderately digested, moderately formed, slightly fibrous, slightly leafy, green, yellow, and brown feces. The wall had regions of mild congestion. The distal colon contained a moderate amount of moist, well-digested, slightly fibrous, slightly leafy, well-formed, green, yellow, and brown feces. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was surrounded by serous dark red tissue. The serosal and cut surfaces were light

pink.

SPLEEN The spleen was mottled white and purple on serosal surfaces and dark red on cut surfaces.

LIVER The liver was soft. The margins were rounded. The serosal surfaces were blue to dark blue and the cut surfaces were red. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 150 mL of slightly viscous, cloudy, dark yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The diameter of the uterus was small. No scars were present. The ovaries had numerous small follicles.

KIDNEYS There was a small amount of perirenal fat. The kidneys were light pink to blue. On cut surfaces, the cortices were light pink to light grey and the medullae were pink to light purple. The corticomedullary boundaries were distinct with a dark red line in some.

URINARY BLADDER The bladder contained 60 mL of watery, golden yellow urine. The mucosa was moderately congested. An ELISA toxicology sample was collected.

HEART There was a small amount of serous epicardial fat with small regions of petechiae. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact and moderately congested. The right hemidiaphragm was distended due to gas in the pleural cavity. The right pleural cavity contained 400 mL of cloudy, flocculent, dark red fluid. The left pleural cavity contained 250 mL of watery dark red fluid. The parietal pleura was severely congested. The right parietal pleura was soft and friable, and the tissue underneath was severely serous. The right lung was coated with a thin layer of caseous tan material. The serosal surfaces were pink to dark red and the cut surfaces were dark pink to dark red and bloody. There was a swollen firm region (10 x 8 cm) at the mid aspect, which was spongy, mottled pink, tan, and dark red on cut surfaces with numerous microabscesses. The left lung was mottled dark pink and dark purple on serosal surfaces, and dark red and bloody on cut surfaces. The airways of both lungs contained a small amount of slightly viscous, dark red fluid. There was a moderate infection of dead trematodes. The mucosa was red to dark red. The right T-septal lymph nodes were enlarged. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The muscle ventral to the occipital condyles had ecchymoses. The retropharyngeal lymph nodes were enlarged.

SKELETON NVL.

OTHER There were ecchymoses in the muscle surrounding the shoulder.

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Depleted, serous fat
- Pneumothorax
- Firm region right lung with microabscesses
- Caseous material right lung serosa

- Fluid in pleural cavities, abdomen
- Bloody lungs
- Red fluid in duodenum, small intestine
- Congested mesenteries, peritoneum, stomach serosa, GI wall, urinary bladder mucosa, parietal pleura
- Dark line kidneys
- Petechiae neck muscle, omentum, mesenteries, epicardial fat
- Ecchymoses neck muscle, mesenteries
- Enlarged lymph nodes
- Macroalgae GI tract
- Specks fat
- Bleached, spongy epidermis
- Cold stress lesions

PROBABLE CAUSE OF DEATH Natural; Other

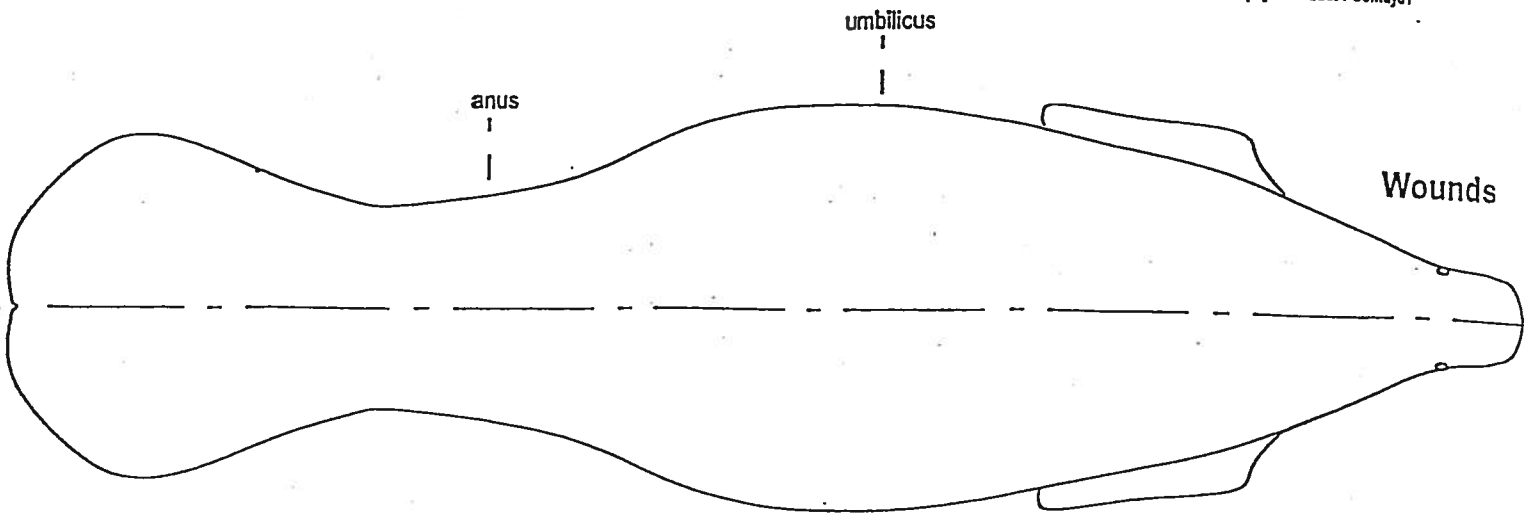
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Brittany D. Barbeau
Sean M. Tennant
Christine M. Fontaine

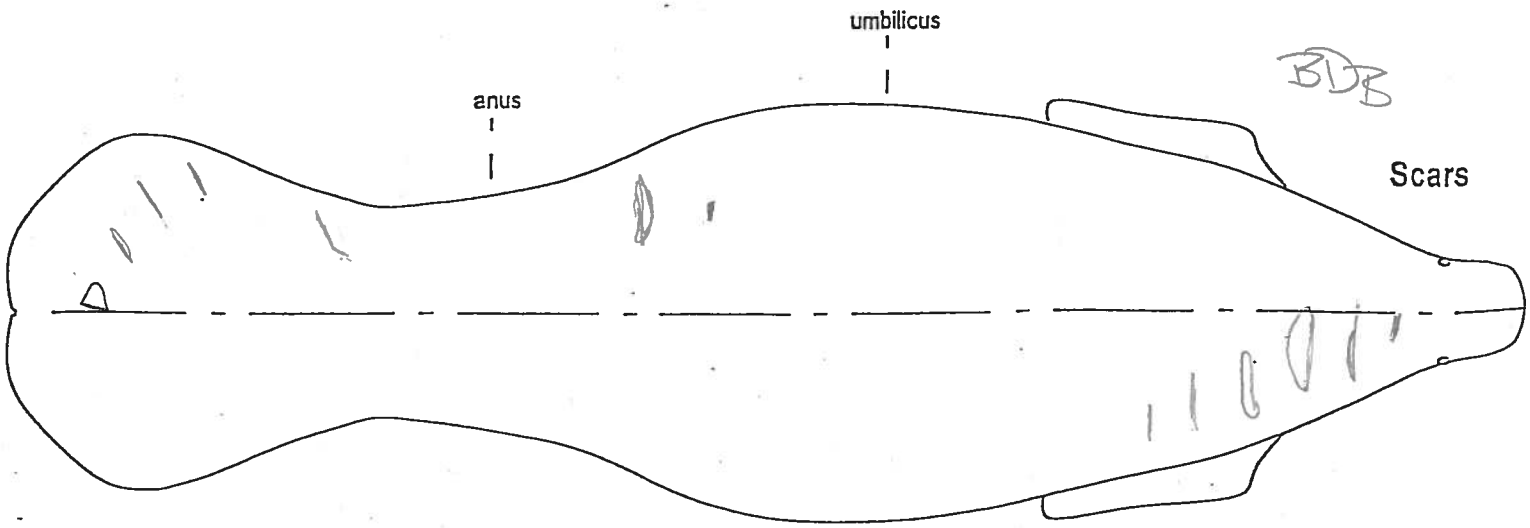
REPORT FILED BY de Wit

Date 08JAN2020 Field I.D. MEC20002

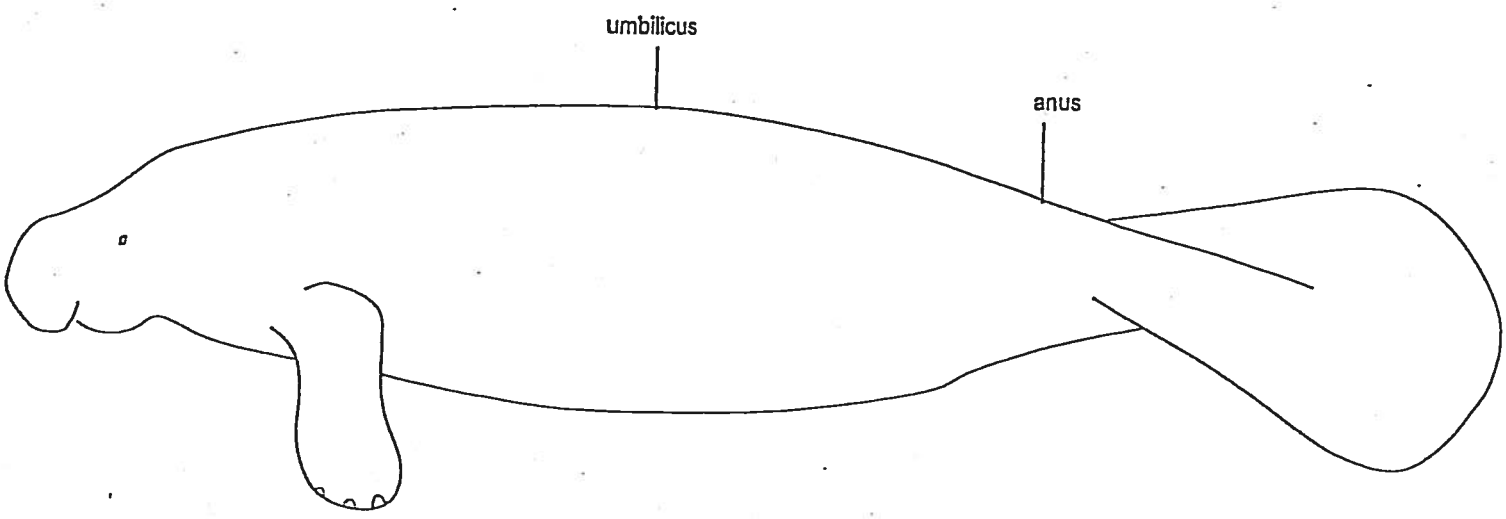
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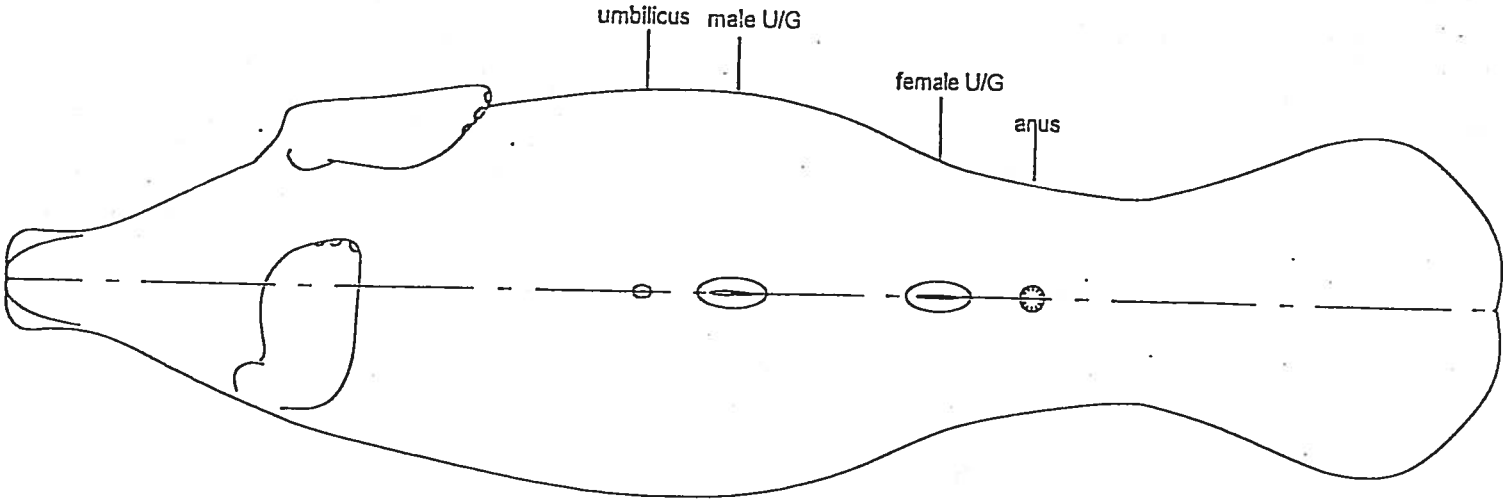


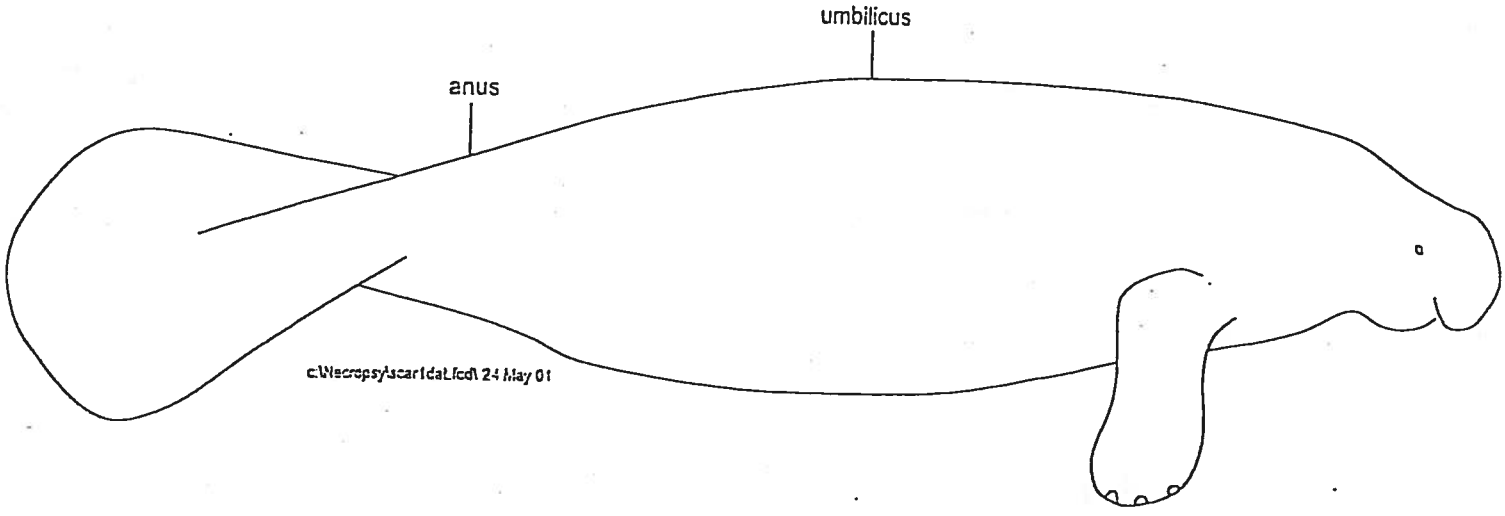
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. _____


umbilicus
anus

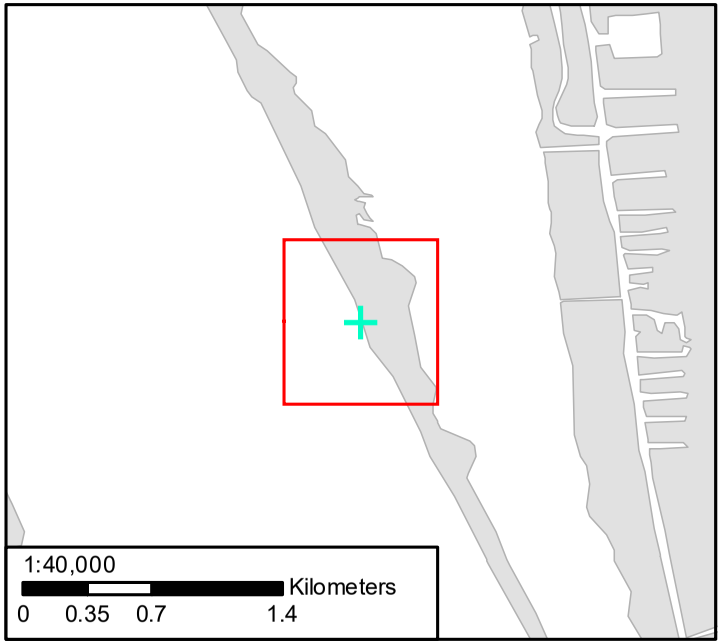

umbilicus
male U/G
female U/G
anus

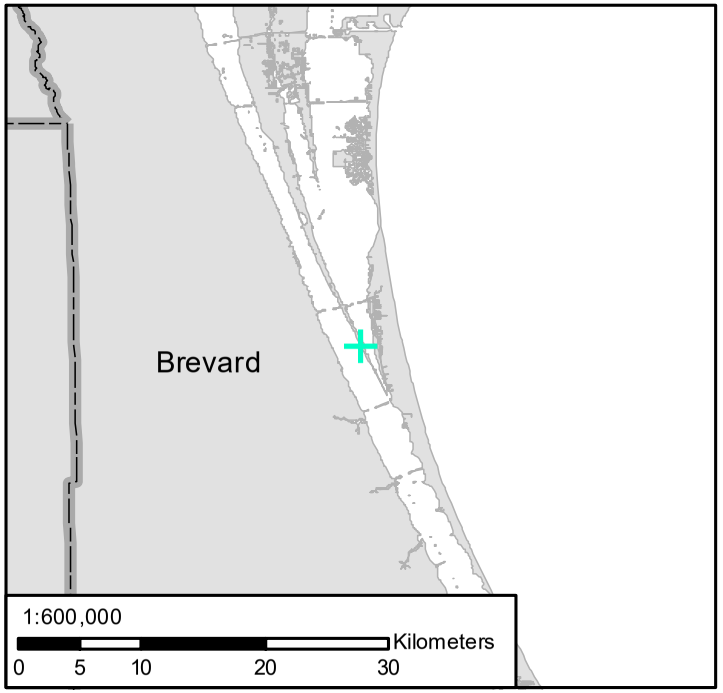

umbilicus
anus

Verified Location of Manatee Carcass MEC20002

Report Date: 1/7/2020 **Received Date:** 1/7/2020 **Received By:** FWC-SMW,WDG







Location: Merritt Island, Brevard County **Latitude:** 28.1787°N **Longitude:** -80.62483°W

Map Created: 3/29/2021

NECROPSY REPORT
FINAL REPORT

Field ID: MEC20002
Alternate Field ID:
Accession Number: 20-096
Species: *Trichechus manatus latirostris*
Date: 07 Jan 2020 (DOR); 08 Jan 2020 (DON)
Location: FL
Sex, Age: F
TL: 259 cm
WT: 330 kg
Body Condition: Good
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: 24> hours

HISTORY

Findings include:

- Bloody nares
- Serous fat, tissue
- Pneumothorax
- Firm region right lung with micro abscesses
- Fluid pleural cavities, abdomen
- Bloody lungs
- Red fluid in duodenum, small intestine
- Congested mesenteries, peritoneum, stomach serosa, GI wall, urinary bladder mucosa, parietal pleura
- Dark line kidneys
- Petechiae neck muscle, omentum, mesenteries
- Enlarged lymph nodes
- Macroalgae GI tract
- Specks fat
- Bleached, spongy epidermis
- Cold stress lesions
-

Summary: Natural; Other

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment
PCR	Lung	Aeromonas dhakensis	

Test	Tissue/Sample	Result	Comment

MICROSCOPIC DESCRIPTION

Received are 10 H&E slides and 1 B&B.

Pulmonary alveoli of the left lung contain extravasated erythrocytes and occasional fibrillar eosinophilic proteinaceous substance (fibrin). In the right lung, there is diffuse flooding of alveolar spaces with viable and degenerate heterophils, mcarophges, fibrin, and necrotic cellular debris. There is necrosis of the associated interstitial wall. There is moderate congestion.The pleura is expanded by clear spaces (edema), fibrin, and extravasated erythrocytes. Fibrin coats the pleural surface.

Skin lesion (56) is characterized by central ulceration flanked by necrosis and hydropic degeneration of the superficial to mid epithelium. The defect is filled with viable and degenerate heterophils admixed with necrotic cellular debris and mixed bacterial coccobacilli. Adjacent necrotic epithelial cells are infiltrated by abundant heterophils. The fascia of the hemidiarphragm is expanded by fibrin, lightly proteinaceous eosinophilic fluid (edema), and few extravasated erythrocytes.

There is mild, diffuse splenic lymphoid depletion and contracture owing to reduced erythrocytes in the red pulp. Few periarteriolar lymphoid sheaths have fibrin within the center. The T-Septal lymph node exhibits moderate lymphoid hyperplasia. Germinal centers have prominent dendritic cells which contain intracytoplasmic nuclear debris. Macrophages are mildly increased within the medullary sinus. The retropharyngeal lymph node is mildly depletion. There is expansion of the medullary sinus by abundant clear spaces (edema). Macrophages are mildly increased within the medullary sinus.

The serosa of the distal small intestine exhibits marked congestion.

The following tissues have no significant histological findings: Proximal small intestine, pancreas, proximal large intestine, kidney, liver, stomach, heart,

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System

A. Skin Lesion: Epidermal necrosis and focal ulceration with heterophilic microabscesses and hydropic degeneration.
B. Hemidiaphragm: Diaphragmitis, fibrinous and heterophilic, acute, diffuse, mild.

Respiratory Sytstem

A. Right Lung: Bronchointerstial pleuropneumonia, necrotizing, heterophilic, subacute, diffuse, marked with fibrinous alveolitis and pleuritis.
B. Left Lung: Fibrinous alveolitis, multifocal, mild.

Nervous System
NE

Urinary and Reproductive System
NSF

Digestive System/Body as a Whole
A. Small Intestine: Serosal congestion, diffuse, moderate.

Cardiovascular System
NSF

Hepatobiliary System
NSF

Endocrine System
NE

Hematolymphatic System
A. Spleen:
    a. Lymphoid depletion.
    b. Congestion.
B. Retropharyngeal Lymph Node: Lymphoid depletion, moderate with edema.
C. T-Septal Lymph Node: Reactive lymphoid hyperplasia.

INTERPRETATIVE SUMMARY

DIAGNOSES
Bacterial Pleuropneumonia
Reactive Lymphoid Hyperplasia

Primary Diagnostic Category: Infectious/Organ Specific

Linked Cases:

There was a severe fibrinous pleuropneumonia similar to other MEC cases. The PCR identified Aeromonas dhakensis and not other bacteria including P. multocida. Brown and Brenn stains, unfortunately, were not helpful in staining of bacteria. This does not mean that they were not present, but did not pick up stain. There was no evidence of septicemia, but T-Septal lymph nodes were reactive indicating draining from the lung. Regardless of the bacterial species, respiratory dysfunction as well as pneumothorax would have led to this manatee's demise. A. dhakensis has been reported as ahuman pathogen with a prevalence of 22% in one study; isolation from the lung was less common.[1]

.



microorganisms-08-00129.pdf

TEST	PURPOSE	SITE	RESULT

DATE:	REPORTING PATHOLOGIST:
3/21/2020	David S. Rotstein, DVM, MPVM, DACVP

[1] Fernandez-Bravo A and MJ Figueras. 2020. Microorganisms 8, 129; doi:10.3390/micoorganisms8010129

FIGURES

No Figures

RESULT REPORTING FORM

ZOOLOGICAL MEDICINE AND WILDLIFE DISEASE LABORATORY

2015 SW 16th Avenue
Room V2-186
University of Florida
College of Veterinary Medicine
Gainesville, Florida 32608
Phone: (352) 294-4420

Frozen lung ELISA sample

Sample Information:

Submitter: UF VMC Aquatic Animal Health/Nicole Stacy	**Date received: 2/21/2020**
Species: Manatee	**Animal ID/Name: MEC20002**

Result information:

Lab accession#	Sample/Tissue	Requested Test	Result
M20-42	Lung 1/8/2020	Bacterial PCR	Positive

Comment:

Positive: PCR produced an amplicon (band) of the correct size consistent with the target agent. Direct sequencing confirmed the presence of ***Aeromonas dhakensis*** in the submitted sample.

Positive PCR results are always confirmed via sequencing. The Zoological Medicine and Wildlife Disease Laboratory specializes in the study of pathogens of non-domestic species. Many of these agents are novel and/or poorly characterized, thus all PCR assays are unvalidated research assays. The diagnostic performance (sensitivity, repeatability) of the assays is not known and negative PCR results are therefore not definitive. If you have any questions, please contact April Childress at ChildressA@ufl.edu or phone number listed above.

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20002
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 374 FWC District: NE
Sex: M (F) Undetermined Length: 259 cm (estimated _____) Weight 330 kg.
Date reported: 07 JAN 20 By: CITIZEN TO FWC ME DISPATCH ORLANDO
Date collected: 07Jan20 By: FCFL - Sara Wappes, [illegible]
Date necropsied: 08Jan20 By: MMPL MdW BLB ALP SMT BDB CMF

LOCATION: State: FL (___) County: Brevard Waterway: Indian River
Latitude: _____ N Longitude: _____ W
Locality description: Merritt Island, South of Pineda

CONDITION: - Fresh - (Moderate) - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other Stomach contents in Alcohol; SI scrape
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other _____
Genetics Box # 95
Female reproductive findings or **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – (No) – UNK **UTERINE SCAR** – Yes – (No) - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: (Negative); Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

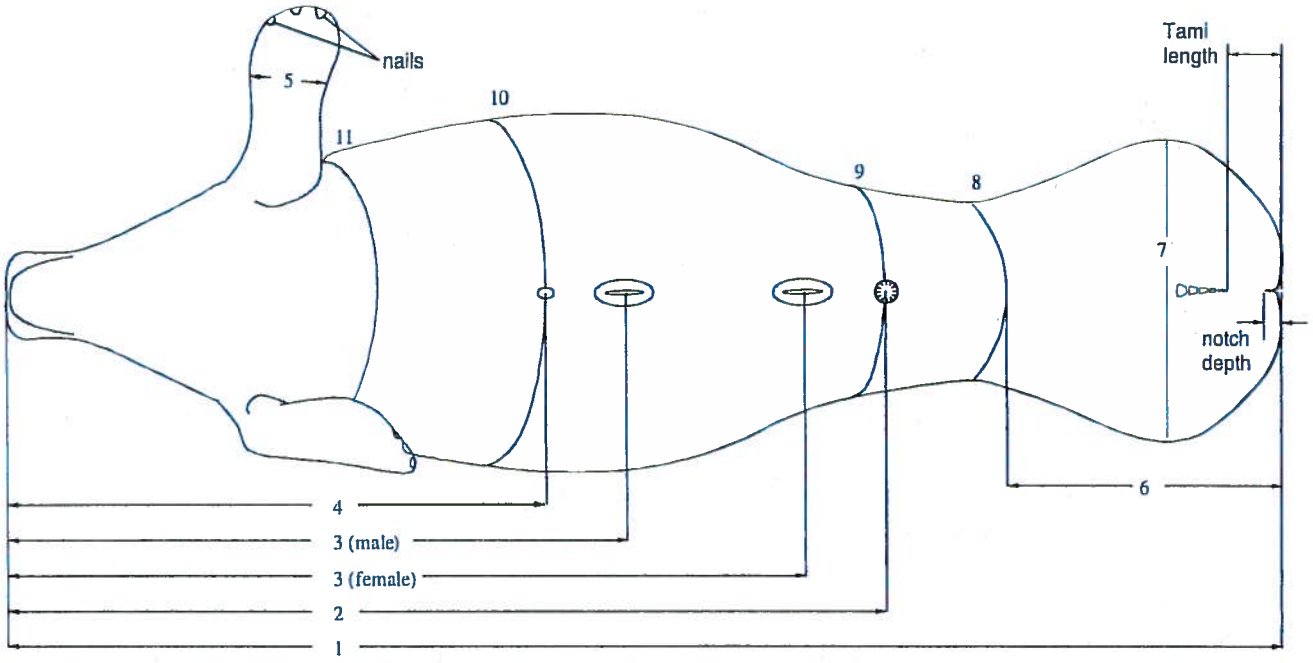
REMARKS: _____

Field ID # MEC20002

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

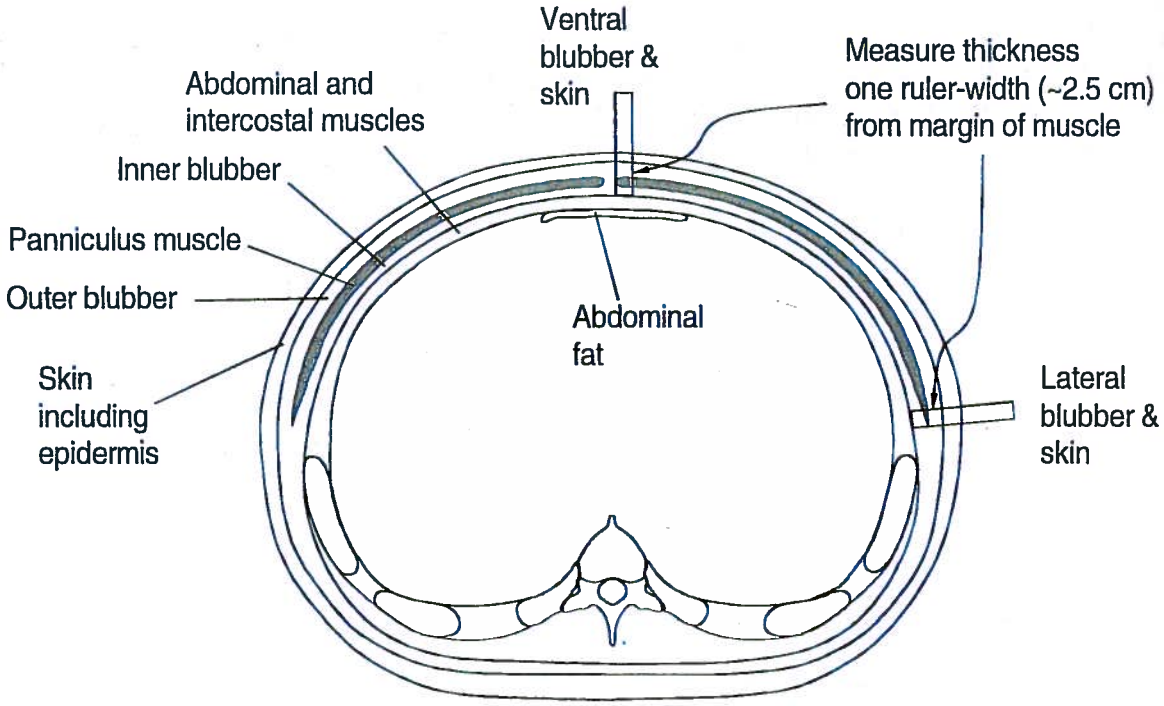
1. Total length 259 cm
2. Snout to anus -C 173 cm
3. Snout to U/G -C 158 cm
4. Snout to umbilicus -C 91 cm
5. Flipper width 15 cm
6. Fluke base 73 cm
7. Fluke width 67 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus ____ cm
10. *Girth at umbilicus ____ cm
11. *Girth at axillae ____ cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.8 cm	2.2 cm	(Epidermis 0.1 cm)
Outer fat	0.9 cm	0.2 cm	(Abdominal fat 3.9 cm)
Inner fat	0.3 cm	0.4 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20002
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 00352 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 07 January 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 07 January 2020 **By**: FWC-SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 55 m WSW of 10020 S Tropical Trail.

Carcass Orientation: Grounded

CONDITION: -

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20003**
Date of Report: 2020-Jan-10
Filed By: FWC EC Field Station

FWC Case # 0544 **FWC Region:** NE

Sex: Male **Length:** 210 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-10 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-10 **By:** FWC-WDG

DATE NECROPSIED: 2020-Jan-10 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.51695 **N**

County: Brevard **Longitude:** -80.78204 **W**

Waterway: Indian River

Location description: Titusville, grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Flat ventrum; Cold stress lesions; Depleted fat(s); Serous fat(s); Wet lung(s); Bloody lung(s); Thin peduncle; Thick algal mat; Froth, fluid in airways; Fluid-filled upper GI tract; Congested GI serosa, mesenteries, parietal pleura, urinary bladder-, GI mucosa.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20003

MORPHOMETRICS:

Total length:	210 cm	**Fluke base:**	cm	**Girth at axillae:**	147 **cm**
Snout to anus:	142 cm	**Fluke width:**	55 cm		
Snout to U/G:	98 cm	**Girth at fluke base:**	77 cm		
Snout to umbilicus:	87 cm	**Girth at anus:**	103 cm		
Flipper width:	14 cm	**Girth at umbilicus:**	170 cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	1.2 cm	2.2 cm		
Outer Blubber Thickness:	1.3 cm	1.5 cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	1 cm	1.5 cm	**Epidermis Thickness:**	0.1 cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20003
SPECIES *T. manatus latirostris*
RECOVERY DATE 10 January 2020
NECROPSY DATE 10 January 2020
GENDER Male **TL** 210 **cm WT** N/T **kg**
CONDITION Fresh

HISTORY 10 January 2020, at 1340 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River near 6705 Riveredge Drive in Titusville, Brevard County. FWC case number 0544 was assigned. The complainant, Jim Skipper (321-689-2751), stated that the carcass was gray, approximately 5 to 6 feet long, and near the shoreline. WDG and FWC intern-Kelly L. Etherton arrived at the reported location at 1505 hrs. A field necropsy was completed at 1710 hrs. The remains were left onsite.

EXTERNAL All of the epidermis was present. There was a thick brown algal mat on the dorsal aspect. A moderate infestation of barnacles was present on the ventral aspect. The ventrum was flat. The peduncle appeared thin. There were linear lesions on the lateral aspects. A minimum of two well-healed watercraft-related scar patterns was observed on the dorsal and right lateral aspects. The fluke margin had one well-healed mutilation at the 5 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, omental, and mesenteric fat. The abdomen contained watery, red fluid.

STOMACH The stomach contained 400 mL of clear fluid mixed with white mucus (see photo). The mucosa was severely congested (see photo). There was a mild infection of live nematodes.

DUODENUM The duodenum contained 600 mL of clear to gray fluid (see photo). The mucosa was severely congested (see photo). There was a severe infection of live nematodes.

JEJUNUM & ILEUM The small intestine serosa and mesentery were mildly congested. The small intestine contained watery gray fluid throughout. The mucosa was unremarkable. There was a mild infection of live nematodes.

CECUM The cecum contained 1.2 L of moist, fibrous, stringy, leafy, poorly digested, yellow to green digesta (see photo). The mucosa was unremarkable. There was a mild infection of dead and live trematodes.

COLON The colon serosa and mesentery were mildly congested. The proximal colon contained moist, poorly formed, poorly digested, fibrous, stringy, yellow to green feces. The mid colon contained moist, poorly formed, poorly digested, slightly fibrous, black feces. The distal colon contained moist, moderately formed, well-digested, homogeneous, black feces. The mucosa was unremarkable. There was a moderate infection of dead trematodes in the proximal colon.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and purple on serosal surfaces, and red on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were black to purple and cut surfaces were red to brown.

GALLBLADDER The gallbladder contained a small amount of watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate, serous reproductive fat. The seminal vesicles were small and empty of contents. The testes were small.

KIDNEYS There was a small amount of perirenal fat. The kidneys were tan to purple on serosal surfaces. On cut surfaces, the cortices were tan and the medullae were dark red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 20 mL of pale yellow urine. The mucosa was slightly congested.

HEART There was a small amount of serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The parietal pleura was moderately congested (see photo). The lungs were tan to purple on serosal surfaces and pink to red, very wet, and bloody on cut surfaces (see photo). The primary airways contained an abundant amount of froth and watery, red fluid (see photo).

HEAD & NECK REGIONS The trachea contained white mucus.

SKELETON NVL.

OTHER There was watery red fluid in the abdominal and pleural cavities, but the volume could not be measured due to water washing into the body cavities.

COMMENTS

SIGNIFICANT FINDINGS

- Flat ventrum
- Thin peduncle
- Cold stress lesions
- Thick algal mat
- Depleted, serous fat
- Wet, bloody lungs
- Froth, fluid in airways
- Fluid-filled upper GI tract
- Congested GI serosa, mesenteries, parietal pleura, urinary bladder-, GI mucosa

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PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

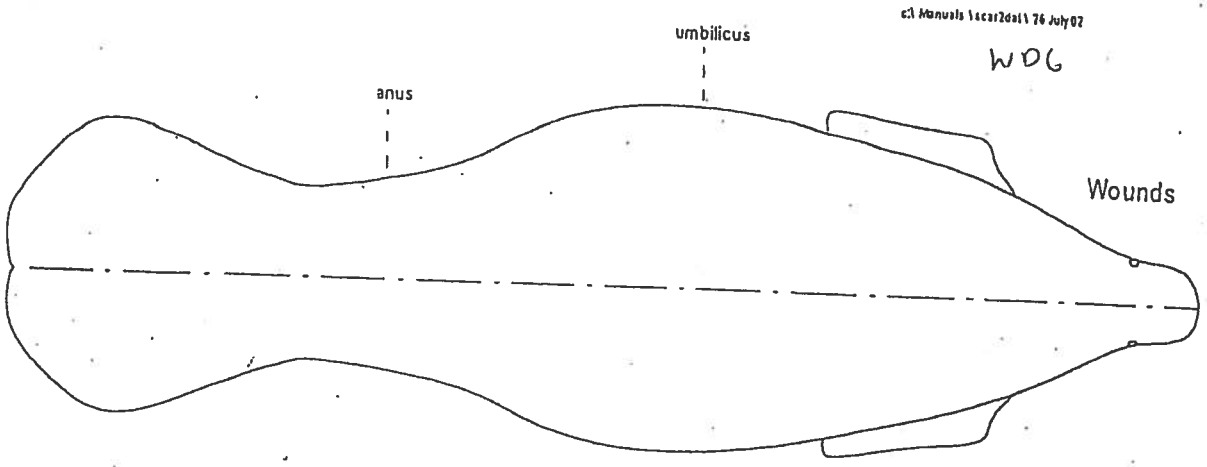
William D. Greer
Kelly L. Etherton (FWC intern)

REPORT FILED BY Etherton / Greer

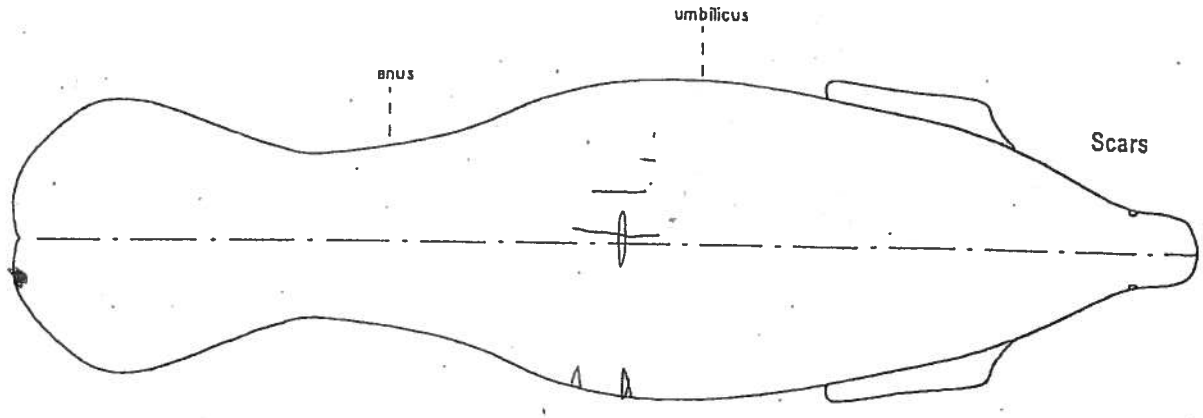
Date 10 January 2020 Field I.D. MEC20003

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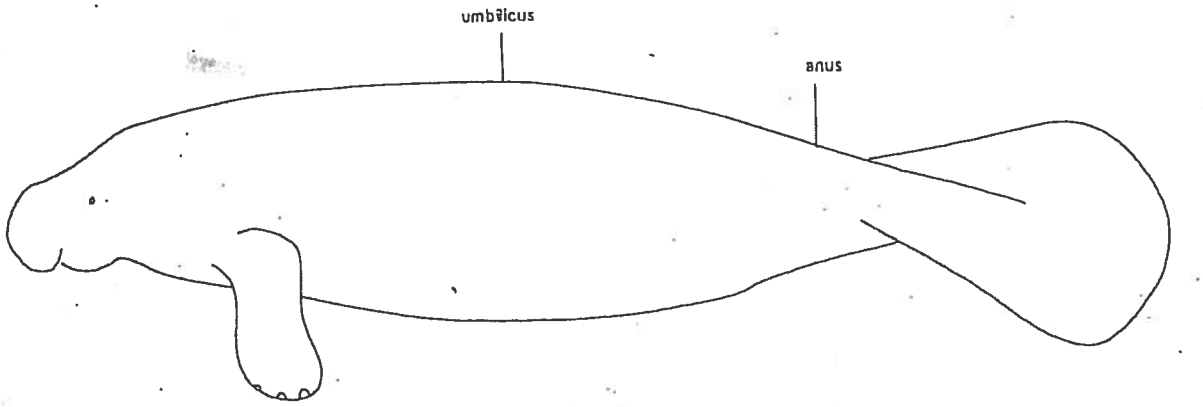
WDG

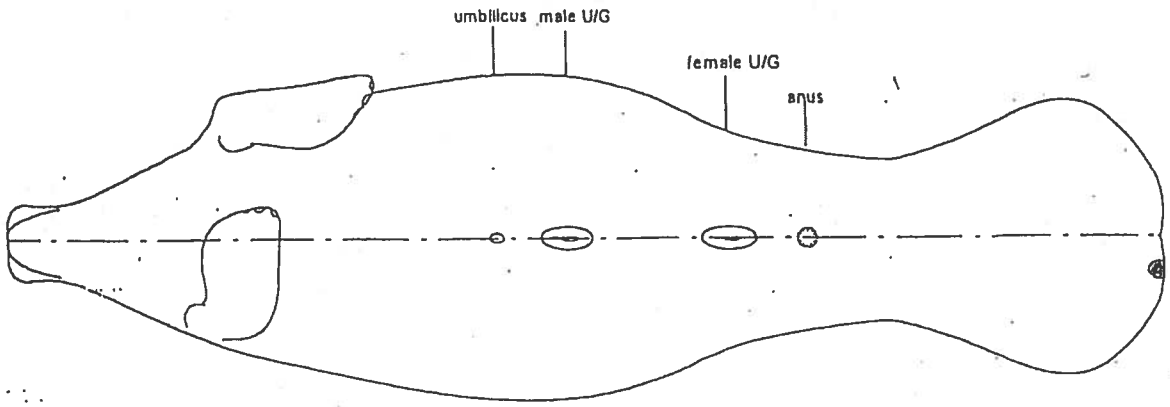


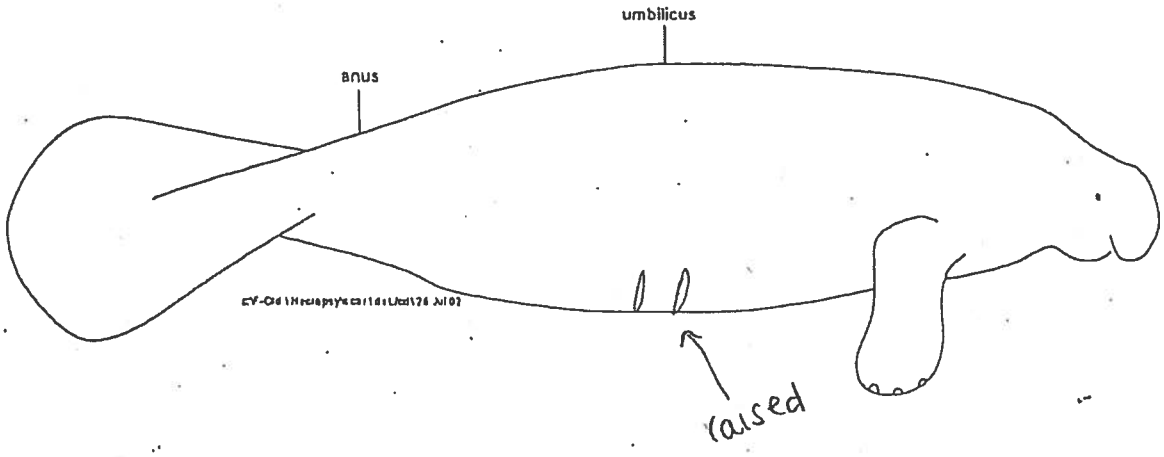
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. MEC20003



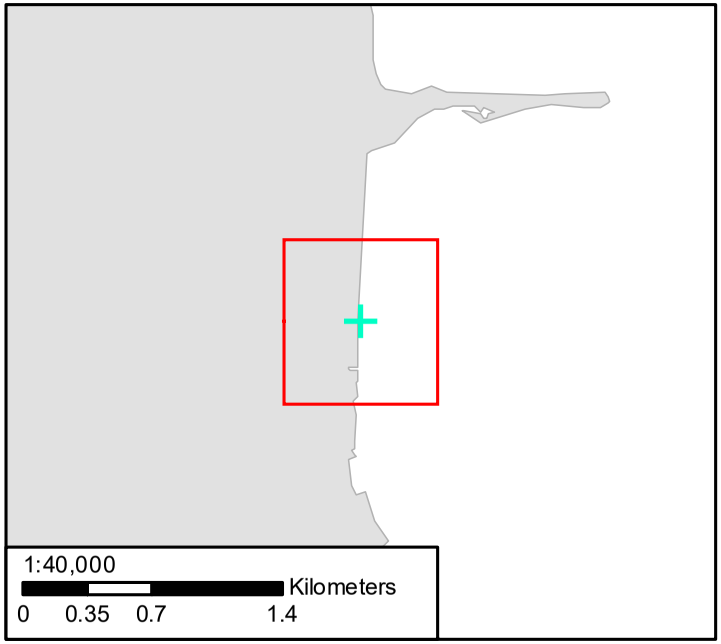


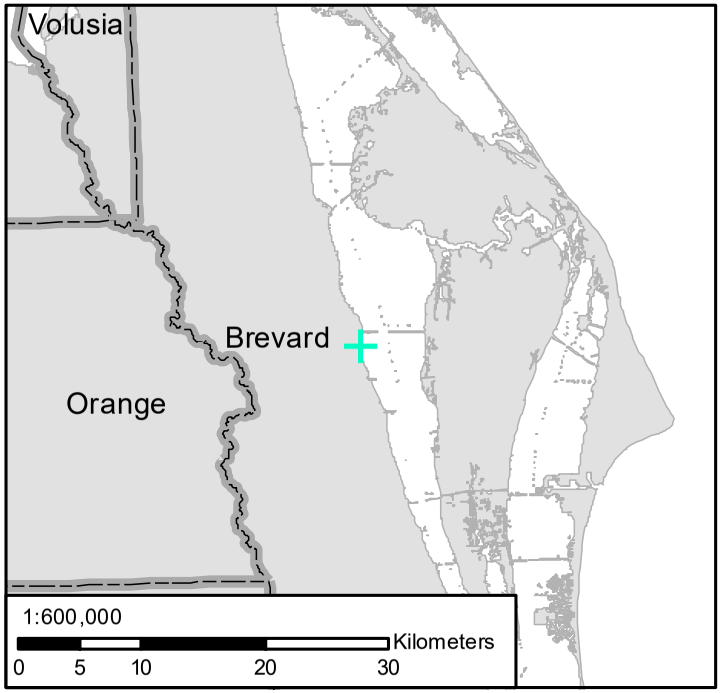


Verified Location of Manatee Carcass MEC20003

Report Date: 1/10/2020 **Received Date:** 1/10/2020 **Received By:** FWC-WDG







Location: Titusville, Brevard County

Latitude: 28.51695°N **Longitude:** -80.78204°W

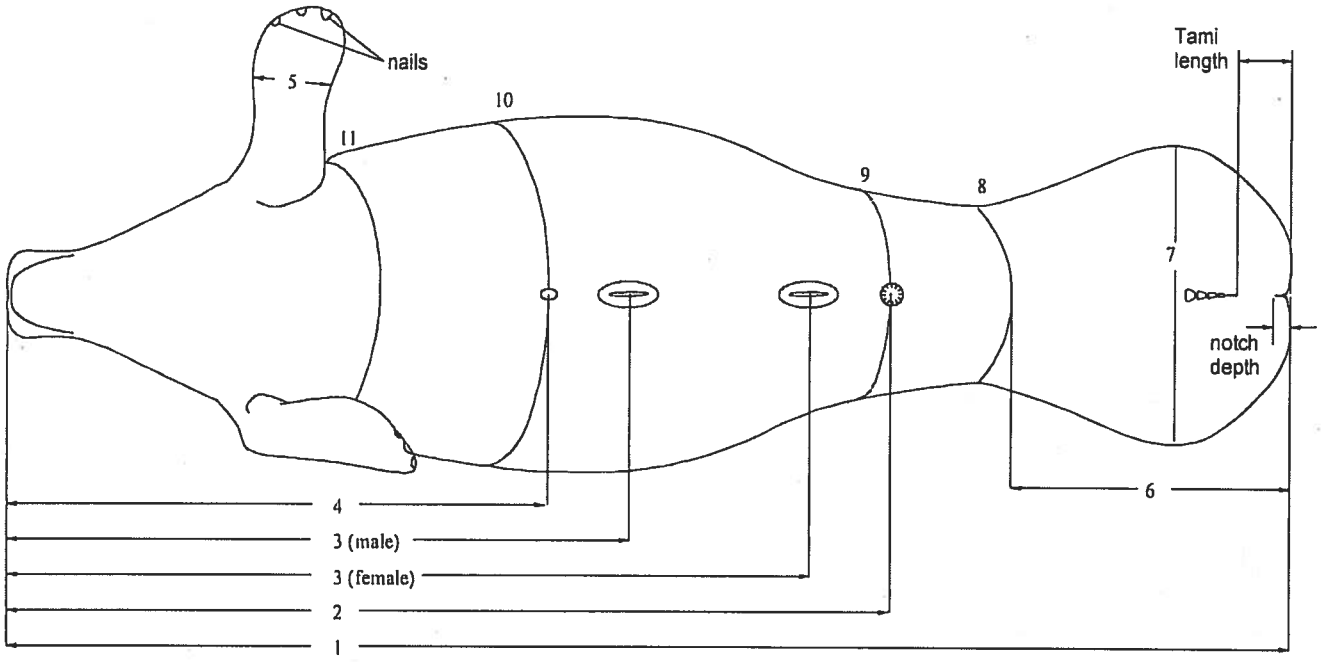
Map Created: 3/29/2021

Field ID # MEC20003

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

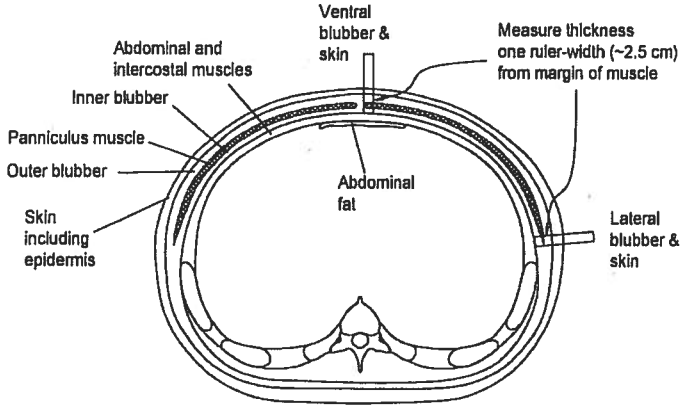
1. Total length 210 cm
2. Snout to anus -C 142 cm
3. Snout to U/G -C 98 cm
4. Snout to umbilicus -C 87 cm
5. Flipper width 14 cm
6. Fluke base N/T cm
7. Fluke width 55 cm
8. *Girth at fluke base 77 cm
9. * Girth at anus 103 cm
10. *Girth at umbilicus 170 cm
11. *Girth at axillae 147 cm

(Depth of notch _____ cm)
(Tami ln_____ cm)
(Nail count: R 4 L 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	1.2 cm	2.2 cm	(Epidermis 0.1 cm)
Outer blubber	1.3 cm	1.5 cm	(Abdominal fat _____ cm)
Inner blubber	1.0 cm	1.5 cm	



Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: Y/N L: Y/N
Placental Scaring: R / L:____x ____ x _____ cm
Pregnant: Y/N – Fetus length _____cm Fetus gender M / F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes Y (N) in epididymes Y (N) Method: visual / microscope slide
Fluid in seminal vesicles Y (N) if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20003
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 544 **FWC District**: Northeast
Sex: Male **Length (cm)**: 210 **Estimated** _____ **Weight (kg)** N/T
Date reported: 10 January 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 January 2020 **By**: FWC- WDG, FWC Intern K. Etherton
Date necropsied: 10 January 202(**By**: FWC- WDG, FWC Intern K. Etherton

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 90 meters NNE from 6705 Riveredge Drive

Carcass Orientation: Grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☑ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Thin, linear lesions, small amount serous fats, fluid filled upper G.I., wet lungs, congestion throughout internal organs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20004**
Date of Report: 2020-Jan-13
Filed By: FWC EC Field Station

FWC Case # 0708 **FWC Region:** NE

Sex: Male **Length:** 299 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-13 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-13 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2020-Jan-13 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.38598 **N**

County: Brevard **Longitude:** -80.66566 **W**

Waterway: Banana River

Location description: Merritt Island, floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cobblestone-like epidermis; Healing skin lesions; Depleted fat(s); Serous fat(s); Wet lung(s); Bloody lung(s); Fluid, sediment in airways; Congested mesentery, GI serosa, urinary bladder mucosa. Reported in the week following nightly air temperatures in the 50's.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20004

MORPHOMETRICS:

Total length:	299 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20004
SPECIES *T. manatus latirostris*
RECOVERY DATE 13 January 2020
NECROPSY DATE 13 January 2020
GENDER Male **TL** 299 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 13 January 2020, at 1140 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River near Merritt Island, Brevard County. FWC case number 0708 was assigned. The complainant, Jim Thompson (321-795-6371), stated that the carcass was floating belly-up with its flippers flat to its chest. At 1149 hrs, SMW received a verification photo. SMW, FWC biologist-William D. Greer, and FWC intern-Kelly Etherton arrived at the Kelly Park boat ramp at 1330 hrs, launched the Key West boat, and located the carcass at 1400 hrs. The carcass was towed to a nearby remote location where a field necropsy was completed by 1555 hrs. The remains were left onsite.

EXTERNAL Approximately 30% of the epidermis was present but sloughing. There were healing linear lesions on the left lateral aspect. A small patch of cobblestone-like epidermis was present on the remaining epidermis of the ventral fluke. A minimum of eight well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, mesenteric, and omental fat.

STOMACH The stomach contained 9.8 L of moist, moderately chewed, woody, fibrous, stringy, yellow to brown ingesta (see photo). The ingesta were coated with a thick layer of viscous, white mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 2 L of wet, moderately chewed, fibrous, stringy, yellow to brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine serosa and mesentery were severely congested (see photo). The proximal small intestine contained viscous, orange fluid. The mid small intestine contained viscous, white fluid. The distal small intestine contained moist, poorly chewed, fibrous, leafy, yellow to green ingesta. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 6 L of moist, moderately digested, fibrous, stringy, yellow to brown digesta (see photo). The mucosa was sloughing. No parasites were observed.

COLON The colon serosa was congested (see photo). The proximal colon contained moist, poorly formed, poorly digested, fibrous, woody, green to brown feces. The mid colon contained moist, moderately formed, moderately digested, fibrous, stringy, brown feces. The distal colon contained moist, well-formed, moderately digested, fibrous, brown feces. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was not examined.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were pink to dark blue and cut surfaces were red to brown.

GALLBLADDER The gallbladder contained approximately 25 mL of viscous, orange bile. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were not examined.

KIDNEYS There was scant perirenal fat. The kidneys were brown on serosal surfaces. On cut surfaces, the cortices were brown and the medullae were red to dark red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 50 mL of flocculent, yellow urine. The mucosa was congested.

HEART There was moderate, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were pink on serosal surfaces and dark red, wet, and bloody on cut surfaces (see photo). The primary airways contained an abundant amount of watery, pink fluid and a small amount of dirt (see photo).

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS The carcass was reported the week following nightly air temperatures in the 50's.

SIGNIFICANT FINDINGS

- Cobblestone epidermis
- Depleted, serous fat
- Congested mesentery, GI serosa, urinary bladder mucosa
- Wet, bloody lungs
- Fluid, sediment in airways

PROBABLE CAUSE OF DEATH Natural; Cold Stress

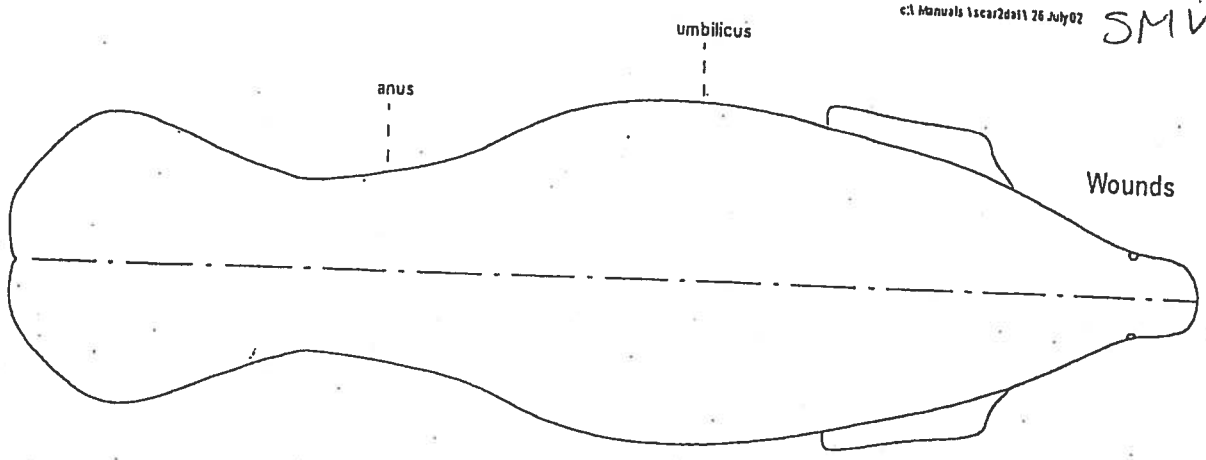
NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes
Kelly L. Etherton (FWC intern)

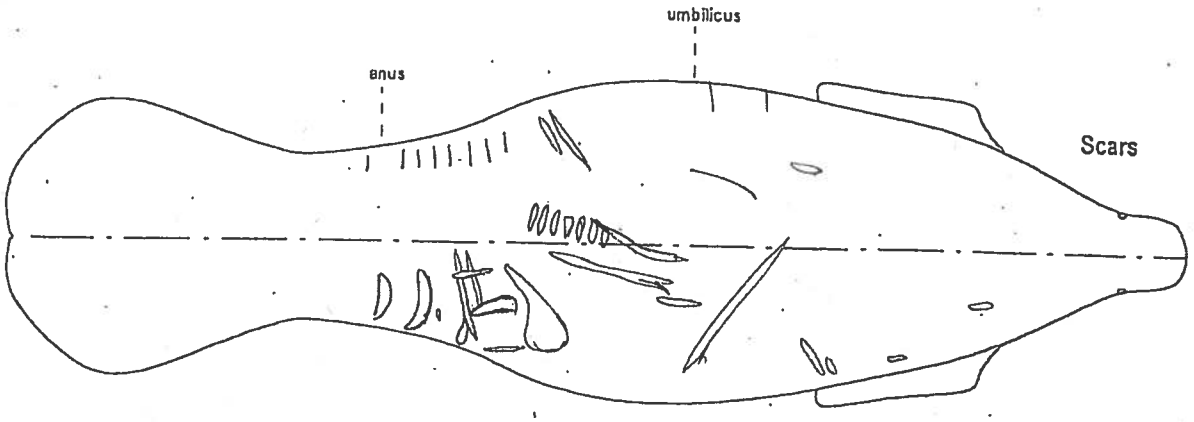
REPORT FILED BY Wappes

Date 13 JAN 2020 Field I.D. MEC20004

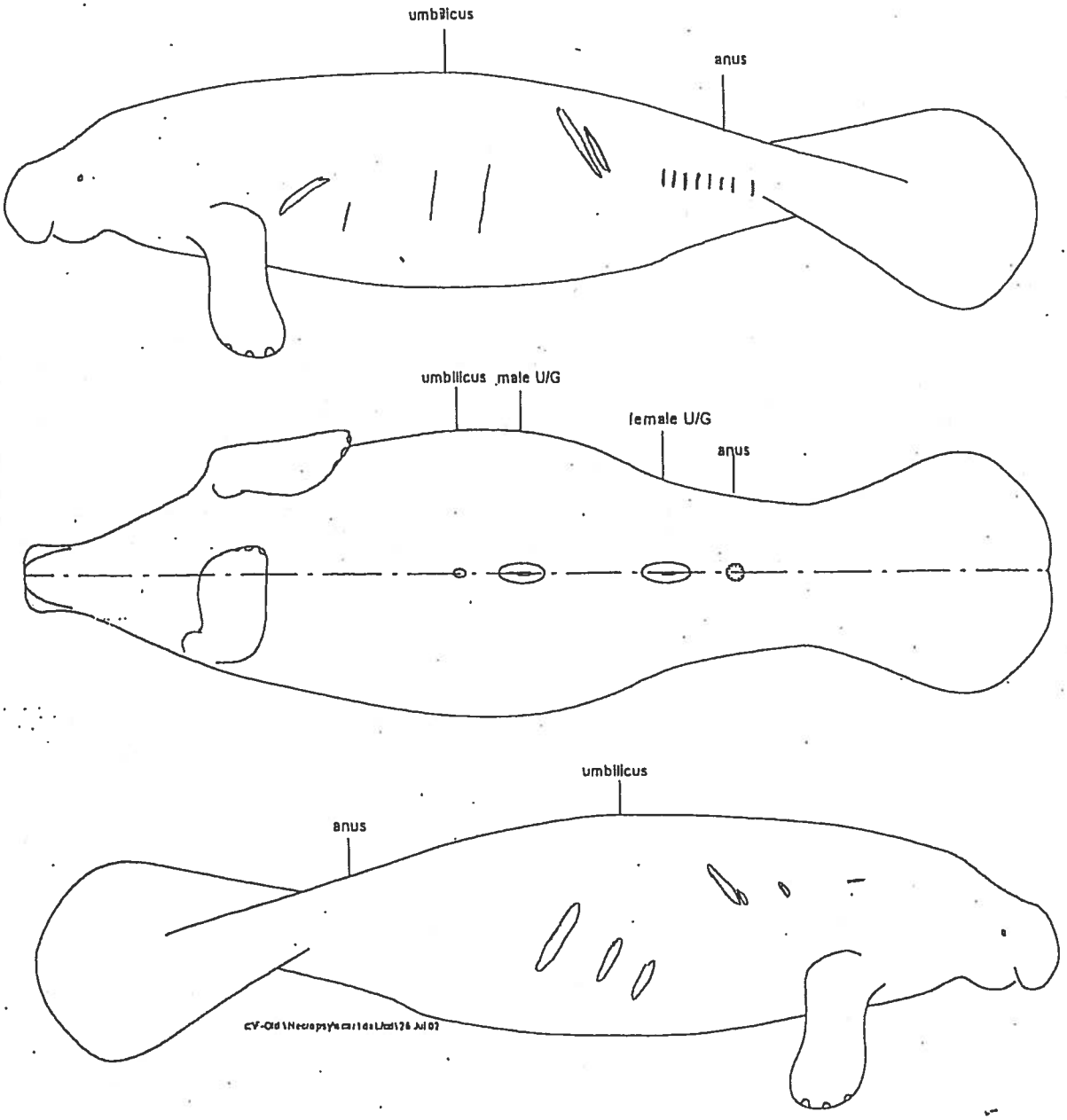
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Width																				
Depth																				
Distance																				



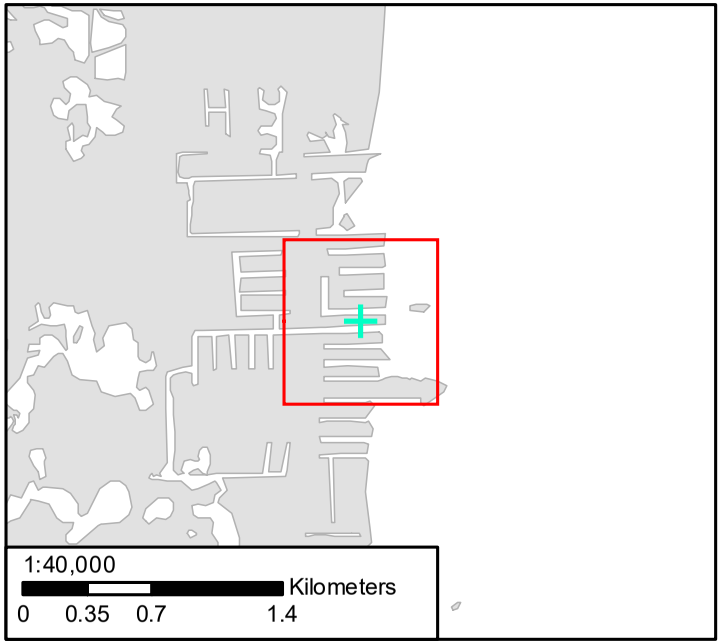
FIELD I.D. MEC20004

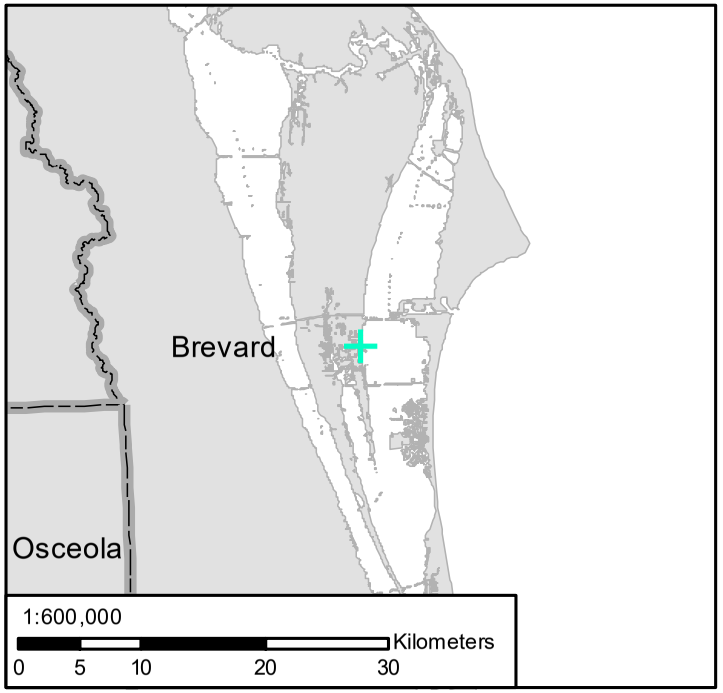


Verified Location of Manatee Carcass MEC20004

Report Date: 1/13/2020 **Received Date:** 1/13/2020 **Received By:** FWC-WDG,SMW







Location: Merritt Island, Brevard County **Latitude:** 28.38598°N **Longitude:** -80.66566°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20004
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 708 **FWC District**: Northeast
Sex: Male **Length (cm)**: 299 **Estimated** _____ **Weight (kg)** N/T
Date reported: 13 January 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 13 January 2020 **By**: FWC-WDG, SMW, FWC Intern-K. Etherton
Date necropsied: 13 January 2020 **By**: FWC-WDG, SMW, FWC Intern-K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 20 m SE of 1705 Central Avenue.

Carcass Orientation: Floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☑ Other ☐ Not Recovered
Explain: Congestion and wet lungs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20005**
Date of Report: 2020-Jan-15
Filed By: FWC EC Field Station

FWC Case # 0873 **FWC Region:** NE

Sex: Male **Length:** 310 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-16 **By:** FWC-SMW

DATE NECROPSIED: 2020-Jan-16 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 27.83574 **N**

County: Brevard **Longitude:** -80.51691 **W**

Waterway: Sebastian River

Location description: Micco, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Healing watercraft wound(s); Bleached epidermis; Shark scavenging; Macroalgae in stomach, colon.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case number 0828.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20005

MORPHOMETRICS:

Total length:	310 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20005
SPECIES *T. manatus latirostris*
RECOVERY DATE 16 January 2020
NECROPSY DATE 16 January 2020
GENDER Male **TL** 310 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 15 January 2020, at 1404 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the C-54 canal of the St. Sebastian River in Micco, Brevard County. FWC case number 0828 was assigned. The complainant, Bill French (703-507-2323), stated that the carcass was white and floating belly-up with vultures on it. No photos were available. WDG requested assistance from St. Sebastian River Preserve State Park, but park biologist-Sammy Checkerd was unable to locate the carcass. **16 January**, at 1136 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding a dead manatee about halfway down the C-54 canal. FWC case number 0873 was assigned. The complainant, Diane Blackford (321-420-8440) could not be contacted. Based on the location description, it was determined to be the same manatee. SMW and FWC intern-K. Etherton arrived at Sebastian Inlet State Park boat ramp at 1310 hrs and launched the Key West boat. The carcass was located at 1420 hrs and towed to an uninhabited shoreline. A field necropsy was completed by 1600 hrs. The remains were left onsite.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. There was a healing watercraft-related wound pattern which consisted of six parallel wounds (#1 – 6) on the caudal dorsum and two parallel wounds on the dorsal fluke. Many of the wounds were associated with thickened, fringe-like epidermis and dermis. Wounds #3 and 4 penetrated into the muscle, and the remaining wounds partially penetrated the dermis. Numerous bleached spots were present in the remaining epidermis. The remaining cranial epidermis had a moderate brown algal mat. There were rents due to decomposition and/or shark scavenging at the anus, urogenital opening, and ventral neck region. Bones were exposed, and the ventrum was covered in an abundant amount of feces. A minimum of five well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. The fluke margin had one large, distinct, well-healed, triangular mutilation between the 3 and 4 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal and mesenteric fat. The omental fat was missing due to decomposition and/or scavenging. Internal organs were missing unless mentioned below.

STOMACH The stomach was torn and contained at least 17 L of moist, moderately chewed, fibrous, stringy, yellow to brown ingesta mixed with red macroalgae (see photo). The ingesta were coated with a thin layer of viscous, white mucus. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum was not examined.

COLON Parts of the colon were missing due to decomposition and/or scavenging. The distal-most half meter of colon contained very moist, slightly stringy, well-digested, moderately formed, brown feces. There were two loose approximately one meter long portions of colon that each contained moist, leafy, fibrous, poorly digested, moderately formed, red to brown feces mixed with red to yellow macroalgae. There was a mild infection of dead trematodes in one of the sections of loose colon.

SPLEEN The spleen was mottled grey and black on serosal surfaces and brown on cut surfaces.

LIVER Half of the liver remained and was soft and friable. Serosal surfaces were blue to black and cut surfaces were brown.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained orange.

REPRODUCTIVE There was abundant reproductive fat. The seminal vesicles were large and contained a large amount of pink to brown fluid. The testes were large. The epididymides were not examined.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 10 mL of light pink urine. The mucosa was unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were soft and friable. Serosal surfaces were mottled white, pink, and purple, and cut surfaces were dark pink. The primary airways were empty of contents. The mucosa was pink. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Shark scavenging
- Healing watercraft wounds
- Bleached epidermis
- Macroalgae in stomach, colon

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

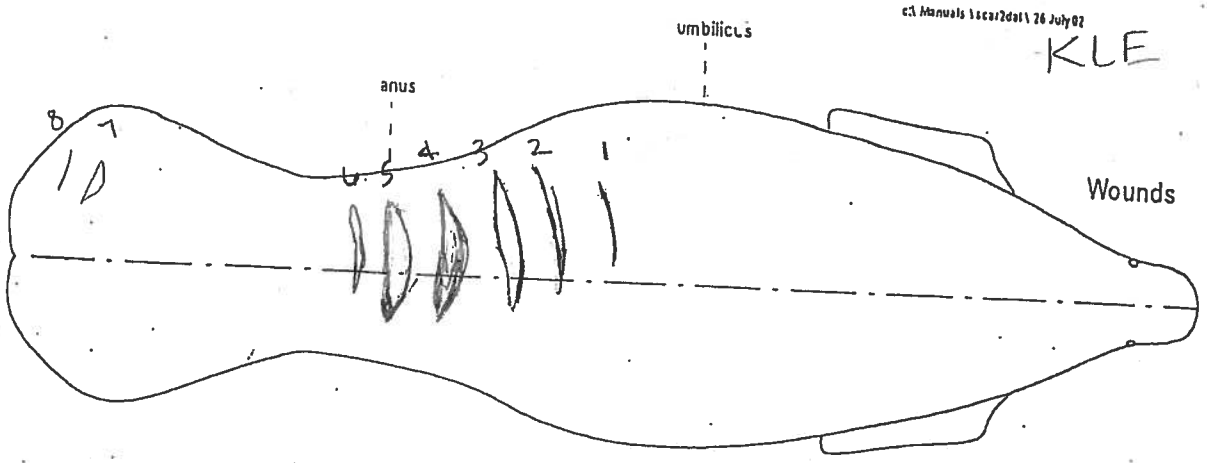
Sara M. Wappes
Kelly L. Etherton (FWC intern)

REPORT FILED BY Etherton / Wappes

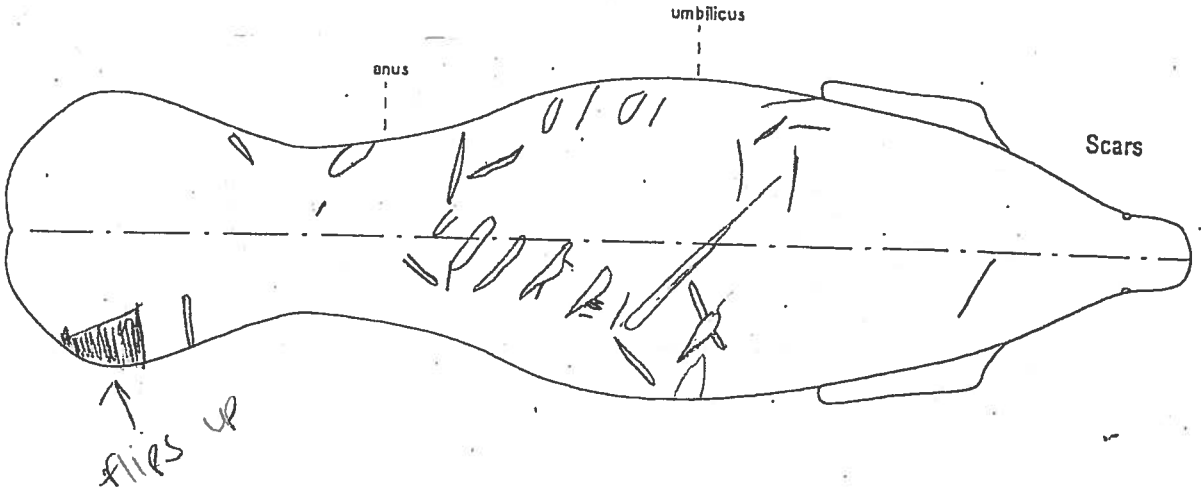
Date 11e January 2020 Field I.D. MEC20005

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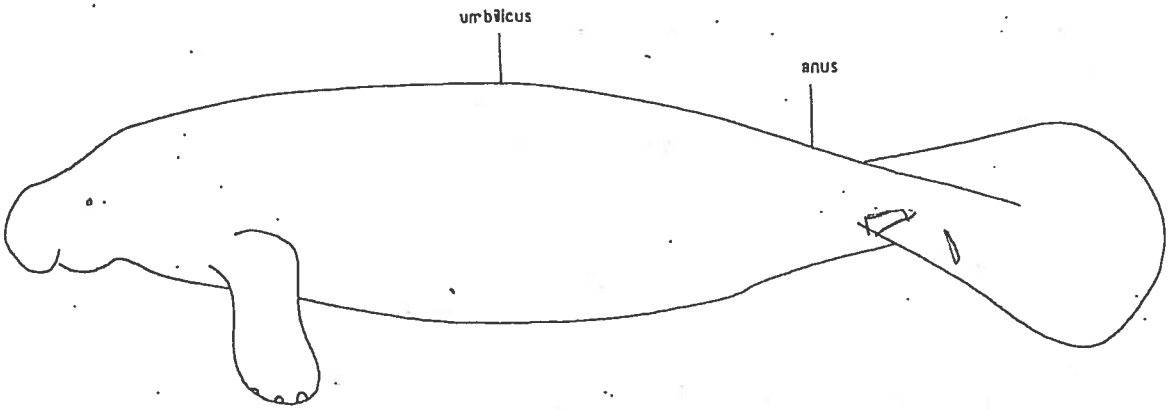
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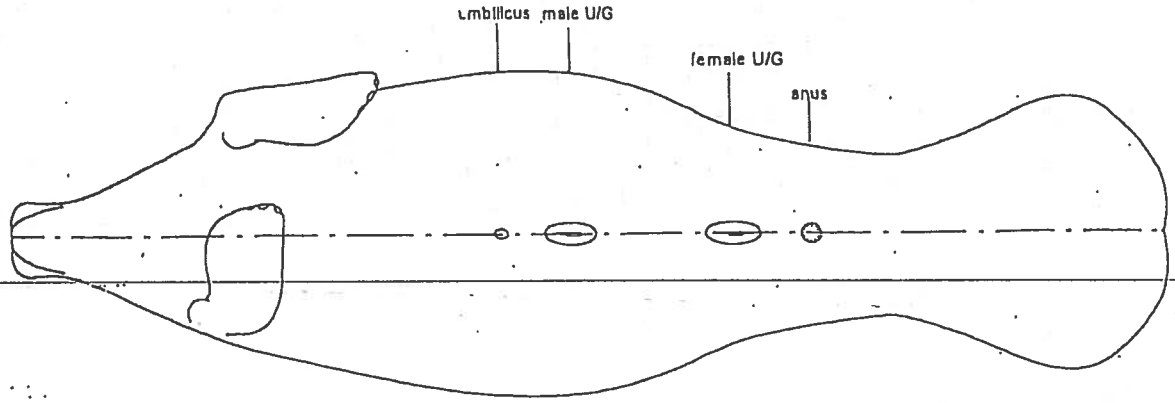


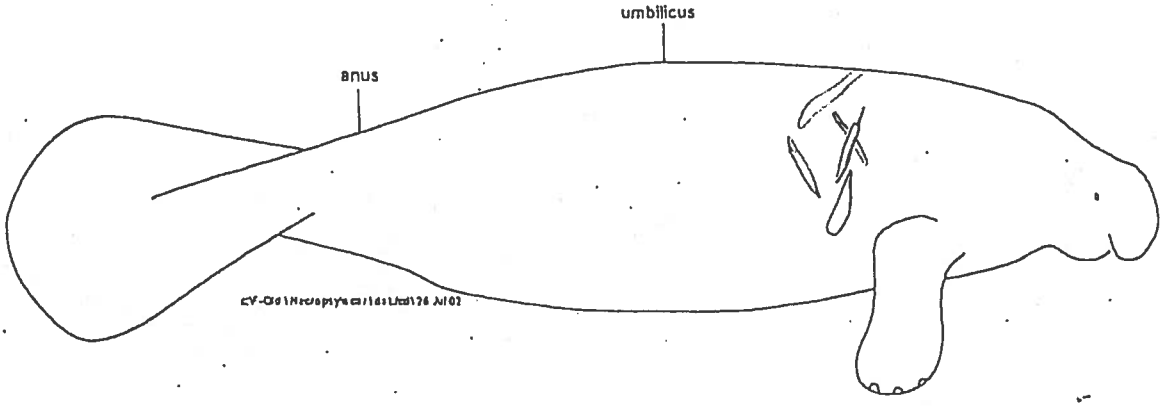
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Width	1.0	1.5	3.0	4.5	4.0	2.0	2.3	1.2												
Depth	0.3	0.8	2.2	2.0	0.8	1.0	0.2	1.0												
Distance	9.5	11.0	11.0	11.0	12.0	13.0	13.0													



FIELD I.D. MEC2000S

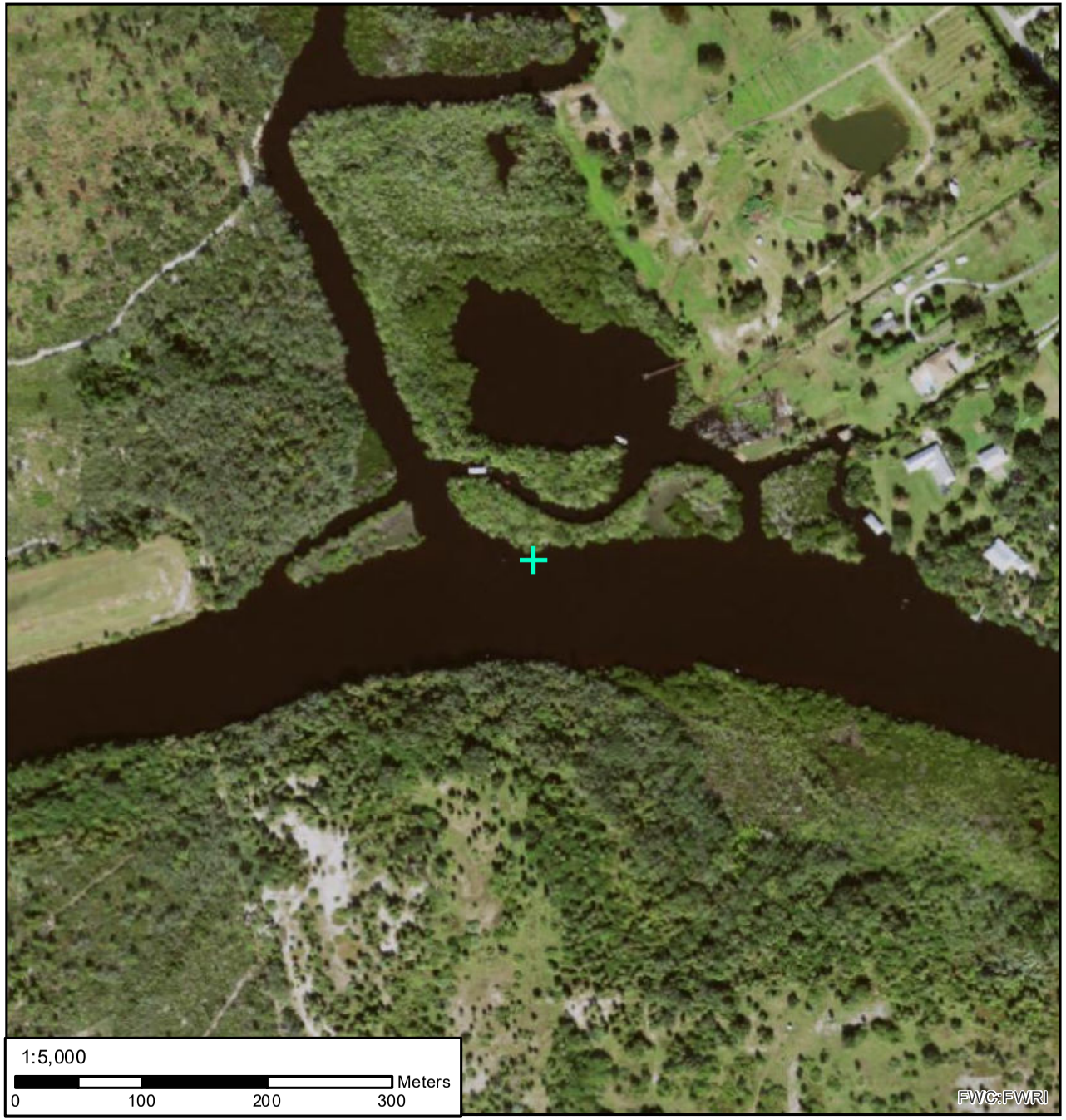


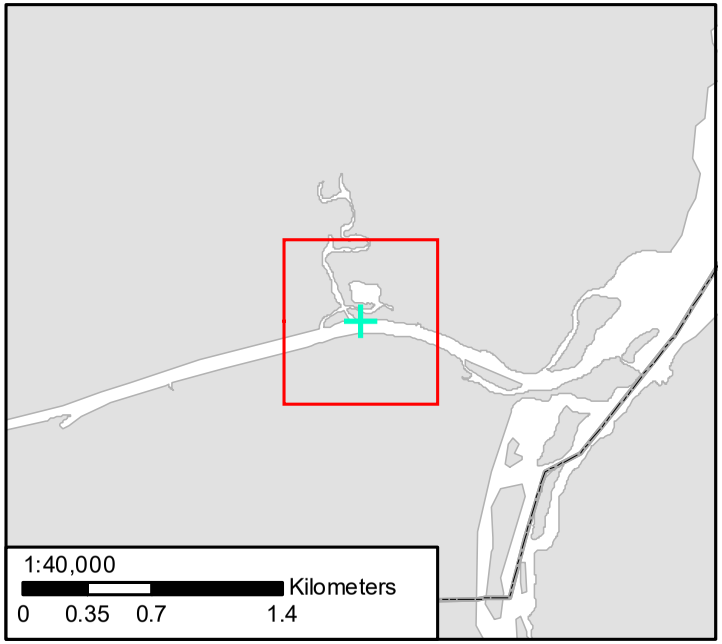


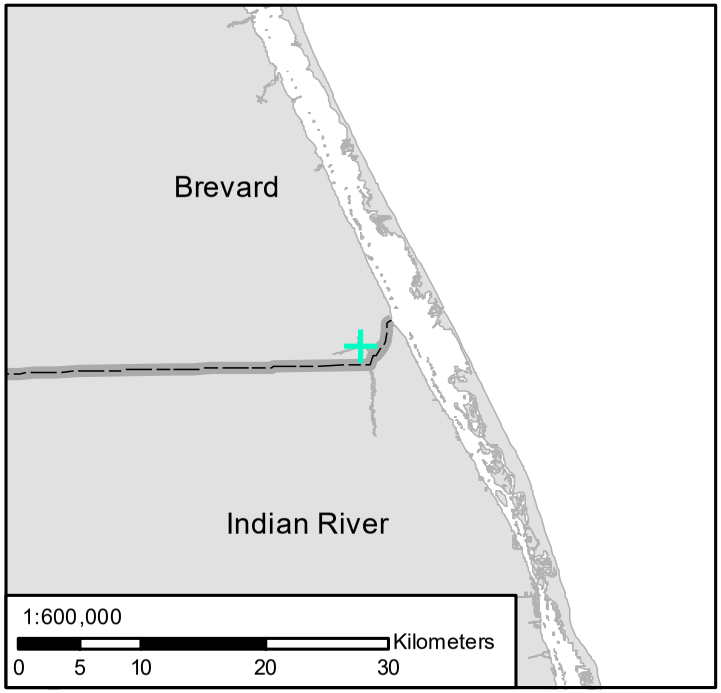


Verified Location of Manatee Carcass MEC20005

Report Date: 1/15/2020 **Received Date:** 1/16/2020 **Received By:** FWC-SMW







Location: Micco, Brevard County

Latitude: 27.83574°N **Longitude:** -80.51691°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20005
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 828, 873 **FWC District**: Northeast
Sex: Male **Length (cm)**: 310 **Estimated** _____ **Weight (kg)** N/T
Date reported: 15 January 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 16 January 2020 **By**: FWC-SMW, FWC Intern- K.Etherton
Date necropsied: 16 January 2020 **By**: FWC-SMW, FWC Intern- K.Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Sebastian River
Latitude: N _____ **Longitude**: W _____
Locality description: Micco, approximately 375 m W of 9582 Tortoise Lane

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☑ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: External wound series, autolyzed and/or missing internal organs, heavily scavenged

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20006**
Date of Report: 2020-Jan-24
Filed By: FWC MMPL

FWC Case # 1273 **FWC Region:** NE

Sex: Male **Length:** 236 **cm** **Weight:** 231.0 **kg**

DATE REPORTED: 2020-Jan-24 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-24 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Jan-27 **By:** MMPL-MdW,BLB,BDB,SMT,TDW

LOCATION: **State:** FL **Latitude:** 28.47982 **N**
County: Brevard **Longitude:** -80.76843 **W**
Waterway: Indian River
Location description: Cocoa, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Depleted fat(s); Serous fat(s); Dark line kidney(s); Wet lung(s); Swollen, firm lung with petechiae and microabscesses; Fluid, fibrin, gelatinous clots in pleural cavities; Fluid, mucus airways; Bloody nares; Dark red ascites; Watery GI contents with macroalgae; Nodule stomach; Black GI mucosa; Congested peritoneum, abdominal fat, mesenteries, hemidiaphragms, parietal pleura, colon wall, GI serosa, urinary bladder-, airway mucosa; Petechiae hemidiaphragms; Specks parietal pleura, right lung.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Healing wounds, Ventral fluke).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Sedimentation sample of small intestine for parasitology. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan positive (Left: 00-0799-8983; Right: 00-079A-126B). Bleached epidermis; Cobblestone-like epidermis; Healing watercraft wound(s); Remodeled ribs. Resolving blood clot pleural cavity. Known as RNE1610, SWFTm1617b, "Blaine", released on 15 Feb 2017. Also FWC case number 1240.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20006

MORPHOMETRICS:

Total length:	236 cm	**Fluke base:**	72 cm	**Girth at axillae:**	127 **cm**
Snout to anus:	158 cm	**Fluke width:**	52 cm		
Snout to U/G:	104 cm	**Girth at fluke base:**	86 cm		
Snout to umbilicus:	93 cm	**Girth at anus:**	103 cm		
Flipper width:	15 cm	**Girth at umbilicus:**	171 cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	1 cm	1.9 cm		
Outer Blubber Thickness:	0.5 cm	0.2 cm	**Abdominal Fat Thickness:**	0.6 cm
Inner Blubber Thickness:	0.1 cm	0.3 cm	**Epidermis Thickness:**	0.1 cm

---

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20006
SPECIES *T. manatus latirostris*
RECOVERY DATE 24 January 2020
NECROPSY DATE 27 January 2020
GENDER Male **TL** 236 **cm WT** 231 **kg**
CONDITION Moderately Decomposed

HISTORY 24 January 2020, at 0756 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a sick manatee in Indian River in Cocoa, Brevard County. FWC case number 1240 was assigned. The complainant, Corey Saussy (321-298-9620), stated that the manatee was 6 feet long, had not moved or taken a breath in 30 minutes, and was currently grounded. At 0801 hrs, WDG received a photo from the complainant but it was inconclusive. At 0806 hrs, WDG requested FWC LE assistance to verify and tow if the manatee was dead. At 1407 hrs, WDG received a text alert from Dispatch regarding a dead manatee in Indian River in Cocoa. FWC came number 1273 was assigned. The complainant, Brenda Landergrover (321-258-4803), stated that the manatee had been there all day, was 6 feet long, and that an officer had arrived while speaking with WDG. At 1450 hrs, FWC Officer-Morgan Maslo secured the carcass to the dock behind the complaint's apartment complex. At 1508 hrs, WDG, FWC biologist-Carley M. Metcalf, (CMM) and FWC intern-Kelly Etherton (KE) arrived at the complex. CMM and KE pulled the carcass by hand to the Port St. John boat ramp. WDG, CMM and KE loaded the carcass into a carcass trailer at 1552 hrs and transported it to the EC Field Station. **25 January**, WDG and CMM transported the carcass to the MMPL arriving at 1120 hrs.

EXTERNAL All of the epidermis was present. Blood-tinged fluid exuded from the nares. The epidermis was bleached on the face. There was a healing watercraft wound series on the dorsal peduncle. The series consisted of three parallel propeller wounds that slightly penetrated into the dermis, which were perpendicular to two parallel linear wounds that were closely associated with each other. There was a thin green algal mat on the dorsal aspect. The epidermis had thin cobblestone-like patches on all aspects. The epidermis was bleached in the ventral chin creases. A minimum of one well-healed watercraft-related scar pattern was observed. The fluke margin had well-healed mutilations between the 5 and 6 o'clock positions and at the 9 o'clock position. There were two small holes with well-healed margins in the caudal fluke margin between the 6 and 7 o'clock positions. Copepods were present. PIT tag scan was positive (Left 00-0799-8983; Right 00-079A-126B), known as RNE1610, SWFTm1617b, "Blaine". A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal, mesenteric, and omental fat. The peritoneum and abdominal fat had bands of severe congestion. The abdomen contained 0.5 L of watery dark red fluid.

STOMACH The stomach contained 2 L of watery, green to brown fluid mixed with a small amount of well-chewed, green and light brown macroalgae and small pieces of leafy green material. The mucosa was autolyzed. There was one 0.8 cm diameter raised grey nodule in the wall of the major curvature. No parasites were observed.

DUODENUM The duodenum contained 1 L of watery, green to brown fluid. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested. The serosa had patches of moderate congestion. The small intestine contained a moderate amount of watery, flocculent, green fluid. The mucosa was sloughing throughout. The proximal small intestine mucosa was black. There was a moderate infection of pinpoint trematodes in the lumen of the proximal small intestine and a mild infection in the distal small intestine. *Nudacotyle undicola* was identified on microscopic examination of a proximal small intestine sedimentation sample. The Peyer's patches were prominent.

CECUM The cecum contained 400 mL of watery, well-digested, gritty, dark green digesta including green

macroalgae. The mucosa was sloughing. No parasites were observed.

COLON The mesentery was moderately congested. The serosa had patches of moderate congestion. The distal colon contained an abundant amount of moist, moderately formed, well-digested, slightly fibrous, dark green feces. An ELISA toxicology sample was collected. The mid- and proximal colon contained an abundant amount of moist, moderately formed, fibrous, olive green feces (including green macroalgae) that was stained black in the outer layer. The proximal-most one meter contained a large amount of watery, poorly formed, well-digested, gritty, dark green feces (including green macroalgae). The mucosa was black and sloughing throughout. The distal colon wall had patches of mild congestion. There was a mild infection of dead trematodes in the proximal colon.

PANCREAS The pancreas was tan to light pink on serosal and cut surfaces.

SPLEEN The spleen was dark red to purple on serosal and cut surfaces.

LIVER The margins were rounded. The serosa was separated from the parenchyma. The liver was soft and friable. The serosal surfaces were dark blue to dark purple and the cut surfaces were red. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 75 mL of flocculent, dark yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The testes and seminal vesicles were small. There was no fluid on cut surfaces of the deferent ducts, epididymides, or seminal vesicles.

KIDNEYS There was scant serous perirenal fat. The kidneys were light grey, light pink, and purple on serosal surfaces. On cut surfaces, the cortices were pink to grey and the medullae were light pink to pink. There was a purple line at most of the corticomedullary boundaries which were otherwise indistinct.

URINARY BLADDER The bladder contained 2 mL of slightly cloudy, light yellow urine. The mucosa was moderately congested. An ELISA toxicology sample was collected.

HEART There was moderate serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The hemidiaphragms were intact. The left hemidiaphragm was severely congested and had numerous petechiae on both aspects. The right hemidiaphragm had a few bands of severe congestion on the pleural aspect. The left parietal pleura was severely congested. The parietal pleura had a few black specks in both pleural cavities. The right pleural cavity contained 250 mL of watery dark red fluid, and one small almost resolved blood clot. The left pleural cavity contained 950 mL of watery dark red fluid and 100 mL of gelatinous, serous, tan clots, and a small amount of tan fibrin. The caudal half of the left lung was firm and swollen. The serosal surfaces of this portion were tan, pink, and pale pink and the cut surfaces were pale pink to red and had numerous microabscesses. The cranial half was mottled pink, red, and dark purple with numerous petechiae on serosal surfaces, and dark red on cut surfaces. The cut surfaces of the left lung were wet. The right lung was pink to purple on serosal surfaces with a moderate amount of petechiae and black specks, and was pink to red on cut surfaces. The airways of both lungs contained an abundant amount of viscous, red-tinged mucus and watery, red-tinged fluid. The mucosa was pink to red and moderately congested. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The tissue was dark red and serous. The nares contained a small amount of watery dark red fluid. The trachea contained a scant amount of watery, dark red fluid. The mucosa was pink.

SKELETON Right ribs 5-9 were remodeled at the heads and proximal one-third. Right ribs 13-15 were remodeled at the mid one-third. The remodeled ribs were deep to the dorsal scar.

OTHER There was no trauma deep to the watercraft wounds.

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Depleted, serous fat
- Fluid, fibrin, gelatinous clots pleural cavities
- Swollen, firm, wet lung with petechiae and microabscesses
- Fluid, mucus in airways
- Dark red ascites
- Watery GI contents with macroalgae
- Nodule stomach
- Black GI mucosa
- Congested peritoneum, abdominal fat, mesenteries, hemidiaphragms, parietal pleura, colon wall, GI serosa, urinary bladder-, airway mucosa
- Petechiae hemidiaphragms
- Dark line kidneys
- Specks parietal pleura, right lung
- Bleached, cobblestone-like epidermis
- Resolving blood clot pleural cavity
- Healing watercraft wounds
- Remodeled ribs
- PIT tag positive, known as RNE1610, SWFTm1617b, “Blaine”

PROBABLE CAUSE OF DEATH Natural; Other

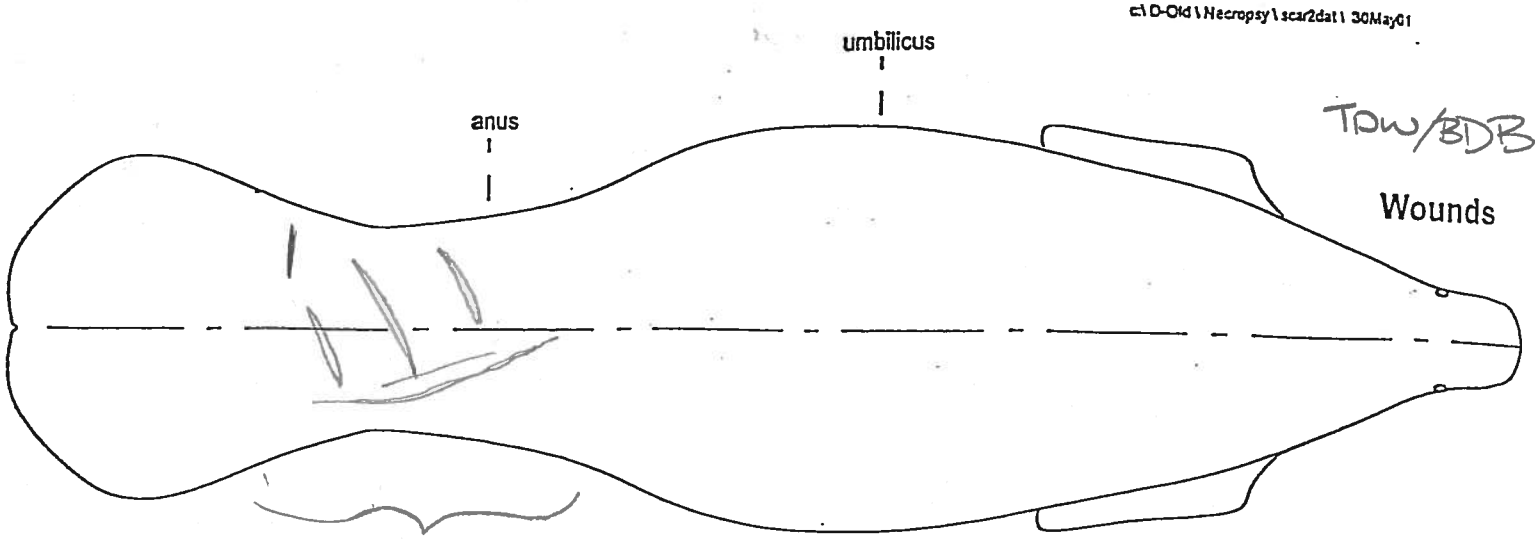
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant
Laura Burns, DVM (UF Veterinary Intern)

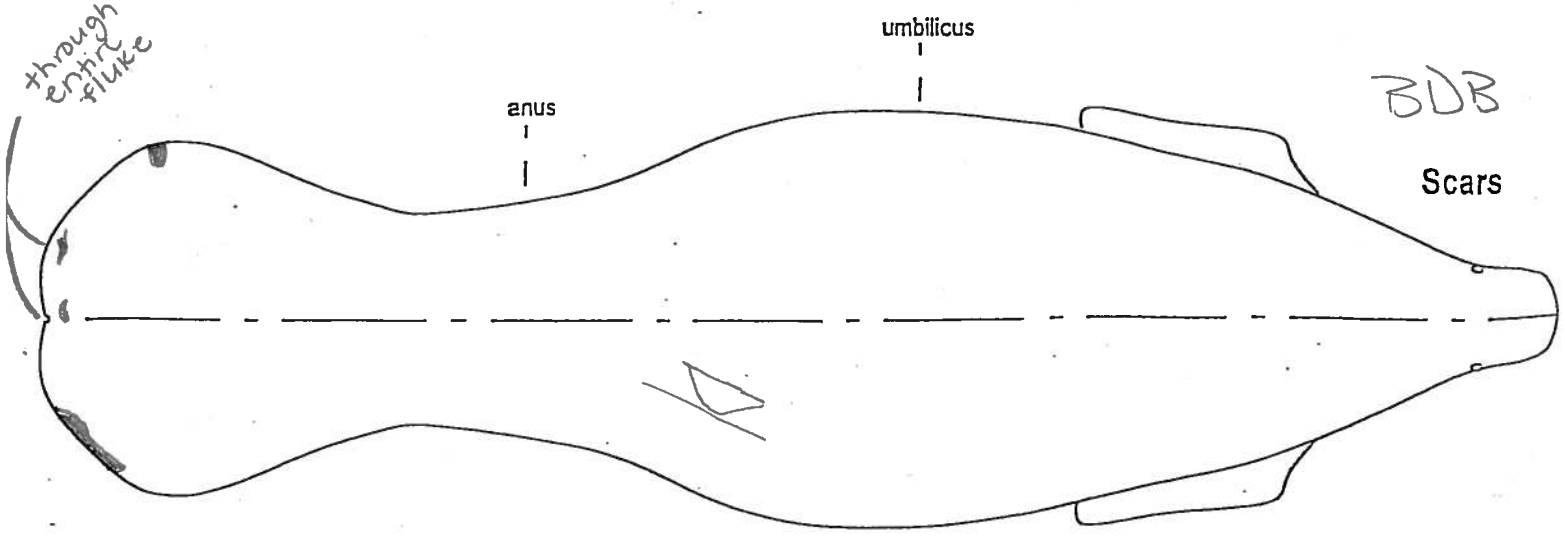
REPORT FILED BY de Wit

Date 26 Jan 2020 Field I.D. MEC20006

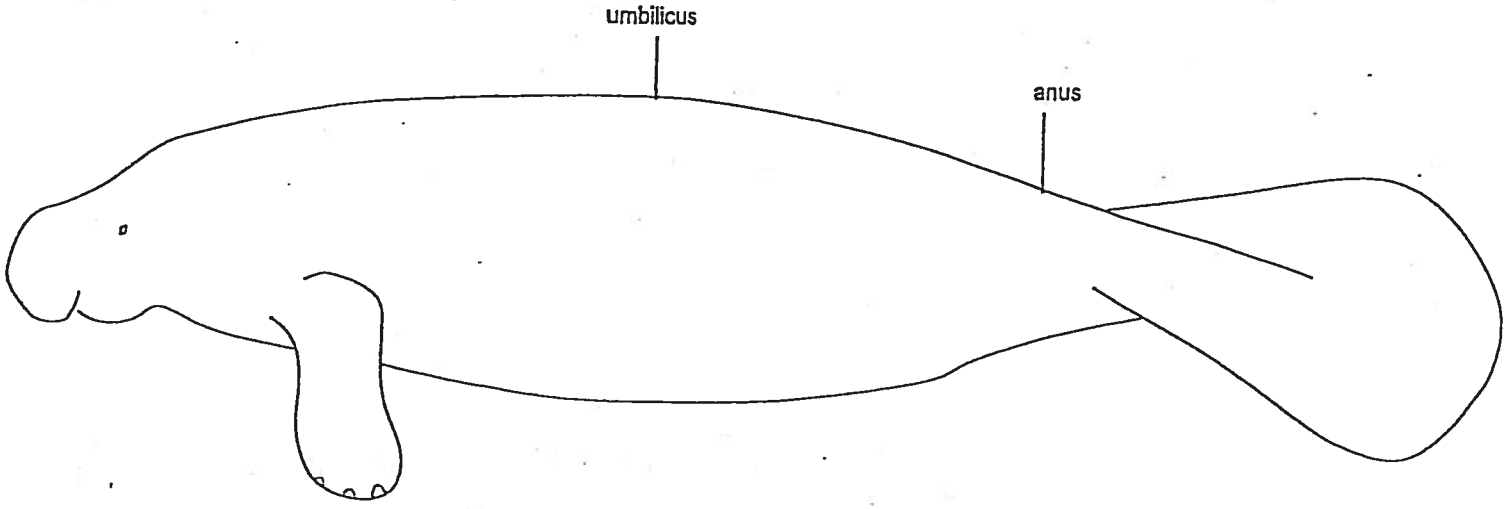
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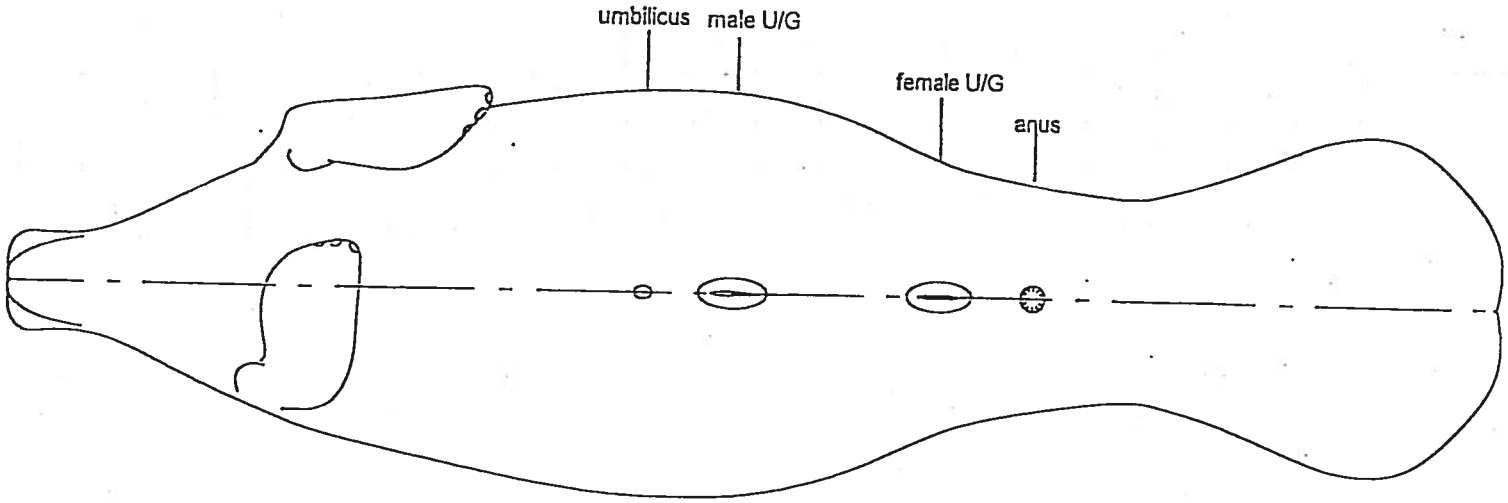


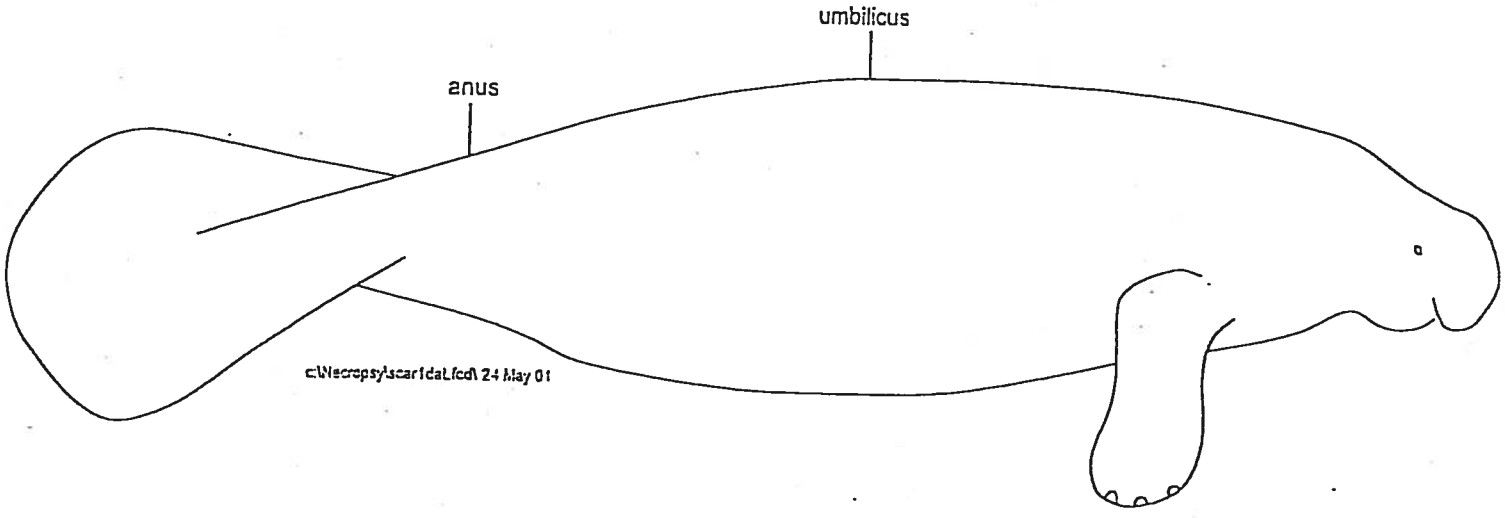
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. _____


umbilicus
anus

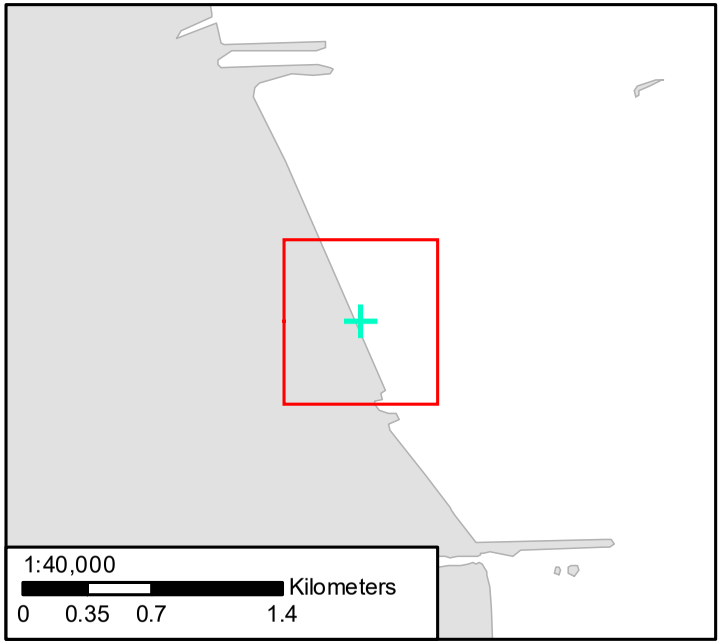

umbilicus
male U/G
female U/G
anus

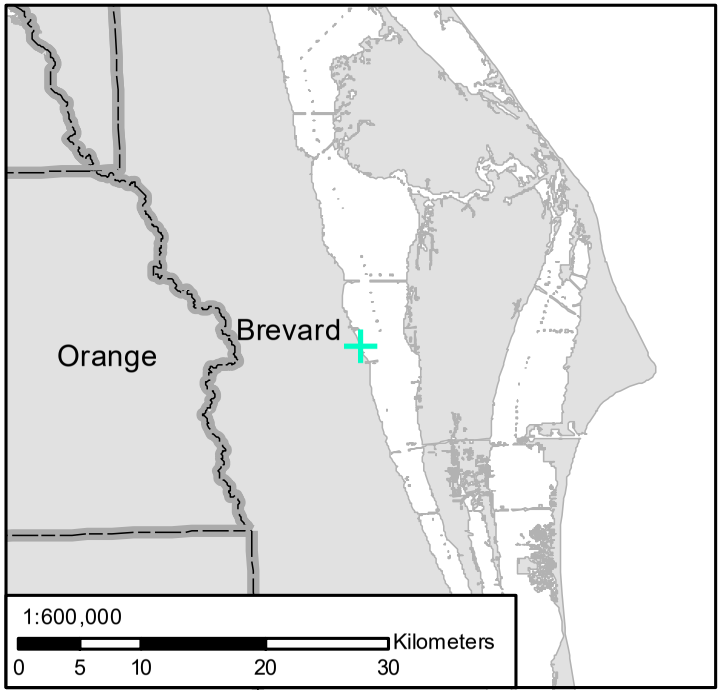

umbilicus
anus
c:\Necropsy\scar1dat.fcd\ 24 May 01

Verified Location of Manatee Carcass MEC20006

Report Date: 1/24/2020 **Received Date:** 1/24/2020 **Received By:** FWC-WDG,CMM







Location: Cocoa, Brevard County

Latitude: 28.47982°N **Longitude:** -80.76843°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20006
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1240,1273 FWC District: FWC NE
Sex: M / F / Undetermined Length: 236 cm (estimated _____) Weight 231 kg.
Date reported: 24 JAN 2020 By: CITIZEN TO FWC NE DISPATCH - ORLANDO
Date collected: 24 JAN 2020 By: FWC-WD6, CMM; FWC INTERN - K. ETHERTON
Date necropsied: 27Jan20 By: MMPL - TDW, MdW, BLB, BDB, SMT

LOCATION: State: FL ( ) County: BREVARD Waterway: INDIAN RIVER
Latitude: _____ N Longitude: _____ W
Locality description: COCOA, NEAR 6850 NORTH COCOA BLVD

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other SI scraps, ~~Lung~~ stomach cont. in alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) - Other feces
Genetics Box # 95
Female reproductive findings or N/A
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements - Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

- healing wounds
- ventral fluke

PIT TAG Scan: Negative; Positive (Left 00 - 0799 8983)(Right 00 - 079A 126B); N/T

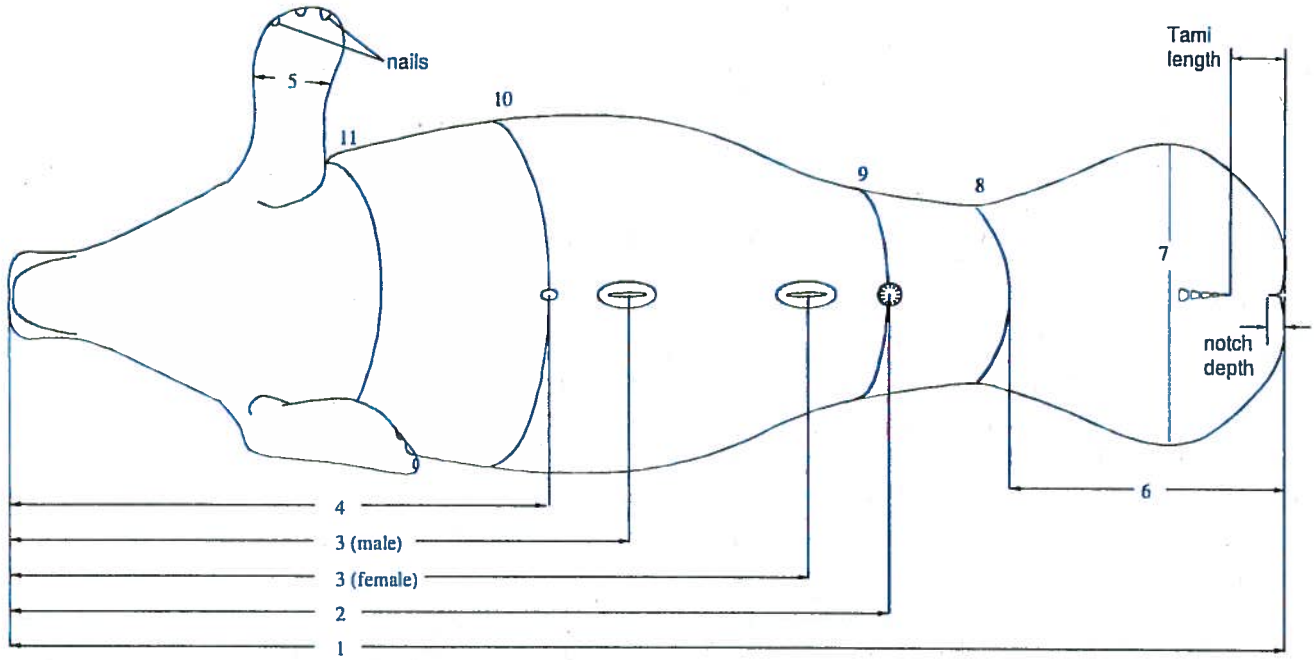
REMARKS: RNE1610/SWFTm1617B, "Blaine" Released 15 Feb 2017

Field ID # MEC200006

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

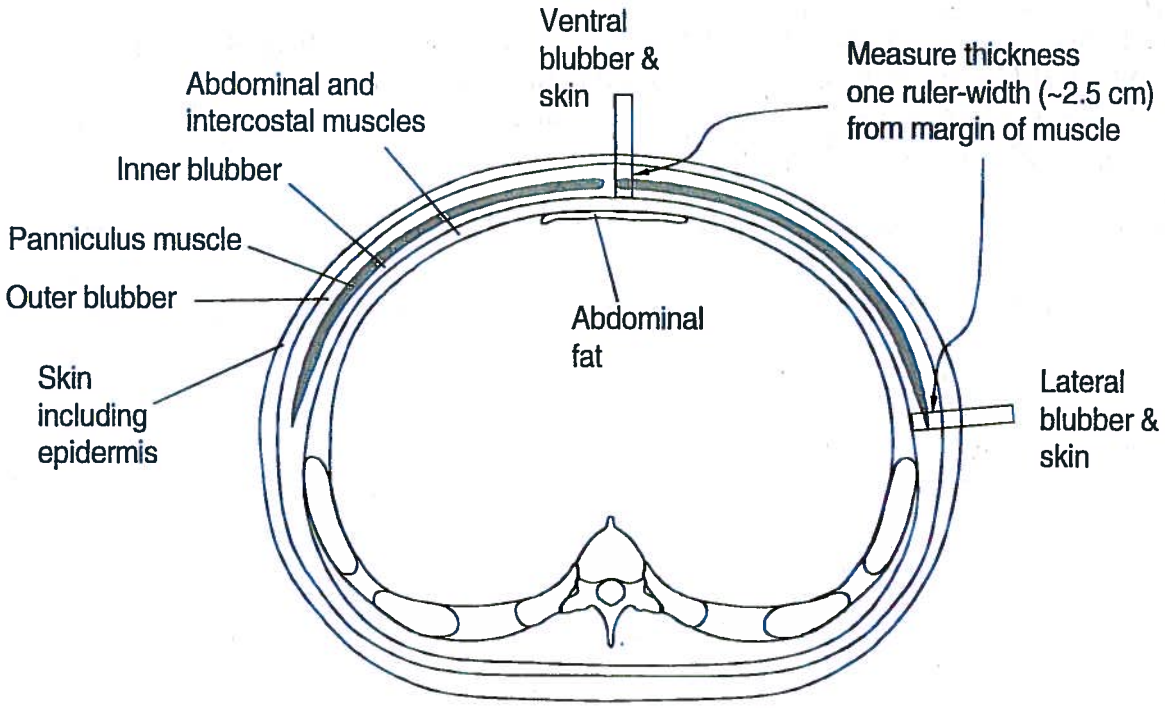
1. Total length 230 cm
2. Snout to anus -C 158 cm
3. Snout to U/G -C 104 cm
4. Snout to umbilicus -C 93 cm
5. Flipper width 15 cm
6. Fluke base 72 cm
7. Fluke width 52 cm
8. *Girth at fluke base 86 cm
9. * Girth at anus 103 cm
10. *Girth at umbilicus 171 cm
11. *Girth at axillae 127 cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	1.0 cm	1.9 cm	(Epidermis 0.1 cm)
Outer fat	0.5 cm	0.2 cm	(Abdominal fat 0.16 cm)
Inner fat	0.1 cm	0.3 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20006
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1240, 1273 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 24 January 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 24 January 2020 **By**: FWC- WDG, CMM; FWC intern- K. Etherton
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 40 m ENE of the 2nd most northern building at 6850 North Highway 1
Carcass Orientation: Grounded

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS: Carcass was found dorsum up.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20007**
Date of Report: 2020-Jan-26
Filed By: FWC MMPL

FWC Case # 1364 **FWC Region:** NE

Sex: Female **Length:** 271 **cm** **Weight:** 389.0 **kg**

DATE REPORTED: 2020-Jan-26 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-26 **By:** FWC-SMW

DATE NECROPSIED: 2020-Jan-27 **By:** MMPL-MdW,BLB,ALP,BDB,TDW,SMT

LOCATION: **State:** FL **Latitude:** 28.20087 **N**
County: Brevard **Longitude:** -80.60614 **W**
Waterway: Grand Canal
Location description: Satellite Beach, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Depleted fat(s); Wet lung(s); Firm, swollen, heavy right lung with microabscesses; Froth, mucus, fluid in airways; Fluid in pleural cavities; Widespread petechiae and ecchymoses; Congested mesenteries, peritoneum, abdominal fat, GI tract, meninges, hemidiaphragms, parietal pleura; Fluid-filled duodenum; Enlarged lymph nodes; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Histology. Stomach contents in alcohol. Microbiology lung and pleural cavity. Cytology lung.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Bacteriology report. Histology report. Cytology report.

REMARKS:

PIT tag scan negative. Lactating. Uterine Scar. Healing skin lesions; Bleached epidermis; Thickened epidermis; Remodeled ribs. Kidney scar. Also FWC case numbers 1351, 1361, and 1362. Macroalgae in GI tract. Black colon mucosa.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20007

MORPHOMETRICS:

Total length:	271 cm	**Fluke base:**	77 cm	**Girth at axillae:**	**cm**
Snout to anus:	183 cm	**Fluke width:**	69 cm		
Snout to U/G:	173 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	99 cm	**Girth at anus:**	cm		
Flipper width:	16 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	1.2 cm	2.9 cm		
Outer Blubber Thickness:	0.8 cm	cm	**Abdominal Fat Thickness:**	0.7 cm
Inner Blubber Thickness:	0.1 cm	cm	**Epidermis Thickness:**	0.2 cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left	4.3	11.9
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20007 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 26 January 2020 **NECROPSY DATE** 27 January 2020
GENDER Female **TL** 271 **cm WT** 389 **kg** **CONDITION** Moderately Decomposed

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HISTORY 26 January 2020, at 1002 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a possible dead manatee in the Berkeley Canal in Satellite Beach, Brevard County. FWC case number 1351 was assigned. The complainant, Joe (321-307-5594), stated that the manatee was dorsum-up, 8 feet long, and he hadn't seen it move in 20 minutes. At 1026 hrs, SMW received a photo from the complainant but could not verify that the manatee was dead. Since SMW was at Blue Springs Manatee Festival, and the potential carcass was in a densely populated area, SMW decided to wait for an additional report. At 1134 hrs, SMW received a text alert from Dispatch regarding a possible dead manatee in the Berkeley Canal. FWC case number 1361 was assigned. At 1137 hrs, SMW left a voicemail for the complainant, Jane Chives (941-720-0970). At 1152 hrs, SMW received a text alert from Dispatch regarding the manatee. FWC case number 1362 was assigned. The complainant, Kate Johansen (321-243-0460), stated that the manatee hadn't moved in a few hours. At 1213 hrs, SMW received another text alert from Dispatch regarding the carcass. FWC case number 1364 was assigned. The complainant, Chris (321-604-1843), stated that the manatee was dorsum-up. SMW and FWC intern-Kelly Etherton (KLE) arrived at the site at 1420 hrs, located the carcass at 1422 hrs, loaded it via ANT Lift at 1512 hrs, and transported it to the EC Field Station at 1600 hrs. The carcass was covered with ice overnight. **27 January**, SMW and KLE transported MEC20007 and MEC20008 to the MMPL arriving at 1028 hrs.

EXTERNAL All of the epidermis was present. Dead trematodes exuded from the nares. The epidermis was bleached on the ventral aspect, face, and fluke margin. The dorsal aspect had diffuse bleached spots. The epidermis of the fluke margin was also slightly thickened. There were several healing circular and small linear lesions surrounded by bleached epidermis on the lateral aspects. There were a few abrasions surrounding the nares. There were two barnacles on the ventral fluke. No watercraft-related wounds were observed. The fluke margin had a small well-healed mutilation at the 7 o'clock position. There was a minimum of two well-healed watercraft-related scar patterns on the dorsal aspect. Both teats were lactating slightly cloudy, light pink-tinged fluid. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal fat and a small amount of mesenteric and omental fat. The abdominal cavity contained 1 L of watery, dark red fluid. There were bands of severe congestion on the peritoneum and abdominal fat. There were patches with high concentrations of petechiae on the cranial one-third of the peritoneum.

STOMACH The serosa was severely congested. The stomach contained 5 L of moist, well-chewed, fibrous, leafy, stringy, dark green to brown macroalgae. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The serosa was moderately congested. The duodenum contained approximately 3 L of watery, dark green to brown fluid mixed with well-chewed, leafy, stringy, dark green to brown macroalgae. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested with numerous petechiae. The proximal small intestine contained a large amount of watery, flocculent, green fluid mixed with a small amount of red to brown macroalgae. The distal small intestine contained a small amount of watery, green to brown fluid, portions also contained a small amount of green to brown macroalgae. There were prominent Peyer's patches throughout. The mucosa of the mid intestine had several small raised nodules associated with pinpoint trematodes. The remaining mucosa was tan and unremarkable. There was a scant infection of pinpoint trematodes in the mid

small intestine.

CECUM The caudal mesenteric lymph nodes were enlarged. There were petechiae on the cecum serosa. The cecum contained 1.5 L of moist, moderately digested, stringy, green to brown digesta. The mucosa was sloughing. No parasites were observed.

COLON The mesentery was severely congested with numerous petechiae. The colon serosa had patches of mild congestion. The proximal colon contained an abundant amount of moist, moderately digested, moderately formed, stringy, green to brown feces. The mucosa was sloughing. The mid colon contained an abundant amount of moist, well-digested, moderately formed, slightly stringy, brown feces. The mucosa had diffuse, mottled, black staining and was sloughing. The distal colon contained a small amount of moist, well-digested, pasty, poorly formed, brown feces. The mucosa was stained solid black and sloughing. No parasites were observed throughout.

PANCREAS The pancreas was tan to light pink on serosal and cut surfaces.

SPLEEN The spleen was dark purple to blue on serosal surfaces and dark red to black on cut surfaces.

LIVER The margins of the liver were rounded. The liver was firm. Serosal surfaces were dark blue and cut surfaces were dark red. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained approximately 75 mL of cloudy, flocculent, dark yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The uterus was contracted. The left uterine horn had a resolving scar which measured 11.9 cm width x 4.3 cm circumference. The right ovary was partially expelled from the bursa and had numerous corpora hemorrhagica and a few small fluid-filled follicles. The left ovary had a few corpora albicantia and a few small fluid-filled follicles.

KIDNEYS There was a small amount of perirenal fat. The kidneys were firm. Serosal surfaces were light pink to blue. On cut surfaces, the cortices were dark grey to light pink and the medullae were pink to pale purple. The corticomedullary boundaries were mostly distinct. The cranial tip of the left kidney had a region of firm fibrinous tissue that measured approximately 3.5 x 2.7 cm. An ELISA toxicology sample was collected.

URINARY BLADDER The bladder was empty of contents. The mucosa was unremarkable.

HEART There was a small amount of serous epicardial fat. There was a moderate amount of petechiae and ecchymoses on the lateral margins of both ventricles (see photo). Valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The abdominal aspect had bands of severe congestion with numerous petechiae. The pleural aspect of the right hemidiaphragm was severely congested. The right pleural cavity had numerous fibrin-like tags adhered to the lung and hemidiaphragm. The right T-septal lymph nodes were enlarged. The right plural cavity contained 1.25 L and the left contained 0.75 L of watery red fluid. The right parietal pleura was severely congested with regions of petechiae. There were numerous gelatinous black specks on the parietal pleura of both pleural cavities. The right lung was heavy. The caudal one-half appeared swollen and was firm. Serosal surfaces were dark pink. Cut surfaces of the cranial one-half were red, and cut surfaces of the caudal one-half were pink to dark red and contained numerous microabscesses (see photos). Cut surfaces were also wet and frothy. The airways contained a large amount of white froth and a moderate amount of watery, dark red fluid. There were a few dead trematodes observed. The mucosa was pink. The left lung was tan to light pink on serosal surfaces and red and slightly wet on cut surfaces. The airways contained a moderate amount of watery, dark red fluid, a small amount of ropey tan

mucus, and a few dead trematodes. The mucosa was tan. The medial caudal one-quarter of the pleural aspect of the left hemidiaphragm (dorsal to the left kidney capsule) had a region of dark grey discoloration. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The trachea contained a small amount of white froth. There was a small amount of well-chewed green sea grass in the back of the mouth. The meninges were moderately congested.

SKELETON Right ribs 4 and 5 were remodeled at the rib head. Right ribs 15-17 were remodeled at the proximal one-third.

OTHER The cortex:medulla ratio of the right adrenal gland was 2:1, and that of the left was 1:1.

COMMENTS

SIGNIFICANT FINDINGS

- Depleted fat
- Firm, swollen, heavy right lung with microabscesses
- Wet lungs
- Froth, mucus, fluid in airways
- Fluid in pleural cavities
- Widespread petechiae and ecchymoses
- Congested mesenteries, peritoneum, abdominal fat, GI tract, meninges, hemidiaphragms, parietal pleura
- Fluid-filled duodenum
- Macroalgae GI tract
- Black colon mucosa
- Enlarged lymph nodes
- Seagrass in mouth
- Healing skin lesions
- Bleached, thickened epidermis
- Lactating
- Uterine scar
- Remodeled ribs
- Kidney scar

PROBABLE CAUSE OF DEATH Natural; Other

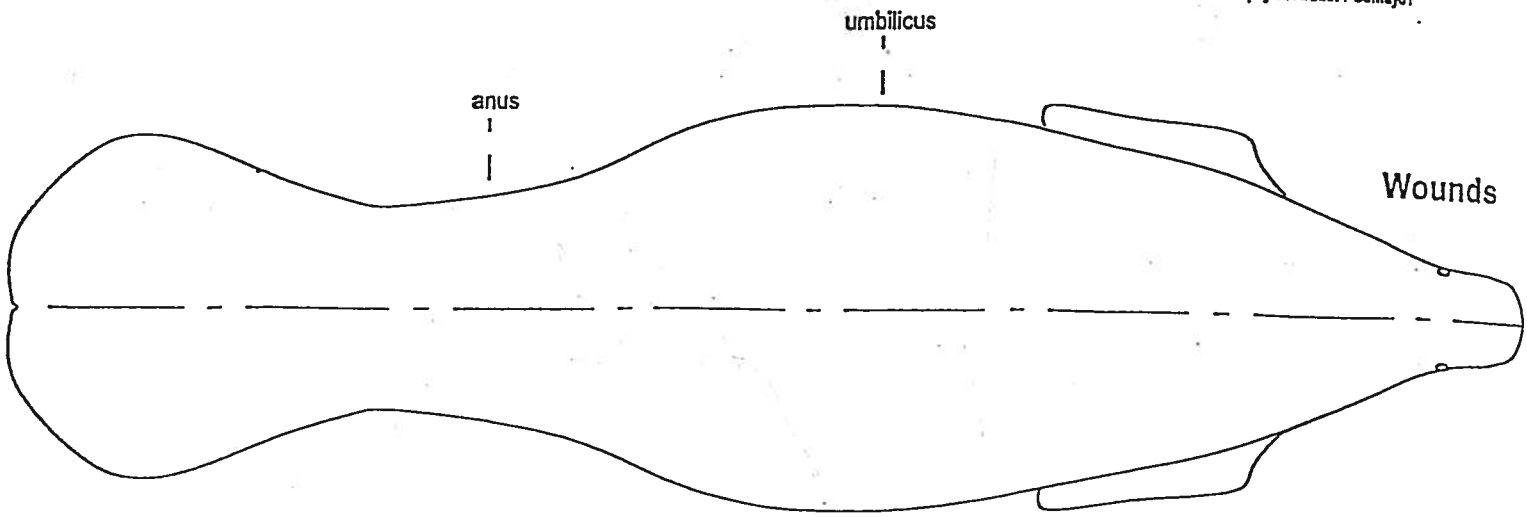
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant
Laura Burns, DVM (UF Veterinary intern)

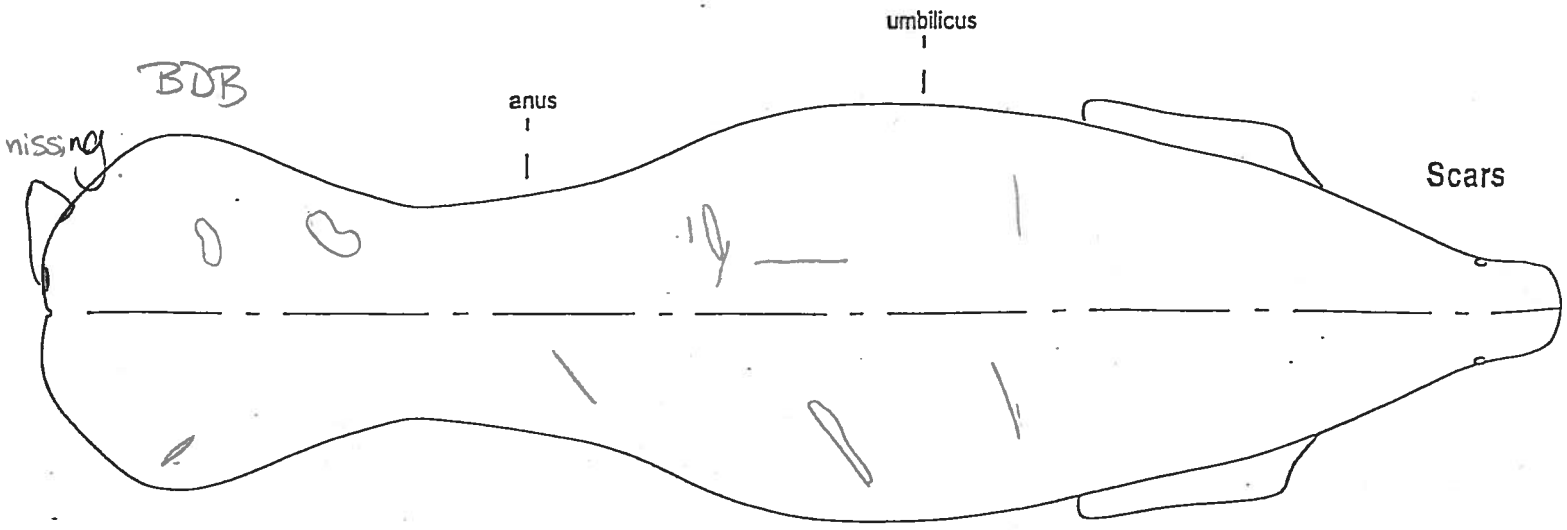
REPORT FILED BY de Wit / Panike

Date 27 JAN 2020 Field I.D. MEC20007

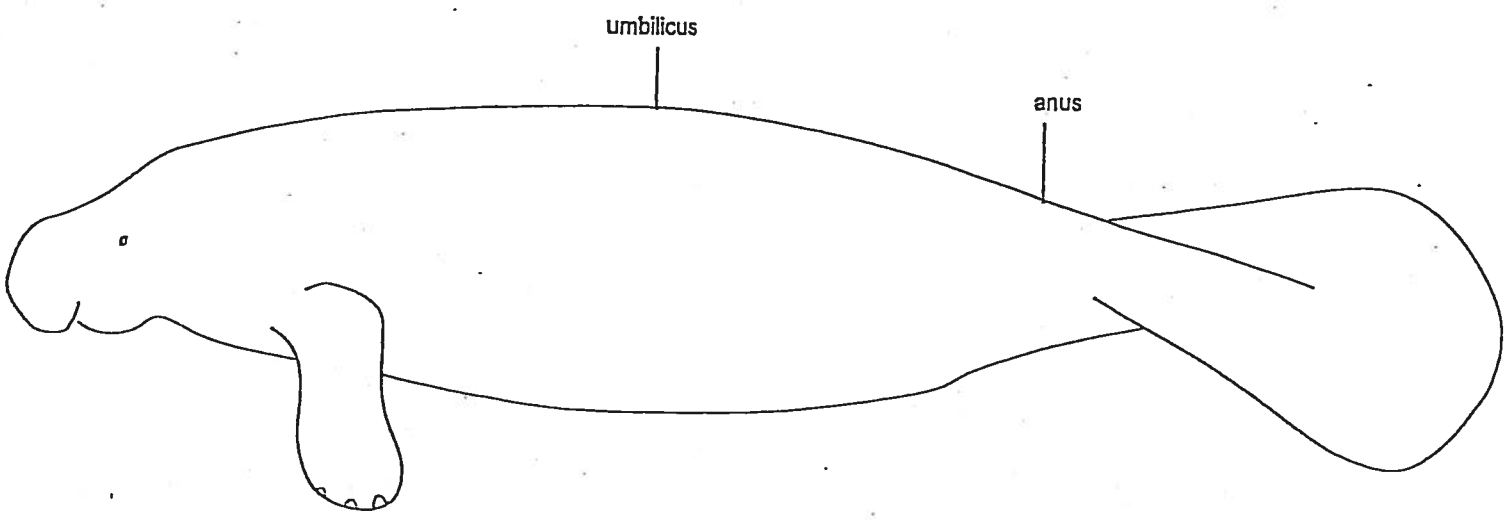
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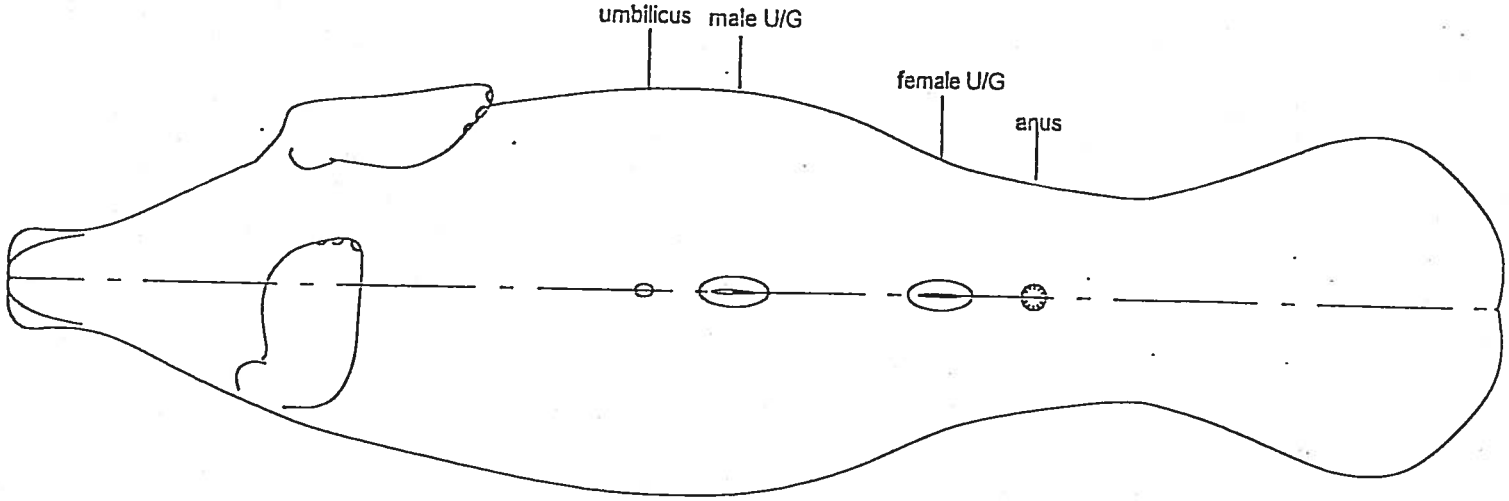


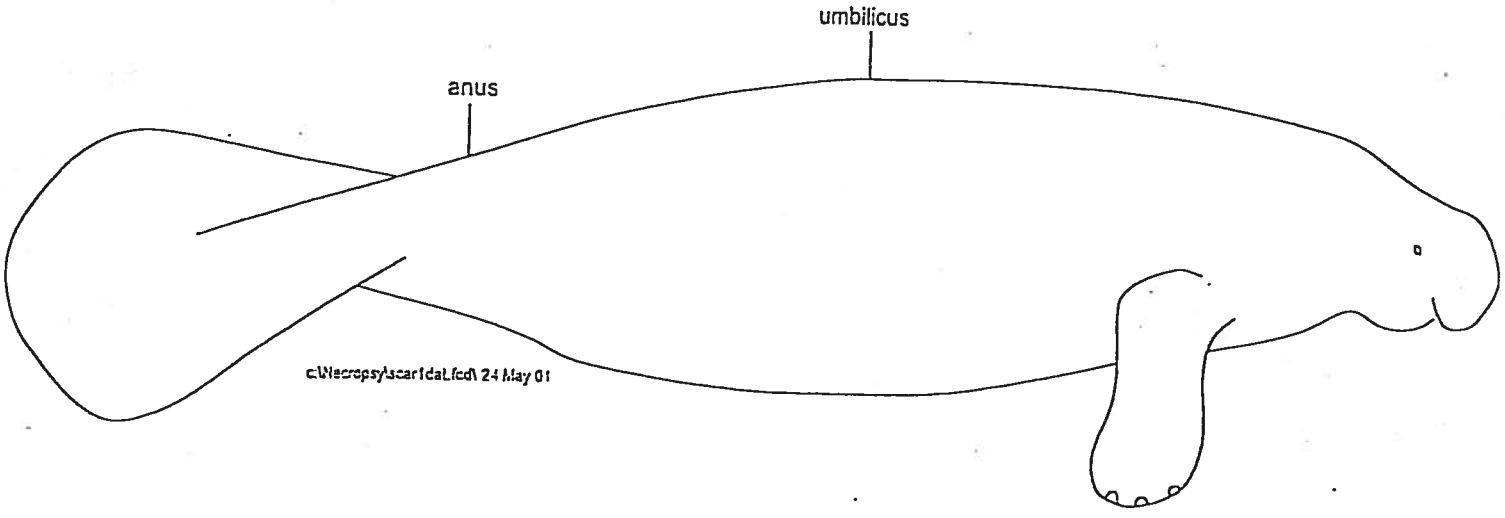
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. _____


umbilicus
anus


umbilicus
male U/G
female U/G
anus

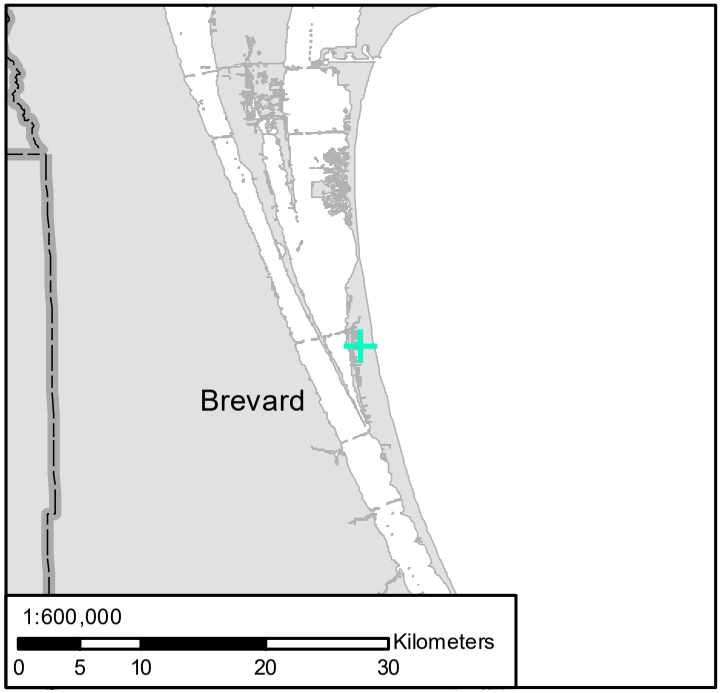

umbilicus
anus

Verified Location of Manatee Carcass MEC20007

Report Date: 1/26/2020 **Received Date:** 1/26/2020 **Received By:** FWC-SMW







Location: Satellite Beach, Brevard County

Latitude: 28.20087°N **Longitude:** -80.60614°W

Map Created: 3/29/2021

EXFOLIATIVE CYTOLOGY REPORT
University of Florida Aquatic Animal Health Program

2015 SW 16th Ave
Gainesville, Florida 32610
352-294 4093 (o)
352-870 5108 (c)
StacyN@ufl.edu

REPORT DATE: January 28, 2020	**COLLECTION DATE:** January 27, 2020
ANIMAL ID: 140671 MEC20007	**SPECIES:** *Trichechus manatus latirostris*

[This report includes interpretative summaries of cytologic findings in the submitted specimens; full reports with detailed cytologic description for each site will be available upon request, slides are on file]

INTERPRETATION:
Fairly well preserved specimen
Marked heterophilic pneumonia with mild macrophagic component and mixed bacterial infection
Presence of abundant extracellular and phagocytized mixed bacteria with predominance of small bipolar bacilli and lesser other mixed bacilli (coccobacilli, small plump bacilli) and diplococci

COMMENT: No yeast/fungus, parasites, or neoplastic cells are identified. The cytologic findings are consistent with chronic-active bacterial pneumonia. Aerobic culture is pending and will be reported by the UF Microbiology Laboratory.

Nicole I. Stacy, DVM, DrMedVet, DACVP
Veterinary Clinical Pathologist
University of Florida College of Veterinary Medicine

UF UNIVERSITY of FLORIDA
Veterinary Diagnostic Laboratories

2015 SW 16th Ave, Gainesville, FL 32610
Phone: 352-294-4726
Fax: 352-392-1769
http://labs.vetmed.ufl.edu

Client ID:	AQUATIC	**Patient ID:**	405721
Client Name:	RS-Walsh/Stacy Marine Mammal Testing	**Patient Name:**	MEC20007
Client Address:	Email Invoices to: ladler1@ufl.edu Gainesville, FL 32610	**Received Date:**	2/3/2020
		Specimen:	Right lung
Primary Phone#	(352) 294-4198		
Clinician:	Nicole I. Stacy, DVM		
Ordered Tests:	Aerobic Culture NO Suspt.		
Pending Tests:			
Requisition #	064907	**Finalized By:**	IS 02/03/20

Preliminary Results

Comments:

Final Results

Moderate to heavy growth:
1. Morganella morgani ssp. morganii
2. Pasturella multocida ssp. multocida
3. Moraxella osloensis

Comments:
Additional bacterial identification requested be Dr. Stacy

Technician: LS **Date** 01/31/20

Click here to take our survey

1/28/2020 Microbiology Results Report - Right lung 064907
Stacy, DVM, Nicole I. - Final - 2/3/2020

UF UNIVERSITY of FLORIDA
Veterinary Diagnostic Laboratories

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Client ID:	AQUATIC	**Patient ID:**	405721
Client Name:	RS-Walsh/Stacy Marine Mammal Testing	**Patient Name:**	MEC20007
Client Address:	Email Invoices to: ladler1@ufl.edu Gainesville, FL 32610	**Received Date:**	2/3/2020
		Specimen:	R pleural cavity fluid
Primary Phone#	(352) 294-4198		
Clinician:	Nicole I. Stacy, DVM		
Ordered Tests:	Aerobic Culture NO Suspt.		
Pending Tests:			
Requisition #	064908	**Finalized By:**	IS 02/03/20

Preliminary Results

Comments:

Final Results

Moderate to heavy growth:
1. Aeromonas hydrophila ssp. hydrophila
2. Morganella morgani ssp. morganii
3. Non-enteric Gram negative bacilli*

Comments:
*Specific identification of the bacterial isolate was not possible by standard biochemical methods. The isolate from this sample will be sent to the Bronson Animal Disease Diagnostic Laboratory for MALDI-TOF bacterial identification. Please note the antimicrobial susceptibility result interpretation will change when the bacterial identification changes.

Additional identification requested per Dr. Stacy.

Technician: LS **Date** 01/31/20

Click here to take our survey

00/00/00 Microbiology Results Report - R pleural cavity fluid 064908 Nicole I. Stacy, DVM

UF UNIVERSITY of FLORIDA
Veterinary Diagnostic Laboratories

2015 SW 16th Ave, Gainesville, FL 32610
Phone: 352-294-4726
Fax: 352-392-1769
http://labs.vetmed.ufl.edu

NECROPSY REPORT
FINAL REPORT

Field ID: MEC20007
Alternate Field ID:
Accession Number: 20-078
Species: *Trichechus manatus latirostris*
Date: 26 Jan 2020 (DOR); 27 Jan 2020 (DON)
Location: FL
Sex, Age: F
TL: 271 cm
WT: 389 kg
Body Condition: Emaciated
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: 24> hours

HISTORY

Findings include:

- Depleted fat
- Firm, swollen lung with microabscesses
- Wet lungs
- Froth, mucus, fluid airways
- Fluid pleural cavities
- Widespread petechiae and ecchymoses
- Congested mesenteries, peritoneum, abdominal fat, GI tract, meninges
- Fluid-filled duodenum
- Macroalgae GI tract
- Black colon mucosa
- Enlarged lymph nodes
- Seagrass in mouth
- Healing skin lesions
- Bleached, thickened epidermis
- Lactating
- Remodeled ribs
- Kidney scar

Summary: Natural; Other

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment
Cytology	Lung imprint	Heterophilic bacterial pneumonia	Mixed bacteria

Test	Tissue/Sample	Result	Comment
Microbiology	R Pleural cavity fluid	Aeromonas hydrophila Morganella morgani Non-enteric Gram negative bacilli	
Microbiology	Right Lung	Morganella morgani Pasturella multicoda Moraxella osloensis	

MICROSCOPIC DESCRIPTION

Received 8 Jan 2020 are 12 H&E slides.

There is marked congestion of vessels of the right hemidiaphragm. There is laminar extravasation of erythrocytes within the fascia. Fascia collagen fibrils and the interstium between myofibers is expanded by clear to lightly eosinophilic proteinaceous fluid (edema).Heterophils are sprinkled within the fascia. Non-adherent clumped fibrin is present within few veins.

Meninges are expanded by clear spaces (edema), scattered macrophages, erythrocytes, and scant fibrillar eosinophilic proteinaceous substance (fibrin). Few vessels in the meninges have glassy walls with scant nuclear debris within the walls. There is laminar pallor of the cerebral cortex (edema).

The cecal mucosa is intact and viable. There is mild, diffuse submucosal edema. There is moderate to marked vascular congestion of the tunica submucosa, muscularis, and serosa. Occasional, medium caliber vessels contain non-adherent fibrin. One vessel has bacterial coccobacilli within the pool of erythrocytes. The mucosa of the proximal large intestine is intact. There is diffuse congestion of serosal vessels. There is mild edema of the distal small intestine submucosa. The mucosa of the distal large intestine is intact. There is moderate congestion of the serosa. The submucosa, muscularis, and serosa of the mid-intestine exhibit moderate vascular congestion. Few vessels contain clumped fibrin which is not adherent to the vessel wall.

Splenic periarteriolar lymphoid sheaths are mildly depleted. There is moderate congestion. There is perisplenic atrophy of adipocytes. The T-Septal lymph node is moderately depleted with loosely-formed follicles. There are scattered colonies of bacterial coccobacilli enmeshed within fibrin and surrounded by heterophils and macrophages. There is expansion of medullary sinuses by clears spaces with interspersed fibrin, macrophages and erythrocytes. There are scattered heterophils and multinucleated giant cells. There is diffuse, marked congestion. Lining endothelial cells are hypertrophied. There is serous atrophy of the perinodal adipose. Few veins in the adipose contain fibrin and enmeshed heterophils. The caudal mesenteric lymph node is moderately cellular and has well-formed follicles. There is a single granuloma with a

core of hyaline substance and degranulated heterophils surrounded by macrophages and multinucleated giant cells. There is moderate congestion.

There is multifocal centrilobular hepatocellular necrosis and dissociation. Remaining hepatocytes contain abundant intracytoplasmic pigment (hemosiderin). Fibrin is present within the affected region. Kupffer cells are laden with mild to moderate amounts of intracytoplasmic brown granules and globules (hemosiderin). There is moderate, diffuse congestion.

There is moderate congestion of the adrenal gland. There is atrophy of peri-adrenal adipocytes.

In the epicardial adipose, there is moderate congestion and multifocal extravasation of erythrocytes.

The resolving cold stress lesion is characterized by focally extensive epithelial necrosis and hydropic degeneration. The basal epithelium is intact. Heterophils form clusters within the necrotic epithelium. There is extravasation of erythrocytes and fibrin. The affect epithelium is lifted off the dermis. Heterophils and erythrocytes fill the epidermal/dermal defect. There is hyperplasia of flanking epithelium.

Within alveolar spaces of the left lung lobe contain scant fibrin with few enmeshed macrophages, heterophils, and few bacterial cocci. There is a marked, diffuse necrosuppurative bronchointerstitial pneumonia involving the right lung lobe. Alveolar spaces are flooded with viable and degenerate heterophils and fewer macrophages. Lamellar fibrin with enmeshed cellular debris and macrophages is also present with alveolar spaces. Occasional alveolar spaces contain bacterial coccobacilli. There is necrosis of interstitial walls. Interstitial walls are expanded by extravasated erythrocytes, fibrin, heterophils, and clear spaces (edema). There is moderate to marked congestion. There is perivascular expansion by clear spaces (edema).

The following tissues have no significant histological findings: Kidney, pancreas, peduncle muscle

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System

A. Skin: Epidermal necrosis and degeneration, acute, focally extensive, moderate with heterophilic epidermitis.
B. Right Hemidiaphragm: Congestion and hemorrhage, diffuse, moderate with edema and mild heterophilic hemidiaphragmitis.

Respiratory Sytstem

A. Right Lung Lobe: Bronchointerstitial pneumonia, necrossupurative, subacute, marked with hemorrhage, fibrin exudation, alveolar interstitial wall necrosis, and intralesional bacterial coccobacilli.

B. Left Lung Lobe: Edema and histiocytosis, diffuse, mild.

Nervous System
A. Meninges: Edema, diffuse, mild with congestion, intravascular fibrin, and rare vascular fibrinoid necrosis.

Urinary and Reproductive System
NSF

Digestive System/Body as a Whole
A. Cecum:
    a. Submucosal edema, diffuse, mild.
    b. Intravascular fibrin and occasional bacterial coccobacilli.
B. Proximal Large Intestine: Congestion, diffuse, moderate.
C. Distal Small Intestine: Submucosal edema, diffuse, mild.
D. Distal Large Intestine: Congestion, diffuse, moderate with intravascular fibrin.

Cardiovascular System
A. Heart, Epicardium: Congestion and hemorrhage, multifocal, moderate.

Hepatobiliary System
A. Congestion, diffuse, moderate.
B. Centrilobular hepatocellular loss and degeneration with congestion, and hepatocellular hemosiderosis.

Endocrine System
A. Adrenal Gland:
    a. Congestion, moderate.
    b. Peri-adrenal adipocyte atrophy.

Hematolymphatic System
A. Spleen:
    a. Depletion, mild.
    b. Congestion, diffuse, moderate.
    c. Peri-splenic adipocyte atrophy.
B. T-Septal Lymph Node:
    a. Depletion, moderate.
    b. Lymphadentis, suppurative to granulomatous, mutlifocal with intralesional bacterial coccobacilli.
    c. Congestion with occcasional intravascular fibrin.
C. Caudal Mesenteric Lymph Node: Lymphadenitis, granulomatous, focal.

INTERPRETATIVE SUMMARY

DIAGNOSES
Bacterial Bronchointerstitial Pneumonia & Lymphadentitis
Septicemia/DIC
Cold Stress - Skin

Primary Diagnostic Category: Infectious Bacterial/.Organ Specific (non-inflammatory)

Linked Cases:

Death is attributed to bacterial pneumonia, secondary septicemia, and likely disseminated intravascular coagulation (DIC). Mixed bacteria were isolated from the lung and bacteria were present in the lung sections. Bacterial spread from the lung occurred given the presence of bacteria in a regional lymph node (T-Septal). Septicemia likely occurred leading to DIC. While there no adherent fibrin thrombi, fibrin was present within vessels which may denote that this component may have been peracute to acute. The initiating event may have been cold stress which may have diminished host immune response. Cold stress syndrome, in one study, 56% (24/43) had associated DIC.[1]

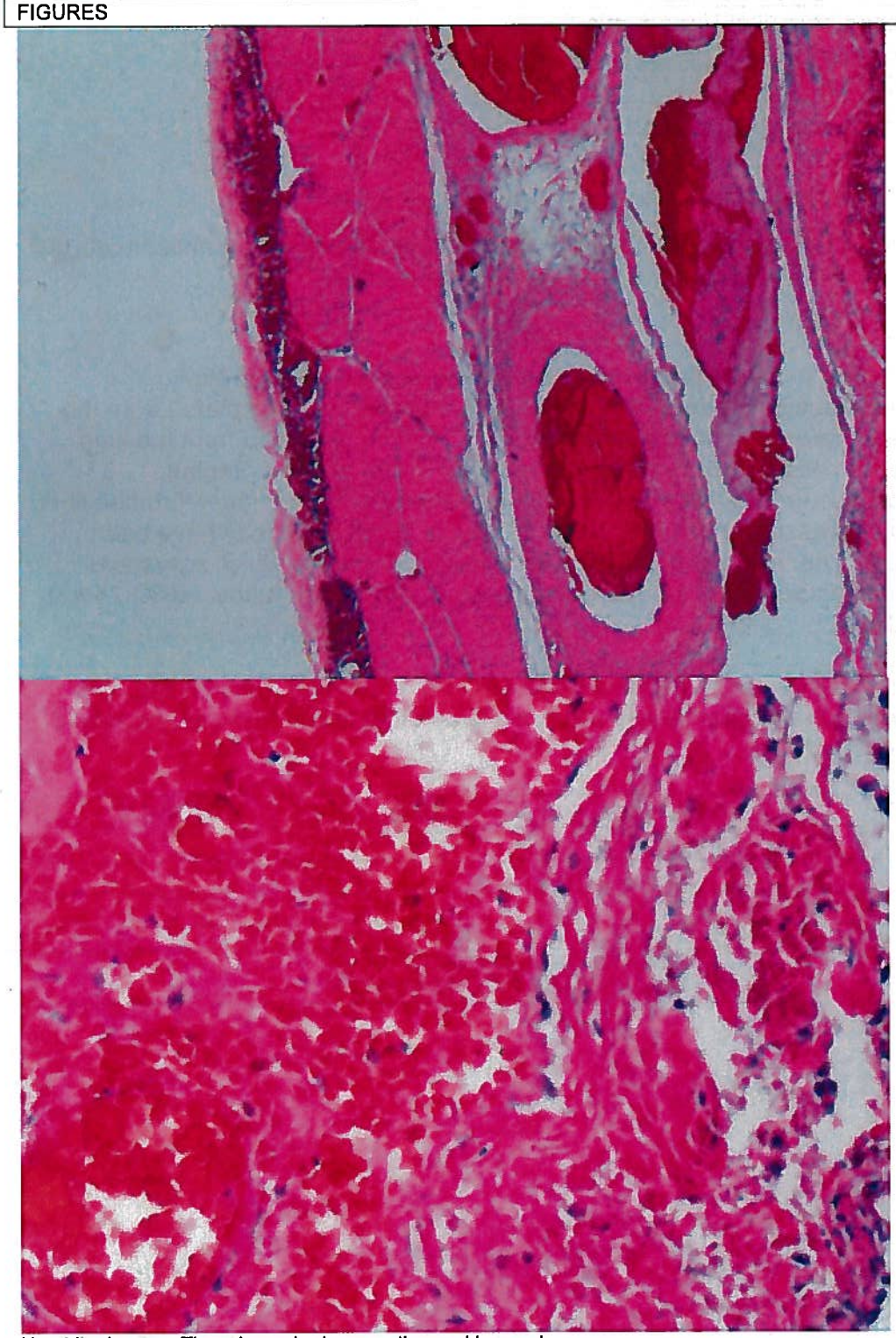
There was no colitis or enteritis.Bacterial rods were not present in the intestine. The granuloma in the caudal mesenteric lymph node is an older lesion and not associated with the acute observations.

TEST	PURPOSE	SITE	RESULT

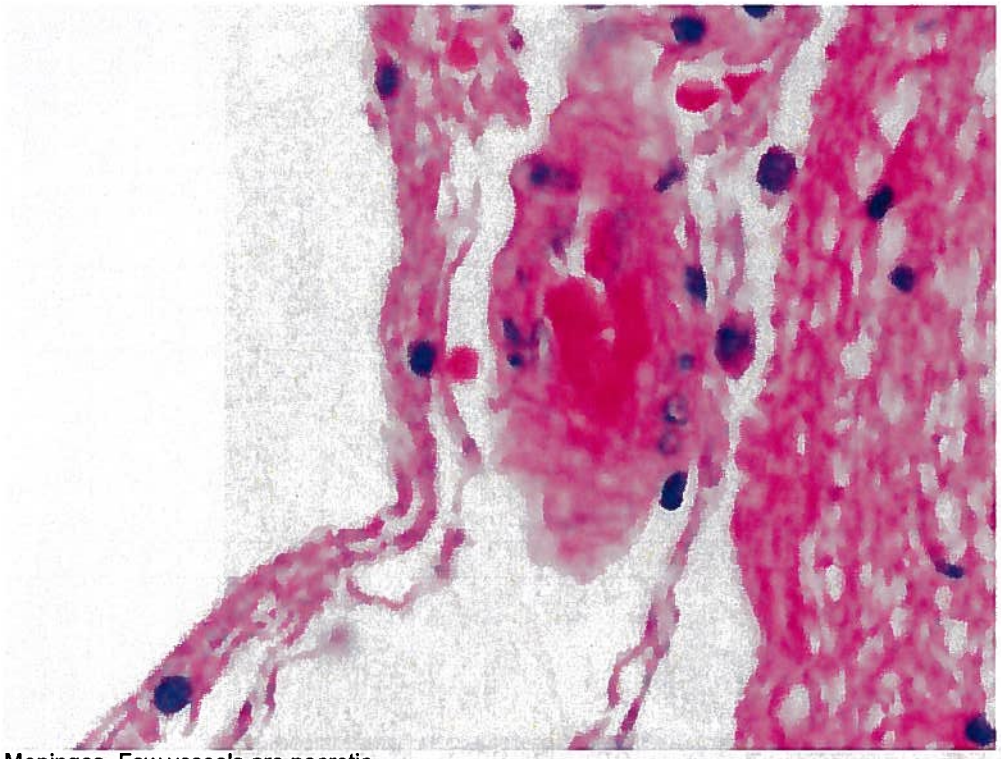
DATE:	REPORTING PATHOLOGIST:
2/13/2020	David S. Rotstein, DVM, MPVM, DACVP

[1] Barratclough A et al. 2017. J Wildl Med 48: 152-158.

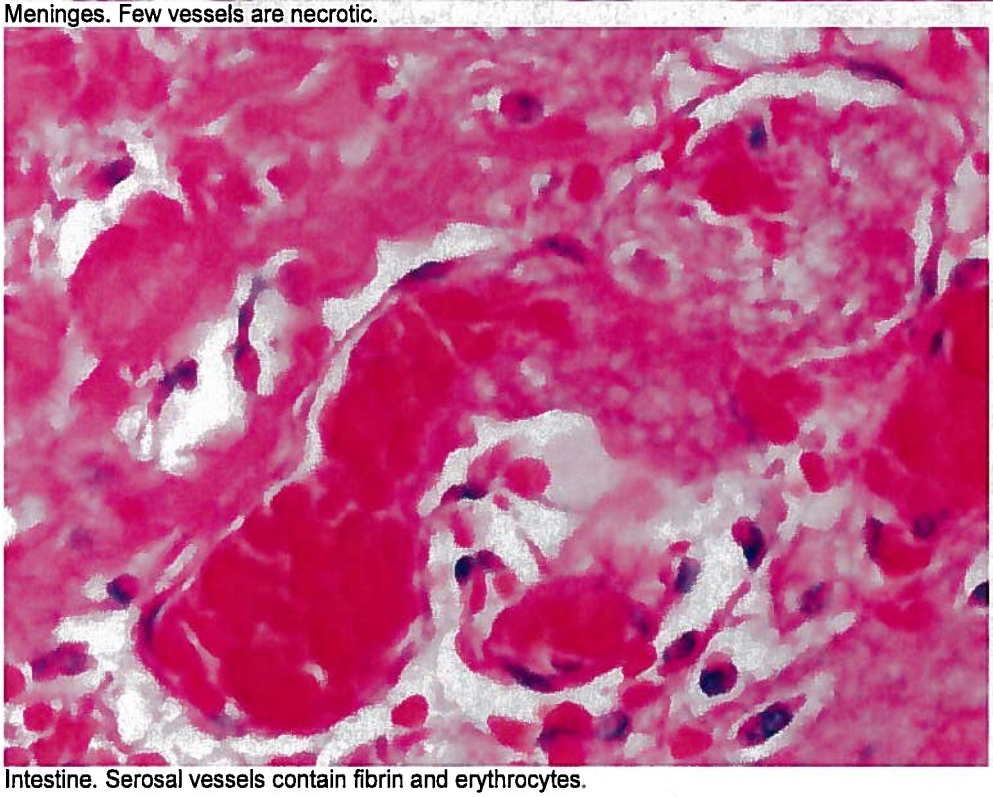
FIGURES



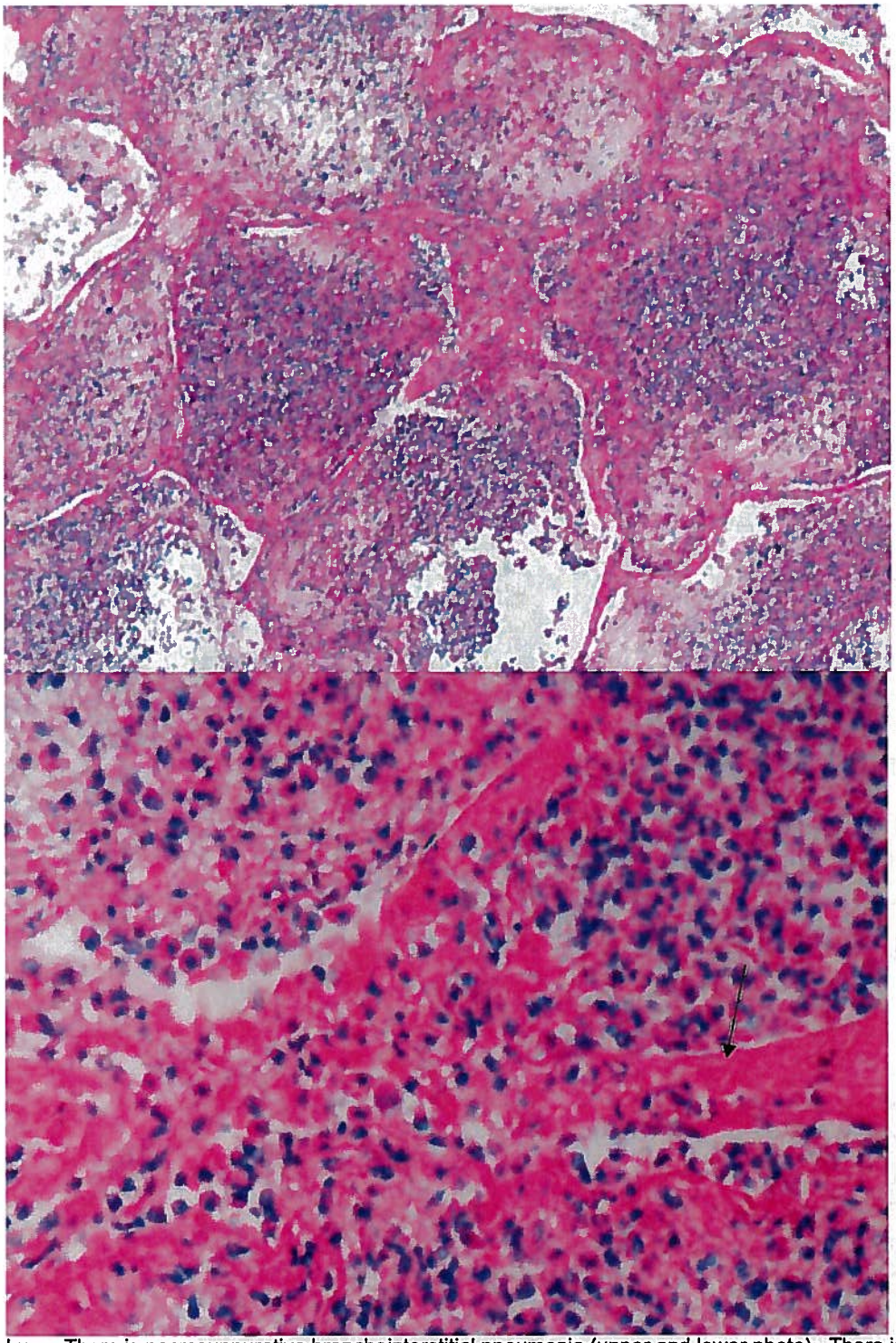
Hemidiaphragm. There is marked congestion and hemorrhage.



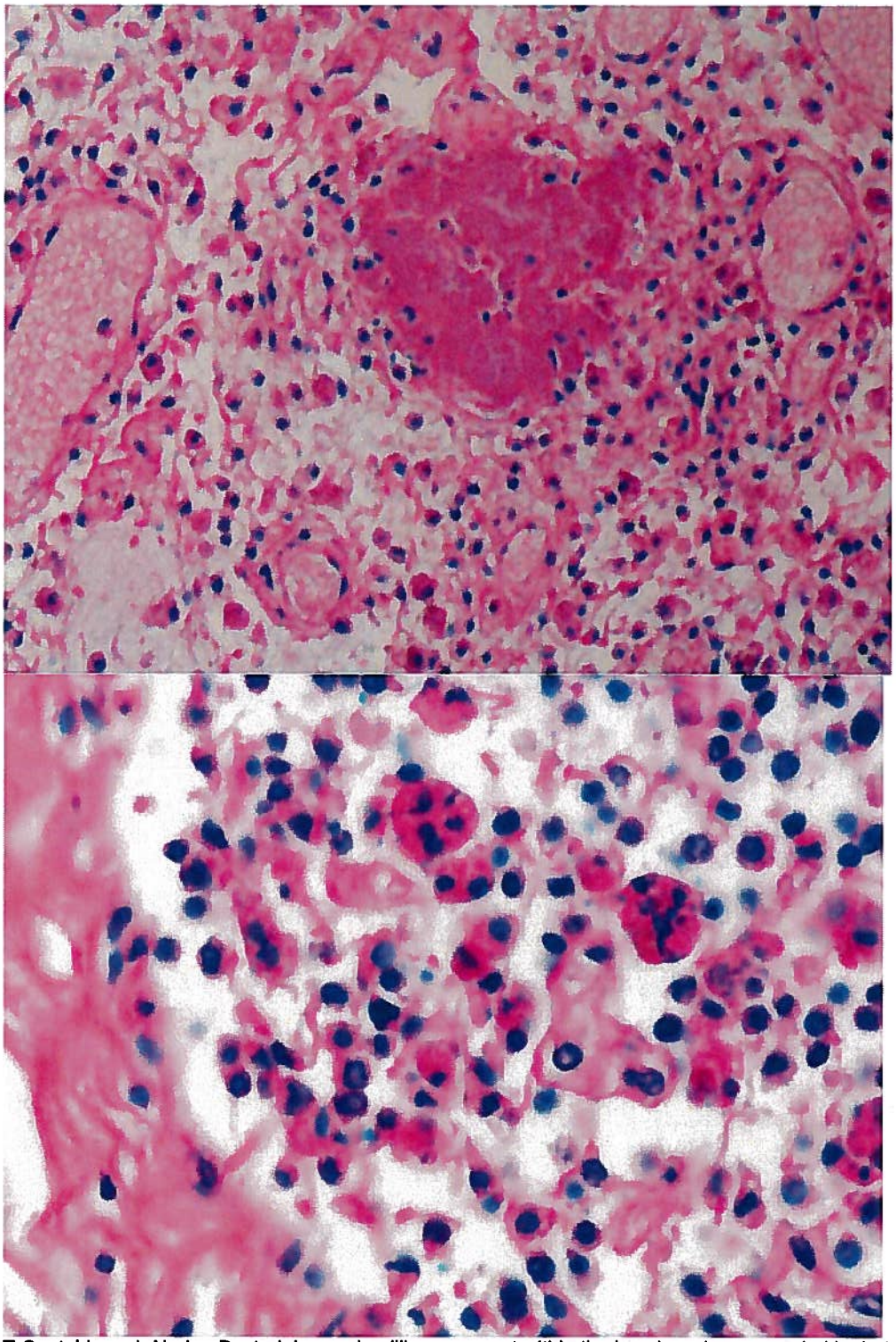
Meninges. Few vessels are necrotic.



Intestine. Serosal vessels contain fibrin and erythrocytes.



Lung. There is necrosuppurative bronchointerstitial pneumonia (upper and lower photo). There is necrsis and hemorrhage in the interstitium.



T-Septal Lymph Node. Bacterial coccobacilli are present within the lymph node surrounded by heterophils and macrophages (upper). Few multinucleated giant cells are present (lower).

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20007
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1361, 1362, 1364 FWC District: NE
Sex: M / (F) / Undetermined Length: 271 cm (estimated _____) Weight 389 kg.
Date reported: 26 Jan 2020 By: Citizen to FWC NE Dispatch- Orlando
Date collected: 26 Jan 2020 By: FWC - SMW, KLE
Date necropsied: 27 Jan 2020 By: MMPL - MdW, BLB, ALP, BDB, TDW, SMT

LOCATION: State: (FL) ( ) County: Brevard Waterway: Berkeley Canal
Latitude: _____ N Longitude: _____ W
Locality description: Satellite Beach

CONDITION: - Fresh - (Moderate) - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) (Other natural (includes Red Tide)
Undetermined: (7) Not Recovered - (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: (Dorsal) - (Ventral) - (R. Lateral) - (L. Lateral) - (Scars) - ~~Fluke~~ - (Cranial) - (Internal) - Site - Other
MTLS COLLECTED: (**Genetics**) - (**Earbone**) – Partial Skeleton – Complete Skeleton –
~~Histology~~ - (Other Stomach contents in Alcohol, microbiology lung & pleural cavity, cytology lung)
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: ~~**Stomach**~~ - (**Liver**) - (**Lung**) - **Urine** – ~~**Kidney**~~ **(if no urine)** - (Other Brain)
Genetics Box # 95
Female reproductive findings or **N/A**
LACTATING Yes - No – UNK **PREGNANT** Yes - (No) – UNK **UTERINE SCAR** - (Yes) - No - UNK
UTERINE HORNS: Small diameter - ~~Contracted/~~Distended – UNK
ADDITIONAL DATA: (External measurements) – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

REMARKS: PIT tag

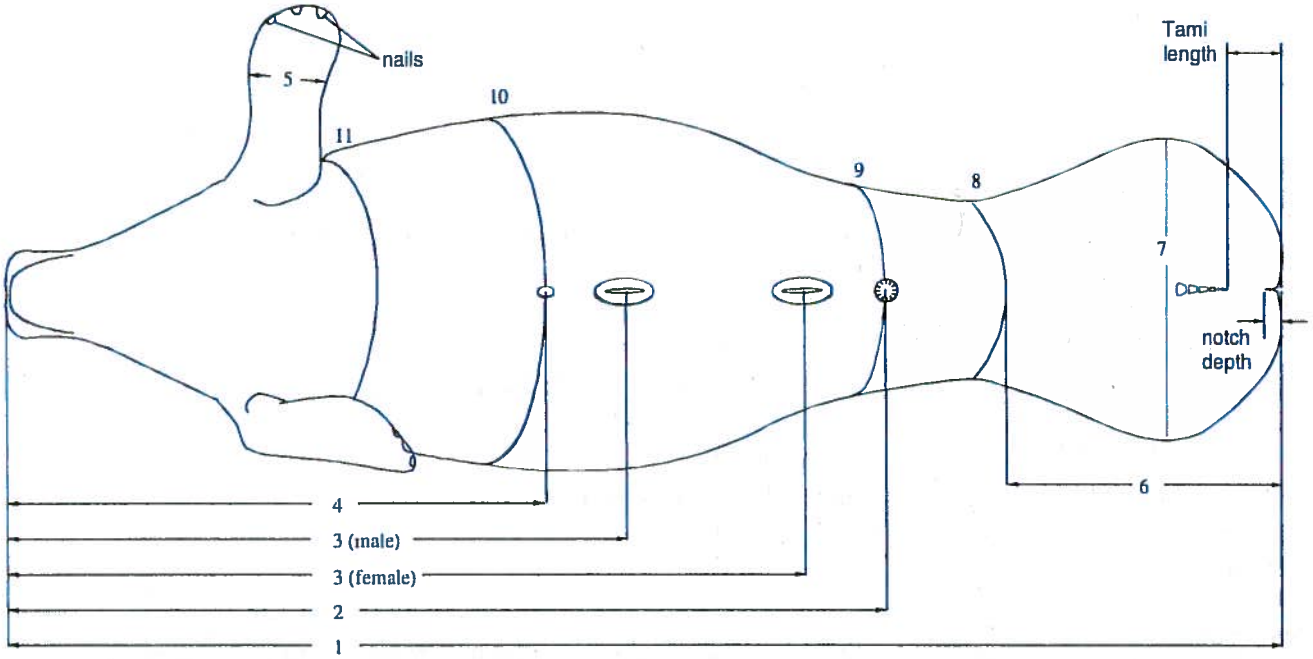
Found dorsum up

Field ID # MEC2007

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

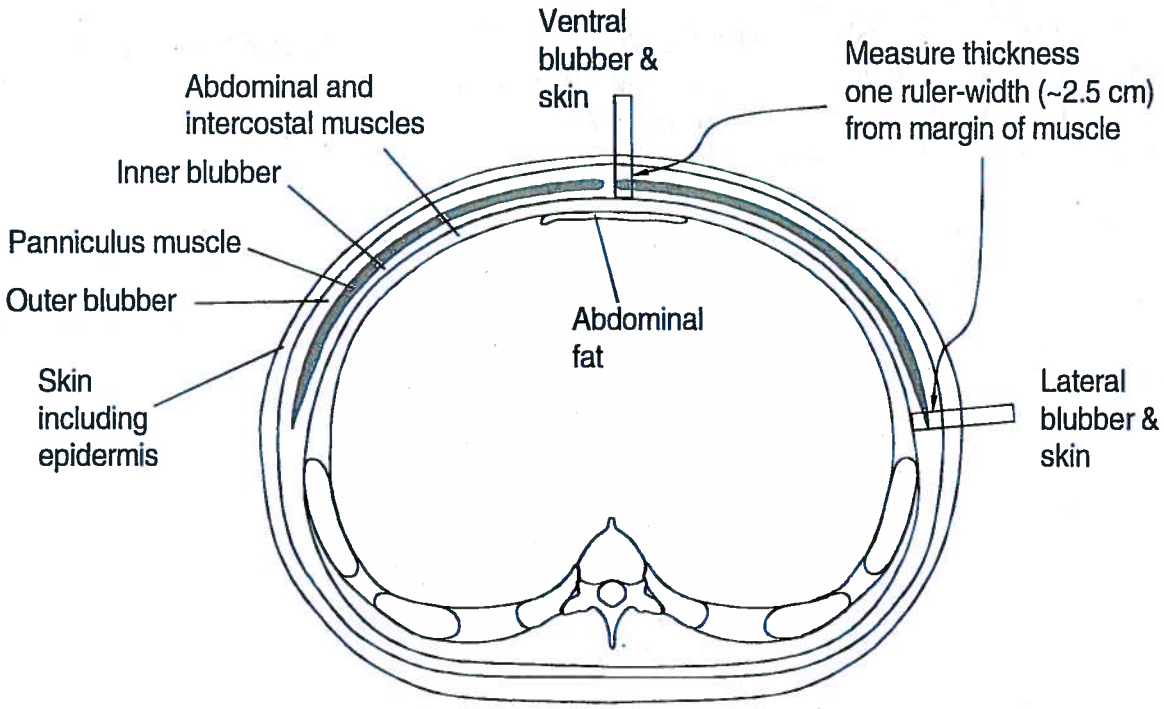
1. Total length 271 cm
2. Snout to anus -C 183 cm
3. Snout to U/G -C 173 cm
4. Snout to umbilicus -C 99 cm
5. Flipper width 16 cm
6. Fluke base 77 cm
7. Fluke width 69 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus ____ cm
10. *Girth at umbilicus ____ cm
11. *Girth at axillae ____ cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	1.2 cm	2.9 cm	(Epidermis 0.2 cm)
Outer fat	0.8 cm	N/T cm	(Abdominal fat 0.7 cm)
Inner fat	0.1 cm	N/T cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20007
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1351, 1361, **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 26 January 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 26 January 2020 **By**: FWC- SMW; FWC intern- K. Etherton
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Berkeley Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 25 m NW of 397 Berkeley Street

Carcass Orientation: Grounded

CONDITION: -

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:

☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:

☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:

☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS: Carcass was found dorsum up.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20008**
Date of Report: 2020-Jan-26
Filed By: FWC MMPL

FWC Case # 1373 **FWC Region:** NE

Sex: Male **Length:** 319 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-26 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-27 **By:** FWC-SMW

DATE NECROPSIED: 2020-Jan-27 **By:** MMPL-MdW,BLB,ALP,BDB,SMT,TDW

LOCATION: **State:** FL **Latitude:** 28.46822 **N**
County: Brevard **Longitude:** -80.76435 **W**
Waterway: Indian River
Location description: Port St. John, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Peanut-shaped head; Depleted fat(s); Serous fat(s); Serous muscle; Dark line kidney(s); Wet lung(s); Heavy left lung; Bloody nares; Chronic hemothorax; Consolidated, folded, adhered right lung; Mucus, fluid in airways; Congested mesenteries, urinary bladder mucosa, kidney serosa; Enlarged kidney; Bloody kidneys; Adhered liver, omental fat; Pale myocardium. Found in intake well #3.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Cobblestone-like epidermis; Remodeled rib.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20008

MORPHOMETRICS:

Total length:	319 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in epididymides (Scant amount of tan fluid).
Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20008
SPECIES *T. manatus latirostris*
RECOVERY DATE 27 January 2020
NECROPSY DATE 27 January 2020
GENDER Male **TL** 319 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 26 January 2020, at 1536 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in an intake well at the Florida Power and Light-Cape Canaveral Energy Center (FPL-CCEC) plant in Indian River in Cocoa, Brevard County. FWC case number 1373 was assigned. The complainant, Felix Gonzalez (386-546-8296), stated that the carcass was 8 feet long and mostly white. At 1622 hrs, SMW received a photo of the carcass from the complainant. The carcass was placed on a pallet for recovery the next morning. **27 January**, at 0755 hrs, SMW and FWC intern-Kelly Etherton (KE) arrived at FPL-CCEC. The carcass was loaded into the back of a truck by forklift at 0808 hrs and transported, along with MEC20007, to the MMPL arriving at 1028 hrs.

EXTERNAL Approximately 20% of the epidermis was present and sloughing. Bloody fluid exuded from the nares. The carcass had a peanut-shaped head. The remaining epidermis was cobblestone-like and had a thin green and brown algal mat. The ventrum was flat. There was a minimum of ten well-healed watercraft-related scar patterns on the dorsal aspect. The fluke margin had a well-healed mutilation between the 5 and 6 o'clock positions. The carcass had dorsal transverse impression bands from overnight placement on a pallet. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal, mesenteric, and omental fat. The omental fat was strongly adhered to the ventral aspect of the liver (see photo). The abdomen contained 1 L of watery, dark red fluid.

STOMACH The stomach contained 6.5 L of moist, well-chewed, stringy, green to brown and bright pink macroalgae. There was a small amount of well-chewed, leafy, green vegetation at the esophageal inlet. The ingesta were coated in a thick layer of tan mucus. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 2 L of moist, stringy, well-chewed, green to brown and bright pink macroalgae. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested. The distal small intestine contained a large amount of moist, fibrous, stringy, moderately chewed, dark green to brown ingesta (mostly macroalgae). The proximal small intestine contained a small amount of thick, viscous, homogeneous, grey mucus. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 4 L of moist, moderately digested, fibrous, stringy, dark brown digesta (including macroalgae). The mucosa was sloughing. There was a mild infection of dead trematodes.

COLON The mesentery was moderately congested. The proximal colon contained a moderate amount of moist, moderately formed, moderately digested, fibrous, stringy, dark brown feces. The distal colon contained a small amount of moist, moderately digested, fibrous, stringy, poorly formed, dark brown and green feces. The mucosa was sloughing. There was a mild infection of dead trematodes.

PANCREAS The pancreas was tan on serosal and cut surfaces.

SPLEEN The spleen was tan to light pink on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were slightly rounded. The serosal surfaces were dark pink to blue and the cut surfaces were dark red to brown with small friable autolyzed regions. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 25 mL of viscous, cloudy, golden yellow to brown bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The testes were large. There was a scant amount of tan fluid on cut surfaces of the deferent ducts. The seminal vesicles were large and contained a moderate amount of cloudy, flocculent tan fluid.

KIDNEYS There was scant serous perirenal fat. The left kidney was enlarged (one-third larger than the right). The dorsal aspect of the right kidney was moderately congested. The serosal surfaces of both kidneys were mottled dark brown, dark grey, and black. On cut surfaces, the cortices were dark grey and the medullae were dark pink to red. The cut surfaces were bloody. There was a dark grey line at most of the corticomedullary boundaries which were distinct.

URINARY BLADDER The bladder contained 100 mL of cloudy, light yellow urine. The mucosa was moderately congested. An ELISA toxicology sample was collected.

HEART There was a small amount of serous epicardial fat. The myocardium was pale. Valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right hemidiaphragm was severely distended. The right pleural cavity contained 62.5 L of bloody, dark red fluid and 5.5 L of fibrin and resolving blood clots. The right lung was consolidated and adhered to the medial aspect of the cranial one-third of the hemidiaphragm. The caudal one-third of the right lung was folded cranially and adhered to itself. The pleural aspect of the right hemidiaphragm, parietal pleura, and the right lung were coated in red and brown fibrin. The right lung was pink to grey on serosal surfaces, and light pink to pink on cut surfaces. The airways contained a moderate amount of viscous, red-tinged mucus. The mucosa was pale pink to tan. The left pleural cavity contained 1 L of watery, dark red fluid. The left lung was heavy. The serosal surfaces were pink, green, and dark blue. The cut surfaces were dark red and wet. The airways contained a moderate amount of slightly viscous, dark red fluid. The mucosa was red to dark red. No parasites were observed in either lung airways. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON Right rib 15 was remodeled at the proximal one-third, which was deep to a mitten-shaped scar on the caudal right dorsum.

OTHER The subdermal tissue and fat was very serous.

COMMENTS The carcass had a chronic injury of the right pleural cavity but the cause of this was undetermined. The manatee was found in intake well #3 and had drowned. Its condition was compromised due to the pleural cavity pathology but probable primary COD was from entrapment.

SIGNIFICANT FINDINGS

- Bloody nares
- Peanut-shaped head
- Depleted, serous fat
- Serous tissue

- Chronic hemothorax
- Consolidated, folded, adhered right lung
- Heavy, wet left lung
- Mucus, fluid in airways
- Congested mesenteries, urinary bladder mucosa, kidney serosa
- Dark line kidneys
- Bloody kidneys
- Enlarged kidney
- Adhered liver, omental fat
- Pale myocardium
- Remodeled rib
- Cobblestone-like epidermis
- Found in FPL intake well #3

PROBABLE CAUSE OF DEATH Human; Other

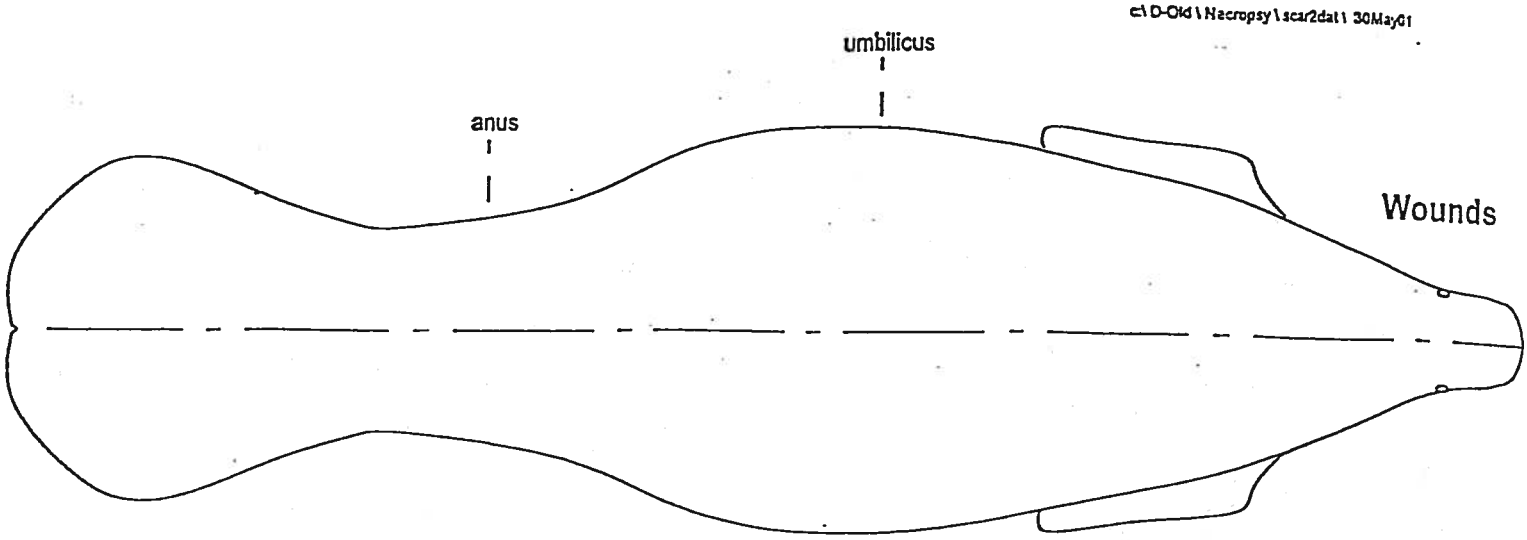
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant

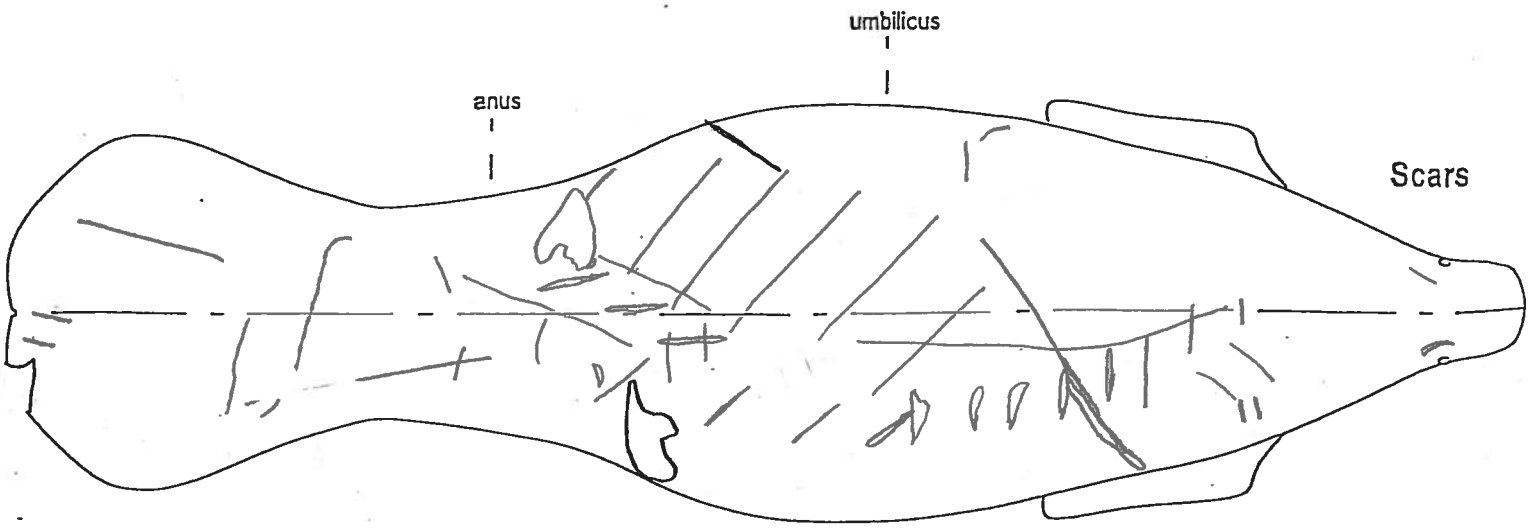
REPORT FILED BY de Wit

Date 27 JAN 2020 Field I.D. MEC20008

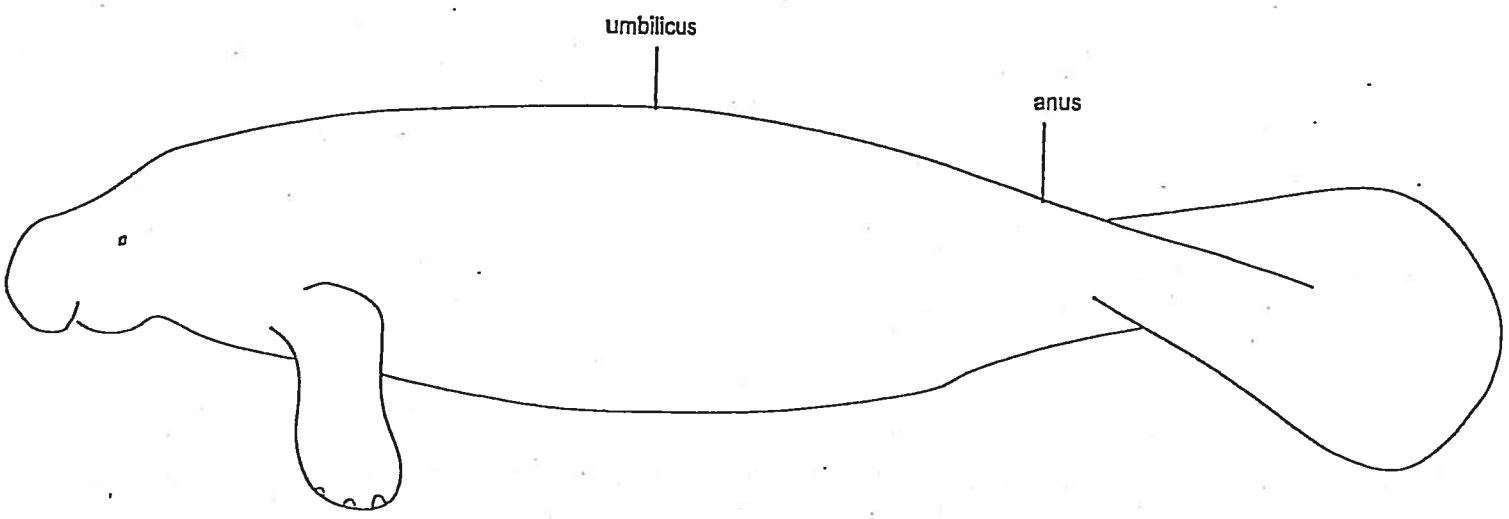
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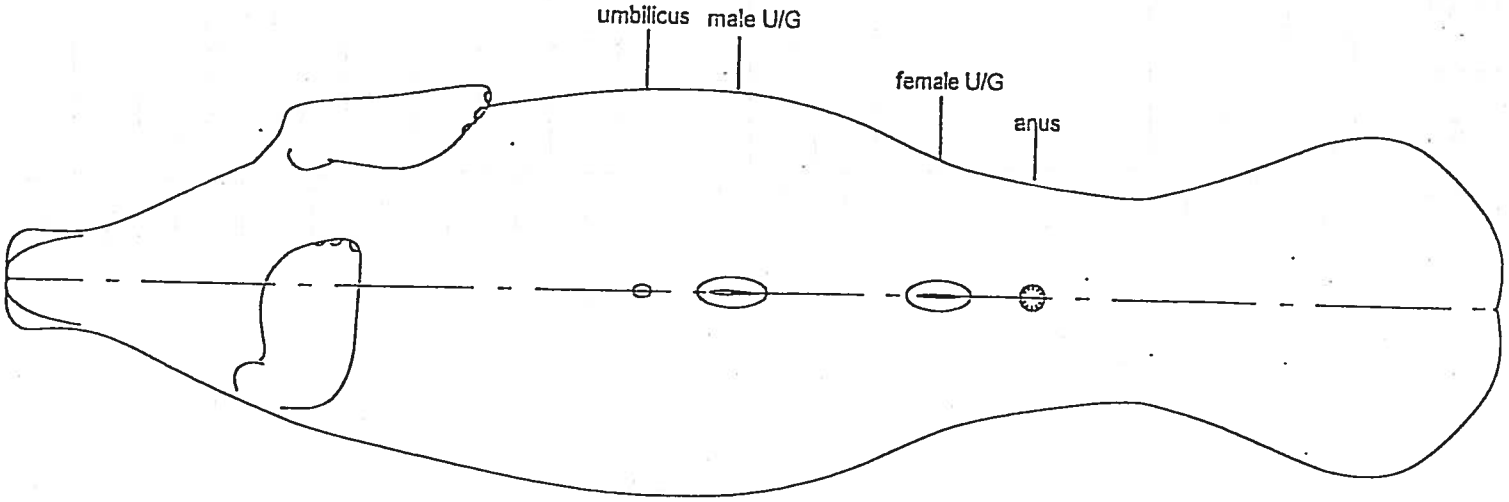


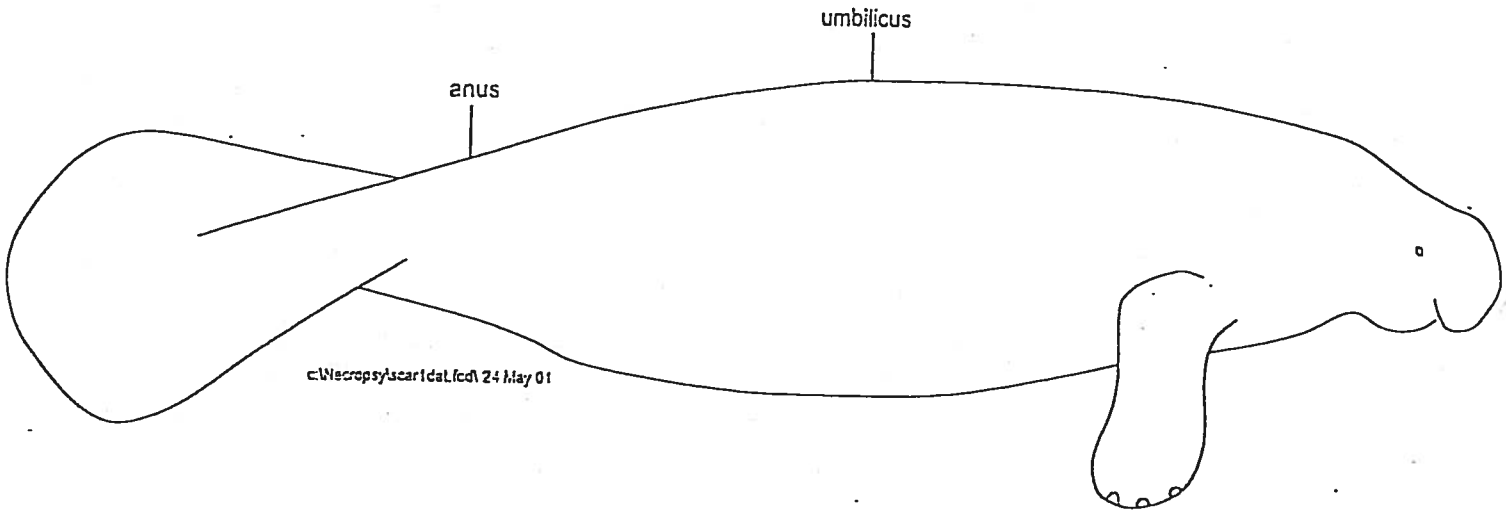
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. _____


umbilicus
anus

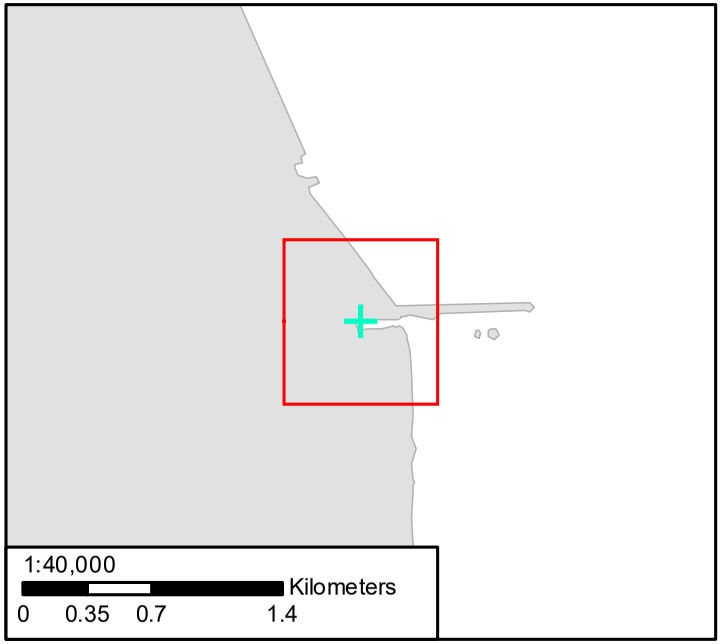

umbilicus
male U/G
female U/G
anus

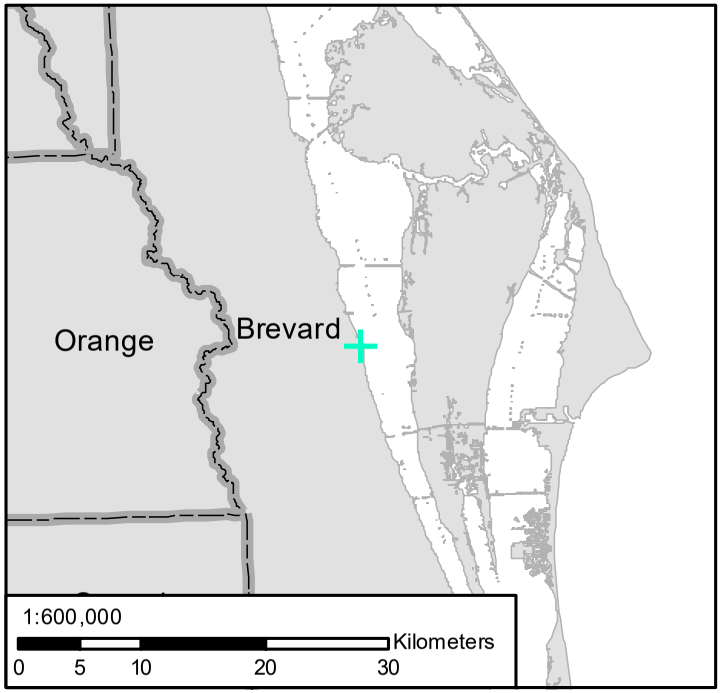

umbilicus
anus

Verified Location of Manatee Carcass MEC20008

Report Date: 1/26/2020 **Received Date**: 1/27/2020 **Received By**: FWC-SMW







Location: Port St. John, Brevard County

Latitude: 28.46822°N **Longitude**: -80.76435°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20008
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1373 FWC District: NE
Sex: M / F / Undetermined Length: 319 cm (estimated) Weight N/T kg.
Date reported: 26 Jan 2020 By: Citizen to FWC NE Dispatch-orlando
Date collected: 27 Jan 2020 By: FWC-SMW, KLE
Date necropsied: 27Jan20 By: MMPL MdW BLB ALP SMT BDB TDW

LOCATION: State: FL ( ) County: Brevard Waterway: Indian River
Latitude: N Longitude: W
Locality description: Cocoa,

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain:

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other Stomach contents in alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other
Genetics Box # 95
Female reproductive findings on N/A
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other

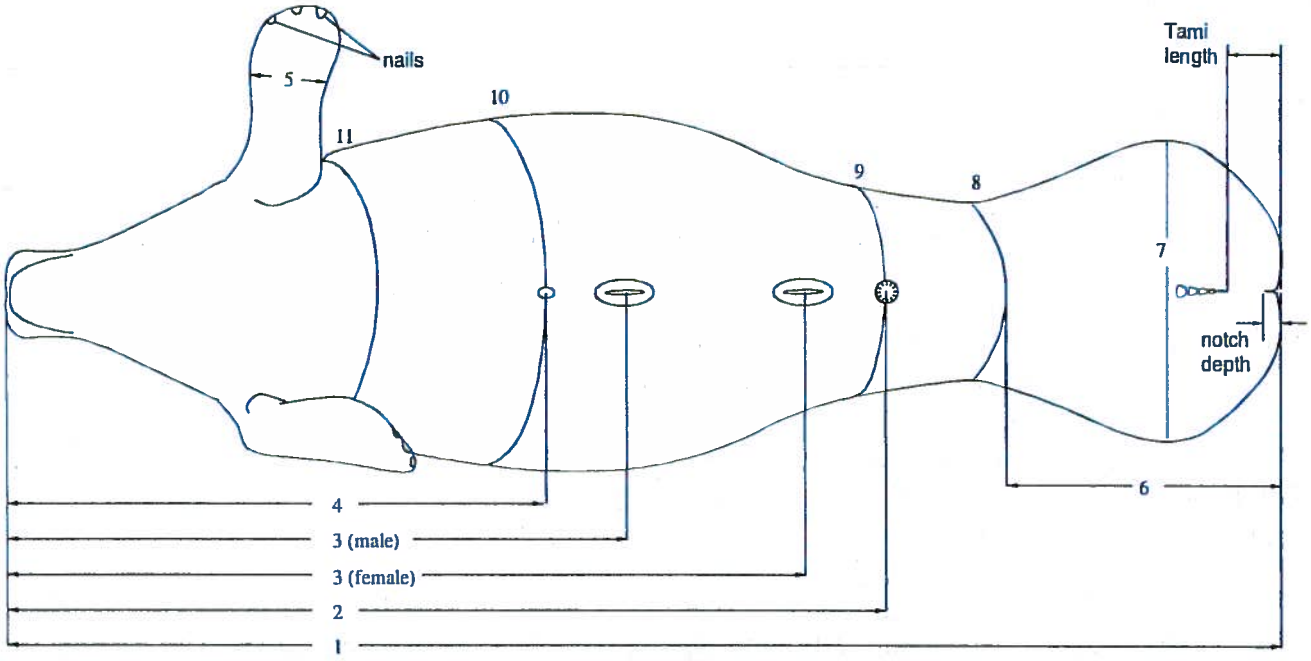
PIT TAG Scan: Negative; Positive (Left____ - ____ - ____)(Right____ - ____ - ____); N/T

REMARKS:
From intake well #3

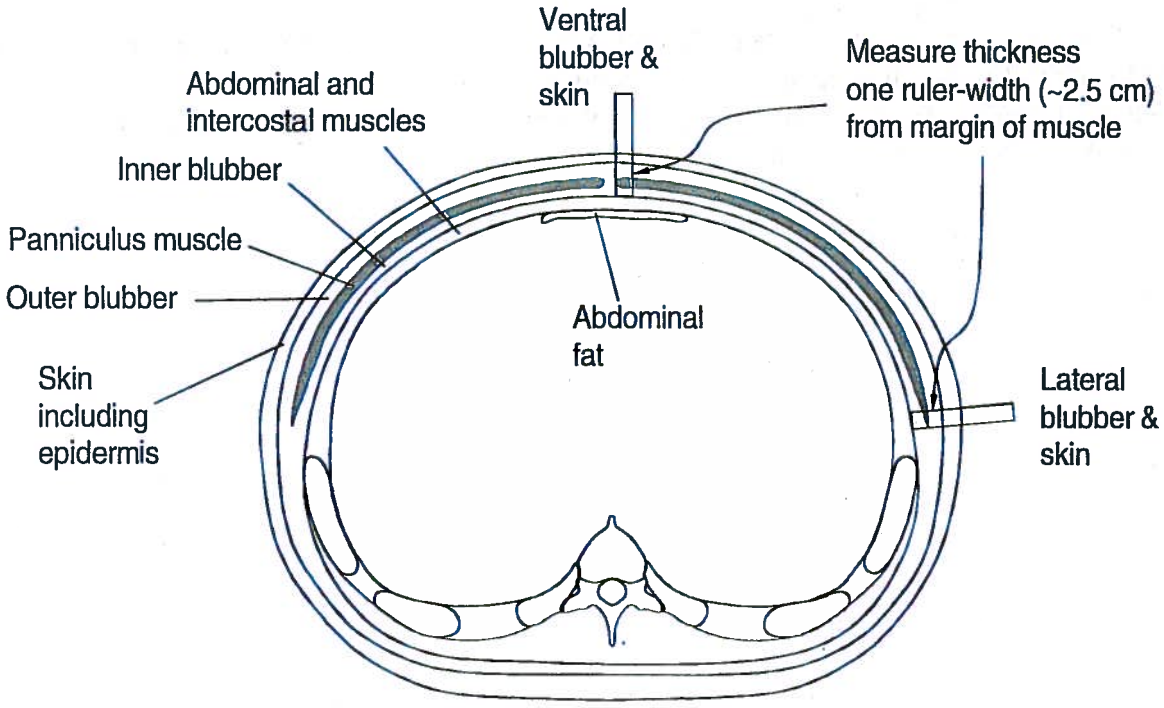
Field ID #_____

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C ____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8.*Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm
(Nail count: L___R___)



Skin and Blubber (cm).	Ventral	Lateral	
Skin.....	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat.....	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat.....	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20008
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1373 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 26 January 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 27 January 2020 **By**: FWC- SMW, FWC Intern- K. Etherton
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 135 m N of 186 Cottrell Avenue

Carcass Orientation: Floating

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS: Carcass was found in intake well #3 at FPL-CCEC

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20009**
Date of Report: 2020-Jan-27
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Female **Length:** 218 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-27 **By:** FWC-Doug Adams to FWC-WDG

DATE COLLECTED: 2020-Jan-27 **By:** FWC-WDG

DATE NECROPSIED: 2020-Jan-27 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 27.81044 **N**

County: Indian River **Longitude:** -80.50662 **W**

Waterway: Sebastian River

Location description: Sebastian, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cold stress lesions; Cobblestone-like epidermis; Bleached epidermis; Depleted fat(s); Serous fat(s); Wet lung (s); Crumbly feces; Flat ventrum; Thickened epidermis; Dry feces; Bloody nares; Fluid-filled stomach; Empty duodenum; Sand in trachea; Fluid in lung airways; Congested mesenteries, colon serosa, urinary bladder mucosa; Vegetation in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal, Other (Healing watercraft wounds).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Healing watercraft wound(s).

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20009

MORPHOMETRICS:

Total length:	218 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20009
SPECIES *T. manatus latirostris*
RECOVERY DATE 27 January 2020
NECROPSY DATE 27 January 2020
GENDER Female **TL** 218 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 27 January 2020, at 1030 hrs, FWC biologist-William D. Greer (WDG) received a text from FWC fisheries biologist-Doug Adams (DA, 321-544-5079) regarding a dead manatee in the St. Sebastian River, in Sebastian, Indian River County. DA described a 5 to 6-foot-long dead manatee that was belly-up. DA towed and secured the carcass at the Dale Wimbrow boat ramp at 1046 hrs. WDG arrived at the boat ramp at 1145 hrs and loaded the carcass by Ezy-Lift at 1210 hrs. The carcass was transported to the EC Field Station where a field necropsy was completed at 1530 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. Bloody fluid exuded from the nares. The ventrum was flat. There was a healing watercraft-related wound pattern on the caudal right dorsal aspect that consisted of two short parallel linear wounds (#2 and 3) at a roughly 45-degree angle to and caudal to a short linear wound (#1). The wound margins were associated with thickened epidermis. A second healing watercraft-related wound pattern was present on the dorsal fluke and consisted of a long linear wound (#4) cranial to and at a roughly 45-degree angle to three parallel linear wounds (#5 – 7). There was necrotic tissue in the centers of the wounds and the wound margins were associated with thickened epidermis. The epidermis of the head and axillae was bleached. There was a moderate brown algal mat on the dorsum. A mild infestation of barnacles and barnacle scars was observed on the ventral aspect. Linear necrotic linear scrapes were present in the epidermis on the left lateral side. Slight cobblestone-like epidermis was present on the ventrum. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, omental, and mesenteric fat. There was a small amount of watery red fluid in the abdominal cavity.

STOMACH The stomach contained 225 mL of watery, gray fluid (see photo). The mucosa was unremarkable. There was a mild infection of dead nematodes.

DUODENUM The duodenum was empty of contents (see photo). The mucosa was unremarkable. There was a mild infection of dead nematodes.

JEJUNUM & ILEUM The mesentery was slightly congested. The small intestine contained viscous, gray fluid mixed with a small amount of moist, poorly chewed, fibrous, green ingesta throughout. The distal portion of the small intestine mucosa was rugose due to contraction (see photo). The mucosa was unremarkable throughout. There was a mild infection of dead nematodes in the mid small intestine. No other parasites were grossly observed.

CECUM The cecum contained 625 mL of moist, poorly digested, stringy, fibrous, green to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The colon serosa and mesentery were slightly congested (see photo). The proximal colon contained dry, crumbly, well-formed, well-digested, fibrous, light brown feces. The distal colon contained dry, crumbly, well-formed, well-digested, fibrous, light brown feces (see photo). The mucosa was sloughing throughout and was black in the proximal colon. No parasites were observed.

PANCREAS The pancreas was light pink on serosal surfaces, and dark pink on cut surfaces.

SPLEEN The spleen was mottled dark blue and gray on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. The liver was blue on serosal surfaces, and dark red on cut surfaces.

GALLBLADDER The gallbladder contained a small amount of watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was scant perirenal fat. The kidneys were tan on serosal surfaces. On cut surfaces, the cortices were light red and the medullae were dark red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was moderately congested.

HEART There was a small amount of serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were tan to blue on serosal surfaces, and dark red and wet on cut surfaces (see photo). The primary airways contained a moderate amount of watery, clear fluid. The left lung primary airway wall had a small, round, hard, red area in the cranial aspect. There was a mild infection of dead trematodes in the primary airways.

HEAD & NECK REGIONS The trachea contained a moderate amount of sand. There was a severe infection of dead trematodes in the trachea (see photo). The mucosa was unremarkable. A small thatch of fibrous, stringy vegetation was found in the mouth (see photo).

SKELETON NVL.

COMMENTS

SIGNIFICANT FINDINGS

- Cold stress lesions
- Cobblestone-like, bleached, thickened epidermis
- Bloody nares
- Flat ventrum
- Depleted, serous fat
- Fluid-filled stomach
- Empty duodenum
- Dry, crumbly feces
- Sand in trachea
- Fluid in lung airways
- Wet lungs
- Congested mesenteries, colon serosa, urinary bladder mucosa
- Vegetation in mouth
- Healing watercraft-related wounds

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

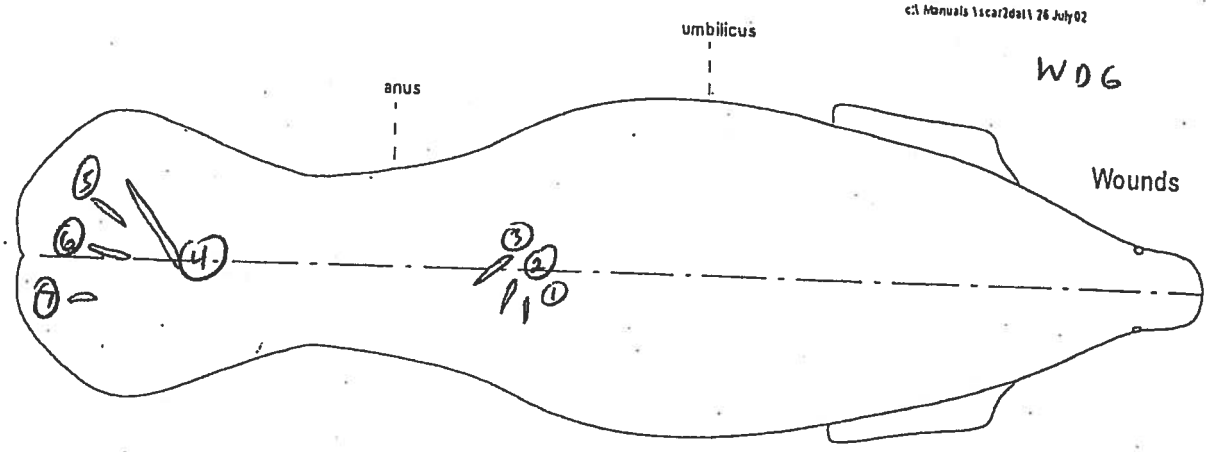
William D. Greer
Carley M. Metcalf

REPORT FILED BY Metcalf / Greer

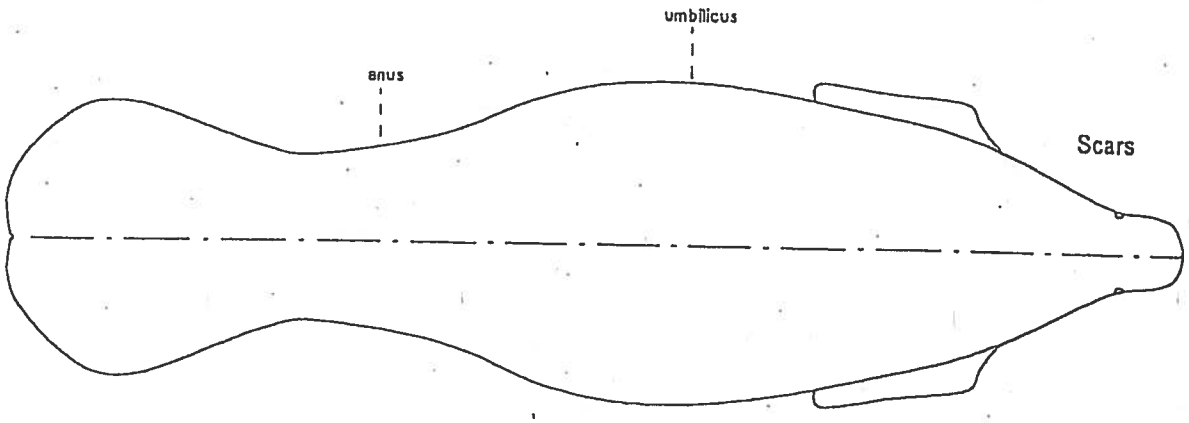
Date 27 JAN 2020 Field I.D. MEC20009

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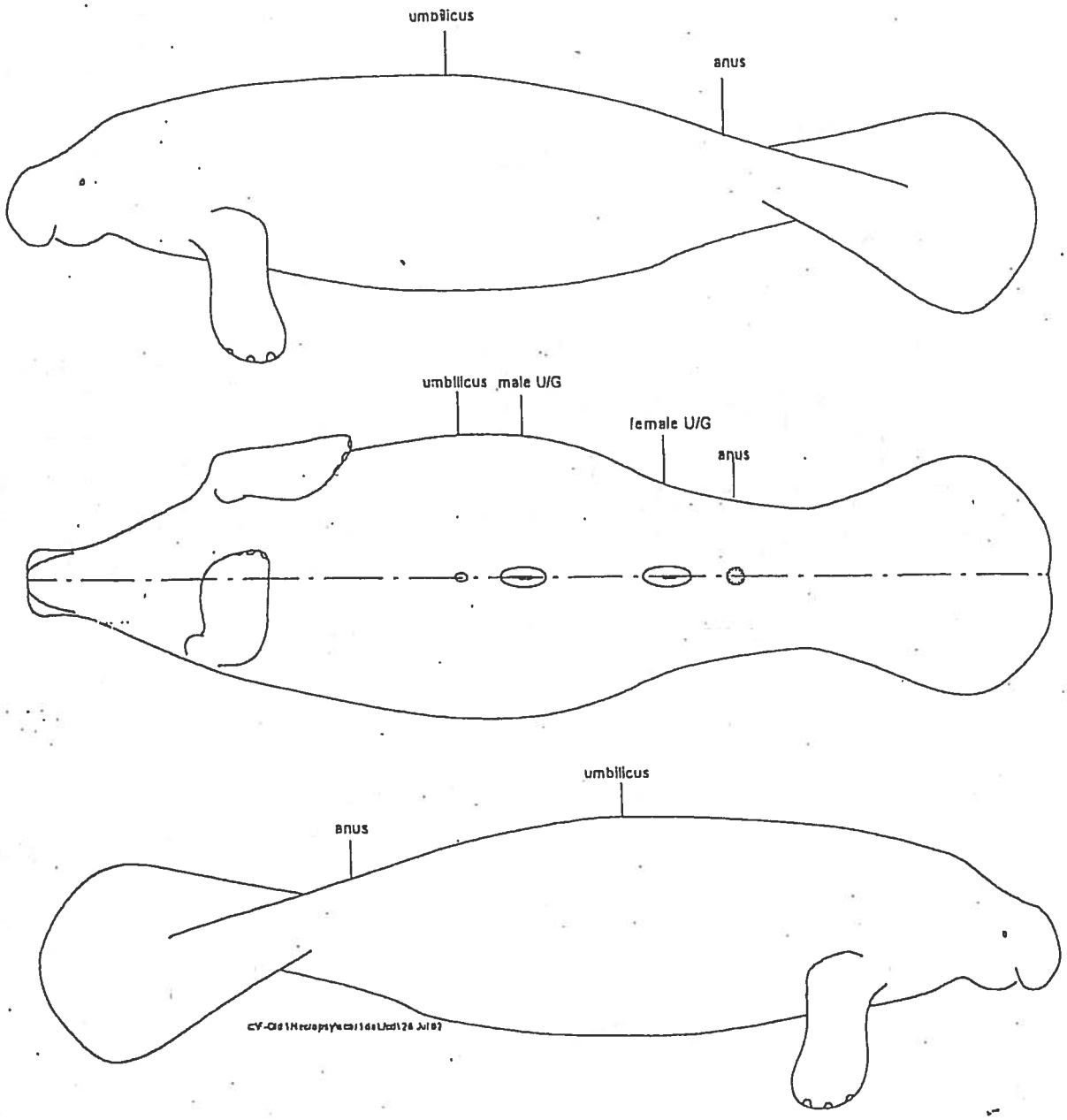
WDG



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Number																				
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Width	0.6	0.8	1.0	1.5	1.5	1.8	2.0													
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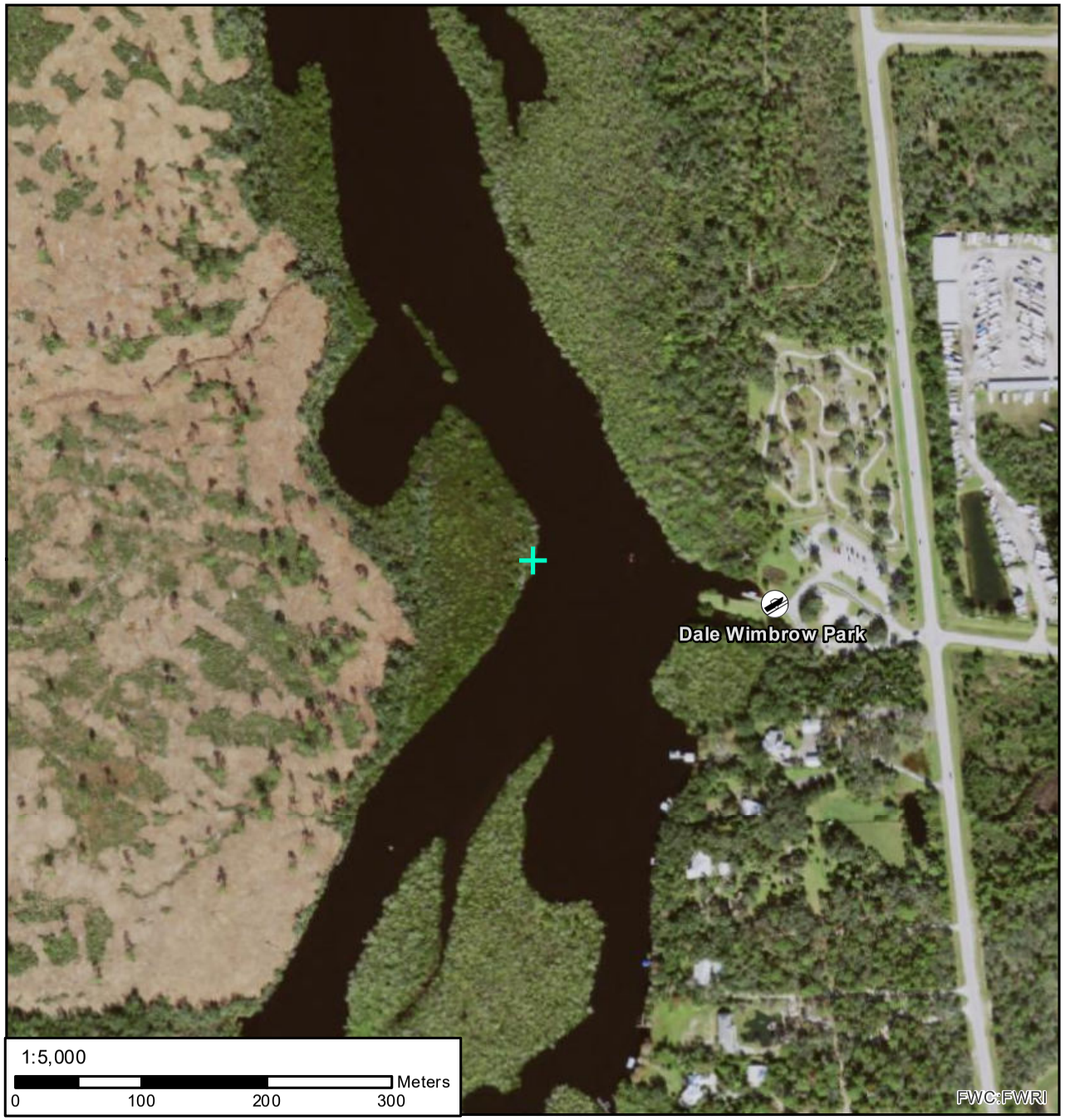


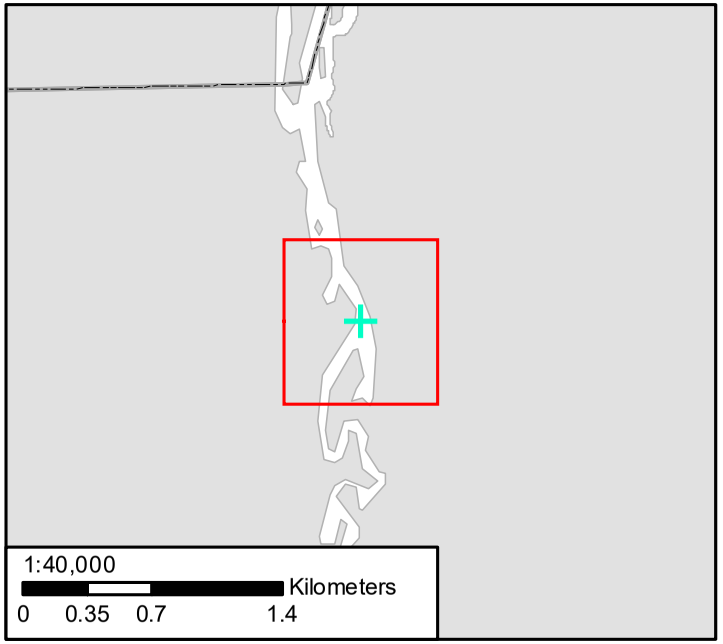
FIELD I.D. _____

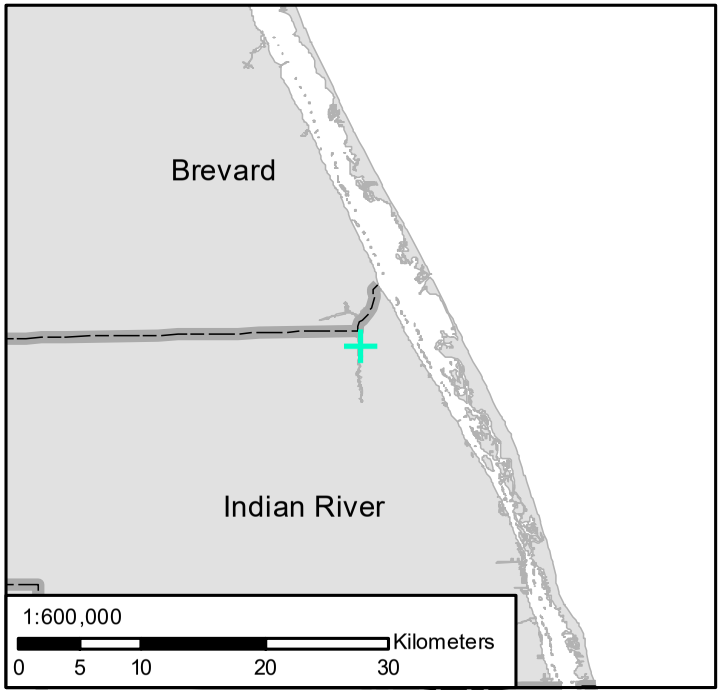

umbilicus
anus
umbilicus
male U/G
female U/G
anus
umbilicus
anus

Verified Location of Manatee Carcass MEC20009

Report Date: 1/27/2020 **Received Date:** 1/27/2020 **Received By:** FWC-WDG







Location: Sebastian, Indian River County

Latitude: 27.81044°N **Longitude:** -80.50662°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20009
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: 218 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 January 2020 **By**: FWC- Doug Adams to FWC- WDG
Date collected: 27 January 2020 **By**: FWC- WDG
Date necropsied: 27 January 2020 **By**: FWC- WDG, CMM

LOCATION INFORMATION: State FL **County**: Indian River **Waterway**: Sebastian River
Latitude: N _____ **Longitude**: W _____
Locality description: Sebastian, approximately 245 m NW of 11725 Roseland Road

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered

Explain: Linear lesions on lateral aspects, bleached face, serous fats, empty upper GI tract, dry/hard/crumbly feces in colon, sand in trachea, fluid in primary airways and lungs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20010**
Date of Report: 2020-Jan-27
Filed By: FWC EC Field Station

FWC Case # 1439 **FWC Region:** NE

Sex: Female **Length:** 168 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jan-28 **By:** FWC-WDG

DATE NECROPSIED: 2020-Jan-28 **By:** FWC-WDG,SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.54976 **N**
County: Brevard **Longitude:** -80.79392 **W**
Waterway: Indian River
Location description: Titusville, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cobblestone-like epidermis; Peanut-shaped head; Depleted fat(s); Empty duodenum; Poorly chewed and digested GI contents; Black specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20010

MORPHOMETRICS:

Total length:	168 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20010
SPECIES *T. manatus latirostris*
RECOVERY DATE 28 January 2020
NECROPSY DATE 28 January 2020
GENDER Female **TL** 168 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 27 January 2020, at 1629 hrs, FWC intern-Kelly L. Etherton (KLE) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville, Brevard County. FWC case number 1439 was assigned. The complainant, Dale (321-225-2961), stated that the carcass was approximately 5 ft long, gray in color, and dorsum-up. He also stated the manatee's skin was sloughing at the mouth. At 1644 hrs, KLE received photo confirmation of the carcass. **28 January**, FWC biologist-William D. Greer (WDG) arrived at the carcass at 0940 hrs, loaded it via Ezy-Lift at 1003 hrs, and transported it to the Brevard County Landfill at 1025 hrs. A field necropsy was completed at 1139 hrs. The remains were disposed of at the Landfill.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. The carcass had a slight peanut-shaped head. There was a moderate brown algal mat and a thin green algal mat on the dorsal aspect. A moderate infestation of barnacles was observed on the dorsal and ventral aspects. There was cobblestone-like epidermis on the ventrum, flippers, and fluke (see photos). No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 1.1 L of moist, stringy, poorly chewed, leafy, green to brown ingesta mixed with yellow macroalgae (see photo). The contents were coated in a thin layer of white mucus. The mucosa was stained light pink (see photo). No parasites were observed.

DUODENUM The duodenum contained 10 mL of moist, poorly chewed, leafy, stringy, brown ingesta mixed with yellow macroalgae. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, grey fluid. The distal small intestine contained moist, poorly formed, poorly chewed, leafy, slightly fibrous, green ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 400 mL of moist, poorly digested, leafy, stringy, green to brown digesta mixed with a small amount of yellow macroalgae. The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained moist, poorly formed, poorly digested, leafy, slightly fibrous, black feces. The mid colon contained moist, poorly formed, poorly digested, leafy, slightly fibrous, green feces. The distal colon contained moist, well-formed, well-digested, homogeneous, black feces. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled grey and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft and friable. Serosal surfaces were blue to black and cut surfaces were dark brown.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained orange to red.

REPRODUCTIVE There was no reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was no perirenal fat. The kidneys were brown to pink on serosal surfaces. On cut surfaces, the cortices were light brown and medullae were red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable.

HEART There was scant epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the parietal pleura (see photo). The lungs were soft and gassy. The lungs were light pink on serosal surfaces and white to light pink on cut surfaces. The primary airways contained a small amount of viscous, pink fluid.

HEAD & NECK REGIONS The trachea contained a mild infection of dead trematodes (see photo).

SKELETON NVL.

OTHER

PHOTOGRAPHS 2020-01-28_FWC023_9212 through 9239.

COMMENTS

SIGNIFICANT FINDINGS

- Cobblestone-like epidermis
- Slight peanut-shaped head
- Depleted fat
- Empty duodenum
- Poorly chewed, -digested GI contents
- Black specks parietal pleura
- Macroalgae in GI tract

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

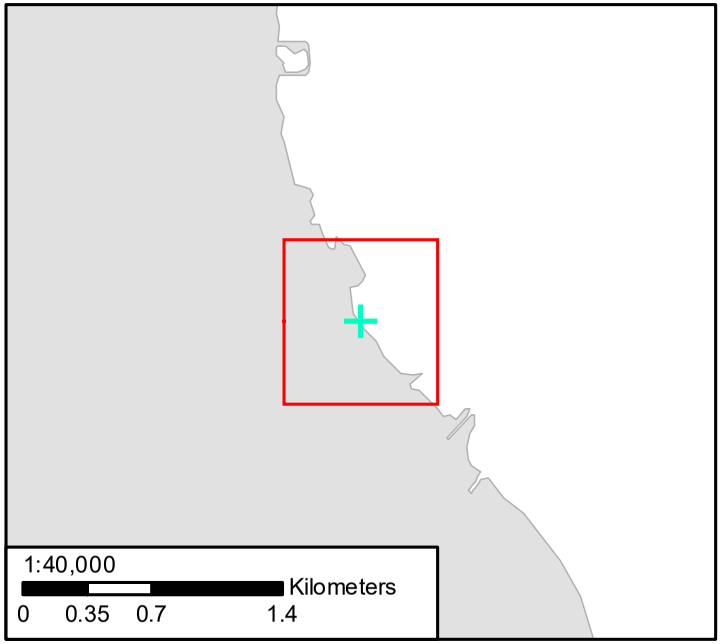
William D. Greer
Sara M. Wappes
Carley M. Metcalf

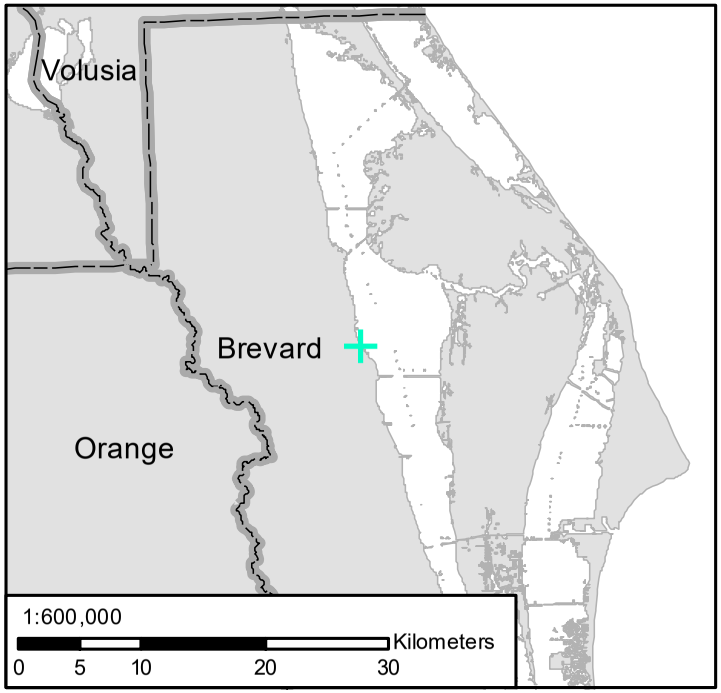
REPORT FILED BY Etherton / Wappes

Verified Location of Manatee Carcass MEC20010

Report Date: 1/27/2020 **Received Date:** 1/28/2020 **Received By:** FWC-WDG







Location: Titusville, Brevard County

Latitude: 28.54976°N **Longitude:** -80.79392°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20010
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1439 **FWC District**: Northeast
Sex: Female **Length (cm)**: 168 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 January 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 28 January 2020 **By**: FWC- WDG
Date necropsied: 28 January 2020 **By**: FWC- WDG, SMW, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 75 m NE of 5132 Riveredge Drive

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Carcass found dorsum up

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20011**
Date of Report: 2020-Jan-31
Filed By: FWC EC Field Station

FWC Case # 1593 **FWC Region:** NE

Sex: Male **Length:** 250 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-31 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.58025 **N**
County: Indian River **Longitude:** -80.36015 **W**
Waterway: Indian River
Location description: Vero Beach, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Cobblestone-like epidermis; Shark scavenging. Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Other (Verification photographs).

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20011

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20011 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Recovered

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HISTORY 31 January 2020, at 0832 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River in Vero Beach, Indian River County. FWC case number 1593 was assigned. The complainant, Micha Mixon (772-453-4742), stated that the carcass was floating, about 8 feet long, and the skin was coming off. At 0836 hrs, WDG received a photo of the carcass from the complainant. Due to a pending rescue (REC2004), WDG requested FWC LE assistance to locate and tow the carcass. FWC Officer-Ray Cybula searched the area but was unable to locate the carcass. No additional reports were received.

EXTERNAL From photographs – Approximately 80% of the ventral epidermis was present but sloughing. There were patches of cobblestone-like epidermis on the ventrum. The tissue of the face and ventral peduncle was mostly missing due to shark scavenging.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Shark scavenging
- Cobblestone-like epidermis

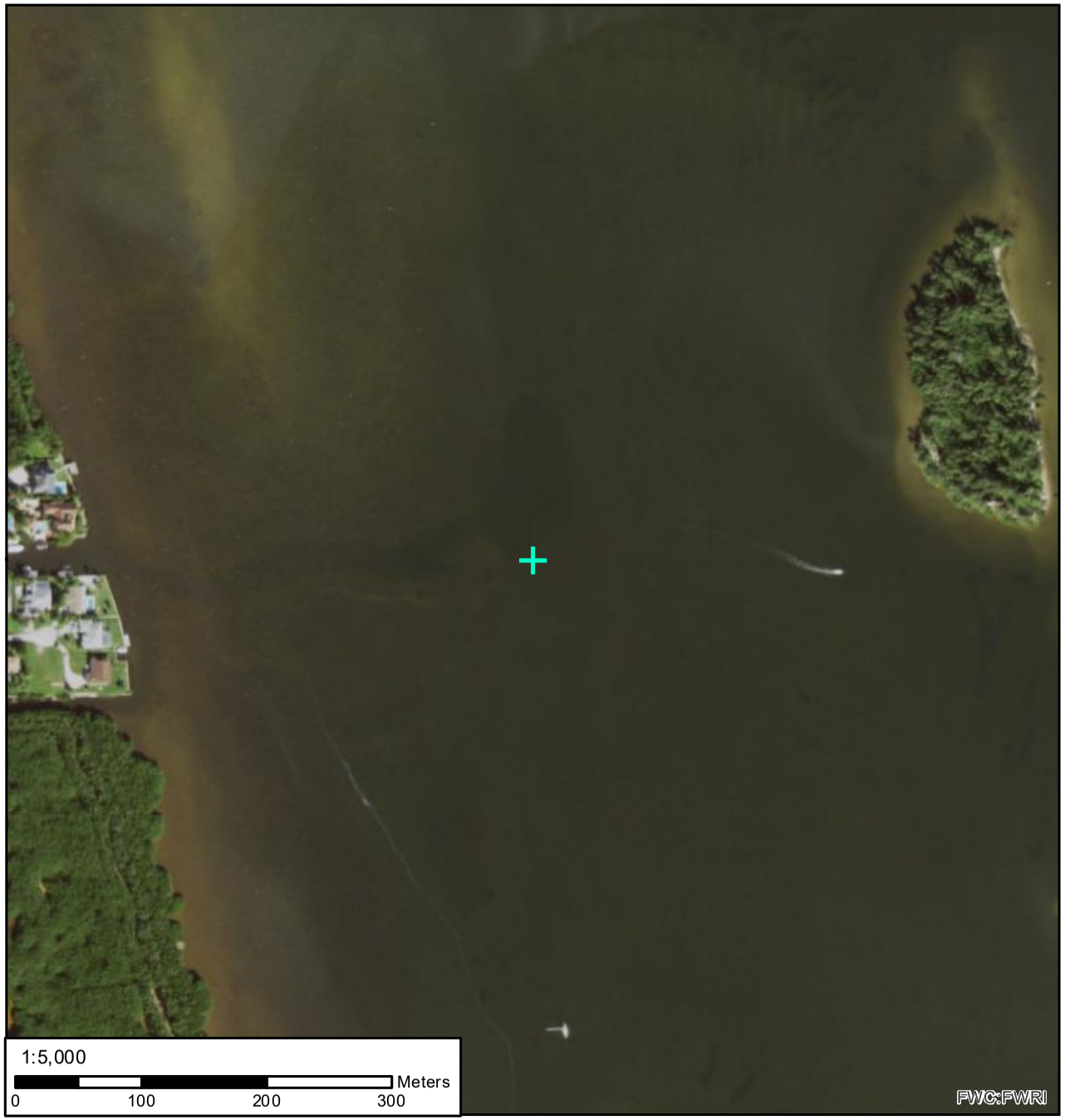
PROBABLE CAUSE OF DEATH Verified; Not Recovered

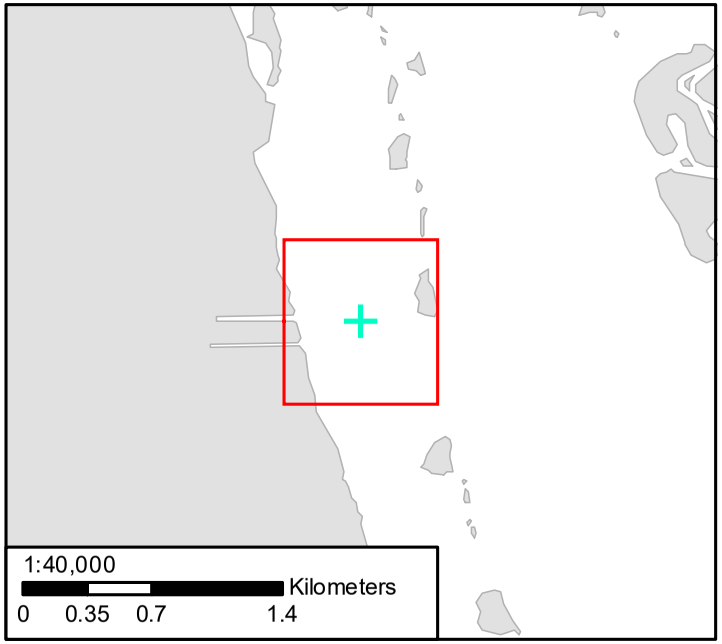
NECROPSY CONDUCTED BY N/A

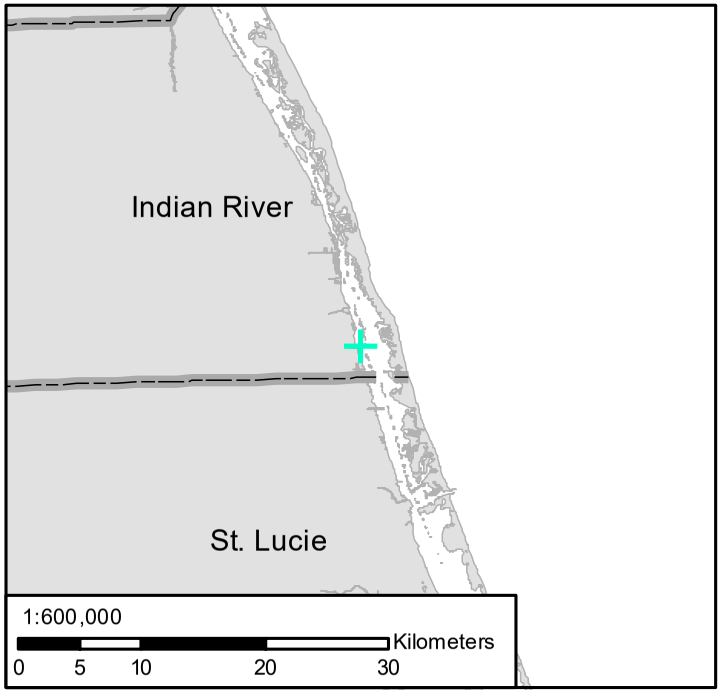
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20011

Report Date: 1/31/2020 **Received Date:** **Received By:**







Location: Vero Beach, Indian River County

Latitude: 27.58025°N **Longitude:** -80.36015°W

Map Created: 3/29/2021

MEC 20011





MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20011
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1593 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** N/T
Date reported: 31 January 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, 350 m ENE of 490 12th Place SE

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Officer search for carcass but was unable to locate

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20012**
Date of Report: 2020-Jan-31
Filed By: FWC EC Field Station

FWC Case # 1633 **FWC Region:** NE

Sex: Male **Length:** 284 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-31 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-01 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Feb-01 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 28.46908 **N**

County: Brevard **Longitude:** -80.75519 **W**

Waterway: Indian River

Location description: Cocoa, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Other

EXPLAIN: Bleached epidermis; Fluid fron nares, mouth; Fluid in abdominal cavity. Necropsy findings did not indicate a certain cause of death.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case number 1604.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20012

MORPHOMETRICS:

Total length:	284 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20012
SPECIES *T. manatus latirostris*
RECOVERY DATE 01 February 2020
NECROPSY DATE 01 February 2020
GENDER Male **TL** 284 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 31 January 2020, at 1148 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near the Florida Power and Light-Cape Canaveral Energy Center warm water discharge in the Indian River in Cocoa, Brevard County. FWC case number 1604 was assigned. The complainant, Kurt Boyken (321-795-1019), stated that the carcass was 7 feet long, starting to turn white, and was grounded along the shoreline. At 1154 hrs, WDG received a photo verifying the carcass and requested FWC LE assistance to tow it due to the rescue of REC2004. At 1540 hrs, FWC Officer Luce secured the carcass at the Port St. John boat ramp. At 1648 hrs, WDG received a text alert from Dispatch regarding the carcass. FWC case number 1633 was assigned. The complainant, Frank (321-225-2175), stated that the carcass was secured at the boat ramp. **01 February**, WDG and FWC biologist-Carley M. Metcalf (CMM) arrived at the boat ramp at 0910 hrs and loaded the carcass via carcass trailer at 0925 hrs. After recovering MEC20013, WDG and CMM transported both carcasses to the Brevard County Landfill at 1110 hrs and completed a field necropsy of MEC20012 by 1345 hrs.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. The carcass was distended with gas. Watery, red fluid exuded from the nares and mouth. The epidermis of the face, flippers, and fluke margin was bleached. A minimum of four well-healed watercraft-related scar patterns was observed on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal fat and a small amount of omental and mesenteric fat. There was 4 L of watery, red fluid in the abdominal cavity.

STOMACH The stomach contained 8 L of moist, poorly chewed, leafy, stringy, slightly fibrous, brown ingesta (see photo). The ingesta were coated in a thin layer of viscous white mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 2.7 L of moist, poorly chewed, leafy, stringy, slightly fibrous, brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM Some sections of the small intestine contained moist, poorly chewed, poorly formed, leafy, slightly fibrous, green to brown ingesta and other sections were empty of contents. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 1.7 L of moist, poorly digested, leafy, stringy, slightly fibrous, brown digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained moist, poorly digested, poorly formed, leafy, stringy, slightly fibrous, brown feces. The mid and distal colon contained moist, well-digested, moderately formed, fibrous, green feces. The mucosa of the mid and proximal colon was unremarkable. The mucosa of the distal colon was black. No parasites were observed throughout.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft. Serosal surfaces were blue to black and cut

surfaces were brown.

GALLBLADDER The gallbladder contained a small amount of watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The seminal vesicles were large and contained an abundant amount of watery, tan fluid. The testes were large. There was no fluid on cut surfaces of the epididymides.

KIDNEYS There was scant perirenal fat. The kidneys were tan on serosal surfaces. On cut surfaces, the cortices were light red and the medullae were dark red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 25 mL of watery, opaque, light red urine. The mucosa was unremarkable.

HEART There was moderate epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were pink to black on serosal surfaces and dark red on cut surfaces. The primary airways contained a small amount of watery, red fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS Necropsy findings did not indicate a certain cause of death.

SIGNIFICANT FINDINGS

- Bleached epidermis
- Fluid from nares, mouth
- Red fluid in abdominal cavity

PROBABLE CAUSE OF DEATH Undetermined; Other

NECROPSY CONDUCTED BY

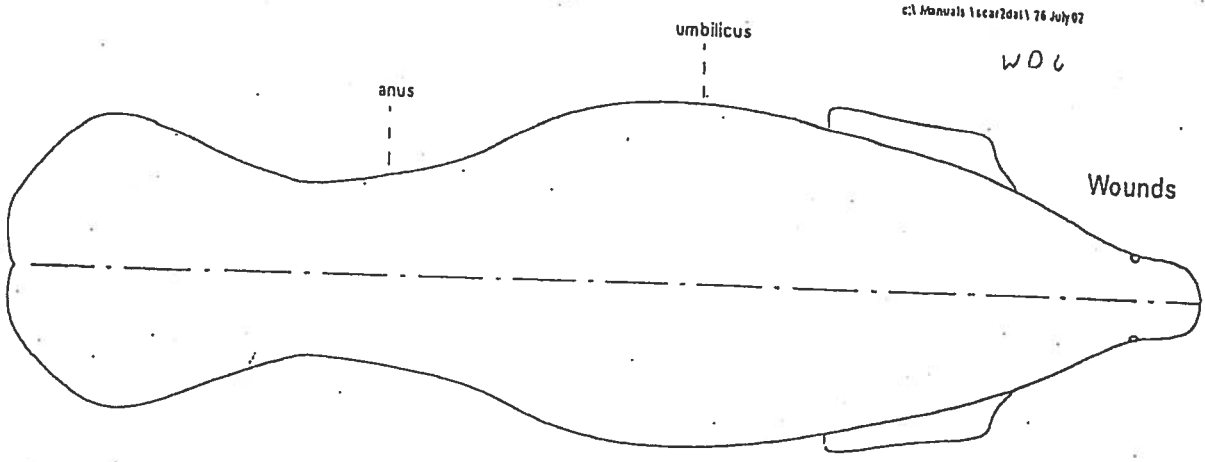
William D. Greer
Carley M. Metcalf

REPORT FILED BY Wappes / Greer

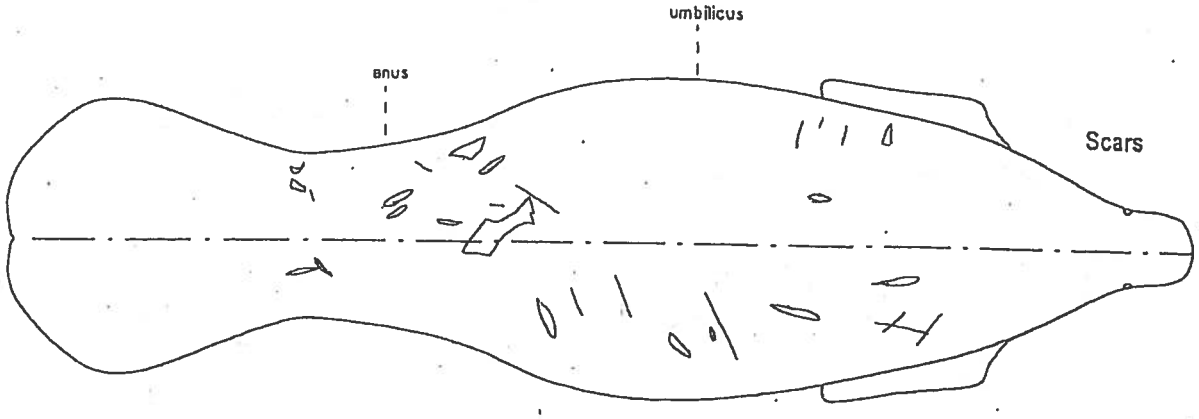
Date 01 FEB 2020 Field I.D. MEL20012.

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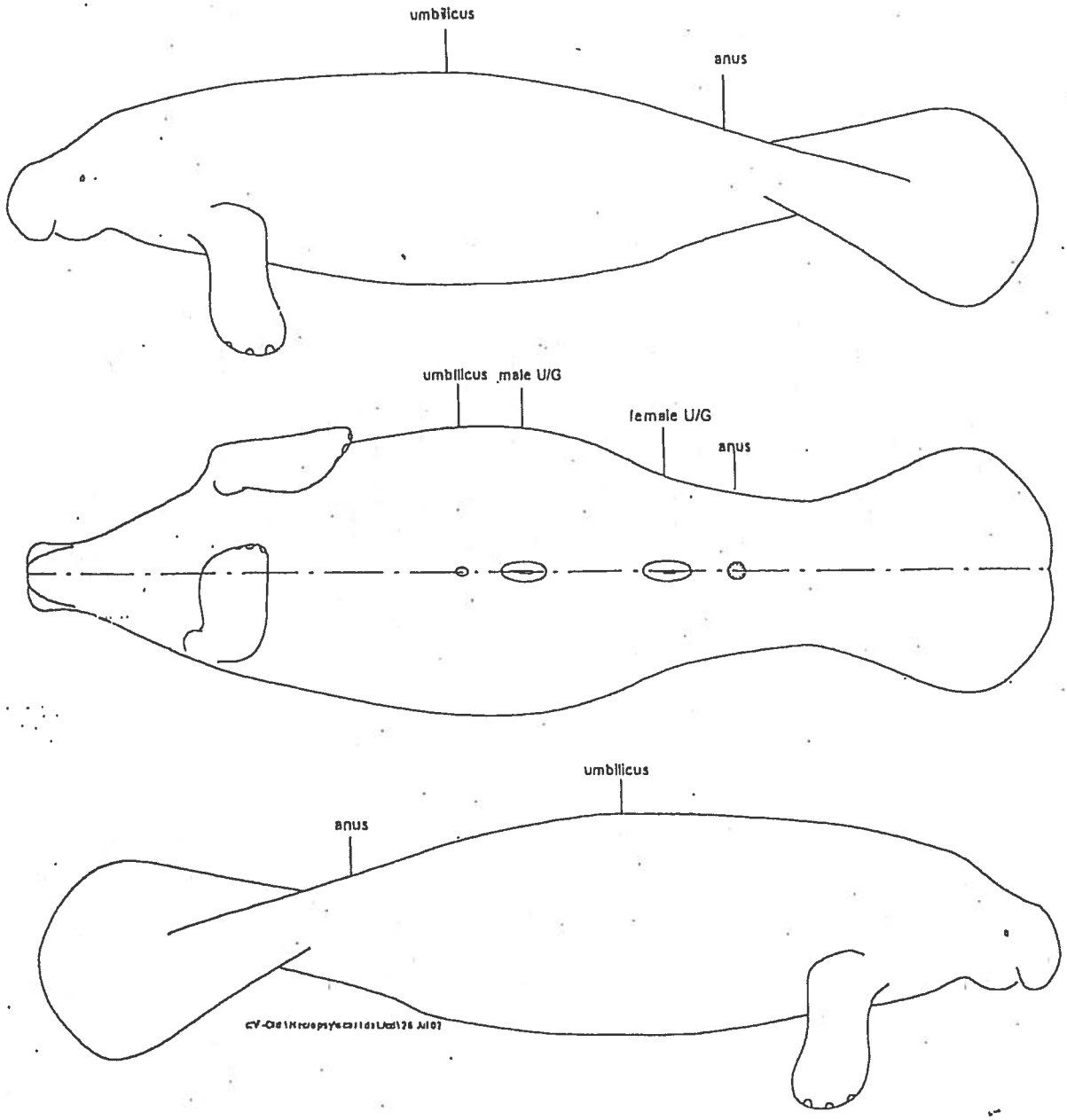
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Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



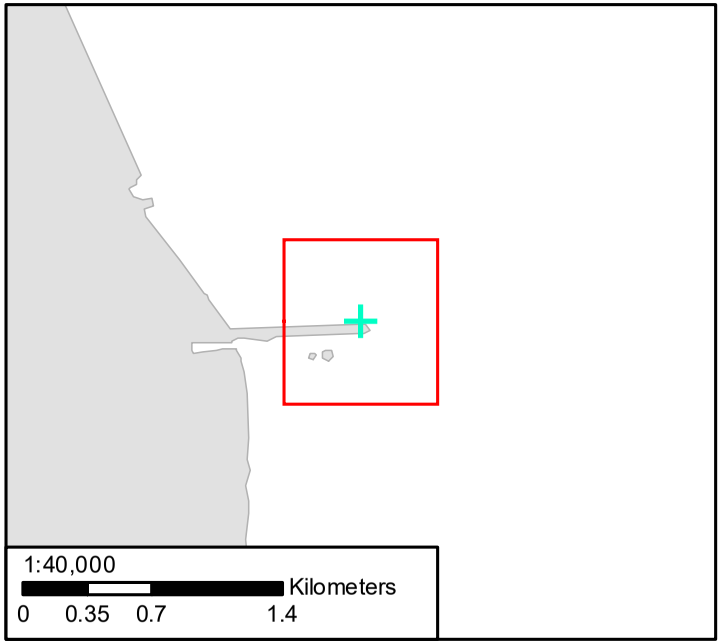
FIELD I.D. _____

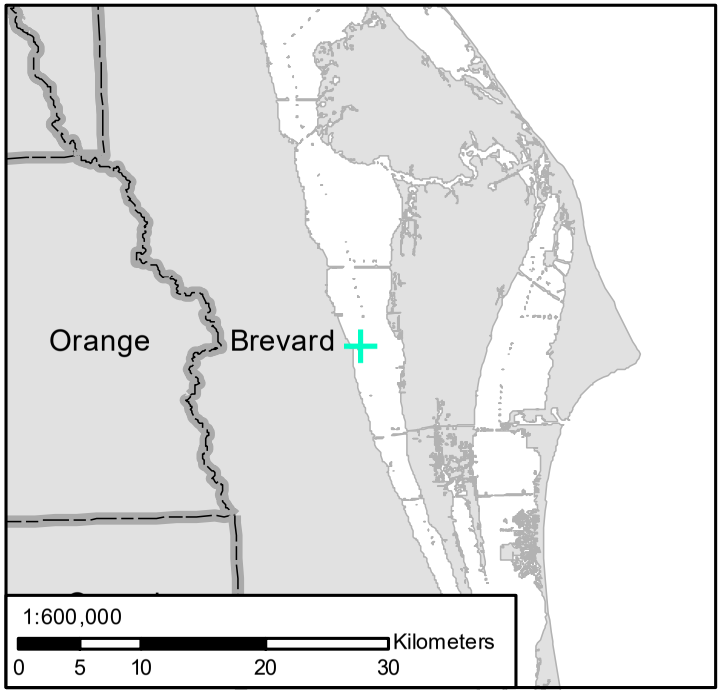

umbilicus
anus
umbilicus
male U/G
female U/G
anus
umbilicus
anus

Verified Location of Manatee Carcass MEC20012

Report Date: 1/31/2020 **Received Date:** 2/1/2020 **Received By:** FWC-WDG,CMM







Location: Cocoa, Brevard County

Latitude: 28.46908°N **Longitude:** -80.75519°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20012
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1604, 1633 **FWC District**: Northeast
Sex: Male **Length (cm)**: 284 **Estimated** _____ **Weight (kg)** N/T
Date reported: 31 January 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 01 February 2020 **By**: FWC- WDG, CMM
Date necropsied: 01 February 20: **By**: FWC- WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 710 m ENE of 101 Cottrell Avenue

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:

☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:

☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:

☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20013**
Date of Report: 2020-Feb-01
Filed By: FWC EC Field Station

FWC Case # 1646 **FWC Region:** NE

Sex: Female **Length:** 125 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-01 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Feb-01 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 28.58207 **N**

County: Brevard **Longitude:** -80.79944 **W**

Waterway: Indian River

Location description: Titusville, floating

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Natural: Cold Stress; Cobblestone-like epidermis; Bleached epidermis; Peanut-shaped head; Fetal folds; Depleted fat(s); Serous fat(s); Thick algal mat; Fluid-filled stomach; Relatively empty cecum.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal, Other (Cold stress lesions).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20013

MORPHOMETRICS:

Total length:	125 cm	**Fluke base:**	48 cm	**Girth at axillae:**	76 **cm**
Snout to anus:	81 cm	**Fluke width:**	30 cm		
Snout to U/G:	74 cm	**Girth at fluke base:**	49 cm		
Snout to umbilicus:	46 cm	**Girth at anus:**	59 cm		
Flipper width:	8 cm	**Girth at umbilicus:**	90 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.1 cm	0.2 cm		
Outer Blubber Thickness:	1 cm	0.2 cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	0.4 cm	0.2 cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20013
SPECIES *T. manatus latirostris*
RECOVERY DATE 01 February 2020
NECROPSY DATE 01 February 2020
GENDER Female **TL** 125 **cm WT** N/T **kg**
CONDITION Fresh

HISTORY 01 February 2020, at 0950 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Indian River in Titusville, Brevard County. FWC case number 1646 was assigned. The complainant, Amy (321-267-8902), stated that the manatee was against her seawall. At 0959 hrs, CMM received a photo of the carcass. CMM and FWC biologist-William D. Greer responded and located the carcass at 1030 hrs, loaded it at 1040 hrs, and transported it to the Brevard County Landfill at 1110 hrs. A field necropsy was completed at 1228 hrs. The remains were disposed of at the landfill.

EXTERNAL All of the epidermis was present. The carcass had a peanut-shaped head. The epidermis of the face and flippers was bleached. The ventral epidermis appeared cobblestone-like. There was a thick, brown algal mat on the dorsal and lateral aspects. There were transverse folds on the ventrum, several of which were bleached. Linear and irregular-shaped lesions were present on the lateral and dorsal aspects and the ventral fluke. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, serous abdominal and omental fat. There was no mesenteric fat.

STOMACH The stomach contained 100 mL of viscous, white fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 75 mL of wet, poorly chewed, leafy, brown to green ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained wet, poorly chewed, leafy, brown to green ingesta. The distal small intestine contained viscous, white fluid. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 50 mL of moist, poorly digested, fibrous, slightly leafy, green digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon contained moist, well-formed, poorly digested, fibrous, green to brown feces. The mucosa was black in the proximal colon and unremarkable in the distal colon. No parasites were observed throughout.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were blue and cut surfaces were dark red.

GALLBLADDER The gallbladder contained a scant amount of watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was no reproductive fat. The diameter of the uterus was small. No scars were

present. There were no follicles on the ovaries.

KIDNEYS There was no perirenal fat. The kidneys were tan on serosal surfaces. On cut surfaces, the cortices were tan and the medullae were dark red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable.

HEART There was no epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were white to pink on serosal surfaces and dark red on cut surfaces. The primary airways contained a small amount of frothy, clear fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Cold stress lesions
- Thick algal mat
- Peanut-shaped head
- Fetal folds
- Depleted, serous fat
- Fluid-filled stomach
- Relatively empty cecum

PROBABLE CAUSE OF DEATH Perinatal; Natural (Cold Stress)

NECROPSY CONDUCTED BY

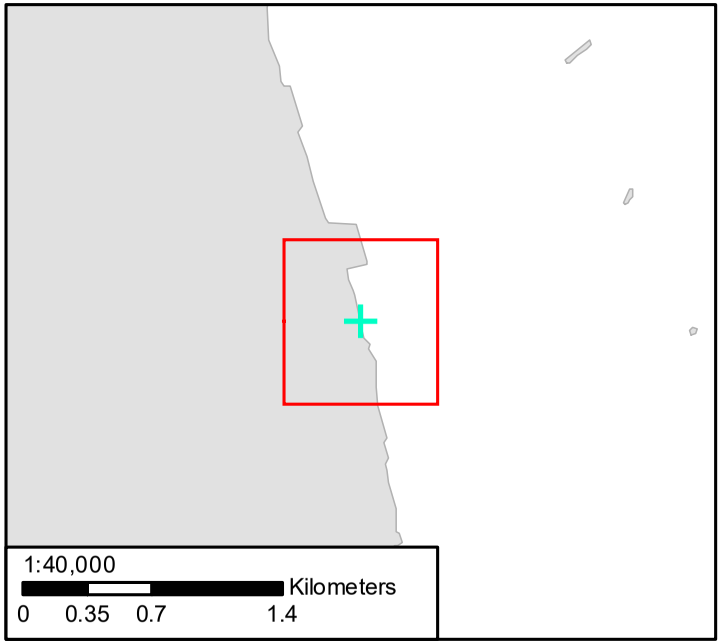
William D. Greer
Carley M. Metcalf

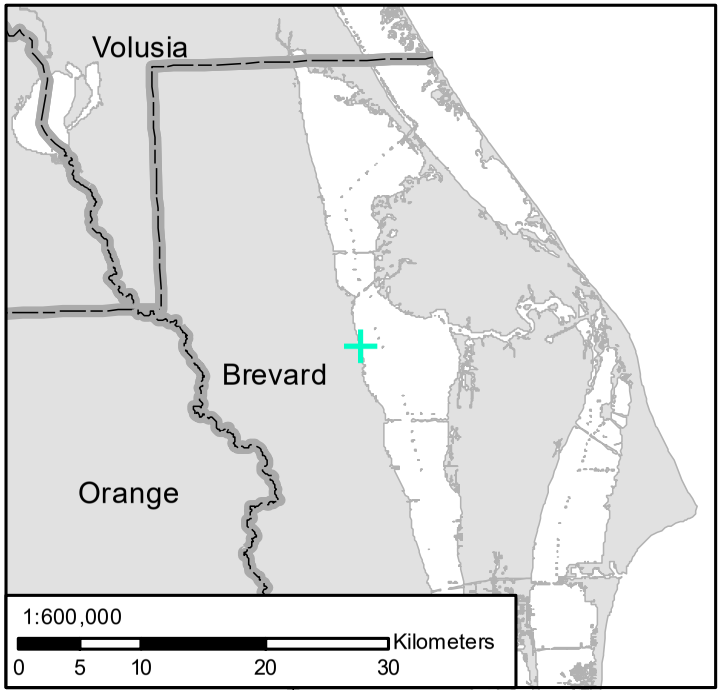
REPORT FILED BY Wappes / Greer

Verified Location of Manatee Carcass MEC20013

Report Date: 2/1/2020 **Received Date**: 2/1/2020 **Received By**: FWC-WDG,CMM







Location: Titusville, Brevard County

Latitude: 28.58207°N **Longitude**: -80.79944°W

Map Created: 3/29/2021

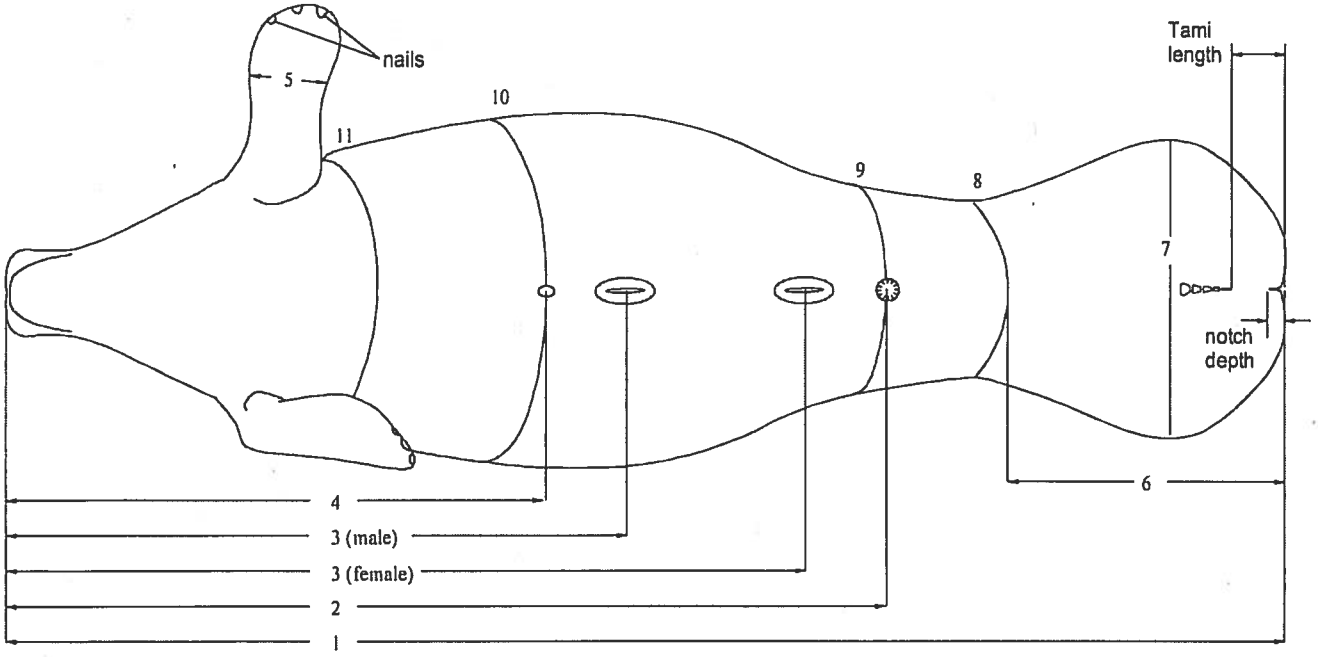
Field ID # MEC20013

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length 125 cm
2. Snout to anus -C 81 cm
3. Snout to U/G -C 74 cm
4. Snout to umbilicus -C 46 cm
5. Flipper width 8 cm
6. Fluke base 48 cm
7. Fluke width 30 cm
8. *Girth at fluke base 49 cm
9. * Girth at anus 59 cm
10. *Girth at umbilicus 90 cm
11. *Girth at axillae 76 cm

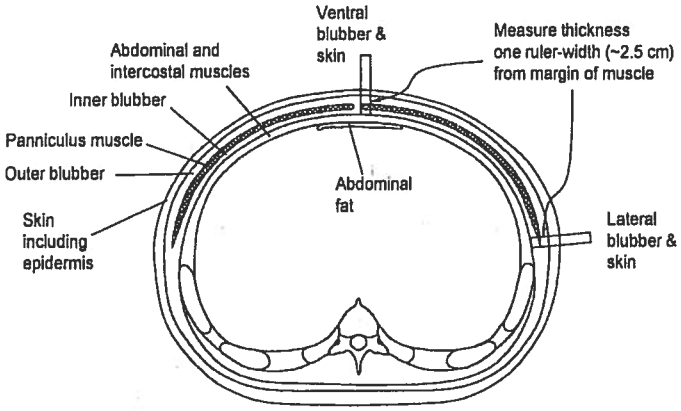
(Depth of notch _____ cm)
(Tami ln_____ cm)

(Nail count: R 3 L 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.1 cm	0.2 cm	(Epidermis _____ cm)
Outer blubber	1.0 cm	0.2 cm	(Abdominal fat _____ cm)
Inner blubber	0.4 cm	0.2 cm	



Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: Y/N L: Y/N
Placental Scaring: R / L:____x ____ x _____ cm
Pregnant: Y/N – Fetus length _____cm Fetus gender M / F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes Y / N; in epididymes Y / N Method: visual / microscope slide
Fluid in seminal vesicles Y / N; if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20013
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1646 **FWC District**: Northeast
Sex: Female **Length (cm)**: 125 **Estimated** _____ **Weight (kg)** N/T
Date reported: 01 February 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 01 February 2020 **By**: FWC- WDG, CMM
Date necropsied: 01 February 20; **By**: FWC- WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 25 m W of 2921 South Washington Avenue

Carcass Orientation: Floating

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☑ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Perinatal evaluation not preformed due to presence of epibiota on skin and vegetation in GI tract

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20014**
Date of Report: 2020-Feb-01
Filed By: FWC EC Field Station

FWC Case # 1720 **FWC Region:** NE

Sex: Female **Length:** 301 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-03 **By:** FWC-WDG

DATE NECROPSIED: 2020-Feb-03 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.20108 **N**

County: Brevard **Longitude:** -80.60315 **W**

Waterway: Berkeley Canal

Location description: Satellite Beach, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Depleted fat(s); Fractured rib(s); Hemothorax; Blood clots; Wet lung(s); Bloody eyes, nares; Remodeling rib fractures; Consolidated, adhered left lung; Fibrin in left pleural cavity; Calcified left hemidiaphragm; Relatively empty upper GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Bleached epidermis; Also FWC case numbers 1652, 1672, 1706, and 1715.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20014

MORPHOMETRICS:

Total length:	301 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20014 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 03 February 2020 **NECROPSY DATE** 03 February 2020
GENDER Female **TL** 301 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 01 February 2020, at 1148 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Berkeley Canal in Satellite Beach, Brevard County. FWC case number 1652 was assigned. The complainant, Angela Melville (954-540-6439), stated that the carcass was 10 feet long, bloated, and gray in color with spots of white. At 1159 hrs, WDG received a photo of the carcass. After necropsies of MEC20012 and MEC20013, WDG and FWC biologist-Carley M. Metcalf located the carcass at 1520 hrs. Due to the carcass size, plans were made to recover it the next day. At 1654 hrs, WDG received a text alert from Dispatch regarding the carcass. FWC case number 1672 was assigned. The complainant, Ivor Goodwin (321-544-8700), stated that the carcass was 10 feet long with its skin starting to slough. **02 February**, at 0840 hrs, FWC biologist-Sara M. Wappes (SMW) and FWC intern-Kelly L. Etherton (KLE) arrived at Berkeley Canal. SMW launched a kayak at 0845 hrs and kayaked the carcass to FWC Officer-Morgan Maslo's boat at 0930 hrs. SMW then secured an additional carcass, MEC20015, to the officer's boat. At 1026 hrs, Officer Maslo informed SMW that the rope securing the carcass had snapped during towing and she was unable to recover it due to high winds/waves. At 1057 hrs, SMW received a text alert from Dispatch regarding a dead manatee in the Banana River near the Pineda Causeway in Satellite Beach. FWC case number 1706 was assigned. The complainant, Phillip Haire (321-795-9281), stated that the manatee was floating 50 yards offshore south of the causeway. SMW and KLE drove to the Pineda Causeway but were unable to see the carcass from land. No officers were available by water. At 1321 hrs, SMW received a text alert from Dispatch regarding the carcass near Tortoise Island in the Banana River. FWC case number 1715 was assigned. The complainant, Tom (321-773-2400), stated that the carcass was ventrum-up with its flippers straight up in the air and 100 yards offshore. At 1549 hrs, SMW received a text alert from Dispatch regarding the carcass near Tortoise Island. FWC case number 1720 was assigned. The complainant, Denise Monsour (321-749-5562), stated that the carcass was floating by her dock, and she secured it to her dock at 1554 hrs. **03 February**, at 0940 hrs, WDG and KLE arrived at the Patrick Air Force Base boat ramp, launched the Key West boat, located the manatee at 1030 hrs, and towed it to a remote location on Samson's Island. A field necropsy was completed by 1230 hrs. The remains were left onsite.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. Bloody fluid exuded from the nares and mouth. The carcass was distended with gas. There were bleached spots on the remaining lateral epidermis. A minimum of nine well-healed watercraft-related scar patterns was observed on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, gassy abdominal fat. There was a small amount of omental and mesenteric fat.

STOMACH The stomach was torn due to decomposition and contained at least 50 mL of moist, poorly chewed, stringy, fibrous, brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 750 mL of watery gray fluid mixed with a small amount of moist, poorly chewed, stringy, fibrous, brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained watery, brown fluid throughout. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 1.7 L of moist, poorly digested, fibrous, stringy, brown digesta (see photo). The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained moist, well-formed, moderately digested, fibrous, stringy, brown feces. The distal colon contained moist, well-formed, well-digested, fibrous, stringy, brown feces. The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was not examined.

SPLEEN The spleen was not examined.

LIVER The liver was soft, friable and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were not examined.

KIDNEYS There was a small amount of perirenal fat. The kidney capsules were distended with gas. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was gassy.

HEART There was a small amount of gassy epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The right hemidiaphragm was intact. The left hemidiaphragm was partially calcified, distended due to fluid in the pleural cavity, and was torn due to decomposition and/or trauma. The left pleural cavity contained at least 20 L of watery dark red fluid, fibrin, and resolving blood clots. The left lung was consolidated and adhered to the parietal pleura. Serosal and cut surfaces were pink to dark red (see photos). The right lung was pink to blue on serosal surfaces and dark red and slightly wet on cut surfaces. The primary airway contained a small amount of watery, red fluid.

HEAD & NECK REGIONS NVL.

SKELETON Left ribs 7 and 8 had oblique remodeling fractures at the mid one-third (see photos). The fractures were deep to a well-healed watercraft-related scar.

OTHER

COMMENTS Some internal organs were not examined due to a potential rescue in the area.

SIGNIFICANT FINDINGS

- Bloody mouth, nares
- Depleted fat
- Remodeling rib fractures
- Chronic hemothorax with fibrin
- Resolving blood clots
- Consolidated, adhered left lung
- Wet right lung
- Calcified hemidiaphragm
- Relatively empty upper GI tract

- Bleached epidermis
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

NECROPSY CONDUCTED BY

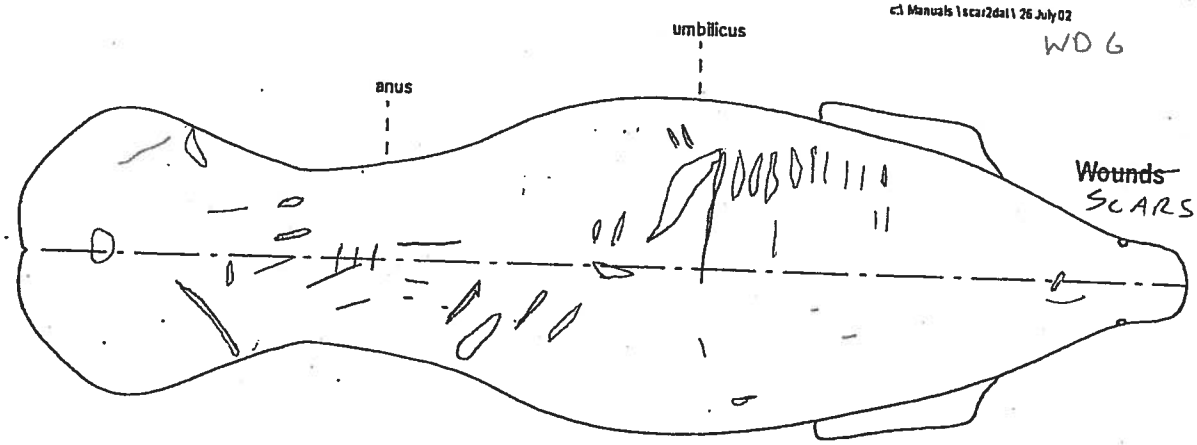
William D. Greer
Kelly L. Etherton (FWC intern)

REPORT FILED BY Greer

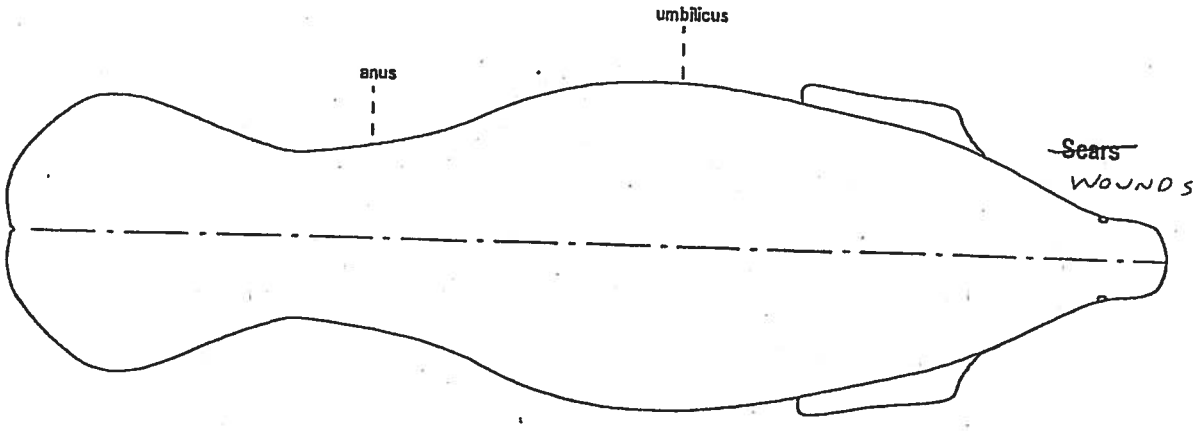
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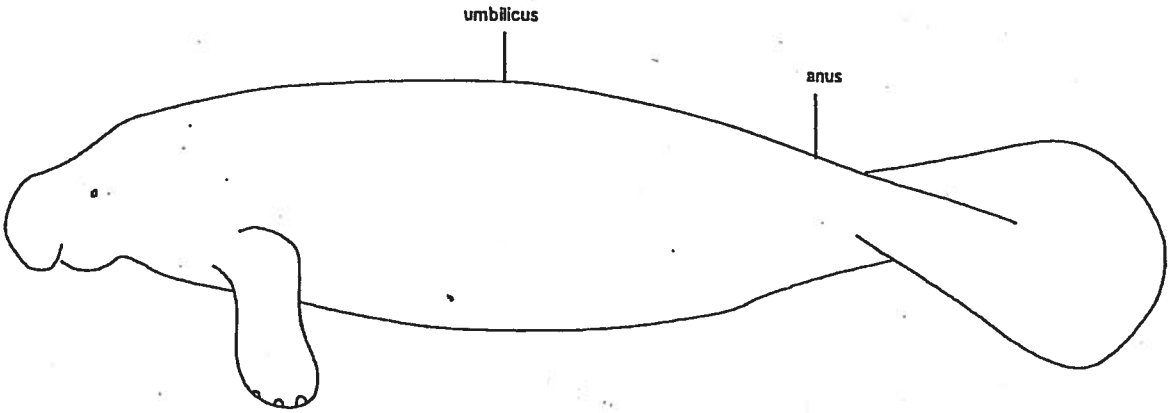
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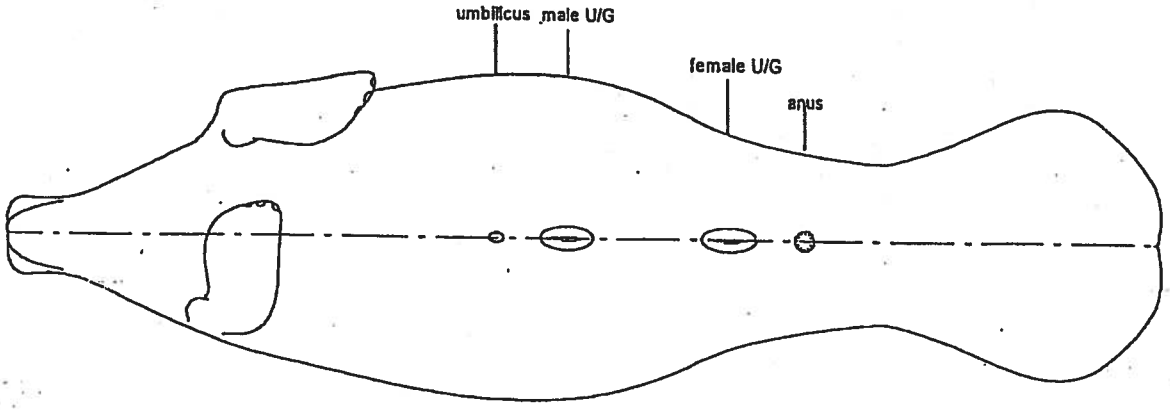


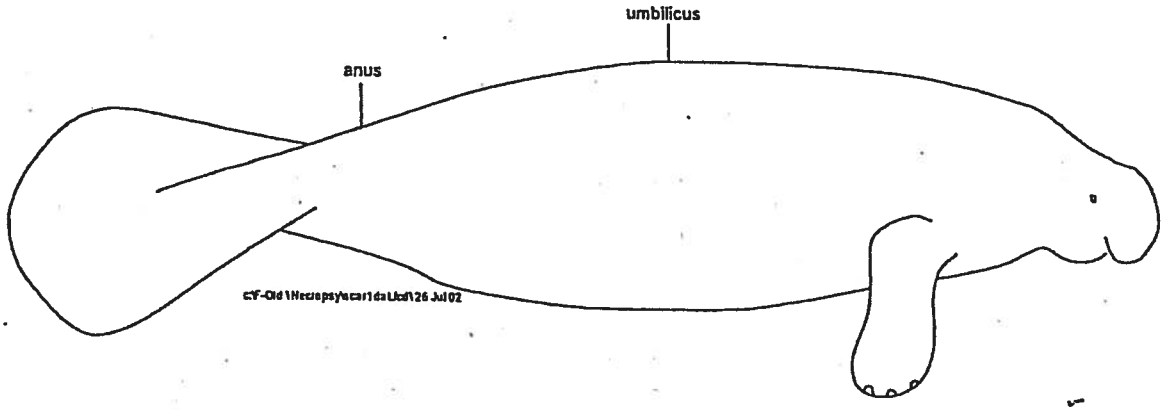
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. _____


umbilicus
anus


umbilicus
male U/G
female U/G
anus

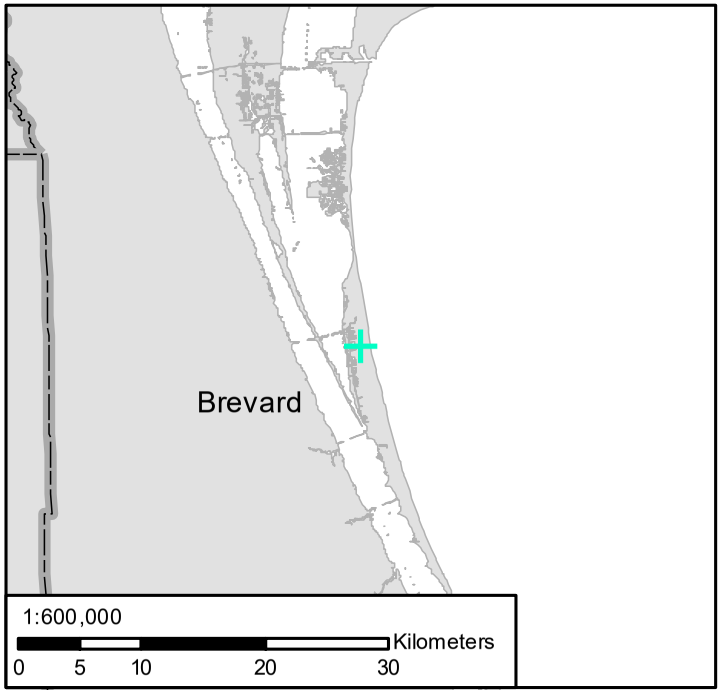

umbilicus
anus

Verified Location of Manatee Carcass MEC20014

Report Date: 2/1/2020 **Received Date**: 2/3/2020 **Received By**: FWC-WDG







Location: Satellite Beach, Brevard County

Latitude: 28.20108°N **Longitude**: -80.60315°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20014
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1652, 1672, 1 **FWC District**: Northeast
Sex: Female **Length (cm)**: 301 **Estimated** _____ **Weight (kg)** N/T
Date reported: 01 February 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 03 February 2020 **By**: FWC- WDG; FWC intern- K. Etherton
Date necropsied: 03 February 20 **By**: FWC- WDG; FWC intern- K. Etherton

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Berkeley Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 20 m SE of 308 West Arlington Street

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Chronic
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Healed wounds on left dorsum, 2 fractured ribs, 20 L of dark red fluid and resolving blood clots in body cavity and left pleural cavity, hardened hemidiaphragm, left lung adhered to body wall, mostly empty upper GI tract

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: ~~Unknown~~ NO **PREGNANT:** Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Reproductive organs were not examined due to having to leave carcass for potential rescue

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20015**
Date of Report: 2020-Feb-01
Filed By: FWC MMPL

FWC Case #

FWC Region: NE

Sex: Female **Length:** 291 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-01 **By:** Citizen to FWC-WDG

DATE COLLECTED: 2020-Feb-02 **By:** FWC-SMW

DATE NECROPSIED: 2020-Feb-03 **By:** MMPL-MdW,BLB,BDB,TDW,SMT

LOCATION:
State: FL **Latitude:** 28.20102 **N**
County: Brevard **Longitude:** -80.60313 **W**
Waterway: Berkeley Canal
Location description: Satellite Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Bleached epidermis; Depleted fat(s); Serous fat(s); Wet lung(s); Bloody nares; Asymmetric carcass; Firm, swollen right lung with mass and coated in fibrin; Lung microabscesses; Fluid, gelatinous material in airways; Fluid in pleural cavities, abdomen; Congested mesentery, parietal pleura, lung serosa; Specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Uterine Scar. Monofilament in colon. Plastic straw in stomach. Plastic string in colon.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20015

MORPHOMETRICS:

Total length:	291 cm	**Fluke base:**	83 cm	**Girth at axillae:**	**cm**
Snout to anus:	192 cm	**Fluke width:**	70 cm		
Snout to U/G:	176 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	98 cm	**Girth at anus:**	cm		
Flipper width:	17 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20015 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 02 February 2020 **NECROPSY DATE** 03 February 2020
GENDER Female **TL** 291 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 02 February 2020, at 0840 hrs, FWC biologist-Sara M. Wappes (SMW) and FWC intern-Kelly L. Etherton (KLE) arrived at Berkeley Canal to recover MEC20014. The complainant for that carcass, Angela Melville (954-540-6439), stated that she thought there were actually two dead manatees behind her house. After recovering MEC20014, SMW located MEC20015 at 0945 hrs. SMW kayaked the carcass to FWC Officer-Morgan Maslo's boat at 1045 hrs. During towing, the rope for MEC20014 broke, and the carcass was lost. Officer Maslo continued towing MEC20015 to the Lake Shepherd boat ramp arriving at 1120 hrs. SMW and KLE arrived at the boat ramp at 1140 hrs and loaded the carcasses via carcass trailer at 1158 hrs. After recovering MEC20016, SMW and KLE transported both carcasses at the MMPL arriving at 1540 hrs.

EXTERNAL Approximately 50% of the top layer of epidermis was present and sloughing. All of the deep epidermis was present. Bloody fluid exuded from the nares. The carcass was distended to the left and flattened on the right aspect. The epidermis had bleached mottling on all aspects. The flippers were bleached. There was a moderate green algal mat on sections of the remainder of the top epidermis. No watercraft-related wounds were observed. There was a minimum of eleven well-healed watercraft-related scar patterns on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal and mesenteric fat, and a small amount of gassy omental fat. The abdomen contained 5 L of watery, cloudy, dark red fluid.

STOMACH The stomach contained 4 L of moist, well-chewed, fibrous, leafy, yellow to green vegetation and a small amount of mangrove propagules. There was a 27 cm long x 0.5 cm wide red-stained clear plastic straw with a white longitudinal stripe in the contents. The mucosa was autolyzed. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum was distended with gas and contained 1 L of wet, well-chewed, fibrous, yellow to green vegetation. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The mesentery had a few patches of mild congestion. The small intestine was distended with gas. The distal and mid small intestine contained a scant amount of watery, cloudy, yellow fluid. The proximal small intestine contained a moderate amount of watery, cloudy, olive green fluid mixed with a scant amount of well-chewed, leafy, dark green vegetation and well-chewed yellow mangrove propagules. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 2.5 L of moist, well-digested, slightly fibrous, woody, green to dark green digesta. The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained a large amount of moist, moderately digested, fibrous, moderately formed, light brown to light green feces. The mid colon contained a moderate amount of moist, well-digested, slightly fibrous, stringy, moderately formed, olive green feces. The distal colon contained a small amount of moist, well-digested, pasty, well-formed, dark green feces. There were one 10 cm long piece of 6 lb test diameter clear monofilament line and one 35 cm long piece of black plastic string in the contents. The mucosa was sloughing throughout. The wall had patches of moderate congestion. No parasites were observed.

PANCREAS The pancreas was light pink to tan on serosal and cut surfaces.

SPLEEN The spleen was dark red to purple on serosal surfaces and dark red on cut surfaces.

LIVER The margins were rounded. The liver was soft and slightly friable. The serosal surfaces were pink to dark blue and the cut surfaces were dark red. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 40 mL of viscous, flocculent, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The uterus was contracted. The right horn had an almost resolved scar. The left horn had a scar with poorly defined margins. The ovaries contained numerous fluid-filled follicles (maximum diameter 0.8 cm). The right ovary was discolored red.

KIDNEYS There was a small amount of serous perirenal fat. The kidneys were firm. The serosal surfaces were mottled tan, pink, and purple. There were patches of mottled grey to dark grey tissue at the medial aspect of the cranial one-third of the left kidney. On cut surfaces, the cortices were pink to dark pink and the medullae were red to dark red. The corticomedullary boundaries were indistinct. An ELISA toxicology sample was collected.

URINARY BLADDER The bladder was empty of contents. The mucosa was unremarkable.

HEART There was a small amount of slightly serous epicardial fat. The myocardium was pale. The valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right pleural cavity contained 2 L and the left pleural cavity contained 1.25 L of watery dark red fluid. The right parietal pleura was severely congested. There were black specks on the parietal pleura of both pleural cavities. The right lung was coated with a thin layer of tan to light pink fibrin. The right lung was firm and swollen. There was an 11.5 cm diameter circular mass on the mid-dorsal aspect which contained a 5 cm diameter pocket with bloody fluid. The serosal surfaces were tan, pink, purple, red, and moderately congested, and the cut surfaces were red to dark red and had numerous microabscesses. The left lung was gassy and distended at the caudal one-third. There were several circular abscesses in the parenchyma of the dorsal aspect (maximum diameter 3.7 cm). The serosal surfaces were tan, pink, and purple, and the cut surfaces were dark pink to red and wet. The airways of both lungs contained an abundant amount of viscous, red-tinged fluid mixed with gelatinous tan material. The mucosa was pink to pale pink. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was elastic, stringy, light orange material in the left naris.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Bleached epidermis
- Asymmetric carcass
- Depleted, serous fat
- Firm, swollen right lung with mass and coated in fibrin
- Wet left lung
- Lung microabscesses

- Fluid, gelatinous material in airways
- Fluid in pleural cavities, abdomen
- Congested mesentery, parietal pleura, lung serosa
- Specks parietal pleura
- Uterine scars
- Plastic straw in stomach contents
- Plastic string, monofilament in colon contents

PROBABLE CAUSE OF DEATH Natural; Other

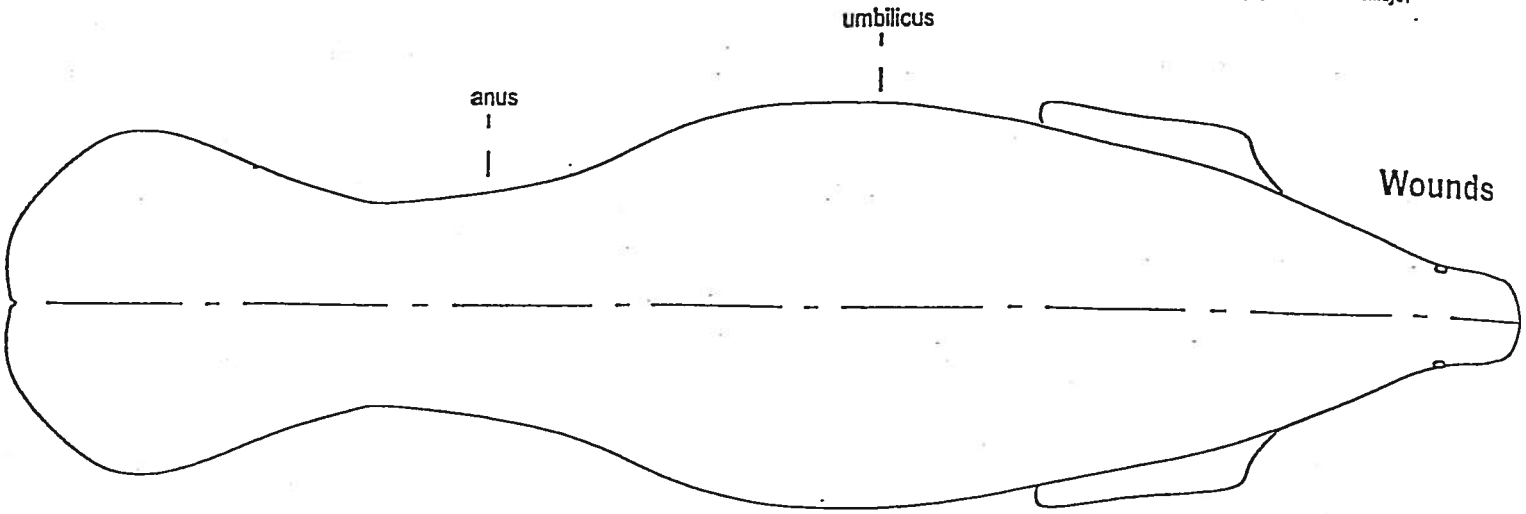
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant
Laura Burns, DVM (UF Veterinary Intern)

REPORT FILED BY de Wit

Date 03 Feb 2020 Field I.D. MEC20015

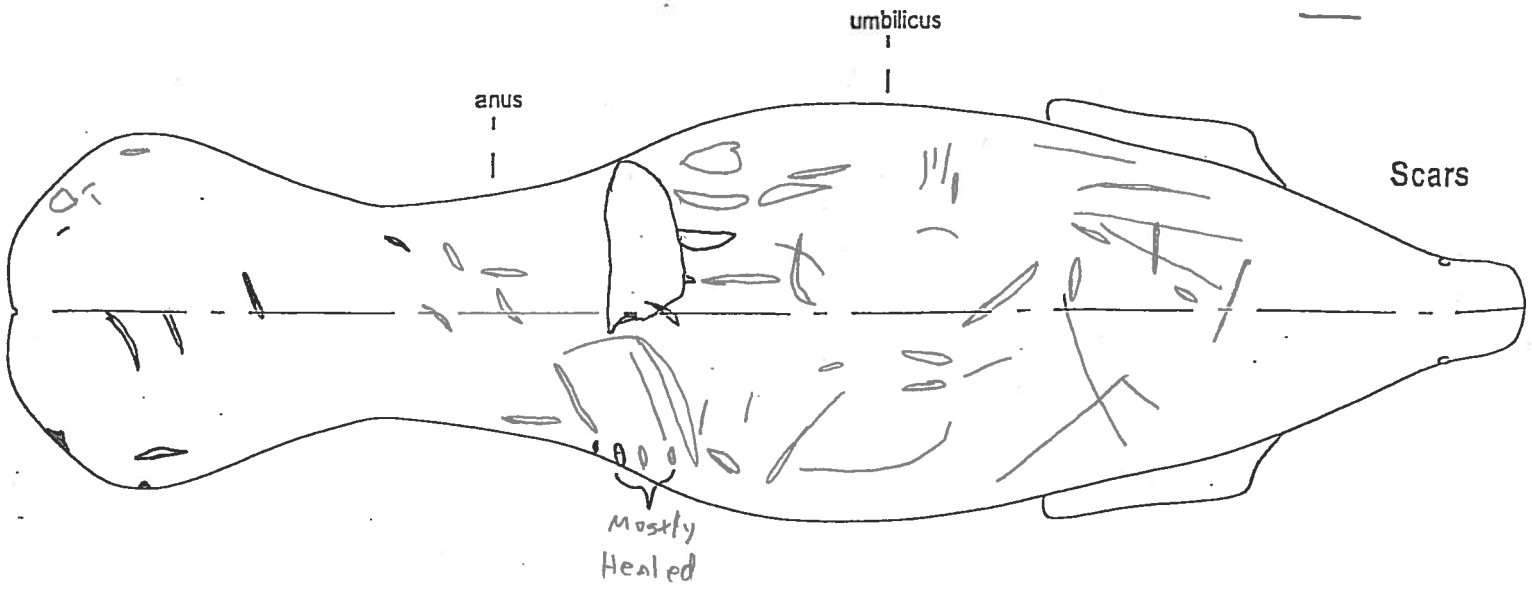
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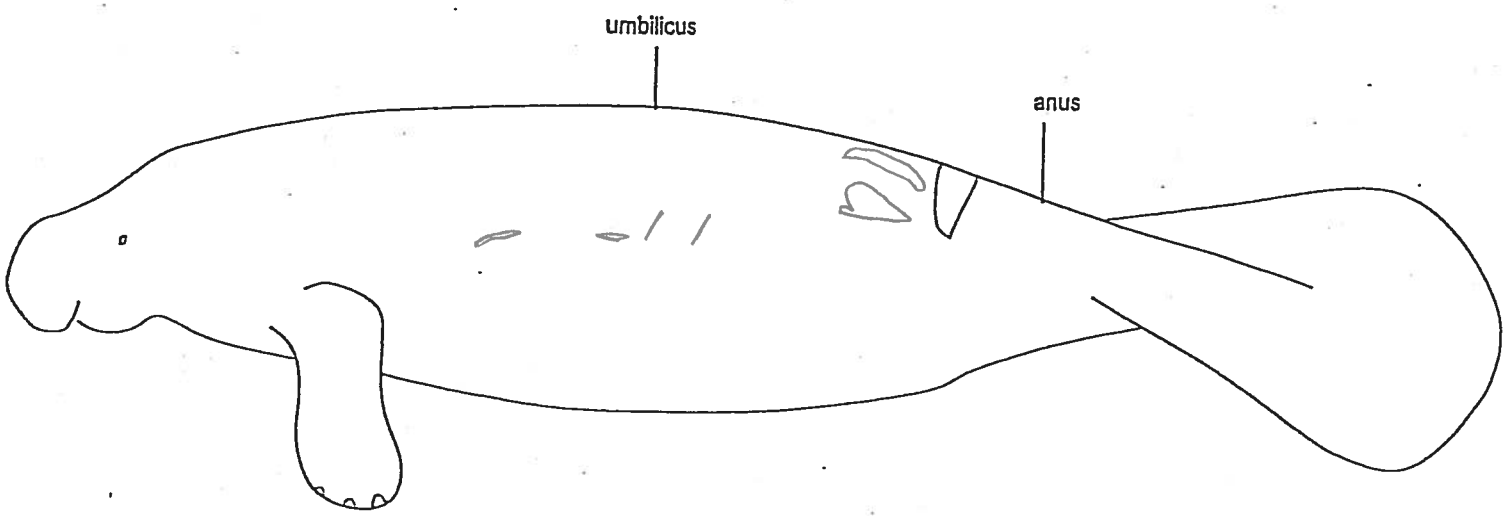
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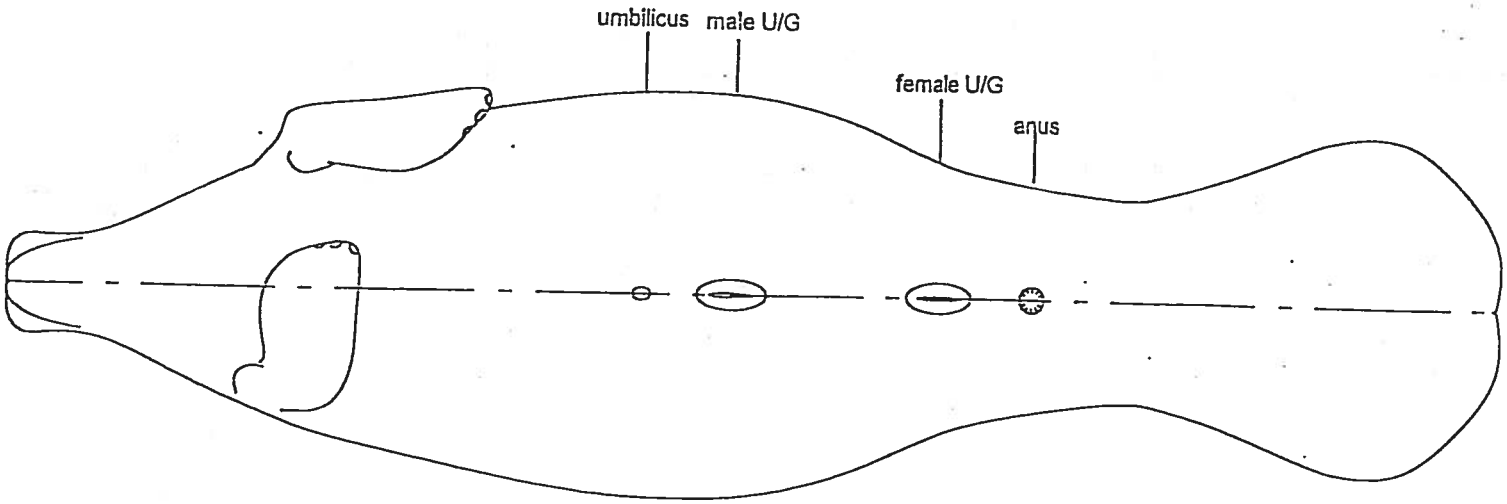
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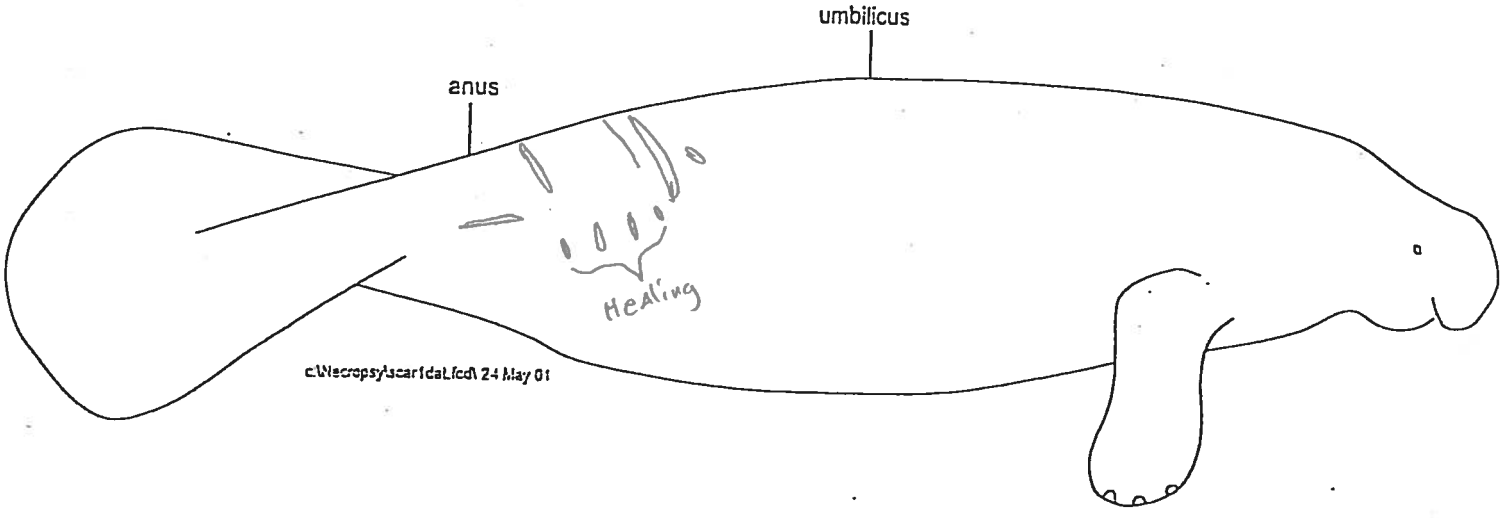
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FIELD I.D. MEC20015

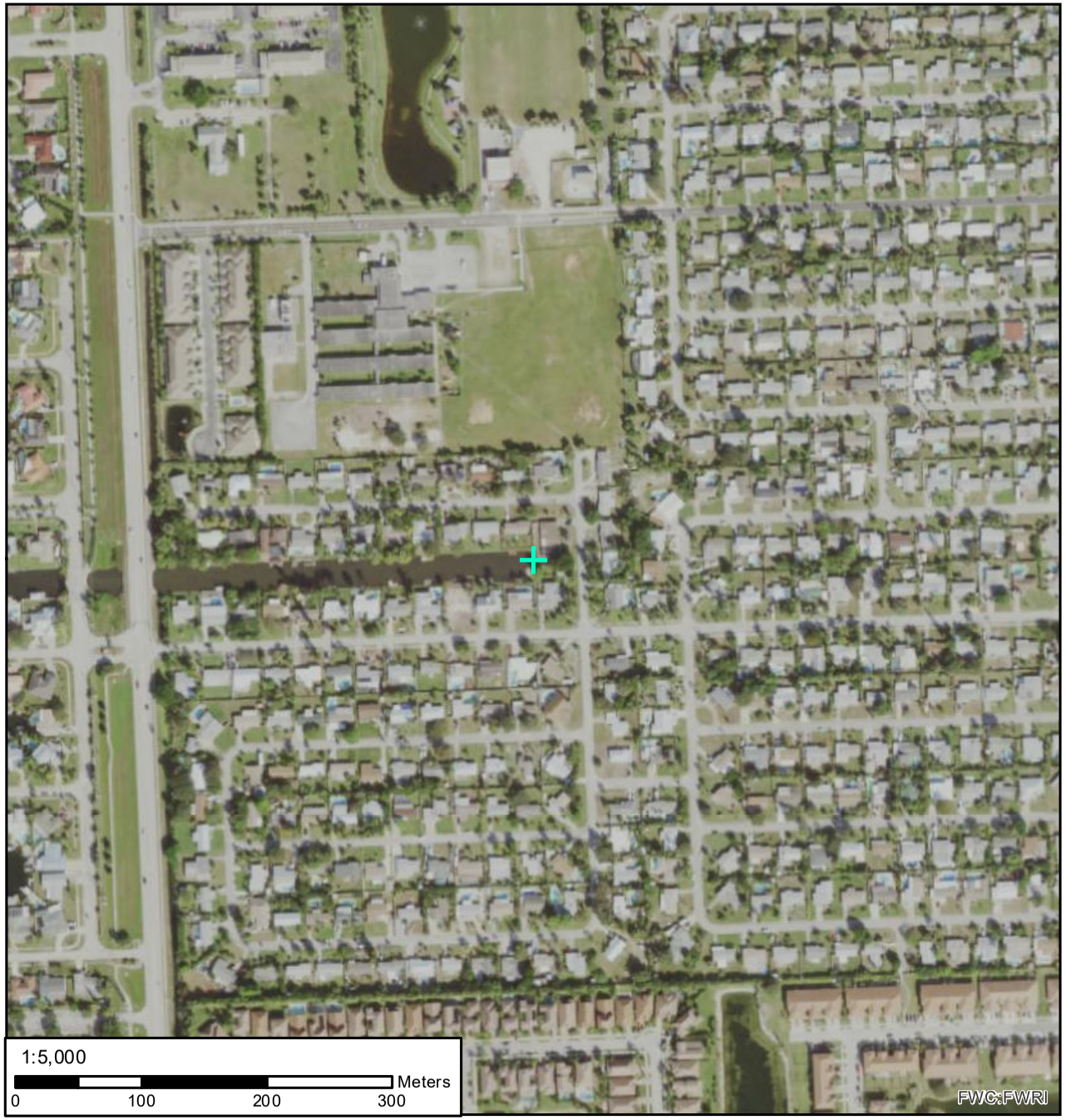




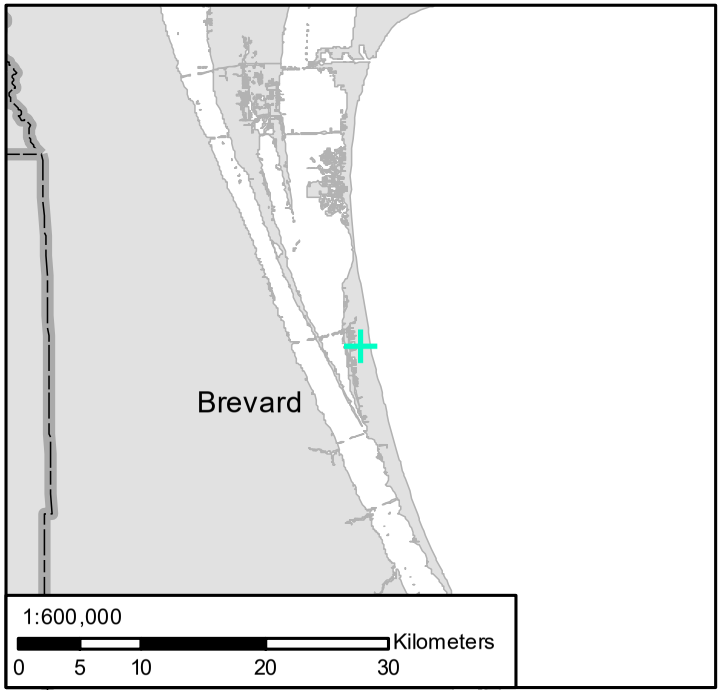


Verified Location of Manatee Carcass MEC20015

Report Date: 2/1/2020 **Received Date**: 2/2/2020 **Received By**: FWC-SMW







Location: Satellite Beach, Brevard County

Latitude: 28.20102°N **Longitude**: -80.60313°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20015
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A FWC District: NEL
Sex: M / F / Undetermined Length: 291 cm (estimated _____) Weight _____ kg.
Date reported: 2Feb 2020 By: Angela Melville
Date collected: 2Feb2020 By: Saya Wappes, Kelly Etherton
Date necropsied: 3FEB2020 By: MMPL - MdW, BLB, BDB, TDW, SMT

LOCATION: State: FL (✓) County: Brevard Waterway: Berkley canal
Latitude: _____ N Longitude: _____ W
Locality description: Satellite Beach

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other Stomach contents in alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach - Liver - Lung - Urine - Kidney (if no urine) – Other _____
Genetics Box # 95
Female reproductive findings or **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

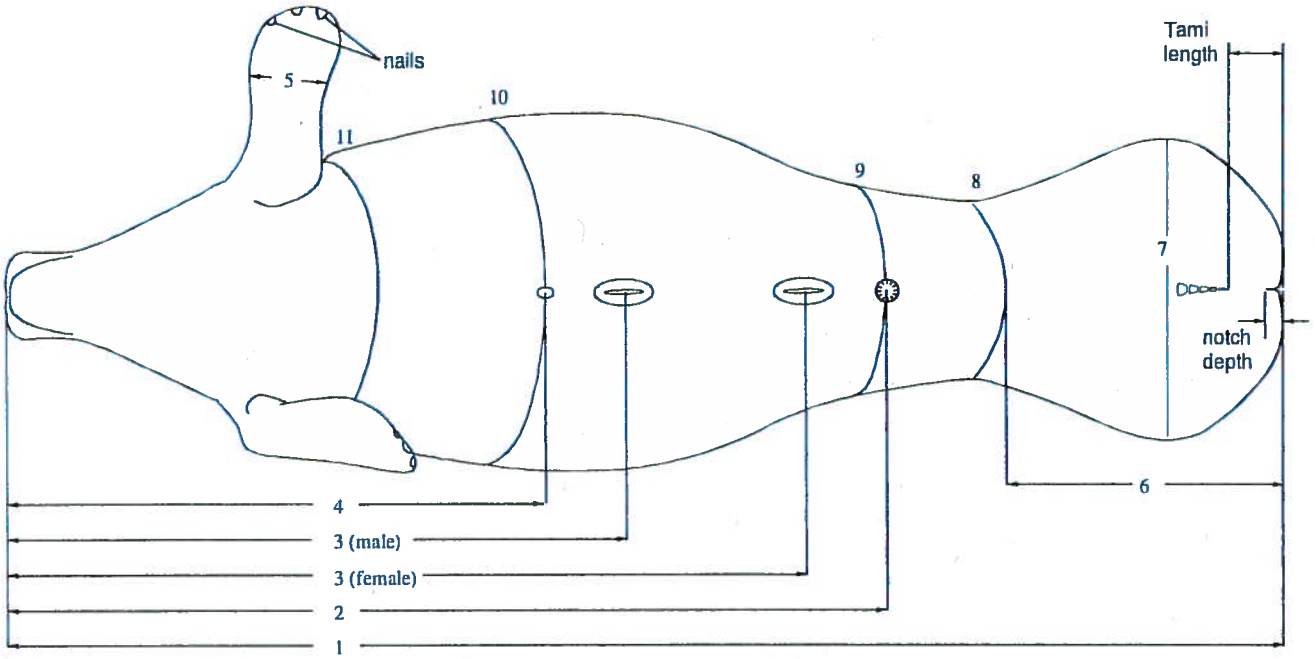
REMARKS: _____

Field ID # MEc20015

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

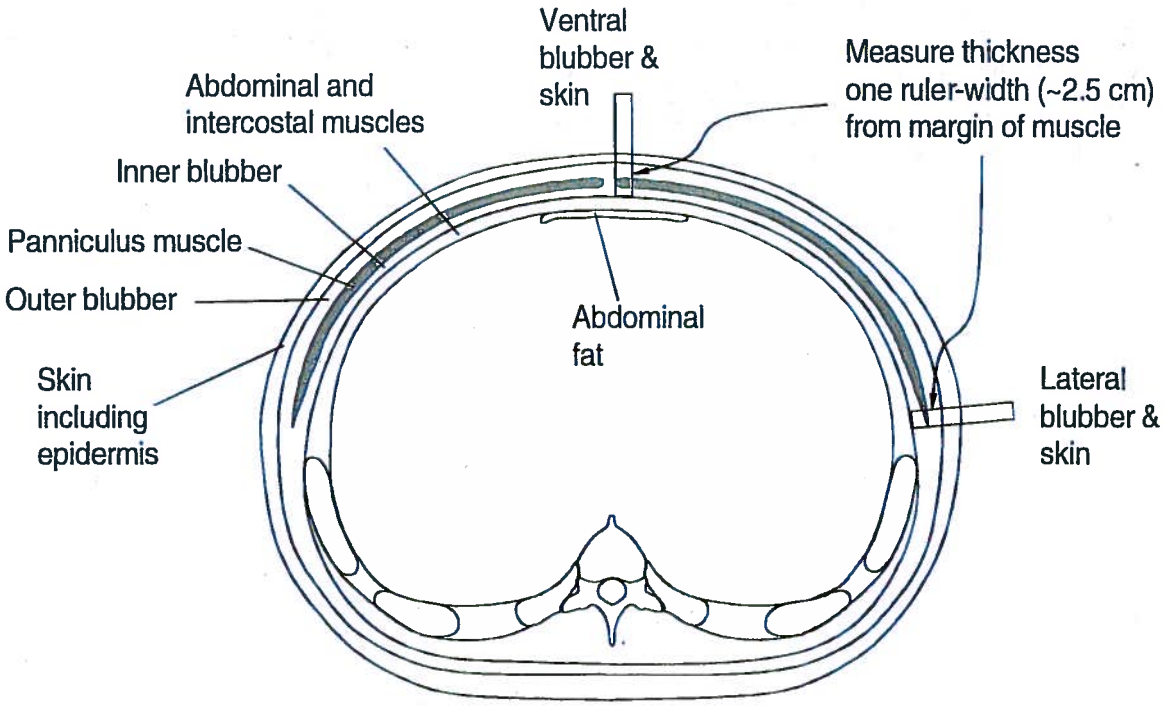
1. Total length 291 cm
2. Snout to anus -C 192 cm
3. Snout to U/G -C 176 cm
4. Snout to umbilicus -C 98 cm
5. Flipper width 17 cm
6. Fluke base 83 cm
7. Fluke width 70 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm

(Nail count: L 3 R 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20015
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 01 February 2020 **By**: Citizen to FWC- WDG
Date collected: 02 February 2020 **By**: FWC- SMW, FWC Intern- K. Etherton
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Berkeley Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 25 m SW of 710 Third Avenue

Carcass Orientation: Floating

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20016**
Date of Report: 2020-Feb-02
Filed By: FWC MMPL

FWC Case # 1701 **FWC Region:** NE

Sex: Female **Length:** 137 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-02 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-02 **By:** FWC-SMW

DATE NECROPSIED: 2020-Feb-03 **By:** MMPL-MdW,BDB,SMT

LOCATION: **State:** FL **Latitude:** 28.44816 **N**

County: Brevard **Longitude:** -80.76031 **W**

Waterway: Indian River

Location description: Cocoa, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Natural: Cold Stress; Bleached epidermis; Thickened epidermis; Depleted fat(s); Serous fat(s); Bloody nares; Fibrin in pleural cavities; Dark brown ascites; Empty duodenum; Relatively empty colon; Enlarged spleen; Vegetation in mouth, nares.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Perinatal evaluation performed.

REMARKS:

PIT tag scan negative. Twine in stomach. Rubber band in stomach. Macroalgae in small intestine.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20016

MORPHOMETRICS:

Total length:	137 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Umbilical arteries probe patent and closed at the umbilicus. Right umbilical artery contained blood clots. Urachus closed at bladder tip.

Ductus Arteriosis Diameter: 0.8 cm

Left Pulmonary Artery Diameter: 1.5 cm

Right Pulmonary Artery Diameter: 1.6 cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20016 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 02 February 2020 **NECROPSY DATE** 03 February 2020
GENDER Female **TL** 137 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 02 February 2020, at 0858 hrs, FWC intern-Kelly L. Etherton (KLE) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Indian River in Cocoa, Brevard County. FWC case number 1701 was assigned. The complainant, John Ferry (954-295-1945), stated that the carcass was three feet long, and mostly grey in color. After recovering MEC20015, SMW and KLE arrived at the carcass at 1250 hrs, loaded it at 1315 hrs, and transported both carcasses to the MMPL arriving at 1540 hrs.

EXTERNAL Almost all of the epidermis was present and sloughing. Bloody fluid exuded from the nares. The epidermis was bleached on the face, flippers, fluke margin, and ventral fluke. The epidermis was thickened on the dorsal and ventral aspects. There was a thin brown algal mat on the dorsal aspect. There was a mild infestation of barnacles. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant serous abdominal, mesenteric, and omental fat. The abdomen contained 25 mL of cloudy, dark brown fluid.

STOMACH The stomach contained 500 mL of moist, well-chewed, slightly fibrous, leafy, dark green to brown vegetation. There were one 10 cm long piece of tan twine and one 12 cm long piece of green rubber band in the contents. The mucosa was sloughing. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum was empty of contents. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a scant amount of moist, well-chewed, slightly stringy, light and dark green macroalgae. The mucosa was sloughing. No parasites were grossly observed.

CECUM The cecum contained 100 mL of wet, well-digested, pasty, homogeneous, dark green digesta. The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained a small amount of moist, well-digested, pasty, poorly formed, green to dark green feces. The distal colon contained a small amount of moist, well-digested, slightly stringy, firm, well-formed, green to dark green feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was red on serosal and cut surfaces.

SPLEEN The spleen was large (5.5 x 4.0 x 1.0 cm). The serosal surfaces were mottled purple and grey and the cut surfaces were dark red.

LIVER The liver was soft, friable, and autolyzed. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained a scant amount of flocculent, brown bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant serous reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was a scant amount of serous perirenal fat. The kidneys were pink on serosal surfaces. On cut

surfaces, the cortices were pink and the medullae were dark red to purple. The corticomedullary boundaries were distinct.

URINARY BLADDER The bladder contained 50 mL of watery red urine. The mucosa was tan and had black specks. The urachus was closed at the bladder tip. An ELISA toxicology sample was collected.

HEART There was scant serous epicardial fat. Valves and chambers were unremarkable. The flat diameter of the ductus arteriosus measured 0.8 cm, that of the right pulmonary artery measured 1.6 cm, and that of the left pulmonary artery measured 1.5 cm.

RESPIRATORY SYSTEM The left hemidiaphragm was intact and the right was torn due to decomposition. The left pleural cavity contained 15 mL of watery, dark red fluid. The lungs were twisted around the longitudinal axis at the caudal one-third. The cranial one-third of each lung was coated with a small amount of stringy, tan fibrin. The serosal surfaces of both lungs were mottled pink and purple and the cut surfaces were purple. The airways contained a scant amount of red fluid. The mucosa was pink. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The mouth contained a scant amount of well-chewed green vegetation. The nares contained a scant amount of woody tan vegetation.

SKELETON Ribs were subluxated due to decomposition.

OTHER The umbilical arteries were probe patent and closed at the umbilicus. The right umbilical artery contained blood clots.

COMMENTS The carcass was recovered several days after severe cold weather.

SIGNIFICANT FINDINGS

- Bleached, thickened epidermis
- Bloody nares
- Depleted, serous fat
- Dark brown ascites
- Fibrin in pleural cavities
- Empty duodenum
- Relatively empty colon
- Enlarged spleen
- Vegetation in mouth, nares
- Macroalgae in small intestine
- Twine, rubber band in stomach contents

PROBABLE CAUSE OF DEATH Perinatal; Natural (Cold Stress)

NECROPSY CONDUCTED BY

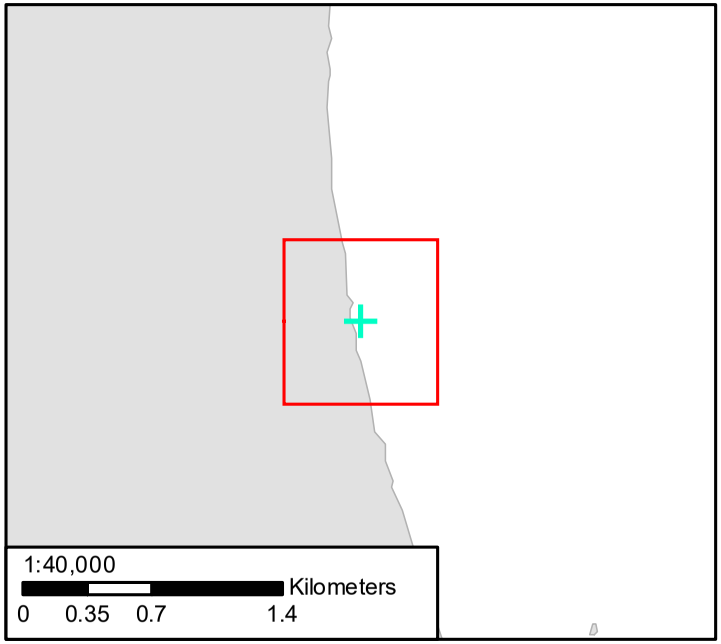
Martine de Wit, DVM
Brittany D. Barbeau
Sean M. Tennant
Laura Burns, DVM (UF Veterinary Intern)

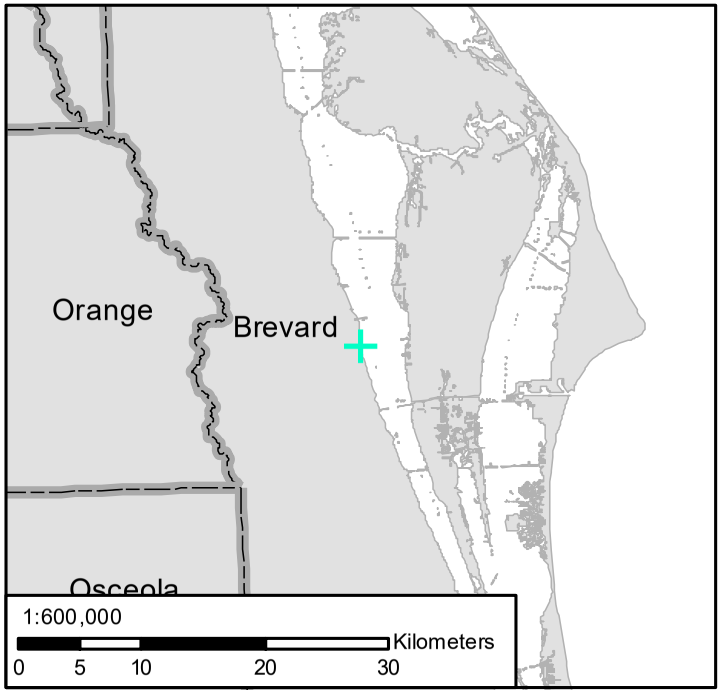
REPORT FILED BY de Wit

Verified Location of Manatee Carcass MEC20016

Report Date: 2/2/2020 **Received Date**: 2/2/2020 **Received By**: FWC-SMW







Location: Cocoa, Brevard County

Latitude: 28.44816°N **Longitude**: -80.76031°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MFC20016
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1701 FWC District: NE
Sex: M / (F) / Undetermined Length: 137 cm (estimated _____) Weight N/T kg.
Date reported: 2 Feb 2020 By: John Ferry → FWC Dispatch - Orlando
Date collected: 2 Feb 2020 By: Sara Wappes, Kelly Etherton
Date necropsied: 3 Feb '20 By: MMPL MDW BDB SMT

LOCATION: State: FL (✓) County: Brevard Waterway: Indian River
Latitude: _____ N Longitude: _____ W
Locality description: 4660 Brentwood Dr. Cocoa, FL

CONDITION: - Fresh - Moderate - (Bad) - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm) Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics - Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other Stomach contents in alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other _____
Genetics Box # 410

Female reproductive findings or **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No – UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

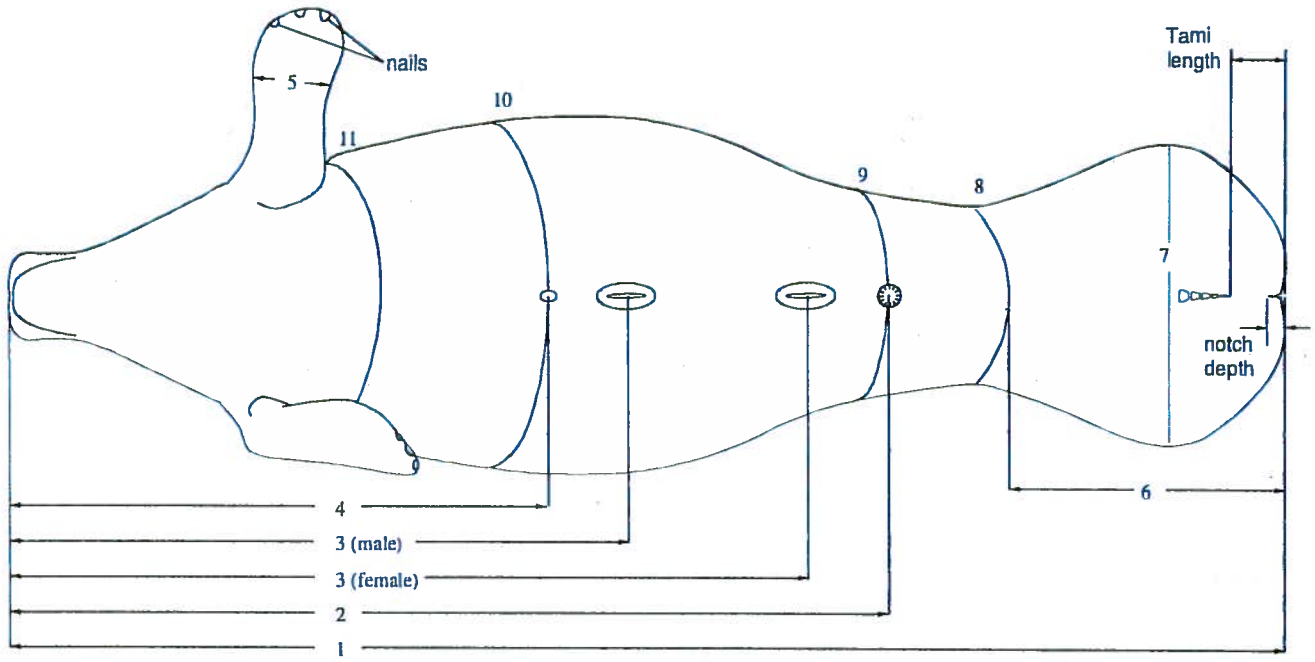
REMARKS: _____

Field ID #_____

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

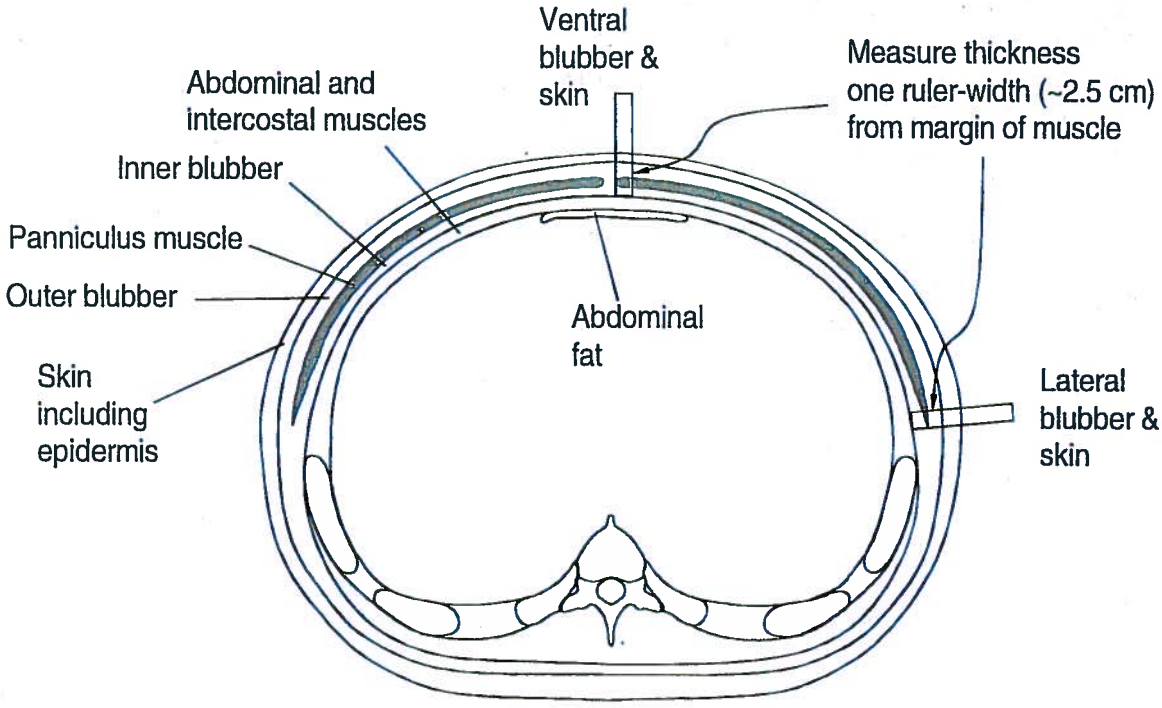
1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C _____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8. *Girth at fluke base _____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae _____ cm

(Nail count: L___R___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20016
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1701 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 02 February 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 02 February 2020 **By**: FWC- SMW; FWC Intern- K. Etherton
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 110 m SE of 4680 Brentwood Drive
Carcass Orientation: Floating

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20017**
Date of Report: 2020-Feb-04
Filed By: FWC EC Field Station

FWC Case # 1855 **FWC Region:** NE

Sex: Female **Length:** 185 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-04 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Feb-04 **By:** FWC-WDG
DATE NECROPSIED: 2020-Feb-05 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.12968 **N**
County: Brevard **Longitude:** -80.59248 **W**
Waterway: Indian River
Location description: Indialantic, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Cobblestone-like epidermis; Depleted fat(s); Serous fat(s); Crumbly feces; Dry feces.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Cleft flipper. A field necropsy was performed. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20017

MORPHOMETRICS:

Total length:	185 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20017
SPECIES *T. manatus latirostris*
RECOVERY DATE 04 February 2020
NECROPSY DATE 05 February 2020
GENDER Female **TL** 185 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 04 February 2020, at 1444 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at 312 Sand Pine Road in the Indian River in Indialantic, Brevard County. FWC case number 1855 was assigned. The complainant, Amanda Gonnella (321-693-0906), stated that the manatee was gray in color and stuck in the rocks. WDG received a photo verifying the carcass at 1149 hrs, arrived at the reported location at 1513 hrs, and secured the carcass to a nearby private boat ramp at 1530 hrs. The carcass was loaded by 1550 hrs via ANT Lift and transported to the EC Field Station. **05 February**, a field necropsy was completed by 1200 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. Patches of eroded dermis were present on the lateral aspects. A small amount of watery, red fluid exuded from the nares. There was cobblestone-like epidermis on the flippers and ventral aspect. The epidermis on the flippers and axillae was bleached. There was a thin brown algal mat on the lateral aspects. A mild infestation of barnacles was present on the ventral aspect. The left flipper was slightly cleft (see photo). No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, serous abdominal and omental fat. There was no mesenteric fat.

STOMACH The stomach contained 250 mL of moist, moderately chewed, stringy, fibrous, orange to brown ingesta. The ingesta were coated with a thin layer of viscous white mucus (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 100 mL of moist, moderately chewed, stringy, fibrous, red to brown ingesta mixed with red and yellow macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous black fluid. Sections of the mid and distal small intestine contained moist, moderately formed, moderately chewed, stringy, yellow to brown ingesta. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 400 mL of moist, moderately digested, stringy, yellow to brown digesta mixed with yellow macroalgae (see photo). The mucosa was gray and sloughing. No parasites were observed.

COLON The proximal and mid colon contained moist, well-formed, moderately digested, stringy, yellow to brown feces. The mucosa was black and sloughing. The distal colon contained dry, crumbly, poorly formed, slightly fibrous, brown to black feces (see photo). The mucosa was unremarkable. No parasites were observed throughout.

PANCREAS The pancreas was tan to pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and red to black on cut surfaces.

LIVER The liver was soft and friable. Serosal surfaces were blue to black and cut surfaces were brown to black.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained orange to brown.

REPRODUCTIVE There was scant reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was no perirenal fat. The kidneys were soft and friable. Serosal surfaces were brown to red. On cut surfaces, the cortices were brown and the medullae were pink. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was gassy.

HEART There was scant, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft and friable. Serosal surfaces were mottled pink, green, and black, and cut surfaces were light pink to dark pink. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Depleted, serous fat
- Dry, crumbly feces
- Cleft flipper
- Macroalgae in GI tract

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

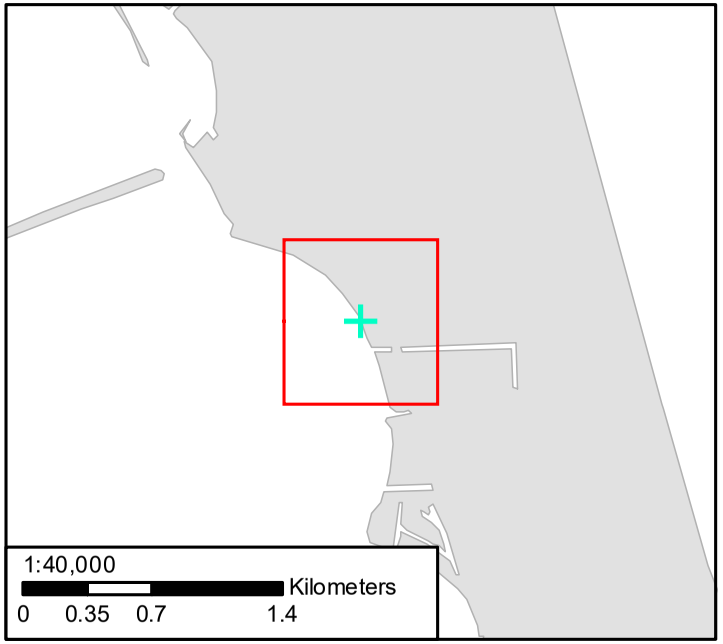
Sara M. Wappes
Carley M. Metcalf

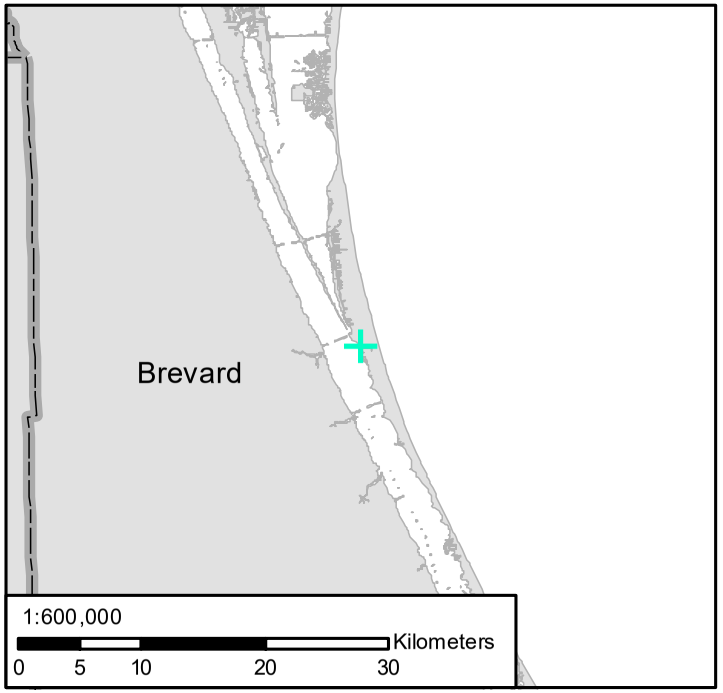
REPORT FILED BY Etherton / Wappes

Verified Location of Manatee Carcass MEC20017

Report Date: 2/4/2020 **Received Date**: 2/4/2020 **Received By**: FWC-WDG







Location: Indialantic, Brevard County

Latitude: 28.12968°N **Longitude**: -80.59248°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20017
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1855 **FWC District**: Northeast
Sex: Female **Length (cm)**: 185 **Estimated** _____ **Weight (kg)** _____
Date reported: 04 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 04 February 2020 **By**: FWC-WDG
Date necropsied: 05 February 20 **By**: FWC-SMW, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Indialantic, approximately 30 m NW of 312 Sand Pine Road

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: cobblestone-like epidermis, bleached epidermis on flippers, scant, serous fats, dry and crumbly feces

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20018**
Date of Report: 2020-Feb-05
Filed By: FWC EC Field Station

FWC Case # 1898 **FWC Region:** NE

Sex: Male **Length:** 204 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-05 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-05 **By:** FWC-SMW,CMM

DATE NECROPSIED: 2020-Feb-05 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.20622 **N**
County: Brevard **Longitude:** -80.613 **W**
Waterway: Grand Canal
Location description: Satellite Beach, floating

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Bleached epidermis; Abscess(es); Depleted fat(s); Serous fat(s); Healing cold stress lesions; Microabscesses in lung; Fluid, fibrin in pleural cavity; Fluid in abdominal cavity; Congested mesenteries, GI serosa, abdominal fat, peritoneum, parietal pleura, hemidiaphragms; Ecchymoses parietal pleura, peritoneum; Fluid, froth in airways; Black specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Abscess).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in stomach. Also FWC case number 1893. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20018

MORPHOMETRICS:

Total length:	204 cm	**Fluke base:**	58 cm	**Girth at axillae:**	115 **cm**
Snout to anus:	133 cm	**Fluke width:**	54 cm		
Snout to U/G:	89 cm	**Girth at fluke base:**	85 cm		
Snout to umbilicus:	75 cm	**Girth at anus:**	96 cm		
Flipper width:	cm	**Girth at umbilicus:**	152 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.8 cm	1.9 cm		
Outer Blubber Thickness:	1.3 cm	0.8 cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	0.1 cm	0.7 cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20018
SPECIES *T. manatus latirostris*
RECOVERY DATE 05 February 2020
NECROPSY DATE 05 February 2020
GENDER Male **TL** 204 **cm WT** N/T **kg**
CONDITION Fresh

HISTORY 05 February 2020, at 1142 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Grand Canal in Satellite Beach, Brevard County. FWC case number 1893 was assigned. The complainant, Kayleigh Douglass (321-514-1171), stated that the carcass was belly-up, not moving, and small. At 1210 hrs, CMM requested FWC LE assistance to verify and tow the carcass. At 1305 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding two dead manatees in the Grand Canal in Satellite Beach, Brevard County. FWC case number 1898 was assigned. The complainant, Tarita (321-614-5662), stated that she had seen one adult carcass float by earlier in the day, and the present carcass floating by was a juvenile. FWC Officer-Brandon Kearney and FWC Lieutenant-Dustin Lightsey were already en route to verify the carcasses. Officer Kearney and Lt. Lightsey located the juvenile carcass at 1345 hrs and secured it to the Pineda Causeway kayak launch at 1404 hrs. The officers searched the area and were unable to locate a second carcass. SMW and CMM arrived at the kayak launch at 1450 hrs, loaded the carcass via ANT Lift at 1505 hrs, and transported it to the Brevard County Landfill at 1540 hrs. A field necropsy was completed by 1700 hrs. The remains were disposed of at the landfill.

EXTERNAL Almost all of the epidermis was present. A small amount of viscous, red fluid exuded from the nares. The epidermis of the face and fluke margin was bleached. There was a moderate brown algal mat on the lateral aspects. A few small lesions were observed on all aspects. Healing linear lesions were present on the right lateral aspect. There was light yellow purulent material deep to one lesion (see photos) on the ventrum, and another lesion exuded viscous, pink to orange fluid (see photo). A minimum of one well-healed watercraft-related scar pattern was observed on the caudal dorsal aspect. No watercraft-related wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of bright yellow abdominal fat and a small amount of omental and mesenteric fat. The peritoneum and abdominal fat were severely congested. There were a also few ecchymoses in the peritoneum (see photos). The abdominal cavity contained 400 mL of watery, red fluid.

STOMACH The stomach contained 3.7 L of moist, well-chewed, stringy, orange to brown ingesta mixed with red macroalgae (see photo). There was a 3.2 m long piece of >10 lb test diameter clear monofilament line in the contents. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 400 mL of wet, moderately chewed, leafy, fibrous, orange to brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery and small intestine serosa was severely congested (see photo). The proximal small intestine contained watery, tan fluid mixed with a small amount of fibrous pieces and red macroalgae. The mid small intestine was empty of contents. The distal small intestine contained very moist, poorly formed, moderately chewed, leafy, fibrous, yellow to green and brown ingesta. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 1.2 L of moist, moderately digested, leafy, fibrous, yellow to brown digesta (see photo). The mucosa was sloughing. No parasites were observed.

COLON The mesentery and colon serosa were severely congested. The proximal colon contained moist, moderately formed, poorly digested, stringy, fibrous, yellow to brown feces. The mid colon contained moist,

moderately formed, moderately digested, stringy, brown feces. The distal colon contained moist, well-formed, well-digested, homogeneous, dark brown feces. The mucosa of the proximal and mid colon was sloughing. The mucosa of the distal colon was black and sloughing (see photo). No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled white and black on serosal surfaces, and dark red to black on cut surfaces.

LIVER The margins of the liver were rounded. The liver was mostly firm. Serosal and cut surfaces were pink to dark blue and black.

GALLBLADDER The gallbladder contained 50 mL of viscous, yellow to orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant reproductive fat. The seminal vesicles and testes were small. There was no fluid on cut surfaces of the seminal vesicles.

KIDNEYS There was scant perirenal fat. The kidneys were pink to brown on serosal surfaces. On cut surfaces of the right kidney, the cortices were tan to light brown and the medullae were pink. On cut surfaces of the left kidney, the cortices were brown and the medullae were pink. The corticomedullary boundaries were distinct in the right kidney and mostly distinct in the left kidney.

URINARY BLADDER The urinary bladder was contracted and empty of contents. The mucosa was unremarkable.

HEART There was scant, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right hemidiaphragm and parietal pleura were severely congested (see photos). The left parietal pleura was moderately congested and had ecchymoses. A few black specks were observed on the parietal pleura. The right pleural cavity contained an abundant amount of dark red fluid and stringy, yellow fibrin. The right lung was firm. Serosal surfaces were white to pink and cut surfaces were pink. Cut surfaces of the caudal half of the right lung contained numerous microabscesses (see photo). The primary airway contained an abundant amount of viscous, red fluid (see photo). The left lung was light pink to dark pink on serosal surfaces and red on cut surfaces (see photo). The primary airway contained a small amount of watery, red fluid.

HEAD & NECK REGIONS There was a moderate amount of froth and viscous, red fluid in the trachea.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bleached epidermis
- Healing cold stress lesions
- Abscesses
- Depleted, serous fat
- Froth, fluid in airways

- Firm right lung with microabscesses
- Fluid, fibrin in right pleural cavity
- Fluid in abdominal cavity
- Congested peritoneum, abdominal fat, mesenteries, GI serosa, parietal pleura, hemidiaphragms
- Ecchymoses peritoneum, parietal pleura
- Black specks parietal pleura
- Macroalgae in GI tract
- Monofilament in stomach contents

PROBABLE CAUSE OF DEATH Natural; Other

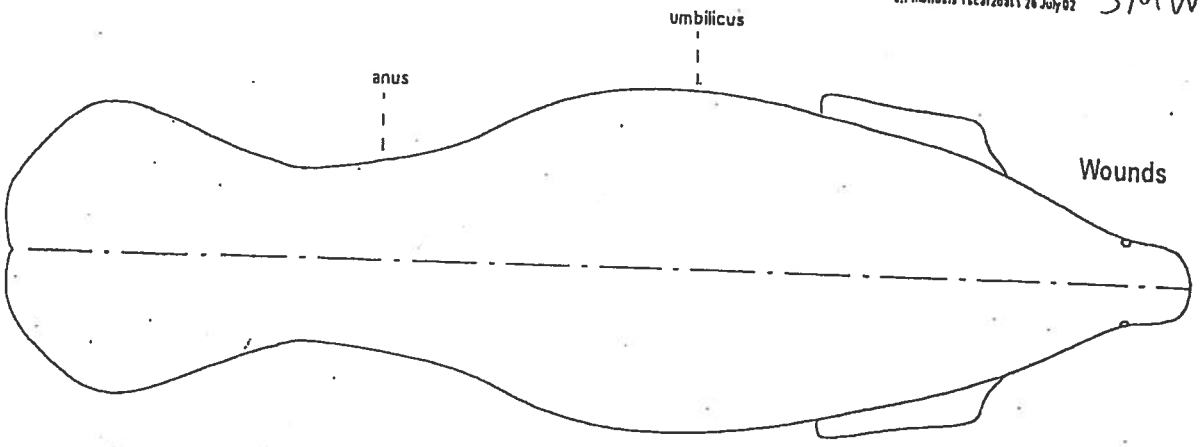
NECROPSY CONDUCTED BY

Sara M. Wappes
Carley M. Metcalf

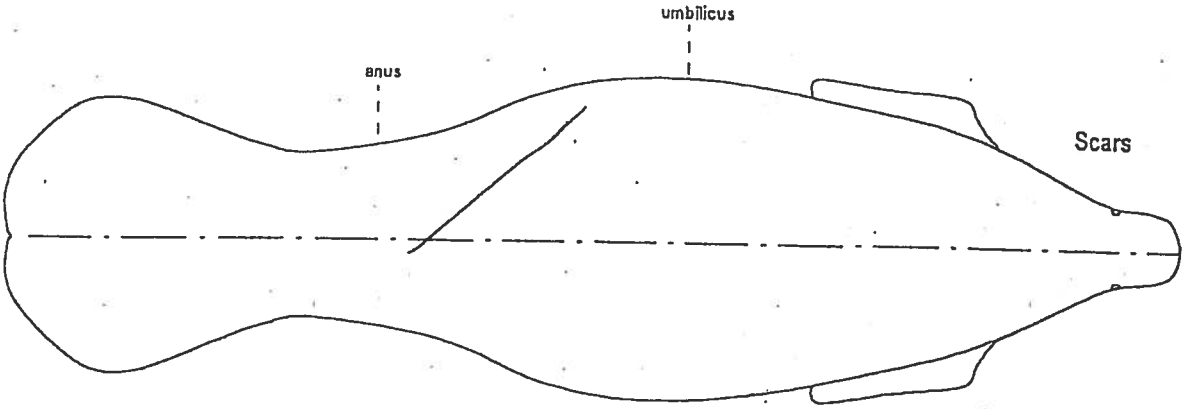
REPORT FILED BY Wappes

Date 05 Feb 2020 Field I.D. MEC20018.

c:\ Manuals \ scar2dat \ 26 July 02 SMW



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

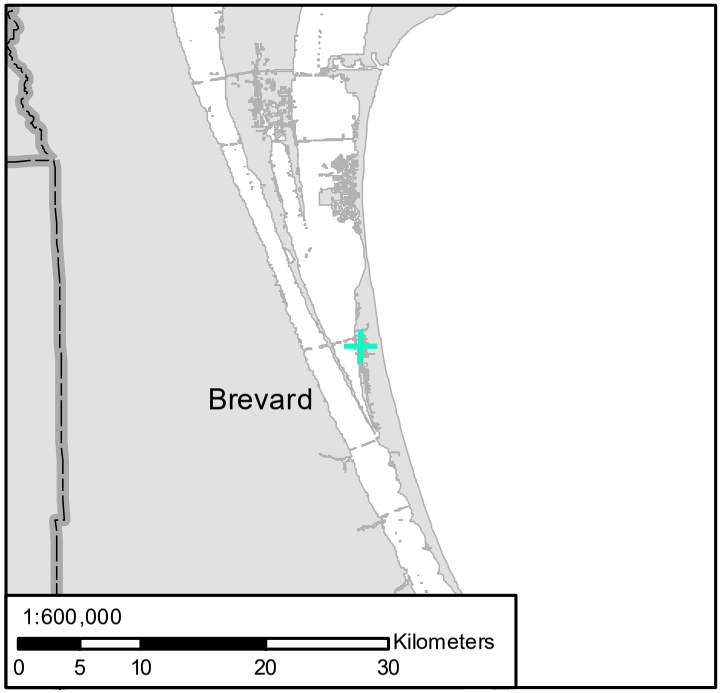


Verified Location of Manatee Carcass MEC20018

Report Date: 2/5/2020 **Received Date**: 2/5/2020 **Received By**: FWC-SMW,CMM







Location: Satellite Beach, Brevard County

Latitude: 28.20622°N **Longitude**: -80.613°W

Map Created: 3/29/2021

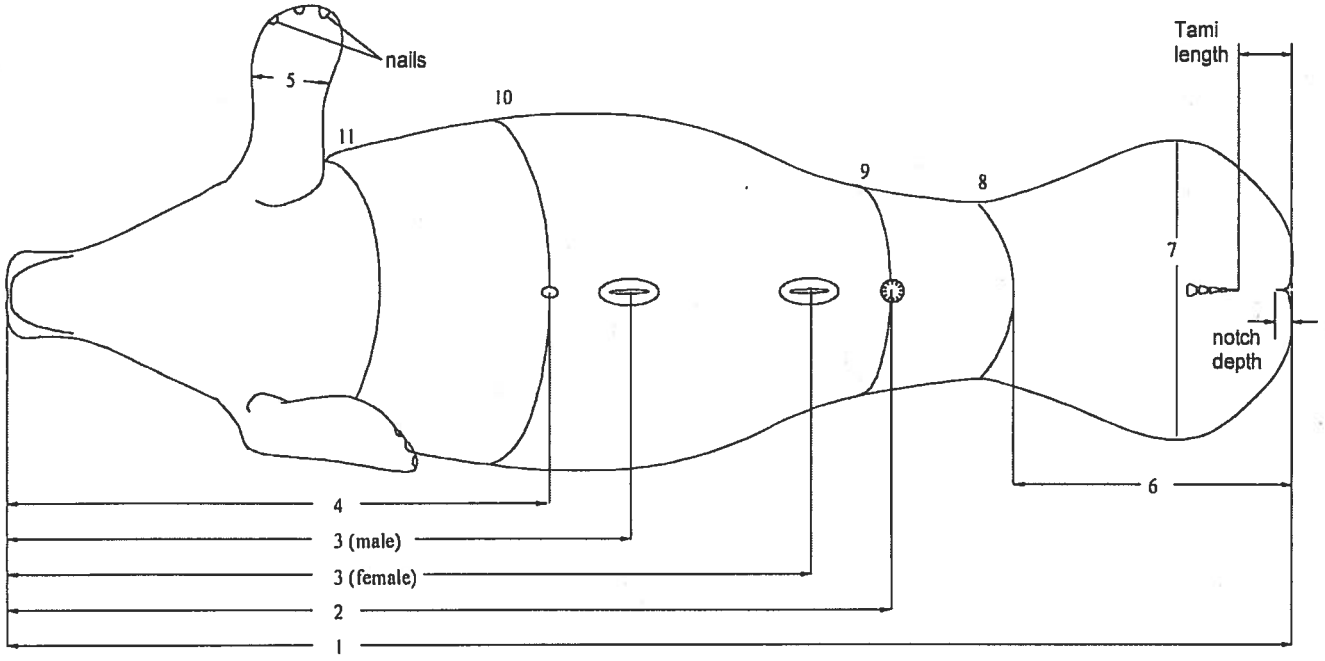
Field ID # MEC20018

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length 204 cm
2. Snout to anus -C 133 cm
3. Snout to U/G -C 89 cm
4. Snout to umbilicus -C 75 cm
5. Flipper width N/T cm
6. Fluke base 58 cm
7. Fluke width 54 cm
8. *Girth at fluke base 85 cm
9. * Girth at anus 96 cm
10. *Girth at umbilicus 152 cm
11. *Girth at axillae 115 cm

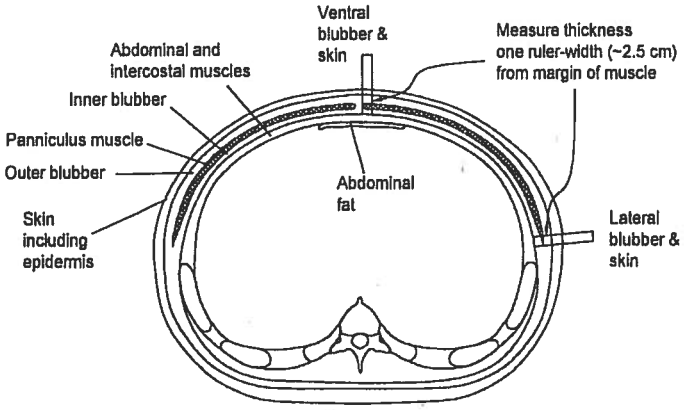
(Depth of notch _____ cm)
(Tami ln_____ cm)

(Nail count: R 3 L 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.8 cm	1.9 cm	(Epidermis _____ cm)
Outer blubber	1.3 cm	0.8 cm	(Abdominal fat _____ cm)
Inner blubber	0.1 cm	0.7 cm	



Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: Y/N L: Y/N
Placental Scaring: R / L:____x ____ x _____ cm
Pregnant: Y/N – Fetus length _____cm Fetus gender M / F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes Y / N; in epididymes Y / N Method: visual / microscope slide
Fluid in seminal vesicles Y / N; if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20018
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1893, 1898 **FWC District**: Northeast
Sex: Male **Length (cm)**: 204 **Estimated** _____ **Weight (kg)** _____
Date reported: 05 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 05 February 2020 **By**: FWC-SMW, CMM
Date necropsied: 05 February 20 **By**: FWC-SMW, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Grand Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 25 m NW of 492 Penguin Drive.

Carcass Orientation: Floating

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Firm lung with microabscesses (pneumonia), abscesses on ventrum, bleached fluke margin

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20019**
Date of Report: 2020-Feb-07
Filed By: FWC EC Field Station

FWC Case # 2034 **FWC Region:** NE

Sex: Unknown **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-07 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.32345 **N**
County: Brevard **Longitude:** -80.65987 **W**
Waterway: Banana River
Location description: Merritt Island, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Bleached epidermis; Cobblestone-like epidermis; Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Other (Verification photographs).

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20019

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20019 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 120 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Recovered

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HISTORY 07 February 2020, at 1632 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River in Merritt Island, Brevard County. FWC case number 2034 was assigned. The complainant, Joe Santora (321-432-9846), stated that the manatee was 3 to 4 feet long, was starting to turn white, and was under some mangroves near his home. At 1638 hrs, WDG received a photo from the complainant confirming the carcass. WDG asked the complainant to confirm in the morning if the carcass was still present. **08 February**, at 0756 hrs, the complainant informed WDG that the carcass was no longer there and that he had searched the entire canal by kayak and did not see it. No additional reports were received.

EXTERNAL From photographs – Most of the ventral epidermis was present. The carcass was slightly distended with gas. The cranial ventral epidermis appeared bleached. The caudal ventral epidermis had patches of cobblestone-like epidermis. Two large barnacles were present on the caudal ventrum.

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Bleached, cobblestone-like epidermis

PROBABLE CAUSE OF DEATH Perinatal; Verified, Not Recovered

NECROPSY CONDUCTED BY N/A

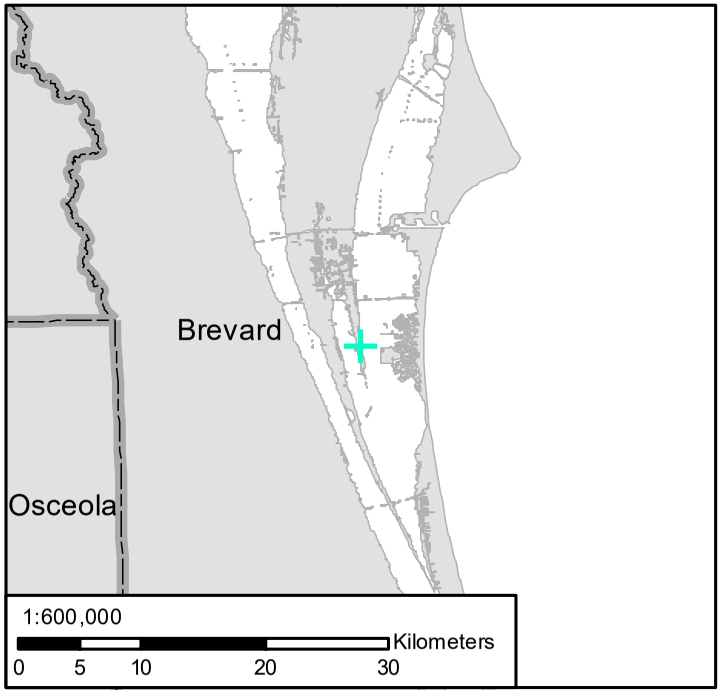
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20019

Report Date: 2/7/2020 **Received Date**: **Received By**:







Location: Merritt Island, Brevard County

Latitude: 28.32345°N **Longitude**: -80.65987°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20019
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2034 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 120 **Weight (kg)** N/T
Date reported: 07 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 30 m WNW of 1955 South Banana River Drive

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Carcass confirmed late in day on 2/7/2020; complainant reported early on 2/8/2020 that carcass was no longer visible and he had search entire canal

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20020**
Date of Report: 2020-Feb-08
Filed By: FWC EC Field Station

FWC Case # 2059 **FWC Region:** NE

Sex: Male **Length:** 312 **cm** **Weight:** 550.0 **kg**

DATE REPORTED: 2020-Feb-08 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-08 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Feb-10 **By:** MMPL-MdW,BLB,ALP,BDB,SMT,CMF,TDW

LOCATION: **State:** FL **Latitude:** 28.55395 **N**
County: Brevard **Longitude:** -80.79548 **W**
Waterway: Indian River
Location description: Titusville, floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Depleted fat(s); Serous fat(s); Dark line kidney(s); Wet lung(s); Mucus in airways; Fluid in pleural cavities; Large amount of fluid in small intestine; Red ascites with small amount of gelatinous clots; Congested mesenteries, peritoneum, colon wall, urinary bladder-, airway mucosa, parietal pleura, meninges, periotic cavities; Petechiae colon serosa; Ecchymoses peritoneum; Enlarged lymph node; Pale myocardium; Macroalgae in GI tract; Sand in upper GI tract; Leaves in mouth; Specks parietal pleura, lung serosa. Necropsy findings fit the case description of the ongoing east coast UME. Cause of this event was still under investigation at the time this report was finalized.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Histology report.

REMARKS:

PIT tag scan positive (Left: 00-000C-F29B; Right: 00-0062-46C6). Monofilament in stomach. Thickened epidermis; Cobblestone-like epidermis; Nodules urinary bladder. Remodeled rib, vertebra. Calcified pocket with necrotic tissue in muscle. Lung scar. Chronic tear hemidiaphragm. Resolving blood clots abdomen. Known as CNC9501, MIPS ID BC525, caught on 12 March 1995 at Container Corp in Fernandina Beach.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20020

MORPHOMETRICS:

Total length:	312 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	1 cm	2.4 cm		
Outer Blubber Thickness:	0.2 cm	0.1 cm	**Abdominal Fat Thickness:**	0.3 cm
Inner Blubber Thickness:	0.1 cm	0.1 cm	**Epidermis Thickness:**	0.1 cm

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Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20020 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 08 February 2020 **NECROPSY DATE** 10 February 2020
GENDER Male **TL** 312 **cm WT** 550 **kg** **CONDITION** Moderately Decomposed

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HISTORY 08 February 2020, at 0835 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a manatee in distress in the Indian River in Titusville, Brevard County. FWC case number 2059 was assigned. The complainant, Barbara Moore (407-501-9342), stated that the animal had not come up for air in almost forty minutes and was floating across from a boat ramp. At 0845 hrs, CMM received a photo of the carcass via text from the complainant. At 0853 hrs, FWC biologist-Sara M. Wappes received a text from Kennedy Point Marina Manager-Bruce regarding the carcass. Bruce (321-362-1254) stated that the manatee had shown no signs of life for two hours. At 1010 hrs, CMM and FWC biologist-William D. Greer arrived at Kennedy Point Marina boat ramp, towed the carcass via kayak to the boat ramp, and loaded it via Ezy-Lift by 1134 hrs. CMM transported the carcass to the MMPL arriving at 1438 hrs.

EXTERNAL All of the epidermis was present. The epidermis had cobblestone-like and thickened patches on all aspects. No watercraft-related wounds were observed. There was a minimum of twelve well-healed watercraft-related scar patterns on the dorsal aspect. The caudal left dorsum was indented associated with a distinct well-healed scar pattern. The fluke margin had a well-healed mutilation between the 5 and 6 o'clock positions. The epidermis was thickened on the fluke margin. There was a moderate green and brown algal mat on the dorsal aspect. PIT tag scan was positive (Left 00-000C-F29B; Right 00-0062-46C6), known as CNC9501, BC525, caught on 12 March 1995 at Container Corp in Fernandina Beach. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal, mesenteric, and omental fat. The mesenteric fat was slightly serous. The abdomen contained 2.5 L of watery, cloudy, red fluid mixed with a small amount of viscous, gelatinous, tan clots. There were a few small mostly resolved blood clots loose in the abdomen. The peritoneum had patchy ecchymoses.

STOMACH The stomach contained 15 L of moist, moderately chewed, leafy, slightly stringy, green, grey, and brown macroalgae and fine white sand. The ingesta were coated with a thick layer of tan mucus. There were one 49 cm long piece of 10 lb clear monofilament line, one 0.5 cm long piece of 10 lb red monofilament line, and one bird's nest of 17 lb clear monofilament line in the contents. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 4.5 L of wet, moderately chewed, stringy, leafy, slightly fibrous, green, grey, and brown macroalgae and fine white sand. The diverticulae contained a moderate amount of fine white sand mixed with tan to green mucus. The mucosa was sloughing. No parasites were observed.

JEJUNUM & ILEUM The mesentery had patches of moderate congestion. The proximal small intestine contained a small amount of wet, well-chewed, fibrous, moderately formed, green vegetation mixed with grey and brown macroalgae. There was a mild infection of pinpoint trematodes. The mid and distal small intestine contained a large amount of opaque red brown fluid mixed with small strings of brown macroalgae. No parasites were grossly observed. The mucosa was autolyzed throughout.

CECUM The cecum contained 2 L of moist, moderately digested, leafy, stringy, dark green to brown digesta mixed with macroalgae. The mucosa was sloughing. No parasites were observed.

COLON The mesentery was severely congested. The distal colon contained a moderate amount of moist, well-digested, slightly stringy, well-formed, dark green feces. The mid colon contained a large amount of moist,

poorly digested, stringy, leafy, poorly formed, dark green feces. The proximal colon contained a large amount of moist, moderately digested, stringy, poorly formed, green feces. The proximal-most one meter contained a large amount of wet, moderately digested, stringy, poorly formed, red feces including macroalgae. The wall was discolored brown. There were petechiae on the serosal surfaces. The mucosa was sloughing throughout and stained black in the distal colon. The wall was moderately congested throughout. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was light pink to dark purple on serosal surfaces, and dark red on cut surfaces.

LIVER The liver was firm. The margins were rounded. The serosal surfaces were pink to dark blue and the cut surfaces were red to brown. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 150 mL of viscous, flocculent, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The testes were moderate in size. There was no fluid on cut surfaces of the epididymides or deferent ducts. The seminal vesicles were moderate in size and contained a moderate amount of opaque tan fluid.

KIDNEYS There was moderate perirenal fat. The kidneys were firm. The serosal surfaces were dark pink to red. On cut surfaces, the cortices were dark pink to grey and the medullae were pink to light purple. Most of the corticomedullary boundaries had a dark red line and the remainder were indistinct. An ELISA toxicology sample was collected.

URINARY BLADDER The bladder contained a scant amount of cloudy yellow urine. The mucosa was moderately congested and had approximately three small raised soft tan nodules.

HEART There was a small amount of serous epicardial fat. The myocardium was pale. Valves were unremarkable. There was an oval-shaped region (approximately 3.0 x 1.5 cm) of roughened tan connective tissue between the major vessels (see photo). The pericardial fluid was yellow.

RESPIRATORY SYSTEM The left hemidiaphragm was intact. The right hemidiaphragm had a 1.7 x 1.0 cm tear with rounded margins at the medial aspect of the cranial one-third associated with remodeled right rib 9. The left parietal pleura and right lung serosa had black specks. The left pleural cavity contained 300 mL and the right contained 500 mL of watery, dark red fluid. The parietal pleura was severely congested in both pleural cavities. The right lung had a well-healed scar at the medial aspect of the cranial one-third which was associated with remodeled right rib 9. Both lungs were pink to light purple on serosal surfaces, and dark red and slightly wet on cut surfaces. The airways contained an abundant amount of viscous, tan mucus. The mucosa was dark pink to red and moderately congested. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a large thatch of poorly chewed pieces of green leafy vegetation in the back of the mouth. An ELISA toxicology sample was collected. The mandibular lymph node was enlarged and dark red. The trachea was occluded with thick, viscous, clear mucus. The nasopharyngeal- and tracheal mucosa was severely congested. The meninges were moderately congested. The periotic cavities were moderately congested.

SKELETON Left ribs 10 and 11 had protruding pockets of synovial fluid at the heads. The right transverse process of T9 was remodeled. Right rib 9 was remodeled at the head.

OTHER There was a 14 x 7 x 5 cm calcified pocket surrounded by necrotic dark grey tissue and containing

watery red fluid, dorsal to remodeled right rib 9 and deep to a well-healed scar.

COMMENTS Necropsy findings fit the case description of the ongoing east coast UME. Cause of this event was still under investigation at the time this report was finalized.

SIGNIFICANT FINDINGS

- Depleted, serous fat
- Wet lungs
- Mucus in airways
- Fluid in pleural cavities
- Large amount of fluid in small intestine
- Red ascites with small amount of gelatinous clots
- Congested mesenteries, peritoneum, colon wall, urinary bladder-, airway mucosa, parietal pleura, meninges, periotic cavities
- Petechiae colon serosa
- Ecchymoses peritoneum
- Dark line kidneys
- Pale myocardium
- Macroalgae in GI tract
- Sand in upper GI tract
- Enlarged lymph node
- Leaves in mouth
- Specks parietal pleura, lung serosa
- Nodules urinary bladder
- Thickened, cobblestone-like epidermis
- Remodeled rib, vertebra
- Calcified pocket with necrotic tissue in muscle
- Lung scar
- Chronic tear hemidiaphragm
- Resolving blood clots abdomen
- Monofilament in stomach contents
- PIT tag positive, known as CNC9501, BC525, caught on 12 March 1995 at Container Corp in Fernandina Beach

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PROBABLE CAUSE OF DEATH Natural; Other

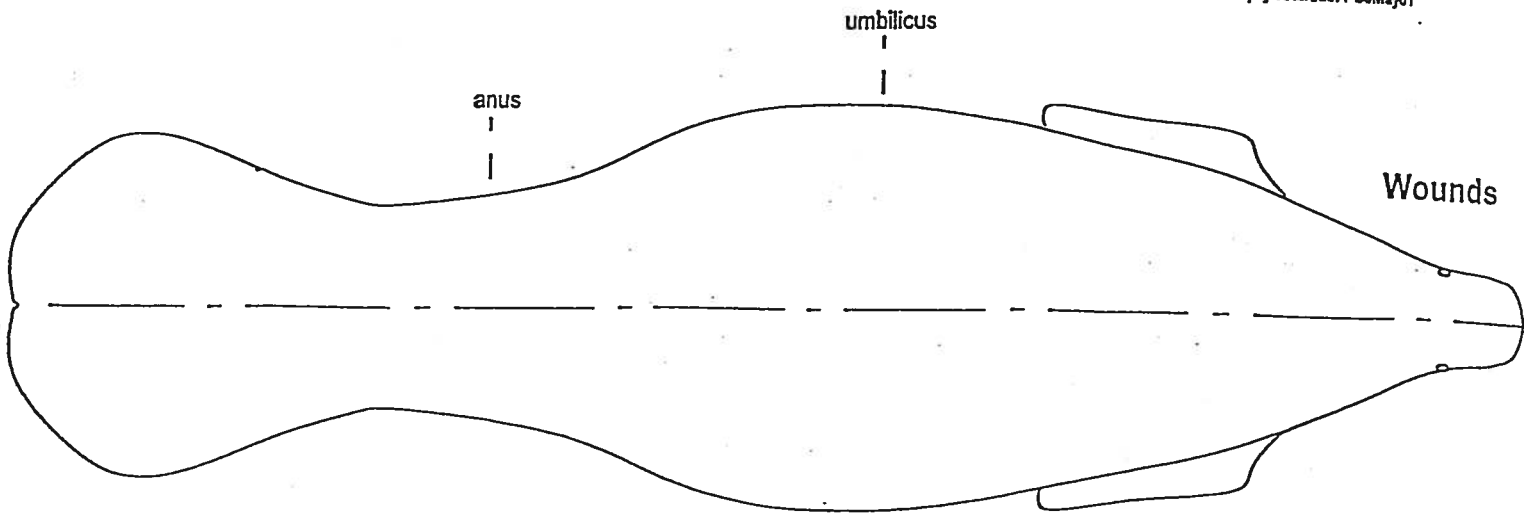
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant
Christine M. Fontaine

REPORT FILED BY de Wit

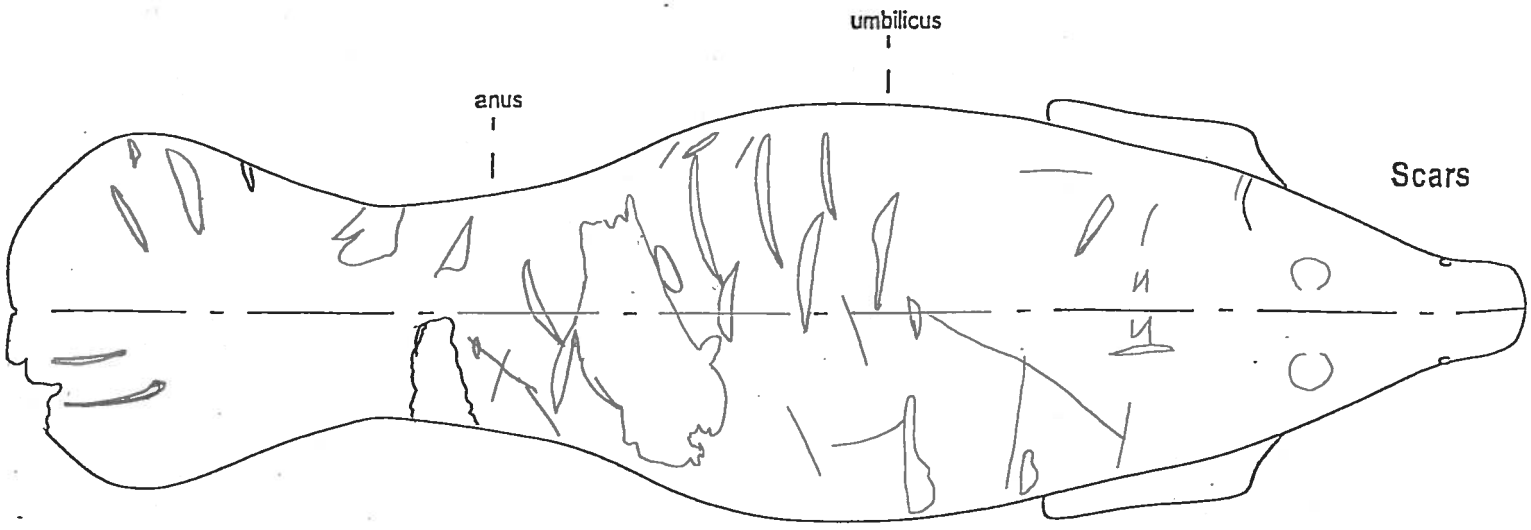
Date _____ Field I.D. MEC20020

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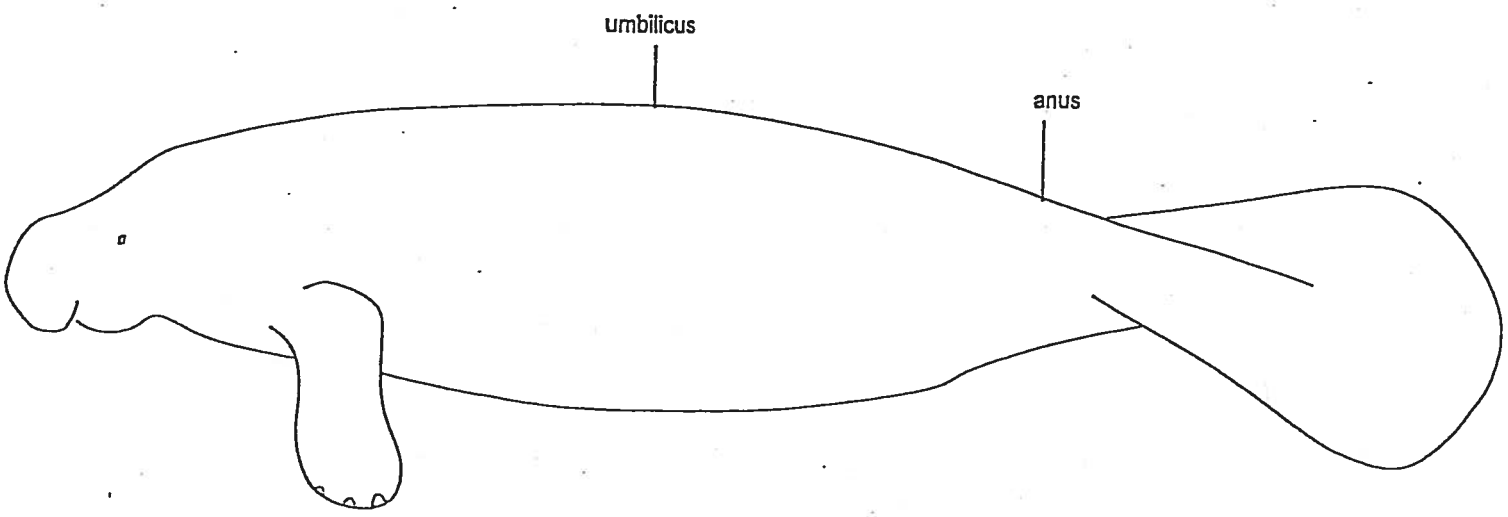


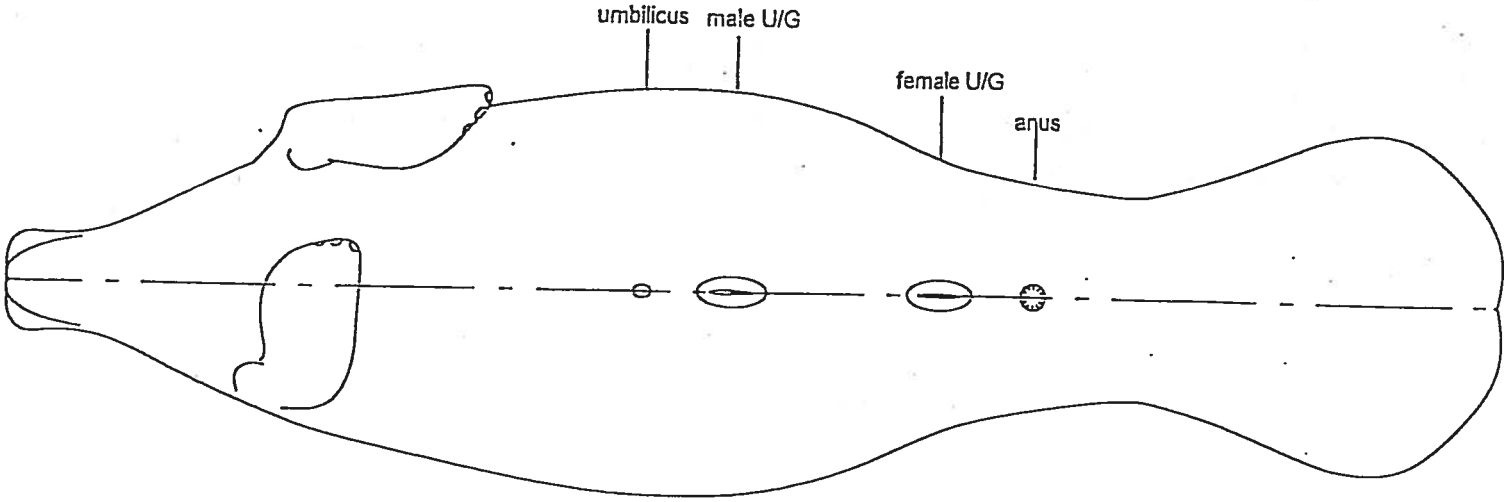
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Length																				
Width																				
Depth																				
Distance																				

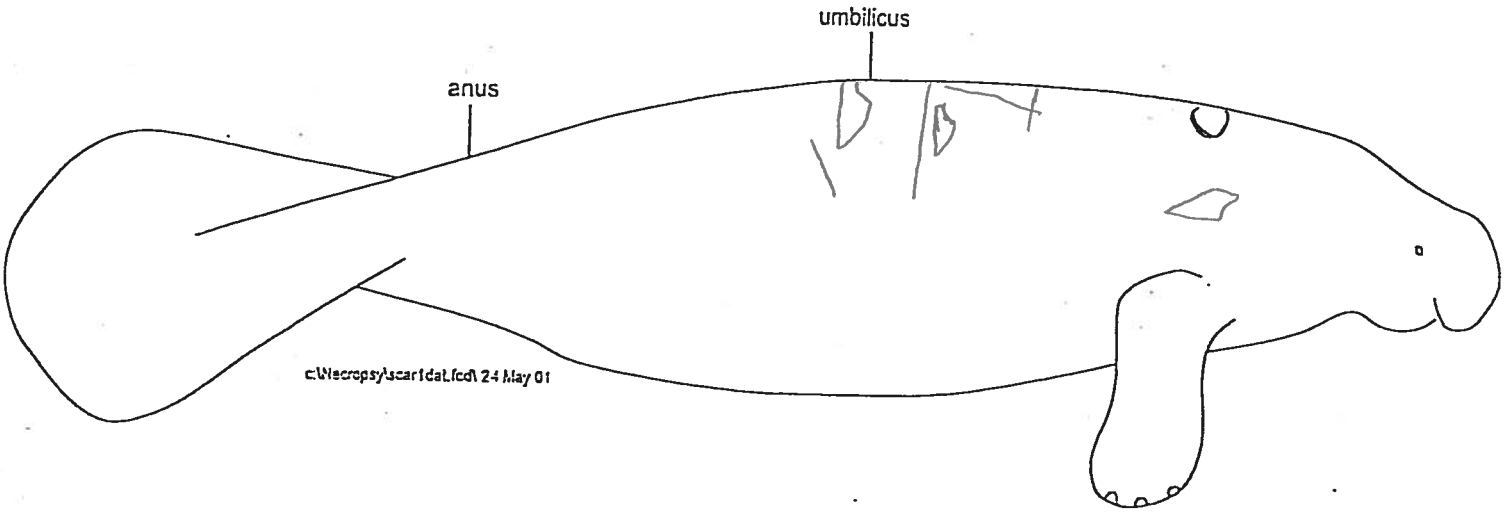
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FIELD I.D. _____

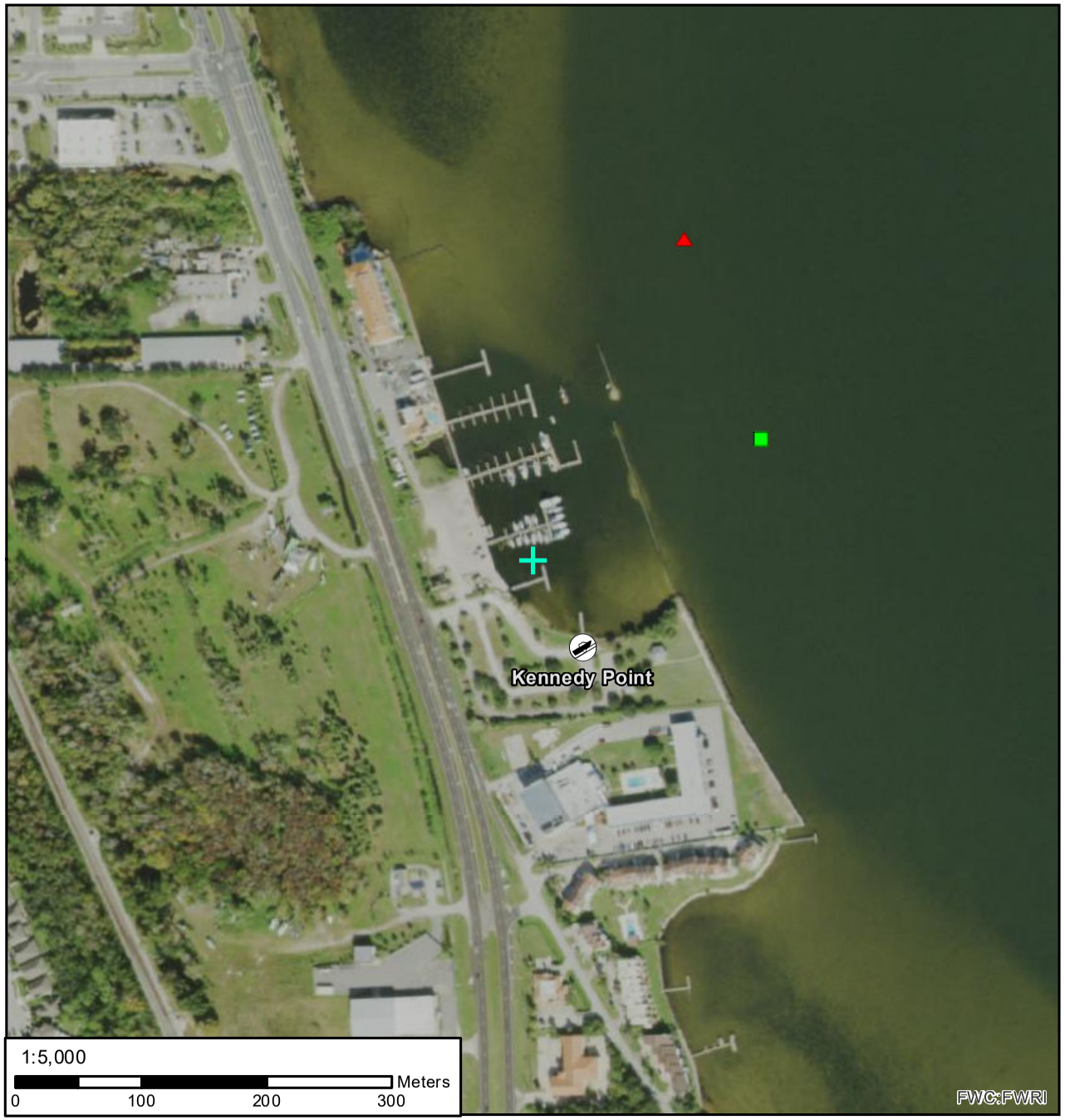

umbilicus
anus

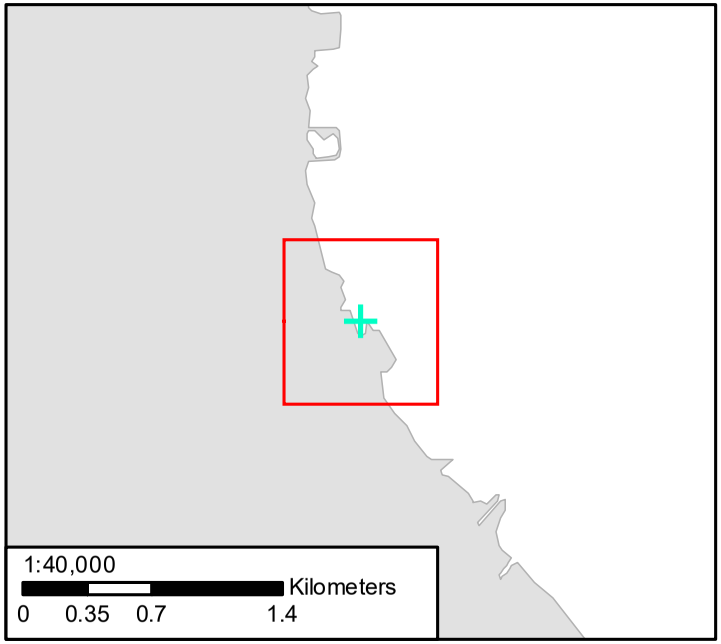

umbilicus
male U/G
female U/G
anus

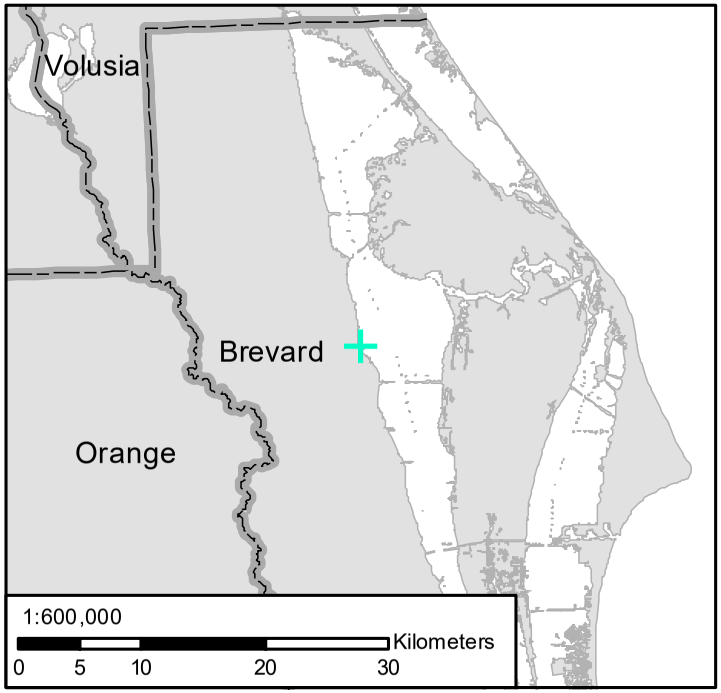

umbilicus
anus
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Verified Location of Manatee Carcass MEC20020

Report Date: 2/8/2020 **Received Date:** 2/8/2020 **Received By:** FWC-WDG,CMM







Location: Titusville, Brevard County **Latitude:** 28.55395°N **Longitude:** -80.79548°W

Map Created: 3/29/2021

NECROPSY REPORT
FINAL REPORT

Field ID: MEC20020
Alternate Field ID:
Accession Number: 20-100
Species: *Trichechus manatus latirostris*
Date: 08 Feb 2020 (DOR); 10 Feb 2020 (DON)
Location: FL
Sex, Age: M
TL: 312 cm
WT: 550 kg
Body Condition: Thin
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: 24> hours

HISTORY

Findings include:

- Depleted fat
- Wet lungs
- Mucus airways
- Fluid pleural cavities
- Large amount of fluid in small intestine
- Red ascites with small amount of gelatinous clots
- Congested mesenteries, peritoneum, colon wall, urinary bladder-, airway mucosa, parietal pleura, meninges
- Dark line kidneys
- Pale myocardium
- Macroalgae GI tract
- Sand in upper GI tract
- Leaves in mouth
- Specks parietal pleura, lung serosa
- Nodules urinary bladder
- Remodeled rib, vertebra
- Calcified pocket with necrotic tissue in muscle
- Lung scar
- Chronic tear hemidiaphragm
- Resolving blood clots abdomen
- Monofilament in stomach contents

Summary: Natural; Other

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment

MICROSCOPIC DESCRIPTION

Received 8 Jan 2020 are 11 H&E slides.

The mandibular lymph node is mildly depleted. There is expansion of the medullary sinus by lightly eosinophilic proteinaceous fluid. There is moderate congestion.The T-Septal lymph node is mildly depleted. There is focally extensive fibrosis with loss of lymphocytes. Few plasma cells are sprinkled within the collagen.

There is diffuse mucosal and submucosal edema of the proximal large intestine. The mucosal epithelium is artifactually sloughed. The mucosa of the mid-colon(57) is mildly edematous. There is dropout of occasional crypts. Two sections of the distal large intestine are examined. There is multifocal lifting of the mucosal epithelium from the submucosa by eosinophilic proteinaceous fluid with enmeshed granular debris.

Centrilobular and mid-zonal hepatocytes contain small to moderate amounts of brown granular pigment (hemosiderin).

There is cerebral perivascular and parenchymal expansion by clear spaces (edema).

There is moderate, diffuse congestion of the nasopharyngeal mucosa. There is moderate congestion of tracheal submucosal vessels.

There is focally extensive expansion of the urinary bladder submucosa by mature collagen.

In the heart, there is interstitial expansion by clear spaces (edema).

The following tissues have no significant histological findings: Cecum, kidney, mid-small intestine, lung, peduncle muscle

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System
NSF

Respiratory Sytstem

A. Nasopharyngeal Mucosa: Congestion, diffuse, moderate.
B. Trachea: Congestion, diffuse, moderate.

Nervous System
A. Brain: Edema, diffuse, mild.

Urinary and Reproductive System
A. Urinary Bladder: Submucosal fibrosis, focally extensive.

Digestive System/Body as a Whole
A. Small Intestine: Edema, diffuse, mild.
B. Large Intestine:Edema, multifocal, mild.

Cardiovascular System
A. Heart: Interstitial edema.

Hepatobiliary System
A. Liver: Hemosiderosis, multifocal, mild.

Endocrine System
NE

Hematolymphatic System
A. Mandibular Lymph Node:
    a. Edema.
    b. Congestion.
    c. Lymphoid depletion, mild.
B. T-Septal Lymph Node:
    a. Fibrosis, focally extensive.
    b. Depletion, mild.

INTERPRETATIVE SUMMARY

DIAGNOSES
Intestinal Edema
Edema-Brain, Heart
Congestion, Multifocal

Primary Diagnostic Category: Infectious/Organ Specific

Linked Cases:

Lesions in the intestine were not as severe as observed in other cases of presumptive clostridial enterocolitis. However, there was edema and lifting of the mucosa. Bacterial rods were not observed, but this would not rule out their presence of secondary results of bacterial toxins. There was edema of the heart and brain and given the enteric disease and depleted fats may be the result of decreased albumin and cardiovascular collapse. The nodule in the urinary bladder is a site of fibrosis. This may be associated with a prior cystitis or urolithiasis. There was no dysplasia of the overlying urothelium.

TEST	PURPOSE	SITE	RESULT

DATE:	REPORTING PATHOLOGIST:
3/17/2020	David S. Rotstein, DVM, MPVM, DACVP

FIGURES

No Figures

Bassett, Brandon

From: deWit, Martine
Sent: Wednesday, February 12, 2020 2:48 PM
To: Barbeau, Brittany; Bassett, Brandon; Fontaine, Christine; Garrett, Andy; Panike, Anna; Tennant, Sean; Whitcomb, Tara
Subject: FW: MEC20020

Here is all the history on Monday's carcass. This was the infamous powerplant in Fernandina Beach that shut down, where trackers monitored manatees' behavior to such a shutdown. Some left and found new warm water sites, others got lost and some never left but waited for the discharge to come back on.

From: Butler, Susan <sbutler@usgs.gov>
Sent: Tuesday, February 11, 2020 12:52 PM
To: Deutsch, Chip <Chip.Deutsch@MyFWC.com>; Garrett, Andy <Andy.Garrett@MyFWC.com>; Reid, James P <jreid@usgs.gov>
Cc: Greer, Bill <Bill.Greer@MyFWC.com>; deWit, Martine <Martine.deWit@MyFWC.com>; Barlas, Margie <Margie.Barlas@MyFWC.com>
Subject: Re: MEC20020

[EXTERNAL SENDER] Use Caution opening links or attachments

Yes, captured on 12Mar95 at Container Corp in Fernandina Beach. CNC9501, male calf (according to data sheet) measured 195 cm and was captured with TNC-10 "March." CNC9501 was PIT tagged and FB circles around PIT tags (we used to do that back in the old days). CNC9501 last documented with "March" as large calf in Banana Creek 11Oct95.
Where was the carcass recovered? TNC-10 "March" had a history of use ranging from PEPP to Fernandina.

Susan Butler
Biologist, U.S. Geological Survey
Wetland and Aquatic Research Center
7920 NW 71st Street

Gainesville, FL 32653

Office: 352-264-3557

Cell: 352-318-8544

Fax: 352-378-4956

Email: sbutler@usgs.gov

From: Deutsch, Chip <Chip.Deutsch@MyFWC.com>
Sent: Monday, February 10, 2020 10:59 AM

To: Garrett, Andy <Andy.Garrett@MyFWC.com>; Reid, James P <jreid@usgs.gov>; Butler, Susan <sbutler@usgs.gov>
Cc: Greer, Bill <Bill.Greer@MyFWC.com>; deWit, Martine <Martine.deWit@MyFWC.com>; Barlas, Margie <Margie.Barlas@MyFWC.com>
Subject: [EXTERNAL] RE: MEC20020

TNC10 ("March") was tagged on that date at Fernandina Beach (Jefferson Smurfit pulp mill effluent; perhaps it was called Container Corp. at that time). Sirenia will need to pull their records on her calf, including its recorded sex.
Chip

From: Garrett, Andy <Andy.Garrett@MyFWC.com>
Sent: Monday, February 10, 2020 9:35 AM
To: Jim Reid <jim_reid@usgs.gov>; Susan Butler <sbutler@usgs.gov>; Deutsch, Chip <Chip.Deutsch@MyFWC.com>
Cc: Greer, Bill <Bill.Greer@MyFWC.com>
Subject: FW: MEC20020

Jim, Susan, and Chip,

ECFL recovered a PIT tag positive carcass this weekend, CNC-95-01 "March", likely calf of TNC10. Do you remember this manatee and the research details? Does the capture location make sense? Thanks.

-Andy

From: Tennant, Sean <Sean.Tennant@MyFWC.com>
Sent: Saturday, February 8, 2020 4:39 PM
To: FWRI-Patho <Patho@fwc.state.fl.us>; Greer, Bill <Bill.Greer@MyFWC.com>; Metcalf, Carley <Carley.Metcalf@MyFWC.com>; Wappes, Sara <Sara.Wappes@MyFWC.com>
Cc: Rood, Kari <Kari.Rood@MyFWC.com>; Johnson, Jennifer <Jennifer.Johnson@MyFWC.com>; Honaker, Allison <Allison.Honaker@MyFWC.com>
Subject: MEC20020

Carley dropped of MEC20020 this afternoon. The carcass is a 312 cm male, and it was PIT tag positive (Left- 00-000CF29B/Right- 00-0062-46C6). The manatee was tagged 12 March 1995 at Container Corp., given ID #CNC-95-01, and was reported to be a 195 cm female, presumed to be the calf of TNC10, also known as "March".

Sean Tennant
Marine Mammal Biologist
Florida Fish and Wildlife Conservation Commission
3700 54th Avenue South
St. Petersburg, FL 33711
Office: 727-893-2907
Mobile: 727-638-2640
Sean.Tennant@myFWC.com
Wildlife Alert Hotline: 1-888-404-3922

Bassett, Brandon

From: Rood, Kari
Sent: Monday, March 9, 2020 9:52 AM
To: Howell, Amber; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Boyd, Denise; Burns, Allison; Deutsch, Chip; deWit, Martine; Edwards, Holly; Faucett, Blake; Fontaine, Christine; Fraser, Emma; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Martz, Meg; Nader, Ana; Nelson, Rachael; Panike, Anna; Peek, Austin; Schubert, Molly; sheri@mote.org; Szemer, Donna; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC20020=BC525

MEC20020=BC525. This animal was also PIT tag positive and known as CNC9501, however I don't believe the connection between CNC9501 & BC525 had been made previous to this match.

Carcass location: Indian River, Titusville
Carcass sex: Male

First sighted 12/30/02 at Canaveral Power Plant
Last sighted 3/8/13 at Canaveral Power Plant
Of note is a 6/21/06 sighting in Cumberland Island, GA
USGS should be able to provide a complete sighting history if needed.

Verifiers: HONAKER 3/6/20 & KAH 3/9/20

Sighting records are not to be used without permission from FWC, MML, and/or USGS, as appropriate.

Kari A. Rood
Manatee Photo-identification
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, FL 33701

Direct line: (727) 502-4737
Main line: (727) 896-8626
Kari.Rood@MyFWC.com
http://MyFWC.com
http://MyFWC.com/research/

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MFC20020
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 62059 FWC District: East Central Field Lab
Sex: M / F / Undetermined Length: 312 cm (estimated _____) Weight 550 kg.
Date reported: 8 Feb 2020 By: Barbara Moore
Date collected: 8 Feb 2020 By: C. Metcalf / W. Greer
Date necropsied: 10 Feb 20 By: MMPL MdW BLB3 ALP BDB3 SMT CMF TDW

LOCATION: State: FL (___) County: Brevard Waterway: Indian River
Latitude: _____ N Longitude: _____ W
Locality description: Kennedy Point Marina

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other stomach cont in alcohol, $
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other brain
Genetics Box # 910 vegetation mouth
Female reproductive findings on **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: Negative Positive (Left 00 - 000C - F29B)(Right 00 - 0062 - 4666); N/T

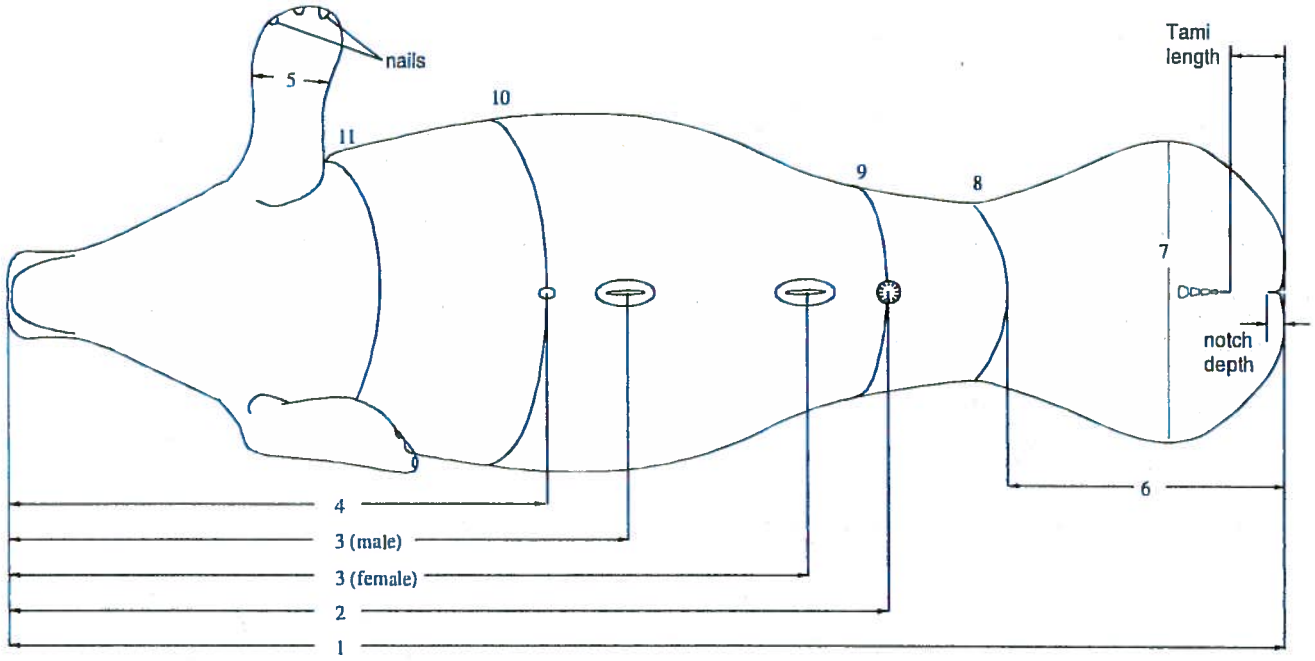
REMARKS: CNC-95-01 caught on 12 March 1995 @ Container Corp., calf of TNC10

Field ID # MEC20020

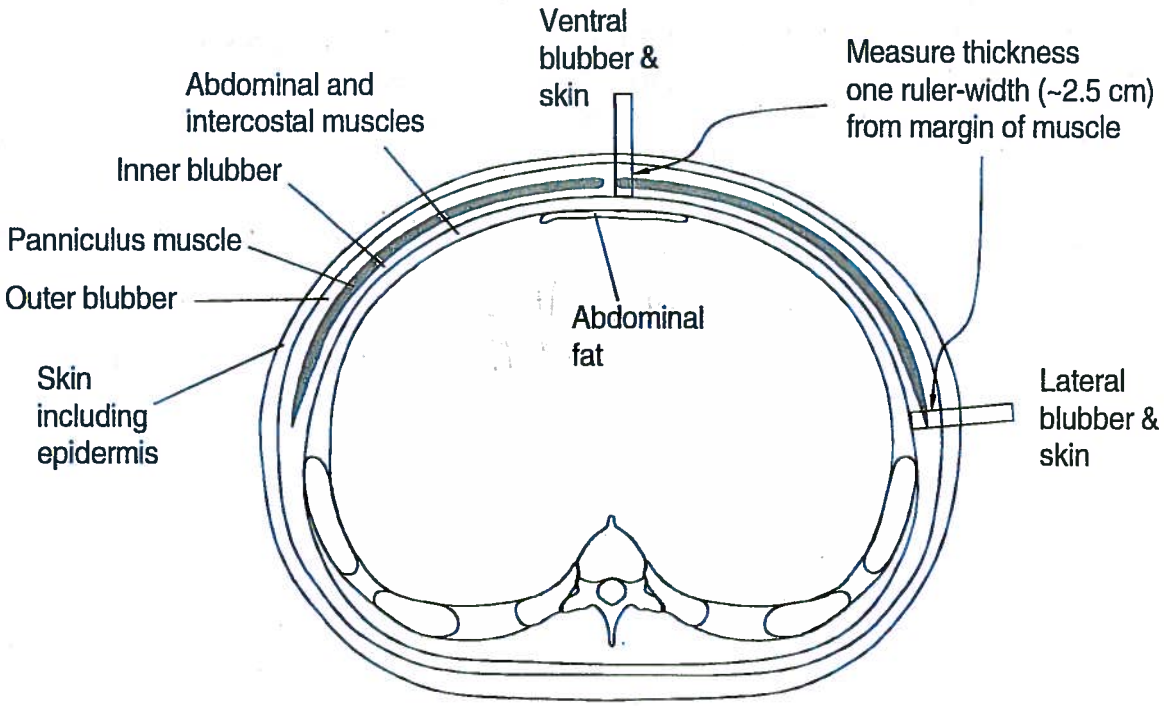
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C _____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8. *Girth at fluke base _____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae _____ cm

(Nail count: L___R___)



Skin and Blubber (cm).	Ventral	Lateral	
Skin	1.0 cm	2.4 cm	(Epidermis 0.1 cm)
Outer fat	0.2 cm	0.1 cm	(Abdominal fat 0.3 cm)
Inner fat	0.1 cm	0.1 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20020
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2059 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 08 February 2020 **By**: Citizen to FWC NE Diaptch-Orlando
Date collected: 08 February 2020 **By**: FWC-WDG, CMM
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 140 m SSE of 4749 South Washington Avenue

Carcass Orientation: Floating

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20021**
Date of Report: 2020-Feb-09
Filed By: FWC EC Field Station

FWC Case # 2117 **FWC Region:** NE

Sex: Female **Length:** 293 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-09 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-09 **By:** FWC-SMW

DATE NECROPSIED: 2020-Feb-09 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.52711 **N**

County: Brevard **Longitude:** -80.73678 **W**

Waterway: Indian River

Location description: Merritt Island, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Watercraft wound(s); Cobblestone-like epidermis; Dark line kidney(s); Crumbly feces; Wet lung(s); Dry feces; Relatively empty, fluid-filled duodenum; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20021

MORPHOMETRICS:

Total length:	293 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20021
SPECIES *T. manatus latirostris*
RECOVERY DATE 09 February 2020
NECROPSY DATE 09 February 2020
GENDER Female **TL** 293 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 09 February 2020, at 0850 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at the NASA Causeway in the Indian River in Merritt Island, Brevard County. FWC case number 2117 was assigned. The complainant, Dusty (352-536-4710), stated that the carcass was grounded, bloated, and belly-up. At 0904 hrs, SMW received a photo verifying the carcass. SMW and FWC intern-Kelly L. Etherton arrived at the causeway at 1040 hrs and completed a field necropsy by 1300 hrs. The remains were left onsite.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. The carcass was slightly distended with gas. Watery, red fluid exuded from the nares. There was a watercraft-related wound pattern on the left dorsal aspect which consisted of seven parallel propeller wounds. Wounds #1 - 5 penetrated into the muscle. Wound #6 cut into the dermis and wound #7 was superficial. The wound margins were eroded. There was a thin brown algal mat on the lateral aspects. Patches of cobblestone-like epidermis were present on the ventral and lateral aspects. A mild infestation of barnacles was present on the fluke. A minimum of eight well-healed watercraft-related scar patterns was observed on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate mesenteric fat and moderate, gassy abdominal fat. There was a small amount of gassy omental fat.

STOMACH The stomach contained 4.3 L of moist, moderately chewed, leafy, stringy, orange to brown ingesta (see photo). The ingesta were coated in a thin layer of pale-yellow mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 200 mL of viscous, orange fluid mixed with a small amount of well-chewed fibrous pieces of ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, orange to brown fluid. The distal small intestine was empty of contents. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 750 mL of moist, moderately digested, fibrous, leafy, green to brown digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained moist, well-formed, well-digested, slightly stringy, brown to green feces. The mid colon contained moist, well-formed, well-digested, homogeneous, black feces. The distal colon contained dry, crumbly, poorly formed, well-digested, homogeneous, black feces. The mucosa was unremarkable throughout. No parasites were observed.

PANCREAS The pancreas was soft. Serosal and cut surfaces were tan to light pink.

SPLEEN The spleen was mottled purple and black on serosal surfaces, and red to purple on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained 25 mL of viscous, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. Both uterine horns were contracted. The right uterine horn contained a scar. Both ovaries contained numerous fluid-filled follicles (maximum diameter 0.5 cm).

KIDNEYS The right kidney was red to green and brown on serosal surfaces (see photo). On cut surfaces, the cortices were brown, and the medullae were pink to dark red with white to tan centers (see photo). The corticomedullary boundaries were distinct with a thin grey line at some. The left kidney was pink to red on serosal surfaces. On cut surfaces, the cortices were light pink to red and the medullae were red. The corticomedullary boundaries were mostly distinct.

URINARY BLADDER The urinary bladder contained 250 mL of flocculent, pink-tinged urine. The mucosa was unremarkable.

HEART There was a small amount of gassy epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were light pink to dark pink on serosal surfaces, and red and wet on cut surfaces. The primary airways contained a small amount of viscous, pink fluid.

HEAD & NECK REGIONS There was a thatch of poorly chewed seagrass in the mouth (see photo).

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Watercraft wounds
- Cobblestone-like epidermis
- Wet lungs
- Dark line kidney
- Relatively empty, fluid-filled duodenum
- Dry, crumbly feces
- Seagrass in mouth
- Uterine scar

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

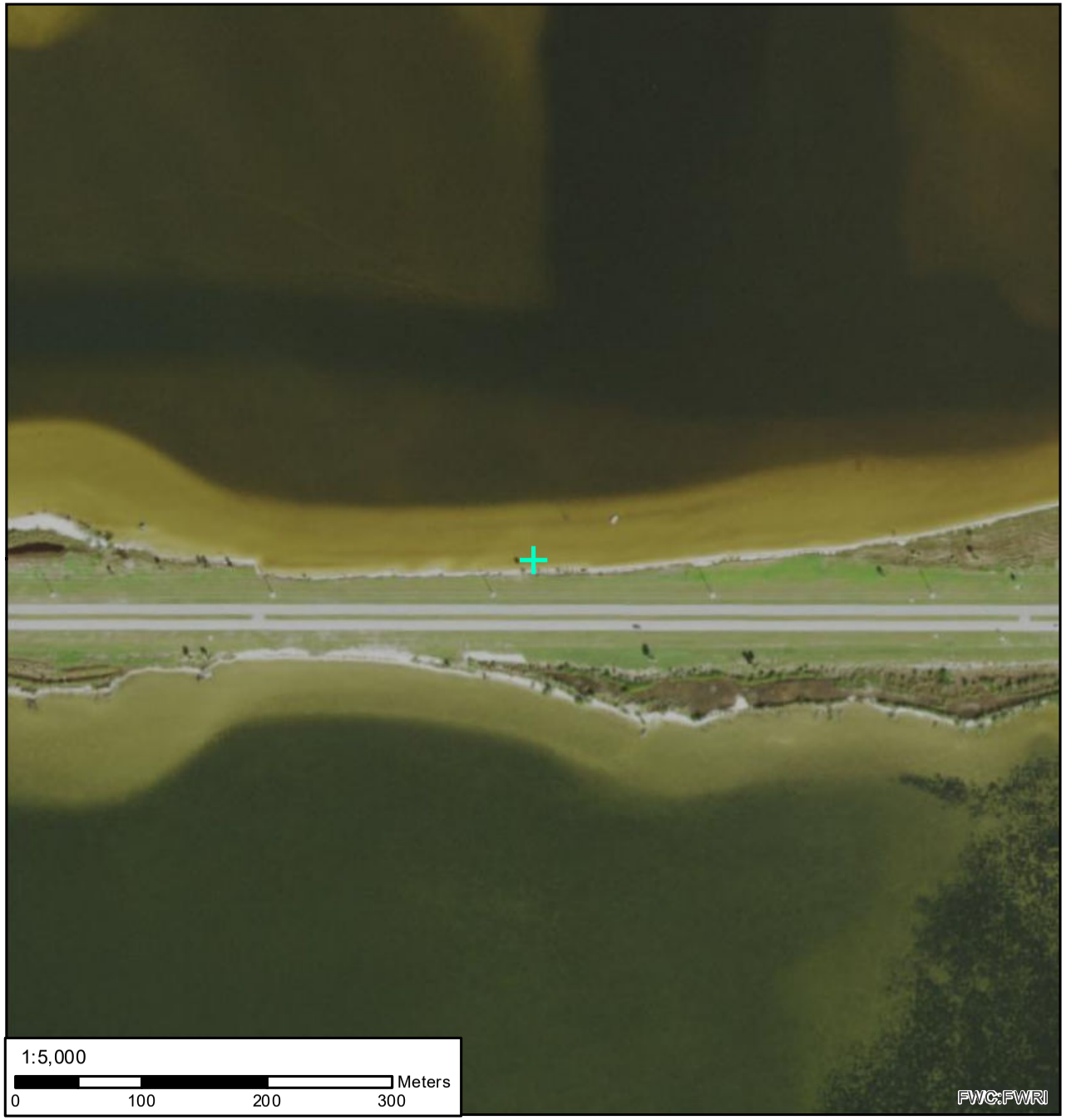
NECROPSY CONDUCTED BY

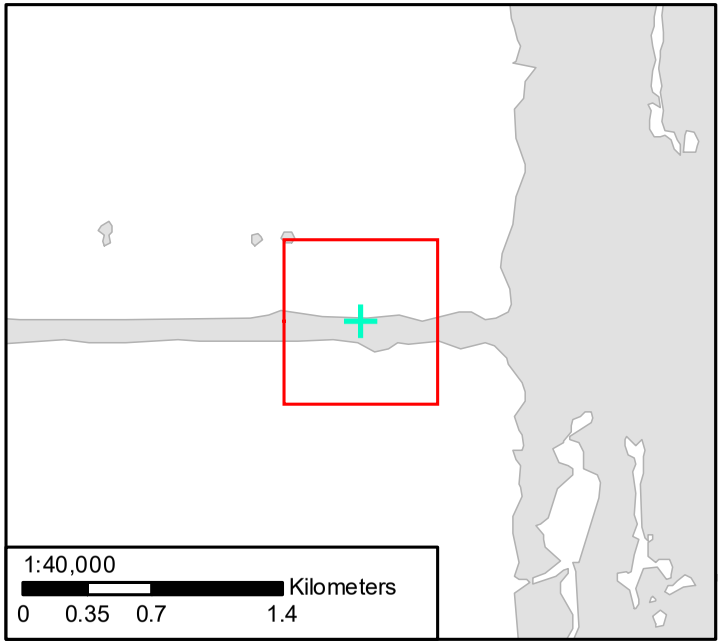
Sara M. Wappes
Kelly L. Etherton (FWC intern)

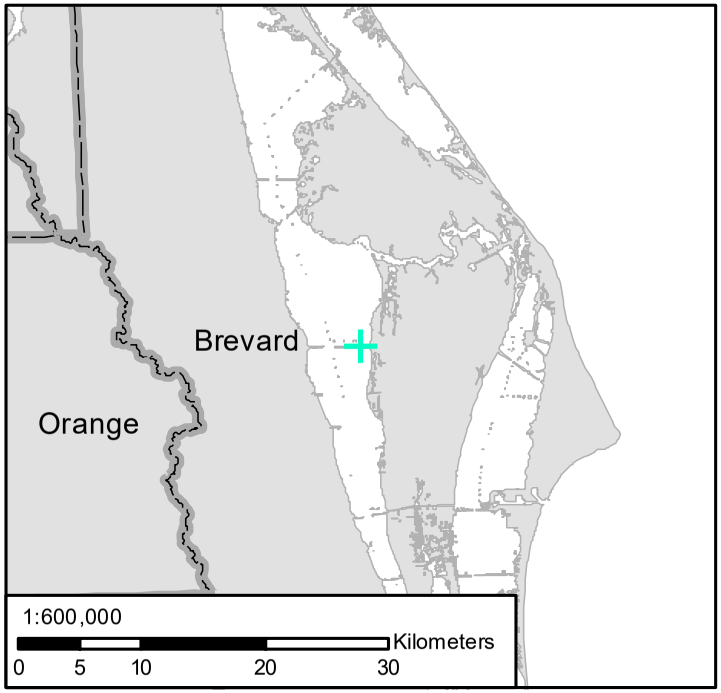
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20021

Report Date: 2/9/2020 **Received Date**: 2/9/2020 **Received By**: FWC-SMW







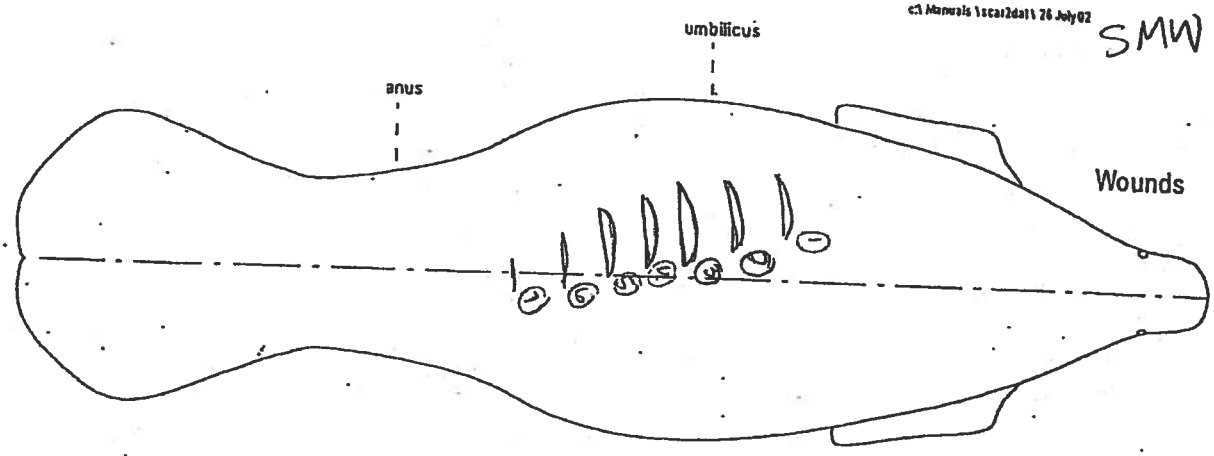
Location: Merritt Island, Brevard County

Latitude: 28.52711°N **Longitude**: -80.73678°W

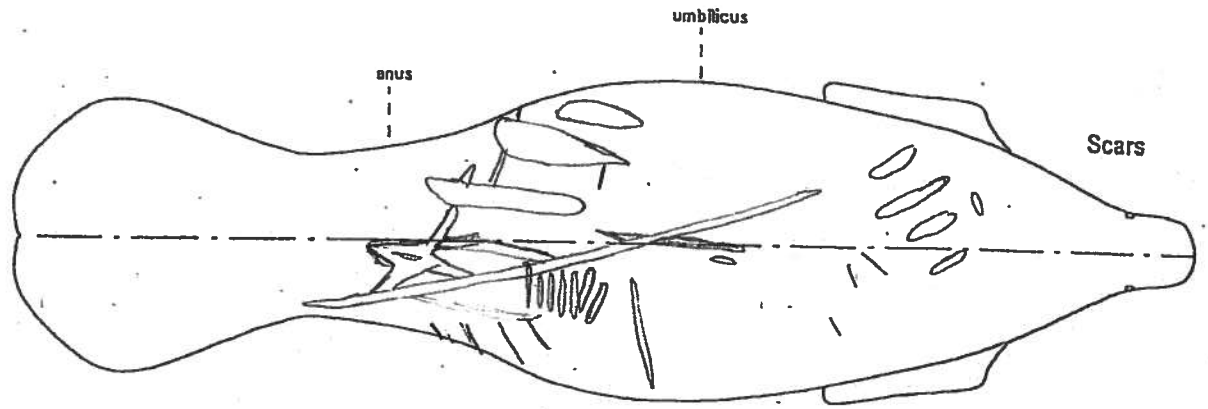
Map Created: 3/29/2021

Date 09 FEB 2020 Field I.D. MEC2002a

c:\ Manuals \ scar2dat \ 26 July 02 SMW



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	16.0	19.8	22.2	21.4	19.8	15.1	6.3													
Width	1.9	2.5	2.5	2.5	2.3	1.5	0.4													
Depth	1.9	2.6	3.9	2.2	2.5	1.3	0.2													
Distance	8.8	10.3	9.8	10.4	10.7	11.2														



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20021
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2117 **FWC District**: Northeast
Sex: Female **Length (cm)**: 293 **Estimated** _____ **Weight (kg)** _____
Date reported: 09 February 2020 **By**: Citizen to FWC- NE Dispatch Orlando
Date collected: 09 February 2020 **By**: FWC-SMW, KLE
Date necropsied: 09 February 20 **By**: FWC-SMW, KLE

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 6.05 km WNW of 8082 Space Commerce Way.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: External wound series, black, crumbly feces, autolyzed internal organ, rendered fats

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20022**
Date of Report: 2020-Feb-09
Filed By: FWC EC Field Station

FWC Case # 2159 **FWC Region:** NE

Sex: Male **Length:** 174 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-09 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-10 **By:** FWC-SMW

DATE NECROPSIED: 2020-Feb-10 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.54764 **N**

County: Brevard **Longitude:** -80.79231 **W**

Waterway: Indian River

Location description: Titusville, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cobblestone-like epidermis; Skin lesions; Abscess(es); Dry, hard feces; Crumbly feces; Gritty texture abdominal organs.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Staton pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20022

MORPHOMETRICS:

Total length:	174 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20022
SPECIES *T. manatus latirostris*
RECOVERY DATE 10 February 2020
NECROPSY DATE 10 February 2020
GENDER Male **TL** 174 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 09 February 2020, at 1646 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River at 5419 Riveredge Drive in Titusville, Brevard County. FWC case number 2159 was assigned. The complainant, Kendall Kerr (678-977-0806), stated that the carcass was on the rocks, belly-up, and appeared to be a calf. At 1655 hrs, SMW received a photo verifying the carcass. **10 February**, SMW and FWC intern-Kelly L. Etherton arrived at the carcass at 1115 hrs and completed a field necropsy by 1210 hrs. The remains were left onsite.

EXTERNAL Approximately 25% of the epidermis was present but sloughing. The carcass was slightly distended with gas. There was a severe infestation of barnacles on the ventral fluke and a mild infestation of barnacles on the ventral aspect and flippers. Small, circular abscesses were present near the ventral fluke base which exuded a small amount of purulent, pale yellow material (see photo). A few chronic linear and circular skin lesions were present. There were patches of cobblestone-like epidermis. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. The abdominal organs had a gritty texture.

STOMACH The stomach contained 250 mL of moist, moderately chewed, leafy, stringy, orange to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 75 mL of wet, moderately chewed, leafy, stringy, green to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, tan fluid. Some sections of the mid small intestine contained moist, poorly formed, moderately chewed, leafy, stringy, green to brown ingesta and other sections were empty of contents. The distal small intestine was empty of contents. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 200 mL of moist, moderately digested, leafy, stringy, green to brown digesta (see photo). The mucosa was autolyzed. There was a mild infection of dead trematodes.

COLON The proximal colon contained moist, moderately formed, moderately digested, slightly stringy, green to brown feces. The mid colon contained slightly moist, hard, well-formed, well-digested, slightly stringy, green to brown feces. The distal colon contained dry, crumbly, poorly formed, well-digested, homogeneous, black feces. The mucosa was autolyzed. No parasites were observed.

PANCREAS The pancreas was tan to pink on serosal and cut surfaces.

SPLEEN The spleen was mottled grey and black on serosal surfaces and black on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained orange to black.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed. The diameter of the uterus was

small.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained a scant amount of watery, pink-tinged fluid. The mucosa was gassy.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft and friable. Serosal surfaces were white to light pink and black, and cut surfaces were white to red. The primary airways were unremarkable. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Cobblestone-like epidermis
- Skin lesions
- Abscesses
- Dry, hard, crumbly feces
- Gritty texture abdominal organs
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

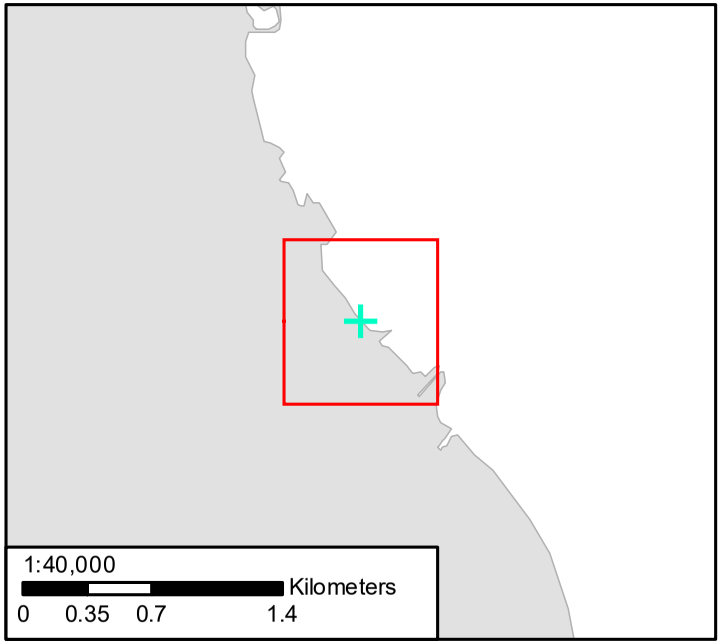
Sara M. Wappes
Kelly L. Etherton (FWC intern)

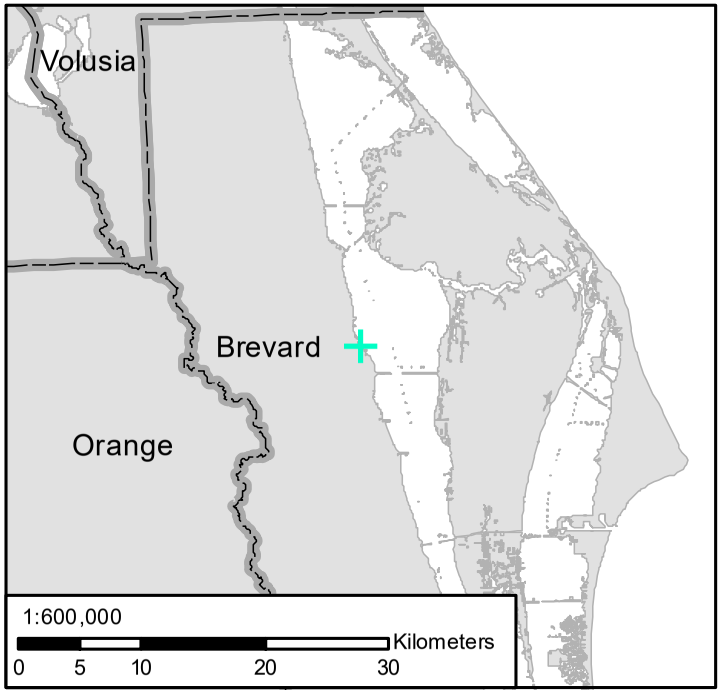
REPORT FILED BY Etherton / Wappes

Verified Location of Manatee Carcass MEC20022

Report Date: 2/9/2020 **Received Date**: 2/10/2020 **Received By**: FWC-SMW







Location: Titusville, Brevard County

Latitude: 28.54764°N **Longitude**: -80.79231°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20022
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2159 **FWC District**: Northeast
Sex: Male **Length (cm)**: 174 **Estimated** _____ **Weight (kg)** _____
Date reported: 09 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 February 2020 **By**: FWC-SMW, FWC intern-K. Etherton
Date necropsied: 10 February 20; **By**: FWC-SMW, FWC intern-K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 110 m N of 5308 Riveredge Drive.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Heavy barnacle infestation on fluke, abscesses on fluke, dry, hard feces, internal organs autolyzed, all fat rendered.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20023**
Date of Report: 2020-Feb-10
Filed By: FWC MMPL

FWC Case #

FWC Region: NE

Sex: Female **Length:** 152 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-10 **By:** FPL-Jennifer Pickett to FWC-WDG

DATE COLLECTED: 2020-Feb-11 **By:** MMPL-MdW

DATE NECROPSIED: 2020-Feb-12 **By:** MMPL-MdW,ALP,SMT,CMF

LOCATION:
State: FL
County: Brevard
Waterway: Indian River
Location description: Port St. John, sunken

Latitude: 28.46823 **N**
Longitude: -80.76429 **W**

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Wet lung(s); Frothy lungs; Heavy, firm left lung coated with fibrin; Fluid in left pleural cavity; Bloody nares; Dark red ascites; Congested urinary bladder mucosa, parietal pleura, hemidiaphragm, lung serosa; Relatively empty duodenum. Recovered from FPL Canaveral intake well #3.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal, Other (Bloody fluid nares).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Sedimentation sample of small intestine for parasitology. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Bleached epidermis; Depleted fat(s); Serous fat(s); Serous muscle; Cold stress lesions; Thick algal mat. Well-rake scrapes on dorsum.

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Necropsy Report	
Lat/Long	

Field ID #: MEC20023

MORPHOMETRICS:

Total length:	152 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC200023 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 11 February 2020 **NECROPSY DATE** 12 February 2020
GENDER Female **TL** 152 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 10 February 2020, at 1956 hrs, FWC off-duty biologist-William D. Greer (WDG) received a text from Florida Power and Light-Cape Canaveral Energy Center (FPL-CCEC) staff-Jennifer Pickett regarding a dead manatee recovered from intake well #3. Jennifer stated that the carcass was a juvenile and that it was placed on a pallet to be recovered the next morning. At 1958 hrs, WDG texted FWC-Martine deWit (MdW) to inform her of the carcass and coordinate transport to the MMPL the next day. **11 February**, WDG and MdW arrived at FPL-CCEC at 0945 hrs and loaded the carcass via Ezy-Lift at 1010 hrs. After a meeting at FPL-CCEC, MdW transported the carcass to the MMPL arriving at 1600 hrs.

EXTERNAL All of the epidermis was present but sloughing. Copious bloody fluid exuded from the nares. There were at least four parallel linear scrapes on the right dorsum, surrounded by irregularly scraped epidermis. A few small chronic cold stress lesions were present on the caudal aspect. The epidermis was bleached on the fluke margin, flippers, and ventral aspect. There was a thick brown algal mat on the dorsal aspect. Several large barnacles and barnacle scars were observed on the ventral aspect. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, mesenteric, and omental fat. The abdomen contained 600 mL of cloudy, dark red fluid.

STOMACH The stomach contained 1.5 L of moist, moderately chewed, fibrous, stringy, leafy, dark green to brown vegetation. The mucosa was autolyzed. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 50 mL of moist, moderately chewed, fibrous, stringy, leafy, dark green to brown vegetation mixed with a small amount of cloudy, dark grey fluid. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal-most one meter of the small intestine contained a moderate amount of moist, moderately chewed, leafy, fibrous, green to brown ingesta. The remainder of the small intestine contained a small amount of viscous, homogeneous, tan fluid. The mucosa was autolyzed throughout. The Peyer's patches were prominent. There was a severe infection of pinpoint trematodes, most of which were in the lumen and some of which were associated with Peyer's patches. *Nudacotyle undicola* was identified on microscopic examination of a distal small intestine sedimentation sample.

CECUM The cecum contained 650 mL of moist, moderately digested, fibrous, leafy, brown digesta. The mucosa was black and sloughing. There was a mild infection of dead trematodes.

COLON The distal colon contained a moderate amount of dry, well-digested, stringy, well-formed, green to brown feces. The mucosa was autolyzed. The mid colon contained a moderate amount of moist, well-formed, well-digested, slightly fibrous, green feces. The proximal colon contained a moderate amount of moist, well-formed, moderately digested, fibrous, leafy, brown feces. The mucosa was black and sloughing in the mid- and proximal colon, which was associated with a black coating on the feces. No parasites were observed throughout.

PANCREAS The pancreas was tan on serosal surfaces, and tan to light pink on cut surfaces.

SPLEEN The spleen was mottled grey and purple on serosal surfaces, and dark red on cut surfaces.

LIVER The liver was soft, friable, and autolyzed. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained a scant amount of viscous, flocculent, dark orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant, serous reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was scant, serous perirenal fat. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The bladder contained 2 mL of watery, very flocculent, pink-tinged urine. The mucosa was mildly congested. An ELISA toxicology sample was collected.

HEART There was a small amount of epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The pleural aspect of the left hemidiaphragm and the left parietal pleura were severely congested. The left pleural cavity contained 265 mL of cloudy red fluid. The dorsal medial aspect of the left lung was loosely adhered to the parietal pleura. The left lung was heavy and firm. The left lung and parietal pleura were coated with strings of tan, fibrin-like material. Serosal surfaces of the left lung were light pink, pink, and purple and severely congested. Cut surfaces were mottled light pink, pink, red, frothy and wet. The right lung was pink to purple on serosal surfaces, and red to dark red and wet on cut surfaces. The airways of both lungs contained a small amount of watery, red fluid. No parasites were observed. The mucosa was dark pink. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER The subdermal tissue and muscle were serous.

COMMENTS The carcass was recovered from intake well #3. Respiratory findings suggest the manatee drowned. The left lung findings with fibrin formation may indicate this was not peracute and suggest the animal may have been in the well for a little while before it died. There were no obvious underlaying health issues. The carcass' fat was depleted but the GI tract was relatively full, and this thin condition is not uncommon for manatees in this area this time of the year.

SIGNIFICANT FINDINGS

- Bloody nares
- Wet, frothy lungs
- Heavy, firm lung coated with fibrin
- Fluid in pleural cavity
- Dark red ascites
- Congested urinary bladder mucosa, parietal pleura, hemidiaphragm, lung serosa
- Relatively empty duodenum
- Well rake scrapes on dorsum
- Few chronic cold stress lesions
- Bleached epidermis
- Thick algal mat

- Depleted, serous fat
- Serous tissue
- Autolyzed internal organs
- Recovered from FPL Canaveral intake well #3

PROBABLE CAUSE OF DEATH Human; Other

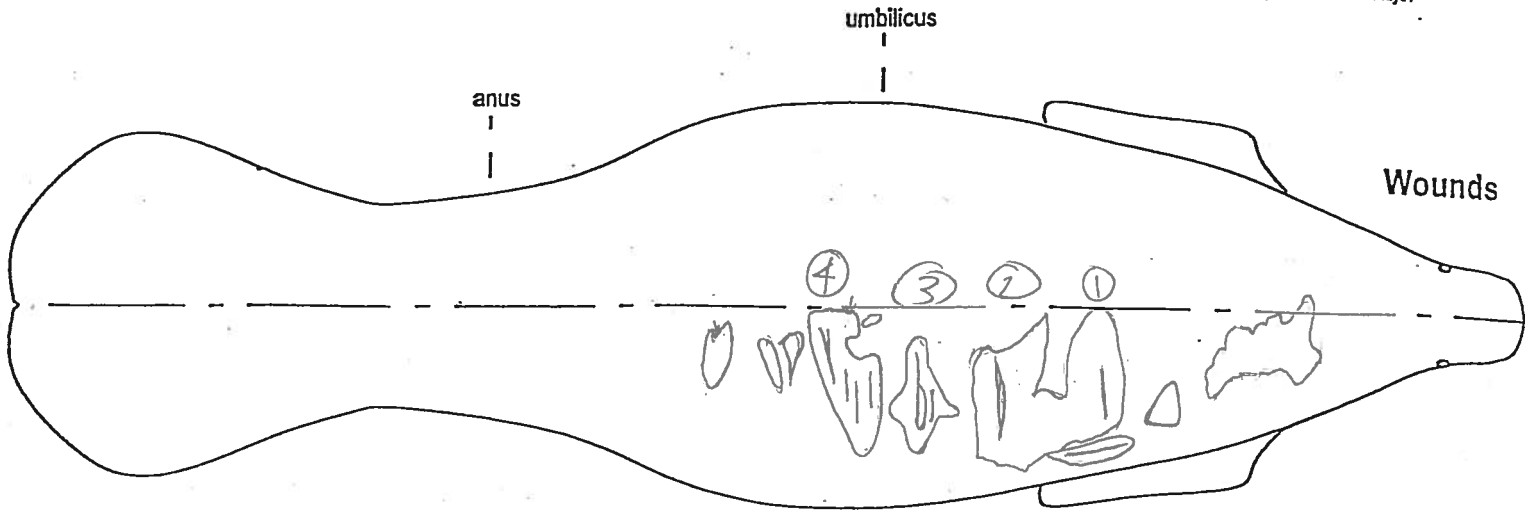
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Anna L. Panike
Sean M. Tennant
Christine M. Fontaine
Tim Bonsper (MMPL volunteer)

REPORT FILED BY de Wit

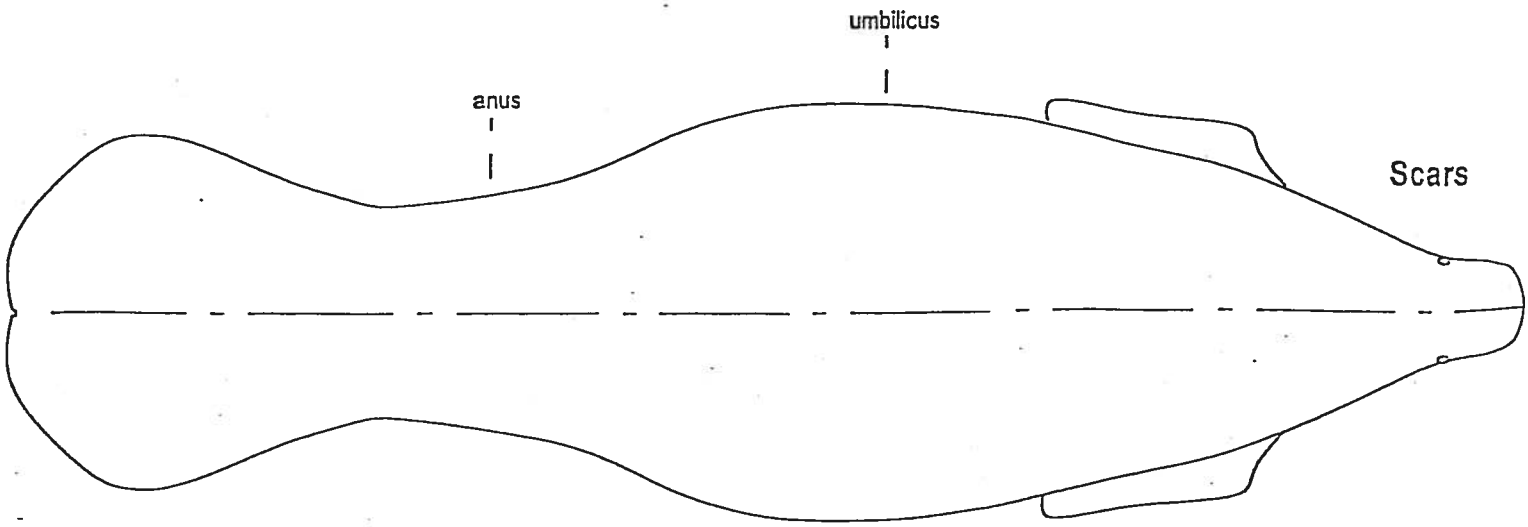
Date 17 Feb 2020 Field I.D. MEC20023

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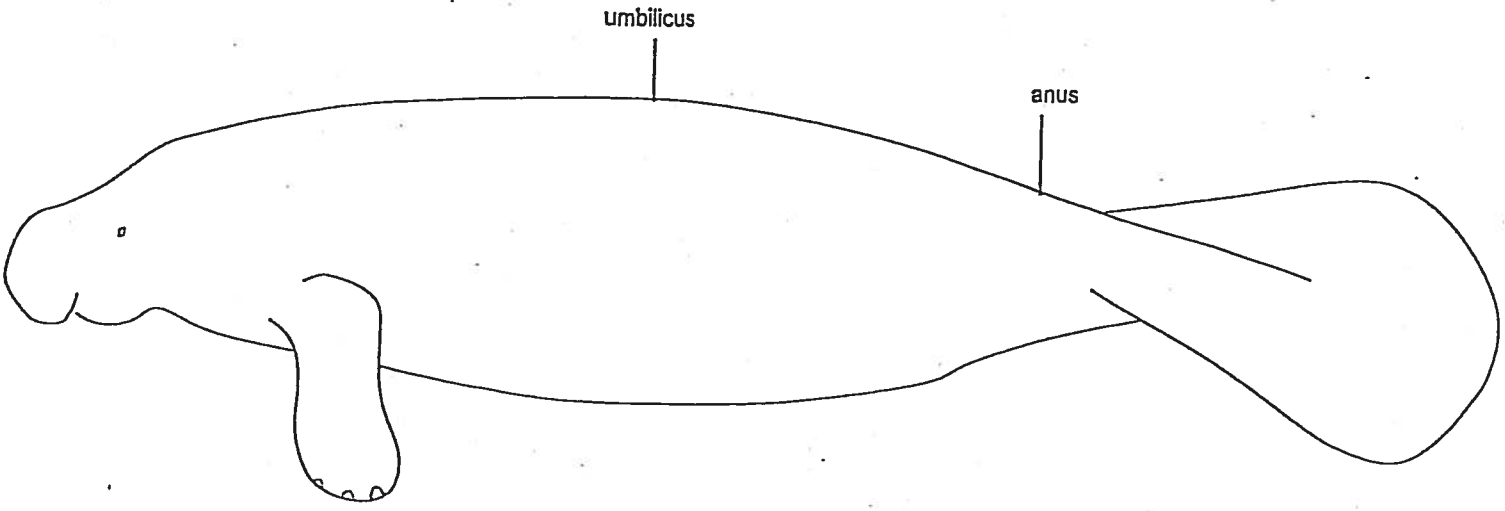


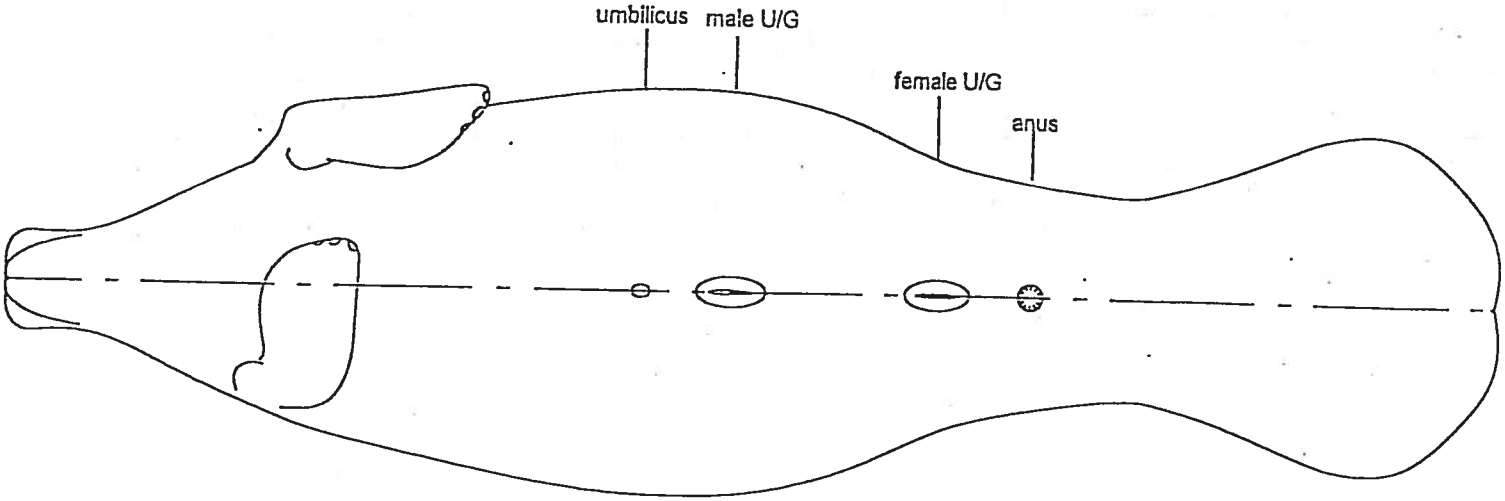
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Width																				
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Distance ⊛	7.5	6.6	8.7																	

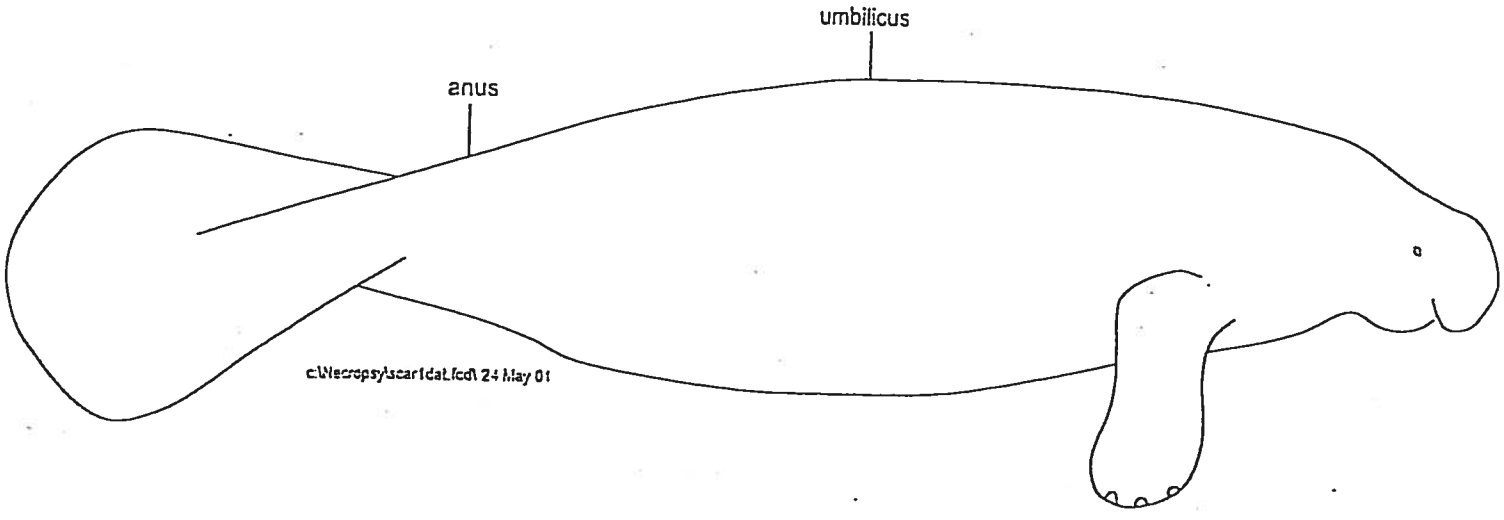
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tallest height: 34.9cm
⊛ middle to middle



FIELD I.D. _____


umbilicus
anus

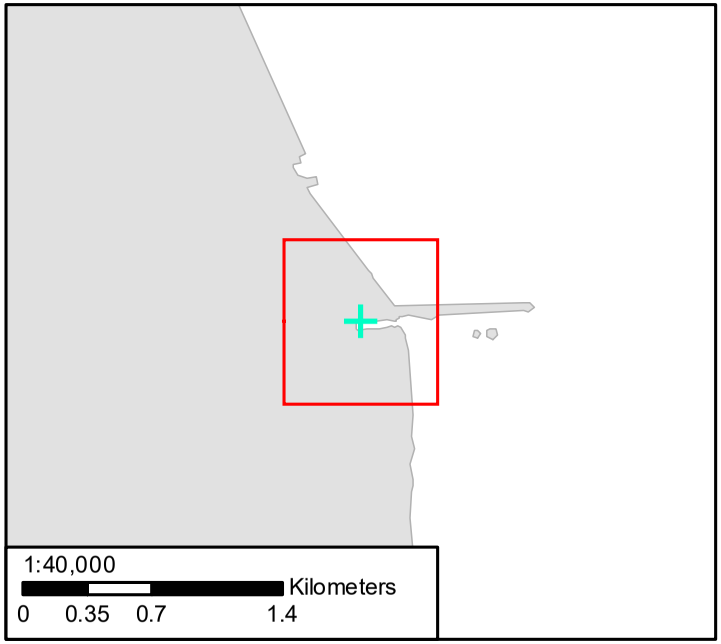

umbilicus
male U/G
female U/G
anus

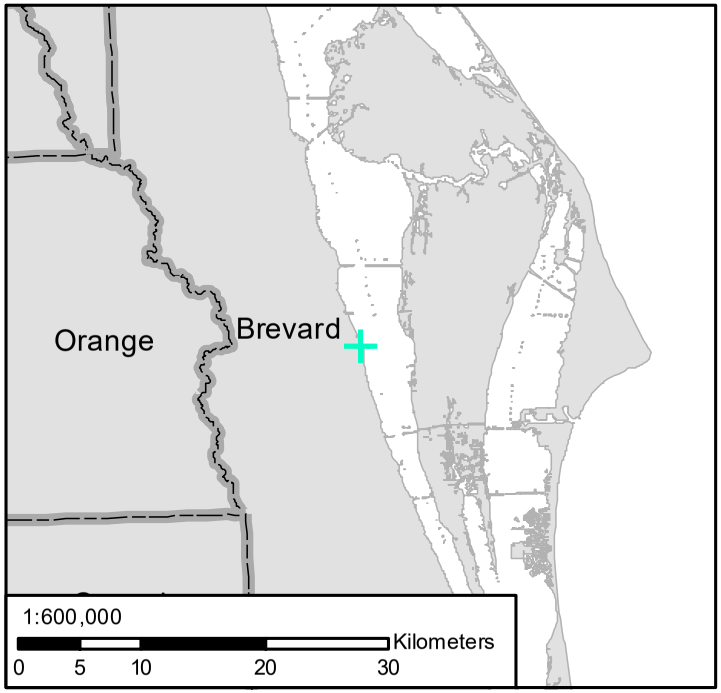

umbilicus
anus
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Verified Location of Manatee Carcass MEC20023

Report Date: 2/10/2020 **Received Date**: 2/11/2020 **Received By**: MMPL-MdW







Location: Port St. John, Brevard County

Latitude: 28.46823°N **Longitude**: -80.76429°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20023
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # _____ FWC District: _____
Sex: M / (F) / Undetermined Length: 157 cm (estimated _____) Weight _____ kg.
Date reported: 10 Feb 20 By: FPL → FWC Bill Greer
Date collected: 11 Feb 20 By: MMPL MdW
Date necropsied: 12 Feb 20 By: MMPL MdW ALP CMF, SMT

LOCATION: State: (FL) (___) County: Brevard Waterway: Indian River
Latitude: _____ N Longitude: _____ W
Locality description: FPL Canaveral intake well #3
Port St John,

CONDITION: - Fresh - Moderate - (Bad) - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: (Dorsal) (Ventral) (R. Lateral) (L. Lateral) - Scars (Fluke) (Cranial) (Internal) Site (Other)
MTLS COLLECTED: (**Genetics**) **Earbone** – Partial Skeleton – Complete Skeleton –
Histology – (Other) sed. sample SJ, stomach contents in alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other _____
Genetics Box # 96
Female reproductive findings or N/A
LACTATING Yes – (No) – UNK **PREGNANT** Yes – (No) – UNK **UTERINE SCAR** – Yes – (No) – UNK
UTERINE HORNS: (Small diameter) – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – (Wound measurements) – Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: (Negative); Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

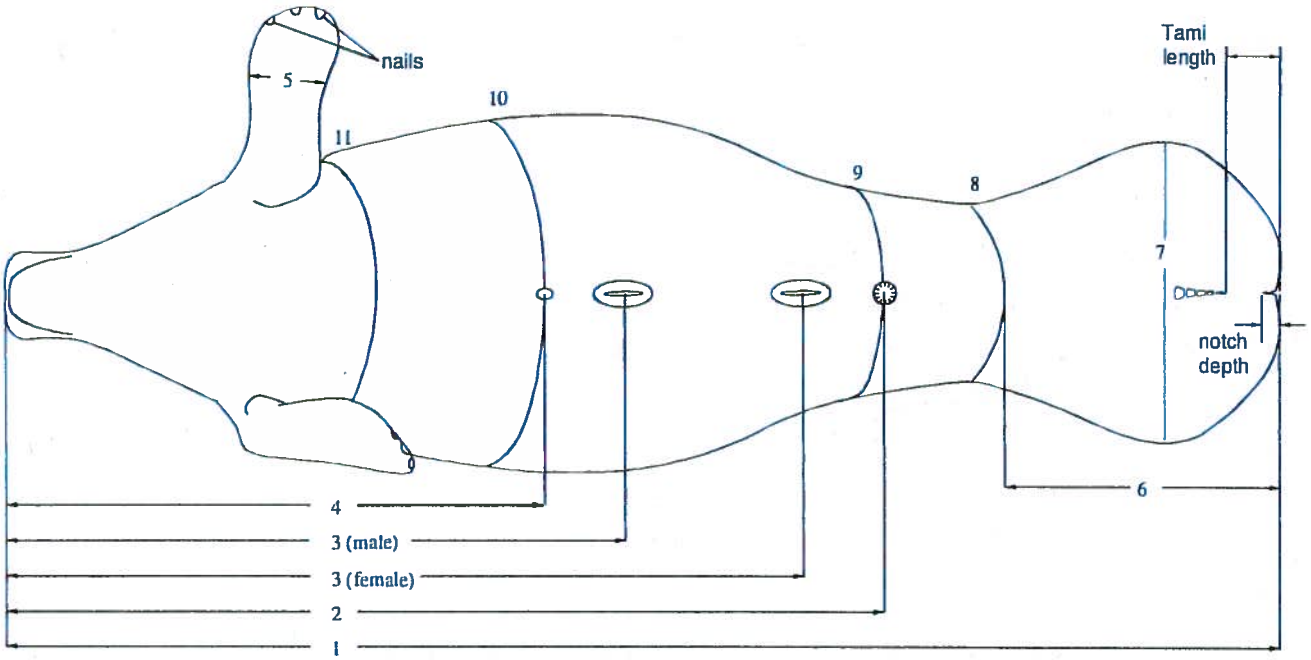
REMARKS: _____

Field ID #_____

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

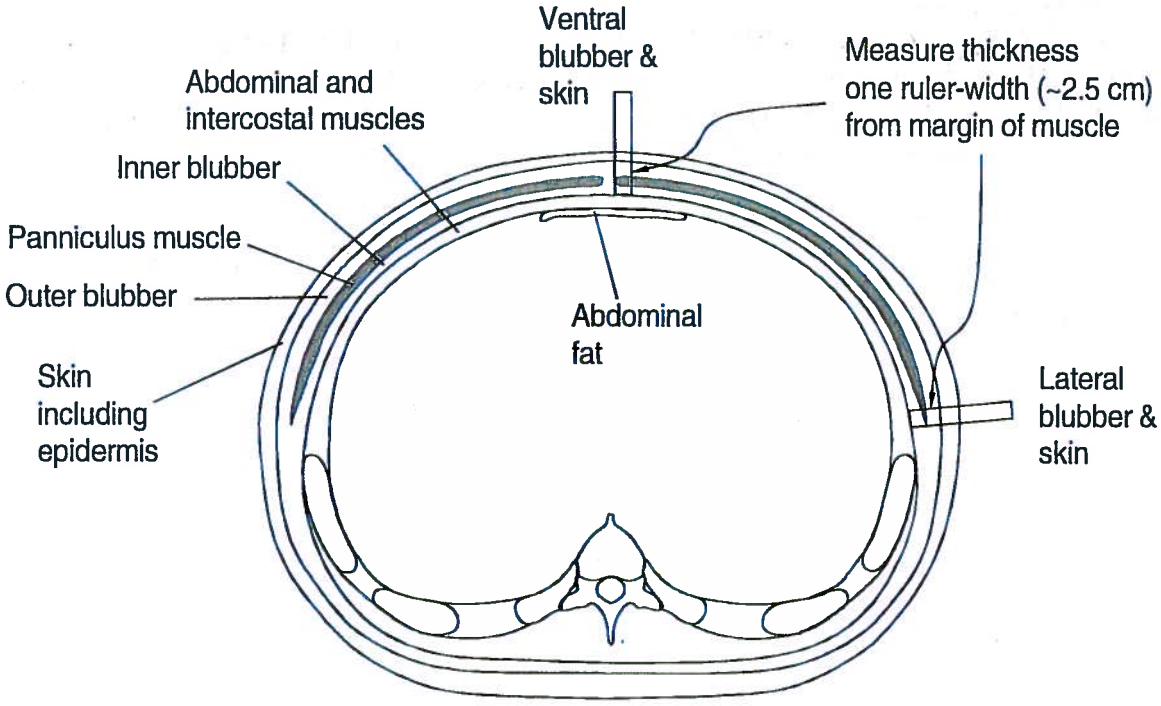
1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C _____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8.*Girth at fluke base _____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae _____ cm

(Nail count: L___R___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20023
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 10 February 2020 **By**: FPL- Jennifer Pickett to FWC-WDG
Date collected: 11 February 2020 **By**: FWC- WDG, MdW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 135 m N of 186 Cottrell Avenue

Carcass Orientation: Sunken

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS: Recovered from FPL-CCEC well #3

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20024**
Date of Report: 2020-Feb-13
Filed By: FWC MMPL

FWC Case # 2384 **FWC Region:** NE

Sex: Male **Length:** 187 **cm** **Weight:** 130.0 **kg**

DATE REPORTED: 2020-Feb-13 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-13 **By:** FWC-SMW,WDG

DATE NECROPSIED: 2020-Feb-17 **By:** MMPL-MdW,BLB,ALP,BDB,SMT,TDW,CMF

LOCATION: **State:** FL **Latitude:** 28.19904 **N**
County: Brevard **Longitude:** -80.63251 **W**
Waterway: Banana River
Location description: Merritt Island, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Emaciated; Depleted fat(s); Serous fat(s); Dark line kidney(s); Wet lung(s); Heavy lungs; Firm, swollen left lung with microabscesses and coated in fibrin; Folded right lung; Fluid in lung airways, pleural cavities; Froth in trachea; Fluid from nares; Enlarged T-septal lymph nodes; Congested peritoenum, mesenteries, abdominal fat, hemidiaphragms, lung, urinary bladder-, airway-, stomach mucosa, GI serosa; Petechiae hemidiaphragms; Black specks peritoneum.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Histology. Microbiology lung. Cytology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Bacteriology report. Histology report. Cytology report.

REMARKS:

PIT tag scan negative. Bleached epidermis; Kidney stones. Macroalgae in GI tract. Thick algal mat.

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Necropsy Report	
Lat/Long	

Field ID #: MEC20024

MORPHOMETRICS:

Total length:	187 cm	**Fluke base:**	57 cm	**Girth at axillae:**	107 **cm**
Snout to anus:	125 cm	**Fluke width:**	51 cm		
Snout to U/G:	80 cm	**Girth at fluke base:**	68 cm		
Snout to umbilicus:	70 cm	**Girth at anus:**	85 cm		
Flipper width:	11 cm	**Girth at umbilicus:**	140 cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20024 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 13 February 2020 **NECROPSY DATE** 17 February 2020
GENDER Male **TL** 187 **cm WT** 130 **kg** **CONDITION** Moderately Decomposed

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HISTORY 13 February 2020, at 1305 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a manatee entangled in something in the Banana River in Merritt Island, Brevard County. FWC case number 2384 was assigned. The complainant, Judy Cult (321-223-1694), stated that the manatee was small and was approximately 200 feet off her back porch. At 1430 hrs, SMW and FWC intern-Kelly L. Etherton (KLE) arrived at the residence. At 1440 hrs, SMW confirmed that the manatee was dead and was not entangled. SMW and KLE loaded the carcass via Ezy-Lift by 1505 hrs. **14 February**, after recovering MEC20025 and MEC20026, FWC biologist-William D. Greer transported all three carcasses to the MMPL arriving at 1328 hrs.

EXTERNAL All of the epidermis was present. Clear fluid exuded from the nares. The carcass had a peanut-shaped head. The ventrum was flat. The epidermis had bleached mottling on the lateral aspects, ventrum, and the fluke. A few barnacles were present. Barnacle scars and copepods were observed. There was a thick green algal mat on the dorsal aspect. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There a small amount of serous abdominal, mesenteric, and omental fat. The abdominal fat and peritoneum were moderately congested and had black specks.

STOMACH The stomach contained 2 L of wet, moderately chewed, leafy, slightly fibrous, stringy, tan to green vegetation mixed with a moderate amount of well-chewed, dark brown to dark red macroalgae. The mucosa was moderately congested. There was a mild infection of dead nematodes. An ELISA toxicology sample was collected.

DUODENUM The duodenum was distended with gas. The dorsal aspect had bands of severe congestion. The duodenum contained 1 L of wet, moderately chewed, leafy, slightly fibrous, stringy, tan to green vegetation mixed with a moderate amount of well-chewed, dark brown to dark red macroalgae. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested. The proximal-most three meters of the small intestine were dark grey discolored and contained a small amount of viscous, dark tan to grey mucus. The remainder of the small intestine contained a moderate amount of viscous, tan and white mucus mixed with a scant amount of well-chewed, green to light red vegetation (including macroalgae). The mucosa was unremarkable. The Peyer's patches were light to dark grey. No parasites were grossly observed.

CECUM The cecum contained 1 L of moist, well-digested, leafy, pasty, green digesta. The mucosa was dark grey to black and sloughing. No parasites were observed.

COLON The mesentery was moderately congested. The distal-most two meters of the serosa were severely congested. The proximal colon contained a moderate amount of moist, well-digested, moderately formed, leafy, pasty, green feces. The distal colon contained a moderate amount of moist, moderately digested, leafy, pasty, moderately formed, dark green feces. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was dark purple to black on serosal surfaces, and dark red on cut surfaces.

LIVER The liver was firm. The margins were sharp and rounded. The serosal surfaces were blue to purple and the cut surfaces were red to brown. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 50 mL of thick, viscous, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The testes and seminal vesicles were small. There was no fluid on cut surfaces of the epididymides, deferent ducts, or seminal vesicles.

KIDNEYS There was scant serous perirenal fat. The kidneys were pink to tan on serosal surfaces. On cut surfaces, the cortices were dark pink to tan and the medullae were pink to dark pink with tan discoloration and gritty material radiating from the centers. The corticomedullary boundaries were distinct and had a faint red line.

URINARY BLADDER The bladder contained 50 mL of watery, clear, yellow urine. The mucosa was moderately congested. An ELISA toxicology sample was collected.

HEART There was scant epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact and were severely congested. The congestion was most severe on the pleural aspects. There were petechiae on the abdominal aspect. The left pleural cavity contained 600 mL of slightly viscous, light red fluid mixed with a small amount of gelatinous tan material. The right pleural cavity contained 500 mL of watery, light red fluid. The left lung was coated with a thin layer of yellow fibrin, and was firm and swollen. The serosal surfaces were severely congested. Both lungs were heavy. The serosal surfaces of both lungs were light to dark pink. The cut surfaces were dark pink to red and wet. The left lung had numerous microabscesses throughout the parenchyma. The caudal tip of the right lung was folded cranially and appeared pinched at the fold. The primary and secondary airways contained an abundant amount of watery, red-tinged fluid. The mucosa was severely congested. No parasites were observed. The left T-septal lymph nodes were moderately enlarged. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The nares and periotic cavities contained a large amount of viscous tan mucus. The trachea contained a large amount of white froth. The tracheal mucosa was moderately congested.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Fluid from nares
- Depleted, serous fat
- Firm, swollen left lung with microabscesses and coated in fibrin
- Wet, heavy lungs
- Folded right lung
- Fluid in lung airways, pleural cavities
- Froth in trachea

- Enlarged T-septal lymph nodes
- Congested peritoneum, mesenteries, abdominal fat, hemidiaphragms, lung, urinary bladder-, airway-, stomach mucosa, GI serosa
- Petechiae hemidiaphragms
- Dark line kidneys
- Kidney stones
- Bleached epidermis
- Thick algal mat
- Black specks peritoneum
- Macroalgae in GI tract

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

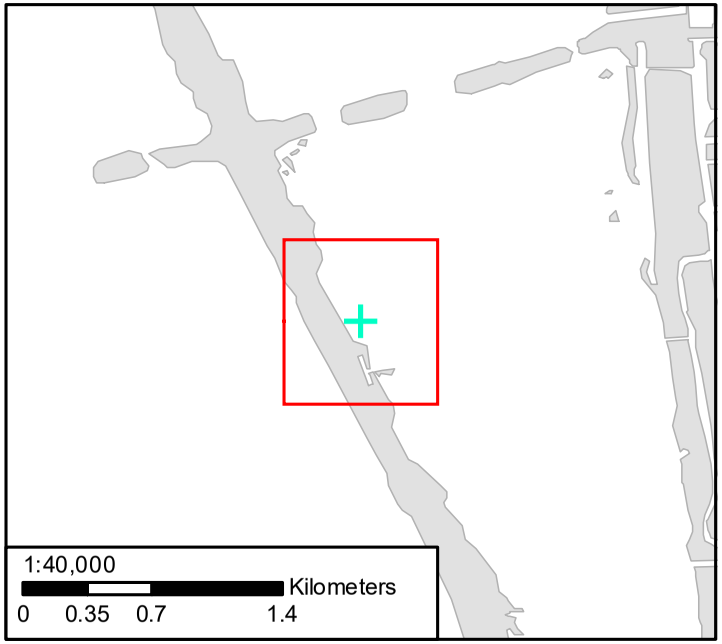
Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant
Christine M. Fontaine

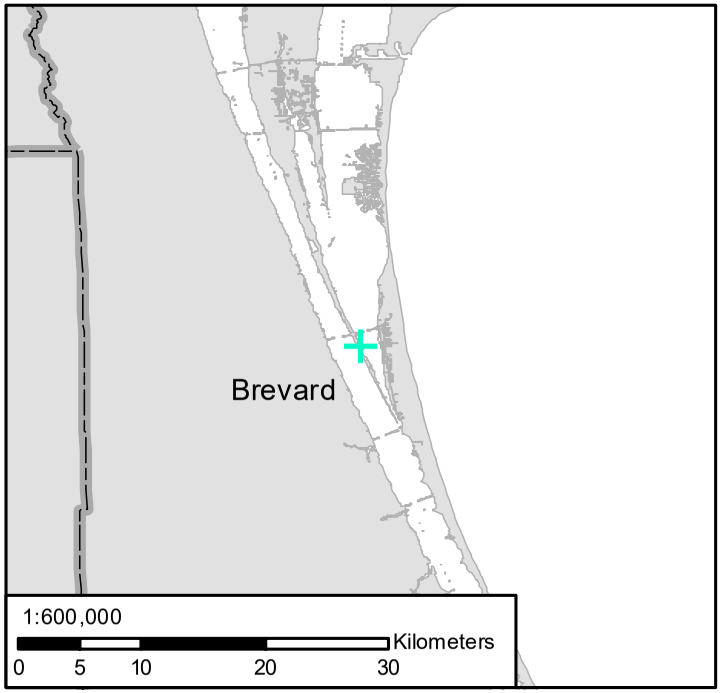
REPORT FILED BY de Wit

Verified Location of Manatee Carcass MEC20024

Report Date: 2/13/2020 **Received Date:** 2/13/2020 **Received By:** FWC-SMW,WDG







Location: Merritt Island, Brevard County **Latitude:** 28.19904°N **Longitude:** -80.63251°W

Map Created: 3/29/2021

NECROPSY REPORT
FINAL REPORT

Field ID: MEC20024
Alternate Field ID:
Accession Number: 20-101
Species: *Trichechus manatus latirostris*
Date: 13 Feb 2020 (DOR); 17 Feb 2020 (DON)
Location: FL
Sex, Age:M
TL: 187 cm
WT: 130 kg
Body Condition: Emaciated
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: 24> hours

HISTORY

Findings include:

- Emaciated
- Depleted, serous fat
- Firm left lung with micro abscesses and coated in fibrin
- Wet, heavy lungs
- Fluid lung airways, pleural cavities
- Enlarged T-septal lymph nodes
- Froth trachea
- Congested peritoneum, mesenteries, abdominal fat, hemidiaphragms, lung, urinary bladder-, airway mucosa, GI serosa
- Dark line kidneys
- Kidney stones
- Bleached epidermis
- Macroalgae in GI tract

Summary: Natural; Other

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment
Cytology	Lung imprint	Heterophilic bacterial pneumonia	Bipolar bacilli
Microbiology	L Lung	E coli Pasturella multocida Vibrio vulnificus	>99% <1% <1%
Microbiology	Right Lung	Morganella morgani Pasturella multicoda	

Test	Tissue/Sample	Result	Comment
		Moraxella osloensis	

MICROSCOPIC DESCRIPTION

Received 8 Jan 2020 are 6 H&E slides and 1 BB slide..

There is a severe fibrinous bronchointerstitial pneumonia. Alveolar spaces are flooded with fibrin, heterophils, and macrophages. Rarely within macrophages, there are presumptive 1 µm bacterial coccobacilli. There is necrosis of interstitial walls which are hyaline and contain necrotic cellular debris. Vessels walls are occasional hyalinized and are lined by plump endothelial cels. There is edema of the pleura and interstitium. Fibrin is present on the pleural surface. Few gram-negative coccobacilli are present with macrophages of Brown and Brenn-stained section of lung. There is mid, diffuse edema of interstitial walls of the right lung lobe. There is moderate, diffuse congestion.

There is marked, diffuse depletion of pancreatic acinar zymogen granules.

One surface of the left hemidiaphragm exhibits expansion of the fascia/muscle interface and myofiber interstitium by pale, homogenous eosinophilic fluid (edema) and hyaline proteinaceous fibrillar substance (fibrin). Heterophils and macrophages are sprinkled within the fluid. On the surface, there is mesothelial hypertrophy and clumps of fibrin with enmeshed necrotic cellular debris and heterophils is present.

The distal renal medulla is atrophied. There is loss of ducts. There are ducts which effaced by amorphous basophilic bone (osseous metaplasia) or lamellated amphophilic substance.

There is lymphoid hyperplasia of the T-Septal lymph node. The medullary sinus is expanded by macrophages.

The following tissues have no significant histological findings: Adrenal gland, liver, heart

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System

A. Left Hemidiaphragm: Hemidiaphragmitis, heterophilic and histiocytic, subacute, multifocal, moderate with fibrin exudation and moderate congestion.

Respiratory Sytstem

A. Left Lung: Bronchointerstitial pneumonia, heterophilic, fibrinous, subacute, diffuse, marked with edema, vascular fibrinoid necrosis, and rare intrahistiocytic gram-negative coccobacilli.
B. Right Lung: Edema, diffuse, moderate with moderate congestion.

Nervous System
NE

Urinary and Reproductive System

A. Kidney: Medullary atrophy with osseous metaplasia and intraductular mineral.

Digestive System/Body as a Whole

A. Pancreas, Exocrine: Atrophy, diffuse, marked.

Cardiovascular System
NSF

Hepatobiliary System
NSF

Endocrine System
NSF

Hematolymphatic System

A. T-Septal Lymph Node: Lymphoid hyperplasia, moderate and sinus histiocytosis.

INTERPRETATIVE SUMMARY

DIAGNOSES
Bacterial Pneumonia and Hemidiaphragmitis
Renolithiasis and Osseous Metaplasia

Primary Diagnostic Category: Infectious Bacterial/.Organ Specific (non-inflammatory)

Linked Cases:

Death is attributed to bacterial pneumonia and possible septicemia. Mixed bacteria were isolated from the lung primarily E. coli and less commonly Pasturella multocida. Based on recent cases, this likely represents another instance of pasturellosis. Few gram-negative bacterial coccobacilli were present, but would be suggestive of Pasturella species. The hemidiaphragmitis was the result of the pulmonary bacterial infection. Hemidiaphragmatic function may have been affected. Nephroliths were observed grossly and small concretions were observed in the atrophied renal medulla. In addition, there were foci of osseous metaplasia. This is likely associated with chronic inflammation/damage to the kidney.

TEST	PURPOSE	SITE	RESULT

DATE:	REPORTING PATHOLOGIST:
3/15/2020	David S. Rotstein, DVM, MPVM, DACVP

FIGURES

No Figures

EXFOLIATIVE CYTOLOGY REPORT
University of Florida Aquatic Animal Health Program

2015 SW 16th Ave
Gainesville, Florida 32610
352-294 4093 (o)
352-870 5108 (c)
StacyN@ufl.edu

REPORT DATE: February 18, 2020	**COLLECTION DATE:** February 17, 2020
ANIMAL ID: MEC20024	**SPECIES:** *Trichechus manatus latirostris*

[This report includes interpretative summaries of cytologic findings in the submitted specimens; full reports with detailed cytologic description for each site will be available upon request, slides are on file]

INTERPRETATION:
Fairly well preserved specimen
Marked heterophilic and histiocytic pneumonia with mild lymphocytic component and bacterial infection
Presence of infrequent extracellular and phagocytized monomorphic bipolar bacilli
Respiratory epithelial cell hyperplasia
Presence of frequent extracellular crystals suggestive of salt origin

COMMENT: No yeast/fungus, parasites, cytologic evidence of hemorrhage, or neoplastic cells are identified. The monomorphic appearance of bipolar bacilli is most consistent with bacterial infection (consider primary vs. secondary). The presence of salt crystals suggests aspiration of sea water, i.e. peri-mortem. Aerobic culture was submitted and will be reported directly by the microbiology laboratory.

Nicole I. Stacy, DVM, DrMedVet, DACVP
Veterinary Clinical Pathologist
University of Florida College of Veterinary Medicine

UF | UNIVERSITY of FLORIDA
Veterinary Diagnostic Laboratories

2015 SW 16th Ave, Gainesville, FL 32610
Phone: 352-294-4726
Fax: 352-392-1769
http://labs.vetmed.ufl.edu

Client ID:	AQUATIC	**Patient ID:**	407338
Client Name:	RS-Walsh/Stacy Marine Mammal Testing	**Patient Name:**	MEC20024
Client Address:	Email Invoices to: ladler1@ufl.edu Gainesville, FL 32610	**Received Date:**	2/18/2020
		Specimen:	L Lung
Primary Phone#	(352) 294-4198		
Clinician:	Nicole I. Stacy, DVM		
Ordered Tests:	Aerobic Culture NO Suspt.		
Pending Tests:	Aerobic Culture NO Suspt.	**Prelim By:**	IS 02/20/20
Requisition #	065281	**Finalized By:**	MC 02/21/2020

Preliminary Results

Scant to moderate growth:

1. Escherichia coli	>99%
2. Enteric Gram negative bacilli	}<1%
3. Non-enteric Gram negative bacilli	

Comments:

Final Results

Scant to moderate growth:

1. Escherichia coli	>99%
2. Pasteurella multocida*	<1%
3. Vibrio vulnificus*	<1%

Comments:

*Specific identification of the bacterial isolates was not possible by standard biochemical methods. The isolates from this sample was sent to the Bronson Animal Disease Diagnostic Laboratory for MALDI-TOF bacterial identification.

Additional identification released per request of clinician.

Technician: MG **Date** 02/20/20, 02/21/2020

Scan here to take our survey

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC2024
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2384 FWC District: FWC. NE
Sex: M / F / Undetermined Length: 187 cm (estimated _____) Weight 130 kg.
Date reported: 13 FEB 2020 By: CITIZEN TO FWC NE DISPATCH - ORLANDO
Date collected: 13 FEB 2020 By: FWL-SMW; FWL INTERN - K. ETHERTON
Date necropsied: 17Feb2020 By: MMPL-MdW, BLB, ALP, BDB, SMT, TDW, CMF

LOCATION: State: FL (___) County: BREVARD Waterway: BANANA RIVER
Latitude: _____ N Longitude: _____ W
Locality description: MERRITT ISLAND, NEAR 8800 SOUTH TROPICAL TRAIL

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other microbiology lung & cytology
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other _____
Genetics Box # 9b
Female reproductive findings of N/A
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements - Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

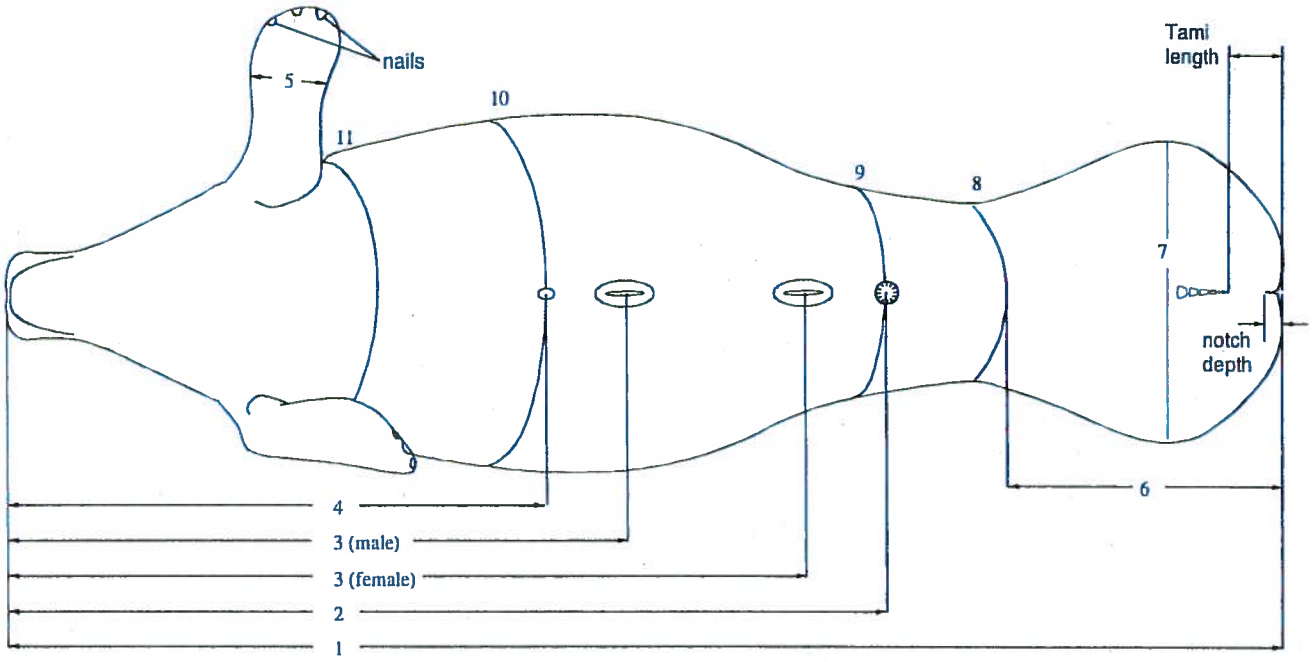
REMARKS: _____

Field ID # MFC2024

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

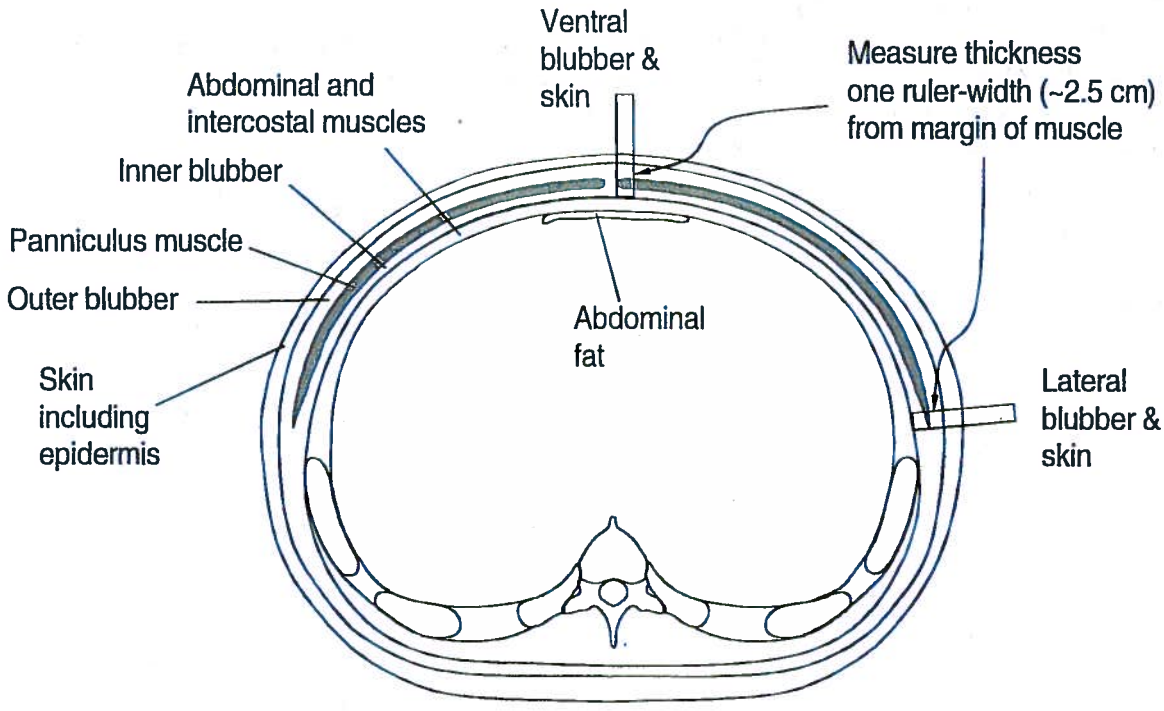
1. Total length 187 cm
2. Snout to anus -C 125 cm
3. Snout to U/G -C 80 cm
4. Snout to umbilicus -C 70 cm
5. Flipper width 11 cm
6. Fluke base 57 cm
7. Fluke width 51 cm
8. *Girth at fluke base 68 cm
9. * Girth at anus 85 cm
10. *Girth at umbilicus 140 cm
11. *Girth at axillae 107 cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20024
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2384 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 13 February 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 13 February 2020 **By**: FWC- WDG; FWC intern- K. Etherton
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 125 m NE of 8860 South Tropical Trail

Carcass Orientation: Grounded

CONDITION: -

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:

☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:

☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:

☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20025**
Date of Report: 2020-Feb-13
Filed By: FWC MMPL

FWC Case # 2391 **FWC Region:** NE

Sex: Male **Length:** 199 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-13 **By:** FPL-Jennifer Pickett to FWC-WDG

DATE COLLECTED: 2020-Feb-14 **By:** FWC-WDG

DATE NECROPSIED: 2020-Feb-17 **By:** MMPL-MdW,BLB,BDB,SMT,TDW,ALP,CMF

LOCATION: **State:** FL **Latitude:** 28.46959 **N**
County: Brevard **Longitude:** -80.76208 **W**
Waterway: Indian River
Location description: Port St. John, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Abscess(es); Serous fat(s); Serous muscle; Empty upper GI tract; Gritty texture GI serosa; Lightly adhered colon.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Sedimentation sample of small intestine for parasitology.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Actual length of the remains was 197 cm. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20025

MORPHOMETRICS:

Total length:	199 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20025
SPECIES *T. manatus latirostris*
RECOVERY DATE 14 February 2020
NECROPSY DATE 17 February 2020
GENDER Male **TL** 199 **cm** (est) **WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 13 February 2020, at 1415 hrs, FWC biologist-William D. Greer (WDG) received a text from Florida Power and Light Cape Canaveral Energy Center (FPL-CCEC) staff-Jennifer Pickett regarding a dead manatee in the discharge area of FPL-CCEC in the Indian River, Cocoa, Brevard County. Jennifer stated that the manatee looked decayed, and she was unsure of the size. WDG requested FWC LE assistance to tow the carcass. FWC case number 2391 was assigned. FWC Officer-Brandon Kearney located the carcass at 1615 hrs, and secured it at the Port St. John boat ramp at 1647 hrs. **14 February**, following the recovery of MEC20024, WDG arrived at the Port St. John boat ramp at 0928 hrs, loaded MEC20025 via carcass trailer by 0939 hrs, then recovered MEC20026. WDG transported all three carcasses to the MMPL arriving at 1328 hrs.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. Decompositional fluid exuded from the nares. No watercraft-related wounds were observed. There was a minimum of two well-healed watercraft-related scar patterns on the dorsal aspect. The fluke margin had a well-healed mutilation between the 9 and 11 o'clock positions. The caudal margin of the fluke was missing and eroded due to decomposition. Actual length of the remains was 197 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. There was a gritty texture on the GI serosa. The colon was lightly adhered to itself, the hemidiaphragm, and the abdominal wall.

STOMACH The stomach contained a few pieces of moderately chewed, leafy, stringy, green and light brown macroalgae. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained a scant amount of watery, moderately chewed, slightly leafy, stringy, brown macroalgae. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal and distal small intestine were empty of contents. The mid small intestine contained a moderate amount of well-chewed, fibrous, leafy, green to brown vegetation (macroalgae and seagrass). The mucosa was autolyzed throughout. There were a few circular dark grey lesions in the wall throughout. There was a moderate infection of pinpoint trematodes throughout. *Nudacotyle undicola* was identified on microscopic examination of a mid small intestine sedimentation sample.

CECUM The cecum contained 500 mL of moist, poorly digested, leafy, fibrous, slightly stringy, green to brown digesta (macroalgae and seagrass). The mucosa was autolyzed. No parasites were observed. An ELISA toxicology sample was collected.

COLON The distal colon contained a moderate amount of moist, firm, well-digested, well-formed, olive green feces. The proximal colon contained a moderate amount of moist, crumbly, fibrous, moderately digested, brown feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder was missing due to decomposition.

REPRODUCTIVE The reproductive fat was rendered. The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The perirenal fat was rendered. The kidneys were soft, friable, and autolyzed. An ELISA toxicology sample was collected.

URINARY BLADDER The bladder was empty of contents. The mucosa was autolyzed.

HEART The heart was missing due to decomposition.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER All fat and most of the muscle was serous. There were three abscesses in the dorsal peduncle muscle (maximum diameter 2 cm)

COMMENTS

SIGNIFICANT FINDINGS

- Serous fat, muscle
- Abscesses
- Empty upper GI tract
- Gritty texture GI serosa
- Lightly adhered colon
- Macroalgae in GI tract
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

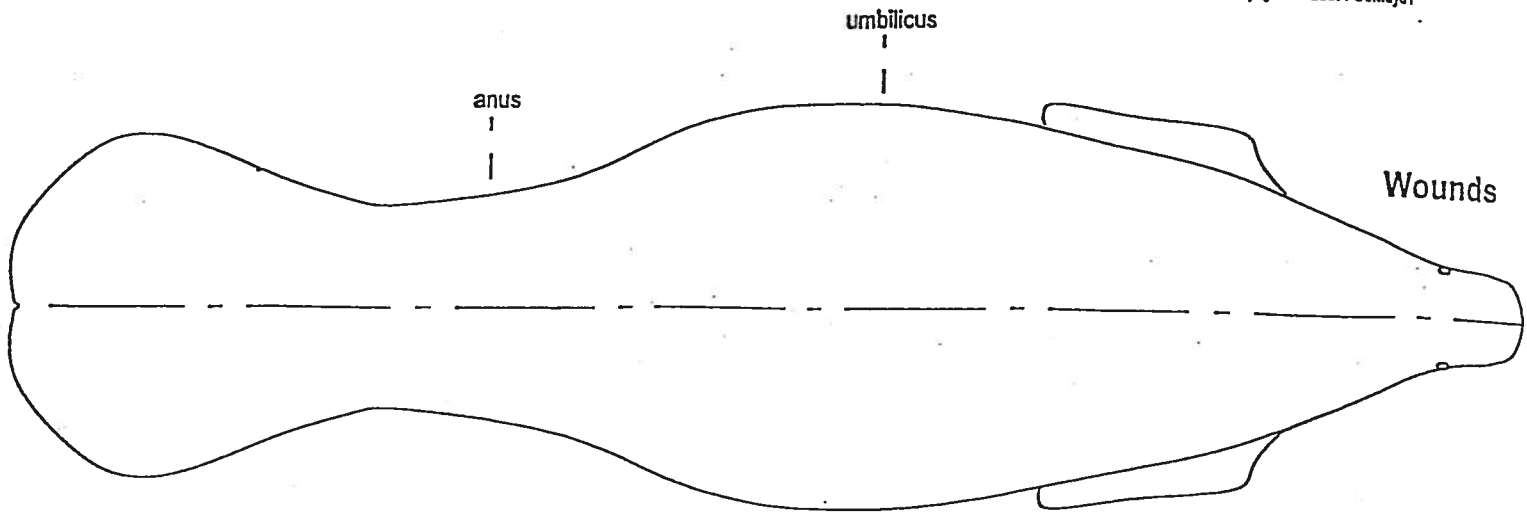
NECROPSY CONDUCTED BY

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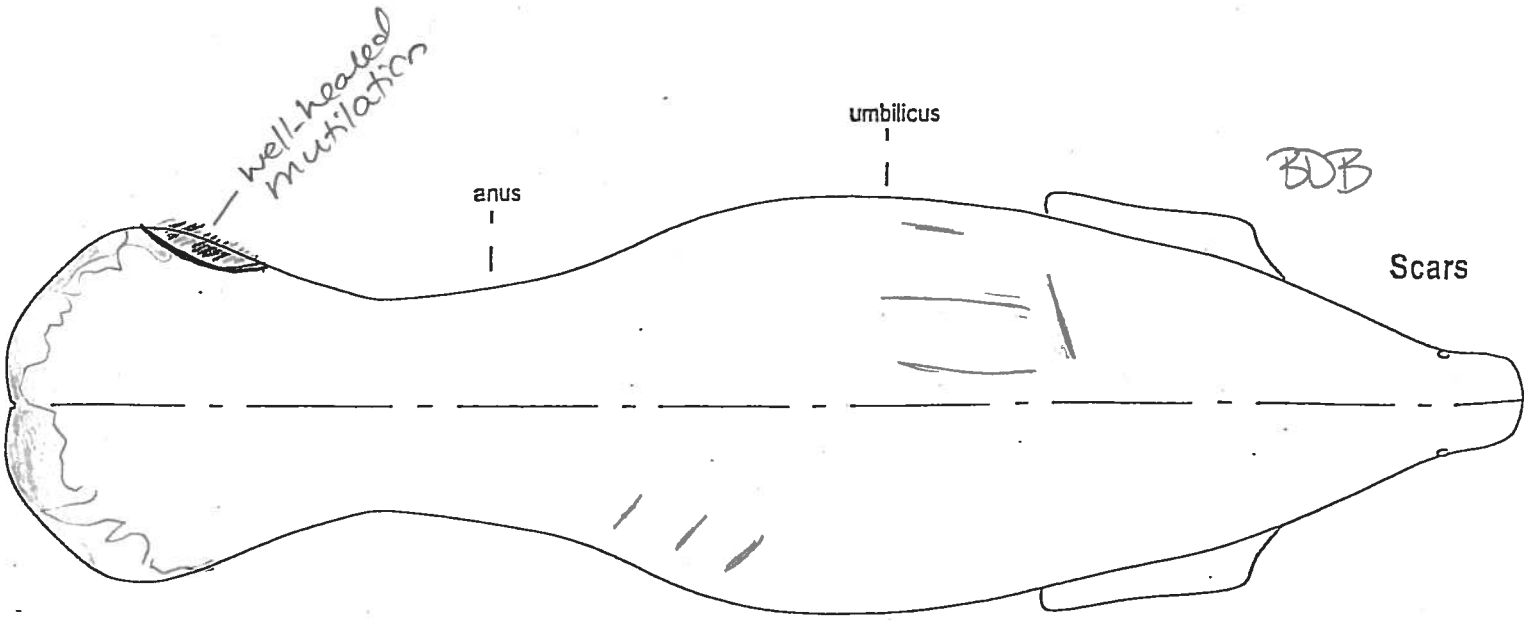
REPORT FILED BY de Wit

Date 14Feb2020 Field I.D. MEC20025

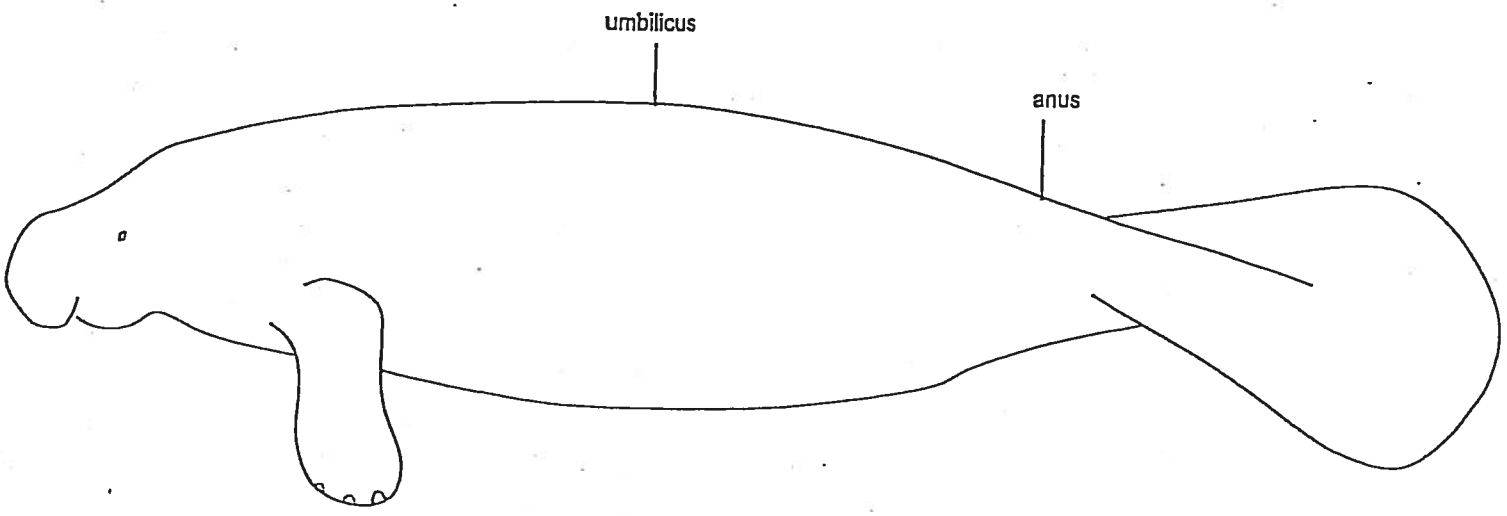
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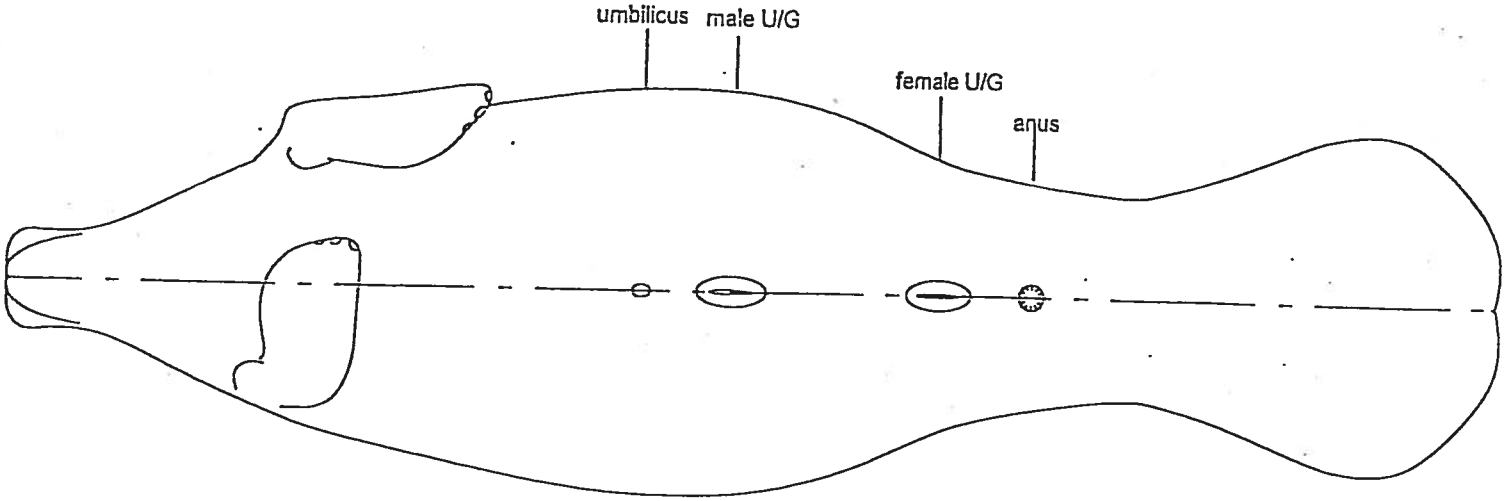


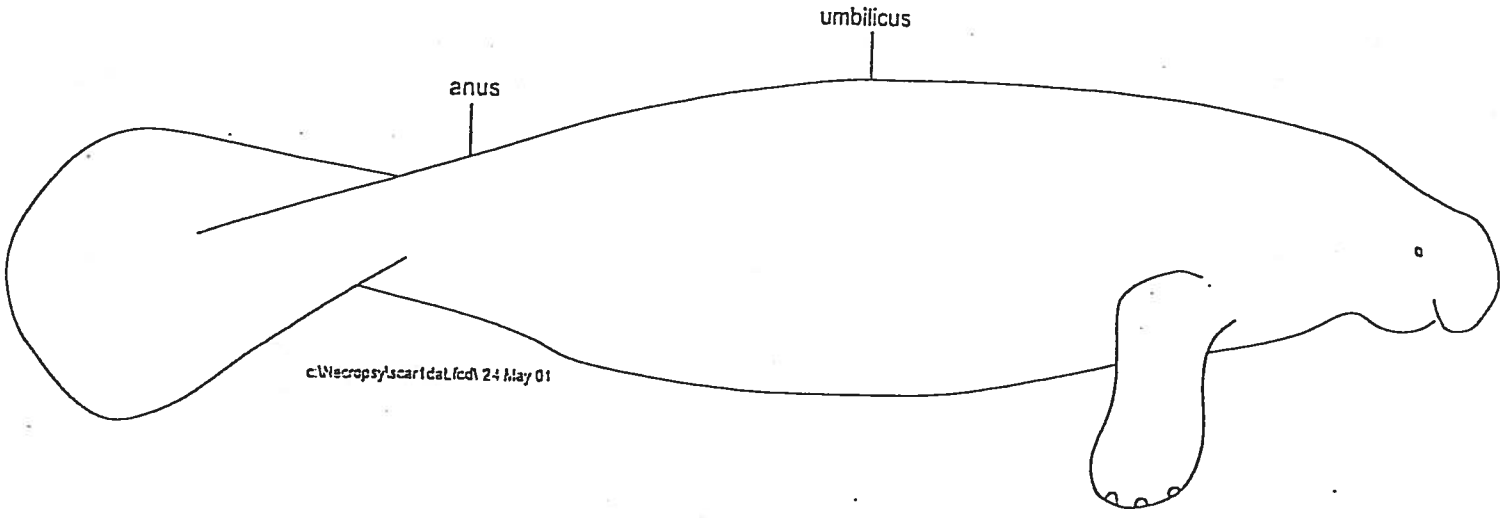
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. _____


umbilicus
anus

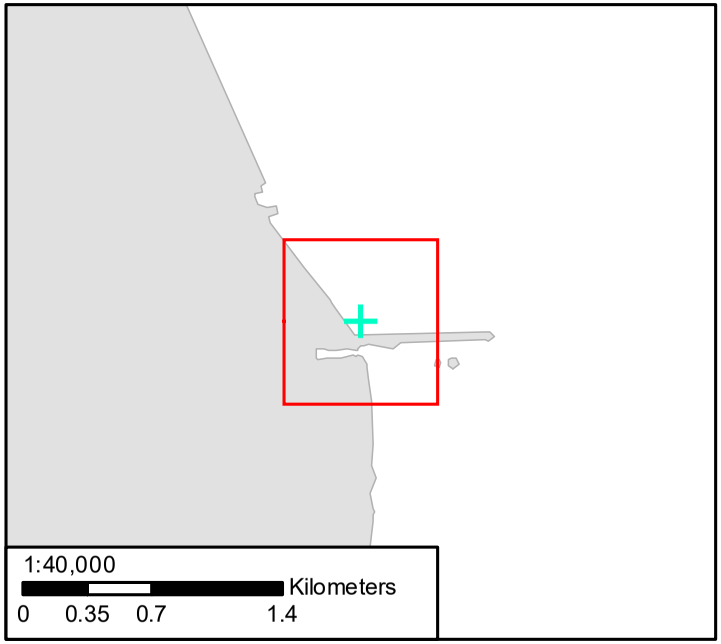

umbilicus
male U/G
female U/G
anus

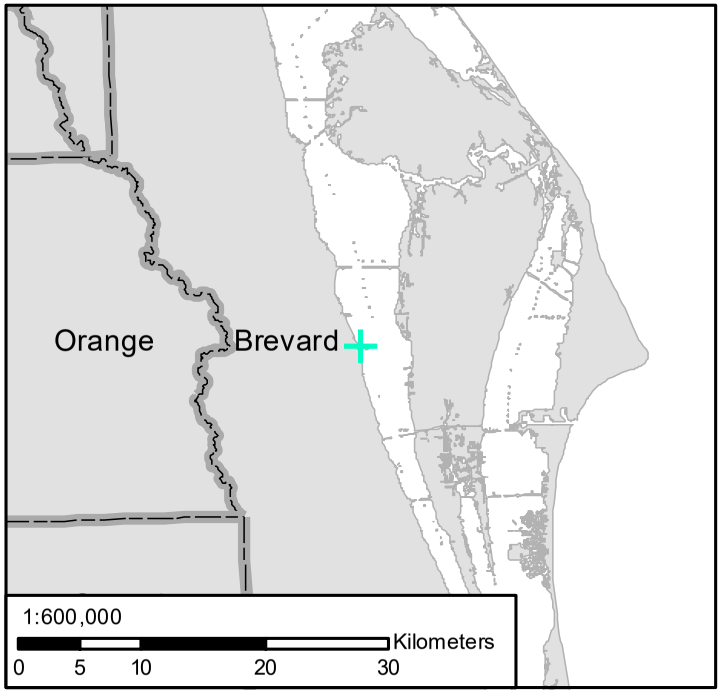

umbilicus
anus
c:\Necropsy\scar1dat.fcd\ 24 May 01

Verified Location of Manatee Carcass MEC20025

Report Date: 2/13/2020 **Received Date:** 2/14/2020 **Received By:** FWC-WDG







Location: Port St. John, Brevard County

Latitude: 28.46959°N **Longitude:** -80.76208°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC 20025
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2391 FWC District: FWC - NE
Sex: M / F / Undetermined Length: 197 cm (estimated 199) Weight _____ kg.
Date reported: 13 FEB 2020 By: FPL - JENNIFER PICKETT TO FWC - WOG
Date collected: 14 FEB 2020 By: FWC - WOG
Date necropsied: 17FEB2020 By: MMPL - MJW, BLB, BDB, SMT, TDW, ACP, CMF

LOCATION: State: FL (___) County: BREVARD Waterway: INDIAN RIVER
Latitude: _____ N Longitude: _____ W
Locality description: COCOA, FPL - CCRL DISCHARGE AREA

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (<150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other ST scrape
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other cecum
Genetics Box # 96
Female reproductive findings or N/A
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

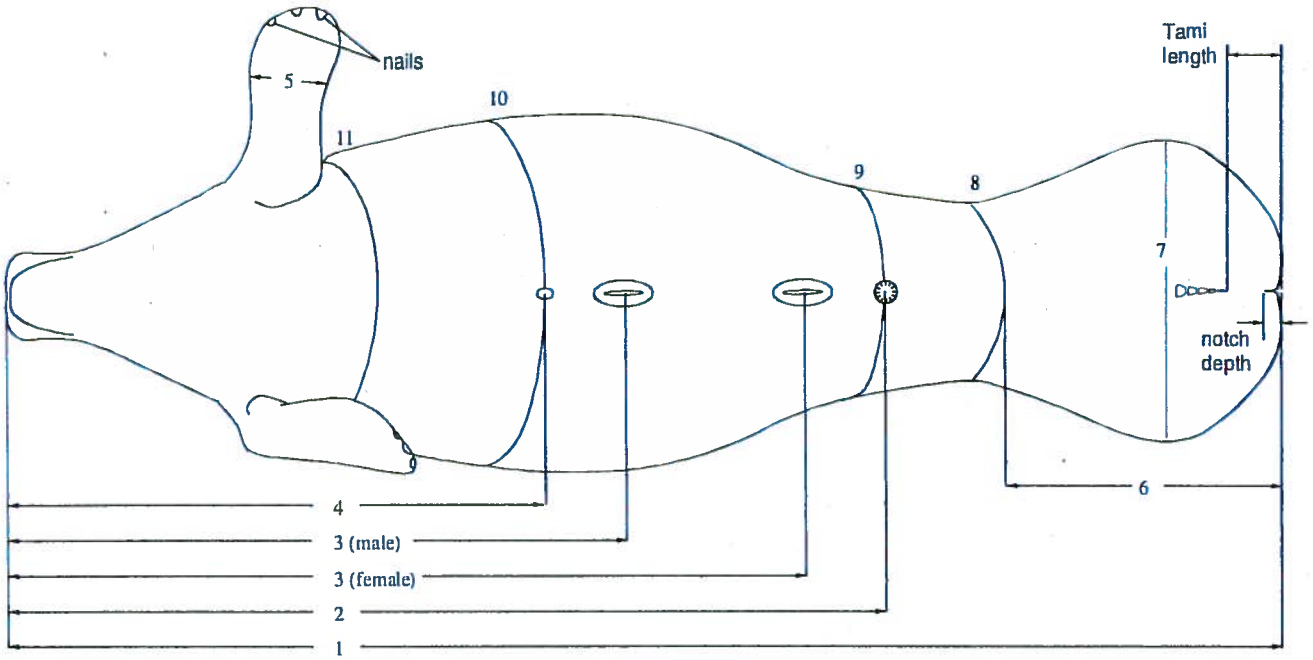
REMARKS: _____

Field ID # MEC

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

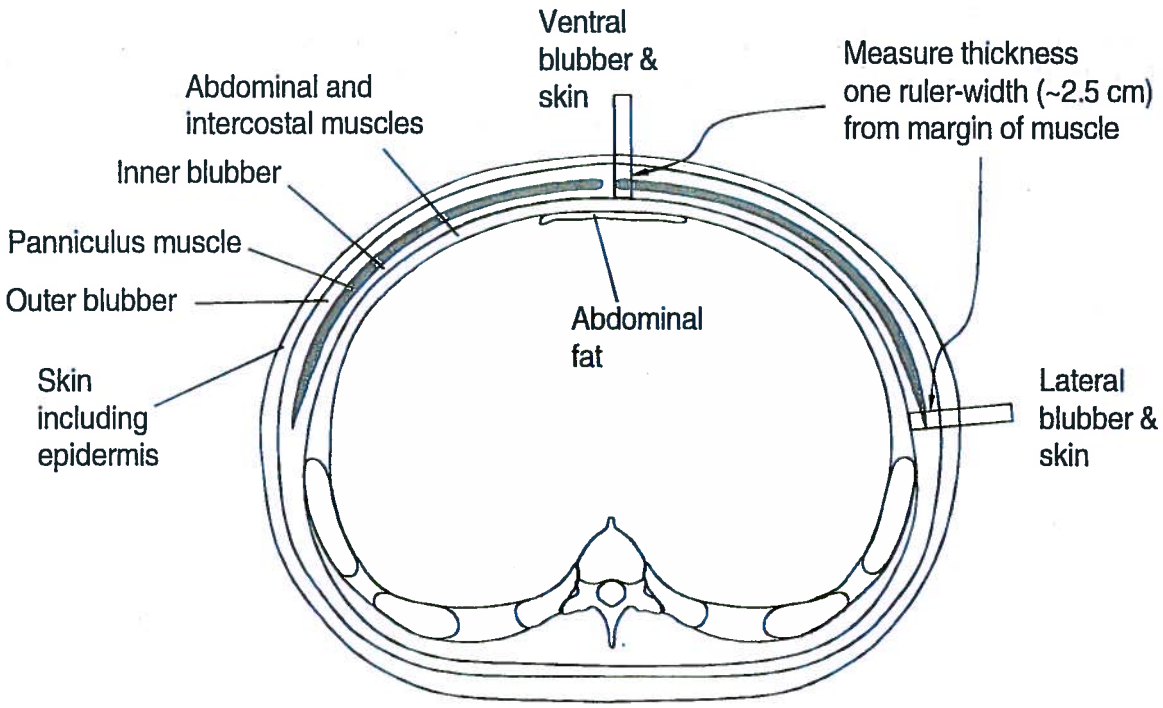
1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C _____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8. *Girth at fluke base _____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae _____ cm

(Nail count: L___R___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin.....	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat.....	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat.....	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20025
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2391 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 13 February 2020 **By**: FPL- Jennifer Pickett to FWC- WDG
Date collected: 14 February 2020 **By**: FWC-WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 300 m NNE of 132 Cottrell Avenue

Carcass Orientation: Floating

CONDITION: -

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20026**
Date of Report: 2020-Feb-13
Filed By: FWC MMPL

FWC Case # 2387 **FWC Region:** NE

Sex: Female **Length:** 236 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-13 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-14 **By:** FWC-SMW,WDG,CMM

DATE NECROPSIED: 2020-Feb-17 **By:** MMPL-MdW,BLB,BDB,SMT,TDW,CMF,ALP

LOCATION: **State:** FL **Latitude:** 28.41368 **N**
County: Brevard **Longitude:** -80.72044 **W**
Waterway: Indian River
Location description: Merritt Island, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Emaciated; Depleted fat(s); Serous fat(s); Serous muscle; Dark line kidney(s); Thick algal mat; Relatively empty, fluid-filled GI tract; Fluid in right pleural cavity; Collapsed right lung; Gritty texture left lung, hemidiaphragm.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Healing wound).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Healing watercraft wound(s).

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20026

MORPHOMETRICS:

Total length:	236 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20026 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 14 February 2020 **NECROPSY DATE** 17 February 2020
GENDER Female **TL** 236 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 13 February 2020, at 1413 hrs, FWC intern-Kelly L. Etherton received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Merritt Island, Brevard County. FWC case number 2387 was assigned. The complainant, Rebecca Thering (716-946-8084), stated that the manatee was on its side and had not moved in hours. She said it appeared to be dead and beached behind her home. Later in the day the carcass was verified by FWC Officer Kearney but he was unable to tow it due to shallow water depth. **14 February**, at 0930 hrs, FWC biologist-Sara M. Wappes and FWC biologist-Carley M. Metcalf arrived at the Cape Crossing Resort and Marina and launched the Key West boat. They located the carcass and towed it to the boat ramp. FWC biologist-William D. Greer (WDG) arrived at the marina at 1021 hrs and loaded the carcass via carcass trailer with MEC20024 and MEC20025 at 1035 hrs. WDG transported all three carcasses to the MMPL arriving at 1328 hrs.

EXTERNAL Approximately 50% of the epidermis was present and sloughing. Decompositional fluid exuded from the nares. The carcass had a peanut-shaped head. There was a thick green algal mat on the dorsal aspect. The dorsal fluke had a healing wound. The epidermis was bleached on the flippers. The ventrum was flat. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, mesenteric, and omental fat.

STOMACH The stomach contained 175 mL of watery, dark brown to black fluid. The mucosa was sloughing. No parasites were observed.

DUODENUM The duodenum contained 20 mL of watery, dark brown to black fluid. The mucosa was sloughing. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a scant amount of viscous, brown to light red paste. The mucosa was autolyzed. No parasites were grossly observed. The Peyer's patches were prominent throughout.

CECUM The cecum contained a scant amount of viscous, brown paste. The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained a small amount of watery, dark green fluid mixed with a small amount of moist, well-formed, well-digested, dark green feces. The mid colon was empty of contents. The distal colon contained a small amount of moist, well-formed, well-digested, fibrous, dark green feces. An ELISA toxicology sample was collected. The mucosa was sloughing throughout. No parasites were observed throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was liquified. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The uterus was small in diameter. There were no scars in the uterus or follicles on the ovaries.

KIDNEYS The perirenal fat was rendered. The kidneys were soft, friable and autolyzed. There was a faint grey line at the corticomedullary boundaries.

URINARY BLADDER The bladder contained 100 mL of cloudy, red-tinged urine. The mucosa was autolyzed and had black specks. An ELISA toxicology sample was collected.

HEART There was scant serous epicardial fat. The heart was soft and friable. Valves were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was torn due to decomposition. The right hemidiaphragm was intact and distended due to gas in the pleural cavity. The right pleural cavity contained 250 mL of watery, red fluid. The right lung was collapsed and slightly adhered to the pleural aspect of the hemidiaphragm. The left lung and pleural aspect of the hemidiaphragm had a gritty texture. Both lungs were soft, friable, and autolyzed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER All fat and muscle was serous.

COMMENTS

SIGNIFICANT FINDINGS

- Bleached epidermis
- Emaciated
- Thick algal mat
- Depleted, serous fat
- Serous muscle
- Relatively empty, fluid-filled GI tract
- Fluid in right pleural cavity
- Collapsed right lung
- Gritty texture left lung, hemidiaphragm
- Dark line kidneys
- Healing wound
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

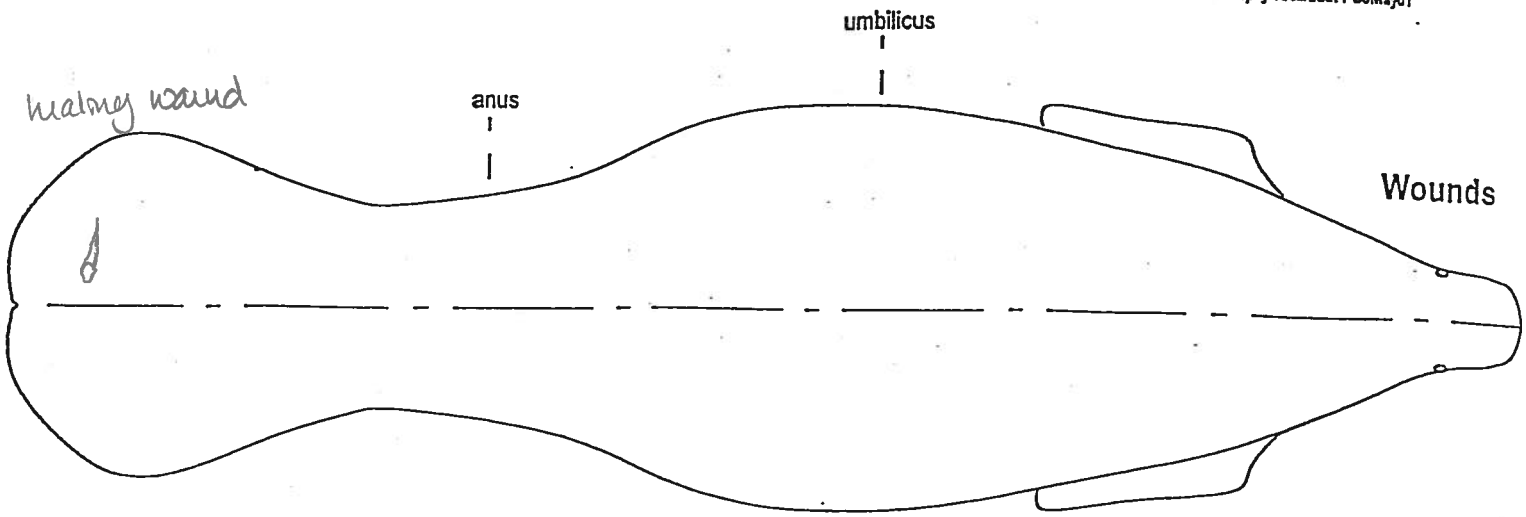
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant
Christine M. Fontaine

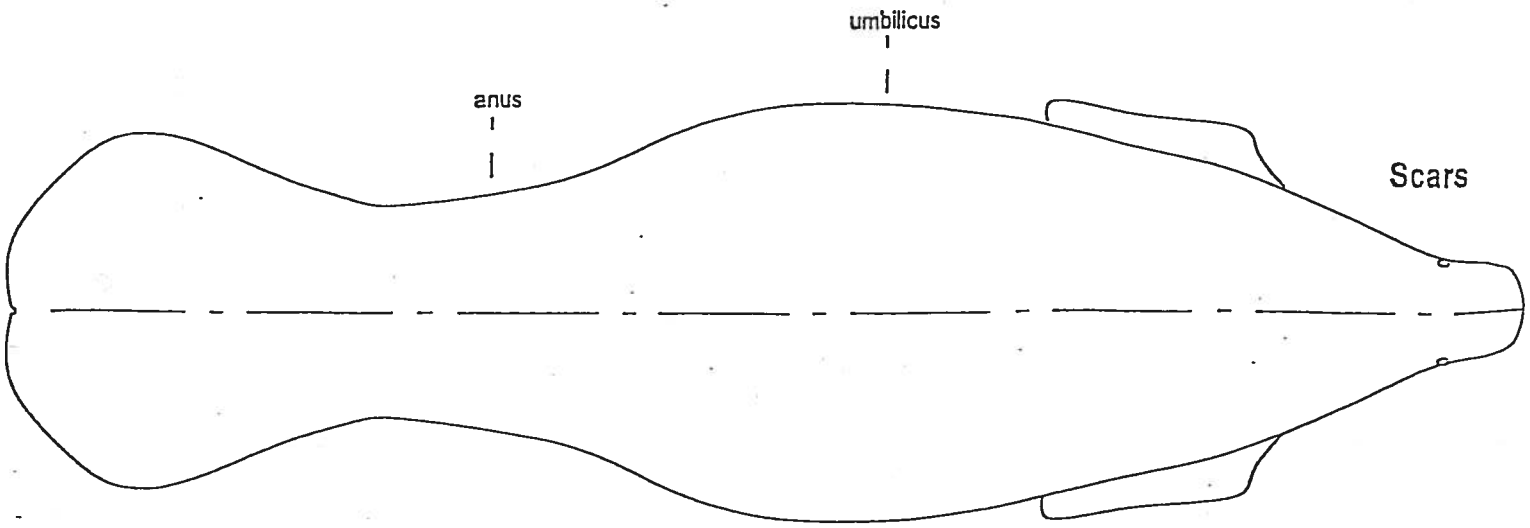
REPORT FILED BY de Wit

Date 14Feb2020 Field I.D. MEC200216

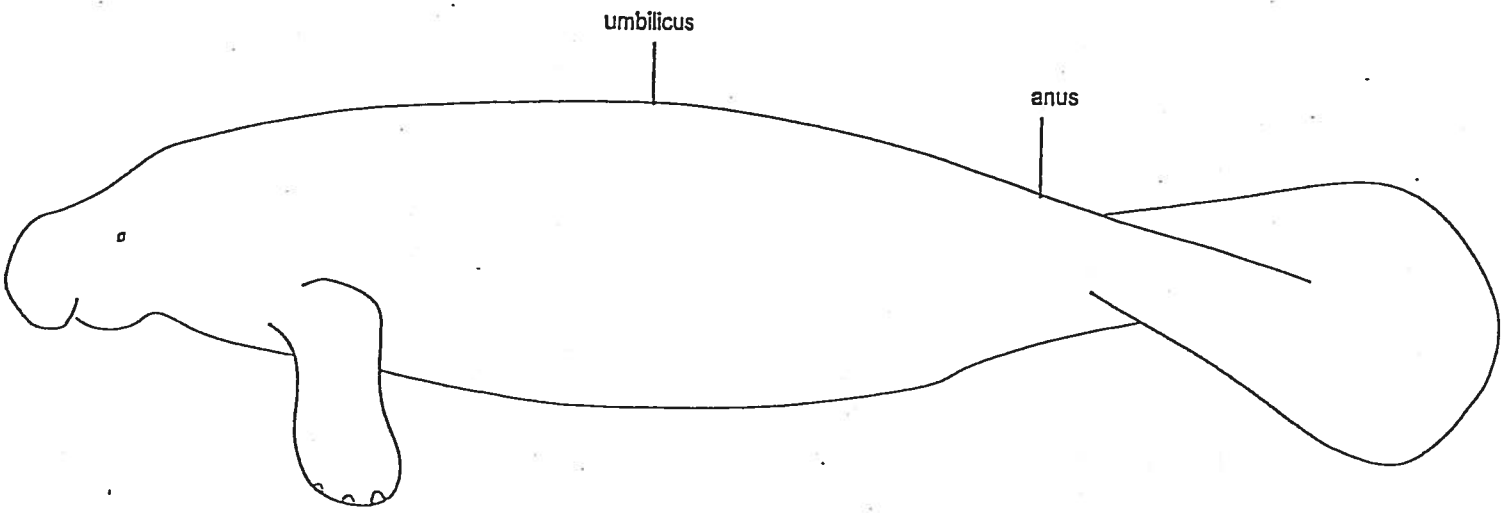
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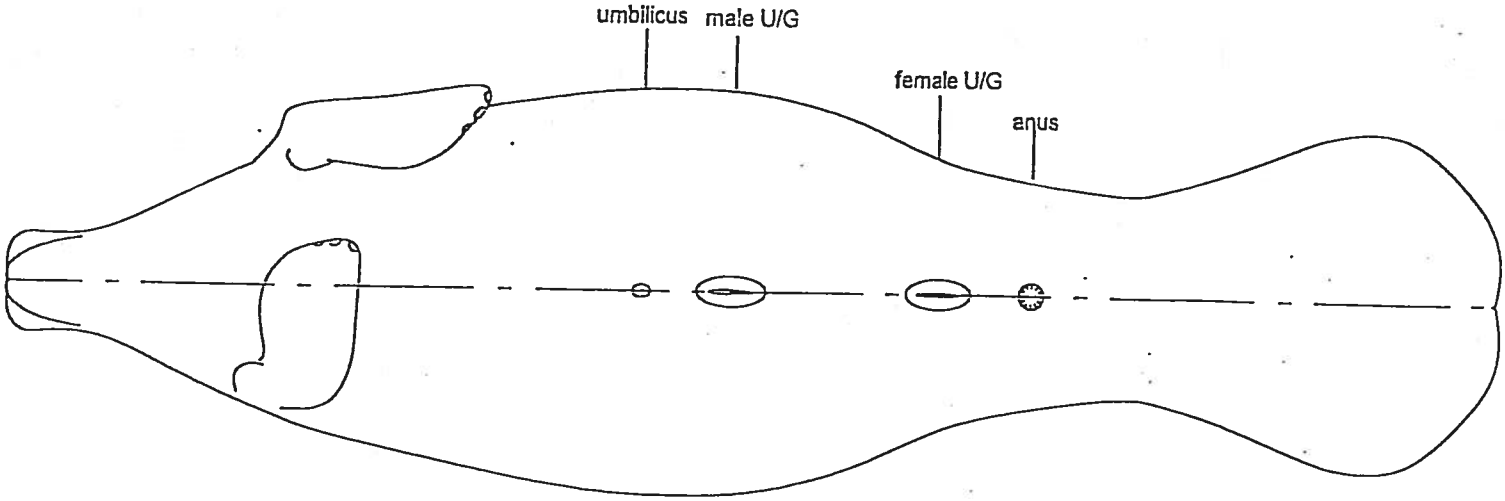


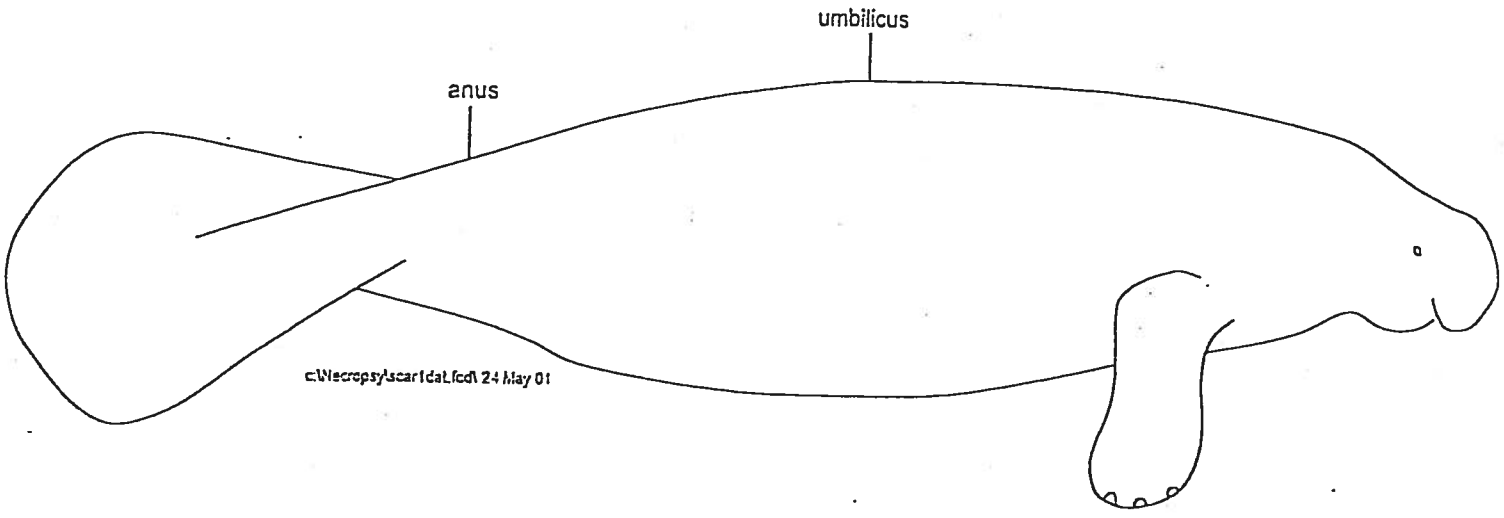
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. _____

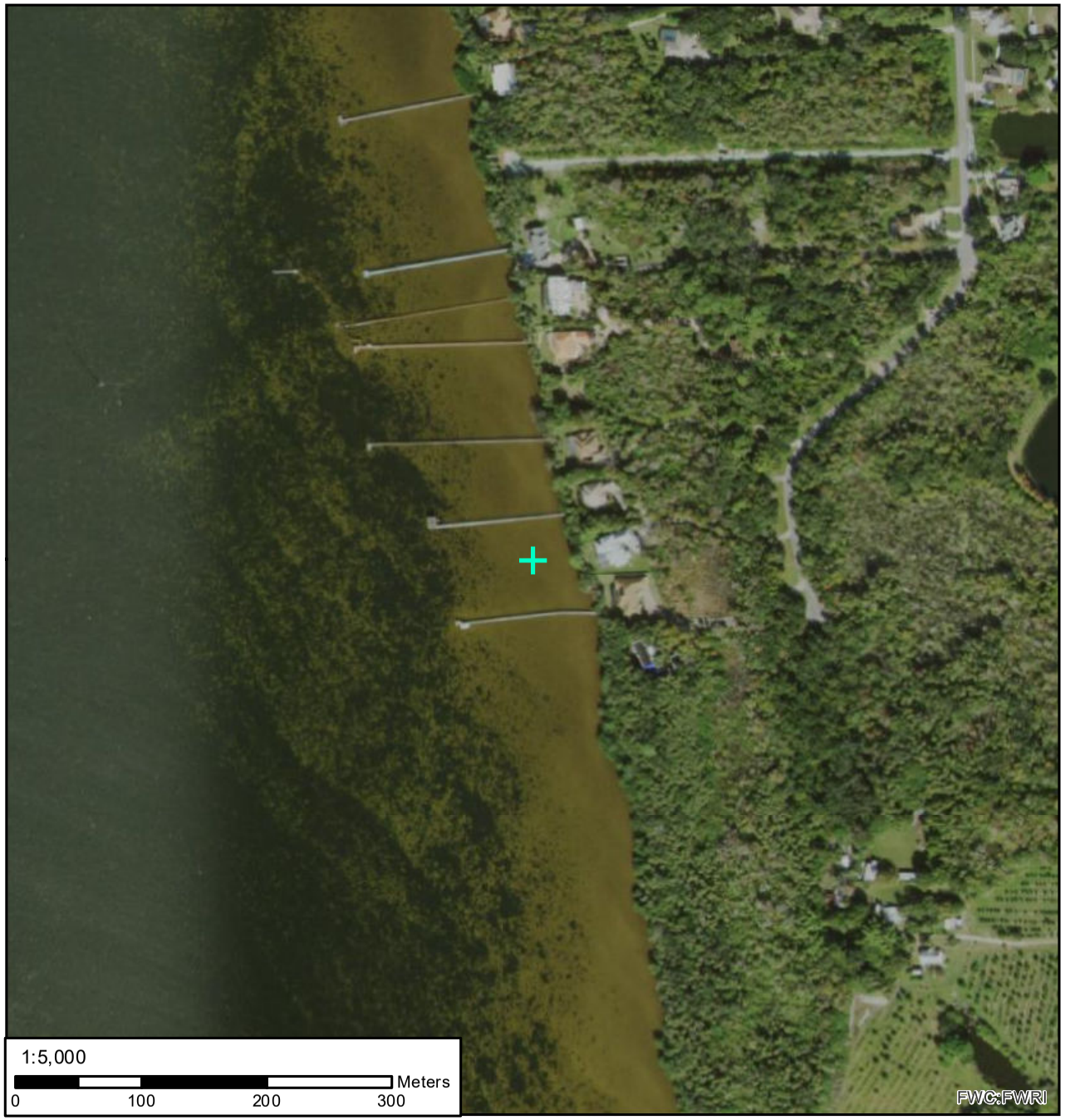

umbilicus
anus

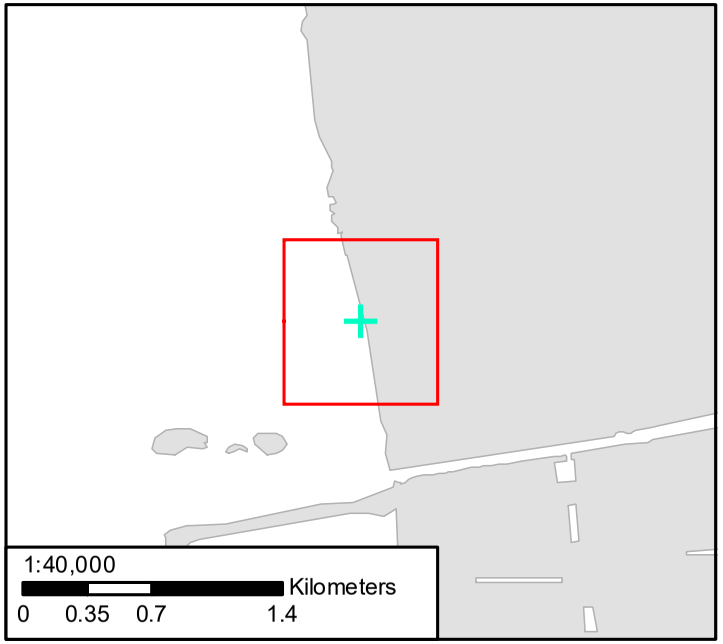

umbilicus
male U/G
female U/G
anus

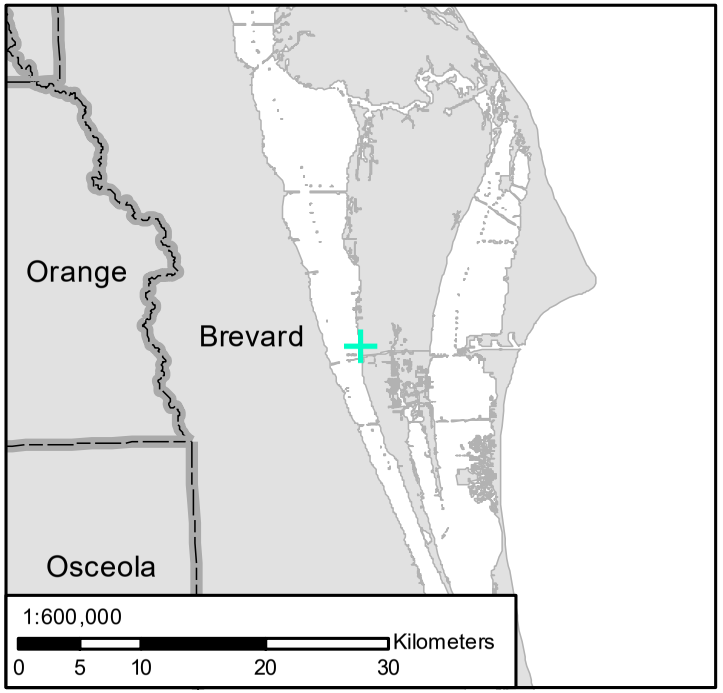

umbilicus
anus
c:\Necropsy\scar1dat.fcd\ 24 May 01

Verified Location of Manatee Carcass MEC20026

Report Date: 2/13/2020 **Received Date:** 2/14/2020 **Received By:** FWC-SMW,WDG,CMM







Location: Merritt Island, Brevard County **Latitude:** 28.41368°N **Longitude:** -80.72044°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC 20026
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2387 FWC District: FWC - NE
Sex: M (F) Undetermined Length: 236 cm (estimated _____) Weight _____ kg.
Date reported: 13 FEB 2020 By: CITIZEN TO FWC NE DISPATCH - ORLANDO
Date collected: 14 FEB 2020 By: FWC - SMW, WDG, CMM
Date necropsied: 17FEB2020 By: MMPL - MdW, BLB, BDB, SMT, TDW, CMF, ALP

LOCATION: State: FL (___) County: BREVARD Waterway: INDIAN RIVER
Latitude: _____ N Longitude: _____ W
Locality description: MERRITT ISLAND, MRAL 3215 SPARTINA AVE

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton – (Rostrum Wound)
Histology - Other _____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other feces
Genetics Box # 96
Female reproductive findings or **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No – UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

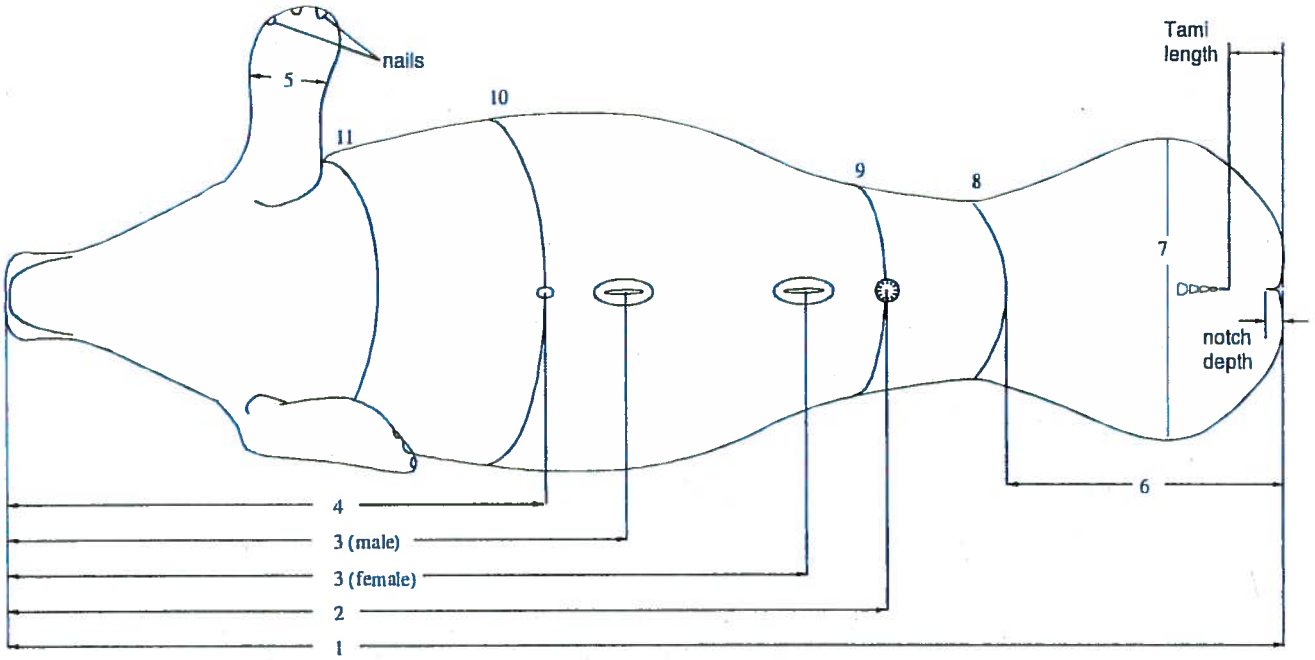
PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

REMARKS: _____

Field ID #_____

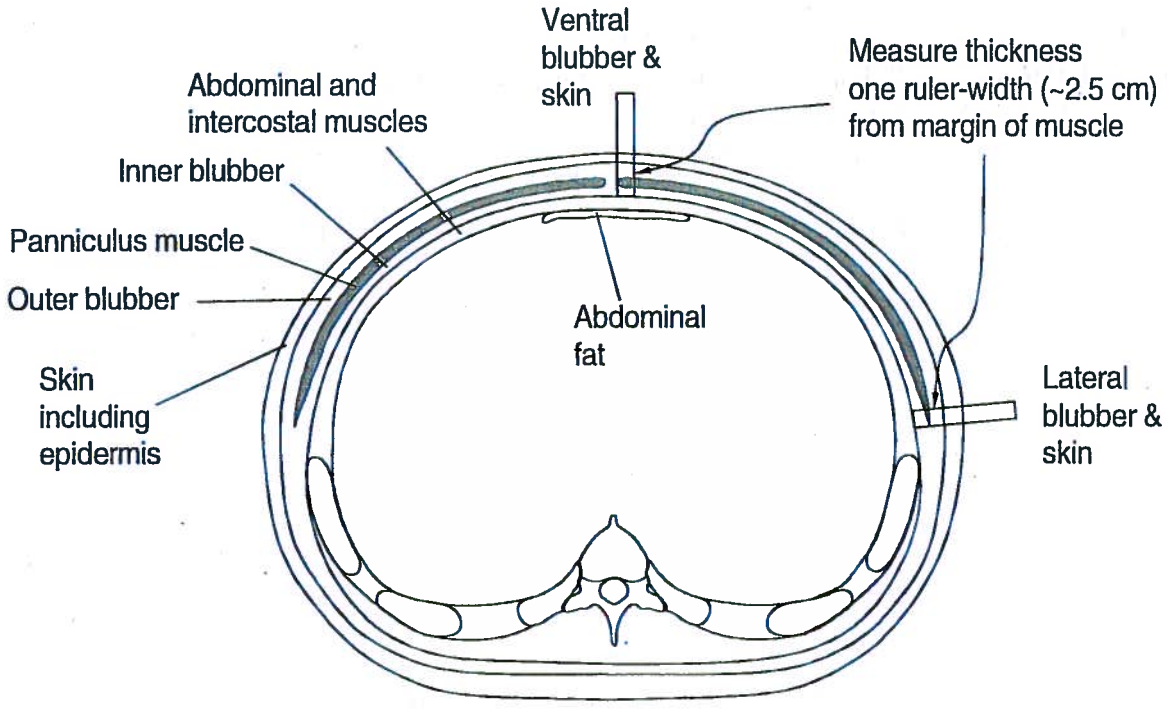
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C ____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8.*Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm
(Nail count: L___R___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin.....	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat.....	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat.....	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20026
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2387 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 13 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 14 February 2020 **By**: FWC- WDG, SMW, CMM
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 60 m W of 3215 Spartina Ave

Carcass Orientation: Grounded

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20027**
Date of Report: 2020-Feb-12
Filed By: FWC EC Field Station

FWC Case # 2389 **FWC Region:** NE

Sex: Male **Length:** 276 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-12 **By:** Citizen to FWC-DJS
DATE COLLECTED: 2020-Feb-14 **By:** FWC-CMM,SMW
DATE NECROPSIED: 2020-Feb-14 **By:** FWC-CMM,SMW

LOCATION: **State:** FL **Latitude:** 27.8124 **N**
County: Indian River **Longitude:** -80.50796 **W**
Waterway: Sebastian River
Location description: Sebastian, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Scavenging.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Remodeled rib.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20027

MORPHOMETRICS:

Total length:	276 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20027
SPECIES *T. manatus latirostris*
RECOVERY DATE 14 February 2020
NECROPSY DATE 14 February 2020
GENDER Male **TL** 276 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 12 February 2020, at 1333 hrs, FWC-Donna J. Szemer (DJS) received a voicemail regarding a dead manatee in the south fork of the Sebastian River in Sebastian, Indian River County. The complainant, Mr. Tillroy, stated that the carcass was near the Dale Wimbrow boat ramp but left no other information or a phone number to contact him. At 1409 hrs, DJS forwarded the information to the EC Field Station. Due to the lack of information and the proximity to a popular boat ramp, staff decided to wait for more calls on the carcass. **13 February**, at 1419 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near the Dale Wimbrow boat ramp. FWC case number 2389 was assigned. The complainant, Michael White (772-228-8317), stated that the carcass was white to red in color and belly-up with vultures on it. Due to the time of day and multiple other carcasses, SMW planned to recover the carcass the next day. **14 February**, SMW and FWC biologist-Carley M. Metcalf arrived at the Dale Wimbrow boat ramp at 1210 hrs, launched the Key West boat, and located the carcass at 1230 hrs. A field necropsy was completed by 1340 hrs. The remains were left on site.

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There were multiple rents due to decomposition and/or scavenging on the mid and caudal ventrum which exposed the body cavity. The face was eroded due to decomposition. A small number of barnacle scars was observed on the dorsal aspect. A minimum of five well-healed watercraft-related scar patterns was observed on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal fat was rendered. The mesenteric and omental fat was missing. All internal organs were missing.

HEAD & NECK REGIONS NVL.

SKELETON Right rib 10 was remodeled at the proximal one-third (see photo). There was an approximately 8 x 3 cm bone growth fused to the dorsal aspect of the remodeling (see photo).

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs
- Scavenging
- Remodeled rib

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

Sara M. Wappes
Carley M. Metcalf

REPORT FILED BY Metcalf / Wappes

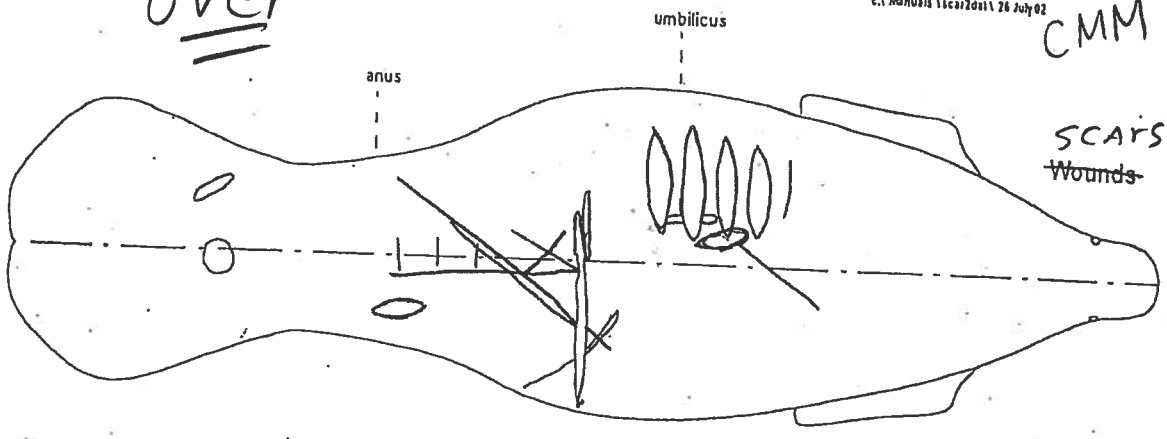
Date 14 Feb 2020

Field I.D. MEC 200227

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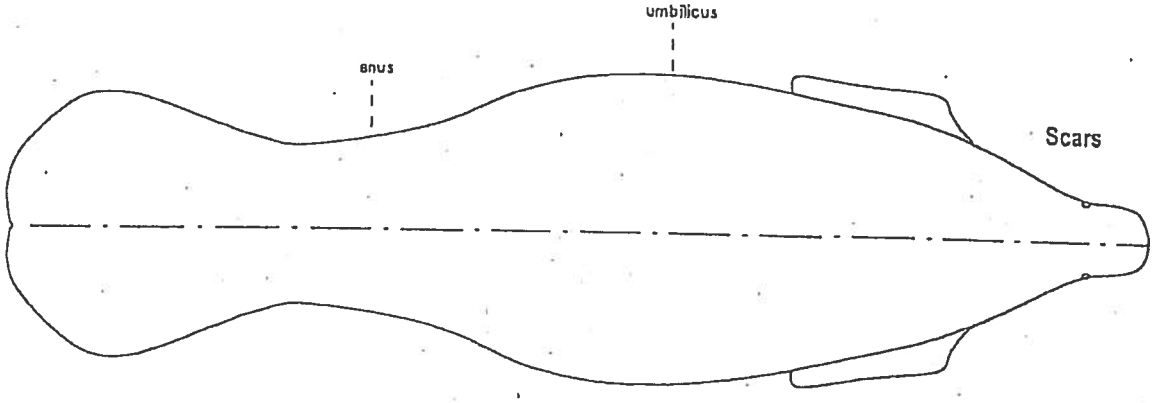
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CMM

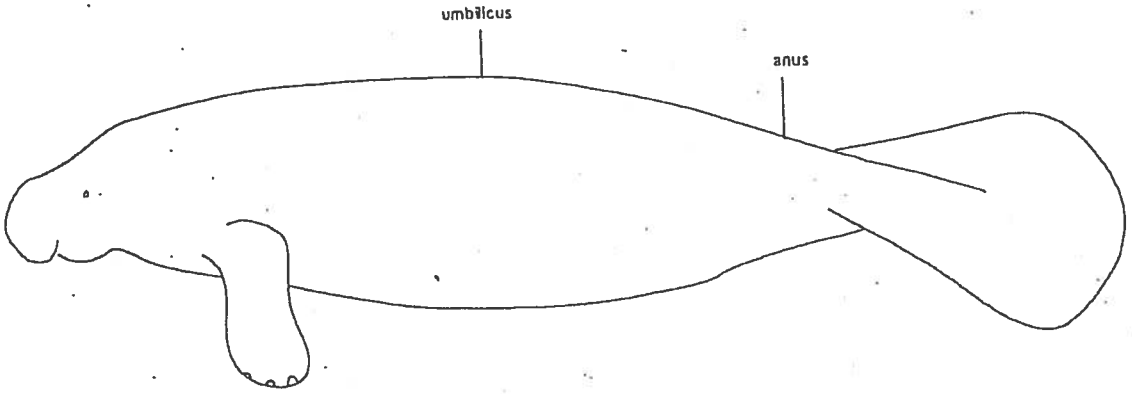


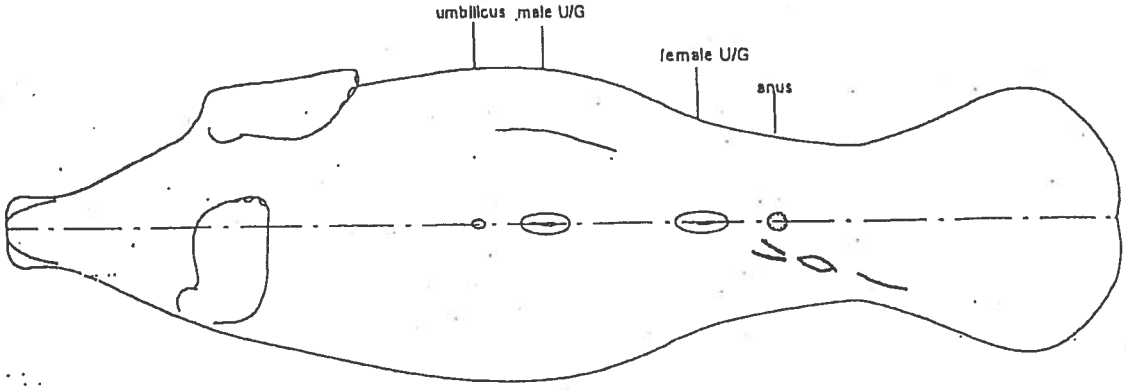
SCARS
~~Wounds~~

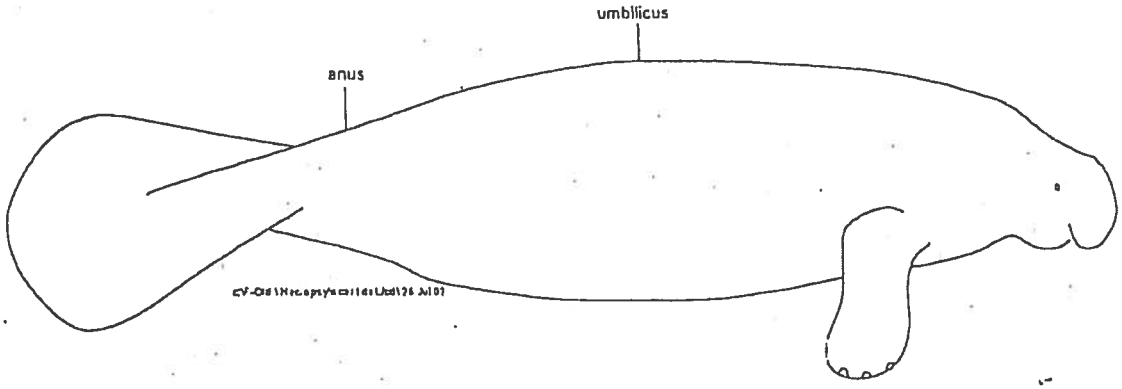
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. MEC 20027

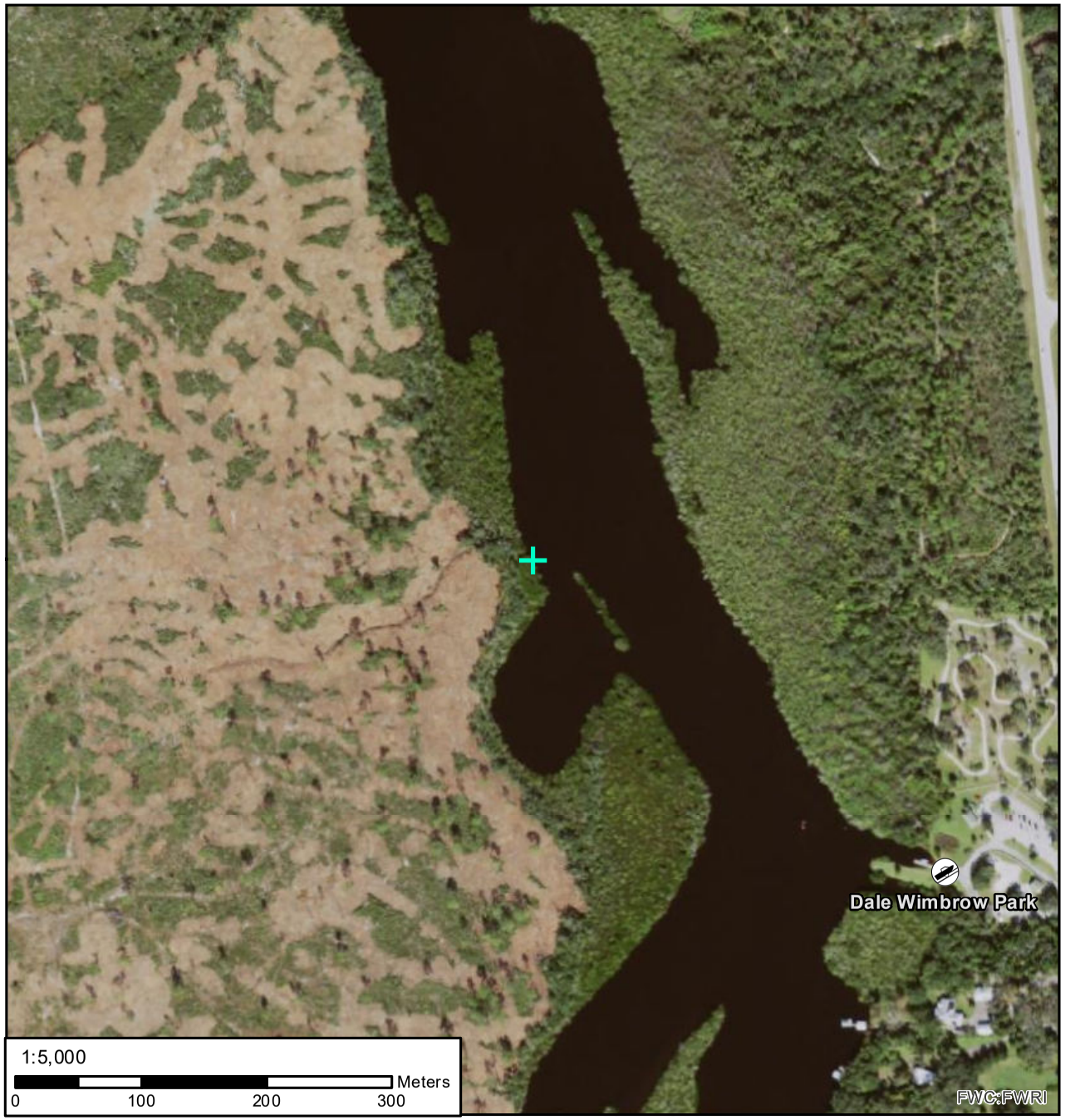




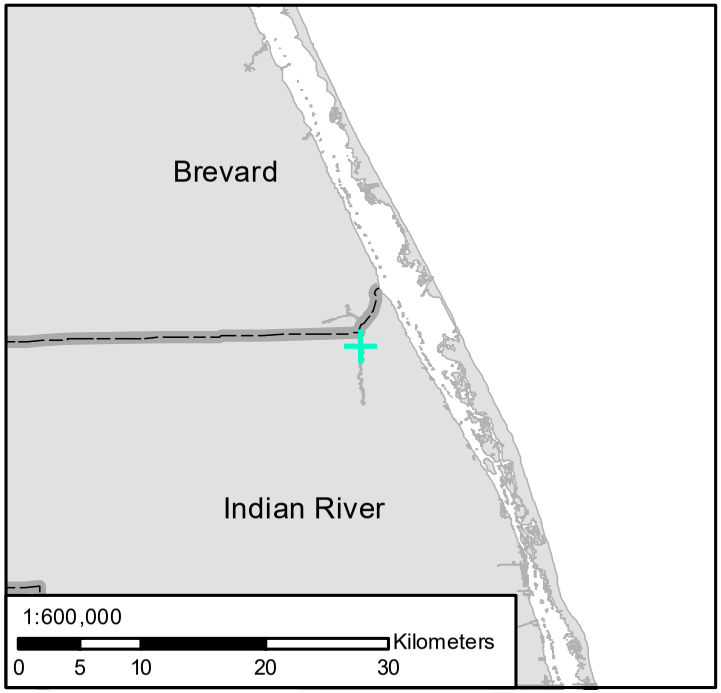


Verified Location of Manatee Carcass MEC20027

Report Date: 2/12/2020 **Received Date:** 2/14/2020 **Received By:** FWC-CMM,SMW







Location: Sebastian, Indian River County

Latitude: 27.8124°N **Longitude:** -80.50796°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20027
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2389 **FWC District**: Northeast
Sex: Male **Length (cm)**: 265 **Estimated** _____ **Weight (kg)** _____
Date reported: 12 February 2020 **By**: Citizen to FWC-DJS
Date collected: 14 February 2020 **By**: FWC-CMM, SMW
Date necropsied: 14 February 20 **By**: FWC-CMM, SMW

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Sebastian River
Latitude: N _____ **Longitude**: W _____
Locality description: Sebastian, approximately 490 m NW of 11725 Roseland Road.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: All internal organs missing, scavenging, remodeled rib

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☐ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☑ Other remodeled rib

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20028**
Date of Report: 2020-Feb-15
Filed By: FWC EC Field Station

FWC Case # 2586 **FWC Region:** NE

Sex: Male **Length:** 143 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-17 **By:** FWC-WDG

DATE NECROPSIED: 2020-Feb-17 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.14381 **N**
County: Brevard **Longitude:** -80.60441 **W**
Waterway: Banana River
Location description: Merritt Island, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Natural: Cold Stress; Bleached epidermis; Cobblestone-like epidermis; Skin lesions; Depleted fat(s); Bloody lung(s); Dry, hard feces; Relatively empty upper GI tract, cecum.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case number 2497.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20028

MORPHOMETRICS:

Total length:	143 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Urachus closed at bladder tip.

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20028
SPECIES *T. manatus latirostris*
RECOVERY DATE 17 February 2020
NECROPSY DATE 17 February 2020
GENDER Male **TL** 143 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 15 February 2020, at 1354 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Banana River in Indian Harbor Beach, Brevard County. FWC case number 2497 was assigned. The complainant, Anil Dhople (352-256-4776), stated that the manatee was four feet long, not breathing, and floating. No photos were available, but the complainant reported he kayaked to the carcass at 1412 hrs and confirmed it was dead. At 1540 hrs, CMM launched a kayak from the Eau Gallie Yacht Club boat ramp but could not locate the carcass. **16 February**, at 1805 hrs, FWC on-call biologist-Molly R. Schubert received a text alert from Dispatch regarding the carcass. FWC case number 2586 was assigned. The complainant, Kraig (321-271-9136), stated the manatee was beached at Dragon Point, and that he poked the carcass with a kayak paddle to confirm it was dead. **17 February**, at 1015 hrs, FWC biologist-William D. Greer (WDG) and FWC intern-Kelly L. Etherton (KLE) arrived at the Eau Gallie Yacht Club. WDG launched a kayak and towed the carcass to the boat ramp where it was loaded at 1047 hrs. After WDG and KLE collected MEC20029, both carcasses were transported to the Brevard County Landfill. A field necropsy was completed at 1306 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. Bloody fluid exuded from the umbilicus and nares. The carcass was distended with gas. The remaining epidermis of the head and flippers was bleached. A thin brown algal mat was present on the dorsal aspect and a very thin green algal mat was present on the ventral aspect. Cobblestone-like epidermis was present on the ventrum. Two linear lesions were observed on the ventral aspect. There was a mild infestation of barnacles on the ventral fluke. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant abdominal, mesenteric, and omental fat. Internal organs were missing unless mentioned below.

STOMACH The stomach contained approximately 5 mL of viscous, white fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained approximately 5 mL of viscous, gray fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained viscous, gray fluid. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 10 mL of wet, poorly digested, fibrous, stringy, yellow to green digesta (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained wet, poorly formed, poorly digested, leafy, stringy, orange to brown feces. The mid colon contained slightly moist, well-formed, moderately digested, fibrous, leafy, black feces. The distal colon contained dry, hard, well-digested, well-formed, green to black feces. The mucosa was autolyzed throughout. No parasites were observed.

LIVER The liver was liquified.

REPRODUCTIVE No reproductive fat was observed. The reproductive organs were soft, friable, and

autolyzed.

KIDNEYS No perirenal fat was observed. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable. The urachus was closed at the bladder tip.

HEART No epicardial fat was observed. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were gassy. Serosal surfaces were pink to black, and cut surfaces were dark red and bloody. The primary airways were unremarkable. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Skin lesions
- Depleted fat
- Bloody lungs
- Dry, hard feces
- Relatively empty upper GI tract, cecum
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Perinatal; Natural (Cold Stress)

NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes
Kelly L. Etherton (FWC intern)

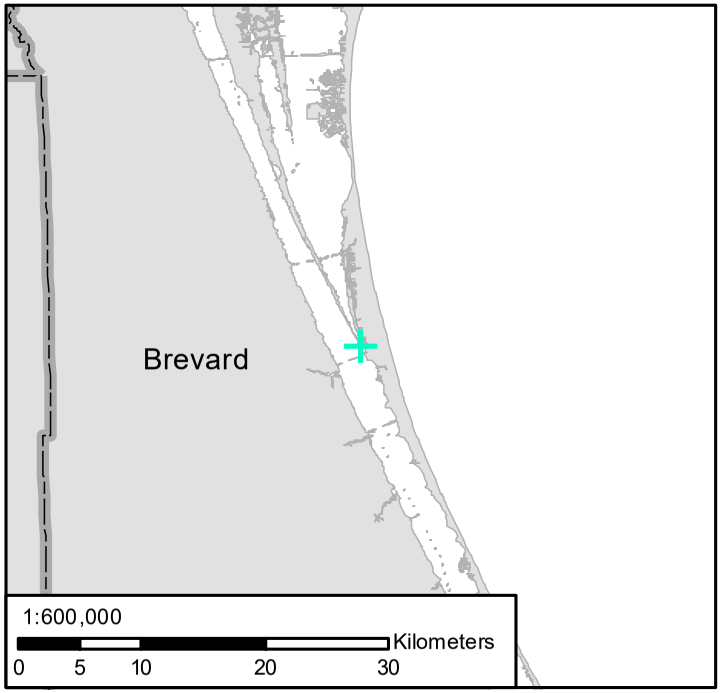
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20028

Report Date: 2/15/2020 **Received Date**: 2/17/2020 **Received By**: FWC-WDG







Location: Merritt Island, Brevard County

Latitude: 28.14381°N **Longitude**: -80.60441°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20028
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2497, 2586 **FWC District**: Northeast
Sex: Male **Length (cm)**: 143 **Estimated** _____ **Weight (kg)** _____
Date reported: 15 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 17 February 2020 **By**: FWC-WDG, FWC intern-K. Etherton
Date necropsied: 17 February 20; **By**: FWC-WDG, SMW, FWC intern-K. Etherton

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 30 m SSE of 11670 Point Drive.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☑ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Cold Stress, bleached flippers and face, cobblestone skin, linear lesions, scant fats, dry, hard feces.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20029**
Date of Report: 2020-Feb-16
Filed By: FWC EC Field Station

FWC Case # 2606 **FWC Region:** NE

Sex: Female **Length:** 192 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-16 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-17 **By:** FWC-WDG

DATE NECROPSIED: 2020-Feb-17 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.20094 **N**

County: Brevard **Longitude:** -80.60699 **W**

Waterway: Grand Canal

Location description: Satellite Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Depleted fat(s); Serous fat(s); Dry, hard feces; Hard, clear pieces in urinary bladder.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal, Other (Shark bite).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Shark bite fluke. Macroalgae in stomach. Also FWC case numbers 2564 and 2605.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20029

MORPHOMETRICS:

Total length:	192 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20029
SPECIES *T. manatus latirostris*
RECOVERY DATE 17 February 2020
NECROPSY DATE 17 February 2020
GENDER Female **TL** 192 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 16 February 2020, at 1431 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Berkeley Canal in Satellite Beach, Brevard County. FWC case number 2564 was assigned. The complainant, Marie Lee (321-431-8867), stated that the carcass was 5 to 6 feet long and under her dock. At 1436 hrs, SMW received a verification photo via text from the complainant. SMW requested FWC LE assistance to tow the carcass but no officers were available. **17 February**, at 0847 hrs, FWC biologist-William D. Greer (WDG) received a text alert from Dispatch regarding a dead manatee in the Berkeley Canal. FWC case number 2605 was assigned. The complainant, Kathy Gooch (321-773-0494), stated there was a dead manatee calf floating in the canal. At 0850 hrs, WDG received another text alert from Dispatch regarding the carcass. FWC case number 2606 was assigned. The complainant, Brenda Lane (407-758-8164), stated there was a dead manatee calf floating in the canal. WDG and FWC intern-Kelly L. Etherton (KLE) located the manatee at 1100 hrs. KLE launched a kayak and towed the carcass to a private boat ramp where it was loaded via Ezy-Lift at 1135 hrs. The carcass was transported to the Brevard County Landfill where a field necropsy was completed at 1519 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was distended with gas. Viscous, pink fluid exuded from the nares. Rents were present at the urogenital opening due to decomposition. There were shark tooth rake marks from the 1 to 2 o'clock position of the fluke. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, serous abdominal, mesenteric, and omental fat.

STOMACH The stomach contained 400 mL of moist, moderately chewed, very stringy, orange to brown ingesta mixed with red and yellow macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 100 mL of wet, moderately chewed, stringy, orange to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained moist, well-chewed, fibrous, stringy, leafy, yellow to brown ingesta (see photo). The distal small intestine contained viscous, gray fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 1.25 L of moist, fibrous, stringy, moderately digested, green to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The proximal colon contained moist, poorly formed, moderately digested, fibrous, stringy, green to brown feces. The mid colon contained moist, hard, well-formed, moderately digested, very fibrous, stringy, green to black feces. The distal colon contained dry, hard, well-formed, very fibrous, stringy, black feces (see photo). The mucosa was black and sloughing in the proximal colon and autolyzed in the mid and distal colon. No parasites were observed throughout.

PANCREAS The pancreas was soft and gassy. **S**erosal and cut surfaces were light pink.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a scant amount of orange to brown bile. The mucosa was bile-stained.

REPRODUCTIVE No reproductive fat was observed. The reproductive organs were soft, friable and autolyzed.

KIDNEYS No perirenal fat was observed. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 200 mL of flocculent, pink-tinged urine and small (<2 mm), hard, pieces of gritty material. The mucosa was autolyzed.

HEART There was no epicardial fat. The heart was soft. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were soft and gassy. Serosal surfaces were pink to black and cut surfaces were dark red. The primary airways contained a small amount of watery, red fluid. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Depleted, serous fat
- Dry, hard feces
- Gritty material in urinary bladder
- Macroalgae in stomach contents
- Shark bite fluke

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

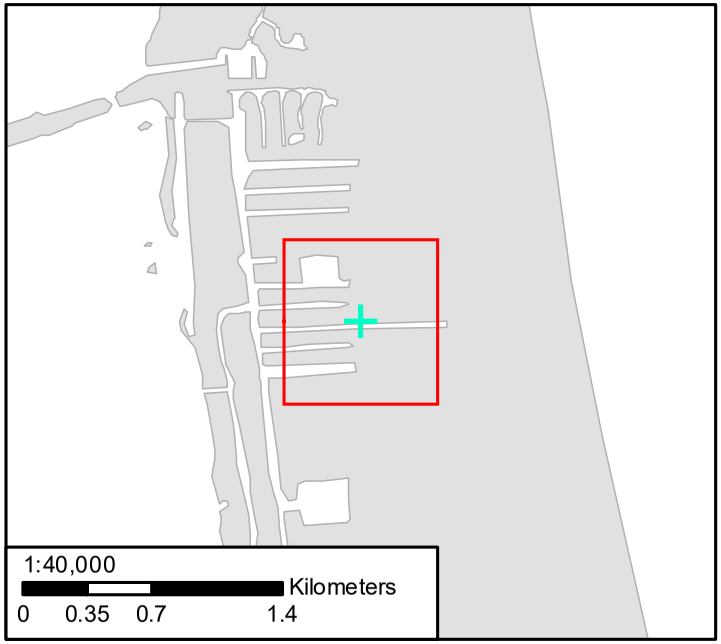
William D. Greer
Sara M. Wappes
Kelly L. Etherton (FWC intern)

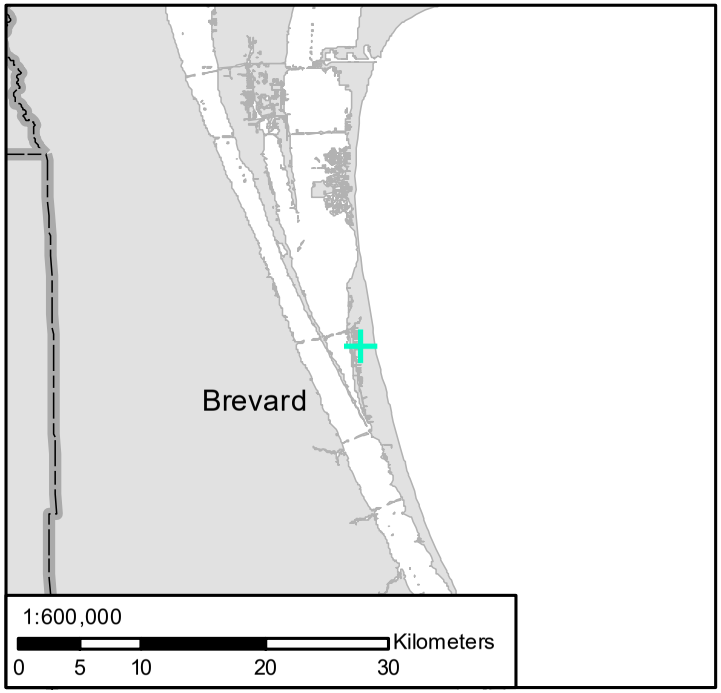
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20029

Report Date: 2/16/2020 **Received Date**: 2/17/2020 **Received By**: FWC-WDG







Location: Satellite Beach, Brevard County

Latitude: 28.20094°N **Longitude**: -80.60699°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20029
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2564, 2605, 26 **FWC District**: Northeast
Sex: Female **Length (cm)**: 192 **Estimated** _____ **Weight (kg)** _____
Date reported: 16 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 17 February 2020 **By**: FWC-WDG, FWC intern-K. Etherton
Date necropsied: 17 February 20 **By**: FWC-WDG, SMW, FWC intern-K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Berkeley Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 35 m NNE of 401 St. George's Court.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Superficial wound near peduncle, autolyzed internal organs, scant, serous fats, dry, hard feces.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20030**
Date of Report: 2020-Feb-16
Filed By: FWC EC Field Station

FWC Case # 2567 **FWC Region:** NE

Sex: Female **Length:** 164 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-16 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-17 **By:** FWC-SMW

DATE NECROPSIED: 2020-Feb-17 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.6308 **N**

County: Brevard **Longitude:** -80.79984 **W**

Waterway: Indian River

Location description: Titusville, grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cobblestone-like epidermis; Emaciated; Depleted fat(s); Serous fat(s); Dry, hard feces; Crumbly feces; Dark line kidney(s); Wet lung(s); Frothy lungs; Fluid, mucus, froth in airways; Fluid in pleural cavities; Thick algal mat; Congested urinary bladder-, small intestine mucosa, colon wall, -serosa, peritoneum; Black specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20030

MORPHOMETRICS:

Total length:	164 cm	**Fluke base:**	47 cm	**Girth at axillae:**	103 **cm**
Snout to anus:	107 cm	**Fluke width:**	41 cm		
Snout to U/G:	100 cm	**Girth at fluke base:**	60 cm		
Snout to umbilicus:	61 cm	**Girth at anus:**	77 cm		
Flipper width:	9.3 cm	**Girth at umbilicus:**	116 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.7 cm	1.4 cm		
Outer Blubber Thickness:	0.7 cm	0.6 cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	0.4 cm	0.3 cm	**Epidermis Thickness:**	0.1 cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20030
SPECIES *T. manatus latirostris*
RECOVERY DATE 17 February 2020
NECROPSY DATE 17 February 2020
GENDER Female **TL** 164 **cm WT** N/T **kg**
CONDITION Fresh

HISTORY 16 February 2020, at 1448 hrs, FWC intern-Kelly L. Etherton (KLE) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville, Brevard County. FWC case number 2567 was assigned. The complainant, Christina Ryan (321-289-8993), described a dead manatee by an island, in shallow water near the FWC Titusville office. The complainant was unable to provide a photo. Due to the proximity to the FWC LE office, an FWC officer was requested. FWC Officer-Harry Balgo located the carcass at 1612 hrs and secured it to the Parrish Park boat ramp at 1624 hrs. **17 February**, FWC biologist-Sara M. Wappes (SMW) arrived at the boat ramp at 1134 hrs and loaded the carcass via ANT Lift at 1150 hrs. A field necropsy was completed at the Brevard County Landfill at 1406 hrs. The remains were disposed of at the landfill.

EXTERNAL Almost all the epidermis was present. Viscous red fluid and yellow mucus exuded from the nares. The carcass had a slight peanut-shaped head. Cobblestone-like epidermis was present on the ventral aspect. There was a mild barnacle infestation on the ventral aspect and dorsal fluke. A thick brown algal mat and a thin green algal mat were present on the dorsum. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, serous abdominal, mesenteric, and omental fat. There were bands of severe congestion on the peritoneum (see photo).

STOMACH The stomach contained 1.1 L of moist, moderately chewed, stringy, yellow to green ingesta mixed with a small amount of red and purple macroalgae (see photo). The contents were covered in white mucus. The mucosa was slightly stained pink. No parasites were observed.

DUODENUM The duodenum contained 600 mL of wet, moderately chewed, stringy, yellow to green ingesta mixed with a small amount of red and purple macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal and mid small intestine contained watery, flocculent, yellow fluid (see photo). The distal small intestine contained wet, stringy, yellow to green ingesta mixed with a small amount of macroalgae. The mucosa was slightly congested throughout. No parasites were grossly observed.

CECUM The cecum contained 300 mL of moist, poorly digested, stringy, yellow to green digesta mixed with a small amount of red and purple macroalgae (see photo). The mucosa was sloughing. No parasites were observed.

COLON The colon serosa was slightly congested (see photo). The proximal colon contained moist, poorly digested, poorly formed, fibrous, leafy, stringy, green to brown feces. The mid colon contained dry, hard, crumbly, well-formed, poorly digested, stringy, fibrous, black feces. There was a 23 cm long piece of >20 lb test diameter clear monofilament line in the contents. The distal colon contained dry, hard, crumbly, poorly digested, well-formed, homogeneous, slightly fibrous, black feces (see photo). The mucosa in the mid colon was slightly congested (see photo). The mucosa in the proximal and distal colon was unremarkable. No parasites were observed throughout.

PANCREAS The pancreas was tan to light pink on serosal surfaces, and light pink on cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red to black on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were blue to dark purple and cut surfaces were dark red.

GALLBLADDER The gallbladder contained 20 mL of viscous, yellow to orange fluid. The mucosa was bile-stained.

REPRODUCTIVE There was scant, serous reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was no perirenal fat. The kidneys were red to brown on serosal surfaces. On cut surfaces, the cortices were brown to red and the medullae were tan to red. The corticomedullary boundaries were distinct with a dark red line at most (see photo).

URINARY BLADDER The urinary bladder contained 150 mL of watery, light yellow urine. The mucosa was moderately congested.

HEART There was scant, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right pleural cavity contained 500 mL of watery, red fluid. The parietal pleura had black specks and was slightly congested (see photo). The left pleural cavity contained 400 mL of watery, red fluid. The lungs were white to light pink on serosal surfaces and light pink to red, wet, and frothy on cut surfaces. The primary airways contained a moderate amount of viscous, frothy, red fluid (see photo).

HEAD & NECK REGIONS The trachea contained a moderate amount of viscous, yellow to red mucus (see photo). The mouth contained a small thatch of red macroalgae.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Cobblestone epidermis
- Emaciated
- Thick algal mat
- Depleted, serous fat
- Dry, hard, crumbly feces
- Wet, frothy lungs
- Froth, fluid, mucus in airways
- Fluid in pleural cavities
- Congested urinary bladder-, small intestine mucosa, colon wall, -serosa; peritoneum
- Dark line kidneys
- Black specks parietal pleura
- Macroalgae in GI tract
- Monofilament in colon

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

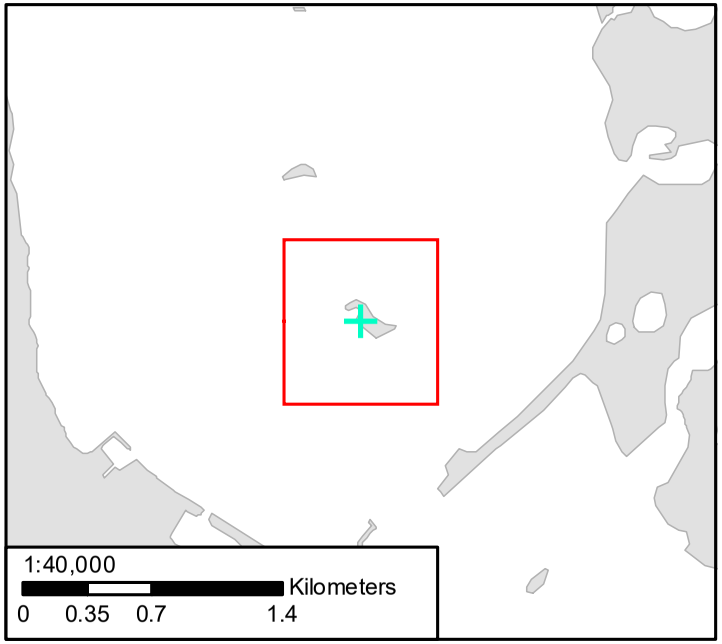
William D. Greer
Sara M. Wappes
Kelly L. Etherton (FWC intern)

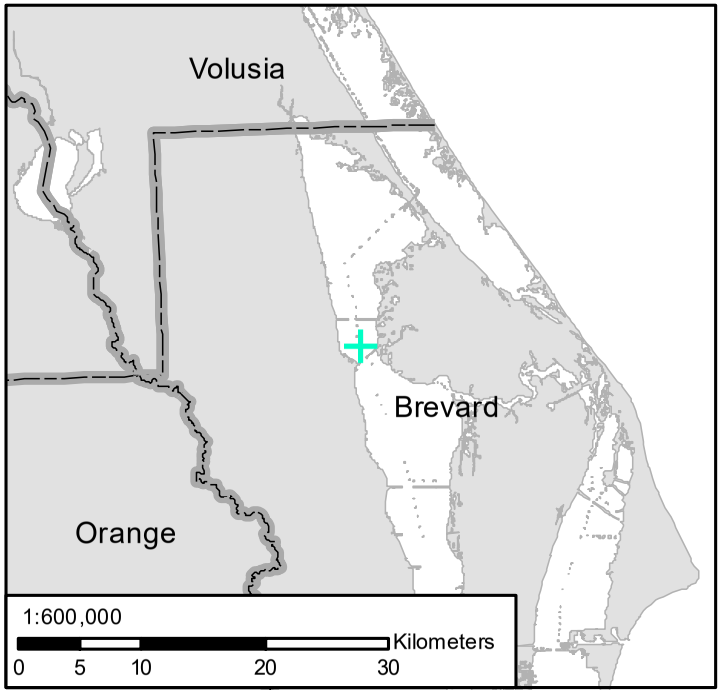
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20030

Report Date: 2/16/2020 **Received Date**: 2/17/2020 **Received By**: FWC-SMW







Location: Titusville, Brevard County

Latitude: 28.6308°N **Longitude**: -80.79984°W

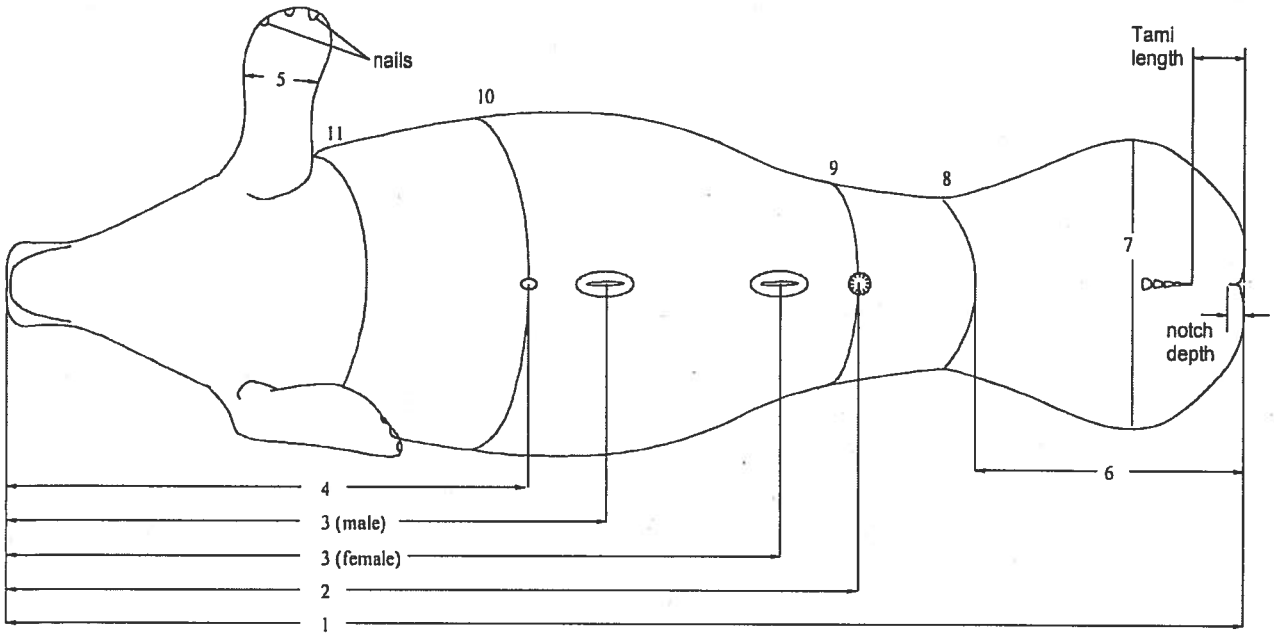
Map Created: 3/29/2021

Field ID # MFC20030

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length 164 cm
2. Snout to anus -C 107 cm
3. Snout to U/G -C 100 cm
4. Snout to umbilicus -C 61 cm
5. Flipper width 9.3 cm
6. Fluke base 47 cm
7. Fluke width 41 cm
8. *Girth at fluke base 60 cm
9. * Girth at anus 77 cm
10. *Girth at umbilicus 116 cm
11. *Girth at axillae 103 cm

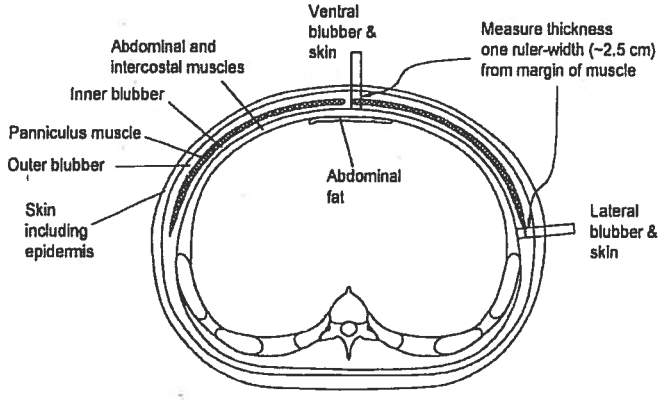
(Depth of notch _____ cm)
(Tami ln_____ cm)
(Nail count: R 3 L 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.7 cm	1.4 cm	(Epidermis 0.1 cm)
Outer blubber	0.7 cm	0.6 cm	(Abdominal fat _____ cm)
Inner blubber	0.4 cm	0.3 cm	

epidermis



Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: Y/N L: Y/N
Placental Scaring: R / L:____x ____ x _____ cm
Pregnant: Y/N – Fetus length _____cm Fetus gender M / F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes Y / N; in epididymes Y / N Method: visual / microscope slide
Fluid in seminal vesicles Y / N; if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20030
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2567 **FWC District**: Northeast
Sex: Female **Length (cm)**: 164 **Estimated** _____ **Weight (kg)** _____
Date reported: 16 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 17 February 2020 **By**: FWC-SMW
Date necropsied: 17 February 20; **By**: FWC-WDG, SMW, FWC intern-K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 910 m NNW of Parrish Park boat ramp.

Carcass Orientation: Grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: cobblestone epidermis, scant, serous fat, dry, crumbly feces

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20031**
Date of Report: 2020-Feb-17
Filed By: FWC EC Field Station

FWC Case # 2608 **FWC Region:** NE

Sex: Male **Length:** 174 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-17 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-17 **By:** FWC-SMW

DATE NECROPSIED: 2020-Feb-17 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.41964 **N**
County: Brevard **Longitude:** -80.75177 **W**
Waterway: Indian River
Location description: Cocoa, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Cobblestone-like epidermis; Depleted fat(s); Dry, hard feces; Crumbly feces; Relatively empty duodenum; Swollen cranial aspect.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Macroalgae in stomach.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20031

MORPHOMETRICS:

Total length:	174 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20031
SPECIES *T. manatus latirostris*
RECOVERY DATE 17 February 2020
NECROPSY DATE 17 February 2020
GENDER Male **TL** 174 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 17 February 2020, at 0923 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Cocoa, Brevard County. FWC case number 2608 was assigned. The complainant, Dennis Mayo (321-831-8160), reported a dead juvenile manatee. At 0931 hrs, SMW received a photo of the carcass via text. SMW arrived at 1053 hrs and loaded the carcass by ANT Lift at 1109 hrs. After collecting MEC20030, SMW transported both carcasses to the Brevard County Landfill. A field necropsy was completed at 1421 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. Watery, pink fluid exuded from the mouth. The carcass was dorsoventrally flattened due to decomposition. The cranial aspect of the carcass was swollen. There was a moderate brown algal mat on the remaining dorsal epidermis. The epidermis was bleached on the flippers and head. Patches of cobblestone-like epidermis were present on the ventrum. There was a mild barnacle infestation on the remaining ventral epidermis. Rents were present on the ventral neck, axillae, and urogenital region due to decomposition. No watercraft-related scars or wounds were observed. There was an eroded mutilation at the 9 o'clock position of the fluke margin. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach contained 900 mL of moist, poorly chewed, leafy, fibrous, stringy, green and orange to brown ingesta mixed with purple macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained approximately 20 mL of moist, moderately chewed, stringy, leafy, green to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was friable when handled. The proximal small intestine contained moist, moderately chewed, stringy, fibrous, leafy, green to brown ingesta. The distal small intestine contained viscous, tan fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 350 mL of moist, moderately digested, leafy, stringy, green to brown digesta (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The colon was friable when handled. The proximal colon contained moist, moderately formed, moderately digested, stringy, fibrous, brown feces. The mid colon contained slightly moist, hard, well-formed, well-digested, slightly stringy, brown to black feces. The distal colon contained dry, crumbly, well-digested, poorly formed, homogeneous, dark brown to black feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and black on cut surfaces.

LIVER The liver was liquified.

GALLBLADDER The gallbladder contained a scant amount of viscous, orange to brown fluid. The mucosa was bile-stained.

REPRODUCTIVE The reproductive fat was rendered. The reproductive organs were soft, friable, and autolyzed.

KIDNEYS No perirenal fat was observed. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was gassy.

HEART No epicardial fat was observed. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. The lungs were white to black on serosal surfaces and light pink to red on cut surfaces. The primary airways were unremarkable. No parasites were observed.

HEAD & NECK REGIONS The trachea contained a small amount of watery, red fluid.

SKELETON The ribs were luxated and subluxated due to decomposition.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Swollen cranial aspect
- Dry, hard, crumbly feces
- Depleted fat
- Relatively empty duodenum
- Macroalgae in stomach
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

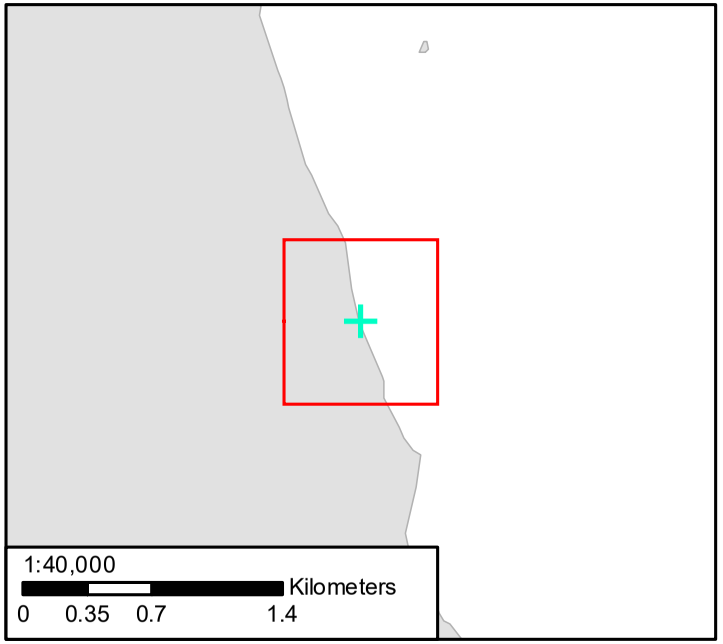
William D. Greer
Sara M. Wappes
Kelly L. Etherton (FWC intern)

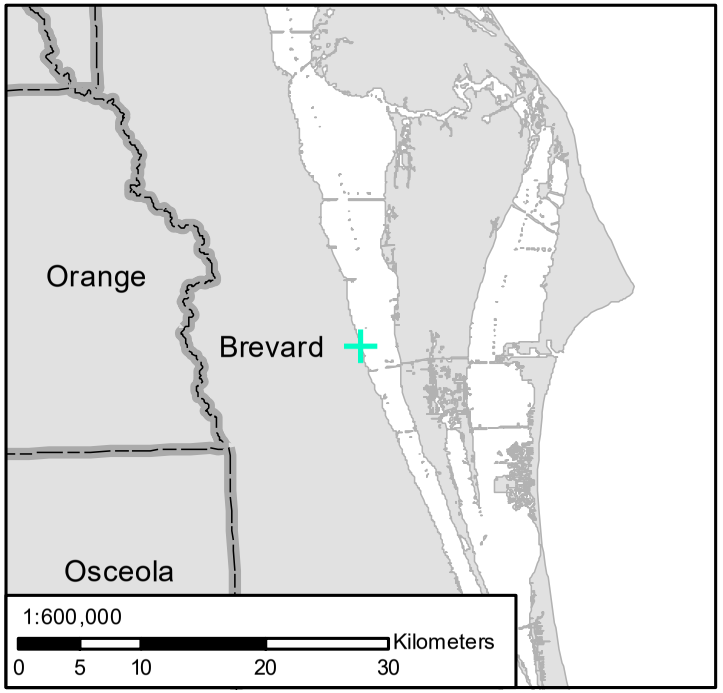
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20031

Report Date: 2/17/2020 **Received Date**: 2/17/2020 **Received By**: FWC-SMW







Location: Cocoa, Brevard County

Latitude: 28.41964°N **Longitude**: -80.75177°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20031
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2608 **FWC District**: Northeast
Sex: Male **Length (cm)**: 174 **Estimated** _____ **Weight (kg)** N/T
Date reported: 17 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 17 February 2020 **By**: FWC-SMW
Date necropsied: 17 February 20; **By**: FWC-WDG, SMW, FWC intern-K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 75 m ESE of 3763 N Indian River Drive.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Internal organs autolyzed or missing, dry and crumbly feces, bleached epidermis flippers

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20033**
Date of Report: 2020-Feb-18
Filed By: FWC EC Field Station

FWC Case # 2676 **FWC Region:** NE

Sex: Female **Length:** 325 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-18 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Feb-18 **By:** FWC-SMW,CMM
DATE NECROPSIED: 2020-Feb-18 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.36406 **N**
County: Brevard **Longitude:** -80.71095 **W**
Waterway: Indian River
Location description: Merritt Island, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Missing bones.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Actual length of the remains was 315 cm. Gender determined via pelvic bone.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20033

MORPHOMETRICS:

Total length:	325 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20033
SPECIES *T. manatus latirostris*
RECOVERY DATE 18 February 2020
NECROPSY DATE 18 February 2020
GENDER Female **TL** 325 **cm** (est) **WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 18 February 2020, at 0956 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Merritt Island, Brevard County. FWC case number 2676 was assigned. The complainant, Bob Peterson (321-452-5256), stated that he had secured the carcass to his dock and that it was very decomposed. SMW verified the carcass via photograph at 1023 hrs and requested FWC LE assistance to tow it. FWC Officer-Brandon Kearney secured the carcass at Doc's Baithouse boat ramp at 1234 hrs. SMW and FWC biologist-Carley M. Metcalf arrived at the boat ramp at 1435 hrs, loaded the carcass via carcass trailer at 1448 hrs, and transported it to the Brevard County Landfill at 1515 hrs. A field necropsy was completed at 1555 hrs. The remains were disposed of at the landfill.

EXTERNAL All of the epidermis was missing. Most of the dermis was severely eroded, and there were numerous rents on the ventrum which exposed the body cavity and skull. The flippers and midline of the fluke were missing. The carcass was dorsoventrally flattened due to decomposition. No watercraft-related scars or wounds were grossly observed. The fluke margin was eroded due to decomposition. Actual length of the remains was 315 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered. Internal organs were missing unless mentioned below.

STOMACH The stomach was torn due to decomposition and contained moist, moderately chewed, stringy, fibrous, green to brown ingesta (see photo). The mucosa was black and autolyzed. No parasites were observed.

COLON The distal-most 0.25 meters of colon remained, which was friable when handled, and contained very moist, moderately formed, well-digested, slightly stringy, brown to black feces. The mucosa was autolyzed. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON The ribs were luxated and subluxated due to decomposition. The caudal vertebrae of the fluke were missing.

OTHER

COMMENTS Gender was determined via pelvic bone (see photo).

SIGNIFICANT FINDINGS

- Missing, autolyzed internal organs
- Missing bones, flippers

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

Sara M. Wappes
Carley M. Metcalf

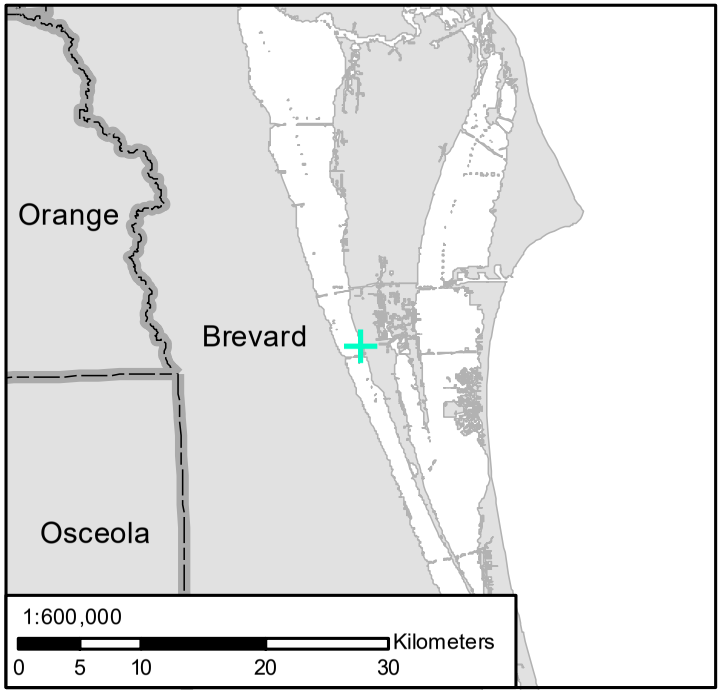
REPORT FILED BY Metcalf / Wappes

Verified Location of Manatee Carcass MEC20033

Report Date: 2/18/2020 **Received Date**: 2/18/2020 **Received By**: FWC-SMW,CMM







Location: Merritt Island, Brevard County

Latitude: 28.36406°N **Longitude**: -80.71095°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission · **Field ID #** MEC20033
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2676 **FWC District**: Northeast
Sex: Female **Length (cm)**: 315 **Estimated** 325 **Weight (kg)** _____
Date reported: 18 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 18 February 2020 **By**: FWC-SMW, CMM
Date necropsied: 18 February 20; **By**: FWC-SMW, CMM

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 155 m W of 475 N Tropical Trail.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: Unknown **PREGNANT:** Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20034**
Date of Report: 2020-Feb-18
Filed By: FWC EC Field Station

FWC Case # 2730 **FWC Region:** NE

Sex: Female **Length:** 338 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-18 **By:** Citizen to FWC Gainesville to FWC-WDG
DATE COLLECTED: 2020-Feb-19 **By:** FWC-SMW,CMM
DATE NECROPSIED: 2020-Feb-19 **By:** FWC-SMW,WDG

LOCATION: **State:** FL **Latitude:** 28.62289 **N**
County: Brevard **Longitude:** -80.79498 **W**
Waterway: Indian River
Location description: Titusville, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Wet lung(s); Bloody lung(s); Congested mesentery, urinary bladder mucosa; Froth, fluid in airways; Wet GI contents; Watery cecum contents; Cecum mucosa sloughiing in sheets; Macroalgace in GI tract, mouth; Black specks parietal pleura, abdominal fat. Necropsy findings fit the case description of the ongoing east coast UME. Cause of this event was still under investigation at the time this report was finalized.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Lactating. Uterine Scar. A field necropsy was performed. Known as MIPS ID PE241, first sighted on 11 Jan 1995 at Port Everglades Power Plant. Also FWC case number 2710.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20034

MORPHOMETRICS:

Total length:	338 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		6
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20034
SPECIES *T. manatus latirostris*
RECOVERY DATE 19 February 2020
NECROPSY DATE 19 February 2020
GENDER Female **TL** 338 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 18 February 2020, at 1331 hrs, FWC biologist-William D. Greer (WDG) received a call from FWC biologist-Maria, based in Gainesville, who had received a report regarding a dead manatee in the Indian River in Titusville, Brevard County. The complainant, Frank Booth (321-323-4116), stated that the manatee was gray with visible flippers that were flat to the chest. No pictures were available. At 1631 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville. FWC case number 2710 was assigned. The complainant, Fred McCue (248-910-8703), stated there was a dead manatee on the southeast side of the Max Brewer Causeway. No pictures were available. FWC LE assistance was requested but no officers were available. **19 February**, at 0733 hrs, FWC on-call biologist-Molly R. Schubert (MRS) received a text alert from Dispatch regarding the carcass. FWC case number 2730 was assigned. The complainant, Carson (321-529-4751), stated the manatee was beached, upside down, and on the east side of the Max Brewer Causeway. At 0755 hrs, MRS received a video of the carcass and forwarded the information to EC Field Station staff. At 1107 hrs FWC biologist-Sara M. Wappes and CMM arrived at the Max Brewer Causeway and pulled the carcass by hand to the Parrish Park Boat ramp. The carcass was loaded into a carcass trailer at 1140 hrs. A field necropsy was completed at the Brevard County Landfill at 1432 hrs. The remains were disposed of at the landfill.

EXTERNAL Almost all of the epidermis was present but sloughing. The epidermis was scraped off the dorsum. A small amount of watery, red-tinged fluid exuded from the nares. The carcass was distended with gas. There was a thin brown algal mat on the remaining dorsal epidermis. A minimum of eleven well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. A well-healed triangular mutilation was present at the 4 o'clock position of the fluke. Both teats were lactating white to pink fluid. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, mesenteric, and omental fat. Black specks were observed in the abdominal fat (see photo).

STOMACH The stomach contained 19.5 L of wet, moderately chewed, stringy, slightly fibrous, slightly leafy, green ingesta mixed with green, red, purple, and yellow macroalgae (see photo). The contents were covered in white to purple mucus. The mucosa was stained pink. No parasites were observed.

DUODENUM The duodenum contained 15 L of watery, moderately chewed, stringy, slightly fibrous, slightly leafy, green ingesta mixed with green, red, purple, and yellow macroalgae and sand (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The proximal small intestine contained watery, gray fluid mixed with yellow macroalgae and fibrous pieces of ingesta. The distal small intestine contained wet, poorly digested, stringy, slightly fibrous, slightly leafy, green ingesta mixed with yellow and green macroalgae. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 4.5 L of watery, moderately chewed, stringy, slightly fibrous, slightly leafy, green digesta mixed with yellow macroalgae (see photo). The mucosa was sloughing in sheets. No parasites were observed.

COLON The mesentery was severely congested. The proximal colon contained wet, poorly formed, poorly digested, leafy, stringy, green to brown feces mixed with yellow and green macroalgae. The mucosa in the

proximal colon was white and sloughing. The mid colon contained wet, poorly formed, moderately digested, stringy, brown feces. The distal colon contained very moist, poorly formed, well-digested, stringy, green to brown feces. The mucosa in the mid and distal colon was black and sloughing. No parasites were observed throughout.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft. Serosal surfaces were gray to blue and cut surfaces were brown.

GALLBLADDER The gallbladder contained 100 mL of viscous, orange to brown bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. Both uterine horns were distended. The right uterine horn contained a scar (6 cm wide). Both ovaries contained numerous fluid-filled follicles (maximum diameter 2.7 cm).

KIDNEYS There was moderate perirenal fat. The kidneys were light red on serosal surfaces. On cut surfaces, the cortices were light red and the medullae were tan to red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was severely congested.

HEART There was moderate, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the parietal pleura. The right lung was light pink to purple on serosal surfaces. The left lung was light pink to blue on serosal surfaces. Cut surfaces of both lungs were light red to dark red, very bloody and wet (see photo). The right lung primary airway contained a small amount of viscous, clear to pink fluid. The left lung primary airway contained a moderate amount of watery, dark red fluid (see photos). No parasites were observed in either lung airways.

HEAD & NECK REGIONS There was a small thatch of purple macroalgae in the mouth. There was frothy fluid in the trachea (see photo).

SKELETON NVL.

OTHER

COMMENTS Necropsy findings fit the case description of the ongoing east coast UME. Cause of this event was still under investigation at the time this report was finalized.

SIGNIFICANT FINDINGS

- Congested mesenteries, urinary bladder mucosa
- Froth, fluid in airways
- Wet, bloody lungs
- Watery cecum contents
- Wet GI contents
- Cecum mucosa sloughing in sheets

- Macroalgae in GI tract, mouth
- Black specks parietal pleura, abdominal fat
- Uterine scar
- Lactating

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

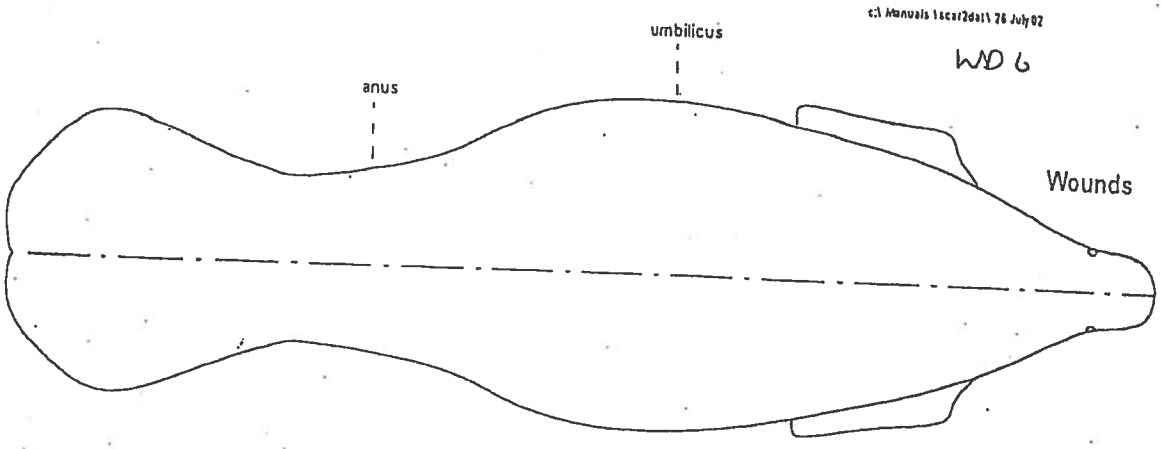
Sara M. Wappes
William D. Greer

REPORT FILED BY Metcalf / Greer

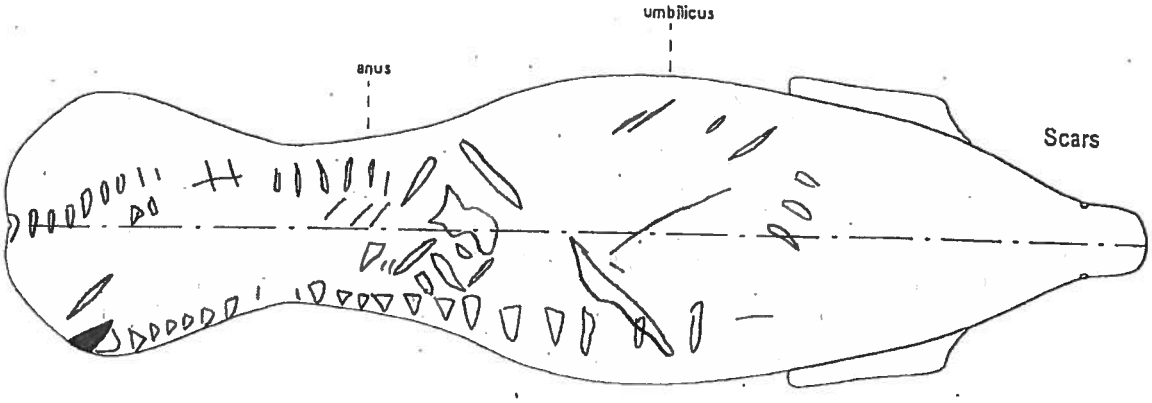
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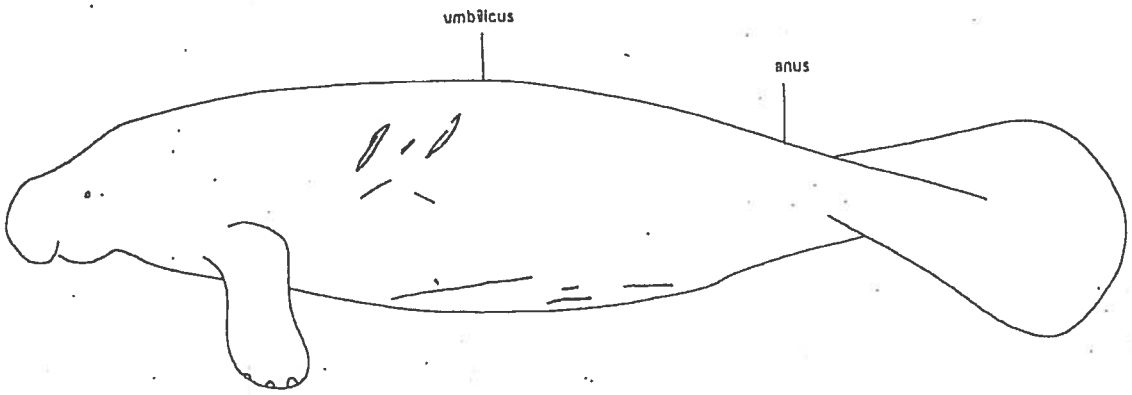


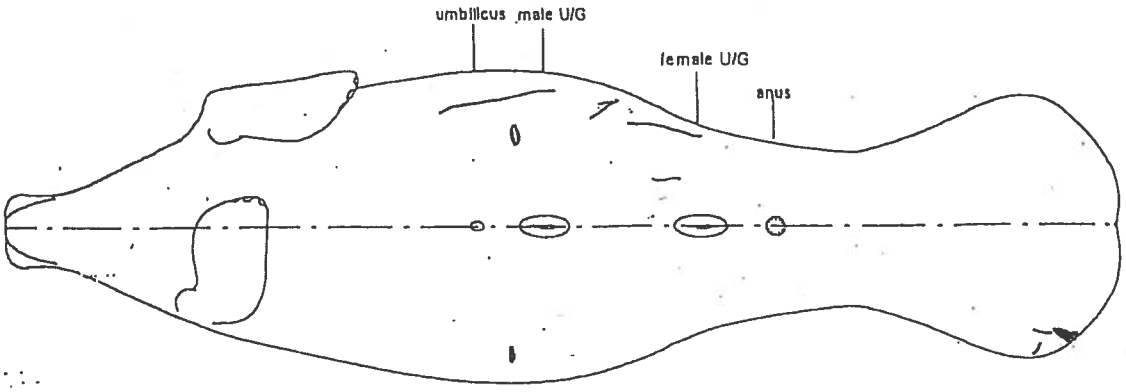
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Length																				
Width																				
Depth																				
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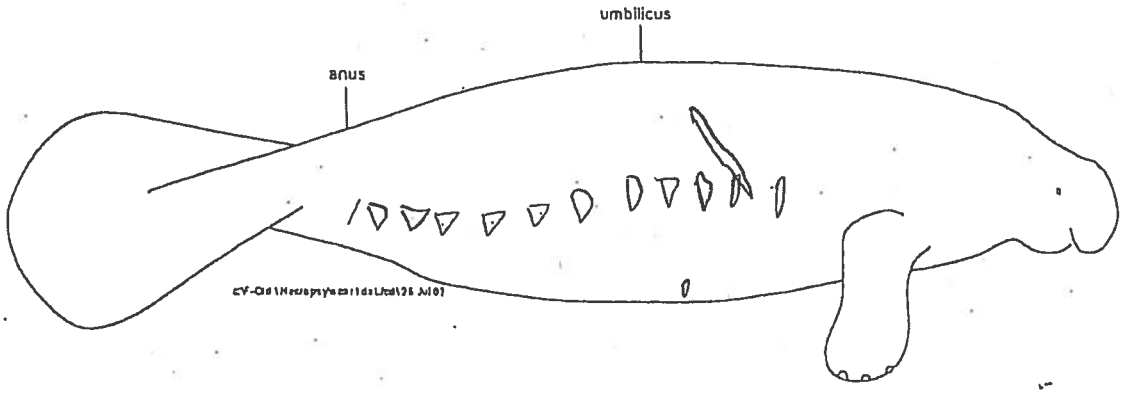


FIELD I.D. MEc20034

WOG



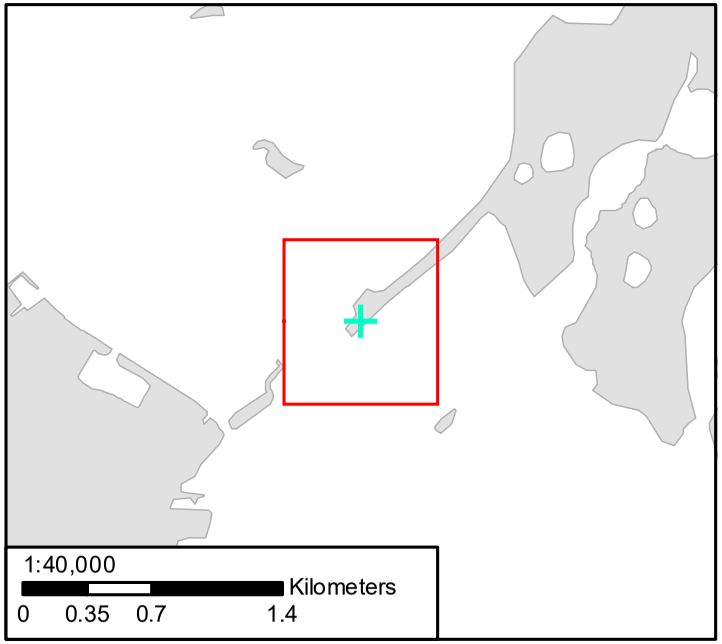


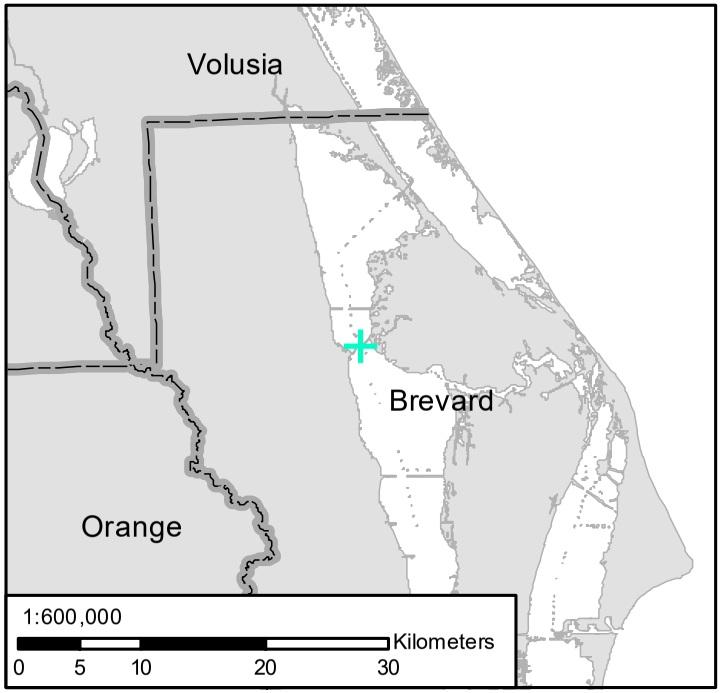


Verified Location of Manatee Carcass MEC20034

Report Date: 2/18/2020 **Received Date:** 2/19/2020 **Received By:** FWC-SMW,CMM







Location: Titusville, Brevard County **Latitude:** 28.62289°N **Longitude:** -80.79498°W

Map Created: 3/29/2021

Bassett, Brandon

From: Rood, Kari
Sent: Tuesday, February 25, 2020 10:45 AM
To: Howell, Amber; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Boyd, Denise; Burns, Allison; Deutsch, Chip; deWit, Martine; Edwards, Holly; Faucett, Blake; Fontaine, Christine; Fraser, Emma; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Martz, Meg; Nader, Ana; Nelson, Rachael; Panike, Anna; Peek, Austin; Schubert, Molly; sheri@mote.org; Szemer, Donna; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC20034=PE241

MEC20034=PE241

Carcass location: Indian River, Titusville
Carcass sex: Female

First sighted 1/11/95 at Port Everglades Power Plant
Last sighted 1/4/10 at Port Everglades Power Plant
Also sighted over the years at Riviera Beach Power Plant.
USGS should be able to provide a complete sighting history if needed.

Verifiers: SMW 2/19/20 & KAH 2/25/20

Sighting records are not to be used without permission from FWC, MML, and/or USGS, as appropriate.

Kari A. Rood
Manatee Photo-identification
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, FL 33701

Direct line: (727) 502-4737
Main line: (727) 896-8626
Kari.Rood@MyFWC.com
http://MyFWC.com
http://MyFWC.com/research/

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20034
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2710, 2730 **FWC District**: Northeast
Sex: Female **Length (cm)**: 338 **Estimated** _____ **Weight (kg)** N/T
Date reported: 18 February 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 19 February 2020 **By**: FWC- SMW, CMM
Date necropsied: 19 February 20; **By**: FWC- SMW, WDG

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 75 m SSE of the Parrish Park boat ramp

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☑ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered

Explain: UME findings: moderate fats, congestion throughout GI tract, very watery contents from stomach to cecum, purple/pink staining of stomach mucosa, frothy fluid in trachea, lungs were wet and bloody when cut and squeezed

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: Yes **PREGNANT:** No **UTERINE SCAR**: Yes
UTERINE HORNS: Distended

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20035**
Date of Report: 2020-Feb-19
Filed By: FWC EC Field Station

FWC Case # 2758 **FWC Region:** NE

Sex: Male **Length:** 261 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-19 **By:** USFWS-Mike Legari to FWC-WDG

DATE COLLECTED: 2020-Feb-20 **By:** FWC-WDG

DATE NECROPSIED: 2020-Feb-20 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.72972 **N**

County: Brevard **Longitude:** -80.75945 **W**

Waterway: Indian River

Location description: Allenhurst, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Thickened epidermis; Skin lesions; Spongy epidermis; Thick algal mat; Empty upper GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Healing watercraft wound(s).

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20035

MORPHOMETRICS:

Total length:	261 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20035
SPECIES *T. manatus latirostris*
RECOVERY DATE 20 February 2020
NECROPSY DATE 20 February 2020
GENDER Male **TL** 261 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 19 February 2020, at 1406 hrs, FWC biologist-William D. Greer (WDG) received a call from Merritt Island National Wildlife Refuge biologist-Mike Legari (ML) regarding a dead manatee near Bairs Cove in the Indian River in Allenhurst, Brevard County. Mike stated that the carcass had vultures on it, but that he had not seen the carcass himself. The photo he had received was from a third party. At 1430 hrs, WDG received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near Bairs Cove in the Indian River in Titusville. The complainant, Patrick Gerald (321-576-7322), stated that he did not get any photos, but the carcass was gray and medium in size. At 1514 hrs, WDG received a photo of the carcass from ML. WDG requested FWC LE assistance. FWC Officer-Seth Loeffler was dispatched at 1739 hrs and towed the carcass to the Bairs Cove boat ramp by 1919 hrs. **20 February**, WDG and FWC intern-Kelly L. Etherton arrived at the boat ramp at 1040 hrs, loaded the carcass via Ezy-Lift at 1105 hrs, and transported it to the Brevard County Landfill at 1230 hrs. A field necropsy was completed by 1327 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. A small amount of watery, red fluid exuded from the mouth and nares. The carcass was distended with gas. There was a healing superficial watercraft-related wound series on the dorsal caudal aspect (see photos) which consisted of a long linear wound (#1) perpendicular to and through five parallel wounds (#2-6). Small, irregular-shaped lesions were present on the fluke margin. There was a thick brown algal mat on the dorsal aspect. Linear lesions were present on the ventral and lateral aspects. A mild infestation of barnacles was observed on the caudal ventrum. There were patches of thickened spongy epidermis on the ventral fluke. Lesions on the ventral fluke had fringe-like growth on the margins. A minimum of two well-healed watercraft-related scar patterns was observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach was contracted and empty of contents. The mucosa was autolyzed (see photo). No parasites were observed.

DUODENUM The duodenum contained 125 mL of watery, white to tan fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, grey fluid. The distal small intestine contained watery, orange fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 2 L of moist, moderately digested, stringy, leafy, fibrous, green to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The colon contained moist, well-formed, moderately digested, stringy, fibrous, green to brown feces throughout. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was liquified.

GALLBLADDER The gallbladder contained a small amount of viscous, orange fluid. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The kidneys were soft and friable. Serosal surfaces were tan to red. On cut surfaces, the cortices were dark red and the medullae were red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 250 mL of flocculent, red-tinged fluid. The mucosa was unremarkable.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft and friable. Serosal surfaces were pink to black and cut surfaces were dark red. The primary airways were torn due to decomposition.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Thick algal mat
- Thickened, spongy epidermis
- Skin lesions
- Empty upper GI tract
- Healing watercraft wounds

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

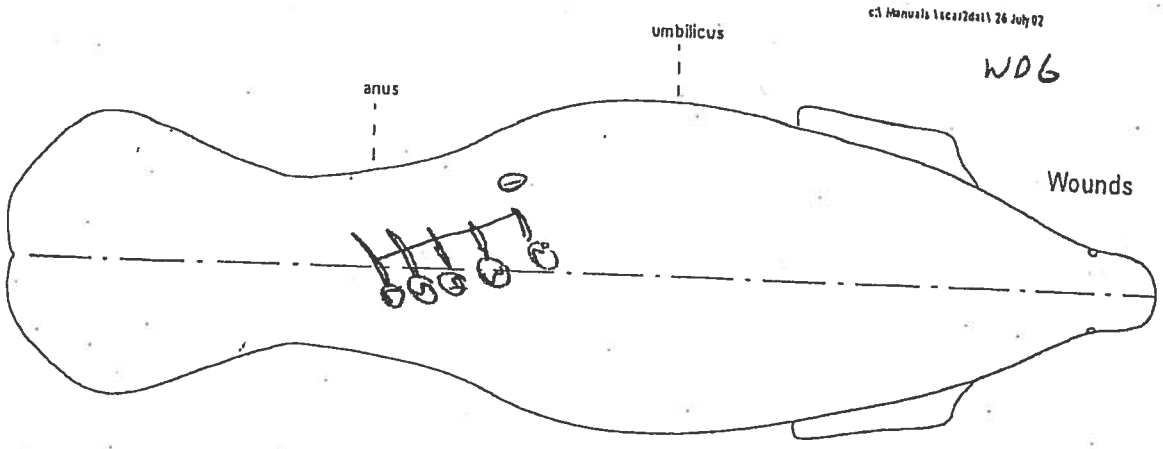
William D. Greer
Kelly L. Etherton (FWC intern)

REPORT FILED BY Etherton / Greer

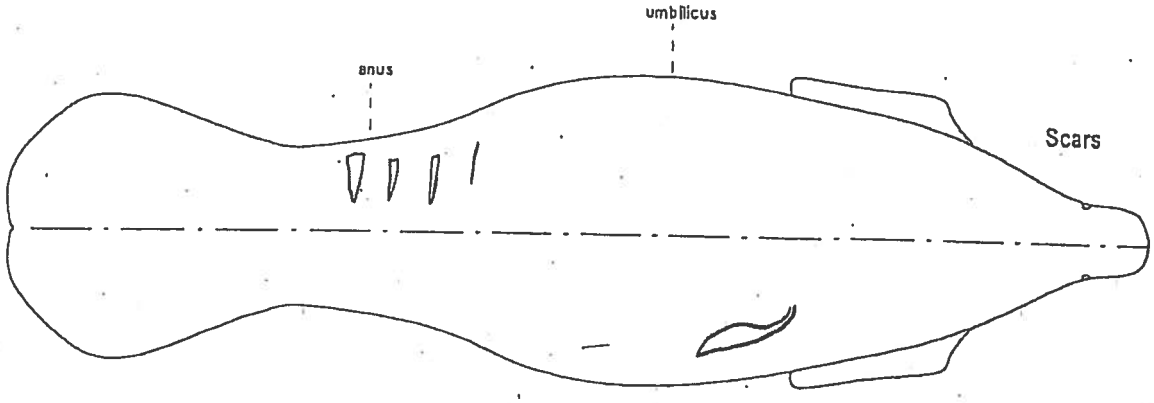
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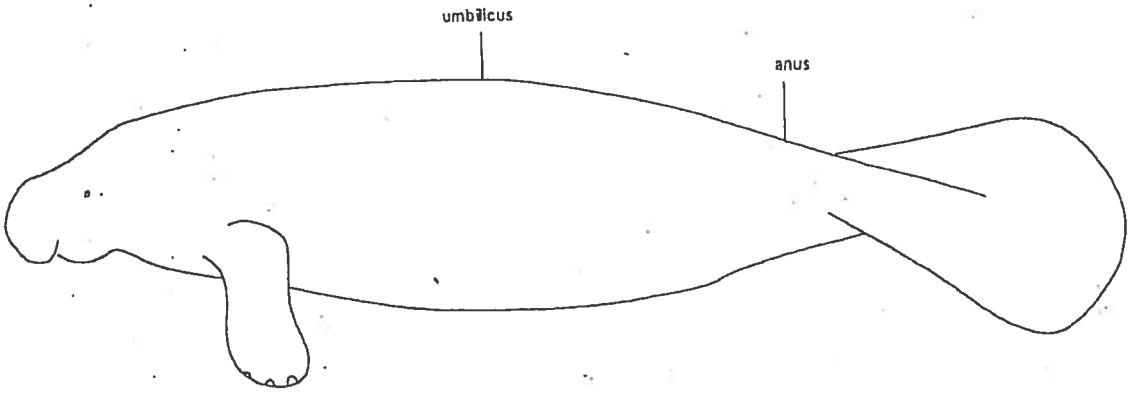
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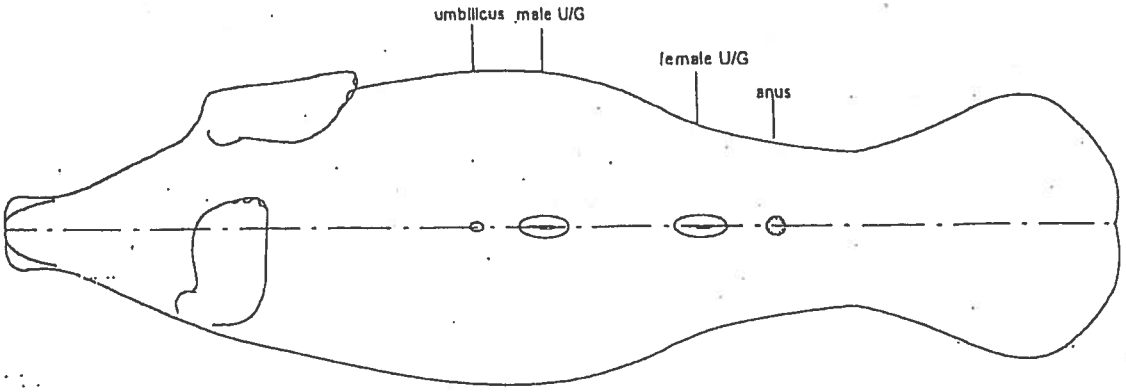


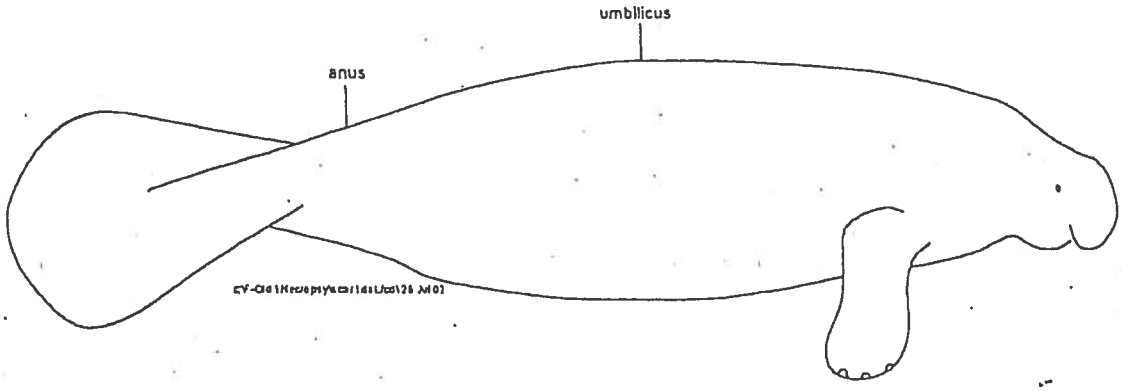
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Depth	0.1	0.1	0.1	0.1	~~0.1~~	0.1														
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FIELD I.D. _____


umbilicus
anus

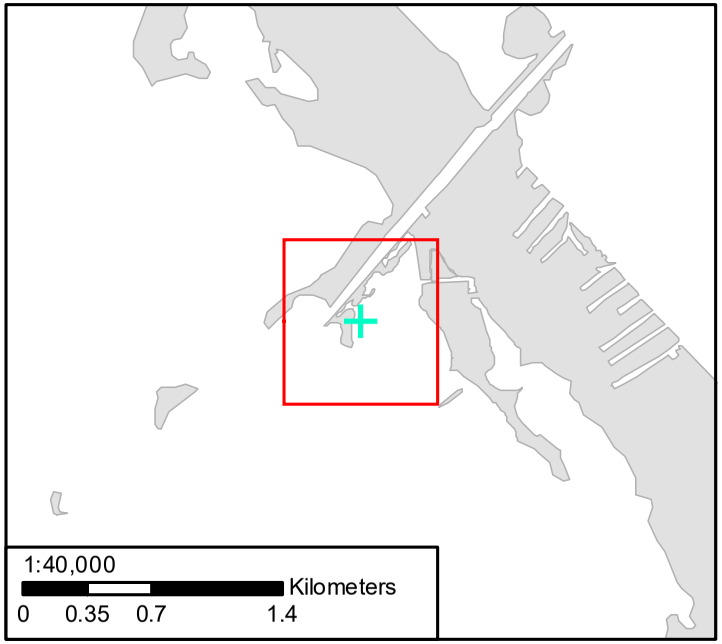

umbilicus
male U/G
female U/G
anus

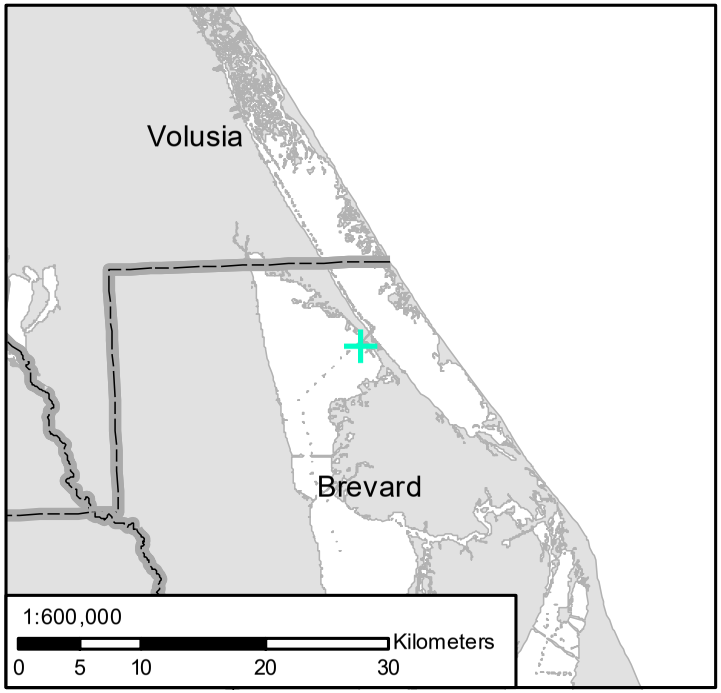

umbilicus
anus

Verified Location of Manatee Carcass MEC20035

Report Date: 2/19/2020 **Received Date:** 2/20/2020 **Received By:** FWC-WDG







Location: Allenhurst, Brevard County

Latitude: 28.72972°N **Longitude:** -80.75945°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20035
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2758 **FWC District**: Northeast
Sex: Male **Length (cm)**: 261 **Estimated** _____ **Weight (kg)** N/T
Date reported: 19 February 2020 **By**: USFWS- Mike Legari to FWC-WDG
Date collected: 20 February 2020 **By**: FWC- WDG; FWC Intern- K. Etherton
Date necropsied: 20 February 20 **By**: FWC- WDG; FWC Intern- K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 440 m WSW of Bairs Cove Boat Ramp

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20036**
Date of Report: 2020-Feb-21
Filed By: FWC EC Field Station

FWC Case # 2903 **FWC Region:** NE

Sex: Male **Length:** 245 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-21 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Feb-22 **By:** FWC-CMM,WDG

DATE NECROPSIED: 2020-Feb-22 **By:** FWC-CMM,WDG

LOCATION: **State:** FL **Latitude:** 27.65198 **N**

County: Indian River **Longitude:** -80.38605 **W**

Waterway: Indian River

Location description: Vero Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cobblestone-like epidermis; Serous fat(s); Relatively empty, fluid-filled upper GI tract, cecum; Lesions in small intestine.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Healing wound).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Healing watercraft wound(s); Also FWC NE Dispatch case number 2886 and SO-A Dispatch case number 3627.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20036

MORPHOMETRICS:

Total length:	245 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20036
SPECIES *T. manatus latirostris*
RECOVERY DATE 22 February 2020
NECROPSY DATE 22 February 2020
GENDER Male **TL** 245 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 21 February 2020, at 1716 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in the Indian River in Vero Beach, Indian River County. FWC case number 3627 was assigned. The complainant, Bill (954-682-2062), stated that the carcass was 6 to 7 feet long, bloated and was grey in color. At 1751 hrs, WDG received a photo of the carcass from the complainant and requested officer assistance to tow it. Dispatch informed WDG that the request would be forwarded to FWC NE Dispatch-Orlando. Dispatch-Orlando assigned FWC case number 2886. **22 February**, at 0926 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from Dispatch-Orlando regarding the carcass. FWC case number 2903 was assigned. The complainant, Jare Odom, said the carcass was floating in the canal behind his home. FWC Officer-Joshua Mock located the carcass at 1022 hrs and towed it to the MacMillan boat ramp at 1101 hrs. WDG and CMM arrived at the boat ramp at 1200 hrs, loaded the carcass via ANT Lift at 1220 hrs, and transported it to the EC Field Station. A field necropsy was completed at 1410 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. The carcass was distended with gas. Watery red fluid and dead trematodes exuded from the nares. There was a 46 cm long, superficial linear healing wound on the dorsum. There was cobblestone-like epidermis on the ventral fluke. A minimum of one well-healed watercraft-related scar pattern was present on the peduncle. The fluke margin had a triangular, well-healed mutilation at the 6 o'clock position and another well-healed linear mutilation at the 3 o'clock position. A thin brown algal mat was observed on the dorsum. There was cobblestone-like epidermis on the ventral fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach contained 100 mL of watery, grey fluid (see photo). The mucosa was autolyzed. There was a mild infection of dead trematodes.

DUODENUM The duodenum contained 200 mL of watery, grey fluid (see photo). The mucosa was autolyzed. There was a mild infection of dead trematodes.

JEJUNUM & ILEUM The proximal small intestine was empty of contents. The wall was slightly rugose (see photo). The mid small intestine contained watery, orange to green fluid. The distal small intestine contained viscous, grey fluid. A small section of the wall was discolored red (see photo). There were diffuse circular tan lesions in the wall. The mucosa was autolyzed throughout. There was a moderate infection of pinpoint trematodes in the wall.

CECUM The cecum contained approximately 20 mL of watery, brown fluid (see photo). The mucosa was autolyzed. There was a mild infection of dead trematodes.

COLON The proximal colon was mostly empty of contents but some sections contained moist, moderately digested, poorly formed, homogeneous feces mixed with fibrous pieces of yellow to green feces. The mid colon contained very moist, moderately digested, poorly formed, tacky, fibrous, green feces. The distal colon contained moist, moderately digested, well-formed, stringy, fibrous, brown to black feces. The mucosa was white and sloughing throughout. A mild infection of dead trematodes was observed throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a small amount of watery, orange fluid. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 50 mL of watery, red-tinged fluid. The mucosa was unremarkable.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. No parasites were observed.

HEAD & NECK REGIONS The trachea contained a moderate amount of watery, red fluid. There was a moderate infection of dead trematodes.

SKELETON NVL.

OTHER The fat layers of the cranial one-third were serous.

COMMENTS

SIGNIFICANT FINDINGS

- Cobblestone-like epidermis
- Serous fat
- Lesions small intestine
- Relatively empty, fluid-filled upper GI tract, cecum
- Healing watercraft wound
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

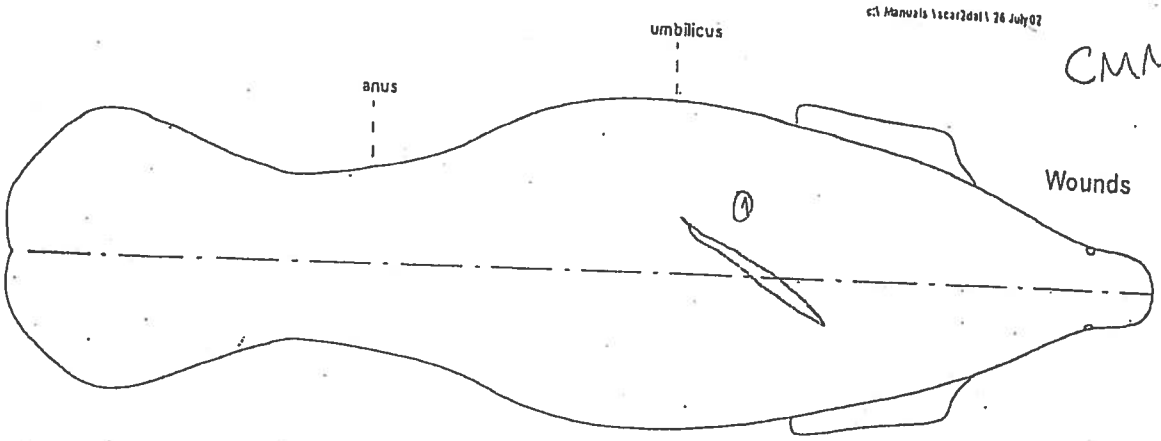
William D. Greer
Carley M. Metcalf

REPORT FILED BY Metcalf / Greer

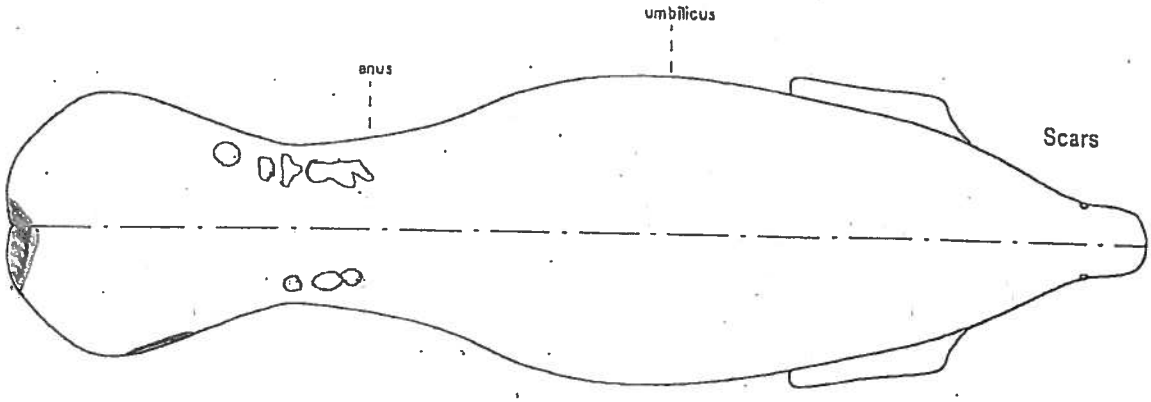
Date 27Feb2020 Field I.D. MFC20036

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CMM

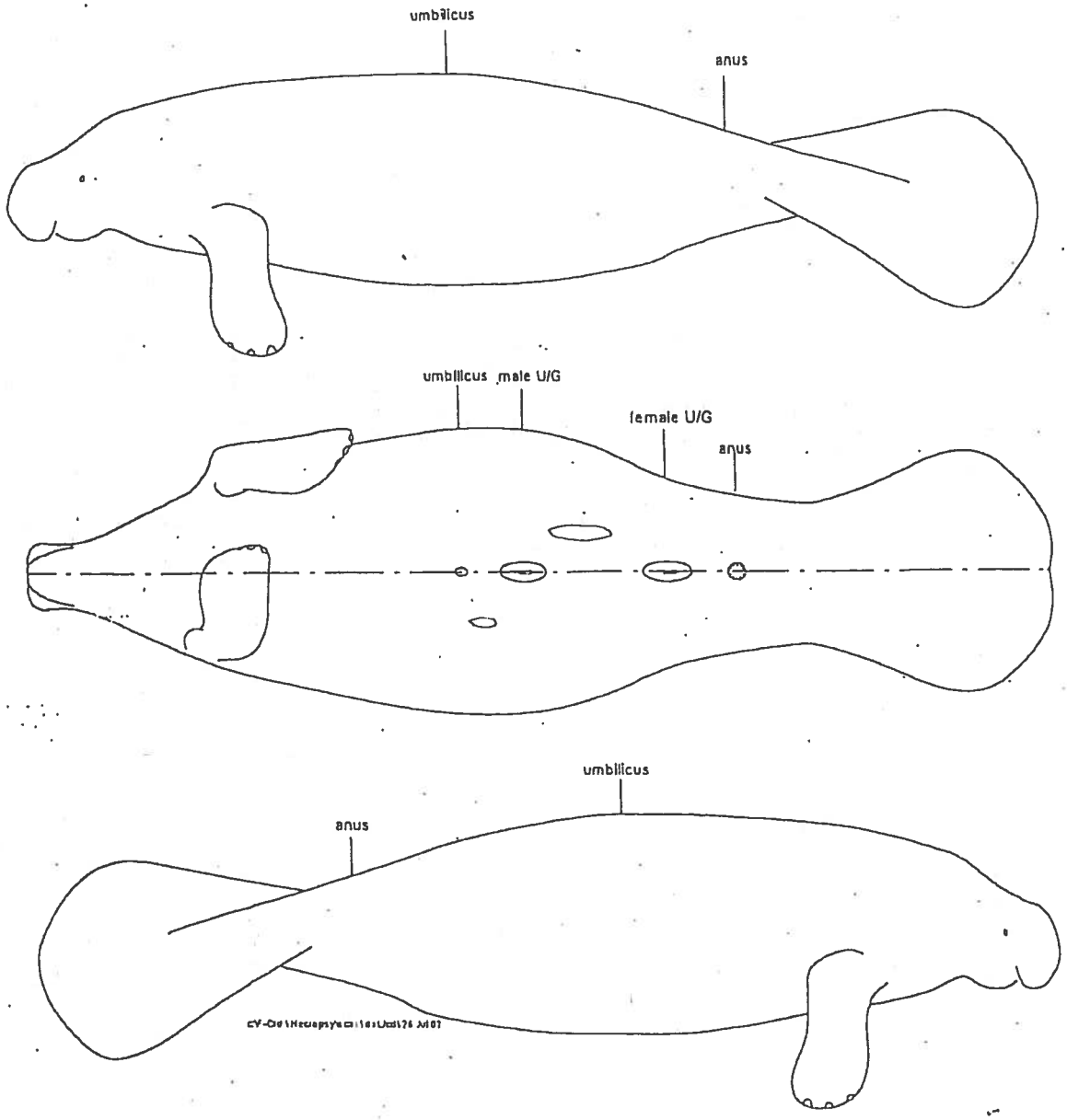


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Width	1.2																			
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Distance																				



FIELD I.D. MEG20036

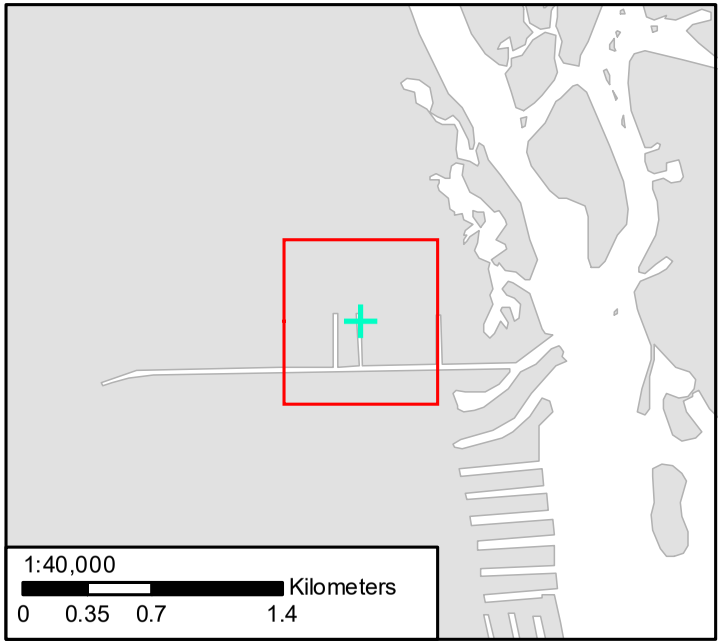
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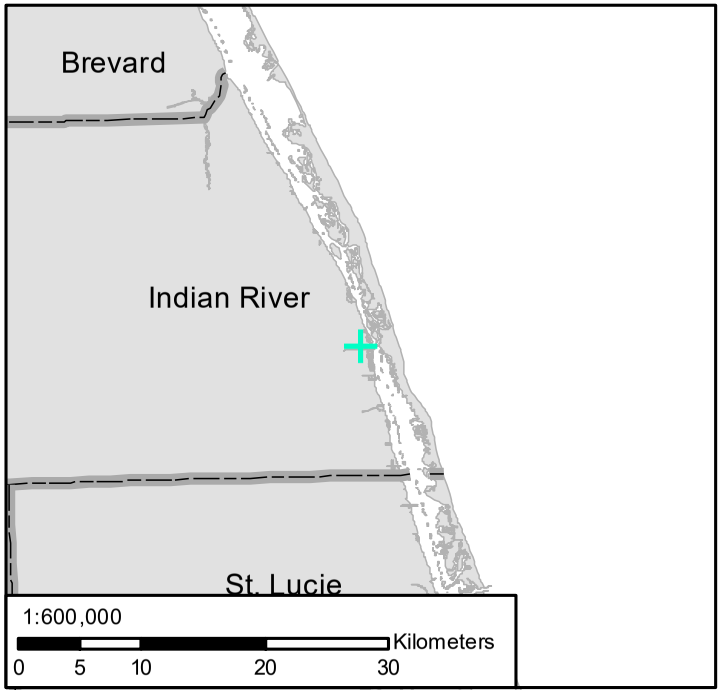


Verified Location of Manatee Carcass MEC20036

Report Date: 2/21/2020 **Received Date:** 2/22/2020 **Received By:** FWC-CMM,WDG







Location: Vero Beach, Indian River County **Latitude:** 27.65198°N **Longitude:** -80.38605°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20036
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2886, 2903 **FWC District**: Northeast
Sex: Male **Length (cm)**: 245 **Estimated** _____ **Weight (kg)** _____
Date reported: 21 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 22 February 2020 **By**: FWC-CMM, WDG
Date necropsied: 22 February 20 **By**: FWC-CMM, WDG

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 30 m E of 3012 Nassau Drive

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20039**
Date of Report: 2020-Feb-25
Filed By: FWC EC Field Station

FWC Case # 3093 **FWC Region:** NE

Sex: Female **Length:** 181 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-25 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-25 **By:** FWC-CMM

DATE NECROPSIED: 2020-Feb-25 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.94963 **N**

County: Volusia **Longitude:** -80.8403 **W**

Waterway: Mosquito Lagoon

Location description: New Smyrna Beach, floating

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Emaciated; Cobblestone-like epidermis; Depleted fat(s); Serous fat(s); Bloody lung(s); Wet lung(s); Crumbly feces; Cold stress lesions; Dry feces; Fluid in pleural cavities; Congested GI serosa, peritoneum, mesenteries; Relatively empty duodenum; Black specks parietal pleura, abdominal fat.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Remodeled rib.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20039

MORPHOMETRICS:

Total length:	181 cm	**Fluke base:**	52 cm	**Girth at axillae:**	105 **cm**
Snout to anus:	119 cm	**Fluke width:**	47 cm		
Snout to U/G:	109 cm	**Girth at fluke base:**	65 cm		
Snout to umbilicus:	66 cm	**Girth at anus:**	30 cm		
Flipper width:	11 cm	**Girth at umbilicus:**	128 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	1 cm	1.6 cm		
Outer Blubber Thickness:	0.8 cm	0.2 cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	0.1 cm	0.2 cm	**Epidermis Thickness:**	0.1 cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20039 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 25 February 2020 **NECROPSY DATE** 25 February 2020
GENDER Female **TL** 181 **cm WT** N/T **kg** **CONDITION** Fresh

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HISTORY 25 February 2020, at 0822 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Mosquito Lagoon in New Smyrna Beach, Volusia County. FWC case number 3093 was assigned. The complainant, Jim Rendar (724-622-0671), described a small dead manatee floating beside his private dock. CMM verified the carcass via photograph at 0836 hrs and arrived at the Mary McLeod Bethune Beach kayak ramp at 1120 hrs. CMM launched a kayak, located the carcass, and towed it to the kayak ramp. The carcass was loaded via ANT Lift at 1215 hrs and transported to the Brevard County Landfill. A field necropsy was completed at 1544 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass had a peanut-shaped head and appeared thin. Watery, red fluid exuded from the nares. There was one linear cold stress lesion with thickened bleached margins on the head. A thin, brown algal mat was present on the dorsal and lateral aspects. There was a mild infestation of barnacles on the ventral aspect. Cobblestone-like epidermis was observed on the ventral aspect and flippers. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal and mesenteric fat, and scant, serous omental fat. The abdominal fat had black specks and was moderately congested. The peritoneum had bands of severe congestion (see photo).

STOMACH The stomach contained 1.5 L of moist, moderately chewed, very stringy, light green to light brown ingesta (see photo). The ingesta were coated in a thin layer of viscous, white mucus. No parasites were observed. The mucosa was unremarkable.

DUODENUM The duodenum contained 50 mL of wet, well-chewed, stringy, dark green to black ingesta (see photo). No parasites were observed. The mucosa was unremarkable.

JEJUNUM & ILEUM The mesentery and small intestine serosa were mildly congested. The proximal small intestine contained viscous, gray fluid mixed with well-chewed, black fibrous pieces of ingesta (see photo). The mucosa was rugose. The mid small intestine contained viscous, light yellow fluid. The distal small intestine contained viscous, light yellow fluid mixed with well-chewed, fibrous, green to black ingesta. No parasites were grossly observed. The mucosa was unremarkable throughout.

CECUM The cecum contained 800 mL of moist, moderately digested, stringy, fibrous, green to brown digesta (see photo). No parasites were observed. The mucosa was black and sloughing.

COLON The mesentery and colon serosa were moderately congested (see photo). The proximal colon contained wet, poorly formed, moderately digested, stringy, fibrous, green to brown feces. There was a mild infection of dead trematodes. The wall was contracted (see photo). The mid colon contained moist, moderately digested, moderately formed, stringy, fibrous, brown feces. The wall was contracted. The distal colon contained dry, crumbly, poorly formed, well-digested, homogeneous, black to brown feces. The mucosa was black and sloughing throughout.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was black on serosal surfaces and dark red to black on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were blue to black and cut surfaces were dark red.

GALLBLADDER The gallbladder contained 50 mL of viscous, yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was no reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was no perirenal fat. The kidneys were mottled brown and red on serosal surfaces (see photo). On cut surfaces, the cortices were brown and the medullae were dark pink. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 50 mL of watery, yellow urine. The mucosa was moderately congested and had black specks (see photos).

HEART There was scant, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There was a mild concentration of black specks on the parietal pleura. There was 400 mL of watery, red fluid in the left pleural cavity and 1 L of watery, red fluid in the right pleural cavity. The lungs were mottled light pink and gray on serosal surfaces, and dark pink, bloody, and wet on cut surfaces. There was a small amount of watery, red fluid in the primary airways. No parasites were observed.

HEAD & NECK REGIONS There was a moderate amount of viscous, red fluid and froth in the trachea.

SKELETON Right rib 9 was remodeled at the proximal one-quarter (see photo).

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Cold stress lesion
- Cobblestone-like epidermis
- Depleted, serous fat
- Fluid in pleural cavities
- Wet, bloody lungs
- Congested GI serosa, peritoneum, mesenteries
- Dry, crumbly feces
- Relatively empty duodenum
- Black specks parietal pleura, abdominal fat
- Remodeled rib

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

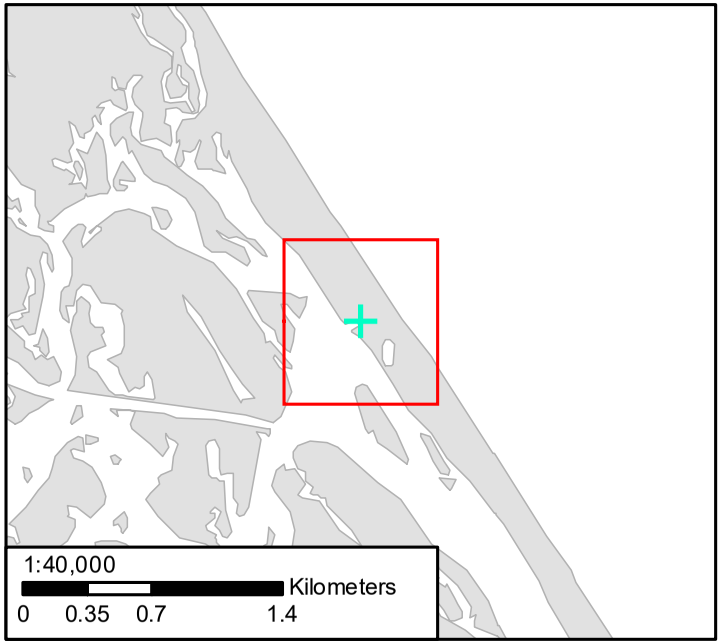
Sara M. Wappes
Carley M. Metcalf

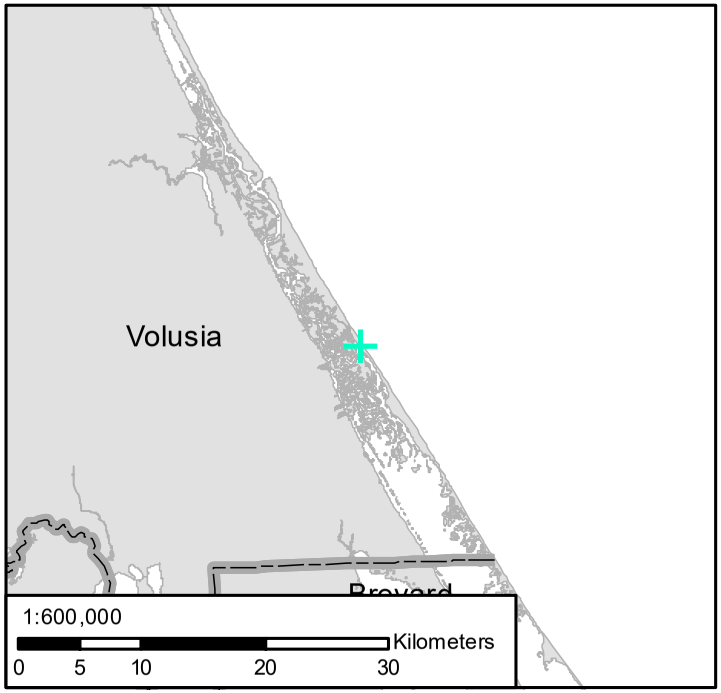
REPORT FILED BY Metcalf / Wappes

Verified Location of Manatee Carcass MEC20039

Report Date: 2/25/2020 **Received Date**: 2/25/2020 **Received By**: FWC-CMM







Location: New Smyrna Beach, Volusia County

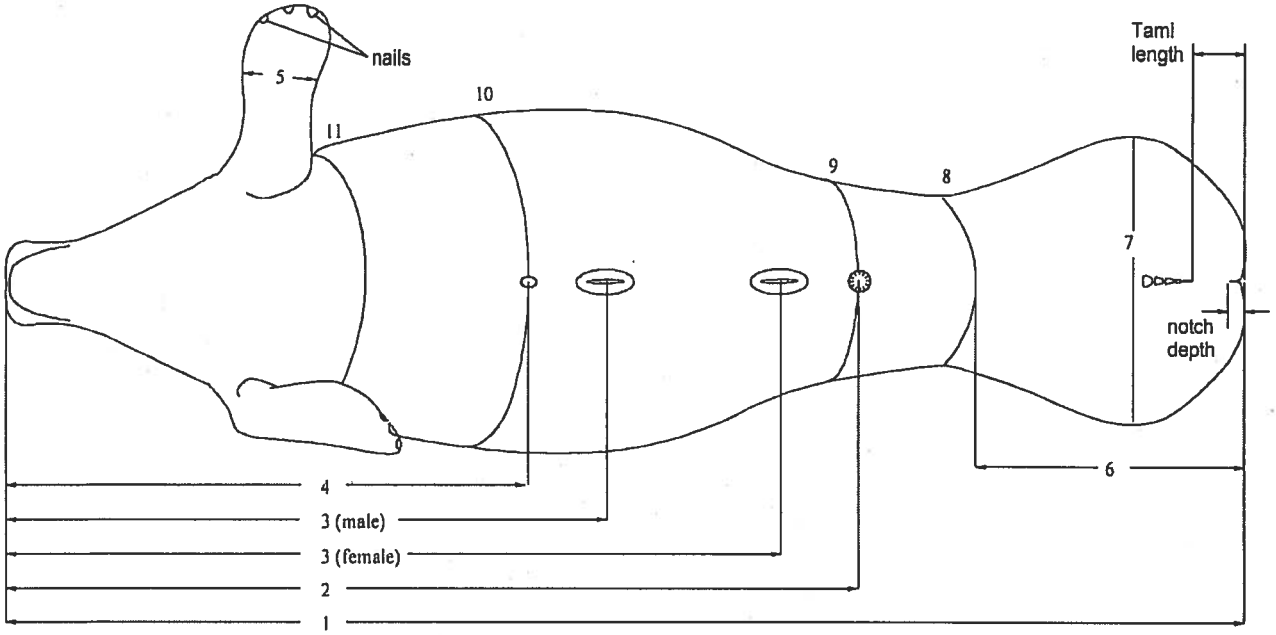
Latitude: 28.94963°N **Longitude**: -80.8403°W

Map Created: 3/29/2021

Field ID # MEC20039

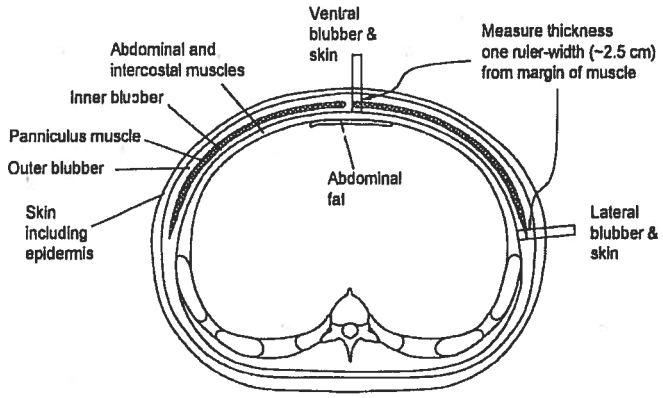
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length 161 cm
2. Snout to anus -C 119 cm
3. Snout to U/G -C 109 cm
4. Snout to umbilicus -C 100 cm
5. Flipper width 11 cm
6. Fluke base 57 cm
7. Fluke width 46.5 cm
8. *Girth at fluke base 65 cm
9. * Girth at anus 78.5 cm
10. *Girth at umbilicus 120 cm
11. *Girth at axillae 105 cm (Depth of notch _____ cm)
(Tami ln_____ cm)
(Nail count: R 3 L 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	1.0 cm	1.6 cm	(Epidermis .1 cm)
Outer blubber	0.6 cm	0.7 cm	(Abdominal fat _____ cm)
Inner blubber	0.1 cm	0.2 cm	



Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: Y/N L: Y/N
Placental Scaring: R / L:____x ____ x _____ cm
Pregnant: Y/N – Fetus length _____cm Fetus gender M / F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes Y / N; in epididymes Y / N Method: visual / microscope slide
Fluid in seminal vesicles Y / N; if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20039
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3093 **FWC District**: Northeast
Sex: Female **Length (cm)**: 185 **Estimated** _____ **Weight (kg)** _____
Date reported: 25 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 25 February 2020 **By**: FWC-CMM
Date necropsied: 25 February 20; **By**: FWC-SMW, CMM

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: New Smyrna Beach, approximately 5 m N of 6660 Engram Road.

Carcass Orientation: Floating

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☒ Other ☐ Not Recovered
Explain: Emaciated, peanut-shaped head, small amount of serous fats, dry, crumbly feces

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20040**
Date of Report: 2020-Feb-26
Filed By: FWC EC Field Station

FWC Case # 3163 **FWC Region:** NE

Sex: Male **Length:** 240 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-26 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-26 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2020-Feb-26 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.77127 **N**

County: Brevard **Longitude:** -80.8446 **W**

Waterway: Indian River

Location description: Mims, grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Propeller; Acute; Watercraft wound(s); Fractured skull; Shredded muscle; Hemorrhagic muscle; Blood clots; Wet lung(s); Bloody lung(s); Froth, fluid in airways; Congested peritoneum, mesenteries, urinary bladder mucosa; Vegetation in mouth; Specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Bleached epidermis; Serous fat(s); Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20040

MORPHOMETRICS:

Total length:	240 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20040
SPECIES *T. manatus latirostris*
RECOVERY DATE 26 February 2020
NECROPSY DATE 26 February 2020
GENDER Male **TL** 240 **cm WT** N/T **kg**
CONDITION Fresh

HISTORY 26 February 2020, at 1140 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Mims, Brevard County. FWC case number 3163 was assigned. The complainant, Trey (541-645-0746), stated that the manatee was small and near the Scottsmoor Landing boat ramp. At 1147 hrs, SMW received a photo of the carcass via text. SMW and FWC biologist William D. Greer arrived at the Scootsmoor Landing boat ramp at 1330 hrs and completed a field necropsy at 1450 hrs. The remains were left on site.

EXTERNAL All of the epidermis was present. The carcass was distended with gas. Watery, red fluid exuded from the nares. There was a fresh watercraft-related wound pattern on the cranial aspect which consisted of a wide superficial linear wound (#1) on the right dorsal head between the eyes, and two parallel wounds (#2 and 3) caudal to and roughly perpendicular to wound #1. Wound #2 penetrated the muscle and was on the caudal dorsal head, and wound #3 cut into the dermis and was on the right dorsal neck region. Fractured skull was visible in wound #2. There was a moderate brown algal mat on the dorsum. A mild infestation of barnacles was present on the ventrum. Numerous bleached spots were present on the ventrum. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, serous abdominal, mesenteric, and omental fat (see photo). The abdominal fat was moderately congested. There were streaks of moderate congestion in the peritoneum.

STOMACH The stomach contained 6.5 L of moist, moderately chewed, fibrous, stringy, mottled brown and dark brown ingesta mixed with white and black banded macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 2.5 L of wet, fibrous, moderately chewed, green to brown vegetation mixed with watery, tan to dark green fluid and white and black banded macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested (see photo). The small intestine contained wet, moderately chewed, stringy, grey to brown ingesta mixed with white and black banded macroalgae. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 2.2 L of moist, moderately formed, fibrous, stringy, brown to black ingesta (see photo). The mucosa was sloughing. No parasites were observed.

COLON The mesentery was severely congested (see photo). The proximal colon contained moist, poorly digested, moderately formed, leafy, stringy, orange to brown feces. The distal colon contained moist, well-digested, moderately formed, stringy, gray to brown feces. The mucosa of the proximal and mid colon was grey and sloughing. The mucosa of the distal colon was sloughing. No parasites were observed.

PANCREAS The pancreas was pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and purple on serosal surfaces, and dark red and bloody on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were blue to purple, and cut

surfaces were dark red and bloody.

GALLBLADDER The gallbladder contained 20 mL of viscous, yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate, serous reproductive fat. The seminal vesicles were small and empty of contents. The testes were small.

KIDNEYS There was moderate, serous perirenal fat. The kidneys were tan to light red on serosal surfaces. On cut surfaces, the cortices were red and the medullae were dark red. The corticomedullary boundaries were distinct (see photo).

URINARY BLADDER The urinary bladder contained 150 mL of clear fluid. The mucosa was moderately congested.

HEART There was moderate, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The parietal pleura was severely congested (see photo). The right parietal pleura had black specks (see photo). The lungs were pink to purple on serosal surfaces, and dark red, wet, and bloody on cut surfaces. The primary airways contained a small amount of slightly frothy, watery red fluid (see photo). No parasites were observed.

HEAD & NECK REGIONS The left frontal bone had multiple fractures deep to wound #2 (see photo). The fractures were surrounded by shredded, hemorrhagic tissue and loose, well-formed blood clots. There was shredded tissue deep to wound #3. The trachea contained frothy fluid. There was green vegetation in the mouth.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wounds
- Fractured skull
- Shredded, hemorrhagic tissue
- Blood clots
- Wet, bloody lungs
- Froth, fluid in airways
- Congested peritoneum, mesenteries, urinary bladder mucosa
- Vegetation in mouth
- Bleached epidermis
- Serous fat
- Macroalgae in GI tract
- Specks parietal pleura

PROBABLE CAUSE OF DEATH Watercraft; Propeller (Acute)

NECROPSY CONDUCTED BY

William D. Greer

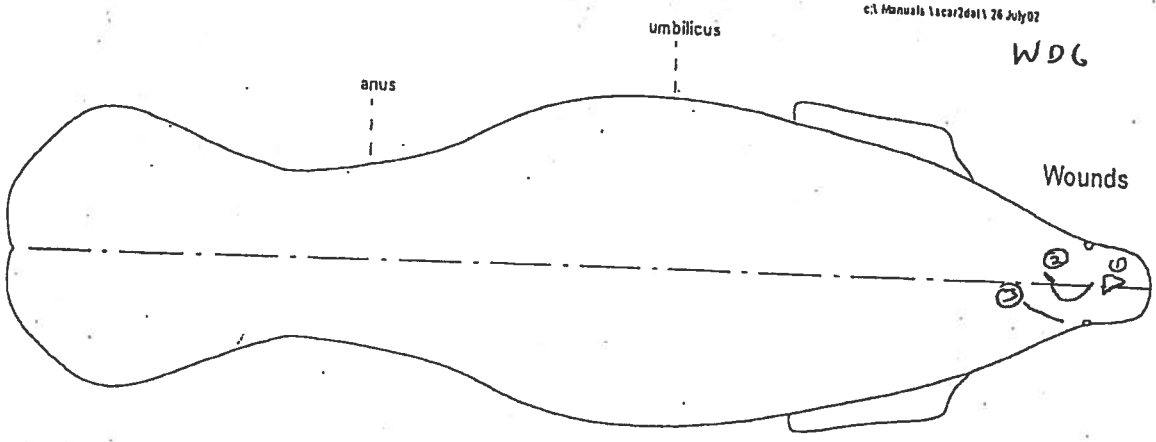
Sara M. Wappes

REPORT FILED BY Etherton / Greer

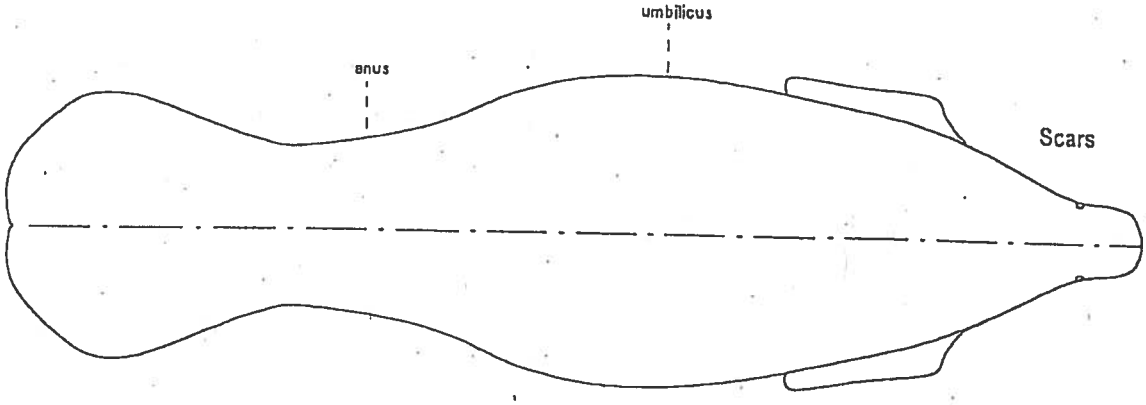
Date 26 FEB 2022 Field I.D. MEC20040

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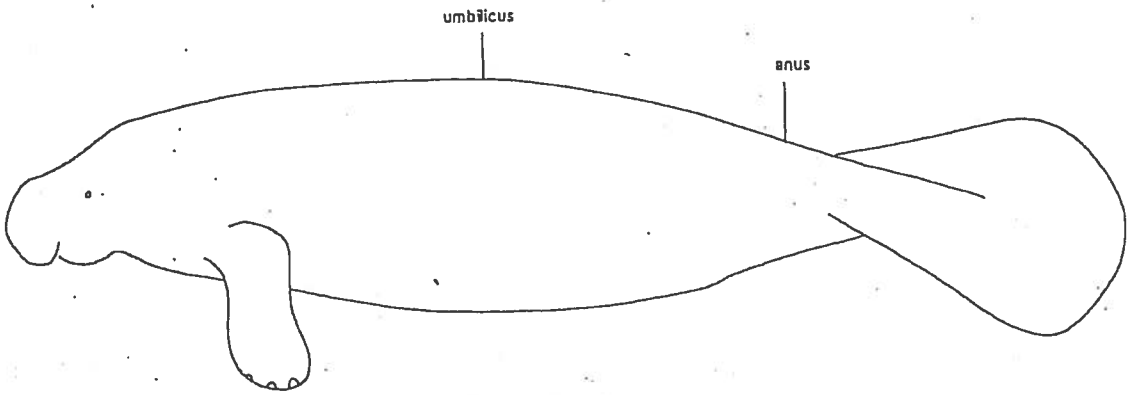
WDG

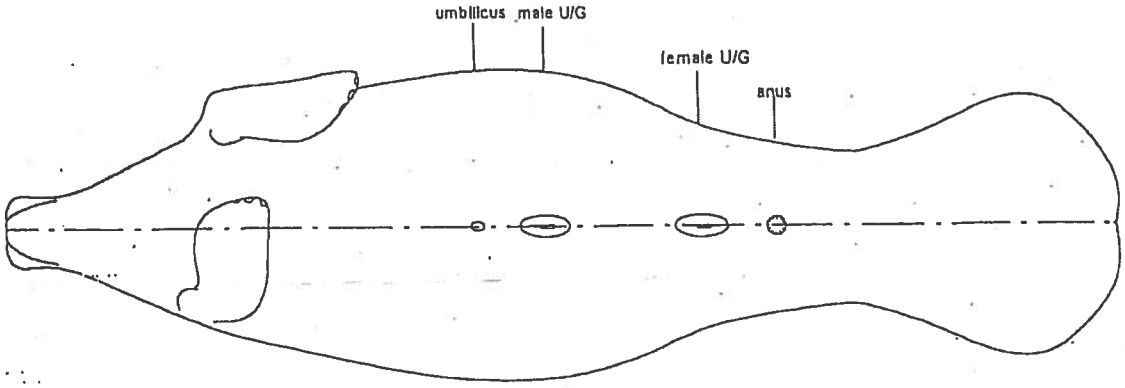


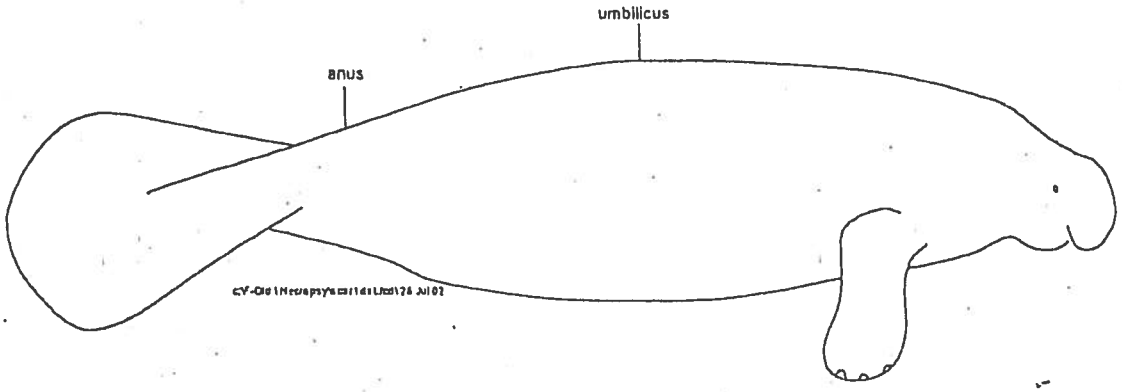
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Number																				
Length	4.6	19	15.6																	
Width	4.0	2.3	0.3																	
Depth	-	2.4	0.1																	
Distance	10.5	16.5																		



FIELD I.D. _____


umbilicus
anus

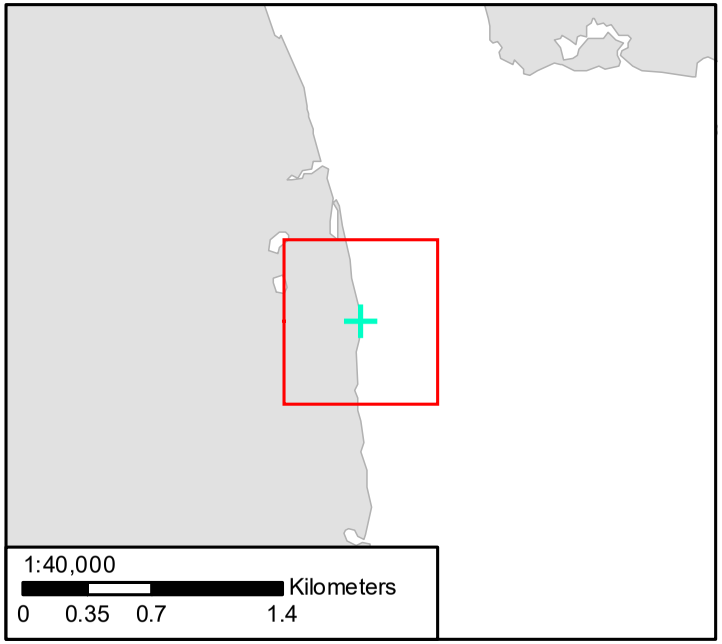

umbilicus
male U/G
female U/G
anus

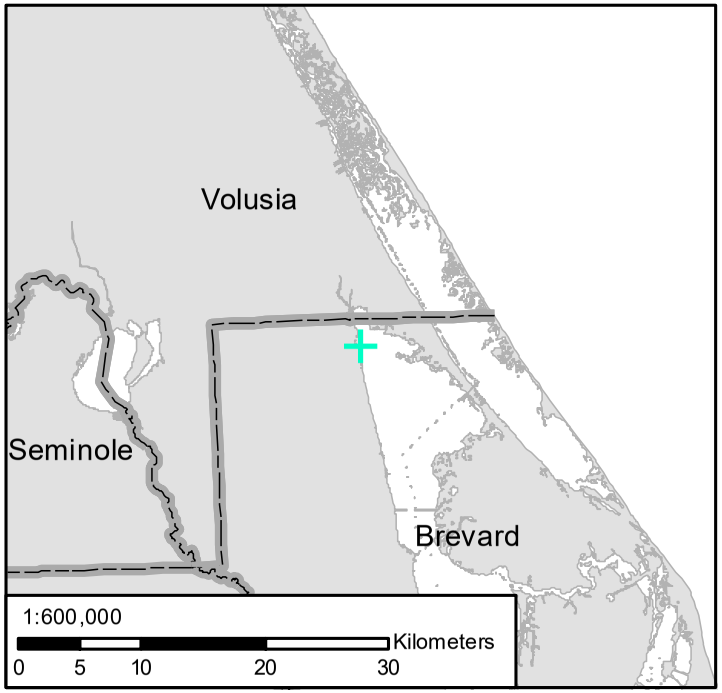

umbilicus
anus

Verified Location of Manatee Carcass MEC20040

Report Date: 2/26/2020 **Received Date:** 2/26/2020 **Received By:** FWC-WDG,SMW







Location: Mims, Brevard County **Latitude:** 28.77127°N **Longitude:** -80.8446°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20040
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3163 **FWC District**: Northeast
Sex: Male **Length (cm)**: 240 **Estimated** _____ **Weight (kg)** _____
Date reported: 26 February 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 26 February 2020 **By**: FWC-WDG, SMW
Date necropsied: 26 February 20; **By**: FWC-WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Mims, approximately 145 m NE of Scottsmoor Landing boat ramp.

Carcass Orientation: Grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Propeller; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Wound series on head, skull exposed, skull fragments in wound, blood clots and hemorrhagic tissue surrounding wound.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☑ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Skull was collected to macerate and further examine.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20041**
Date of Report: 2020-Feb-27
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Male **Length:** 146 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-27 **By:** FPL-Jennifer Pickett to FWC-WDG

DATE COLLECTED: 2020-Feb-27 **By:** FWC-SMW

DATE NECROPSIED: 2020-Feb-27 **By:** FWC-SMW

LOCATION:
State: FL
County: Brevard
Waterway: Indian River
Location description: Port St. John, floating

Latitude: 28.46856 **N**
Longitude: -80.7588 **W**

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Natural: Cold Stress; Longitudinal folds; Cobblestone-like epidermis; Skin lesions; Peanut-shaped head; Fetal folds; Depleted fat(s); Serous fat(s); Relatively empty upper GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20041

MORPHOMETRICS:

Total length:	146 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20041
SPECIES *T. manatus latirostris*
RECOVERY DATE 27 February 2020
NECROPSY DATE 27 February 2020
GENDER Male **TL** 146 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 27 February 2020, at 1256 hrs, FWC biologist-William D. Greer (WDG) received a text from Florida Power and Light (FPL)-Jennifer Pickett regarding a dead manatee on the berm at the FPL Cape Canaveral Energy Center in the Indian River, Brevard County. Jennifer stated that the carcass was small and losing its skin. At 1317 hrs, WDG received a photo verifying the carcass. FWC biologist-Sara M. Wappes and FWC intern-Kelly L. Etherton arrived at the FPL boat ramp at 1418 hrs, launched a kayak, and towed the carcass to the ramp. The carcass was loaded at 1455 hrs and transported to the Brevard County Landfill at 1520 hrs. A field necropsy was completed by 1617 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was slightly distended with gas. Watery, red fluid exuded from the nares. The carcass had a slightly peanut-shaped head. There were longitudinal and transverse folds on the ventrum. A mild infestation of barnacles was observed on the ventrum. The ventral epidermis was cobblestone-like. There was a circular lesion with thickened margins on the left lateral aspect. The eyes were bulging due to decomposition. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, serous mesenteric and omental fat. No abdominal fat was observed.

STOMACH The stomach contained 25 mL of viscous, gray to pink fluid mixed with well-chewed, green and red macroalgae (see photo). The mucosa was stained light pink. No parasites were observed.

DUODENUM The duodenum contained 75 mL of watery, flocculent, gray fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained viscous, gray to tan fluid throughout. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 100 mL of moist, well-digested, stringy, green to brown digesta mixed with green macroalgae. The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained wet, poorly formed, well-digested, green to brown feces mixed with green macroalgae (see photo). The mucosa was sloughing. The mid colon contained wet, poorly formed, well-digested, stringy, green to brown feces (see photo). The distal colon contained slightly moist, well-formed, well-digested, slightly tacky, homogeneous, brown feces (see photo). The mucosa was unremarkable in the mid and distal colon. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled brown and black on serosal surfaces, and dark purple to black on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft. The serosa was separated from the parenchyma. Serosal and cut surfaces were mottled purple and black.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained yellow to orange.

REPRODUCTIVE There was no reproductive fat. The seminal vesicles and testes are small. There was no fluid on cut surfaces of the epididymides or seminal vesicles.

KIDNEYS There was no perirenal fat. The kidneys were red to brown on serosal surfaces. On cut surfaces, the cortices were red to brown and the medullae were bright red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 25 mL of watery, pink-tinged fluid. The mucosa was unremarkable.

HEART There was no epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were mottled light pink and dark pink on serosal surfaces, and brown to dark red on cut surfaces. The primary airways contained a scant amount of watery, red fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Cobblestone-like epidermis
- Skin lesion
- Emaciated
- Fetal folds
- Depleted, serous fat
- Relatively empty upper GI tract
- Macroalgae in GI tract

PROBABLE CAUSE OF DEATH Perinatal; Natural (Cold Stress)

NECROPSY CONDUCTED BY

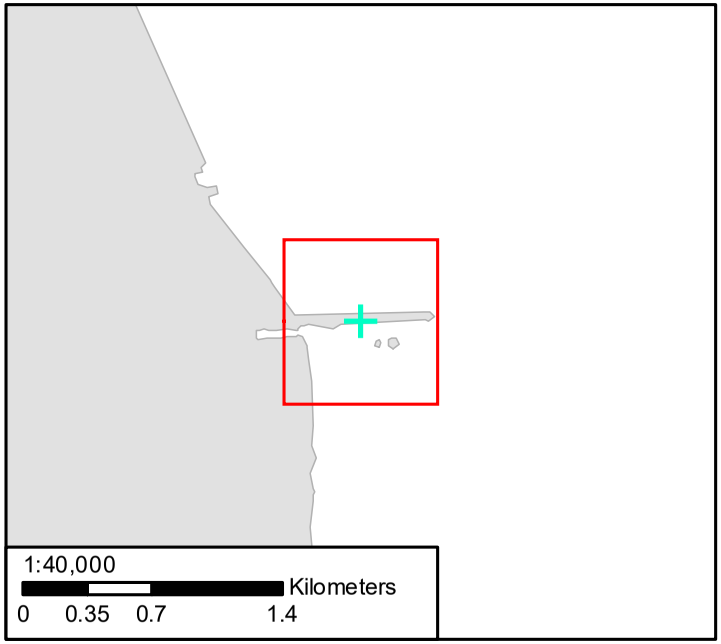
Sara M. Wappes
Kelly L. Etherton (FWC intern)

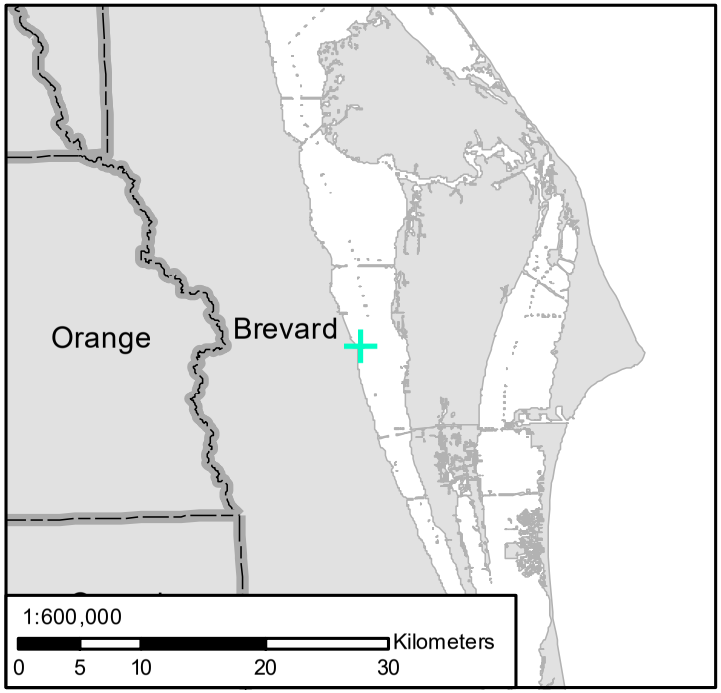
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20041

Report Date: 2/27/2020 **Received Date**: 2/27/2020 **Received By**: FWC-SMW







Location: Port St. John, Brevard County

Latitude: 28.46856°N **Longitude**: -80.7588°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20041
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Male **Length (cm)**: 146 **Estimated** _____ **Weight (kg)** _____
Date reported: 27 February 2020 **By**: FPL-Jennifer Pickett to FWC-WDG
Date collected: 27 February 2020 **By**: FWC-SMW, FWC intern-K. Etherton
Date necropsied: 27 February 20; **By**: FWC-SMW, FWC intern-K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 380 m NE of 101 Cottrell Avenue.

Carcass Orientation: Floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☑ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Longitudinal folds, relatively empty upper GI tract, macroalgae throughout GI tract, scant or no fats

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20042**
Date of Report: 2020-Feb-27
Filed By: FWC EC Field Station

FWC Case # 3242 **FWC Region:** NE

Sex: Female **Length:** 172 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-28 **By:** FWC-WDG

DATE NECROPSIED: 2020-Feb-29 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 28.61966 **N**

County: Brevard **Longitude:** -80.80696 **W**

Waterway: Indian River

Location description: Titusville, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Peanut-shaped head; Bleached epidermis; Cobblestone-like epidermis; Depleted fat(s); Serous fat(s); Wet lung (s); Bloody lung(s); Dark line kidney(s); Sediment in airways, lung parenchyma; Fluid in pleural cavities; Macroalgae in mouth; Specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20042

MORPHOMETRICS:

Total length:	172 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20042
SPECIES *T. manatus latirostris*
RECOVERY DATE 28 February 2020
NECROPSY DATE 29 February 2020
GENDER Female **TL** 172 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 27 February 2020, at 1813 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville, Brevard County. FWC case number 3242 was assigned. The complainant, Martiel (207-450-0650), stated that the carcass was small, gray, and was dorsum-up. WDG received a photo of the carcass at 1834 hrs, and requested FWC LE assistance to secure it at 1836 hrs. **28 February**, at 1110 hrs, FWC Officer Luce located the carcass and advised that it could be recovered via Ezy-Lift from where it was at the marina. Due to rescue efforts at Blue Spring State Park, staff response was delayed. At 1650 hrs, WDG, FWC intern-Kelly L. Etherton, and FWC volunteer- Peter Jepeal arrived at the marina. The carcass was loaded at 1720 hrs and transported to the EC Field Station. **29 February**, a field necropsy was completed at 0944 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. Watery, red fluid exuded from the nares. The carcass had a slight peanut-shaped head. The epidermis of the head and flippers was slightly bleached. There was a moderate, brown algal mat on the dorsal aspect. Cobblestone-like epidermis was present on the ventrum and ventral fluke. The fluke margin had a triangular, well-healed mutilation at the 5 o'clock position. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, mesenteric, and omental fat.

STOMACH The stomach contained 600 mL of moist, moderately chewed, stringy, yellow to green ingesta mixed with white and black banded, green, red, and purple macroalgae (see photo). The contents were covered in a thin layer of viscous, white to purple mucus. The mucosa was stained pink and purple (see photo). No parasites were observed.

DUODENUM The duodenum contained 75 mL of wet, moderately chewed, fibrous, stringy, green to brown ingesta mixed with a small amount of white and black banded, red, and green macroalgae (see photo). The mucosa was unremarkable. There was a mild infection of dead nematodes.

JEJUNUM & ILEUM The proximal small intestine contained moist, moderately chewed, stringy, fibrous, green to brown ingesta mixed with red macroalgae. The mid small intestine contained moist, moderately chewed, stringy, fibrous, green to brown ingesta. The distal small intestine was mostly empty of contents, but some sections contained moist, moderately chewed, stringy, fibrous, green to brown ingesta. The mucosa was white and sloughing throughout. No parasites were grossly observed.

CECUM The cecum contained 750 mL of moist, poorly digested, fibrous, stringy, yellow to green digesta (see photo). The mucosa was black and sloughing. There was a mild infection of dead trematodes.

COLON The proximal colon contained moist, well-formed, poorly digested, fibrous, stringy, green to brown feces. The mid colon contained moist, well-formed, moderately digested, stringy, fibrous, brown feces. The distal colon contained moist, well-formed, well-digested, fibrous, homogeneous, brown feces. The proximal and mid colon mucosa was black and sloughing. The distal colon mucosa was white and sloughing. There was a mild infection of dead trematodes in the proximal colon.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was firm. Serosal surfaces were purple and cut surfaces were red to brown.

GALLBLADDER The gallbladder contained 20 mL of watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was no reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was no perirenal fat. The kidneys were tan on serosal surfaces. On cut surfaces, the cortices were tan and the medullae were dark red. The corticomedullary boundaries were distinct and had a dark grey band present (see photo).

URINARY BLADDER The urinary bladder contained 200 mL of dark yellow urine. The mucosa was unremarkable.

HEART There was no epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There was a mild concentration of black specks on the parietal pleura. There was 500 mL of watery, red fluid in the right pleural cavity and 400 mL of watery, red fluid in the left pleural cavity. The lungs were pink to blue on serosal surfaces and red to brown, bloody, and wet on cut surfaces. There was sediment in the lung parenchyma. There was a moderate amount of mud in the primary and secondary airways (see photo). No parasites were observed.

HEAD & NECK REGIONS The trachea contained a small amount of mud (see photo). There was a small thatch of purple macroalgae in the mouth (see photo).

SKELETON NVL.

COMMENTS

SIGNIFICANT FINDINGS

- Peanut-shaped head
- Bleached, cobblestone-like epidermis
- Depleted, serous fat
- Wet, bloody lungs
- Sediment in airways, lung parenchyma
- Fluid in pleural cavities
- Dark line kidneys
- Macroalgae in mouth, GI tract
- Black specks parietal pleura

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

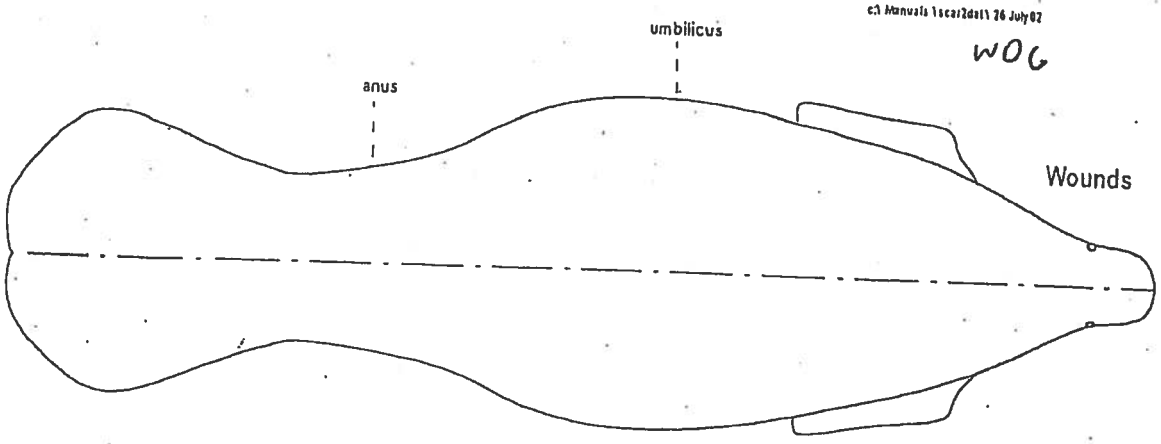
William D. Greer
Carley M. Metcalf

REPORT FILED BY Metcalf / Greer

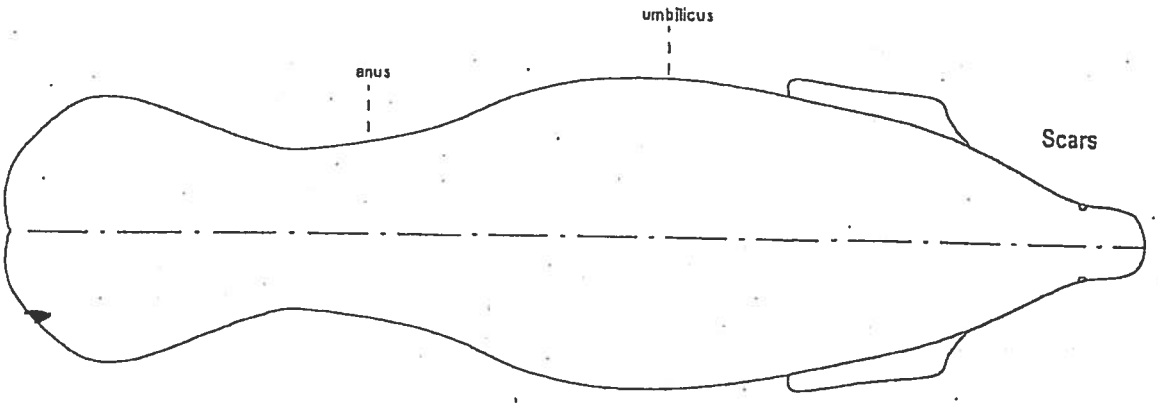
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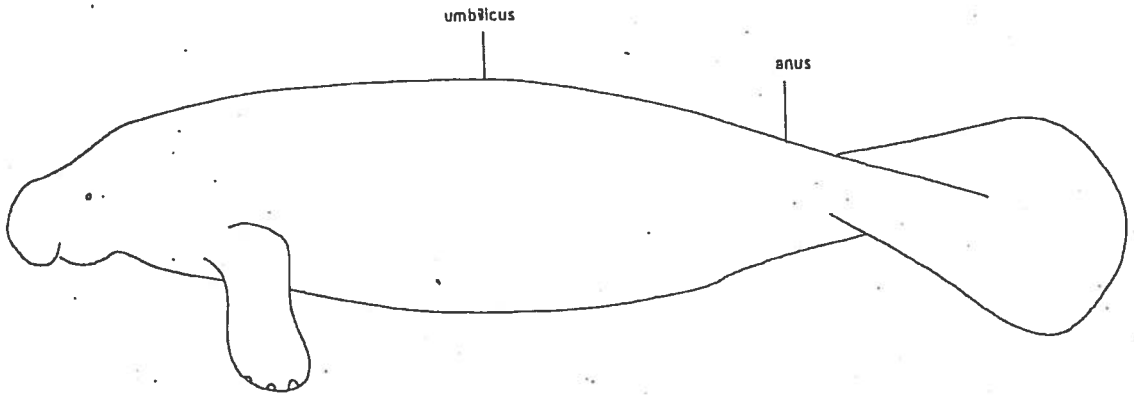
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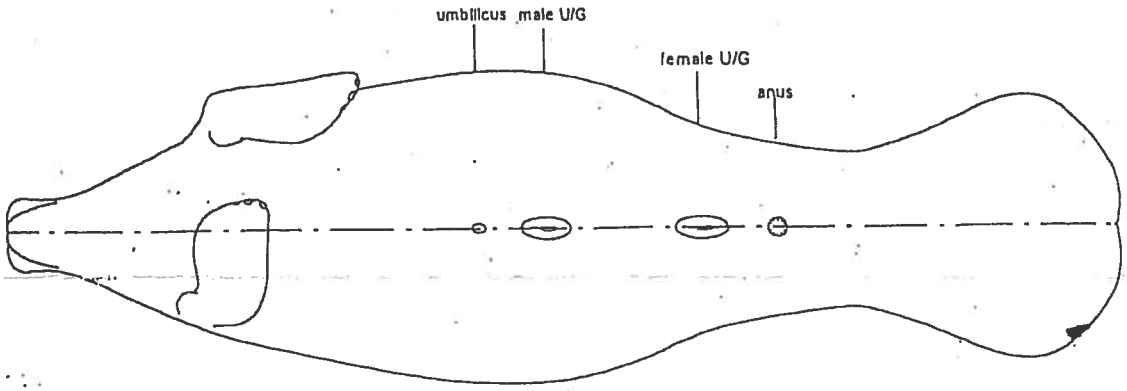


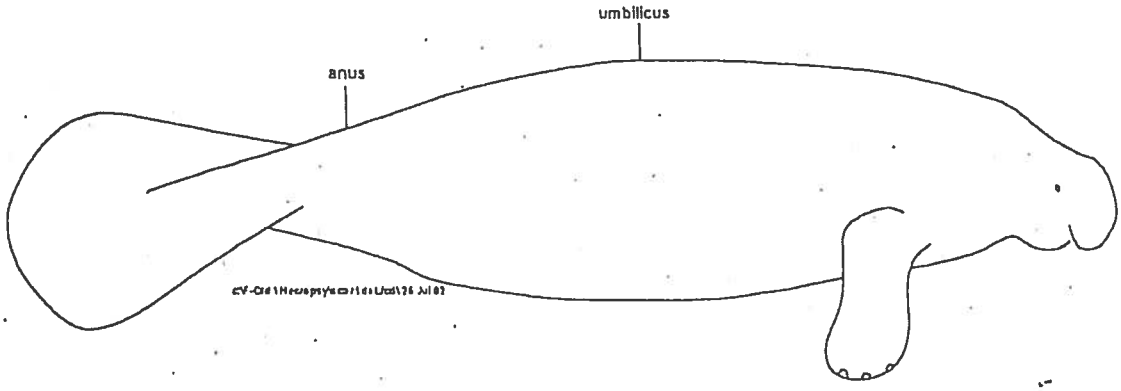
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FIELD I.D. MEC20042

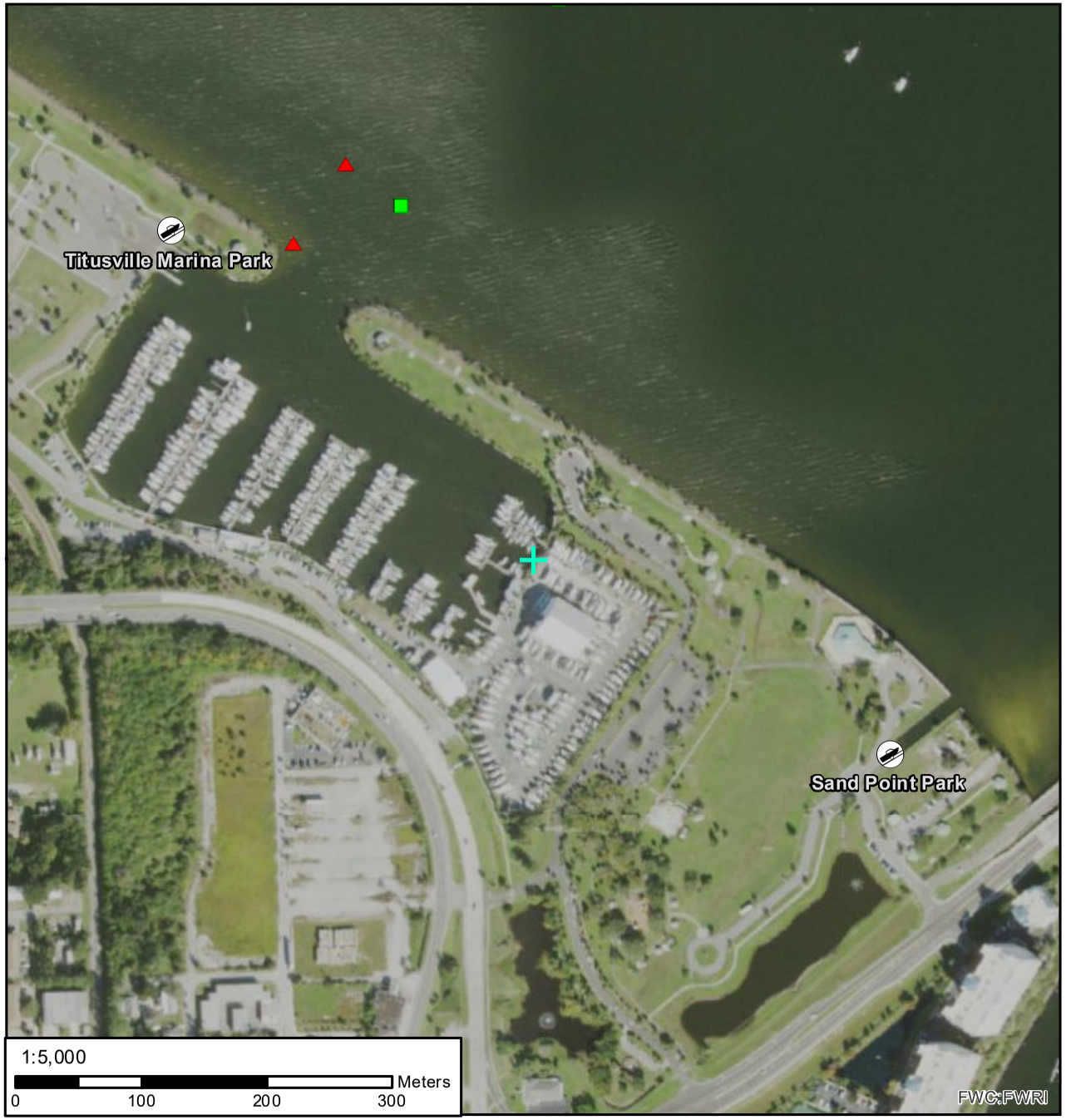


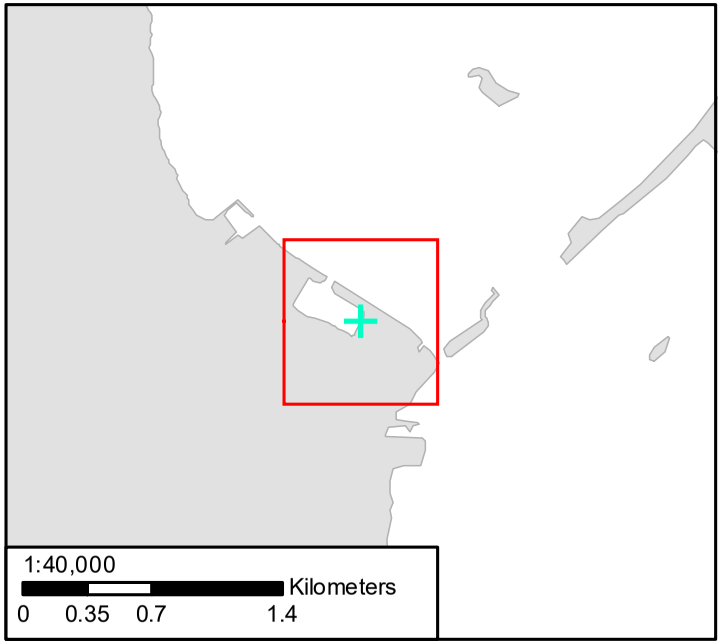


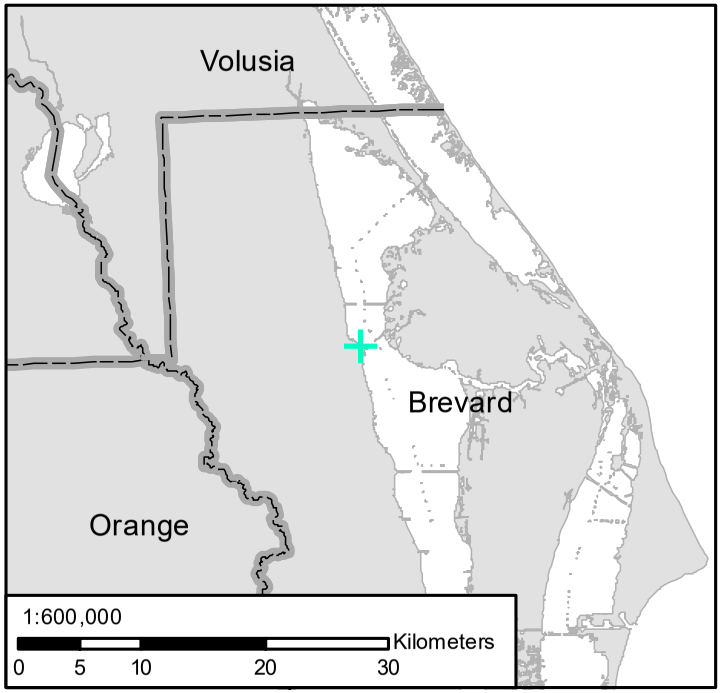


Verified Location of Manatee Carcass MEC20042

Report Date: 2/27/2020 **Received Date**: 2/28/2020 **Received By**: FWC-WDG







Location: Titusville, Brevard County

Latitude: 28.61966°N **Longitude**: -80.80696°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20042
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3242 **FWC District**: Northeast
Sex: Female **Length (cm)**: 172 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 February 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 28 February 2020 **By**: FWC-WDG; FWC Intern- K. Etherton, FWC vol- P. Jepeal
Date necropsied: 29 February 20; **By**: FWC- WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 60 m NE of the easternmost building at 415 North Washington Avenue
Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Signs of drowning- mud in trachea and primary airways. Slightly bleached face and flippers. Stomach mucosa stained pink to purple with macroalgae present. Lungs wet and bloody on cut surfaces. Small amount of serous fats.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20043**
Date of Report: 2020-Feb-28
Filed By: FWC EC Field Station

FWC Case # 3993 **FWC Region:** NE

Sex: Unknown **Length:** 225 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-28 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Mar-12 **By:** FWC-SMW
DATE NECROPSIED: 2020-Mar-12 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.4727 **N**
County: Brevard **Longitude:** -80.76565 **W**
Waterway: Indian River
Location description: Cocoa, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Missing ventrum, pelvic bones, flippers; Shark scavenging.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Actual length of the remains was 215 cm. Also FWC case number 3272.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20043

MORPHOMETRICS:

Total length:	225 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20043 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 12 March 2020 **NECROPSY DATE** 12 March 2020
GENDER Undetermined **TL** 225 **cm** (est) **WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 28 February 2020, at 1042 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River in Cocoa, Brevard County. FWC case number 3272 was assigned. The complainant, James Torrey (407-312-0063), described a dead manatee on shore, a half mile north of the Florida Power and Light-Cape Canaveral Energy Center. WDG verified the carcass via photograph at 1058 hrs. Due to its severe decomposition and increased carcass load, MEC20043 was not recovered. **11 March**, at 1812 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a text alert from Dispatch regarding the carcass in the Indian River in Cocoa. FWC case number 3993 was assigned. The complainant, Kelly Parish (803-622-0101), had secured the carcass to the rocks at 7240 US-1 in Cocoa. DMB verified the carcass via photograph at 2151 hrs and passed the information to the EC Field Station. **12 March**, at 1030 hrs, FWC biologist-Sara M. Wappes and FWC intern-Kelly L. Etherton arrived at the Port St. John boat ramp at 1030 hrs, launched the Key West boat, and towed the carcass to a nearby location where a field necropsy was completed by 1145 hrs. Based on location and photos, it was determined to be the same carcass from 28 February.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition and scavenging. Almost all of the soft tissue of the ventral and lateral aspects and the head was missing due to shark scavenging. The body cavity was exposed. The flippers were missing. There was a mild infestation of barnacles and barnacle scars on the remaining dorsal epidermis. No watercraft-related wounds or scars were observed. Actual length of the remains was 215 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was missing. All internal organs were missing.

HEAD & NECK REGIONS NVL.

SKELETON The ribs were luxated due to decomposition. Pelvic bones were missing.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs, ventrum, pelvic bones, flippers
- Shark scavenging

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

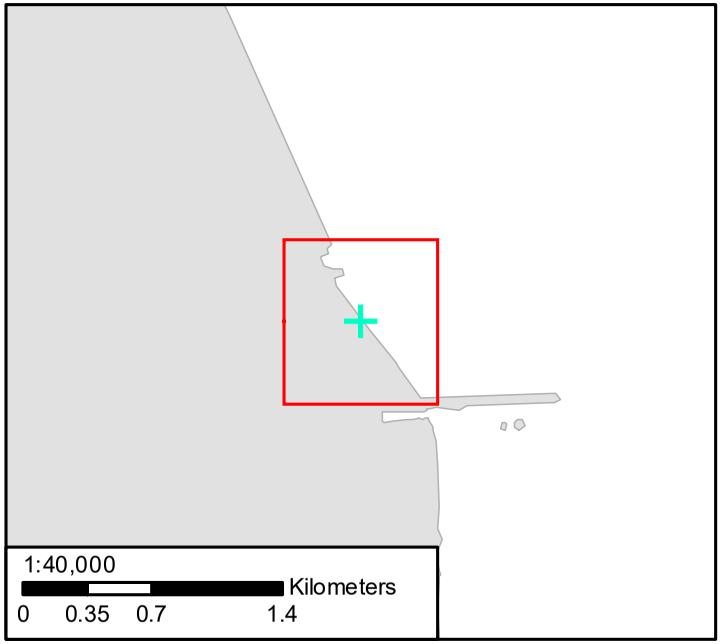
Sara M. Wappes
Kelly L. Etherton (FWC intern)

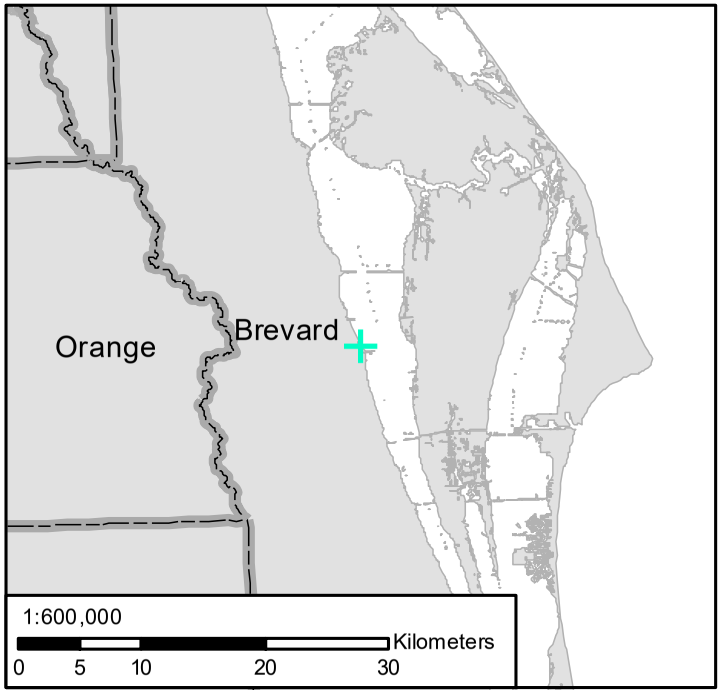
REPORT FILED BY Etherton / Wappes

Verified Location of Manatee Carcass MEC20043

Report Date: 2/28/2020 **Received Date**: 3/12/2020 **Received By**: FWC-SMW







Location: Cocoa, Brevard County

Latitude: 28.4727°N **Longitude**: -80.76565°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20043
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3272, 3993 **FWC District:** Northeast
Sex: Undetermined **Length (cm):** 215 **Estimated** 225 **Weight (kg)** N/T
Date reported: 28 February 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 12 March 2020 **By:** FWC-SMW, FWC intern-K. Etherton
Date necropsied: 12 March 2020 **By:** FWC-SMW, FWC intern-K. Etherton

LOCATION INFORMATION: **State** FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Cocoa, approximately 175 m E of 7415 N Hwy 1.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Scavenging, all internal organs missing, bones luxated due to decomposition

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20044**
Date of Report: 2020-Feb-28
Filed By: FWC EC Field Station

FWC Case # 3287 **FWC Region:** NE

Sex: Male **Length:** 180 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-28 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.32663 **N**
County: Brevard **Longitude:** -80.69214 **W**
Waterway: Indian River
Location description: Merritt Island, grounded

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Other (Verification photograph).

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20044

MORPHOMETRICS:

Total length:	180 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20044 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 180 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Recovered

---

HISTORY 28 February 2020, at 1508 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Merritt Island, Brevard County. FWC case number 3287 was assigned. The complainant, Richard Demers (321-453-2792), stated that the carcass was 6 feet long, belly-up, and completely white. At 1605 hrs, WDG received a photo verifying the carcass. At 1610 hrs, WDG requested FWC LE assistance to tow the carcass to a remote location. **29 February**, at 1346 hrs, FWC Officer-Morgen Maslo informed WDG that she was unable to tow the carcass due to its severe decomposition. Due to increased carcass load and this carcass' significant decomposition, MEC20044 was not recovered or necropsied.

EXTERNAL From photographs – All of the ventral epidermis was missing. The carcass was dorsoventrally flattened. Most of the fluke was missing due to decomposition and/or scavenging. The caudal ventral and left cranial lateral dermis were eroded due to decomposition.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Recovered

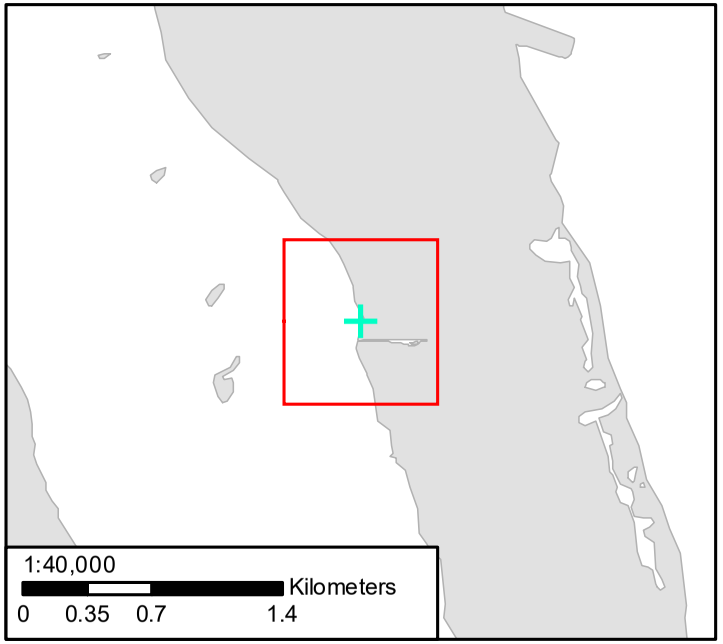
NECROPSY CONDUCTED BY N/A

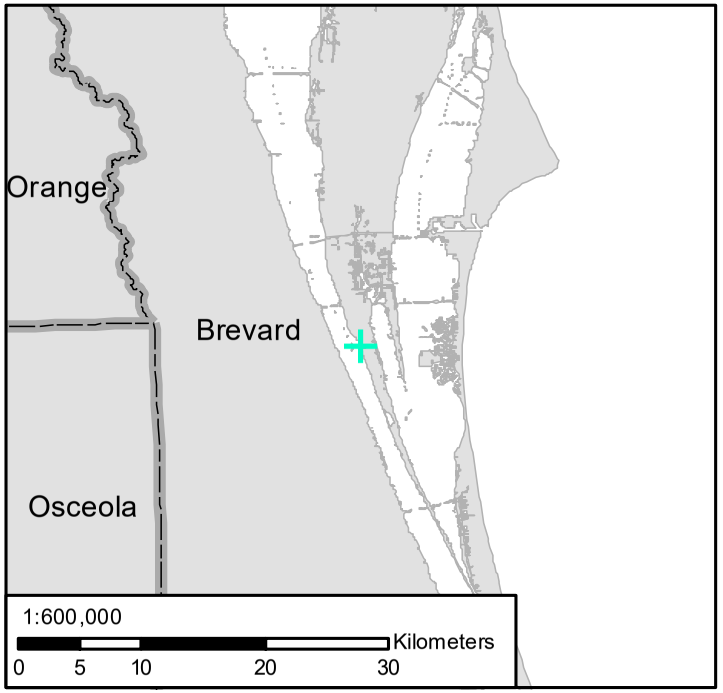
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20044

Report Date: 2/28/2020 **Received Date**: **Received By**:







Location: Merritt Island, Brevard County

Latitude: 28.32663°N **Longitude**: -80.69214°W

Map Created: 3/29/2021

4/6/2024

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20044
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3287 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 28 February 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 40 m WSW of 415 Footman Lane

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20045**
Date of Report: 2020-Mar-01
Filed By: FWC MMPL

FWC Case # 3374 **FWC Region:** NE

Sex: Male **Length:** 330 **cm** **Weight:** 672.0 **kg**

DATE REPORTED: 2020-Mar-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-01 **By:** FWC-SMW MMPL-AJG,MdW

DATE NECROPSIED: 2020-Mar-03 **By:** MMPL-MdW,BLB,BDB,CMF

LOCATION: **State:** FL **Latitude:** 28.07462 **N**
County: Brevard **Longitude:** -80.60854 **W**
Waterway: Crane Creek
Location description: Melbourne, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Dark line kidney(s); Wet lung(s); Heavy, foamy lungs; Bloody eyes; Fluid from nares; Fluid-filled small intestine, cecum, proximal colon; Cecum, colon mucosa sloughing in sheets; Congested mesenteries, peritoneum, cecum serosa, parietal pleura, urinary bladder-, airway mucosa, hemidiaphragms; Petechiae parietal pleura; Macroalgae in GI tract; Fluid in pleural cavities; Fluid, mucus in airways; Red-tinged ascites; Vegetation, mud in mouth; Specks parietal pleura. Necropsy findings fit the case description of the ongoing east coast UME. Cause of this event was still under investigation at the time this report was finalized.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wound).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Monofilament in stomach, colon. Braided line in stomach. Man-made sponge in colon. Serous fat(s); Bleached epidermis; Adhesion epididymis; Nodule in lung. Known as MIPS ID BC432, first sighted on 05 October 1993 at Port Canaveral.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20045

MORPHOMETRICS:

Total length:	330 cm	**Fluke base:**	106 cm	**Girth at axillae:**	**cm**
Snout to anus:	219 cm	**Fluke width:**	cm		
Snout to U/G:	135 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	119 cm	**Girth at anus:**	cm		
Flipper width:	20 cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20045 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 01 March 2020 **NECROPSY DATE** 03 March 2020
GENDER Male **TL** 330 **cm WT** 672 **kg** **CONDITION** Moderately Decomposed

---

HISTORY 01 March 2020, at 1341 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Crane Creek in Melbourne, Brevard County. FWC case number 3374 was assigned. The complainant, Paul Webb (321-749-8235), stated that the carcass was 10 feet long and grey. At 1350 hrs, SMW received a photo of the carcass and requested FWC LE assistance to tow it. At 1604 hrs, SMW met Officer Cole Delano at the Front Street boat ramp. The carcass was secured to the boat ramp at 1720 hrs. SMW went to the EC Field Station to get a carcass trailer, returned to the boat ramp, and loaded the carcass at 1825 hrs. SMW transported the carcass to Desoto Park at 1900 hrs where it was stored overnight. **02 March**, at 0700 hrs, FWC biologists-Andrew J. Garrett (AJG) and Martine deWit (MdW) arrived at Desoto Park for manatee health assessments. AJG and MdW departed Desoto Park with the carcass by 1130 hrs and transported it to the MMPL arriving at 1400 hrs.

EXTERNAL All of the epidermis was present. The eyes were bloody. Copious clear fluid and dead trematodes exuded from the nares. There were numerous superficial linear scrapes on the right dorsal head and shoulder region. There was a fresh superficial linear wound on the mid left dorsum. The epidermis was scraped off the left muzzle, ventral chin, and cranial aspect of the right axilla. The dorsal epidermis had bleached spots. Copepods were present. There was a minimum of fifteen well-healed watercraft-related scar patterns on the dorsal aspect. The fluke margin had one distinct well-healed mutilation at the 1 o'clock position, one small well-healed mutilation near the 6 o'clock position, and four distinct well-healed mutilations between the 8 and 10 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate serous abdominal, mesenteric, and omental fat. The peritoneum had streaks of moderate congestion. The abdomen contained 5.5 L of red-tinged fluid.

STOMACH The stomach contained 24 L of moist, well-chewed, soft, green, light green, and brown macroalgae. The ingesta were coated with a moderate layer of purple to pink mucus. There were one bird's nest of 12 lb test diameter clear monofilament line, two pieces (4.3 and 26.8 cm long) of 15 lb test diameter clear monofilament line, one 45.3 cm long piece of 60 lb test diameter clear monofilament line, and one 50 cm long piece of green braided line attached to a bird's nest of the same line in the contents. The mucosa was pink. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 6 L of wet, moist, soft, well-chewed, green and light green macroalgae and a small amount of green fluid. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested. The distal small intestine contained a large amount of watery clear colorless fluid mixed with a moderate amount of well-chewed, leafy, green vegetation. The proximal small intestine contained a large amount of grey fluid. The Peyer's patches were distinct. The mucosa was autolyzed throughout. No parasites were grossly observed throughout.

CECUM The cecum contained 4 L of green fluid mixed with well-digested pieces of green and brown macroalgae. The mucosa was sloughing in sheets. The wall had distinct lymph nodules. No parasites were observed. The serosa had streaks of severe congestion.

COLON The mesentery had patches of severe congestion. The colon contained a large amount of wet, poorly formed, well-digested, soft, green feces mixed with macroalgae. There were nine pieces of clear monofilament line throughout the colon contents, varying in length between 5.2 and 60.4 cm, and in thickness between 10 and

60 lb test diameter. There were three pieces of man-made sponge material in the colon (distal colon: 13.5 x 6.0 x 0.8 cm; mid colon 16.0 x 18.0 x 0.6 cm and 6.0 x 4.8 x 1.8 cm). The mucosa was sloughing. The proximal-most one meter contained a large amount of green fluid mixed with green and brown macroalgae pieces. The mucosa was sloughing in sheets. No parasites were observed throughout. The lymph nodules were distinct in the wall throughout.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was light pink to dark purple on serosal surfaces, and red on cut surfaces.

LIVER The margins were rounded. The liver was firm. The serosal surfaces were light blue to light purple. The cut surfaces were red to brown. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 100 mL of viscous, flocculent, slightly cloudy, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate serous reproductive fat. The testes were moderate in size. There was no fluid on cut surfaces of the epididymides or deferent ducts. The seminal vesicles were moderate in size and contained a small amount of flocculent tan fluid. The left epididymis had a long, stringy, firm adhesion to the peritoneum, which was surrounded by discolored black tissue.

KIDNEYS There was a small amount of serous perirenal fat. The kidneys were firm. The serosal surfaces were pale pink, tan, and purple. On cut surfaces, the cortices were pale pink, tan, and grey and the medullae were red to purple. The corticomedullary boundaries were distinct. There was a dark purple line at a few of the corticomedullary boundaries. An ELISA toxicology sample was collected.

URINARY BLADDER The bladder contained a scant amount of slightly cloudy, light yellow urine. The mucosa was severely congested.

HEART There was moderate, slightly serous epicardial fat. The myocardium was slightly pale. Valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact and severely congested on the pleural aspect. The parietal pleura was severely congested and had numerous petechiae and a few black specks. The right pleural cavity contained 500 mL and the left pleural cavity contained 750 mL of light red fluid. The lungs were heavy and swollen. The serosal surfaces were pink, pale pink, and light purple. The cut surfaces were red to dark red, wet, and foamy. The airways contained a moderate amount of watery, light red fluid and white and red-tinged mucus. No parasites were observed. The mucosa was dark pink to red and severely congested. The right lung had a firm 0.5 cm diameter dark green nodule in the mid-ventral parenchyma. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The trachea contained a scant amount of viscous, pink mucus. The mucosa was red. There were a few dead trematodes and a small amount of mud in the nares. There was a large thatch of poorly chewed *Caulerpa* and a moderate amount of mud in the mouth. An ELISA toxicology sample was collected.

SKELETON NVL.

OTHER Some of the fat was serous. There was no damage underneath the scrapes on the head, shoulder, and dorsum.

COMMENTS Necropsy findings fit the case description of the ongoing east coast UME. Cause of this event was still under investigation at the time this report was finalized.

SIGNIFICANT FINDINGS

- Bloody eyes
- Fluid from nares
- Fluid-filled small intestine, cecum, proximal colon
- Cecum-, colon mucosa sloughing in sheets
- Congested mesenteries, peritoneum, cecum serosa, parietal pleura, urinary bladder-, airway mucosa, hemidiaphragms
- Petechiae parietal pleura
- Dark line kidneys
- Macroalgae in GI tract
- Fluid in pleural cavities
- Heavy, wet, foamy lungs
- Fluid, mucus in airways
- Red-tinged ascites
- Vegetation, mud in mouth
- Serous fat
- Bleached epidermis
- Specks parietal pleura
- Monofilament, man-made sponge in colon
- Monofilament, braided line in stomach
- Adhesion epididymis
- Nodule in lung

PROBABLE CAUSE OF DEATH Natural; Other

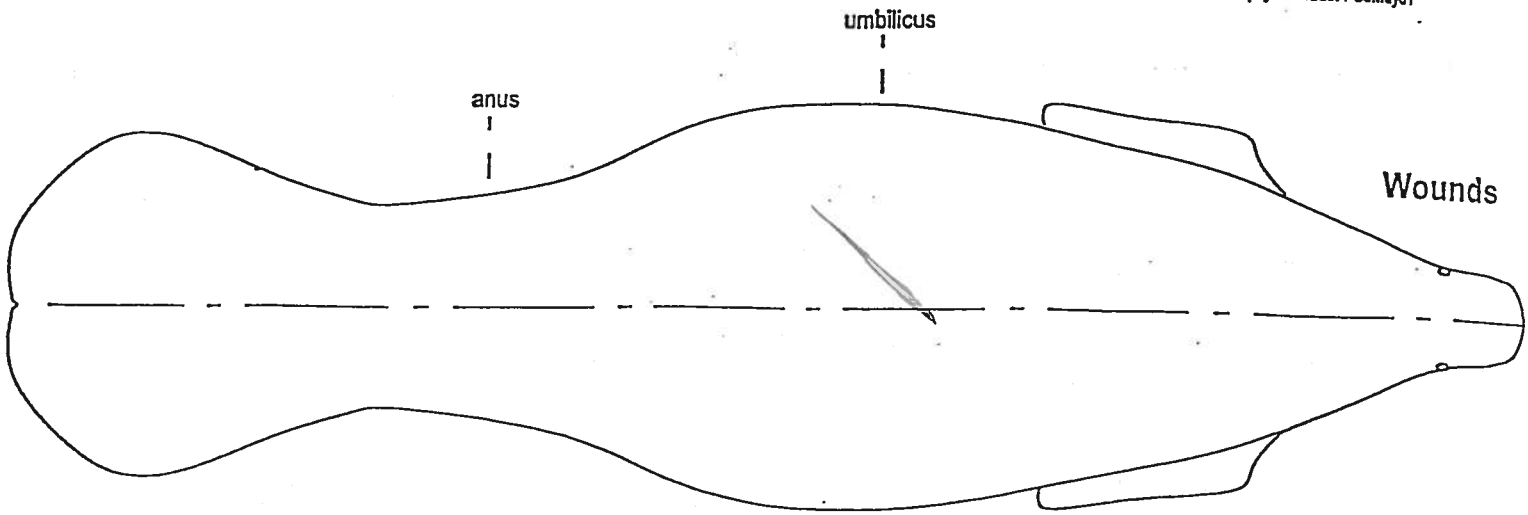
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Brittany D. Barbeau
Christine M. Fontaine

REPORT FILED BY de Wit

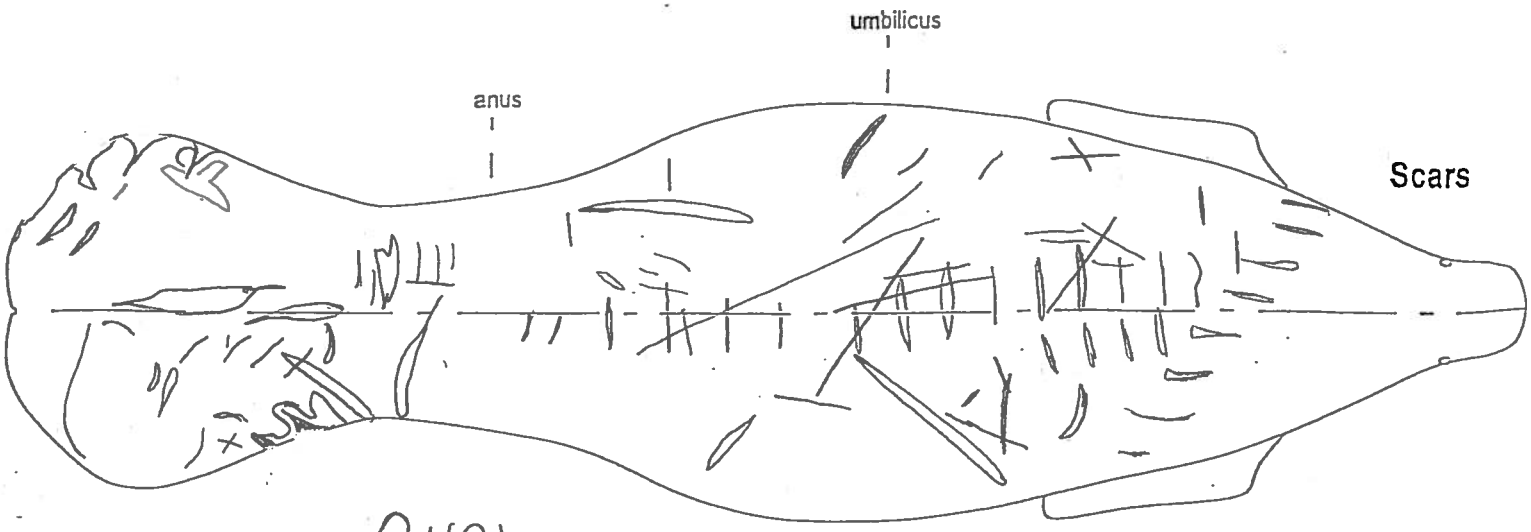
Date 03 March 2020 Field I.D. MEC20045

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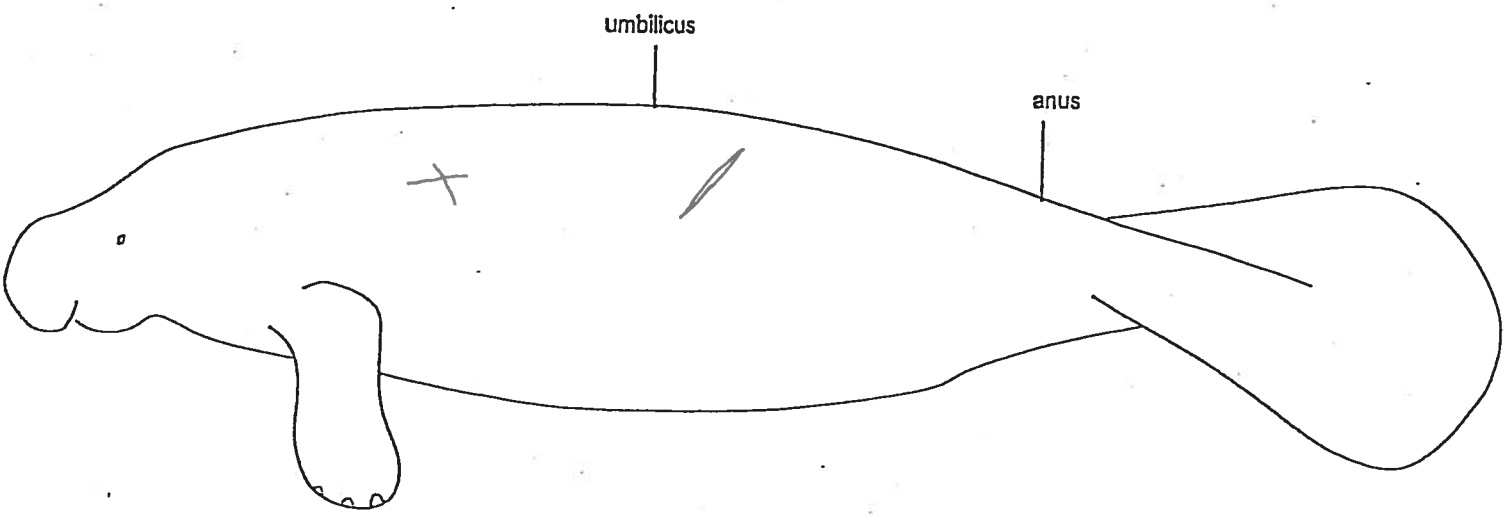
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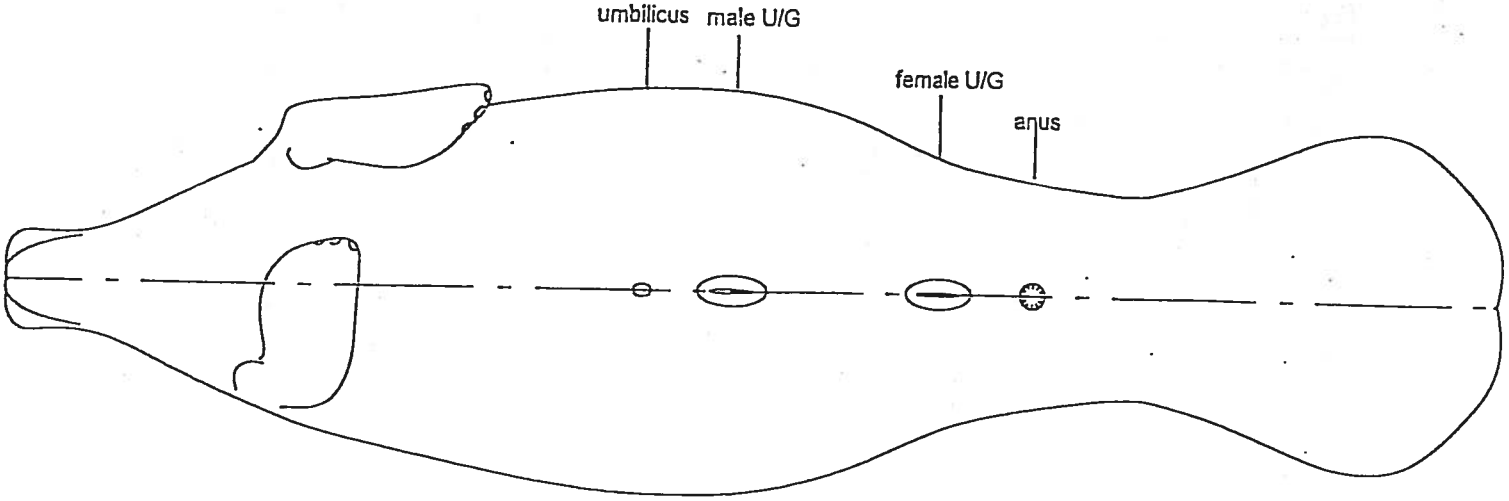
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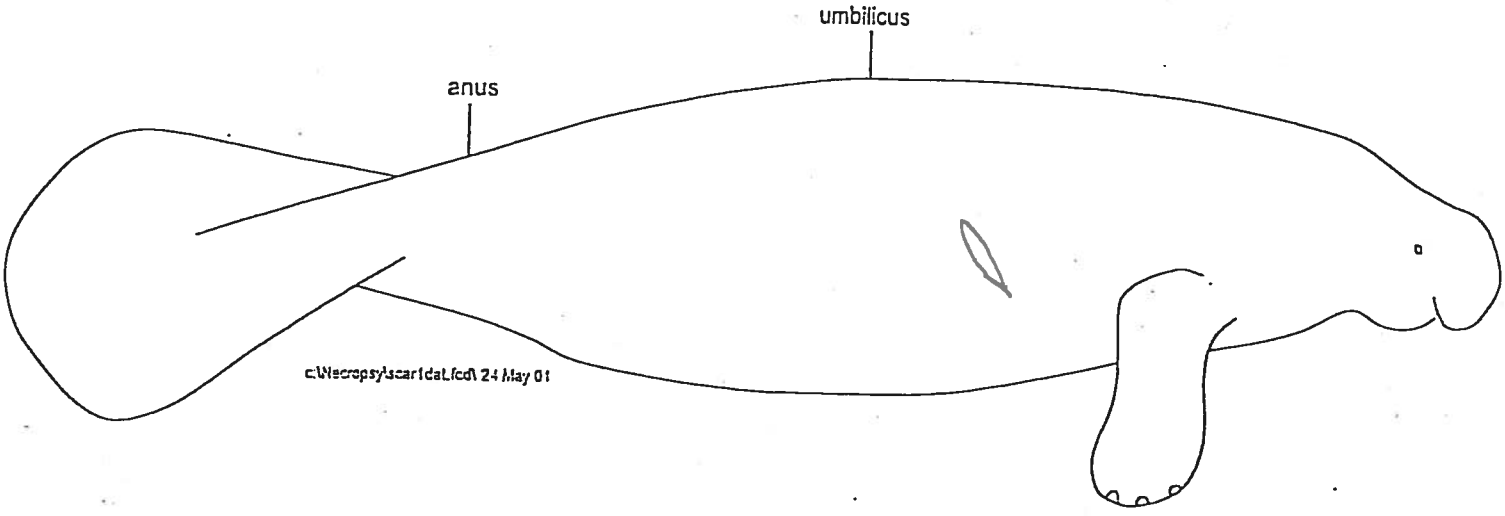


Over

FIELD I.D. MEC20045



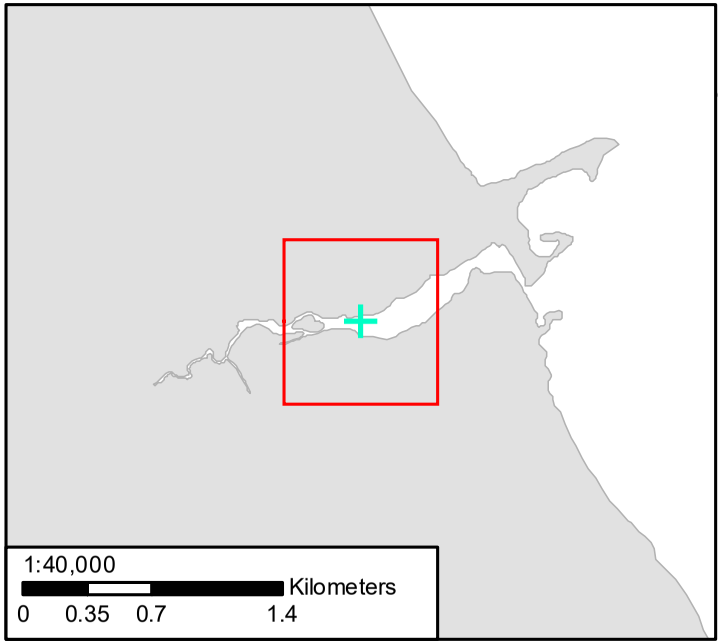


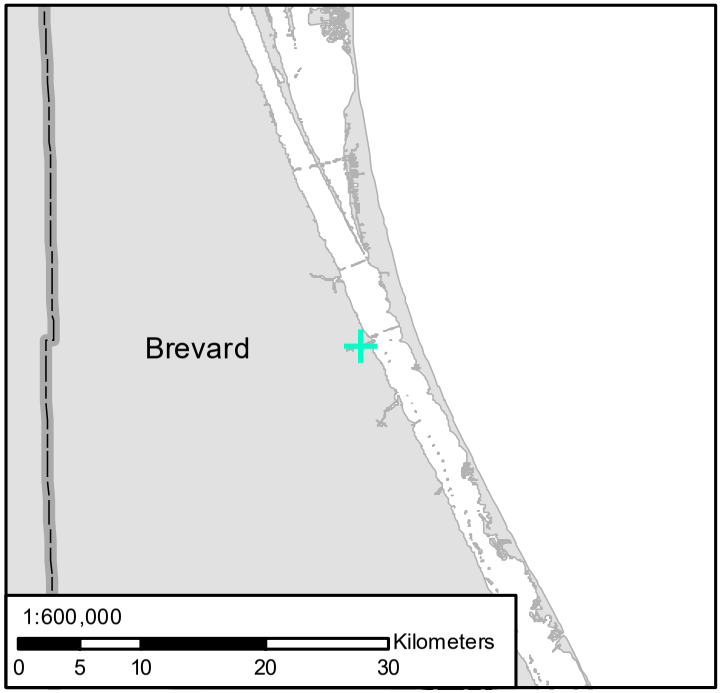


Verified Location of Manatee Carcass MEC20045

Report Date: 3/1/2020 **Received Date:** 3/1/2020 **Received By:** FWC-SMW MMPL-AJG,MdW







Location: Melbourne, Brevard County **Latitude:** 28.07462°N **Longitude:** -80.60854°W

Map Created: 3/29/2021

Bassett, Brandon

From: Rood, Kari
Sent: Monday, March 9, 2020 10:28 AM
To: Howell, Amber; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Boyd, Denise; Burns, Allison; Deutsch, Chip; deWit, Martine; Edwards, Holly; Faucett, Blake; Fontaine, Christine; Fraser, Emma; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Martz, Meg; Nader, Ana; Nelson, Rachael; Panike, Anna; Peek, Austin; Schubert, Molly; sheri@mote.org; Szemer, Donna; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC20045=BC432

MEC20045=BC432

Carcass location: Crane Creek, Melbourne
Carcass sex: Male

First sighted 10/5/93 at Port Canaveral.
Last sighted 9/3/11 at Port Canaveral.
Also sighted at Berkeley Street Canal and the Port Everglades Power Plant.
USGS should be able to provide a complete sighting history if needed.

Verifiers: HONAKER 3/6/20 & KAH 3/9/20

Sighting records are not to be used without permission from FWC, MML, and/or USGS, as appropriate.

Kari A. Rood
Manatee Photo-identification
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, FL 33701

Direct line: (727) 502-4737
Main line: (727) 896-8626
Kari.Rood@MyFWC.com
http://MyFWC.com
http://MyFWC.com/research/

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20045
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # _____ FWC District: _____
Sex: M / F / Undetermined Length: 330 cm (estimated _____) Weight 672 kg.
Date reported: _____ By: _____
Date collected: 02 MAR 2020 By: MMPL AJG MdW
Date necropsied: 03 MAR 2020 By: MMPL - MdW BLB BDB CMF

LOCATION: State: FL (___) County: _____ Waterway: _____
Latitude: _____ N Longitude: _____ W
Locality description: _____
_____

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other wound?
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other stomach rmt in alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) - Other vegetation from mask
Genetics Box # 96
Female reproductive findings or **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other _____

PIT TAG Scan: Negative, Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

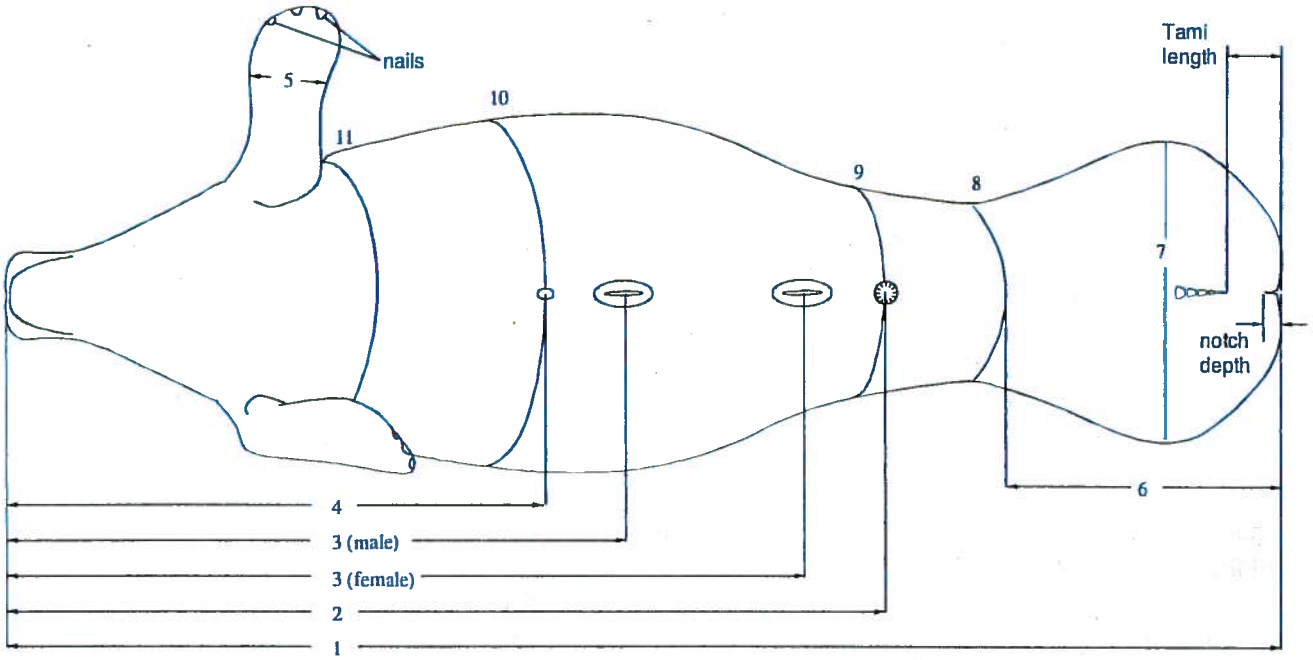
REMARKS: _____

Field ID # MEC20045

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

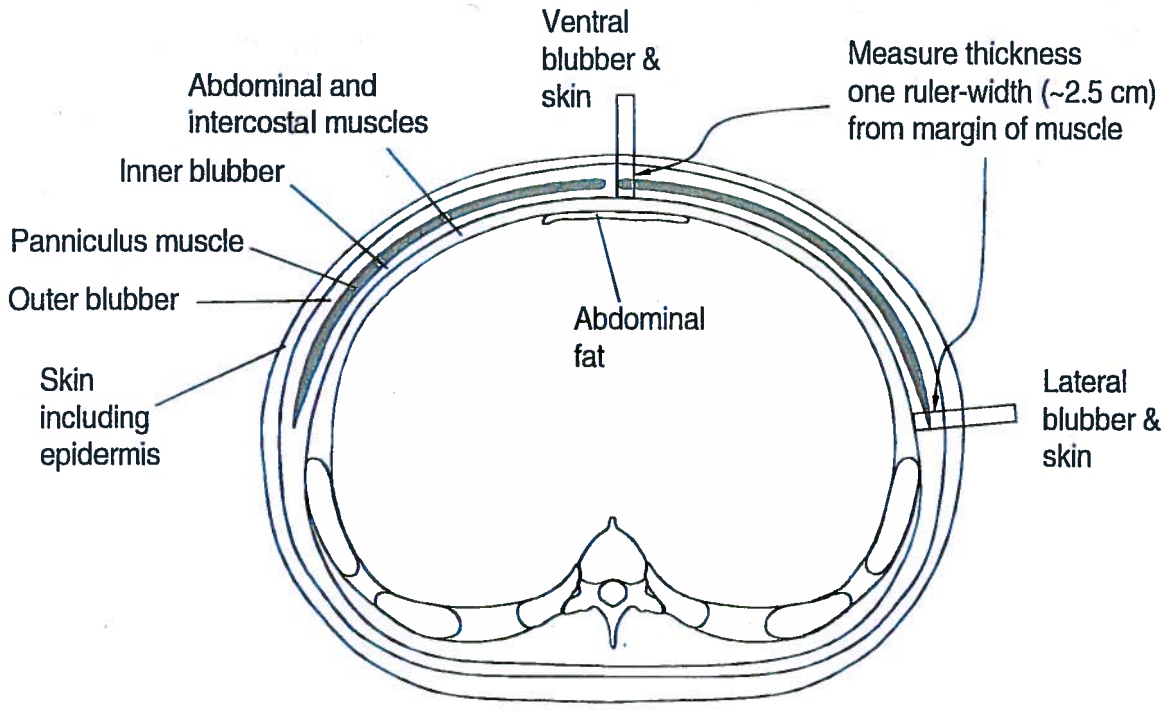
1. Total length _____ cm
2. Snout to anus -C 219 cm
3. Snout to U/G -C 135 cm
4. Snout to umbilicus -C 119 cm
5. Flipper width 20 cm
6. Fluke base 106 cm estimate
7. Fluke width 87* cm
8. *Girth at fluke base _____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae _____ cm

(Nail count: L___R___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20045
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3374 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 01 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 01 March 2020 **By**: FWC-SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Crane Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 110 m SSE of 2206 Grant Place

Carcass Orientation: Grounded

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20046**
Date of Report: 2020-Mar-01
Filed By: FWC EC Field Station

FWC Case # 3381 **FWC Region:** NE

Sex: Unknown **Length:** 160 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-01 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.93149 **N**
County: Brevard **Longitude:** -80.4994 **W**
Waterway: Indian River
Location description: Melbourne Beach, grounded

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20046

MORPHOMETRICS:

Total length:	160 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20046 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 160 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 01 March 2020, at 1553 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Melbourne Beach, Brevard County. FWC case number 3381 was assigned. The complainant, Stephanie Schoolfield (407-341-3671), stated that the manatee was 4 to 5 feet long, white, with vultures on it, and located across the canal in a wildlife preserve area. At 1615 hrs, SMW received a photo of the carcass. Based on the size, location, and increased carcass load, this manatee was not recovered or necropsied.

EXTERNAL From photographs - Almost all of the dorsal and left lateral epidermis was missing. The carcass was distended with gas. Transverse folds were observed on the ventrum.

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

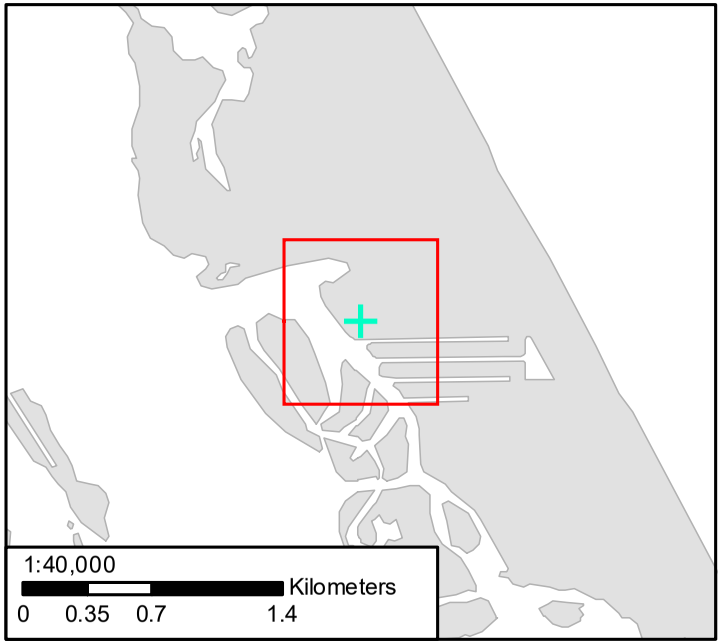
NECROPSY CONDUCTED BY N/A

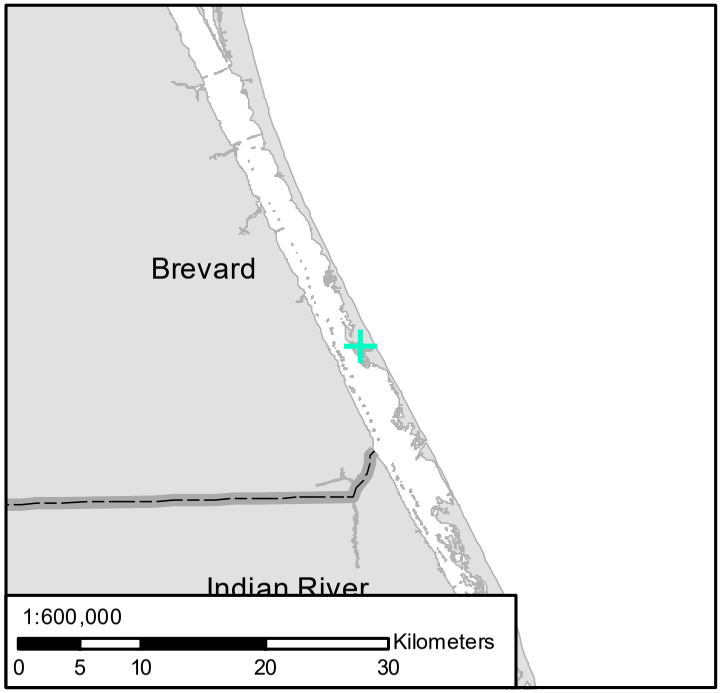
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20046

Report Date: 3/1/2020 **Received Date**: **Received By**:







Location: Melbourne Beach, Brevard County **Latitude**: 27.93149°N **Longitude**: -80.4994°W

Map Created: 3/29/2021

MEC 20076

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20046
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3381 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 01 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne Beach, approximately 60 m N of 459 Nikomas Way

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20047**
Date of Report: 2020-Mar-02
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Female **Length:** 256 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-02 **By:** USFWS-Mike Legari to FWC-WDG

DATE COLLECTED: 2020-Mar-03 **By:** FWC-SMW,CMM

DATE NECROPSIED: 2020-Mar-03 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.69313 **N**

County: Brevard **Longitude:** -80.70834 **W**

Waterway: Mosquito Lagoon

Location description: Merritt Island, grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Emaciated; Cobblestone-like epidermis; Healing skin lesions; Serous fat(s); Wet lung(s); Bloody lung(s); Crumbly feces; Dry feces; Fluid-filled duodenum; Thick algal mat; Fluid, froth in airways; Fluid in pleural cavities; Congested peritoneum, abdominal fat, mesenteries, GI serosa, urinary bladder mucosa, uterus; Relatively empty upper GI tract; Black specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20047

MORPHOMETRICS:

Total length:	256 cm	**Fluke base:**	75 cm	**Girth at axillae:**	134 **cm**
Snout to anus:	167 cm	**Fluke width:**	69 cm		
Snout to U/G:	159 cm	**Girth at fluke base:**	95 cm		
Snout to umbilicus:	98 cm	**Girth at anus:**	108 cm		
Flipper width:	18 cm	**Girth at umbilicus:**	179 cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	1.4 cm	1.7 cm		
Outer Blubber Thickness:	1 cm	0.4 cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	0.5 cm	0.3 cm	**Epidermis Thickness:**	0.1 cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20047
SPECIES *T. manatus latirostris*
RECOVERY DATE 03 March 2020
NECROPSY DATE 03 March 2020
GENDER Female **TL** 256 **cm WT** N/T **kg**
CONDITION Fresh

HISTORY 02 March 2020, at 1951 hrs, FWC biologist-William D. Greer received an afterhours e-mail from Merritt Island National Wildlife Refuge-Mike Legari regarding a dead manatee in Mosquito Lagoon in Merritt Island, Brevard County. The complainant, Kimberly Wren, stated that the carcass was small and dorsum-up in the water. A photo of the carcass and a photo of the location on a map were included in the email. **03 March**, after rescuing REC2009, FWC biologists-Sara M. Wappes and Carley M. Metcalf and FWC intern-Kelly L. Etherton arrived at the reported location at 1445 hrs, located the carcass at 1508 hrs, and completed a field necropsy by 1633 hrs. The remains were left onsite.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. Watery red fluid exuded from the nares. The carcass had a peanut-shaped head and appeared thin. The ventrum was flat and had a longitudinal fold in the midline. A thick brown algal mat was present on the dorsal and lateral aspects. There was a mild infestation of barnacles on the lateral and ventral aspects and the fluke. Patches of cobblestone-like epidermis were present on the ventral fluke. A minimum of two well-healed watercraft-related scar patterns was observed on the dorsal aspect. There were two ulcerating linear lesions on the dorsal aspect of the fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, serous mesenteric, omental, and abdominal fat. The peritoneum and abdominal fat had bands of severe congestion (see photo).

STOMACH The stomach contained 1 L of wet, moderately chewed, stringy, yellow to green and brown ingesta (see photo). The ingesta were coated in a thick layer of viscous, white mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 600 mL of watery, brown fluid mixed with a small amount of well-chewed, stringy, green to brown ingesta (see photo). The mucosa was light yellow and sloughing (see photo). No parasites were observed.

JEJUNUM & ILEUM The small intestine serosa and mesentery were severely congested (see photo). The proximal and mid small intestine contained watery, gray to yellow fluid mixed with a small amount of well-chewed, fibrous pieces of green ingesta. The distal small intestine contained moist, moderately formed, moderately chewed, stringy, fibrous, green to brown vegetation. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 2.1 L of moist, moderately digested, stringy, green to brown digesta (see photos). The mucosa was black and sloughing. No parasites were observed.

COLON The colon serosa and mesentery were severely congested (see photo). The proximal colon contained moist, moderately digested, moderately formed, stringy, fibrous, dark green feces. The mucosa was black and sloughing. The mid colon contained moist, well-digested, well-formed, fibrous, dark green to brown feces. The distal-most 0.5 meter of colon contained dry, poorly formed, crumbly, homogeneous, black feces. The remainder of the distal colon contained moist, well-digested, well-formed, fibrous, dark green to brown feces. The mucosa of the distal-most 0.5 meter of colon was unremarkable. The mucosa of the remainder of the distal colon and the mid colon was sloughing. No parasites were observed throughout.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled grey and black on serosal surfaces, and dark red to black on cut surfaces.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were blue to purple and cut surfaces were dark red and bloody.

GALLBLADDER The gallbladder contained 75 mL of viscous, yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The left uterine horn was small in diameter. The right uterine horn was contracted and contained a light red band (possible nearly resolved uterine scar, see photo). There was viscous, pale yellow fluid in the uterus and right uterine horn (see photo). The uterus mucosa was severely congested. Both ovaries contained numerous fluid-filled follicles.

KIDNEYS There was scant, serous perirenal fat. The kidneys were dark red on serosal surfaces. On cut surfaces, the cortices and medullae were dark red. The corticomedullary boundaries were indistinct (see photo).

URINARY BLADDER The urinary bladder contained 250 mL of watery, slightly flocculent, yellow urine. The mucosa was congested.

HEART There was moderate, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the right parietal pleura. The right pleural cavity contained 2.6 L of watery, red fluid and the left pleural cavity contained 2.4 L of watery, red fluid. The lungs were mottled light pink, blue, and black on serosal surfaces, and dark red, wet, and bloody on cut surfaces. The airways contained a moderate amount of viscous, red-tinged fluid and froth (see photo).

HEAD & NECK REGIONS The trachea contained frothy fluid.

SKELETON NVL.

OTHER

COMMENTS The carcass was reported after several days of cold weather with nightly air temperatures in the upper 40’s and low 50’s.

SIGNIFICANT FINDINGS

- Emaciated
- Thick algal mat
- Cobblestone-like epidermis
- Ulcerating skin lesions
- Serous fat
- Dry, crumbly feces
- Relatively empty upper GI tract
- Fluid-filled duodenum
- Froth, fluid in airways
- Wet, bloody lungs
- Fluid in pleural cavities
- Congested peritoneum, abdominal fat, mesenteries, GI serosa, urinary bladder-, uterus mucosa

- Black specks parietal pleura

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

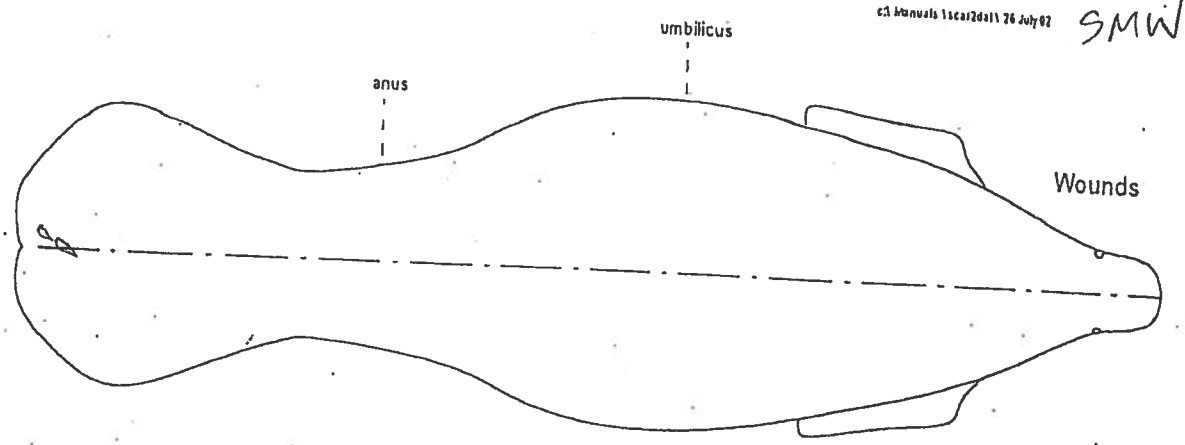
Sara M. Wappes
Carley M. Metcalf
Kelly L. Etherton (FWC intern)

REPORT FILED BY Etherton / Wappes

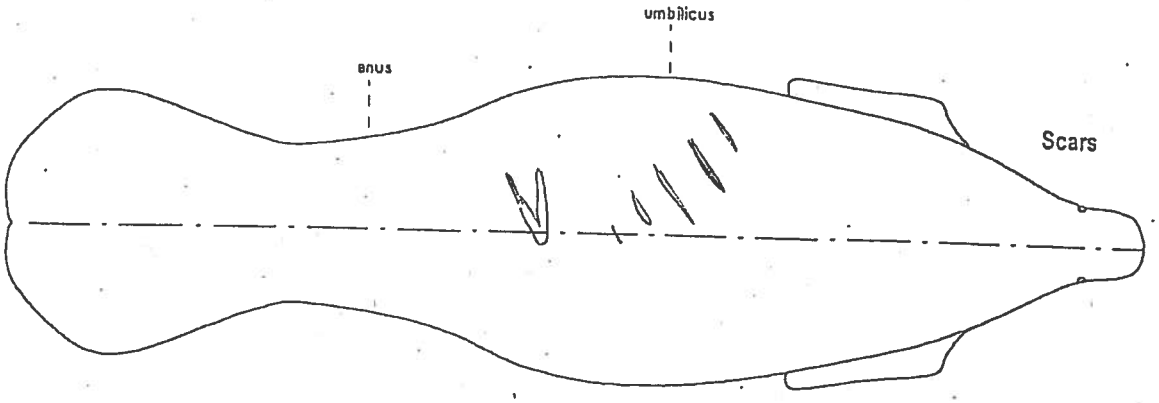
Date 03 MAR 2020

Field I.D. MEC20047

c:\ Manuals \ scar2dat \ 26 July 02 SMW



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

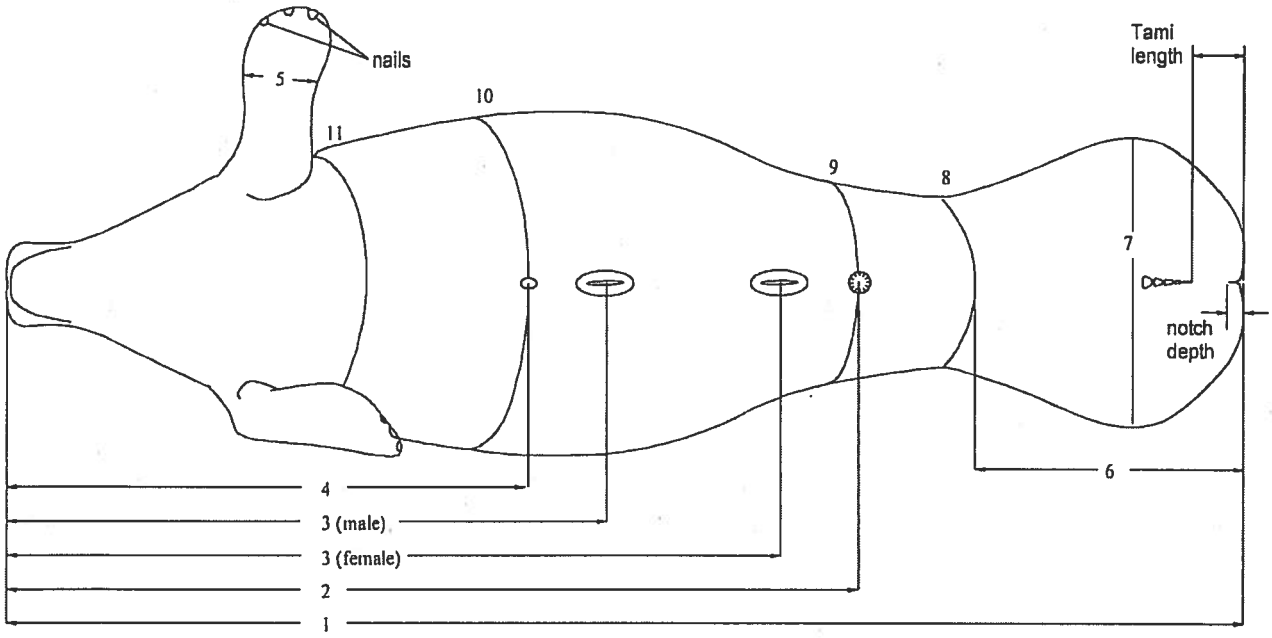


Field ID # MEC20047

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

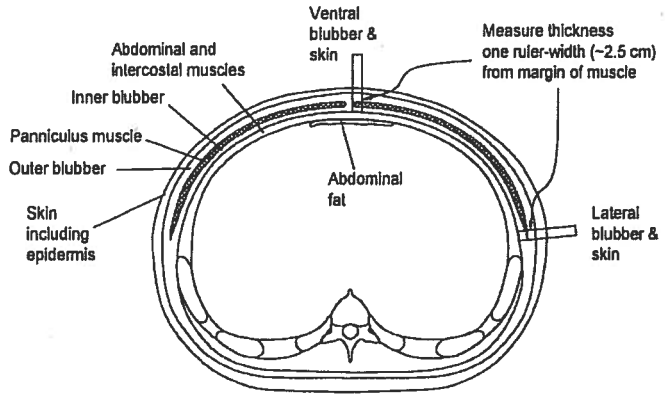
1. Total length 256 cm
2. Snout to anus -C 167 cm
3. Snout to U/G -C 159 cm
4. Snout to umbilicus -C 98 cm
5. Flipper width 18 cm
6. Fluke base 75 cm
7. Fluke width 69 cm
8. *Girth at fluke base 95 cm
9. * Girth at anus 108 cm
10. *Girth at umbilicus 179 cm
11. *Girth at axillae 134 cm

(Depth of notch _____ cm)
(Tami ln_____ cm)
(Nail count: R___L___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	1.4 cm	1.7 cm	(Epidermis 0.1 cm)
Outer blubber	1.0 cm	0.4 cm	(Abdominal fat _____ cm)
Inner blubber	0.5 cm	0.3 cm	

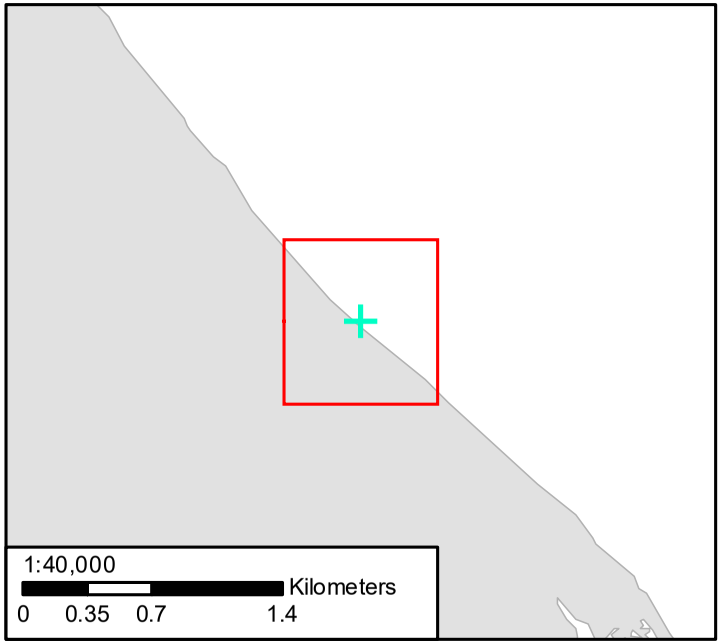


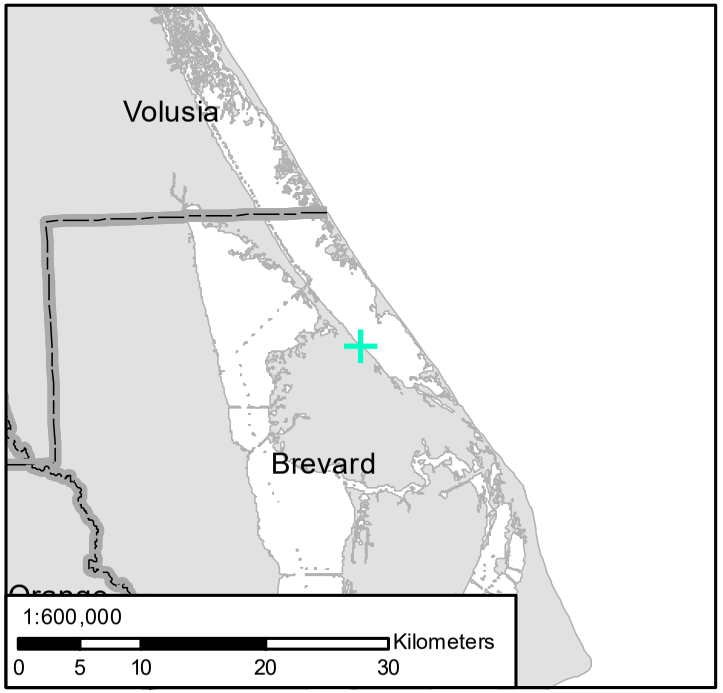
Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: Y/N L: Y/N
Placental Scaring: R / L:____x ____ x _____ cm
Pregnant: Y/N – Fetus length _____cm Fetus gender M / F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes Y / N; in epididymes Y / N Method: visual / microscope slide
Fluid in seminal vesicles Y / N; if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

Verified Location of Manatee Carcass MEC20047

Report Date: 3/2/2020 **Received Date:** 3/3/2020 **Received By:** FWC-SMW,CMM







Location: Merritt Island, Brevard County

Latitude: 28.69313°N **Longitude:** -80.70834°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20047
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: 256 **Estimated** _____ **Weight (kg)** N/T
Date reported: 02 March 2020 **By**: USFWS- Mike Legari to FWC- WDG
Date collected: 03 March 2020 **By**: FWC-SMW, CMM; FWC intern- K. Etherton
Date necropsied: 03 March 2020 **By**: FWC-SMW, CMM; FWC intern- K. Etherton

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 1.57 kM NE of the intersections of Courtenay Parkway North and A. Max Brewer Parkway
Carcass Orientation: Grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Emaciated, thick brown algal mat, serous fats, dry/crumbly feces in colon, heavy congestion, frothy fluid in primary airway and trachea

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Right uterine horn contracted, left uterine horn small diameter. Right uterine horn contained a possible nearly resolved uterine scar.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20048**
Date of Report: 2020-Mar-03
Filed By: FWC EC Field Station

FWC Case # 3558 **FWC Region:** NE

Sex: Female **Length:** 233 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-04 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Mar-05 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 27.98419 **N**

County: Brevard **Longitude:** -80.52466 **W**

Waterway: Indian River

Location description: Melbourne Beach, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Relatively empty proximal colon; Macroalgae in stomach; Wet upper GI contents.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case number 3469.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20048

MORPHOMETRICS:

Total length:	233 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20048
SPECIES *T. manatus latirostris*
RECOVERY DATE 04 March 2020
NECROPSY DATE 05 March 2020
GENDER Female **TL** 233 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 03 March 2020, at 0809 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Melbourne Beach, Brevard County. FWC case number 3469 was assigned. The complainant, Paul Failla (321-652-5761), stated that the carcass could be seen from land. At 0843 hrs, the carcass was verified by Hubbs-SeaWorld Research Institute-Teresa Jablonski. The carcass was not recovered due to staff conducting a manatee rescue (REC2009). **04 March**, at 1252 hrs, William D. Greer (WDG) received a text alert from Dispatch regarding the carcass. FWC case number 3558 was assigned. The complainant, David Rossbau (321-298-3445), stated that the carcass was near the previously reported location. WDG and FWC biologist-Carley M. Metcalf (CMM) arrived at the carcass at 1620 hrs and towed it via kayak. The carcass was loaded via ANT Lift at 1705 hrs and transported to the EC Field Station. **05 March**, a field necropsy was completed at 1146 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was distended with gas. Watery, red fluid exuded from the nares and mouth. A thin light brown algal mat was present on the remaining epidermis. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. The margin of the fluke had well-healed mutilations at the 4 and 6 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered.

STOMACH The stomach contained 1.1 L of wet, poorly chewed, stringy, fibrous, brown ingesta mixed with purple woody pieces and macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 500 mL of wet, poorly chewed, stringy, fibrous, green to brown ingesta mixed with red and purple woody pieces (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine was empty of contents. The distal small intestine contained moist, moderately chewed, stringy, fibrous, green to brown ingesta mixed with red woody pieces (see photo). The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 325 mL of moist, poorly digested, stringy, fibrous, green to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The proximal colon contained a small amount of moist, poorly formed, poorly digested, tacky, stringy, fibrous, green to brown feces. The mucosa was black and sloughing. The mid and distal colon contained moist, well-formed, moderately digested, stringy, fibrous, brown to black feces. The mid and distal mucosa was autolyzed. No parasites were observed throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was mottled grey and black on serosal surfaces and black on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained 20 mL of watery orange bile. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. The primary airways were friable when handled. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Relatively empty proximal colon
- Wet upper GI contents
- Macroalgae in stomach

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

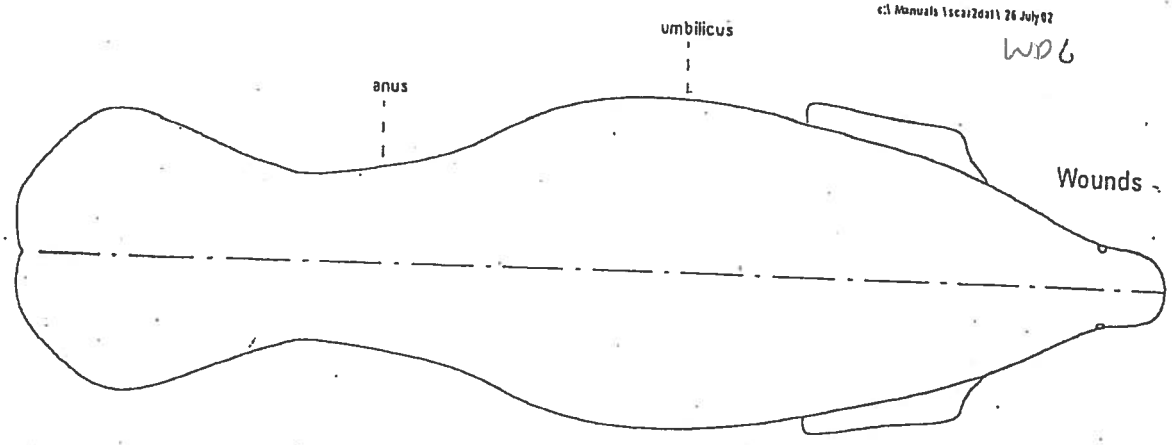
William D. Greer
Carley M. Metcalf
Kelly L. Etherton (FWC intern)

REPORT FILED BY Etherton / Greer

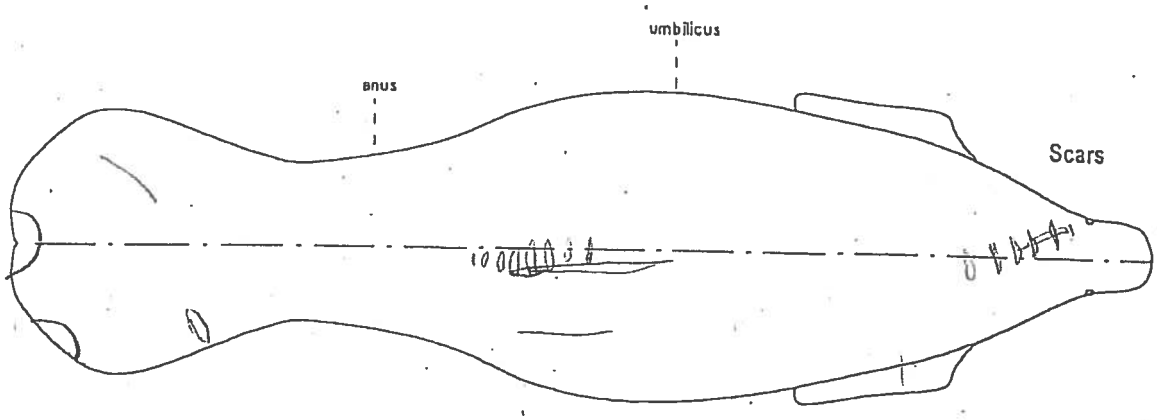
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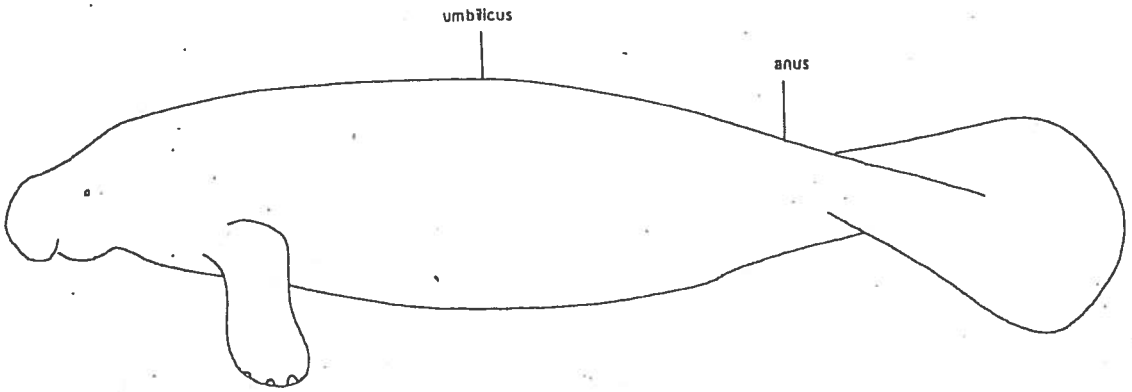
WD6

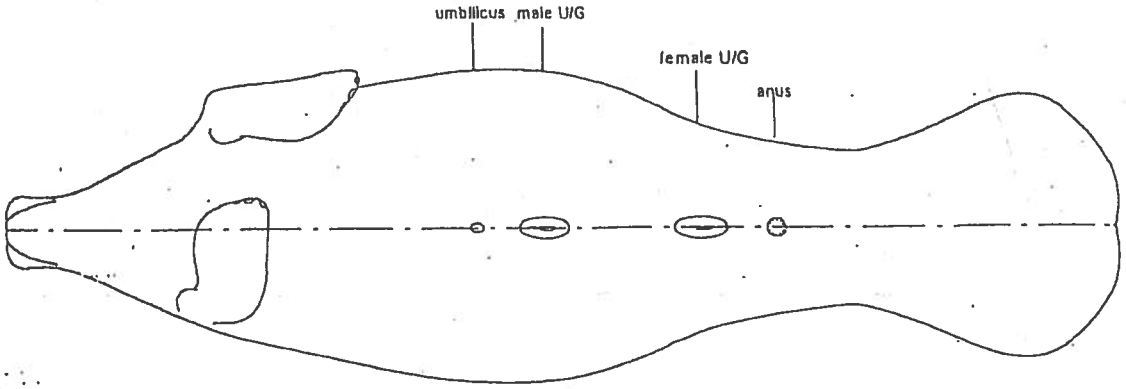


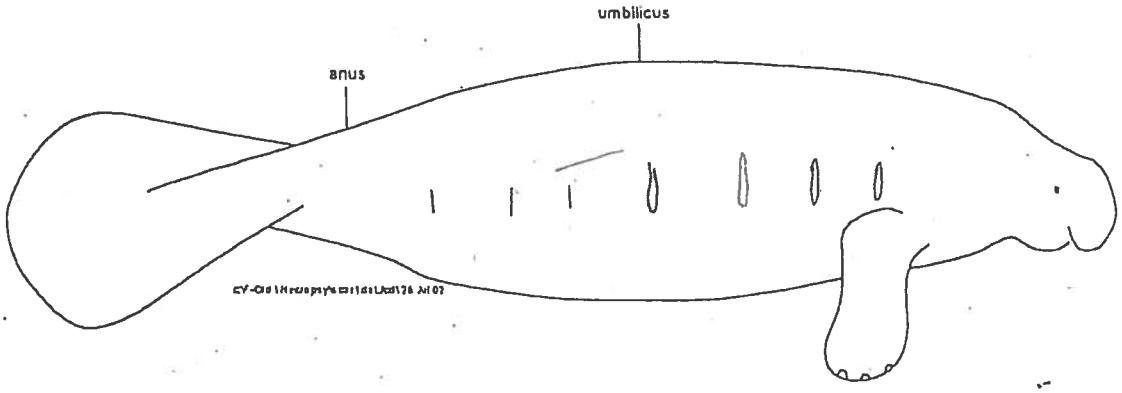
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Number																				
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FIELD I.D. MRC20048



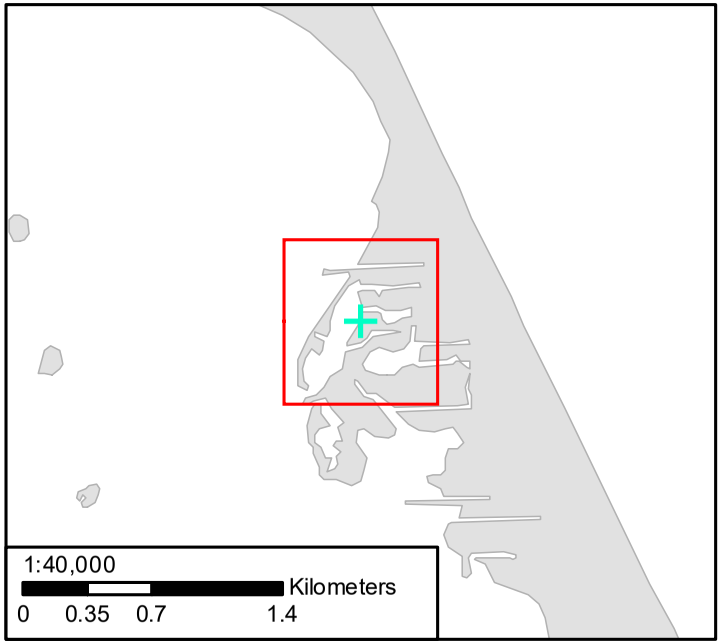


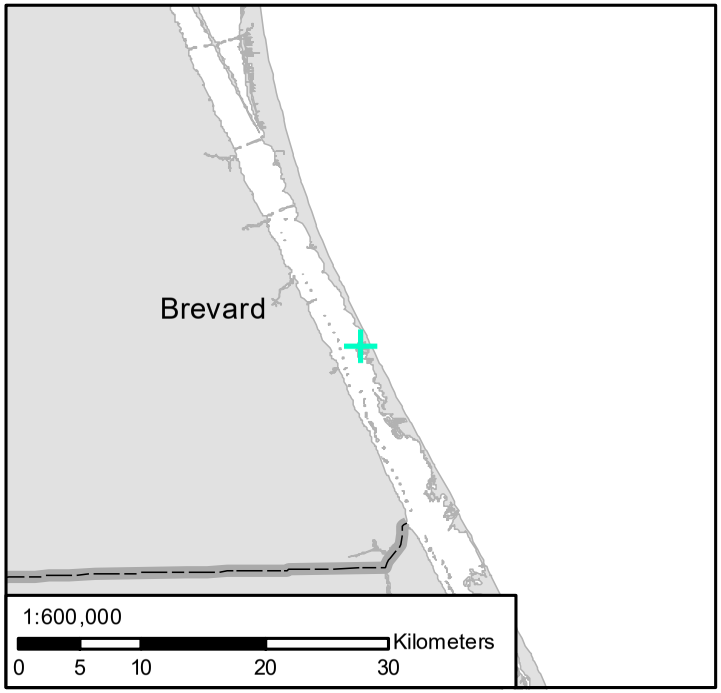


Verified Location of Manatee Carcass MEC20048

Report Date: 3/3/2020 **Received Date**: 3/4/2020 **Received By**: FWC-WDG,CMM







Location: Melbourne Beach, Brevard County

Latitude: 27.98419°N **Longitude**: -80.52466°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20048
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3469, 3558 **FWC District**: Northeast
Sex: Female **Length (cm)**: 233 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 04 March 2020 **By**: FWC- WDG, CMM
Date necropsied: 05 March 2020 **By**: FWC- WDG, CMM; FWC intern- K. Etherton

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne Beach, approximately 15 m NW of 440 Ross Avenue

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:

☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:

☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:

☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20049**
Date of Report: 2020-Mar-03
Filed By: FWC EC Field Station

FWC Case # 3515 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-03 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.678 **N**
County: Brevard **Longitude:** -80.82599 **W**
Waterway: Indian River
Location description: Mims, grounded

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case number 3475.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20049

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20049 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 03 March 2020, at 0923 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River in Mims, Brevard County. FWC case number 3475 was assigned. The complainant, Mike Bishop (321-536-5805), stated that the carcass was approximately 7 to 8 feet long and floating in the water against an island. At 0931 hrs, CMM received a photo of the carcass. Due to an increased case load and the rescue of REC2009, a response was not available. **04 March**, at 0746 hrs, CMM received a text alert from Dispatch regarding a dead manatee in the Indian River in Mims. FWC case number 3515 was assigned. The complainant, Charles Watts (863-227-4647), stated that there was a beached dead manatee at an island across from the Jones Avenue boat ramp. The carcass was not recovered or necropsied.

EXTERNAL From photograph – All of the epidermis was present on the visible portions of the carcass.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

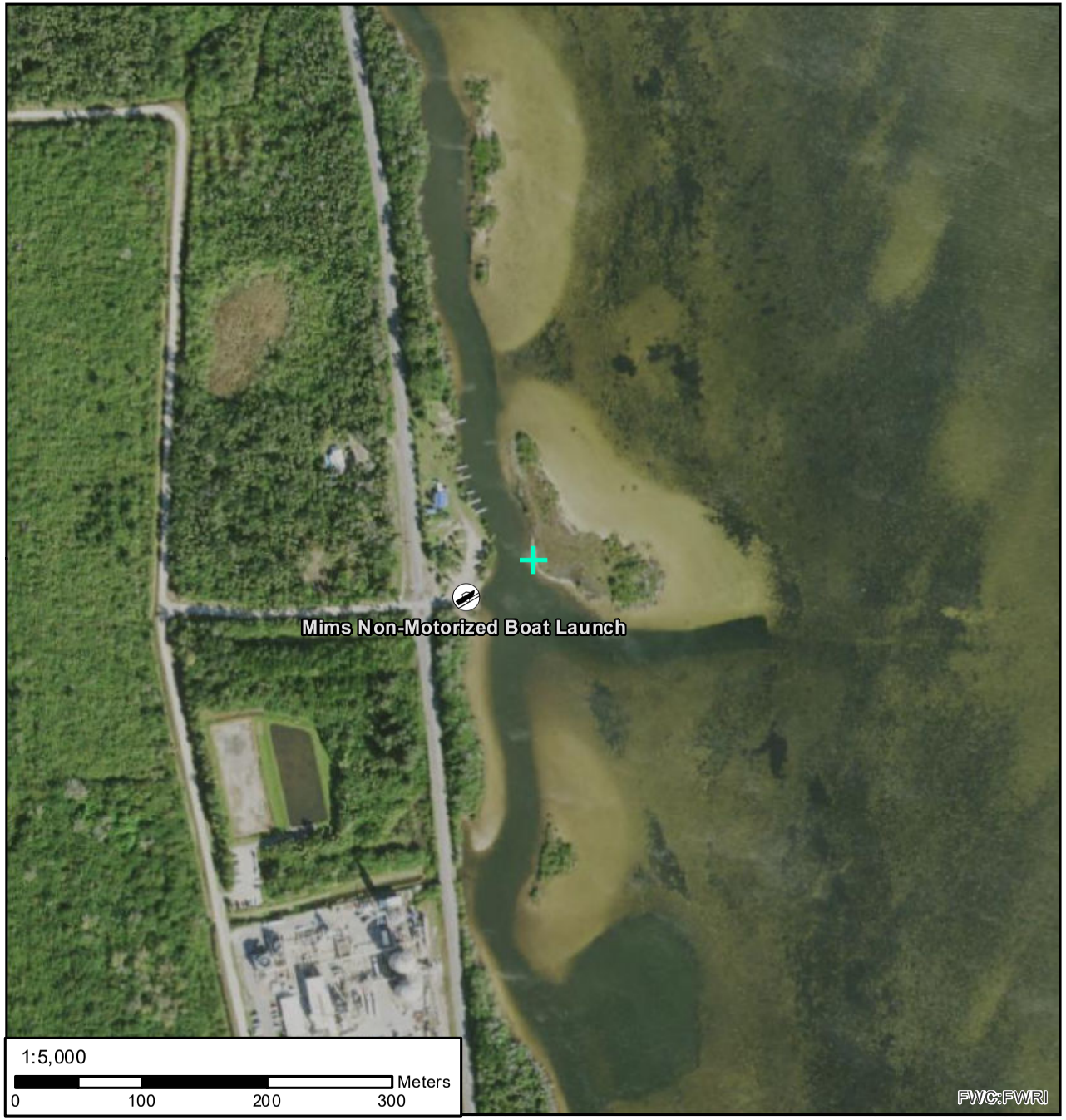
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

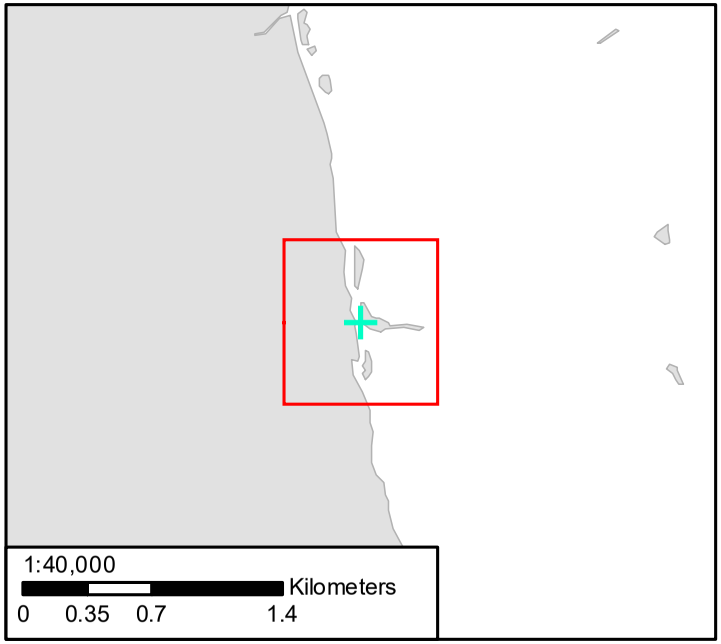
NECROPSY CONDUCTED BY N/A

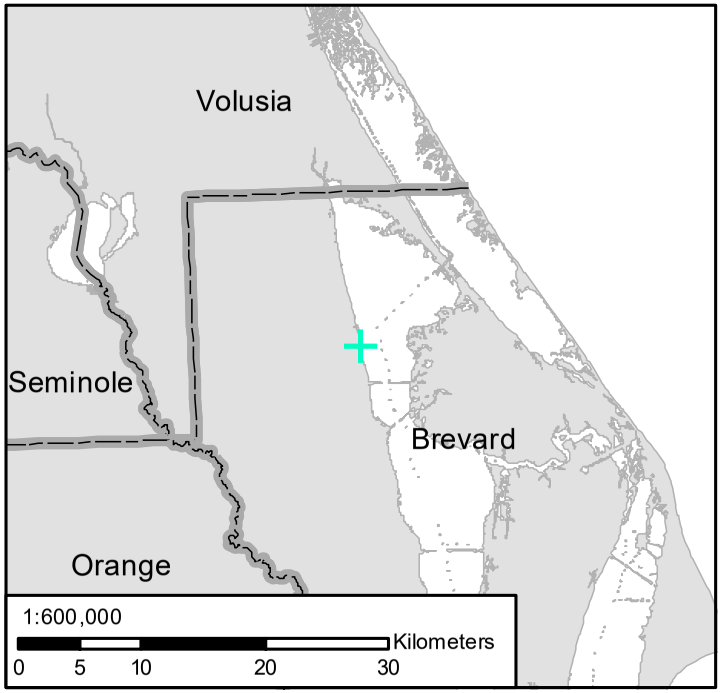
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20049

Report Date: 3/3/2020 **Received Date**: **Received By**:







Location: Mims, Brevard County

Latitude: 28.678°N **Longitude**: -80.82599°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20049
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3475, 3515, **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** N/T
Date reported: 03 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Mims, approximately 90 m SE of 2000 Jones Avenue

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20050**
Date of Report: 2020-Mar-03
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Male **Length:** 242 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-03 **By:** FWC-SMW,CMM

DATE COLLECTED: 2020-Mar-03 **By:** FWC-SMW,CMM

DATE NECROPSIED: **By:**

LOCATION:
State: FL
County: Brevard
Waterway: Mosquito Lagoon
Location description: Merritt Island, beached

Latitude: 28.69283 **N**
Longitude: -80.70804 **W**

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: External workup performed, but full necropsy not conducted.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Fluke.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20050

MORPHOMETRICS:

Total length:	242 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20050
SPECIES *T. manatus latirostris*
RECOVERY DATE 03 March 2020
NECROPSY DATE N/A
GENDER Male **TL** 242 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 03 March 2020, at 1508 hrs, FWC biologists-Sara M. Wappes (SMW) and Carley M. Metcalf (CMM) and FWC intern-Kelly Etherton (KLE) arrived at MEC20047's location. At 1515 hrs, KLE observed a possible second dead manatee nearby in the Mosquito Lagoon in Merritt Island, Brevard County. At 1516 hrs, SMW and KLE verified that it was a dead manatee. After necropsying MEC20047, SMW, KLE, and CMM completed an external work up of MEC20050 by 1646 hrs. Due to the state of decomposition and time of day the carcass was not necropsied. The remains were left onsite.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The dorsal dermis was covered in bird droppings. The carcass was distended with gas. The face was eroded due to decomposition. There was a rent due to decomposition and/or scavenging at the umbilicus through which GI tract protruded. No watercraft-related scars or wounds were grossly observed. PIT tag scan was negative. A genetics sample was collected.

SIGNIFICANT FINDINGS

- Verified by FWC biologists
- Scavenging

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

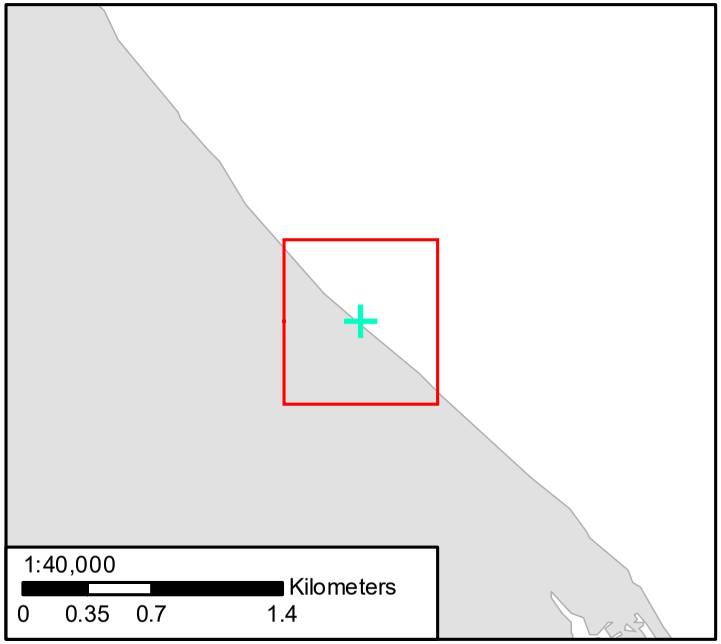
NECROPSY CONDUCTED BY N/A

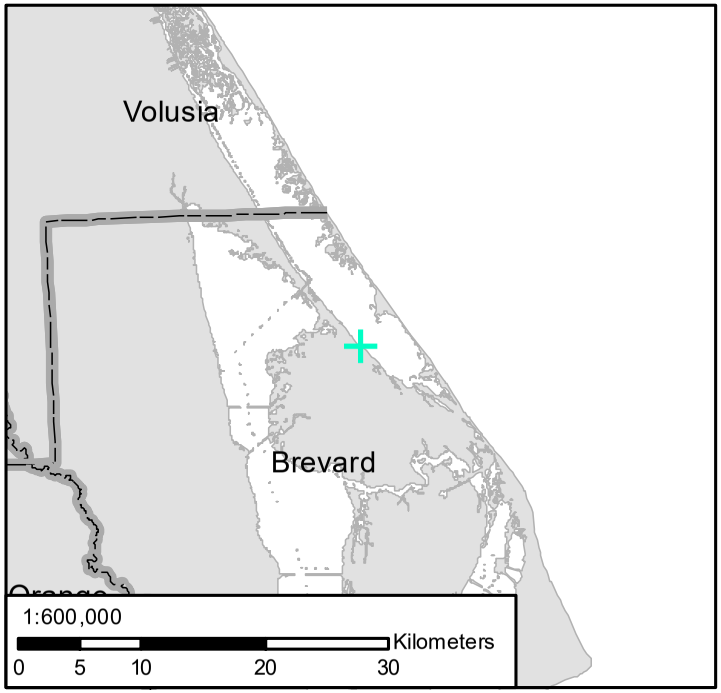
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20050

Report Date: 3/3/2020 **Received Date:** 3/3/2020 **Received By:** FWC-SMW,CMM







Location: Merritt Island, Brevard County

Latitude: 28.69283°N **Longitude:** -80.70804°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20050
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Male **Length (cm)**: 242 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 March 2020 **By**: FWC- SMW, CMM; FWC intern- K. Etherton
Date collected: 03 March 2020 **By**: FWC- SMW, CMM; FWC intern- K. Etherton
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 1.57 kM NE of the intersections of Courtenay Parkway North and A. Max Brewer Parkway
Carcass Orientation: Beached

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: External work-up completed.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☑ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20051**
Date of Report: 2020-Mar-03
Filed By: FWC EC Field Station

FWC Case # 3502 **FWC Region:** NE

Sex: Female **Length:** 169 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-04 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Mar-04 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 27.96297 **N**

County: Brevard **Longitude:** -80.54079 **W**

Waterway: Indian River

Location description: Grant-Valkaria, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Emaciated; Bleached epidermis; Cobblestone-like epidermis; Depleted fat(s); Serous fat(s); Relatively empty GI tract; Dry, hard feces; Abscess(es); Ulcerating skin lesions; Fluid, mucus, froth in airways; Congested peritoneum, abdominal fat, mesentery, stomach-, urinary bladder mucosa; Macroalgae in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20051

MORPHOMETRICS:

Total length:	169 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20051
SPECIES *T. manatus latirostris*
RECOVERY DATE 04 March 2020
NECROPSY DATE 04 March 2020
GENDER Female **TL** 169 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 03 March 2020, at 1655 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Grant-Valkaria, Brevard County. FWC case number 3502 was assigned. The complainant, Stuart Kantor (321-446-9837), stated that the carcass was small, back-up and grounded. At 1732 hrs, SMW received a photo of the carcass from the complainant. **04 March**, FWC biologists-William D. Greer and Carley M. Metcalf arrived at the carcass at 0930 hrs and completed a field necropsy by 1035 hrs. The remains were left onsite.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass had a peanut-shaped head. The ventrum was flat. There was cobblestone-like epidermis on the ventral aspect. The epidermis of the head and flippers was bleached. A few ulcerating linear lesions were observed. A thin brown algal mat was present on the dorsal aspect. A mild infestation of barnacles and barnacle scars was observed on the ventrum. There was a lump on the mid left dorsal aspect. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, serous abdominal, omental, and mesenteric fat. There were patches of moderate congestion on the peritoneum and abdominal fat.

STOMACH The stomach contained 100 mL of viscous, white fluid mixed with poorly chewed, fibrous, green to yellow ingesta and red macroalgae (see photo). The mucosa was congested (see photo). No parasites were observed.

DUODENUM The duodenum contained approximately 20 mL of wet, homogeneous, brown to gray fluid (see photo). The mucosa was rugose due to contraction (see photo) but otherwise unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was mildly congested. The small intestine contained viscous, gray to black fluid mixed with intermittent sections of poorly chewed, stringy, green to brown ingesta. The small intestine mucosa was rugose throughout but otherwise unremarkable. No parasites were grossly observed.

CECUM The cecum contained 300 mL of moist, poorly digested, stringy, fibrous, green digesta mixed with red, yellow, and green macroalgae (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The proximal colon contained moist, moderately formed, poorly digested, stringy, green feces mixed with yellow and red macroalgae. The mucosa was unremarkable. The mid colon contained wet, poorly formed, well-digested, stringy, green feces. The mucosa was black and sloughing. The distal colon contained dry, hard, well-formed, well-digested, stringy, fibrous, black feces (see photo). The mucosa was white and sloughing. No parasites were observed throughout.

PANCREAS The pancreas was tan to gray on serosal surfaces and light pink on cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and black on cut surfaces.

LIVER The margins of the liver were rounded. The liver was firm. Serosal surfaces were blue and cut

surfaces were red to brown and bloody.

GALLBLADDER The gallbladder contained 50 mL of watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE No reproductive fat was observed. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS No perirenal fat was observed. The kidneys were tan to red on serosal surfaces. On cut surfaces, the cortices were tan and the medullae were dark red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 150 mL of dark yellow urine. The mucosa was congested.

HEART No epicardial fat was observed. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were white to blue on serosal surfaces and white to red on cut surfaces. The primary airways contained an abundant amount of yellow mucus and a small amount of watery, clear fluid (see photo). No parasites were observed.

HEAD & NECK REGIONS There was a small thatch of yellow macroalgae in the mouth. The trachea contained a small amount of frothy fluid. A mild infection of dead trematodes was observed.

SKELETON NVL.

OTHER The lump on the dorsal left side contained an abundant about of caseous, white to yellow material (see photo).

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Bleached, cobblestone-like epidermis
- Ulcerating skin lesions
- Abscess
- Depleted, serous fat
- Relatively empty GI tract
- Dry, hard feces
- Fluid, mucus, froth in airways
- Congested peritoneum, abdominal fat, mesentery, stomach-, urinary bladder mucosa
- Macroalgae in mouth, GI tract

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

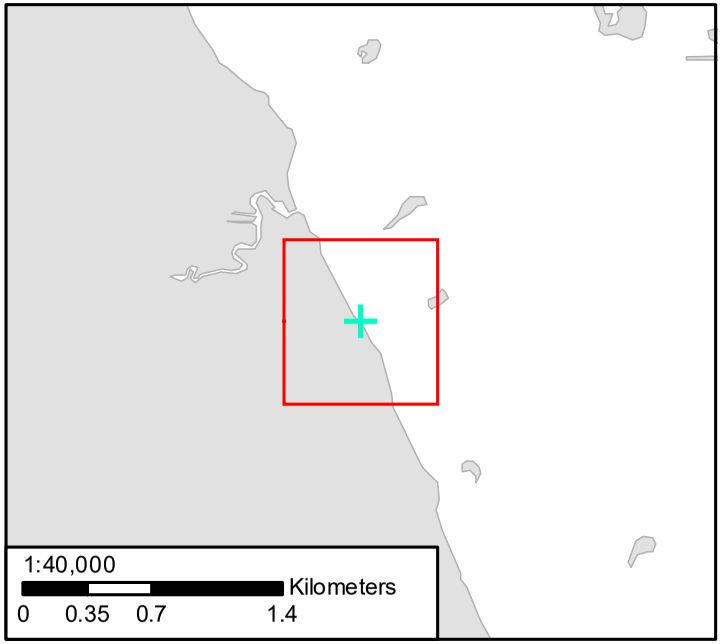
William D. Greer
Carley M. Metcalf

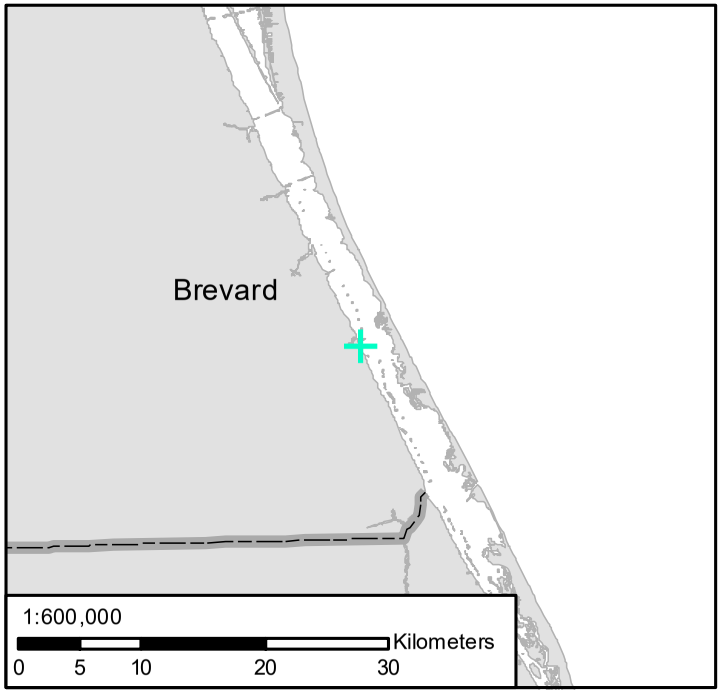
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20051

Report Date: 3/3/2020 **Received Date:** 3/4/2020 **Received By:** FWC-WDG,CMM







Location: Grant-Valkaria, Brevard County **Latitude:** 27.96297°N **Longitude:** -80.54079°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20051
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3502 **FWC District**: Northeast
Sex: Female **Length (cm)**: 169 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 04 March 2020 **By**: FWC- WDG, CMM
Date necropsied: 04 March 2020 **By**: FWC- WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Grant-Valkaria, approximately 135 m NNE of 3660 Highway 1

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Emaciated, bleached flipper and heads, cobblestone skin on ventrum, lump on dorsal left side-pus filled when cut, scant fats, dry hard feces in colon, frothy fluid in trachea, primary airways pus and liquid filled

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20052**
Date of Report: 2020-Mar-03
Filed By: FWC EC Field Station

FWC Case # 3549 **FWC Region:** NE

Sex: Female **Length:** 234 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-04 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Mar-04 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 28.39841 **N**

County: Brevard **Longitude:** -80.61924 **W**

Waterway: Banana River

Location description: Cape Canaveral, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Peanut-shaped head; Bleached epidermis; Cobblestone-like epidermis; Cold stress lesions; Congested peritoneum, fat, mesenteries, colon serosa; Bloody liver; Mucus in airways; Vegetation in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Watercraft wound(s); Also FWC case number 3510.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20052

MORPHOMETRICS:

Total length:	234 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20052 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 04 March 2020 **NECROPSY DATE** 04 March 2020
GENDER Female **TL** 234 **cm WT** N/T **kg** **CONDITION** Moderately Decomposed

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HISTORY 03 March 2020, at 1835 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River in Cape Canaveral, Brevard County. FWC case number 3510 was assigned. The complainant, Bruce Lang (802-238-9436), stated that there was a dead manatee floating in the water. ARH relayed the information to EC Field Station staff but did not receive a confirmation photo. **04 March**, at 1017 hrs, ARH received a photo of the carcass and forwarded it to EC Field Station staff. At 1144 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from Dispatch regarding a dead manatee in the Banana River in Cape Canaveral. FWC case number 3549 was assigned. The complainant did not want to be contacted. FWC biologist-William D. Greer (WDG) and CMM arrived at Banana River Park at 1300 hrs, located the carcass, and completed a field necropsy by 1505 hrs. The remains were left onsite.

EXTERNAL Almost all of the epidermis was present. The carcass was slightly distended with gas. There was a fresh superficial watercraft-related wound series on the cranial dorsum which consisted of a long, wide linear wound (#1) cranial and perpendicular to three parallel wounds (#2 – 4). A thin green and brown algal mat was observed on the dorsal aspect. A mild infestation of barnacles was present on the dorsal and ventral aspects. The epidermis of the head, axillae, and flippers was bleached. There was a slight peanut-shaped head. The ventral epidermis had numerous bleached barnacle scars and small circular lesions. A few chronic skin lesions were present. A small amount of cobblestone-like epidermis was present on the ventral fluke. A minimum of one well-healed watercraft-related scar pattern was observed. There were small, well-healed mutilations of the fluke margin at the 6 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, congested abdominal, mesenteric, and omental fat. The peritoneum had patches of severe congestion. There were black specks on the peritoneum and abdominal fat (see photos).

STOMACH The stomach contained 3.5 L of moist, poorly chewed, stringy, fibrous, green to brown ingesta. The ingesta were coated in white mucus (see photo). The mucosa was unremarkable. There was a mild infection of dead trematodes.

DUODENUM The duodenum contained 600 mL of wet, poorly chewed, stringy, fibrous, green to brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The small intestine was mostly empty of contents, but some sections contained watery, tan to grey fluid mixed with poorly chewed, fibrous pieces of ingesta. The mucosa was unremarkable. There was a mild infection of dead trematodes in the proximal and mid small intestine. No parasites were grossly observed in the distal small intestine.

CECUM The cecum contained 625 mL of moist, poorly digested, stringy, fibrous, green to brown digesta. The mucosa was black and sloughing (see photo). There was a mild infection of dead trematodes.

COLON The mesentery and colon serosa were moderately congested (see photo). The proximal colon contained wet, poorly formed, moderately digested, stringy, fibrous, green to brown feces. There was a moderate infection of dead trematodes. The mid colon contained moist, moderately digested, well-formed, stringy, homogeneous, green feces. The mucosa was black and sloughing in the proximal and mid colon. The distal colon contained moist, well-digested, well-formed, stringy, homogeneous, green feces. The mucosa was

white and sloughing.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft. Serosal surfaces were blue and cut surfaces were red to brown and bloody.

GALLBLADDER The gallbladder contained 30 mL of watery orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS There was moderate perirenal fat. The kidneys were tan to red on serosal surfaces. On cut surfaces, the cortices were tan, and the medullae were red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 150 mL of pale-yellow urine. The mucosa was unremarkable.

HEART There was moderate, serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were white to pink on serosal surfaces and pink to dark red on cut surfaces. The primary airways contained a moderate amount of white mucus. There was a mild infection of dead trematodes (see photo).

HEAD & NECK REGIONS There was a mild infection of dead trematodes in the trachea. There was a large thatch of poorly chewed green vegetation in the mouth (see photo).

SKELETON NVL.

OTHER The watercraft wounds were cut into from the dorsal aspect, but no hemorrhage or blood clots were observed in the muscle directly deep to the wounds. The wounds were probably postmortem. The carcass was reported after several days of cold weather with nightly temperatures in the upper 40's.

COMMENTS

SIGNIFICANT FINDINGS

- Peanut-shaped head
- Bleached, cobblestone-like epidermis
- Cold stress lesions
- Congested peritoneum, fat, mesenteries, colon serosa
- Bloody liver
- Mucus in airways
- Vegetation in mouth
- Specks peritoneum, fat
- Fresh watercraft wounds

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

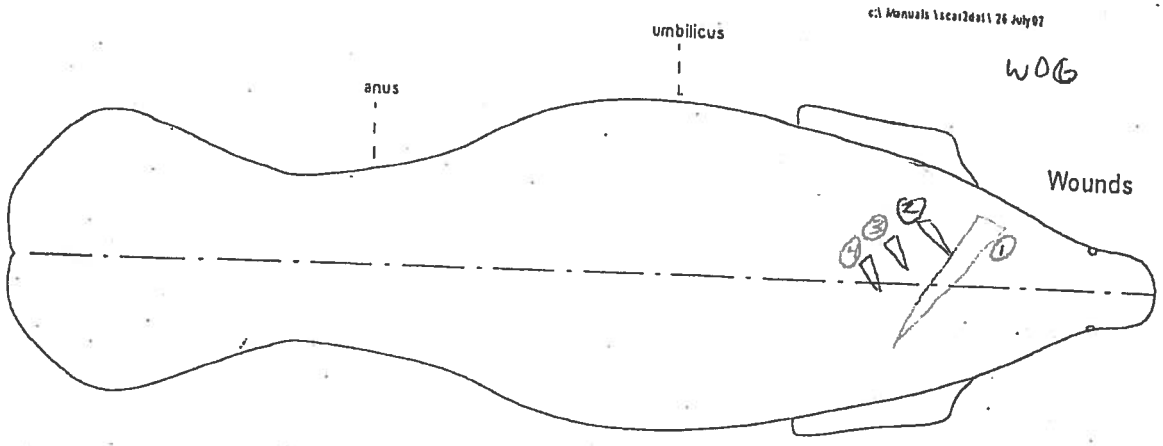
William D. Greet
Carley M. Metcalf

REPORT FILED BY Etherton / Greer

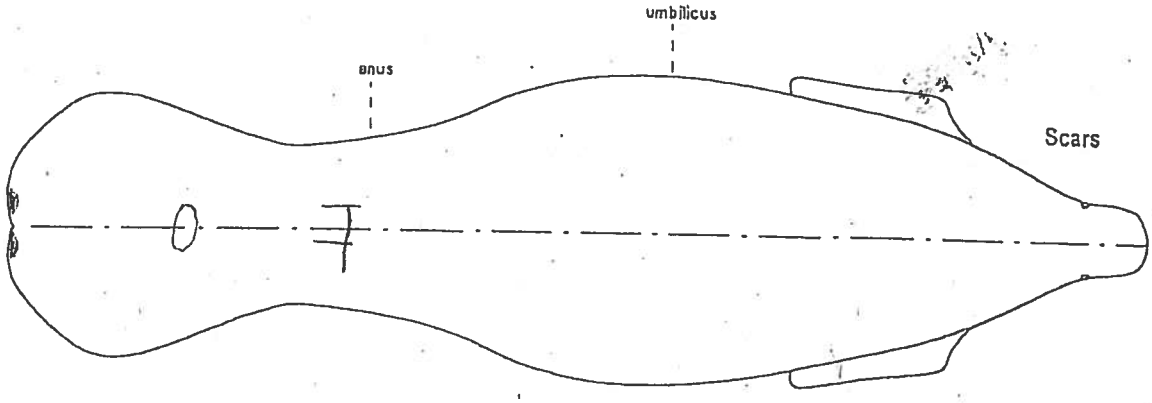
Date 04 MAR 2020 Field I.D. MFC20052

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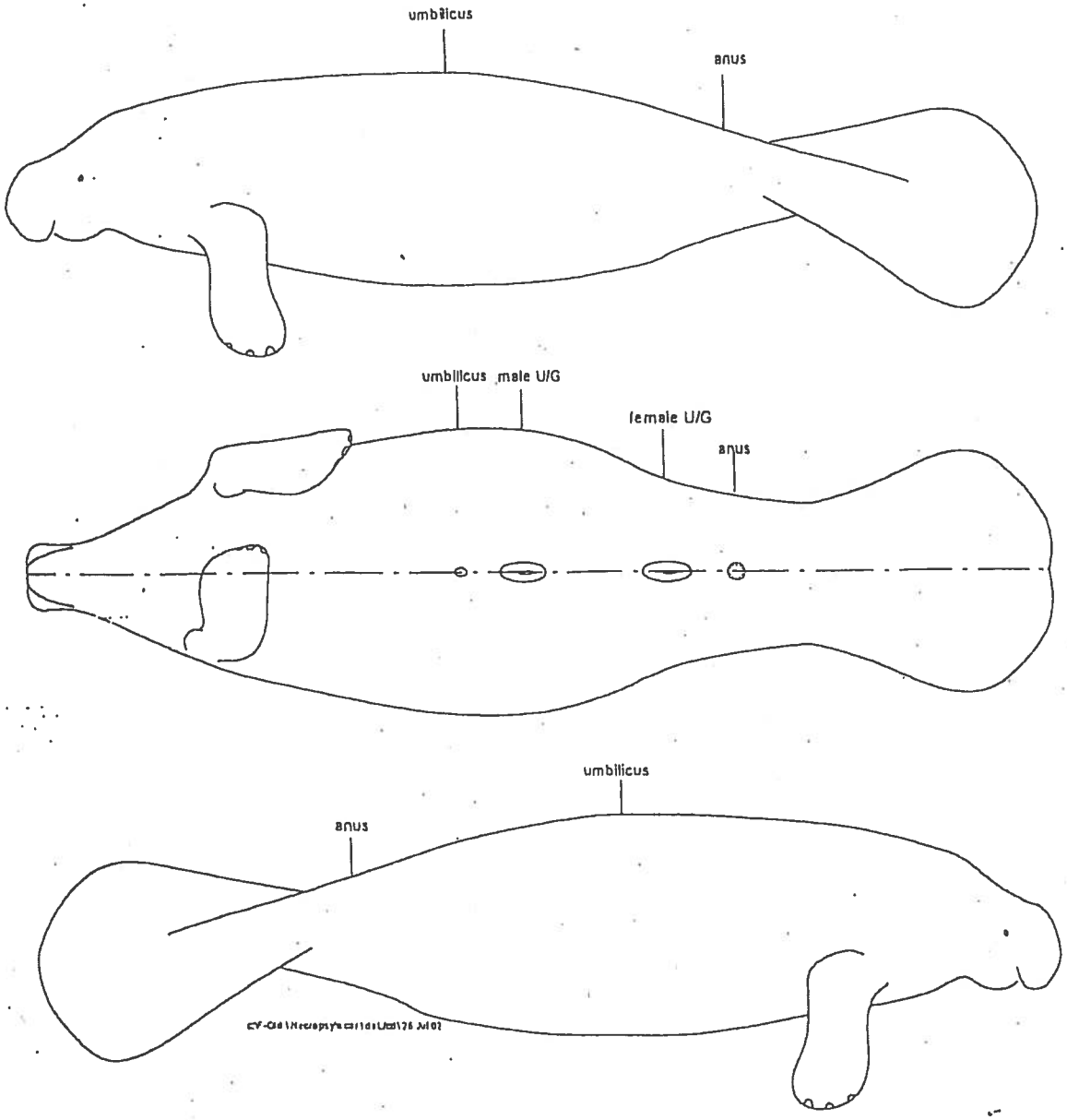
WOG



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	34	19	20	13																
Width	5	3	4	2.5																
Depth	.1	.1	.1	.1																
Distance	-	9	9																	



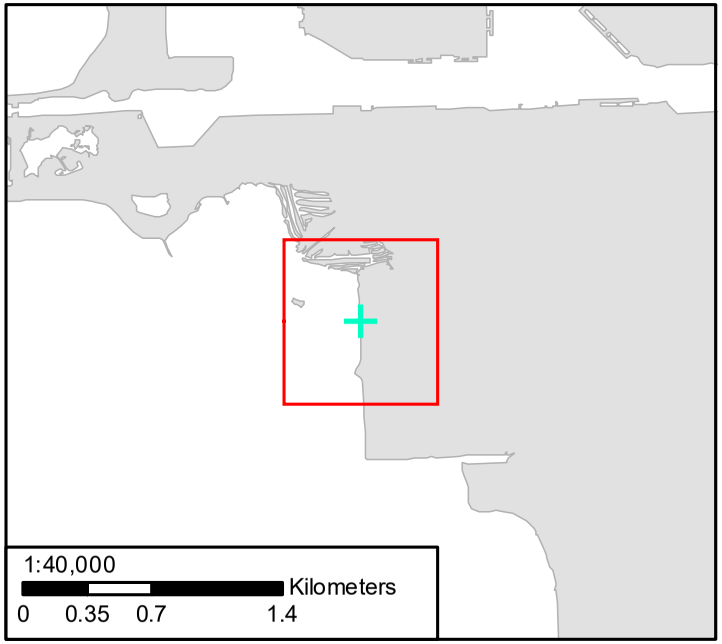
FIELD I.D. _____

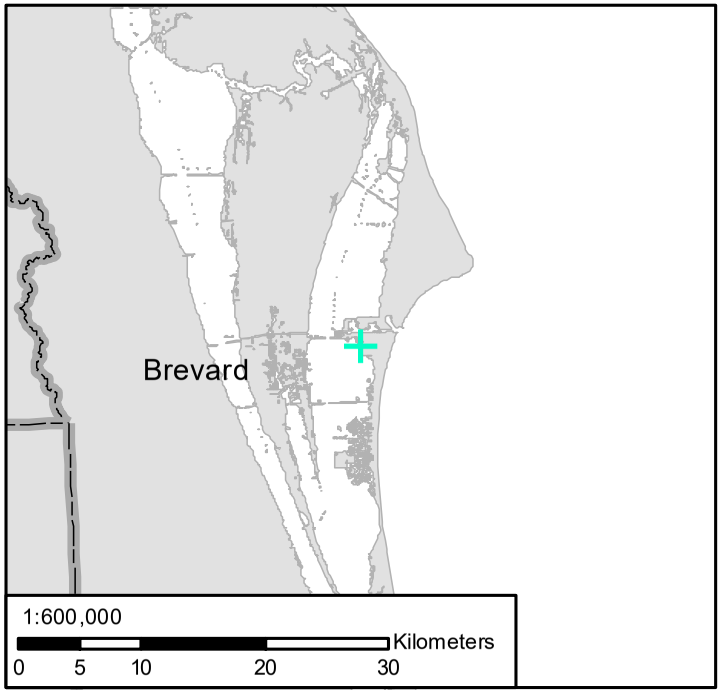

umbilicus
anus
umbilicus
male U/G
female U/G
anus
umbilicus
anus

Verified Location of Manatee Carcass MEC20052

Report Date: 3/3/2020 **Received Date**: 3/4/2020 **Received By**: FWC-WDG,CMM







Location: Cape Canaveral, Brevard County

Latitude: 28.39841°N **Longitude**: -80.61924°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20052
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3510, 3549 **FWC District**: Northeast
Sex: Female **Length (cm)**: 234 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 04 March 2020 **By**: FWC- WDG, CMM
Date necropsied: 04 March 2020 **By**: FWC- WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Cape Canaveral, approximately 90 m SSW of the easternmost building at 8935 Puerto Del Rio Drive
Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☑ Other ☐ Not Recovered
Explain: Heavy congestion throughout body, primary airways contained white pus and clear liquid, small/hard/circular white nodules in right lung

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20053**
Date of Report: 2020-Mar-04
Filed By: FWC EC Field Station

FWC Case # 3522 **FWC Region:** NE

Sex: Female **Length:** 242 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-04 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-04 **By:** FWC-WDG,CMM

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.14692 **N**
County: Brevard **Longitude:** -80.63441 **W**
Waterway: Indian River
Location description: Melbourne, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Healing watercraft wound(s); Cobblestone-like epidermis; Thick algal mat. External workup performed, but full necropsy not conducted.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20053

MORPHOMETRICS:

Total length:	242 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20053
SPECIES *T. manatus latirostris*
RECOVERY DATE 04 March 2020
NECROPSY DATE N/A
GENDER Female **TL** 242 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 04 March 2020, 0903 hrs, FWC biologist-Carley Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Melbourne, Brevard County. FWC case number 3522 was assigned. The complainant, Jase Quinn (321-446-4800), stated that the carcass was 6.5 feet long, belly-down, and the skin was coming off. On the way to field necropsy MEC20052, CMM and FWC biologist-William D. Greer (WDG) located MEC20053 at 1115 hrs. Because of a high carcass load, only an external examination was performed which was completed by 1135 hrs. The remains were left onsite.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was slightly distended with gas. There was a 44 x 1 cm healing linear watercraft-related wound on the mid dorsal aspect. There was a thick, brown and green algal mat on the dorsal aspect. Cobblestone-like epidermis was present on the ventrum and ventral fluke. There were rents present at axillae, along the lateral aspects, at the urogenital opening, and ventral fluke due to decomposition. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

COMMENTS

SIGNIFICANT FINDINGS

- Healing watercraft wound
- Cobblestone-like epidermis
- Thick algal mat

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

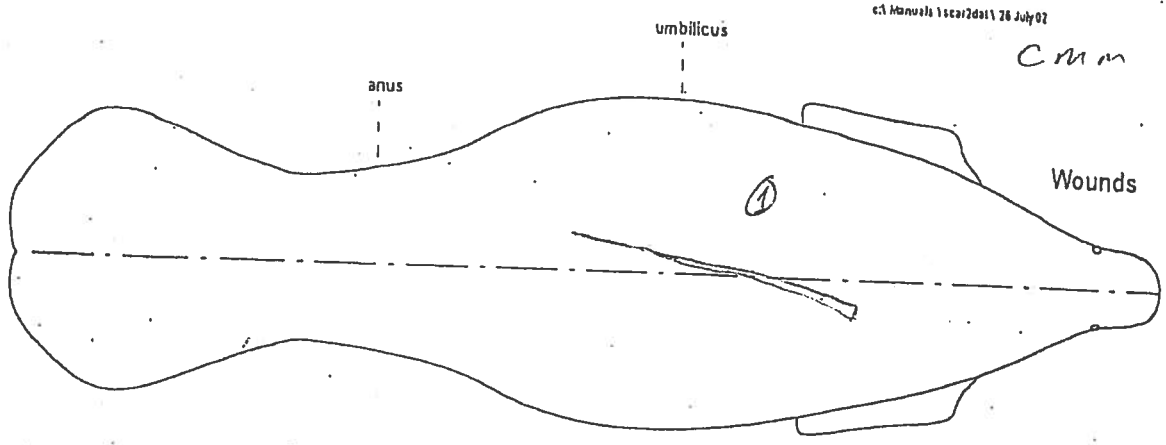
NECROPSY CONDUCTED BY N/A

REPORT FILED BY Metcalf / Greer

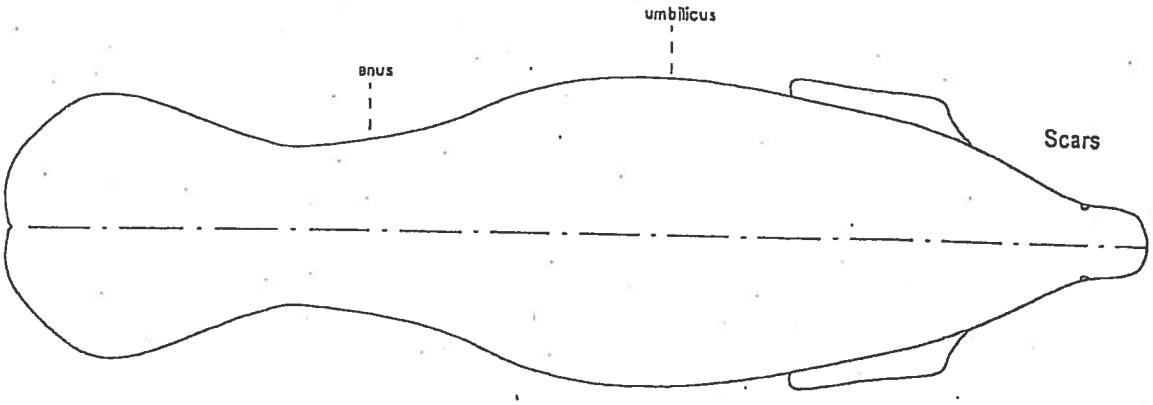
Date 04 March 2020 Field I.D. MEC20053

c:\ Manuals \ scar2dat \ 26 July 02

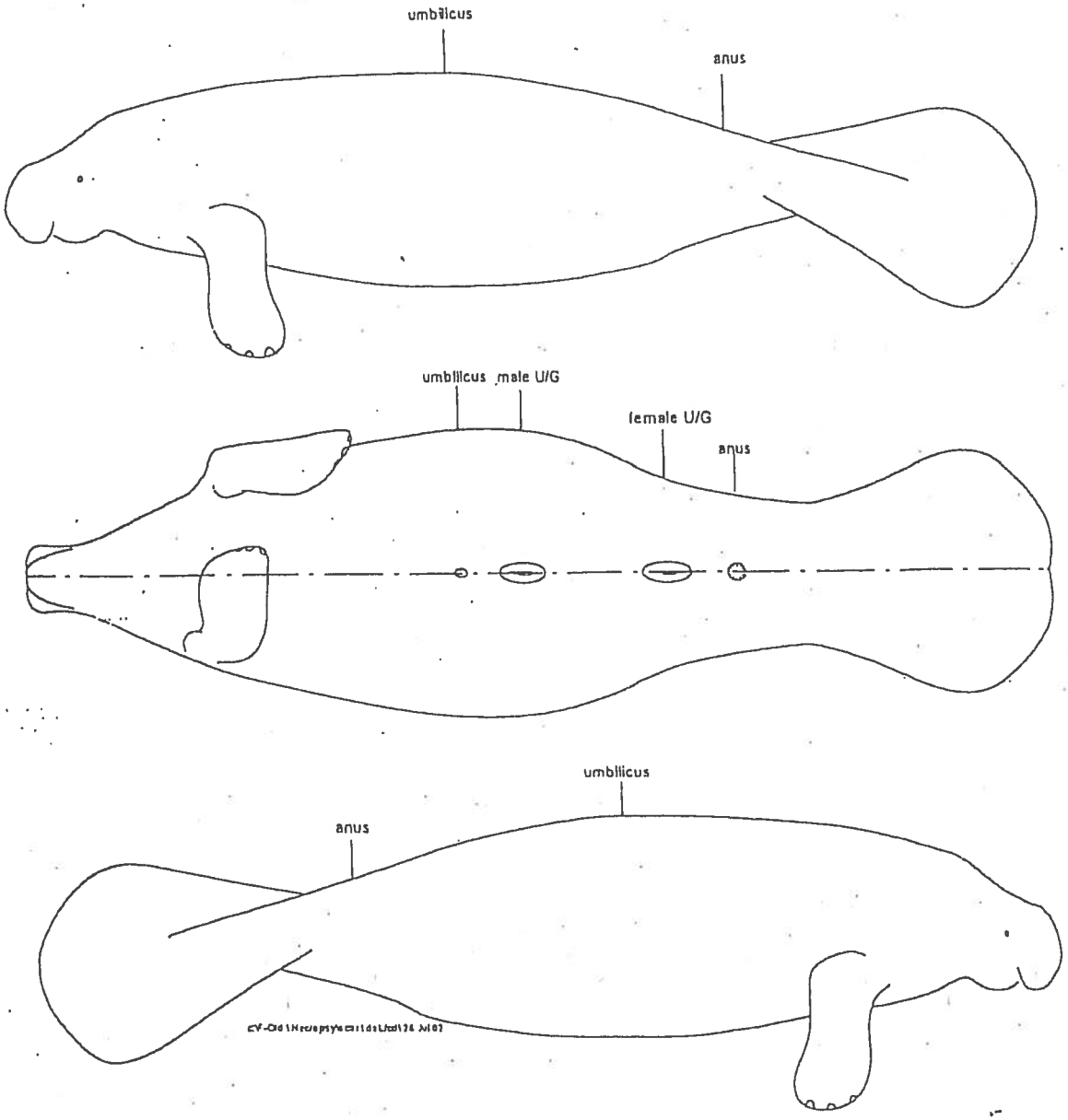
cm



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	44.0																			
Width	1.0																			
Depth	0.1																			
Distance																				



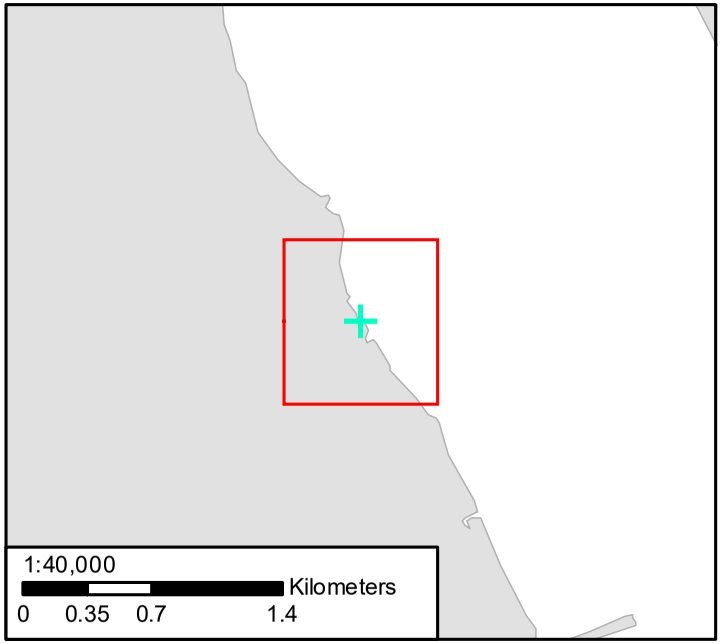
FIELD I.D. _____

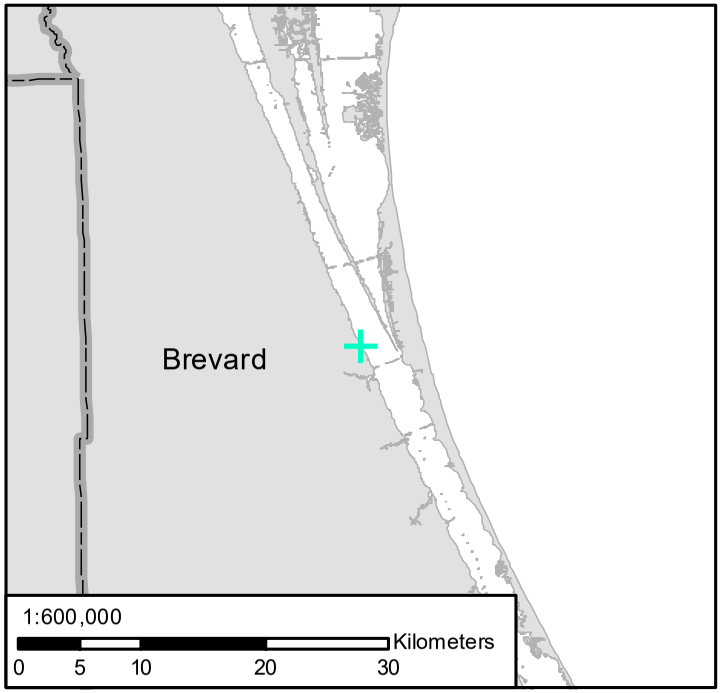

umbilicus
anus
umbilicus
male U/G
female U/G
anus
umbilicus
anus

Verified Location of Manatee Carcass MEC20053

Report Date: 3/4/2020 **Received Date:** 3/4/2020 **Received By:** FWC-WDG,CMM







Location: Melbourne, Brevard County **Latitude:** 28.14692°N **Longitude:** -80.63441°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20053
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3522 **FWC District**: Northeast
Sex: Female **Length (cm)**: 242 **Estimated** _____ **Weight (kg)** N/T
Date reported: 04 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 04 March 2020 **By**: FWC-WDG, CMM
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 35 m SE of 2459 Pineapple Avenue

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: External work-up completed

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20054**
Date of Report: 2020-Mar-04
Filed By: FWC EC Field Station

FWC Case # 3567 **FWC Region:** NE

Sex: Unknown **Length:** 180 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-04 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.67604 **N**
County: Brevard **Longitude:** -80.82594 **W**
Waterway: Indian River
Location description: Mims, grounded

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20054

MORPHOMETRICS:

Total length:	180 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20054 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 180 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 04 March 2020, at 1434 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Mims, Brevard County. FWC case number 3567 was assigned. The complainant, Justin Mckown (407-920-9880), stated that the manatee was approximately 6 feet in length, belly-up, had skin peeling, and was grounded. He also reported another carcass (MEC20049) nearby. At 1437 hrs, WDG received a photo of MEC20054. Due to an increased carcass load, the manatee was not recovered or necropsied.

EXTERNAL From photographs - Approximately 70% of the ventral epidermis was present and sloughing. The carcass was distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

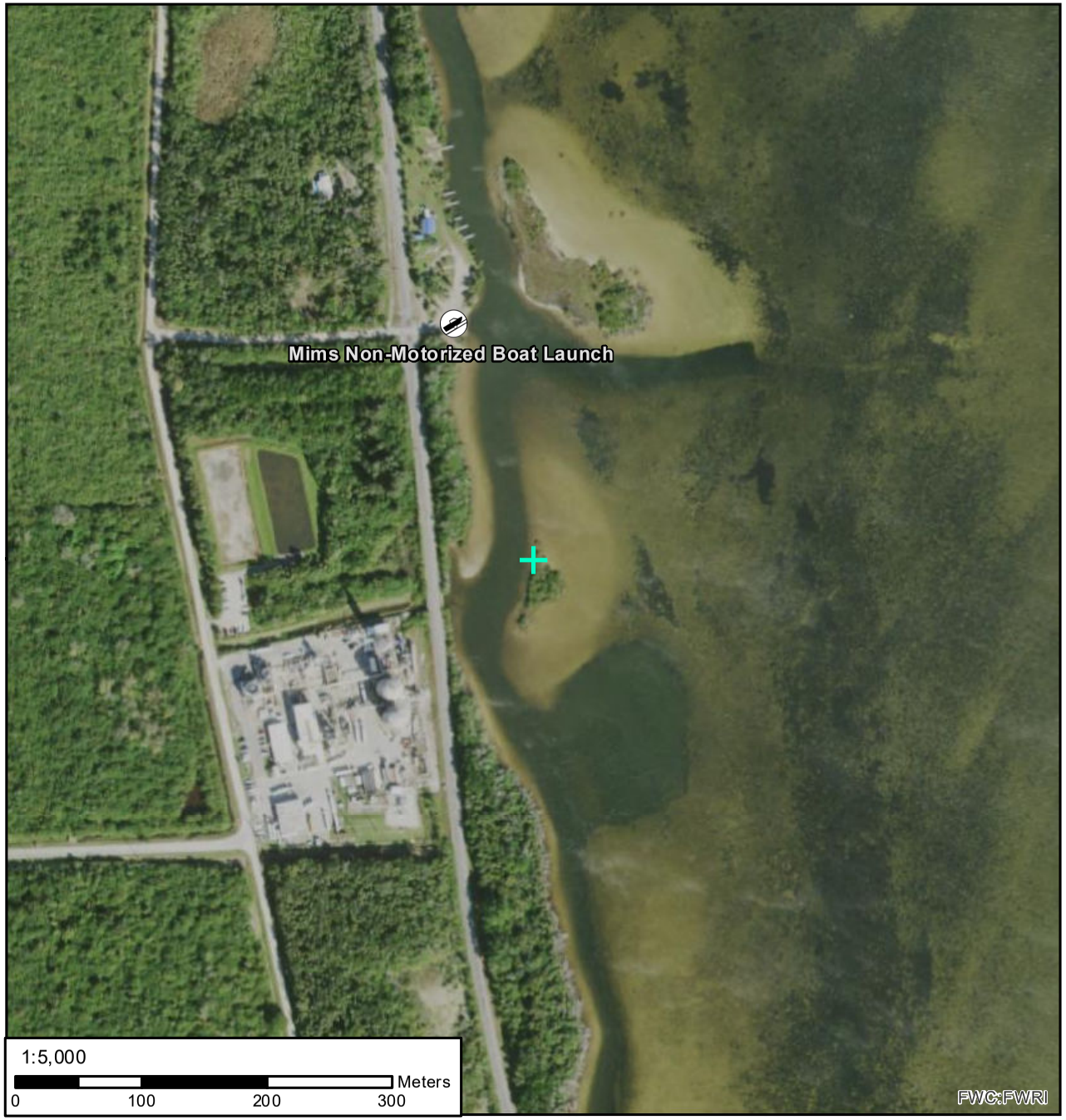
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

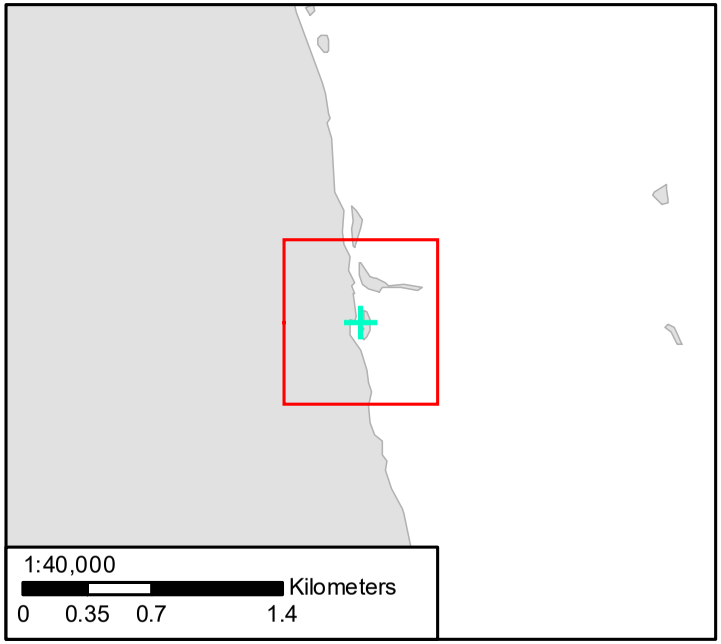
NECROPSY CONDUCTED BY N/A

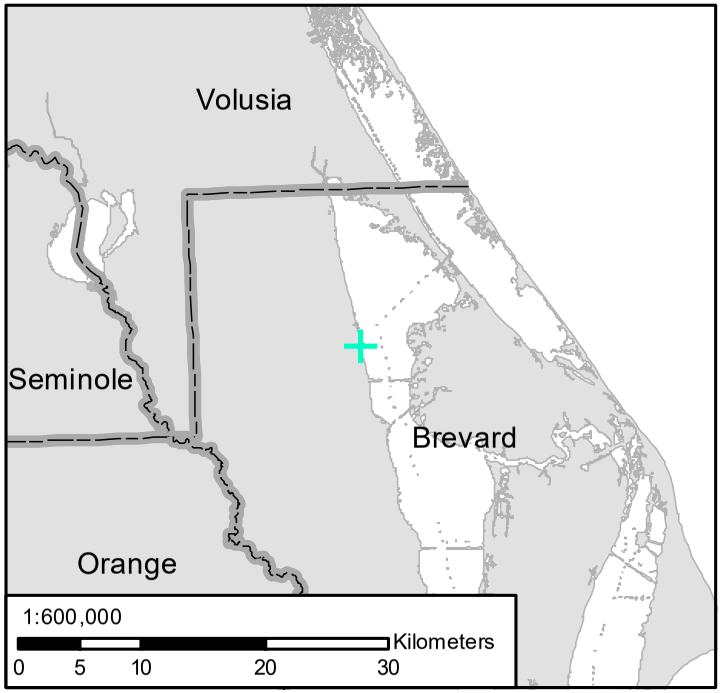
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20054

Report Date: 3/4/2020 **Received Date:** **Received By:**







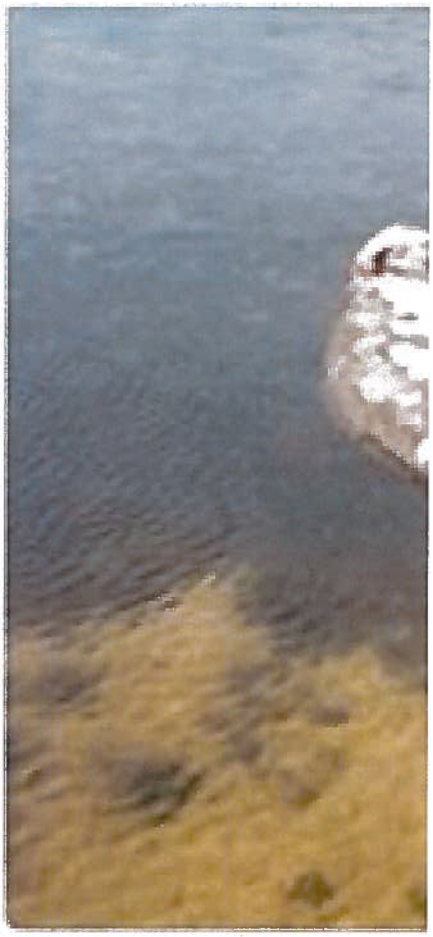
Location: Mims, Brevard County **Latitude:** 28.67604°N **Longitude:** -80.82594°W

Map Created: 3/29/2021

Justin Mckown

Assigned to MyFWC Florida Fish and Wildlife





12:46 PM

Hi Justin - can yo
member would lik

4079209880

Write a reply...

EXHIBIT 2005

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20054
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3567 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 04 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Mims, approximately 275 m SSE of 2000 Jones Ave

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20055**
Date of Report: 2020-Mar-05
Filed By: FWC MMPL

FWC Case # 3612 **FWC Region:** NE

Sex: Male **Length:** 212 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-05 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-05 **By:** FWC-WDG

DATE NECROPSIED: 2020-Mar-06 **By:** MMPL-MdW

LOCATION: **State:** FL **Latitude:** 27.5655 **N**

County: Indian River **Longitude:** -80.36376 **W**

Waterway: Indian River

Location description: Vero Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Emaciated; Bleached epidermis; Skin lesions; Depleted fat(s); Serous fat(s); Dry, hard feces; Relatively empty GI tract; Fliud in pleural cavities.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20055

MORPHOMETRICS:

Total length:	212 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20055
SPECIES *T. manatus latirostris*
RECOVERY DATE 05 March 2020
NECROPSY DATE 06 March 2020
GENDER Male **TL** 212 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 05 March 2020, at 1044 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Vero Beach, Indian River County. FWC case number 3612 was assigned. The complainant, Carl Gustafson (404-583-8166), stated that the carcass was gray, back-up, and 5 to 6 feet long. WDG received a photo of the carcass at 1056 hrs, and requested FWC LE assistance at 1057 hrs to tow it. At 1625 hrs, FWC Officer Marroquin was dispatched and secured the carcass at the Oslo Road boat ramp. WDG arrived at the boat ramp at 1835 hrs, loaded the carcass via Ezy-Lift at 1855 hrs, and transported it to the EC Field Station. **06 March**, WDG transported the carcass, along with MEC20056, to the MMPL arriving at 0830 hrs.

EXTERNAL Almost all of the epidermis was present and sloughing. The carcass was distended with gas. Decompositional fluid exuded from the nares. The eyes were bulging due to decomposition. The ventrum had longitudinal folds after gas release from abdominal incision. There was a thin brown algal mat and mud layer on the dorsal aspect. The epidermis of the right lateral aspect had several small linear ulcerating lesions. The epidermis was bleached on the face, fluke margin, and flippers. The ventral aspect had diffuse bleached lesions in the epidermis. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of gassy abdominal fat, and scant serous mesenteric and omental fat.

STOMACH The stomach contained 50 mL of viscous, pasty, green mucus mixed with a few pieces of poorly chewed, green vegetation. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 25 mL of viscous, pasty, green mucus mixed with a few pieces of poorly chewed, green vegetation. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was friable and contained a scant amount of tan mucus. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained a scant amount of viscous, homogeneous, green paste mixed with a few small pieces of poorly digested, fibrous, green vegetation. The mucosa was autolyzed. No parasites were observed.

COLON The distal colon contained a scant amount of dry, hard, well-formed, well-digested, slightly fibrous, olive green feces. The mid colon contained a scant amount of moist, well-formed, well-digested, fibrous, olive green feces. An ELISA toxicology sample was collected. The proximal colon contained a scant amount of wet, poorly formed, slightly fibrous, well-digested, olive green feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was liquified. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE There was scant serous reproductive fat. The reproductive organs were small and soft, friable, and autolyzed.

KIDNEYS The perirenal fat was rendered. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The bladder contained 4 mL of red-tinged urine. The mucosa was autolyzed. An ELISA toxicology sample was collected.

HEART There was scant serous epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right pleural cavity contained 1 L and the left pleural cavity contained 250 mL of dark red fluid. The lungs were pink to light red on serosal and cut surfaces. The airways were clear. The mucosa was unremarkable. There was a mild infection of small dead trematodes. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bleached epidermis
- Emaciated
- Skin lesions
- Depleted, serous fat
- Dry, hard feces
- Relatively empty GI tract
- Fluid in pleural cavities
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

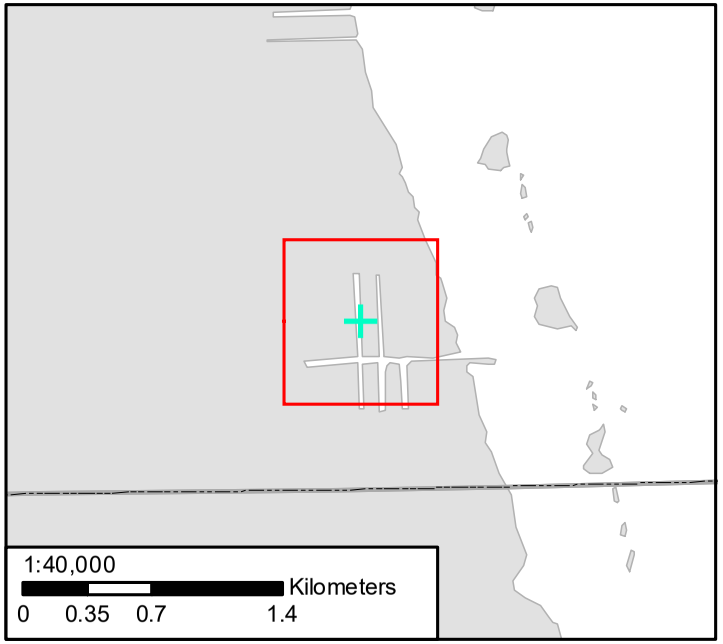
Martine de Wit, DVM

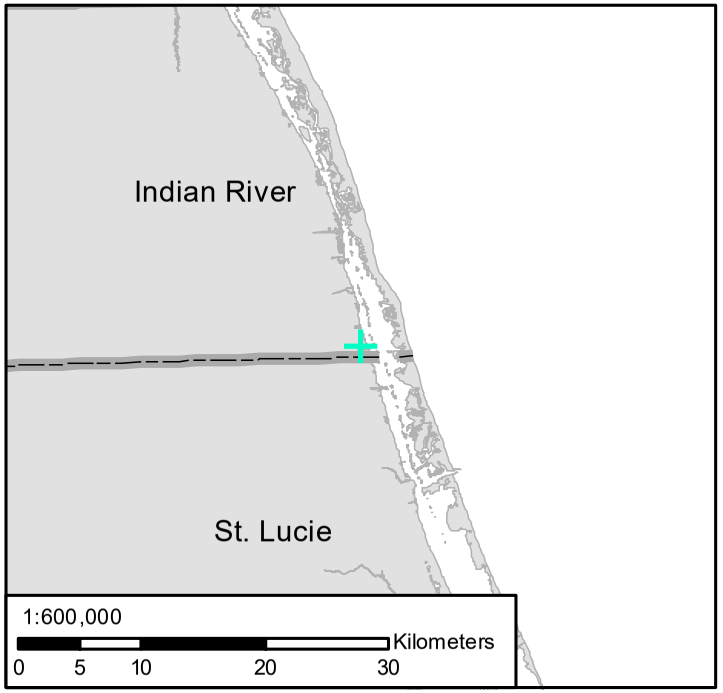
REPORT FILED BY de Wit

Verified Location of Manatee Carcass MEC20055

Report Date: 3/5/2020 **Received Date**: 3/5/2020 **Received By**: FWC-WDG







Location: Vero Beach, Indian River County

Latitude: 27.5655°N **Longitude**: -80.36376°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20055
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3612 FWC District: FWC NE
Sex: M / F / Undetermined Length: 212 cm (estimated _____) Weight _____ kg.
Date reported: 05 MAR 2020 By: CITIZEN TO FWC NE DISPATCH - ORLANDO
Date collected: 05 MAR 2020 By: FWC - WDC
Date necropsied: 6 Mar. 20 By: MMPL MdW

LOCATION: State: FL (___) County: INDIAN RIVER Waterway: INDIAN RIVER
Latitude: _____ N Longitude: _____ W
Locality description: VERO BEACH, NEAR 2014 5TH COURT SE

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics - Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other_____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other feces mid colon
Genetics Box #_____
Female reproductive findings of N/A
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other_____

PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

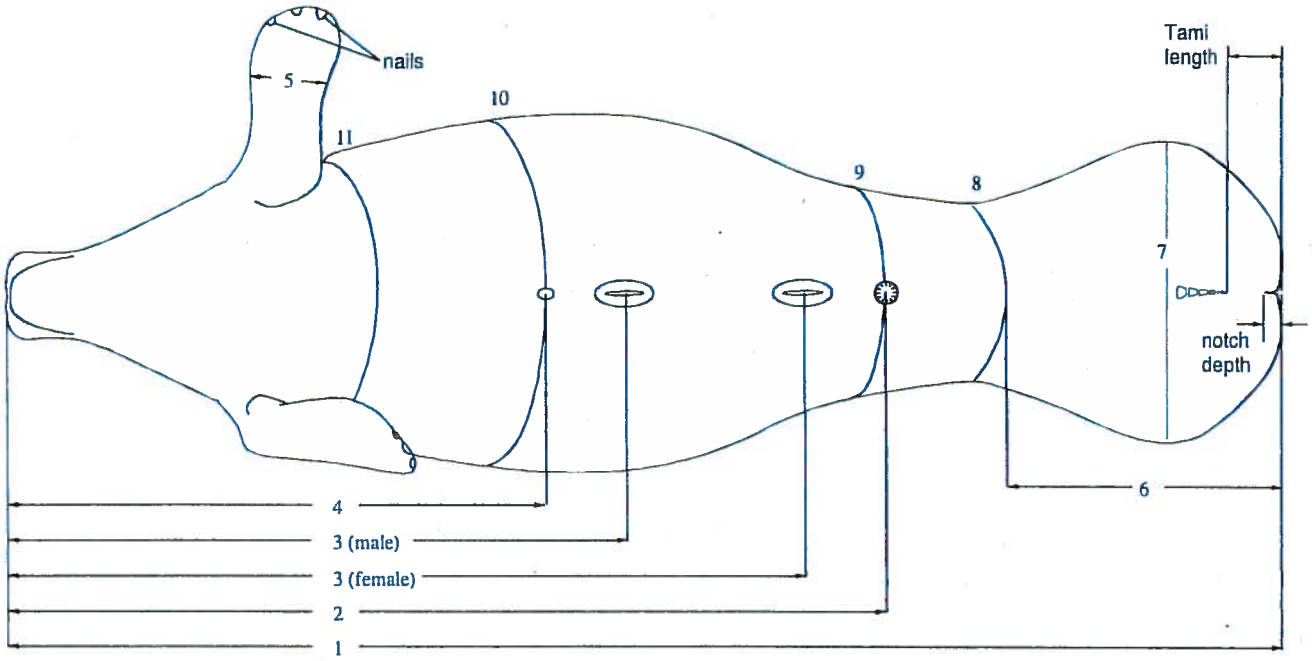
REMARKS: _____

Field ID #_____

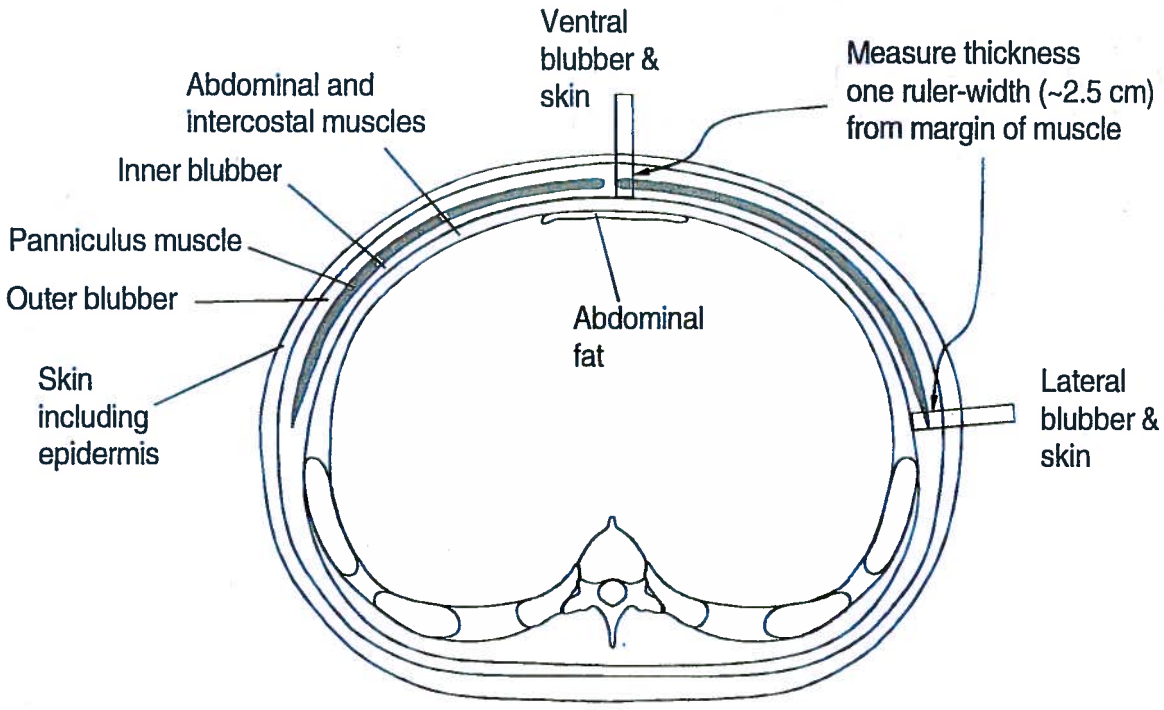
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C _____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8. *Girth at fluke base _____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae _____ cm

(Nail count: L___R___)



Skin and Blubber (cm).	Ventral	Lateral	
Skin.....	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat.....	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat.....	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20055
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3612 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 05 March 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 05 March 2020 **By**: FWC- WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 20 m W of 1963 6th Avenue SE

Carcass Orientation: Floating

CONDITION: -

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20056**
Date of Report: 2020-Mar-05
Filed By: FWC MMPL

FWC Case # 3631 **FWC Region:** NE

Sex: Male **Length:** 226 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-05 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-05 **By:** FWC-WDG

DATE NECROPSIED: 2020-Mar-06 **By:** MMPL-MdW

LOCATION: **State:** FL **Latitude:** 27.84443 **N**

County: Brevard **Longitude:** -80.49797 **W**

Waterway: Sebastian River

Location description: Sebastian, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Cobblestone-like epidermis; Healing skin lesions; Depleted fat(s); Serous fat(s); Serous muscle; Thick mud layer; Empty duodenum.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Plastic in stomach. Macroalgae in stomach.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20056

MORPHOMETRICS:

Total length:	226 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20056
SPECIES *T. manatus latirostris*
RECOVERY DATE 05 March 2020
NECROPSY DATE 06 March 2020
GENDER Male **TL** 226 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 05 March 2020, at 1350 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in St. Sebastian River in Sebastian, Brevard County. FWC case number 3631 was assigned. The complainant, Ellen Flowers (207-557-0169), stated that the carcass was under her neighbor's dock and due to the location she was unable to get a photo. WDG arrived at the location at 1455 hrs and located the carcass at 1505 hrs. The carcass was loaded via Ezy-Lift at 1525 hrs and transported to the EC Field Station. **06 March**, WDG transported the carcass, along with MEC20055, to the MMPL arriving at 0830 hrs.

EXTERNAL Approximately 90% of the epidermis was present and sloughing. The carcass was distended with gas. Bloody and decompositional fluid exuded from the nares. The dorsal and lateral aspects were coated with a thick layer of mud. There were a few small healing lesions in the epidermis of the dorsal aspect. The epidermis of the flippers was bleached. The ventral epidermis had thin cobblestone-like patches. The eyes were bulging due to decomposition. No watercraft-related wounds were observed. A minimum of three well-healed watercraft-related scar patterns was present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant serous abdominal, mesenteric, and omental fat.

STOMACH The stomach contained 1.5 L of moist, moderately chewed, fibrous, green and brown vegetation, mangrove propagules, and stringy, soft, green macroalgae. The mucosa was autolyzed. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained a scant amount of viscous grey fluid and pieces of brown leaves. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The distal and mid small intestine were empty of contents. The proximal small intestine contained a scant amount of viscous, thick, grey fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 2 L of dry, moderately digested, fibrous, leafy, brown to green digesta. The mucosa was autolyzed. No parasites were observed.

COLON The distal colon contained a moderate amount of dry, well-formed, well-digested, slightly fibrous, dark green and light brown feces. The mid colon contained a moderate amount of moist, well-formed, moderately digested, fibrous, leafy, light to dark brown feces. There were two pieces (8.5 and 17.5 cm long) of thin plastic string in the contents. The proximal colon contained a moderate amount of dry, fibrous, leafy, well-formed, moderately digested, green, brown, and black feces. The mucosa was autolyzed throughout. There was a mild infection of dead trematodes in the proximal colon.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was liquified. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE The reproductive fat was rendered. The reproductive organs were small and autolyzed.

KIDNEYS The perirenal fat was rendered. The kidneys were liquified.

URINARY BLADDER The urinary bladder contained 100 mL of watery, red-tinged urine. The mucosa was autolyzed. An ELISA toxicology sample was collected.

HEART The epicardial fat was rendered. The heart was liquified.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER Most muscle and subdermal fat was serous.

COMMENTS

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Thick mud layer
- Healing skin lesions
- Depleted, serous fat
- Serous muscle
- Empty duodenum
- Plastic string in colon
- Macroalgae in stomach
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

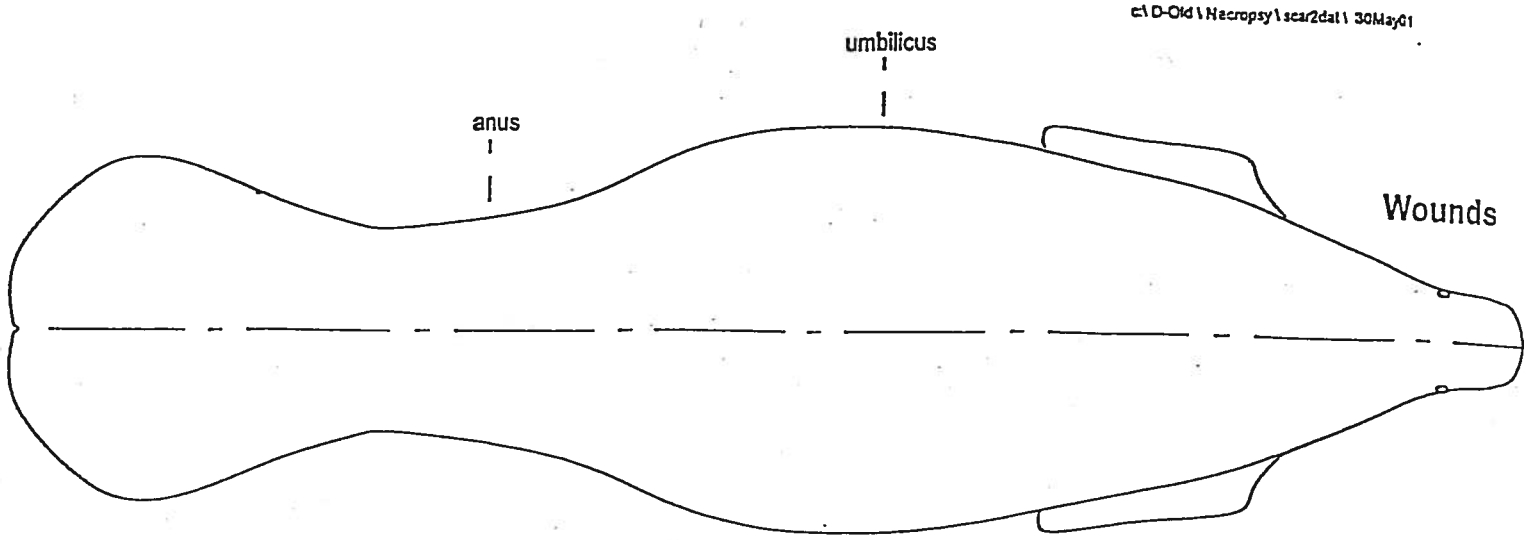
NECROPSY CONDUCTED BY

Martine de Wit, DVM

REPORT FILED BY de Wit

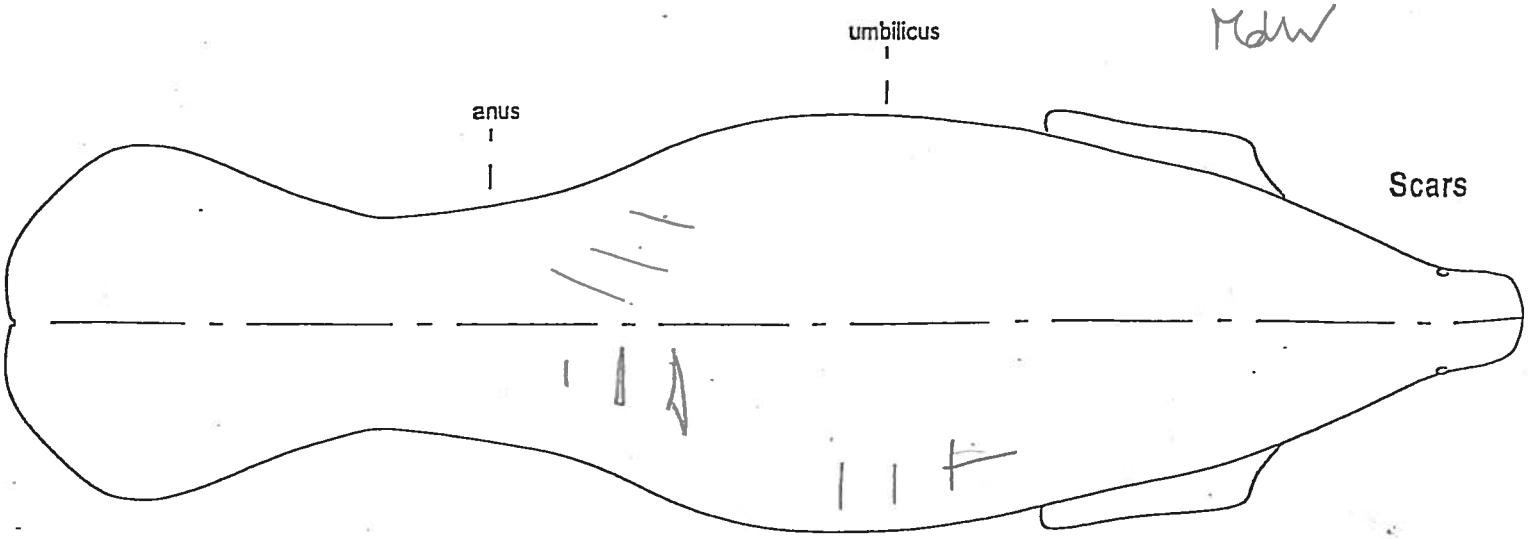
Date 6 March '20 Field I.D. MEC20056

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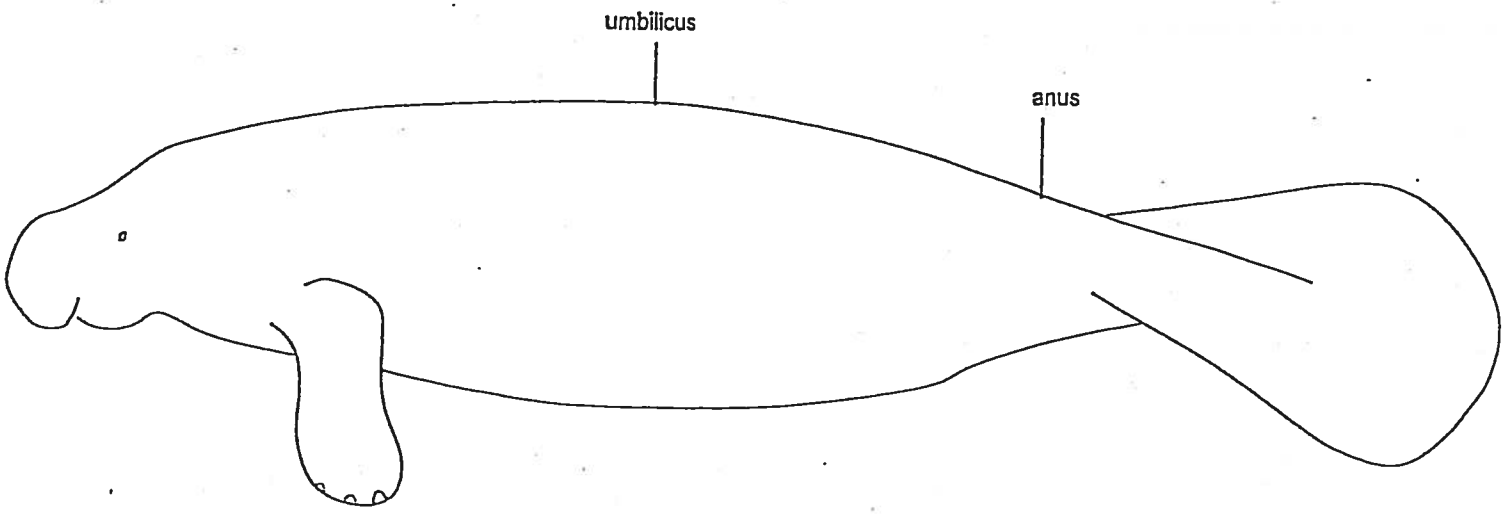


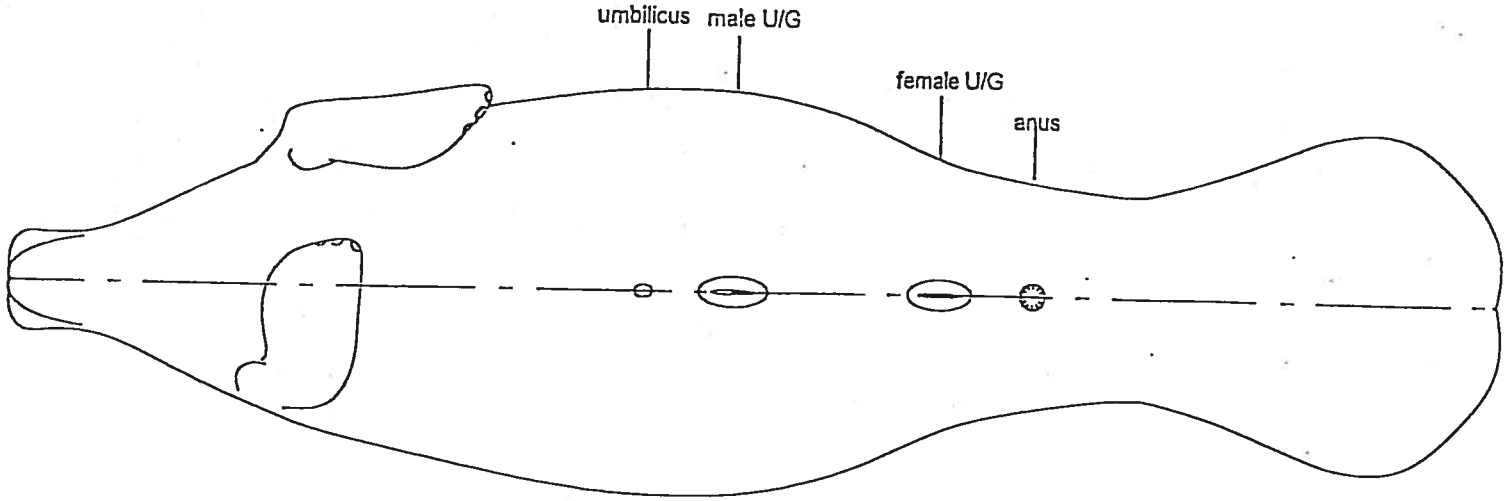
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Length																				
Width																				
Depth																				
Distance																				

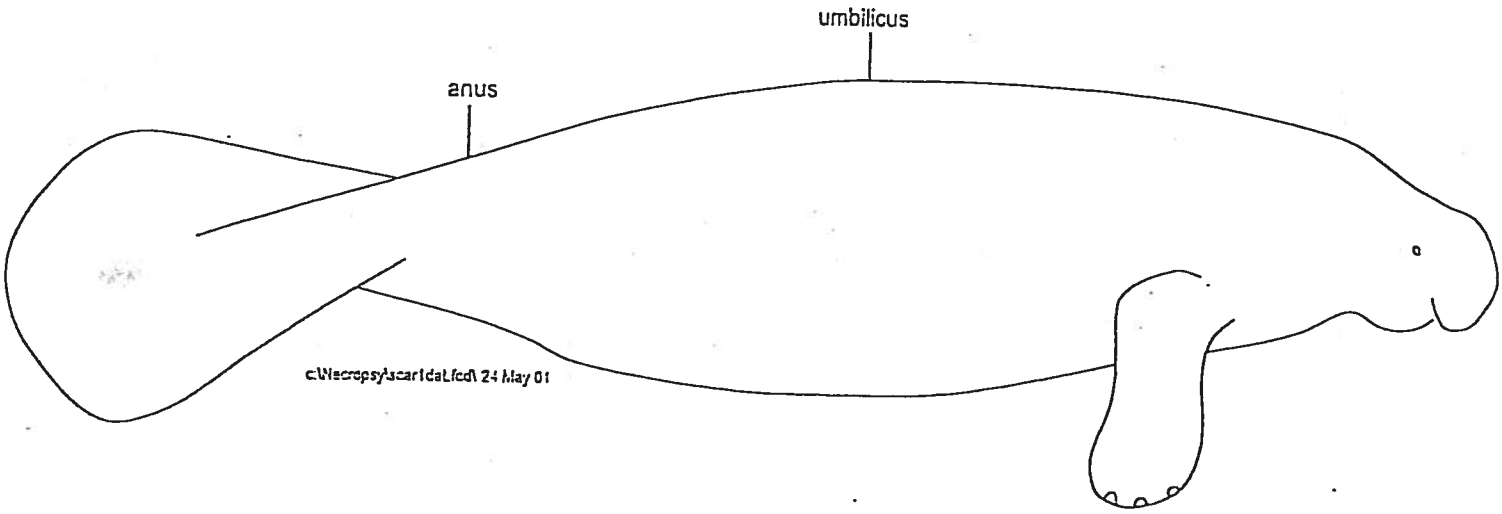
MdW



FIELD I.D. _____


umbilicus
anus

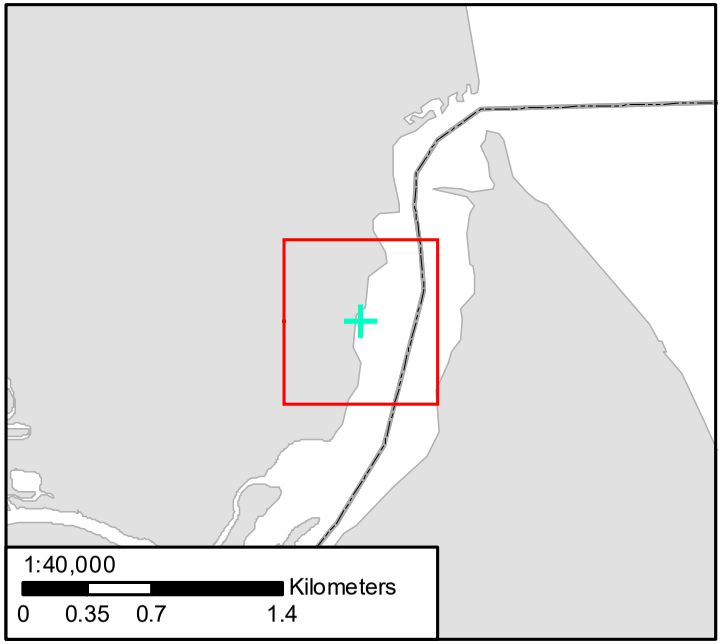

umbilicus
male U/G
female U/G
anus

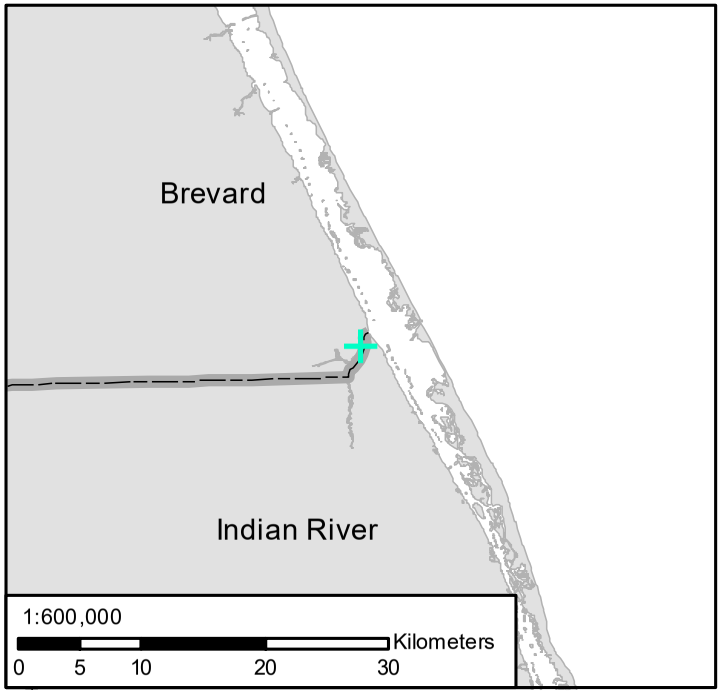

umbilicus
anus
c:\Necropsy\scartdat.fcd\ 24 May 01

Verified Location of Manatee Carcass MEC20056

Report Date: 3/5/2020 **Received Date**: 3/5/2020 **Received By**: FWC-WDG







Location: Sebastian, Brevard County

Latitude: 27.84443°N **Longitude**: -80.49797°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20056
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3631 FWC District: FWC NE
Sex: M / F / Undetermined Length: 226 cm (estimated _____) Weight _____ kg.
Date reported: 05 MAR 2020 By: CITIZEN TO FWC NE DISPATCH - ORLANDO
Date collected: 05 MAR 2020 By: FWC-WOG
Date necropsied: 6 March '20 By: MMPL MdW

LOCATION: State: FL (___) County: BREVARD Waterway: SEBASTIAN RIVER
Latitude: _____ N Longitude: _____ W
Locality description: SEBASTIAN, BEHIND 9864 RIVERVIEW DRIVE

CONDITION: - Fresh - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics - Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other Stomach cont in alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: Stomach - Liver - Lung – Urine - Kidney (if no urine) – Other_____
Genetics Box #_____
Female reproductive findings or **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other_____

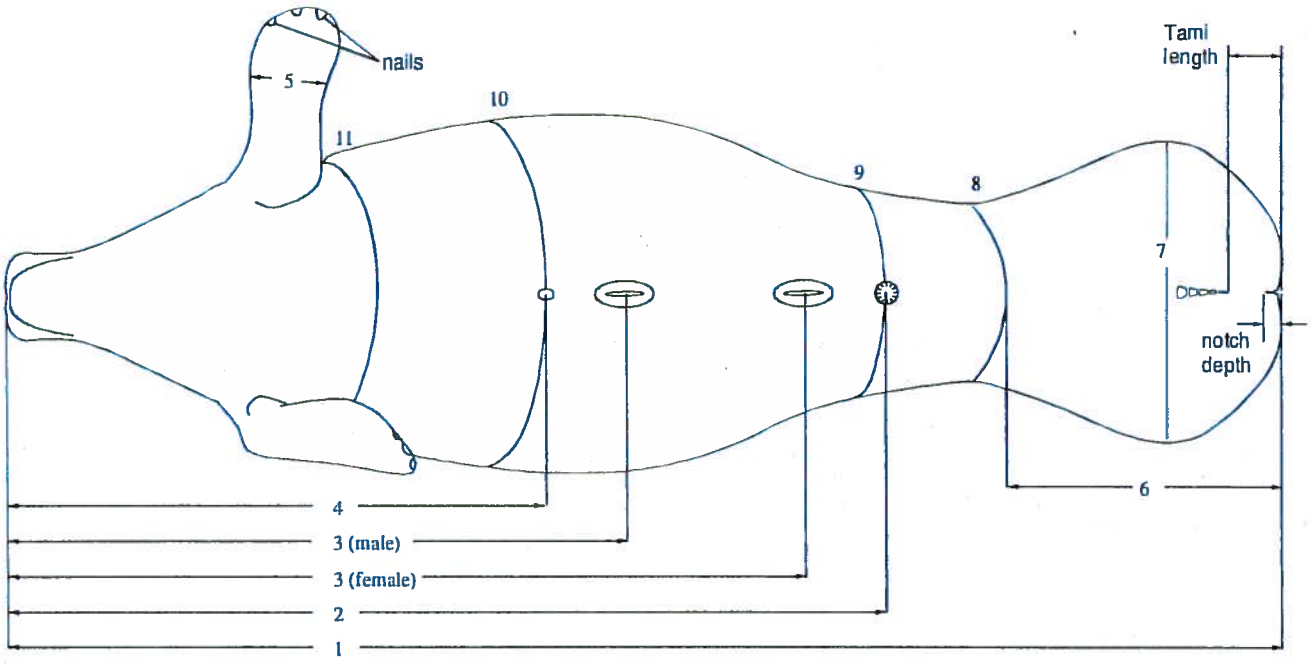
PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

REMARKS: _____

Field ID #_____

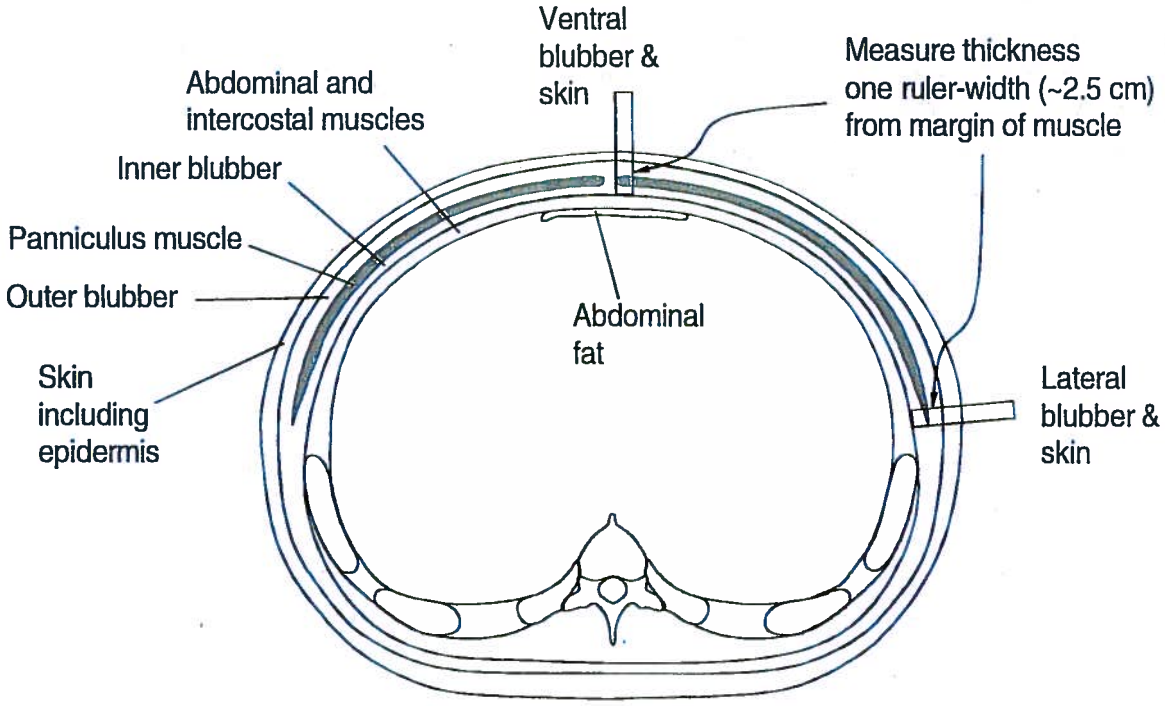
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C ____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8.*Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm
(Nail count: L___R___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin.....	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat.....	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat.....	_____ cm	_____ cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20056
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3631 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 05 March 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 05 March 2020 **By**: FWC- WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: St. Sebastian River
Latitude: N _____ **Longitude**: W _____
Locality description: Sebastian, approximately 65 m SE of 9860 Riverview Drive

Carcass Orientation: Grounded

CONDITION: -

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:

☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:

☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:

☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20057**
Date of Report: 2020-Mar-05
Filed By: FWC NE Field Station

FWC Case # 3652 **FWC Region:** NE

Sex: Female **Length:** 261 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-05 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-06 **By:** FWC-KAT

DATE NECROPSIED: 2020-Mar-07 **By:** FWC-ACP,KAT

LOCATION: **State:** FL **Latitude:** 28.90214 **N**
County: Volusia **Longitude:** -80.85256 **W**
Waterway: Indian River North
Location description: Oakhill, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Healing skin lesions; Depleted fat(s); Serous fat(s); Wet lung(s); Bloody lung(s); Congested GI wall.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC NE Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in cecum, colon. Scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20057

MORPHOMETRICS:

Total length:	261 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20057
SPECIES *T. manatus latirostris*
RECOVERY DATE 06 March 2020
NECROPSY DATE 07 March 2020
GENDER Female **TL** 261 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 05 March 2020, at 1720 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River North, Edgewater, Volusia County. FWC case number 3652 was assigned. The complainant, Libby Livette (386-631-8389), provided a photo and reported the dead manatee was observed with a smaller manatee climbing on it (presumed male). ARH requested officer assistance and was informed an officer was assigned to the case for the next morning. ARH relayed the information to EC Field Station staff. FWC biologist-Bill Greer requested assistance from NE Field Station staff and passed along the information at 1750 hrs. **06 March**, at 0813 hrs, FWC biologist-Kyanna A. Tamborini (KAT) called Dispatch and was informed FWC Officer Malicoat was assigned the case. At 0915 hrs, KAT contacted Officer Malicoat who agreed to launch a boat and search the area. Officer Malicoat located the carcass at 1202 hrs and towed it to the River Breeze Park boat ramp. KAT arrived at the boat ramp at 1428 hrs, loaded the carcass into the carcass trailer at 1453 hrs, and transported it to the NE Field Station at 1720 hrs. **07 March**, KAT and FWC biologist-Allison C. Burns transported the carcass to Buck Island where a field necropsy was completed at 1155 hrs.

EXTERNAL Approximately 65% of the epidermis was present but sloughing. The muzzle was slightly eroded due to decomposition. The tissue around the right eye was torn due to scavenging. A thin green and brown algal mat was present on the dorsal aspect. A few healing linear and pitted lesions were observed. The epidermis of the axillae was bleached. Numerous bleached spots were observed on the dorsum. The tissue surrounding the anus was torn due to scavenging. A minimum of five well-healed watercraft-related scar patterns was observed on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal fat and a small amount of mesenteric and omental fat. There was approximately 1.65 L of red-tinged fluid in the abdominal cavity.

STOMACH The stomach contained approximately 1.2 L of moist, fibrous, well-chewed, brown to orange ingesta mixed with green to orange fibrous pieces and a small amount of viscous, white mucus. The mucosa was pink. No parasites were observed.

DUODENUM The duodenum contained approximately 225 mL of wet, chunky, green to brown ingesta mixed with small pieces of brown and red vegetation. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained gray fluid. The mucosa was autolyzed. The distal small intestine contained gritty, brown to orange fluid mixed with fibrous pieces of red ingesta. Patches of the wall were congested. No parasites were grossly observed throughout.

CECUM The cecum contained approximately 1.6 L of wet, well-digested, fibrous, green and red digesta. There was a 25 cm long piece of clear monofilament line in the digesta. The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained moist, fibrous, poorly formed, dark gray to green feces. The mid colon contained moist, well-formed, dark gray to green feces. A 7 cm long piece of lime green monofilament line was found in the mid colon which was near a linear region of congestion in the wall. The distal colon contained moist, fibrous, well-formed, green feces mixed with several small black seeds. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was gassy. Serosal and cut surfaces were pink.

SPLEEN The spleen was firm. Serosal surfaces were grey and cut surfaces were dark purple and slightly bloody.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained approximately 5 mL of dark orange bile. The mucosa was stained orange.

REPRODUCTIVE There was a small amount of reproductive fat. The uterine horns were small in diameter. No scars were present. There was a scant amount of slightly viscous, red to brown fluid in the right uterine horn.

KIDNEYS There was scant perirenal fat. The kidneys were gray to brown on serosal surfaces and red on cut surfaces. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained approximately 600 mL of pink urine. The mucosa was autolyzed.

HEART There was a small amount of epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were green to blue on serosal surfaces and red to brown, bloody, and wet on cut surfaces. The primary airways contained a scant amount of brown fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bleached epidermis
- Healing skin lesions
- Depleted, serous fat
- Wet, bloody lungs
- Congested GI wall
- Monofilament in cecum, colon
- Autolyzed internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

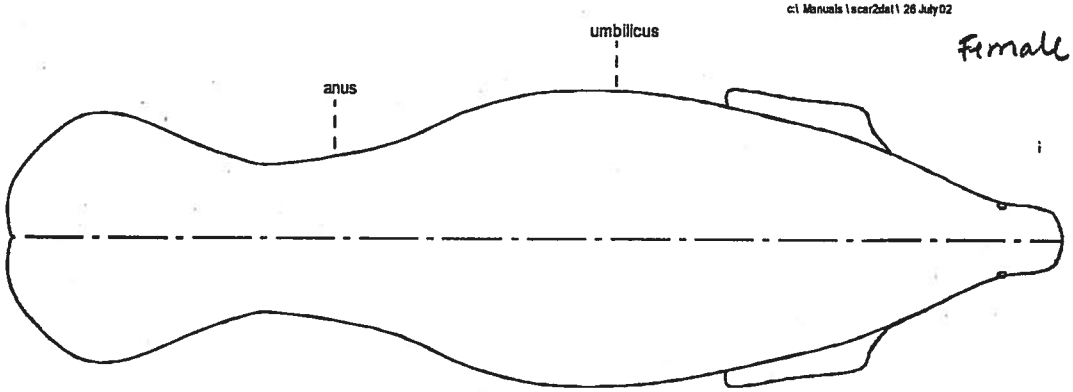
Allison C. Burns
Kyanna A. Tamborini

REPORT FILED BY Tamborini

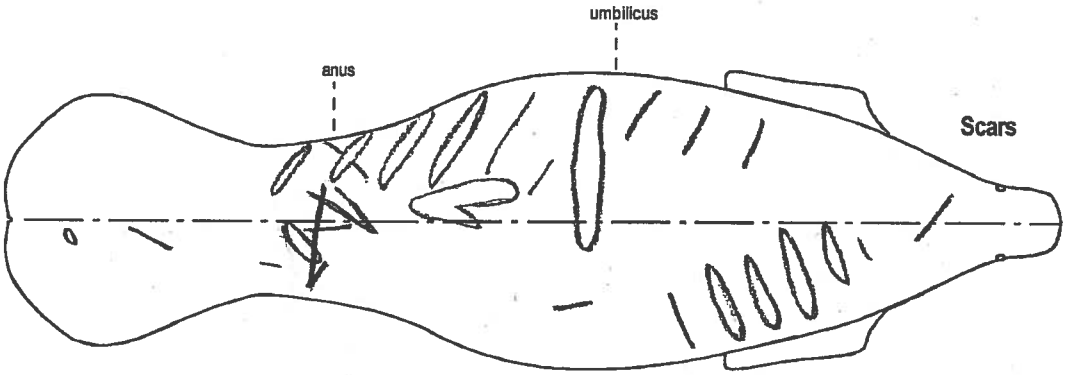
Date 07 March 2020 Field I.D. MEC20057

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Female : 241 cm



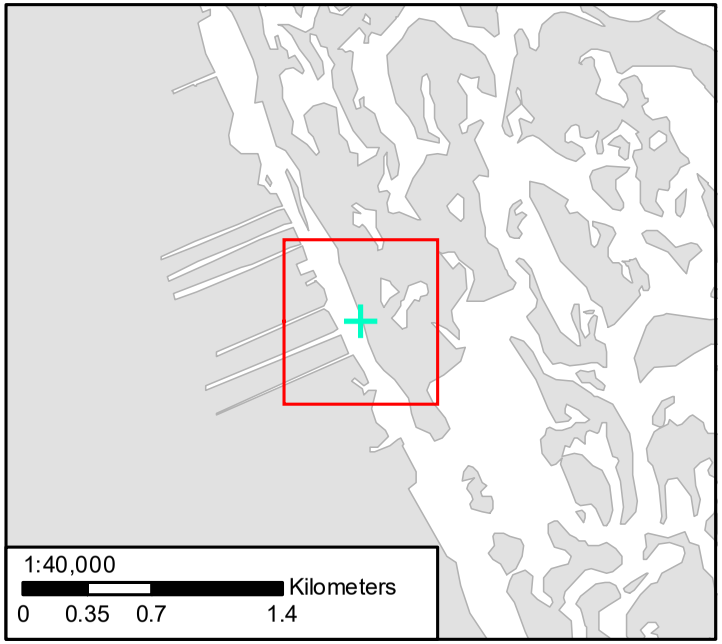
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
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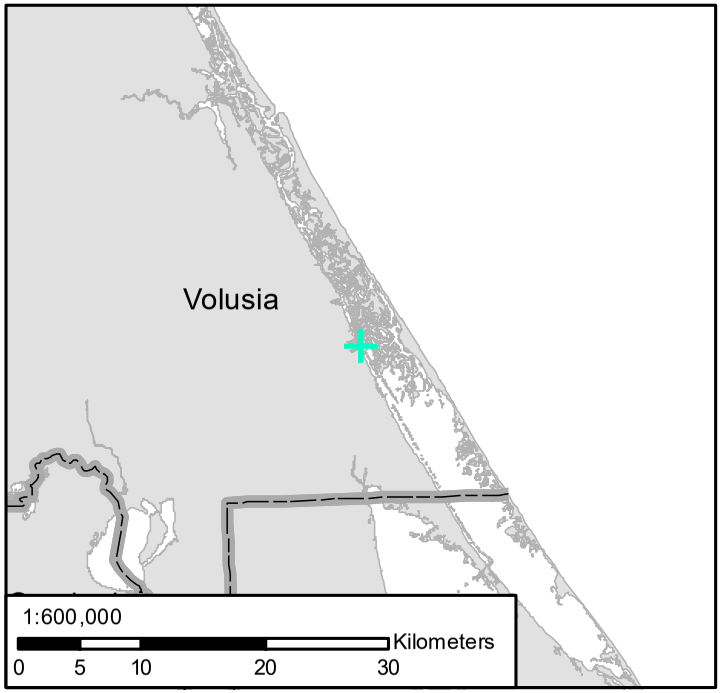


Verified Location of Manatee Carcass MEC20057

Report Date: 3/5/2020 **Received Date**: 3/6/2020 **Received By**: FWC-KAT







Location: Oakhill, Volusia County

Latitude: 28.90214°N **Longitude**: -80.85256°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20057
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3652 **FWC District**: Northeast
Sex: Female **Length (cm)**: 261 **Estimated** _____ **Weight (kg)** N/T
Date reported: 05 March 2020 **By**: Libby Livette (386-631-8389)
Date collected: 06 March 2020 **By**: Kyanna A. Tamborini, FWC LE Ofc. Megan Malicoat
Date necropsied: 07 March 2020 **By**: Allison C. Burns, Kyanna A. Tamborini

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Indian River North
Latitude: N 28.90215 **Longitude**: W -80.852583
Locality description: Oakhill; approximately 125 m NE of 289 Randle Ave

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☑ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20059**
Date of Report: 2020-Mar-09
Filed By: FWC EC Field Station

FWC Case # 3828 **FWC Region:** NE

Sex: Female **Length:** 180 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-09 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-09 **By:** FWC-SMW

DATE NECROPSIED: 2020-Mar-09 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.06248 **N**

County: Brevard **Longitude:** -80.59247 **W**

Waterway: Indian River

Location description: Palm Bay, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Cold stress lesions; Cobblestone-like epidermis; Empty stomach; Scavenging.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20059

MORPHOMETRICS:

Total length:	180 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20059
SPECIES *T. manatus latirostris*
RECOVERY DATE 09 March 2020
NECROPSY DATE 09 March 2020
GENDER Female **TL** 180 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 09 March 2020, at 0834 hrs, FWC intern-Kelly L. Etherton (KLE) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Indian River in Palm Bay, Brevard County. FWC case number 3828 was assigned. The complainant, Martina Hufnagel (321-272-0372), stated that the carcass was belly-up and white with vultures on it. KLE and FWC biologist-Sara M. Wappes arrived at the residence at 0927 hrs, located the carcass at 0929 hrs, and towed it to a nearby remote shoreline. A field necropsy was completed by 1034 hrs. The remains were left onsite.

EXTERNAL Approximately 50% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. There were rents at the anus, urogenital opening, and mid ventrum due to decomposition and/or scavenging. There was a moderate brown algal mat on the remaining dorsal and lateral epidermis. Circular lesions were observed on the left lateral aspect. Healing linear lesions were present on all aspects. There was cobblestone-like epidermis on the ventral fluke. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. Internal organs were missing unless mentioned below.

STOMACH The stomach contained a scant amount of viscous, tan fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum was torn due to decomposition and empty of contents. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was friable when handled and contained viscous, light brown fluid. The proximal small intestine wall was rugose. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 300 mL of moist, moderately digested, stringy, leafy, orange to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON Only the proximal-most 0.5 meter of colon remained which contained moist, moderately formed, poorly digested, leafy, woody, stringy orange to brown feces. There was one 16 cm long piece of black monofilament line in the contents (see photo). The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft and friable. Serosal surfaces were mottled gray and black, and cut surfaces were tan.

LIVER The liver was soft, friable, and autolyzed.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Scavenging
- Cold stress lesions
- Cobblestone-like epidermis
- Empty stomach
- Monofilament in colon

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

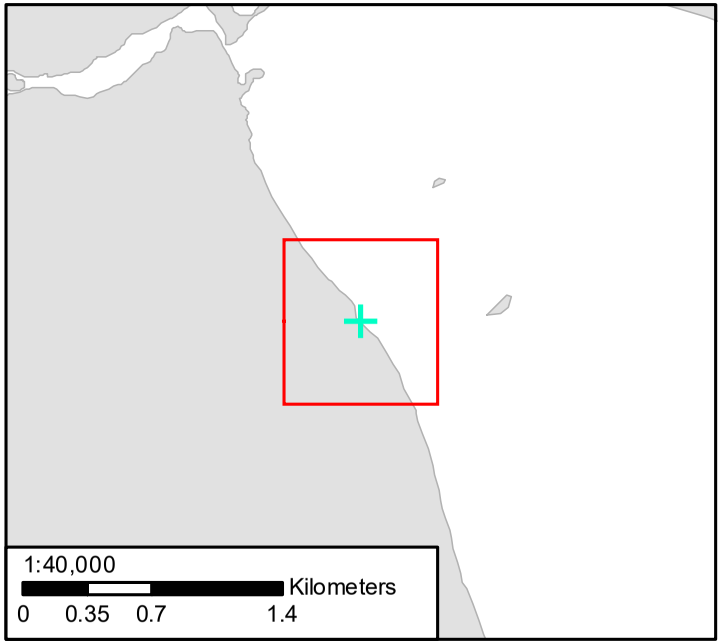
Sara M. Wappes
Kelly L. Etherton (FWC intern)

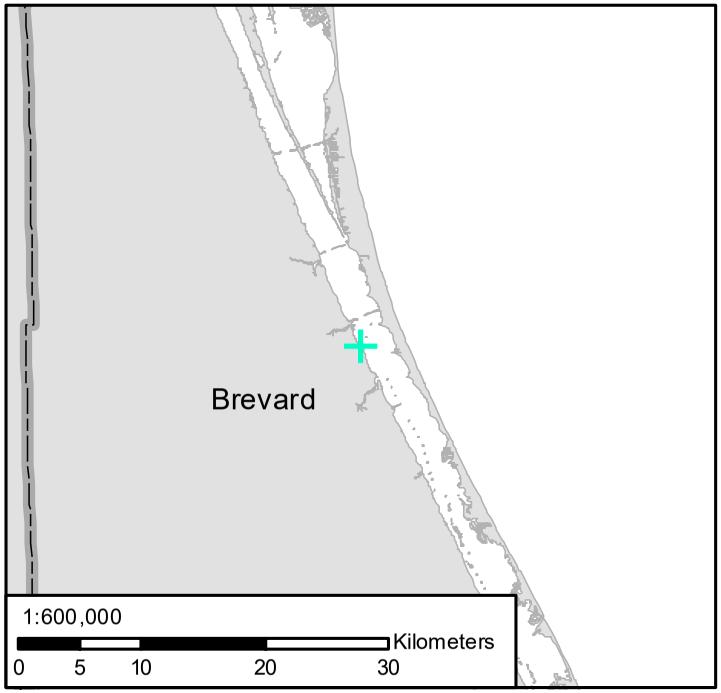
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20059

Report Date: 3/9/2020 **Received Date**: 3/9/2020 **Received By**: FWC-SMW







Location: Palm Bay, Brevard County

Latitude: 28.06248°N **Longitude**: -80.59247°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20059
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3828 **FWC District**: Northeast
Sex: Female **Length (cm)**: 180 **Estimated** _____ **Weight (kg)** _____
Date reported: 09 March 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 09 March 2020 **By**: FWC-SMW, FWC intern-K. Etherton
Date necropsied: 09 March 2020 **By**: FWC-SMW, FWC intern-K. Etherton

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 40 m E of 2471 Riverview Drive NE.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Rents due to decomposition and/or scavenging, internal organs autolyzed or missing

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20060**
Date of Report: 2020-Mar-09
Filed By: FWC EC Field Station

FWC Case # 3870 **FWC Region:** NE

Sex: Female **Length:** 190 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-09 **By:** FWC Officer to FWC NE Dispatch
DATE COLLECTED: 2020-Mar-11 **By:** FWC-SMW,CMM
DATE NECROPSIED: 2020-Mar-11 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 27.94189 **N**
County: Brevard **Longitude:** -80.53158 **W**
Waterway: Indian River
Location description: Grant-Valkaria, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Scavenging; Empty upper GI tract; Remodeled ribs with necrotic bone fragment.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Actual length of the remains was 184 cm. Macroalgae in cecum.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20060

MORPHOMETRICS:

Total length:	190 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20060
SPECIES *T. manatus latirostris*
RECOVERY DATE 11 March 2020
NECROPSY DATE 11 March 2020
GENDER Female **TL** 190 **cm** (est) **WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 09 March 2020, at 1723 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Grant, Brevard County. FWC case number 3870 was assigned. The complainant, FWC Lieutenant Zamonis, reported a dead adolescent manatee along the shoreline. It was too dark to take a picture, so he agreed to return the following day. At 1824 hrs, DMB forwarded the information to the EC Field Station. **10 March**, at 1130 hrs, Lt. Zamonis sent a photo of the carcass to FWC biologist-William D. Greer. Due to the rescue of REC2009, no response was available that day. **11 March**, FWC biologists-Sara M. Wappes and Carley M. Metcalf arrived at the Christenson's Landing boat ramp at 1408 hrs, launched the Key West boat, and towed the carcass to a nearby spoil island. A field necropsy was completed by 1515 hrs. The remains were left onsite.

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There were rents due to decomposition and/or scavenging at the face, axillae, neck, and caudal ventrum. A moderate infestation of barnacles was present on the remaining dorsal fluke epidermis. No watercraft-related scars or wounds were grossly observed. Actual length of the remains was 184 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. Internal organs were missing unless mentioned below.

STOMACH The stomach contained a scant amount of viscous, tan fluid (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 50 mL of watery, opaque, tan fluid (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained watery, gray fluid throughout. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 200 mL of wet, well-digested, stringy, brown digesta mixed with yellow macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

COLON Approximately one meter of unattached colon remained which contained moist, well-digested, well-formed, slightly tacky, homogeneous, brown feces. The mucosa was autolyzed. No parasites were observed.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and gray to pink on cut surfaces.

GALLBLADDER The gallbladder contained approximately 10 mL of dark orange bile. The mucosa was bile-stained.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. Only the right lung remained and was soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON The ribs were luxated and subluxated due to decomposition. Right ribs 15 and 16 were

remodeled at the mid one-third (see photo). The remodeling of right rib 16 was associated with a loose fragment of necrotic bone.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Scavenging
- Empty upper GI tract
- Remodeled ribs with necrotic bone fragment
- Macroalgae in cecum

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

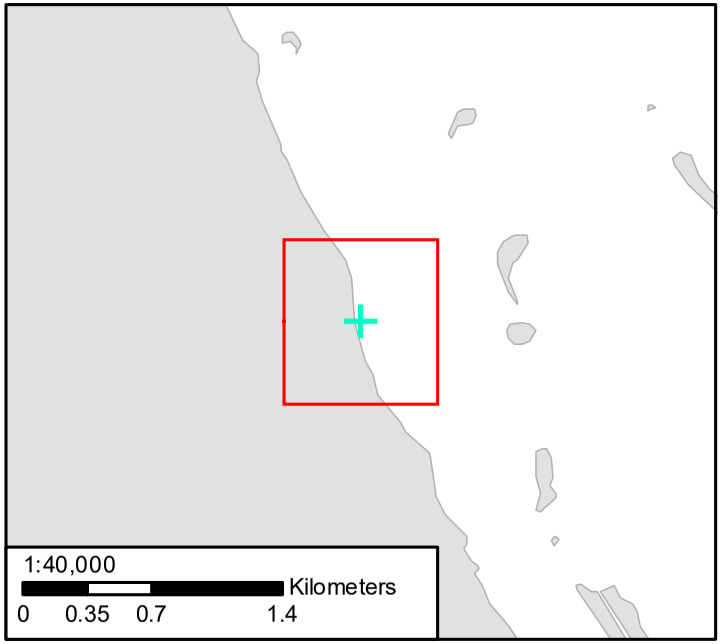
Sara. M Wappes
Carley M. Metcalf

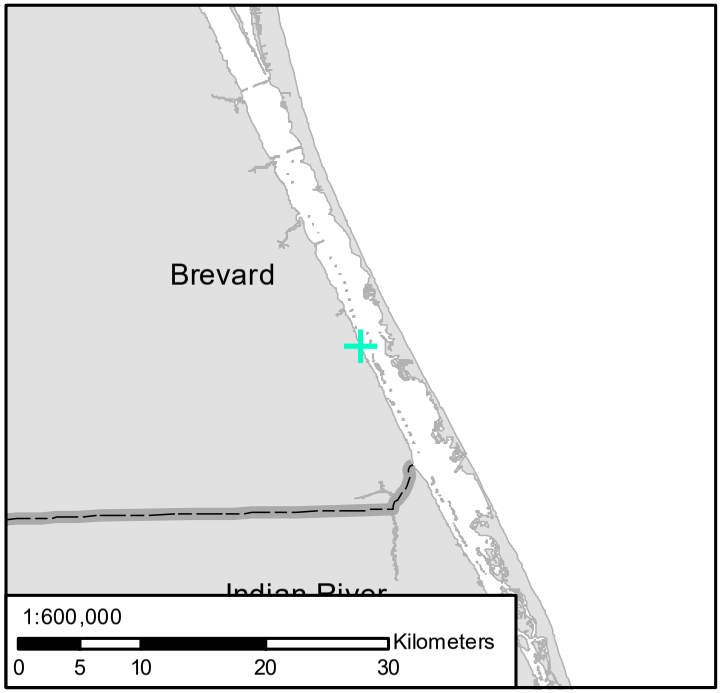
REPORT FILED BY Metcalf / Wappes

Verified Location of Manatee Carcass MEC20060

Report Date: 3/9/2020 **Received Date:** 3/11/2020 **Received By:** FWC-SMW,CMM







Location: Grant-Valkaria, Brevard County

Latitude: 27.94189°N **Longitude:** -80.53158°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20060
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3870 **FWC District**: Northeast
Sex: Female **Length (cm)**: 184 **Estimated** 190 **Weight (kg)** _____
Date reported: 09 March 2020 **By**: FWC-Lt. Zamonis to FWC NE Dispatch-Orlando
Date collected: 11 March 2020 **By**: FWC-SMW, CMM
Date necropsied: 11 March 2020 **By**: FWC-SMW, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Grant-Valkaria, approximately 115 m E of 4730 Highway 1.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Autolyzed, missing internal organs, ribs #15 and 16 had spongy section

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20061**
Date of Report: 2020-Mar-10
Filed By: FWC EC Field Station

FWC Case # 3924 **FWC Region:** NE

Sex: Female **Length:** 272 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-10 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-11 **By:** FWC-SMW,CMM

DATE NECROPSIED: 2020-Mar-11 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.22394 **N**

County: Brevard **Longitude:** -80.61595 **W**

Waterway: Banana River

Location description: Satellite Beach, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Watercraft wound(s); Bloody lung(s); Bloody nares; Copious bloody fluid from left lifting cut; Remodeled left ribs.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20061

MORPHOMETRICS:

Total length:	272 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20061
SPECIES *T. manatus latirostris*
RECOVERY DATE 11 March 2020
NECROPSY DATE 11 March 2020
GENDER Female **TL** 272 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 10 March 2020, 1516 hrs, FWC intern-Kelly L. Etherton received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River in Satellite Beach, Brevard County. FWC case number 3924 was assigned. The complainant, Keitha Patillo-Bain (321-271-9832), reported the carcass grounded one mile north of the Pineda Causeway. At 1540 hrs, FWC biologist-Carley M. Metcalf (CMM) verified the carcass via photograph. **11 March**, CMM and FWC biologist-Sara M. Wappes (SMW) arrived at the Patrick Air Force Base boat ramp at 0950 hrs and launched the Key West boat at 0958 hrs. CMM and SMW located the carcass at 1020 hrs, towed it to a nearby remote location, and completed a field necropsy at 1224 hrs. The remains were left onsite.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was distended with gas. Copious watery, red fluid exuded from the nares and caudal lateral incisions. Dead trematodes exuded from the nares. There was one watercraft-related wound series on the left lateral aspect of the peduncle consisting of three parallel wounds that partially penetrated the dermis. A minimum of four well-healed watercraft-related scar patterns was observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach contained 2 L of moist, very poorly chewed, woody, leafy, fibrous, stringy, orange to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 500 mL of slightly moist, poorly chewed, woody, leafy, stringy, green, yellow, and brown ingesta mixed with yellow macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a small amount of moist, poorly chewed, poorly formed, stringy, leafy, green to brown ingesta mixed with yellow macroalgae. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 2 L of slightly moist, poorly digested, very stringy, very leafy, green to brown digesta mixed with yellow macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained moist, well-formed, poorly digested, very stringy, very fibrous, green to brown feces. The mid colon contained moist, well-formed, moderately digested, stringy, fibrous, brown feces. The distal colon contained slightly moist, well-formed, well-digested, slightly stringy, slightly fibrous, green to black feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was not examined.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained orange to black.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed. The uterus was contracted. The

right uterine horn contained a scar. The left uterine horn was autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was gassy.

HEART The heart was soft. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were mottled red, blue, and dark brown on serosal surfaces, and dark red and bloody on cut surfaces. The primary airways contained a small amount of watery, red fluid. There was a mild infection of dead trematodes in the left lung primary airway.

HEAD & NECK REGIONS There was a small amount of dirt in the trachea.

SKELETON Left rib 12 was remodeled at the mid one-third (see photo). Left rib 13 was remodeled at the distal one-third (see photo).

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Watercraft wounds
- Bloody nares, lungs
- Copious bloody fluid from left lifting cut
- Remodeled left ribs
- Macroalgae in GI tract

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

Sara M. Wappes
Carley M. Metcalf

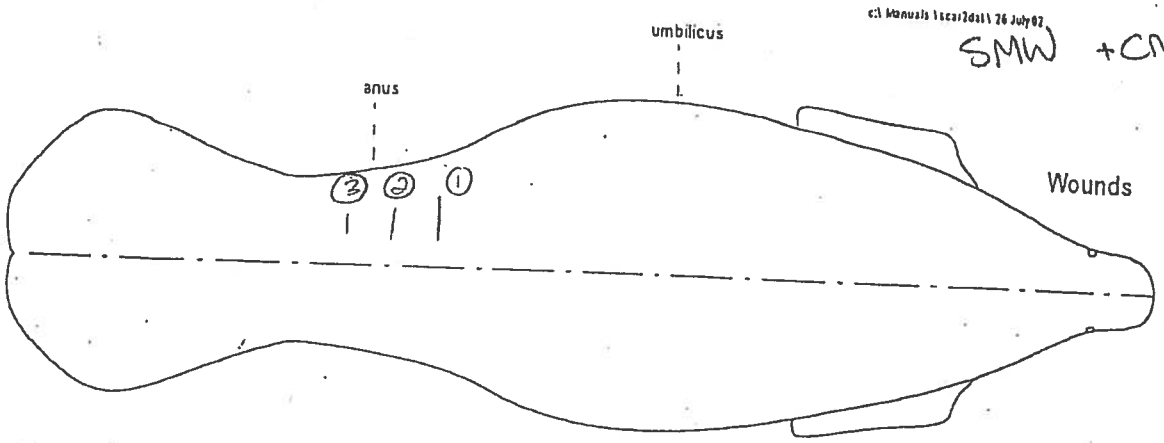
REPORT FILED BY Metcalf / Wappes

Date 11 Mar 2020

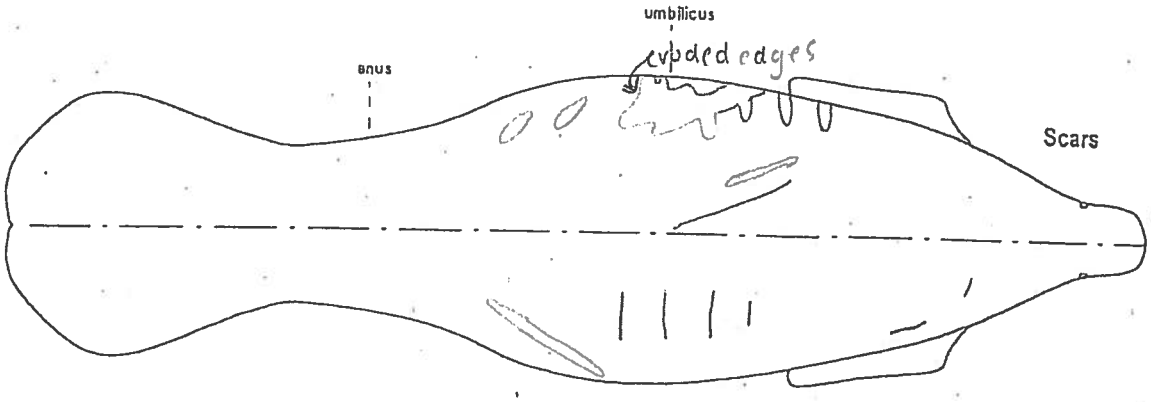
Field I.D. MFC20061

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SMW +CMM



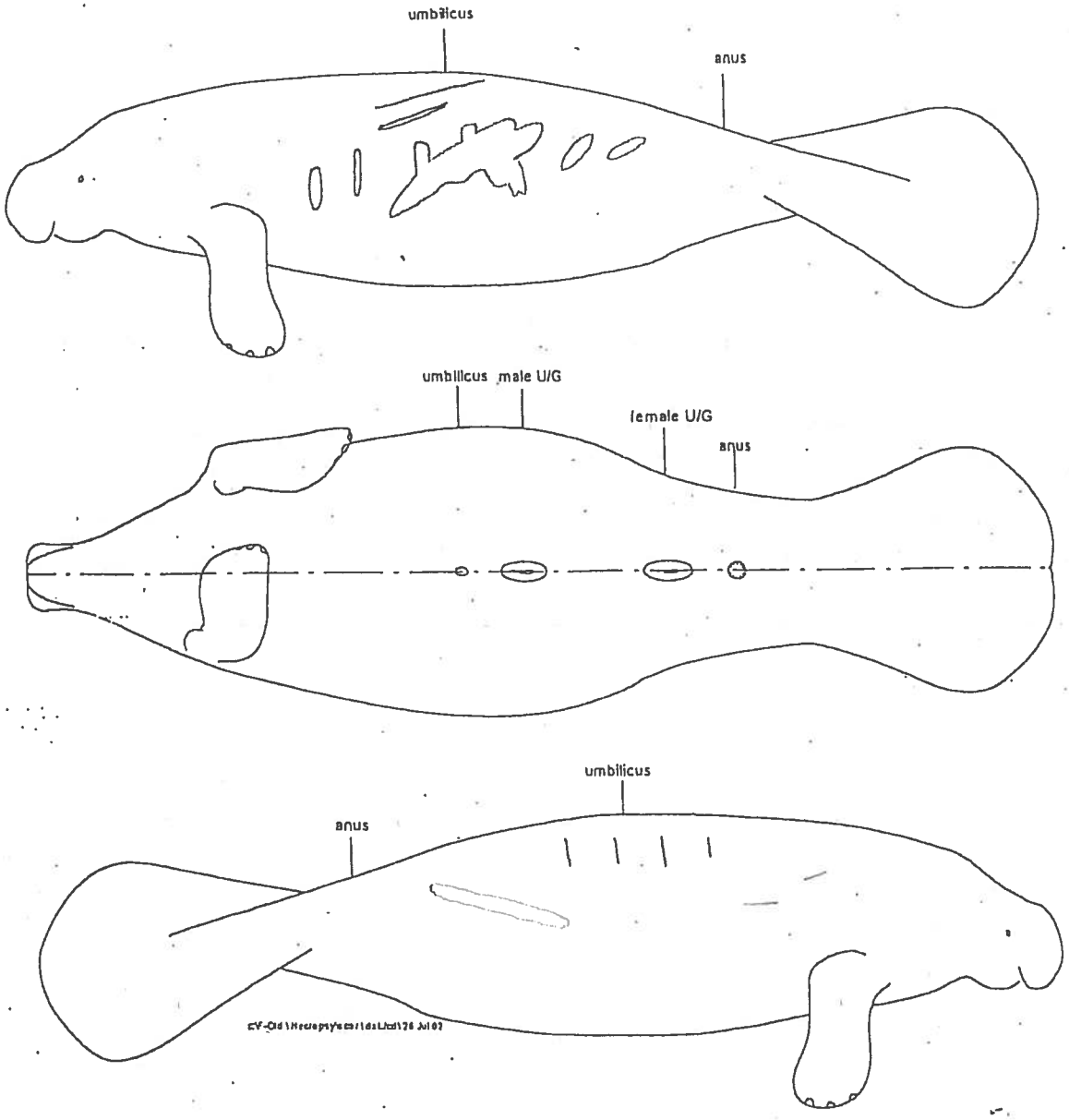
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Length	6.0	8.5	7.0																	
Width	0.4	0.5	0.1																	
Depth	0.1	0.1	-																	
Distance	11.2	10.0																		



FIELD I.D. MEC20061

CMM

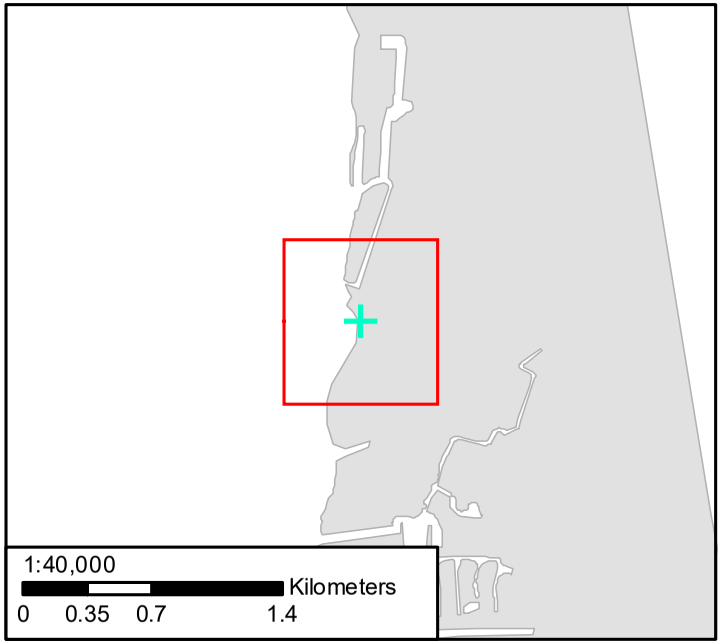
scars heavily eroded

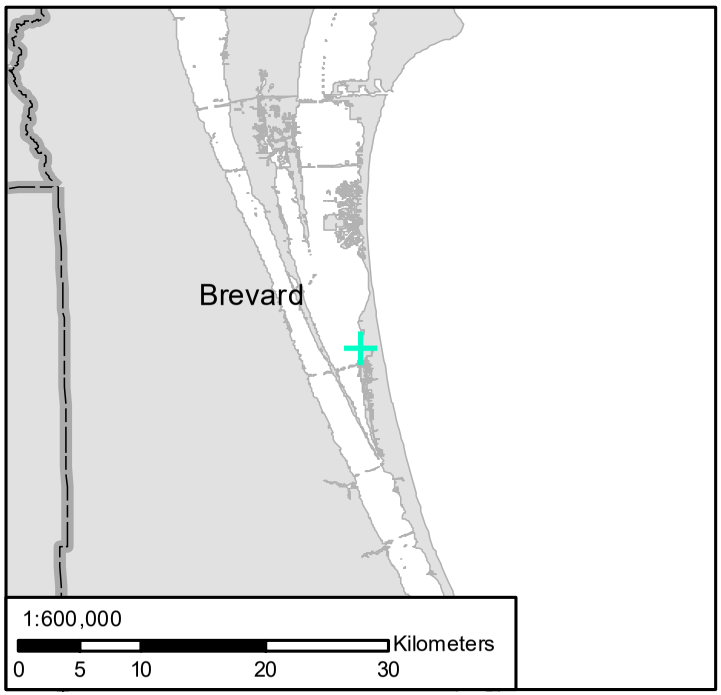


Verified Location of Manatee Carcass MEC20061

Report Date: 3/10/2020 **Received Date:** 3/11/2020 **Received By:** FWC-SMW,CMM







Location: Satellite Beach, Brevard County **Latitude:** 28.22394°N **Longitude:** -80.61595°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20061
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3924 **FWC District**: Northeast
Sex: Female **Length (cm)**: 272 **Estimated** _____ **Weight (kg)** _____
Date reported: 10 March 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 11 March 2020 **By**: FWC-SMW, CMM
Date necropsied: 11 March 2020 **By**: FWC-SMW, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 1.35 km NNW of 452 Thrush Drive.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Autolyzed and missing internal organs, superficial propeller wounds on peduncle, remodeled ribs 12 and 13, copious amounts of watery, red fluid exuded from nares and lateral incisions

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20062**
Date of Report: 2020-Mar-11
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Unknown **Length:** 275 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-11 **By:** KSC-Doug Scheidt to FWC-SMW

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.58199 **N**

County: Brevard **Longitude:** -80.64087 **W**

Waterway: Banana River

Location description: Merritt Island,

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20062

MORPHOMETRICS:

Total length:	275 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20062 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 275 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 11 March 2020, at 1303 hrs, FWC biologist-Sara M. Wappes (SMW) received a phone call from Kennedy Space Center-Doug Scheidt regarding a dead manatee in the turning basin at the Kennedy Space Center in Merritt Island, Brevard County. At 1307 hrs, SMW received a photo of the carcass. Due the significant decomposition and limited site accessibility, the carcass was not recovered or necropsied.

EXTERNAL From photograph - All of the ventral epidermis was missing. There were numerous rents on the ventrum due to decomposition and/or scavenging. A rib was visible through a rent at the left axilla. The carcass was dorsoventrally flattened due to decomposition.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

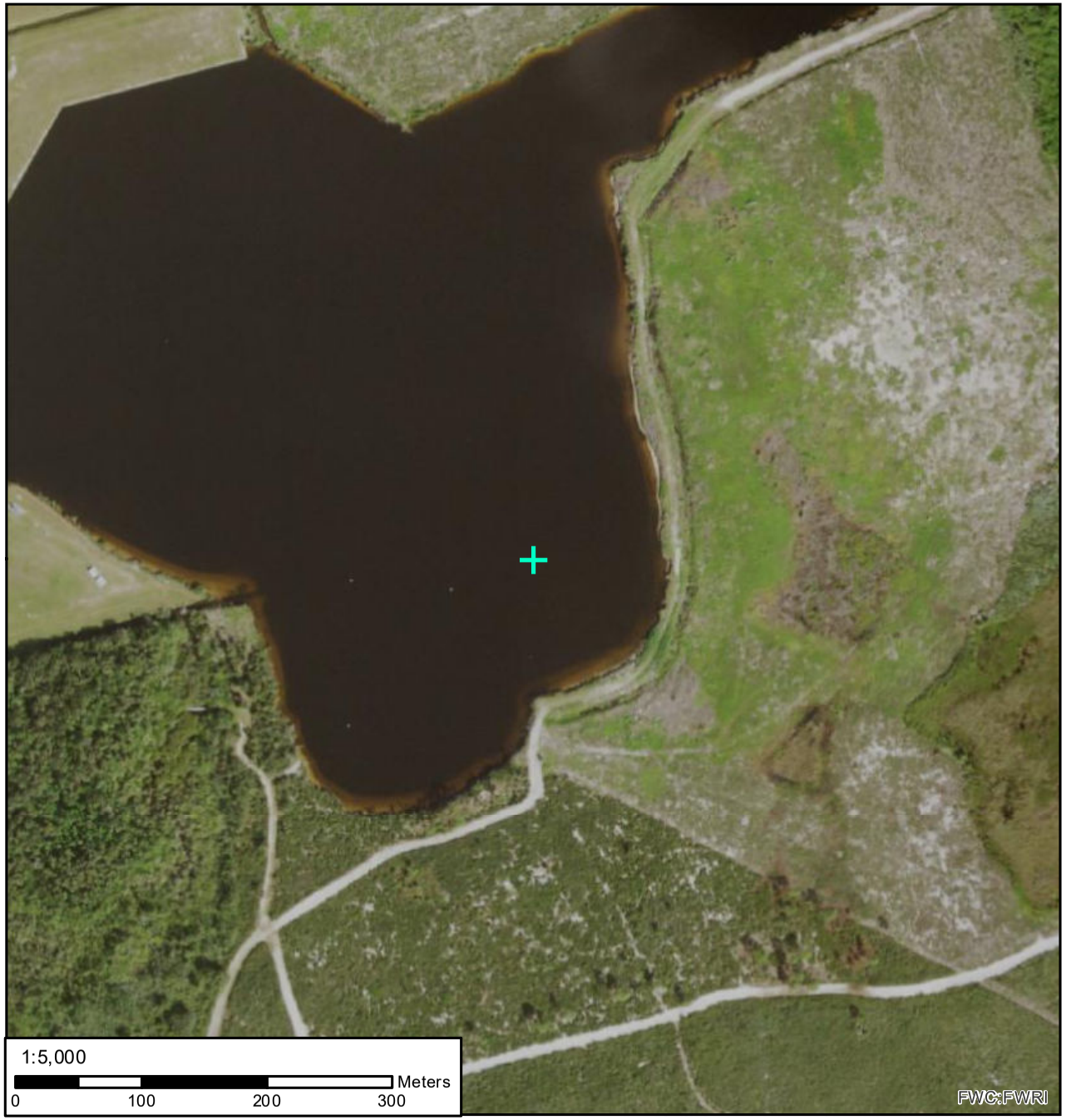
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

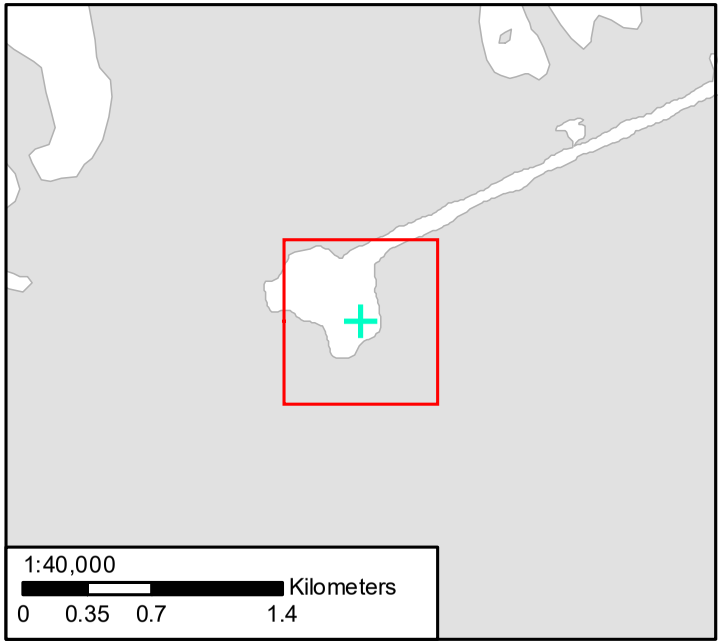
NECROPSY CONDUCTED BY N/A

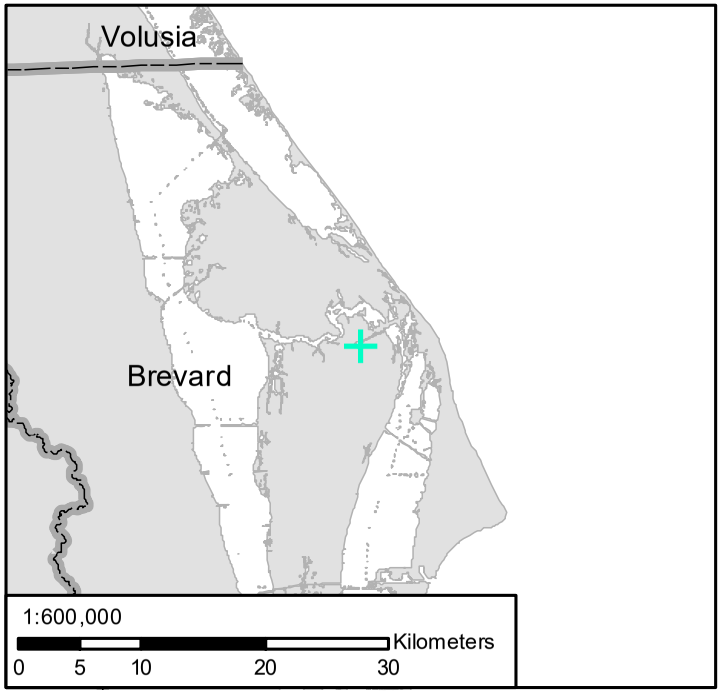
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20062

Report Date: 3/11/2020 **Received Date**: **Received By**:





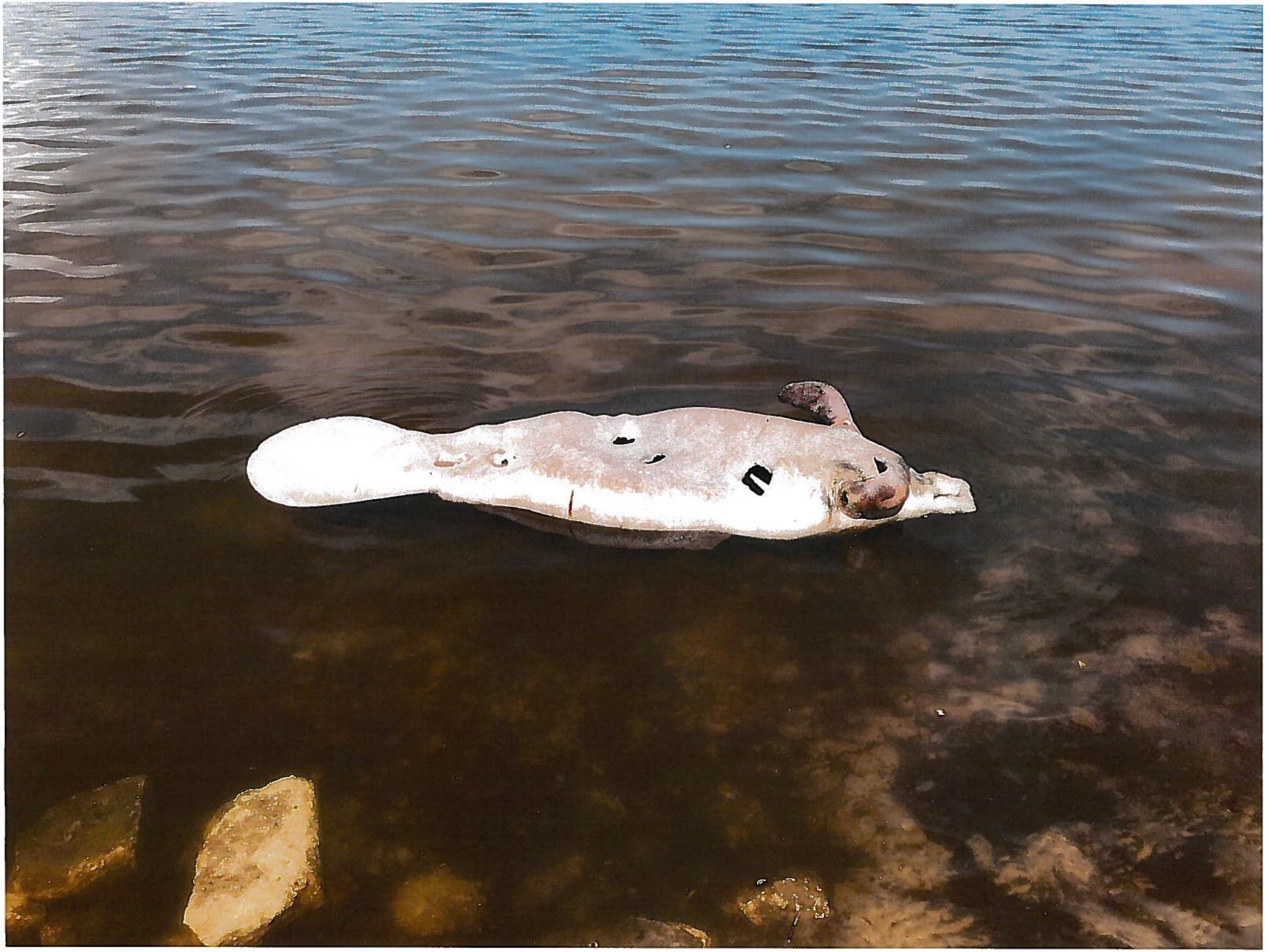


Location: Merritt Island, Brevard County

Latitude: 28.58199°N **Longitude**: -80.64087°W

Map Created: 3/29/2021

MEC20062



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20062
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 275 **Weight (kg)** _____
Date reported: 11 March 2020 **By**: KSC-Doug Scheidt to FWC-SMW
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: KSC Turning Basin
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 990 m SE of Vehicle Assemby Building at NASA and 1.45 km E of the intersection of Kennedy Parkway N and Saturn Cswy.
Carcass Orientation: -

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20063**
Date of Report: 2020-Mar-12
Filed By: FWC EC Field Station

FWC Case # 4048 **FWC Region:** NE

Sex: Female **Length:** 281 **cm** **Weight:** 386.0 **kg**

DATE REPORTED: 2020-Mar-12 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-12 **By:** FWC-CMM

DATE NECROPSIED: 2020-Mar-13 **By:** MMPL-MdW,AJG,SMT

LOCATION: **State:** FL **Latitude:** 27.81114 **N**
County: Indian River **Longitude:** -80.46424 **W**
Waterway: Indian River
Location description: Sebastian, floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Torn muscle; Shredded muscle; Hemorrhagic muscle; Fractured scapula (e); Luxated rib(s); Blood clots; Hemothorax; Collapsed lung(s); Torn parietal pleura; Dark line kidney(s); Wet lung(s); Frothy lung; Froth in trachea; Watery fluid exuding from nares; Congested mesenteries, peritoneum; Dark red ascites; Caulerpa in mouth; Black specks abdominal fat.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Stomach and mouth contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Lactating. Uterine Scar. Healing watercraft wound(s); Skin lesions; Bleached epidermis; Serous fat(s); Thick algal mat. Fluid-filled small intestine, cecum, proximal colon; Cecum-, proximal colon mucosa sloughing in sheets; Macroalgae in GI tract; Also FWC case numbers 4020 and 4032.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20063

MORPHOMETRICS:

Total length:	281 cm	**Fluke base:**	77 cm	**Girth at axillae:**	**cm**
Snout to anus:	188 cm	**Fluke width:**	70 cm		
Snout to U/G:	174 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	105 cm	**Girth at anus:**	cm		
Flipper width:	16 cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	0.9 cm	2 cm		
Outer Blubber Thickness:	1.6 cm	0.8 cm	**Abdominal Fat Thickness:**	0.3 cm
Inner Blubber Thickness:	0.5 cm	0.7 cm	**Epidermis Thickness:**	0.1 cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left	4.2	3.5
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20063 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 12 March 2020 **NECROPSY DATE** 13 March 2020
GENDER Female **TL** 281 **cm WT** 386 **kg** **CONDITION** Moderately Decomposed

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HISTORY 12 March 2020, at 0931 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding an injured manatee in the Indian River in Sebastian, Indian River County. FWC case number 4020 was assigned. The complainant, Jesse Austin (321-604-8901), described an injured manatee laying on its side, bobbing. No photo was available. At 1132 hrs, CMM received a text alert from Dispatch regarding a dead manatee in the Indian River in Sebastian. FWC case number 4032 was assigned. The complainant, David Jensen (207-233-2966), reported a dead manatee covered in barnacles, floating high in the water, with no visible markings. No photo was available. At 1422 hrs, CMM received a text alert from Dispatch regarding an injured manatee in the Indian River in Sebastian. FWC case number 4048 was assigned. The complainant, Kyle Fullburn (561-262-1621), described the manatee as floating and not breathing. FWC turtle research staff were passing the location and FWC volunteer-Paul Lins, who was aboard the vessel, secured the carcass for recovery. CMM arrived at the Sebastian Yacht Club at 1559 hrs, loaded the carcass at 1646 hrs, and transported it to the EC Field Station. **13 March**, FWC intern-Kelly L. Etherton transported the carcass to the MMPL arriving at 0946 hrs.

EXTERNAL All of the epidermis was present. Copious watery light red fluid and dead trematodes exuded from the nares. There was a fresh superficial wound on the right shoulder region. The left dorsal fluke had two superficial parallel healing wounds. There was an ulcerating lesion in the epidermis of the left dorsal fluke. The epidermis of the head, axillae, and flippers was bleached. The epidermis of the ventral aspect had diffuse bleached mottling. There was a minimum of seven well-healed watercraft-related scar patterns on the dorsal aspect. There was a thick brown and green algal mat on the dorsal and lateral aspects. There was a moderate infestation of barnacles. Copepods were present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate serous abdominal fat, and a small amount of serous mesenteric and omental fat. There were black specks on the abdominal fat. The peritoneum had streaks of severe congestion. The abdomen contained 1.25 L of watery, dark red fluid.

STOMACH The stomach contained 5.5 L of moist, moderately chewed, leafy, fibrous, woody, green, brown, and dark pink vegetation including macroalgae. The ingesta were coated with a thin layer of tan mucus. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 3.5 L of moist, moderately chewed, leafy, fibrous, woody, green, brown, and dark pink vegetation including macroalgae and 500 mL of dark green fluid. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The serosa had diffuse dark red patches which were associated with Peyer's patches. The mid and proximal small intestine contained a large amount of dark green fluid mixed with a moderate amount of poorly chewed *Caulerpa*. The distal small intestine contained a small amount of white and tan mucus. The mucosa was unremarkable throughout. The Peyer's patches were prominent. No parasites were grossly observed.

CECUM The caudal mesenteric lymph nodes were enlarged and autolyzed. The cecum contained 1.25 L of watery dark green to black fluid mixed with moderately digested pieces of tan mangrove propagules and green to grey macroalgae including *Caulerpa*. The mucosa was sloughing in sheets. No parasites were observed.

COLON The mesentery was severely congested. The proximal-most one meter contained a large amount of

watery dark green to black fluid mixed with moderately digested pieces of tan mangrove propagules and green to grey macroalgae including *Caulerpa*. The mucosa was sloughing in sheets. The remainder of the proximal colon contained a moderate amount of wet, moderately digested, olive green feces mixed with macroalgae and tan mangrove propagules. The mid colon contained a moderate amount of moist, well-digested, slight stringy, moderately formed, olive green feces. The distal colon contained a moderate amount of moist, well-digested, slightly stringy, well-formed, green feces. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was tan to pink on serosal and cut surfaces.

SPLEEN The spleen was small (1.0 cm long x 0.2 cm wide), and dark purple to black on serosal and cut surfaces.

LIVER The liver was firm. The margins were sharp and rounded. The serosal surfaces were light to dark purple, and the cut surfaces were dark brown. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 25 mL of flocculent, yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate serous reproductive fat. There was copious milk on cut surfaces of the mammary glands. The uterus was contracted. There was an almost resolved scar (3.5 cm wide x 4.2 cm circumference) in the left horn. Both ovaries had numerous large (maximum 0.6 cm) and small follicles. The right ovary also contained more than ten corpora albicantia.

KIDNEYS There was a small amount of serous perirenal fat. The kidneys were light to dark purple on serosal surfaces. On cut surfaces, the cortices were light to dark brown, and the medullae were light to dark red. The corticomedullary boundaries were distinct with a dark red line in most.

URINARY BLADDER The bladder contained 300 mL of clear, light yellow urine. The mucosa was unremarkable. An ELISA toxicology sample was collected.

HEART There was moderate serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left pleural cavity contained 0.5 L of watery light red fluid. The left lung was heavy. The serosal surfaces were pink to purple, and the cut surfaces were light to dark red, and wet and frothy. The airways contained a small amount of watery red fluid and red froth. The mucosa was light red. No parasites were observed. The right pleural cavity contained 5 L of loose, small and large, well-formed blood clots and bloody fluid. The right lung was collapsed. The serosal and cut surfaces were light to dark red. The airways were clear. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a thatch of poorly chewed *Caulerpa* in the mouth. The trachea contained a moderate amount of white froth. There was a moderate infection of dead trematodes in the nares.

SKELETON The right scapula had at least five fractures which were associated with shredded, torn, hemorrhagic tissue and loose well-formed blood clots. Right ribs 3, 6, and 7 were luxated and the heads did not perforate the parietal pleura. Right ribs 4 and 5 were luxated and the heads perforated the parietal pleura. The luxated heads were surrounded by torn, hemorrhagic tissue and loose, well-formed blood clots. There was torn hemorrhagic tissue dorsal to the proximal one-third of right ribs 3-6 and between the proximal aspects of right ribs 7 and 8. The trauma was deep to the fresh wound on the right shoulder region.

OTHER There was shredded, hemorrhagic tissue on the cranial right dorsal aspect deep to the fresh wound on the shoulder region.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wound
- Watery fluid exuding from nares
- Torn, shredded, hemorrhagic tissue
- Luxated ribs
- Fractured scapula
- Hemothorax
- Blood clots
- Torn parietal pleura
- Collapsed right lung
- Wet, frothy left lung
- Froth in trachea
- Dark red ascites
- Congested mesenteries, peritoneum
- Dark line kidneys
- Fluid-filled small intestine, cecum, proximal colon
- Cecum-, proximal colon mucosa sloughing in sheets
- Macroalgae in GI tract
- Vegetation in mouth
- Black specks abdominal fat
- Healing wounds fluke
- Skin lesions
- Bleached epidermis
- Thick algal mat
- Serous fat
- Lactating
- Uterine scar

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

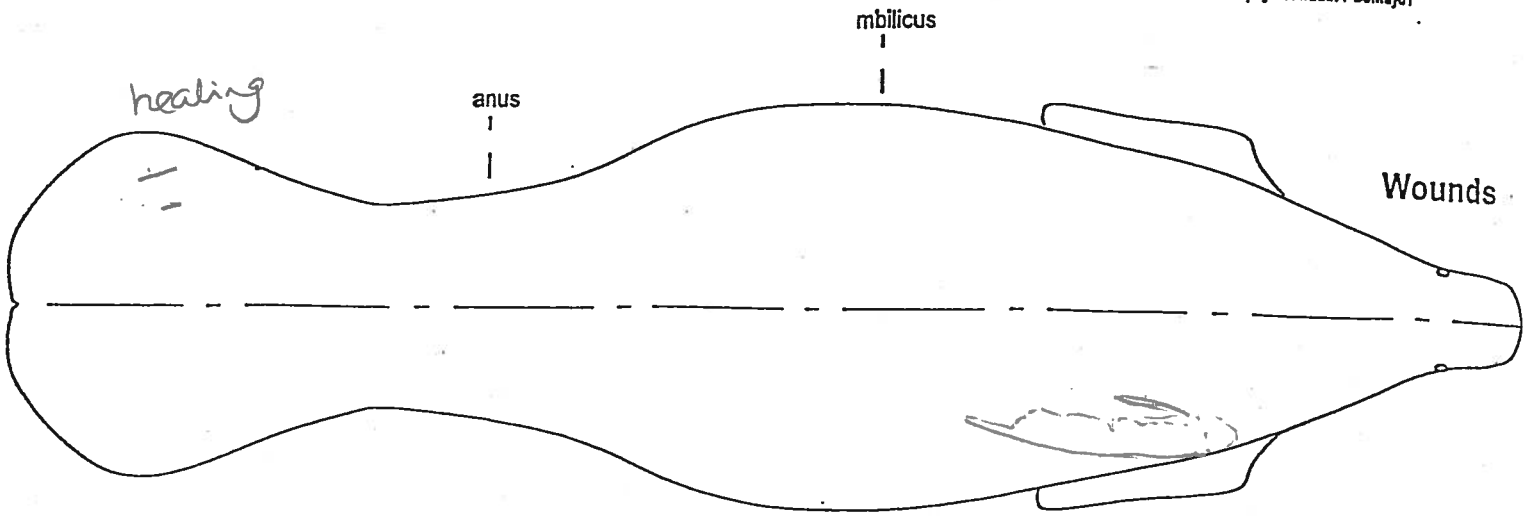
Martine de Wit, DVM
Andrew J. Garrett
Sean M. Tennant

REPORT FILED BY de Wit

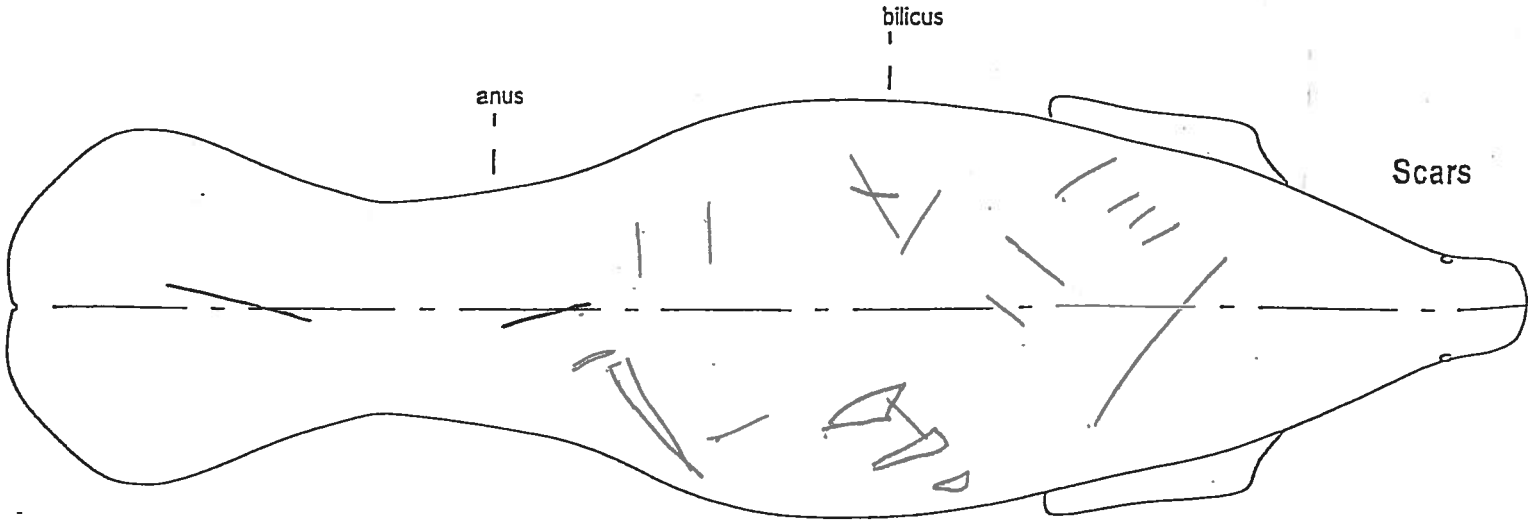
Date 13 March '20

Field I.D. MEC20063 M 2 36

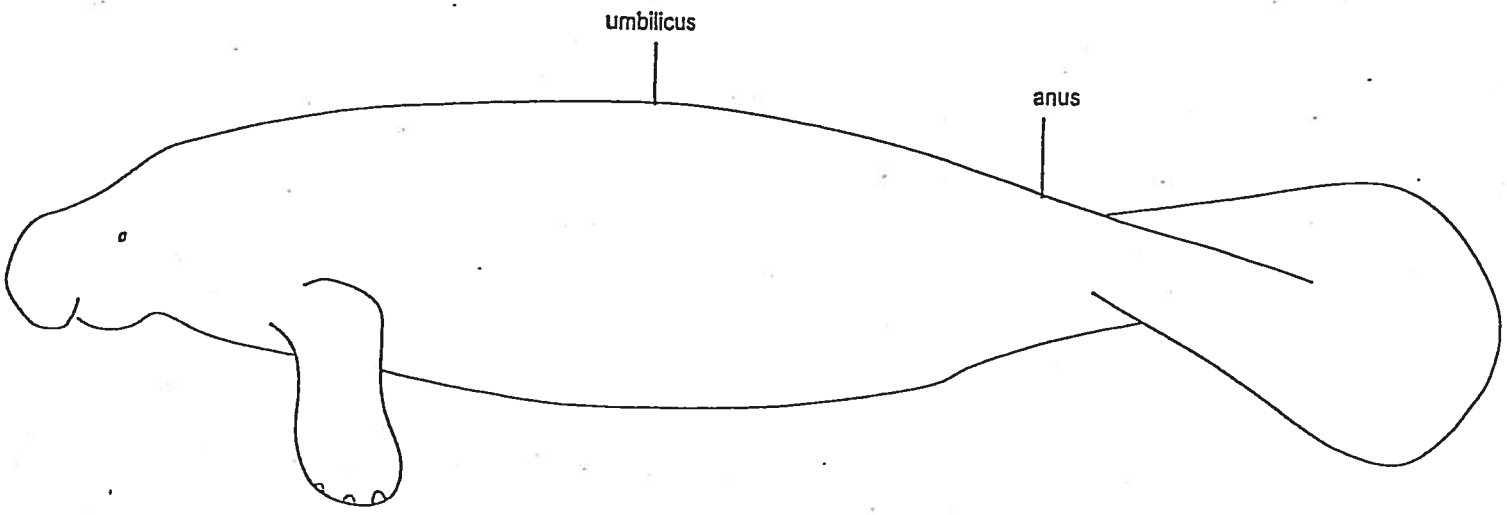
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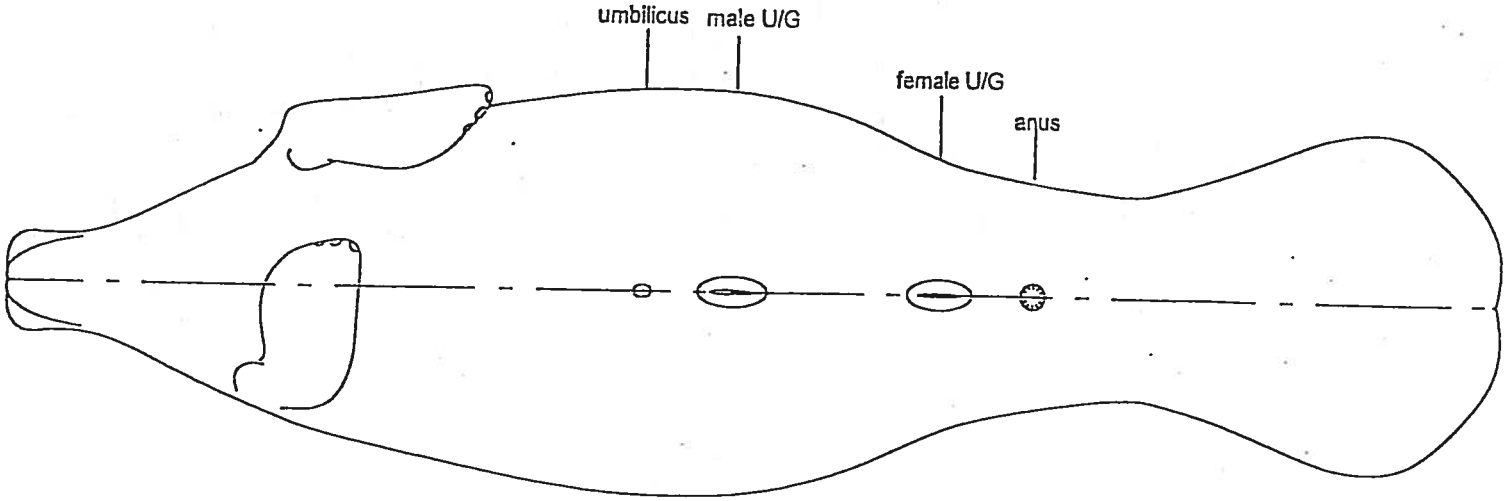


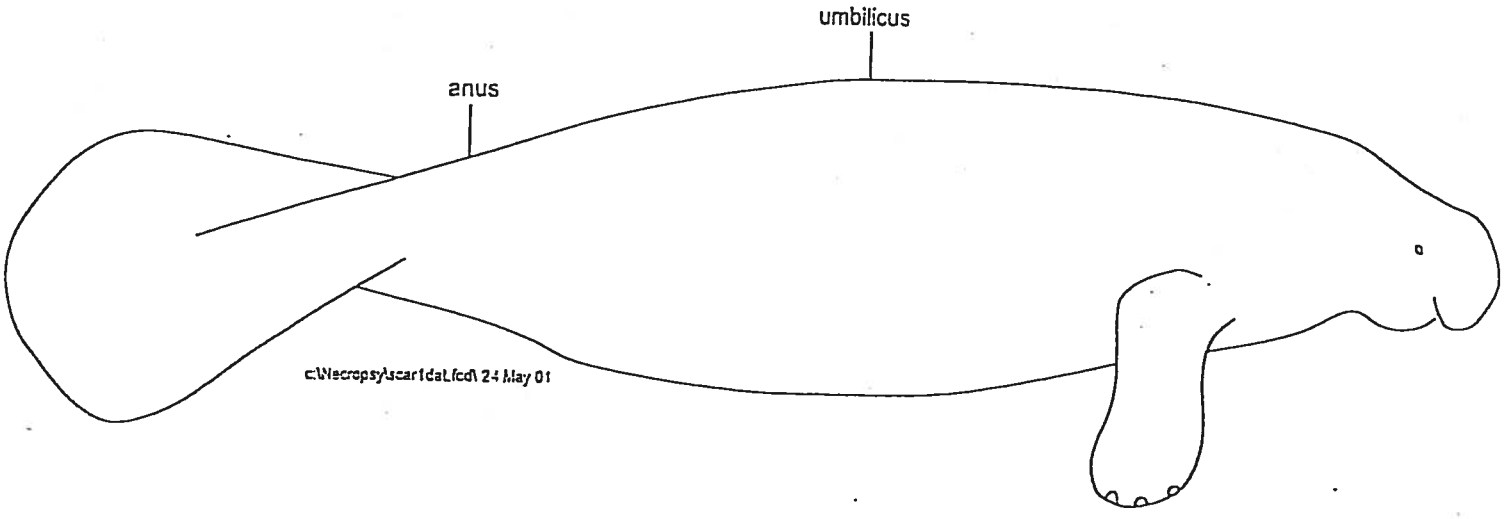
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Number																				
Length																				
Width cm																				
Depth																				
Distance																				



FIELD I.D. _____


umbilicus
anus

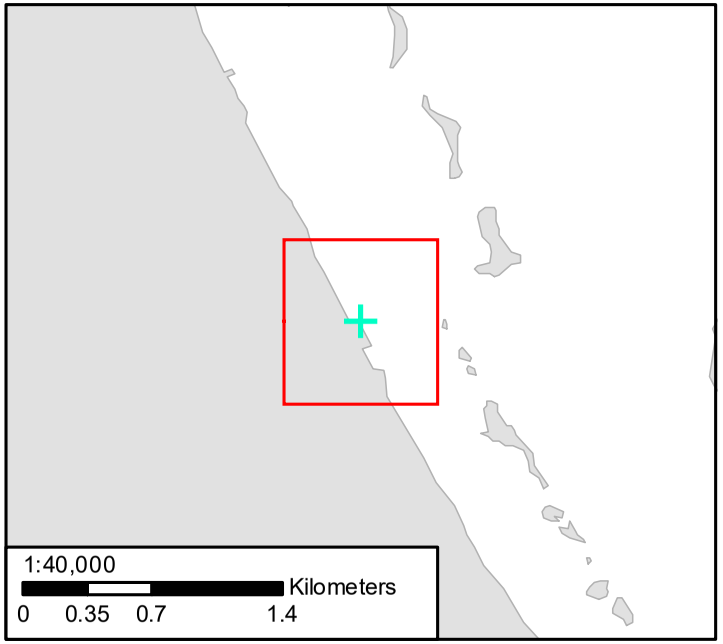

umbilicus
male U/G
female U/G
anus

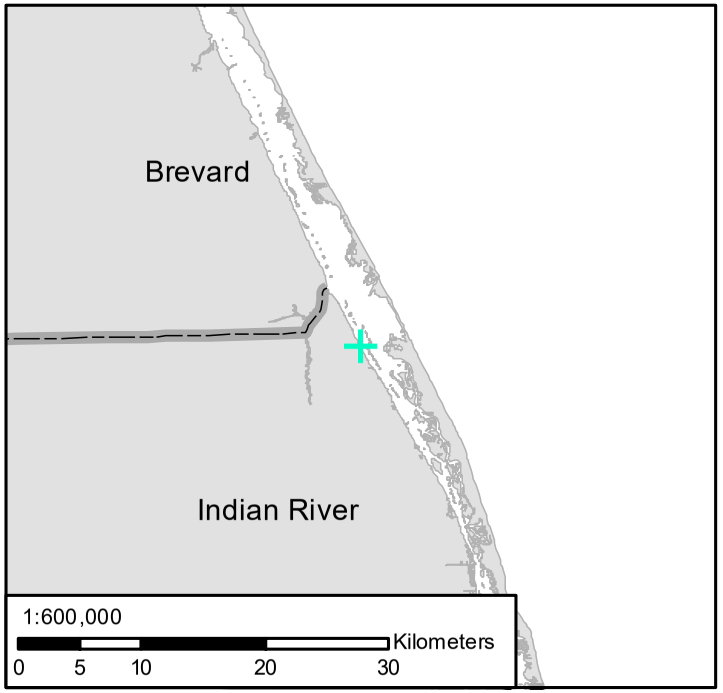

umbilicus
anus
c:\Necropsy\scar1dat.fcd\ 24 May 01

Verified Location of Manatee Carcass MEC20063

Report Date: 3/12/2020 **Received Date:** 3/12/2020 **Received By:** FWC-CMM







Location: Sebastian, Indian River County

Latitude: 27.81114°N **Longitude:** -80.46424°W

Map Created: 3/29/2021

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20063
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4048 FWC District: ECFL
Sex: M / (F) / Undetermined Length: 281 cm (estimated _____) Weight 386.0 kg.
Date reported: 3/12/20 By: citizen
Date collected: 3/12/20 By: CMM
Date necropsied: 3/13/20 By: MMPL new AJG SMT

LOCATION: State: FL (X) County: Indian River Waterway: Indian River
Latitude: _____ N Longitude: _____ W
Locality description: _____

CONDITION: - Fresh - (Moderate) - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute) – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: (Dorsal) - (Ventral) (R. Lateral) - (L. Lateral) - (Scars) - (Fluke) - (Cranial) - (Internal) - Site - (Other wound)
MTLS COLLECTED: (**Genetics**) - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - (Other) stomach, mouth contents in 70% alcohol
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: (Stomach) – (Liver) – (Lung) – (Urine) – Kidney (if no urine) – Other_____
Genetics Box # 97
Female reproductive findings or **N/A**
LACTATING (Yes) – No – UNK **PREGNANT** Yes – (No) – UNK **UTERINE SCAR** – (Yes) – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other_____

PIT TAG Scan: (Negative) Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

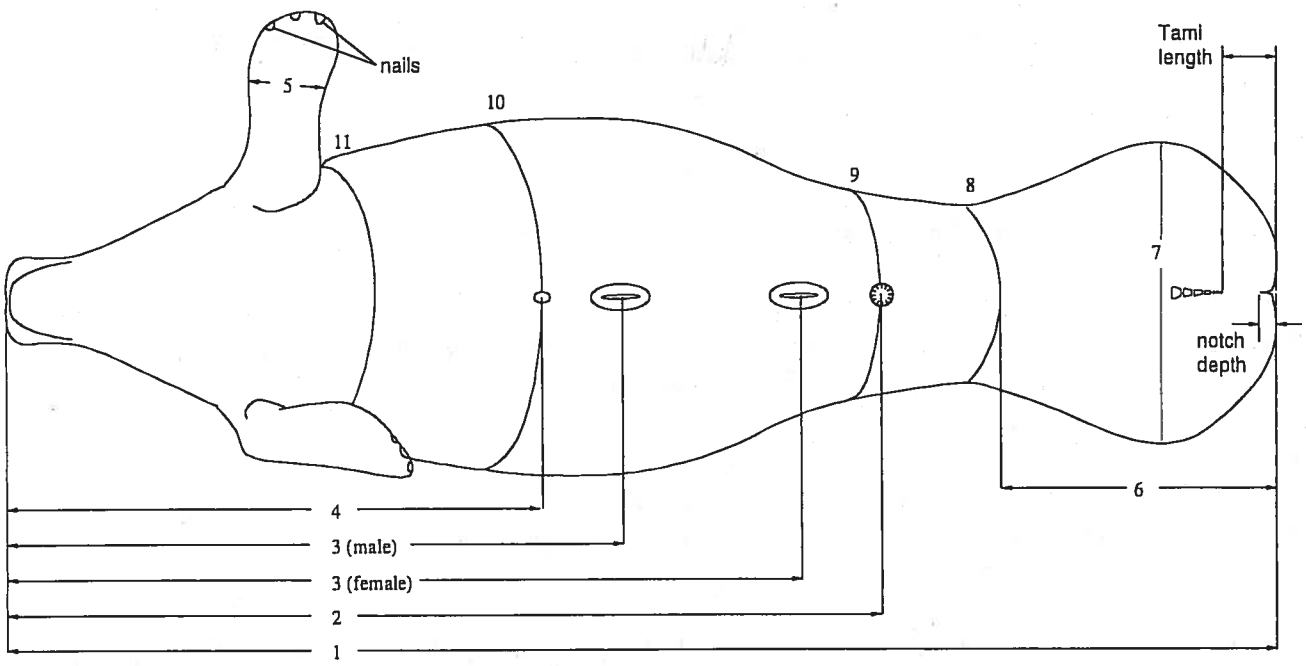
REMARKS: _____

Field ID #_____

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

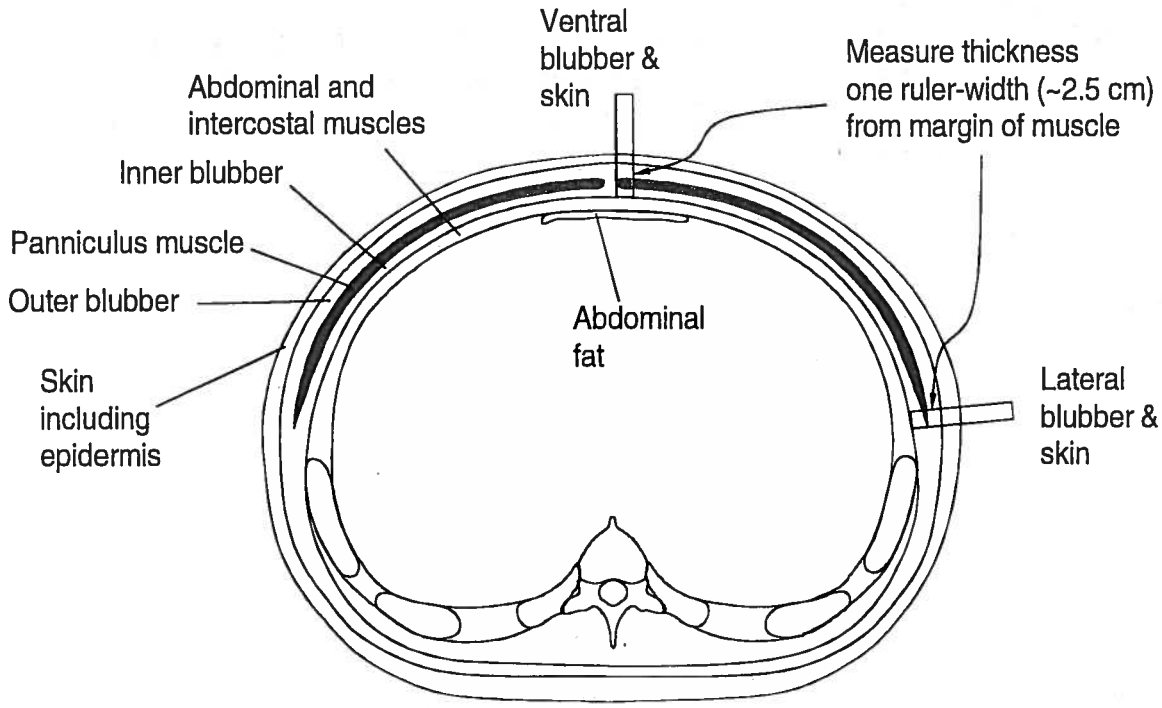
1. Total length 281 cm
2. Snout to anus -C 188 cm
3. Snout to U/G -C 174 cm
4. Snout to umbilicus -C 105 cm
5. Flipper width 16 cm
6. Fluke base 77 cm
7. Fluke width 70 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm

(Nail count: L___R___)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.9 cm	2.0 cm	(Epidermis 0.1 cm)
Outer fat	1.6 cm	0.8 cm	(Abdominal fat 0.3 cm)
Inner fat	0.5 cm	0.7 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20063
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4020, 4150, 46 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 12 March 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 12 March 2020 **By**: FWC- CMM
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Sebastian, approximately 10 meters S of 820 Indian River Drive
Carcass Orientation: Floating

CONDITION: -

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: -
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20064**
Date of Report: 2020-Mar-13
Filed By: FWC EC Field Station

FWC Case # 4094 **FWC Region:** NE

Sex: Male **Length:** 150 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-13 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Mar-13 **By:** FWC Intern-K. Etherton
DATE NECROPSIED: 2020-Mar-14 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 28.56026 **N**
County: Brevard **Longitude:** -80.78173 **W**
Waterway: Indian River
Location description: Titusville, floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Natural: Cold Stress; Peanut-shaped head; Bleached epidermis; Cobblestone-like epidermis; Abscess(es); Fetal folds; Depleted fat(s); Wet lung(s); Bloody lung(s); Fluid in airways; Bloody liver; Congested mesentery.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Shark scavenging. Actual length of the remains was 145 cm. Macroalgae in stomach.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20064

MORPHOMETRICS:

Total length:	150 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20064
SPECIES *T. manatus latirostris*
RECOVERY DATE 13 March 2020
NECROPSY DATE 14 March 2020
GENDER Male **TL** 150 **cm** (est) **WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 13 March 2020, at 1016 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville, Brevard County. FWC case number 4094 was assigned. The complainant, Keith (712-708-5389), described a 3.5-foot-long manatee with organs coming out and missing half of the tail. CMM requested FWC LE assistance due to the location of the carcass. FWC Officer Luce located the carcass at 1241 hrs and towed it to Kenney Point boat ramp. FWC intern-Kelly L. Etherton arrived at the boat ramp at 1332 hrs, loaded the carcass via Ezy-Lift at 1400 hrs, and transported it to the EC Field Station where it was covered with ice overnight. **14 March**, at 0915 hrs, a field necropsy was completed at the field station. The remains were disposed of at the Brevard County Landfill.

EXTERNAL All of the epidermis was present but sloughing. The dermis was missing on the ventral and left aspect of the neck due to shark scavenging. Internal organs were exposed through a shark bite on the mid ventrum. The right aspect of the fluke was missing due to shark scavenging. The carcass had a slight peanut-shaped head. The epidermis of the head, flippers, and ventral transverse folds was slightly bleached. There was a moderate brown algal mat on the dorsal aspect. Cobblestone-like epidermis was visible on the ventral fluke. A mild infestation of barnacles and barnacle scars was present on the ventrum. No watercraft-related scars or wounds were observed. Actual length of the remains was 145 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal fat was missing due to scavenging (see photo). There was scant mesenteric and omental fat.

STOMACH The stomach contained 600 mL of moist, moderately chewed, leafy, stringy, yellow to brown ingesta mixed with a small amount of yellow macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 75 mL of viscous, gray fluid mixed with a small amount of well-chewed, fibrous, green pieces of ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained watery, white fluid. The mid small intestine contained moist, moderately chewed, leafy, stringy, brown ingesta. The distal small intestine contained very moist, moderately chewed, leafy, stringy, brown ingesta (see photo). The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained approximately 20 mL of moist, poorly digested, leafy, slightly stringy, yellow to green digesta. The mucosa was unremarkable. No parasites were observed.

COLON The mesentery was mildly congested. Intermittent sections of the colon were missing due to scavenging. The proximal and mid colon contained very moist, poorly formed, poorly digested, stringy, leafy, brown feces. The distal colon contained moist, well-formed, well-digested, clay-like, slightly stringy, homogeneous, brown feces. The mucosa was white and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was firm. Serosal surfaces were blue and cut surfaces were dark red and bloody.

GALLBLADDER The gallbladder contained approximately 10 mL of viscous, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was no reproductive fat. The seminal vesicles were small and contained no fluid. The testes were small.

KIDNEYS There was no perirenal fat. The kidneys were tan to light pink on serosal surfaces. On cut surfaces, the cortices were light pink and the medullae were dark red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 50 mL of pale yellow urine. The mucosa was unremarkable.

HEART There was no epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were white to light pink on serosal surfaces and dark red, wet, and bloody on cut surfaces. There was a moderate amount of watery, red fluid in the primary airways. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER There were abscesses in the ventral fat layer (see photo).

COMMENTS

SIGNIFICANT FINDINGS

- Peanut-shaped head
- Cobblestone-like, bleached epidermis
- Abscesses
- Fetal folds
- Depleted fat
- Wet, bloody lungs
- Fluid in airways
- Bloody liver
- Congested mesentery
- Macroalgae in stomach
- Shark scavenging

PROBABLE CAUSE OF DEATH Perinatal; Natural (Cold Stress)

NECROPSY CONDUCTED BY

William D. Greer
Carley M. Metcalf

REPORT FILED BY Metcalf / Greer

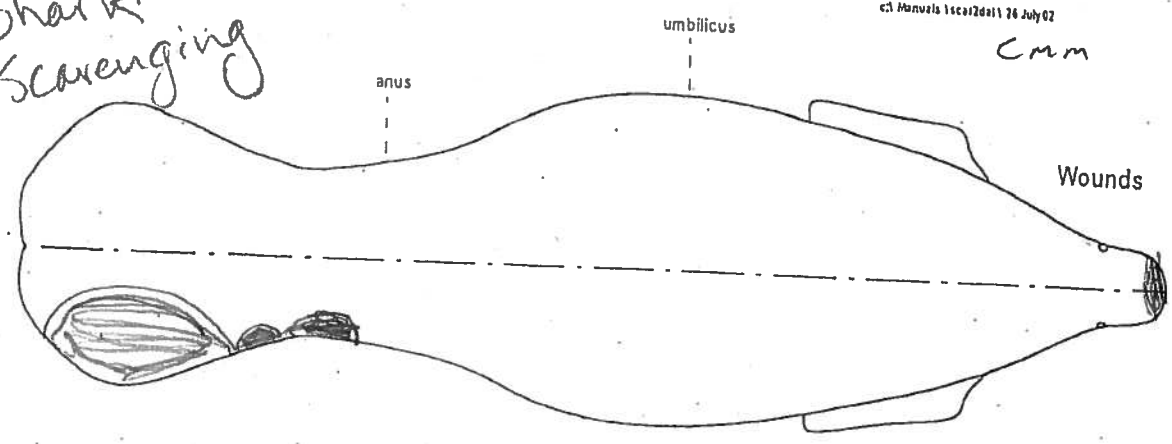
Date 14 MAR 2020

Field I.D. MEC20064

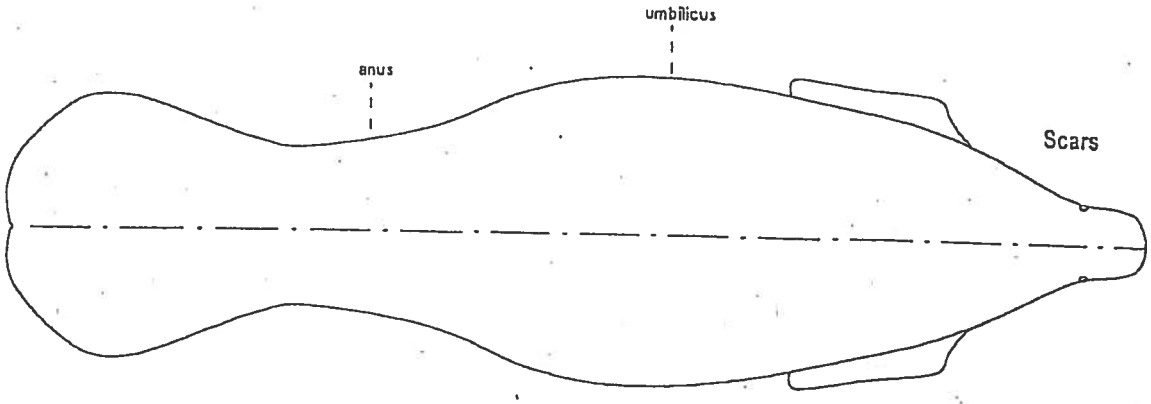
Shark Scavenging

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CMM

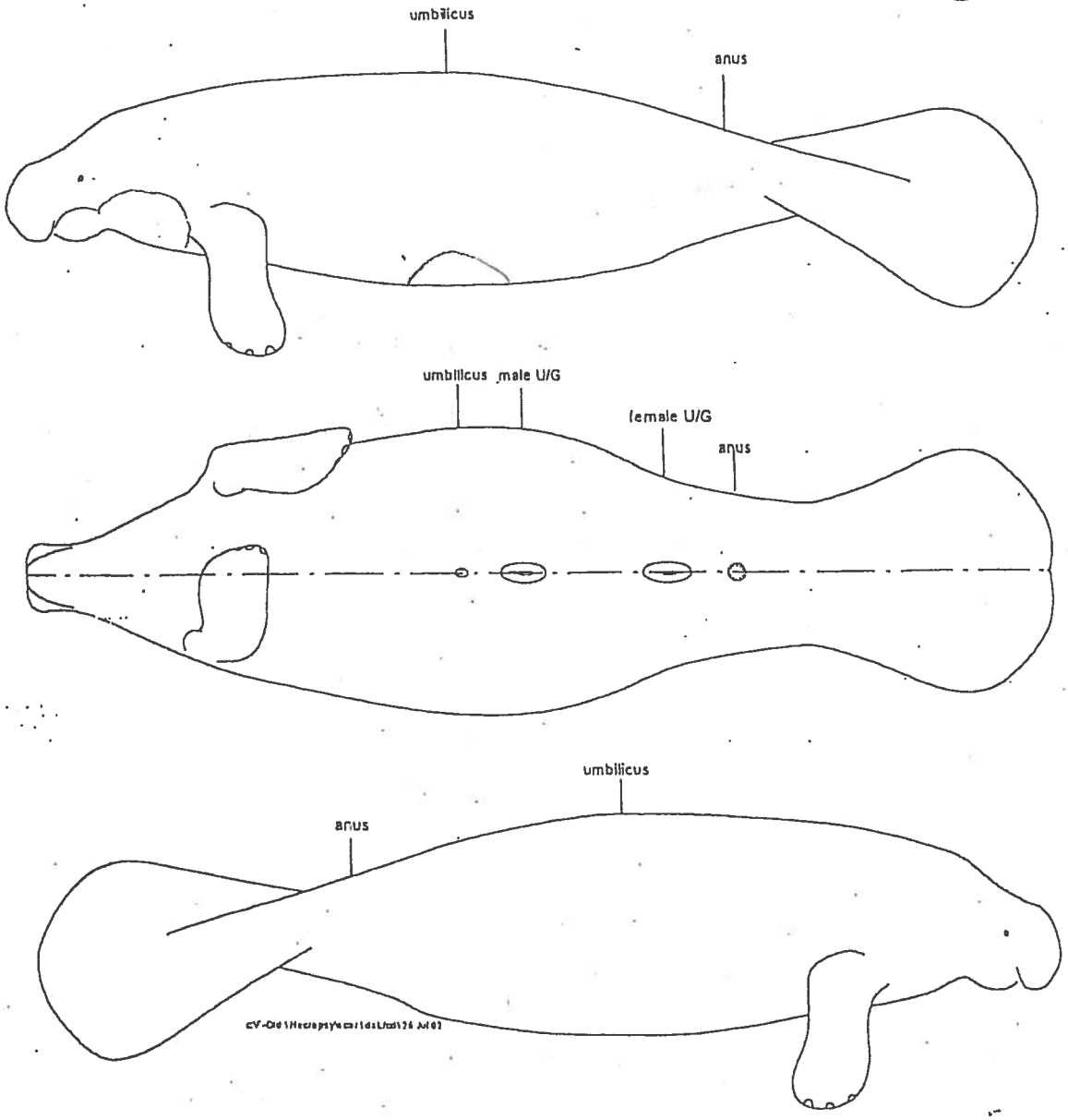


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Length																				
Width																				
Depth																				
Distance																				



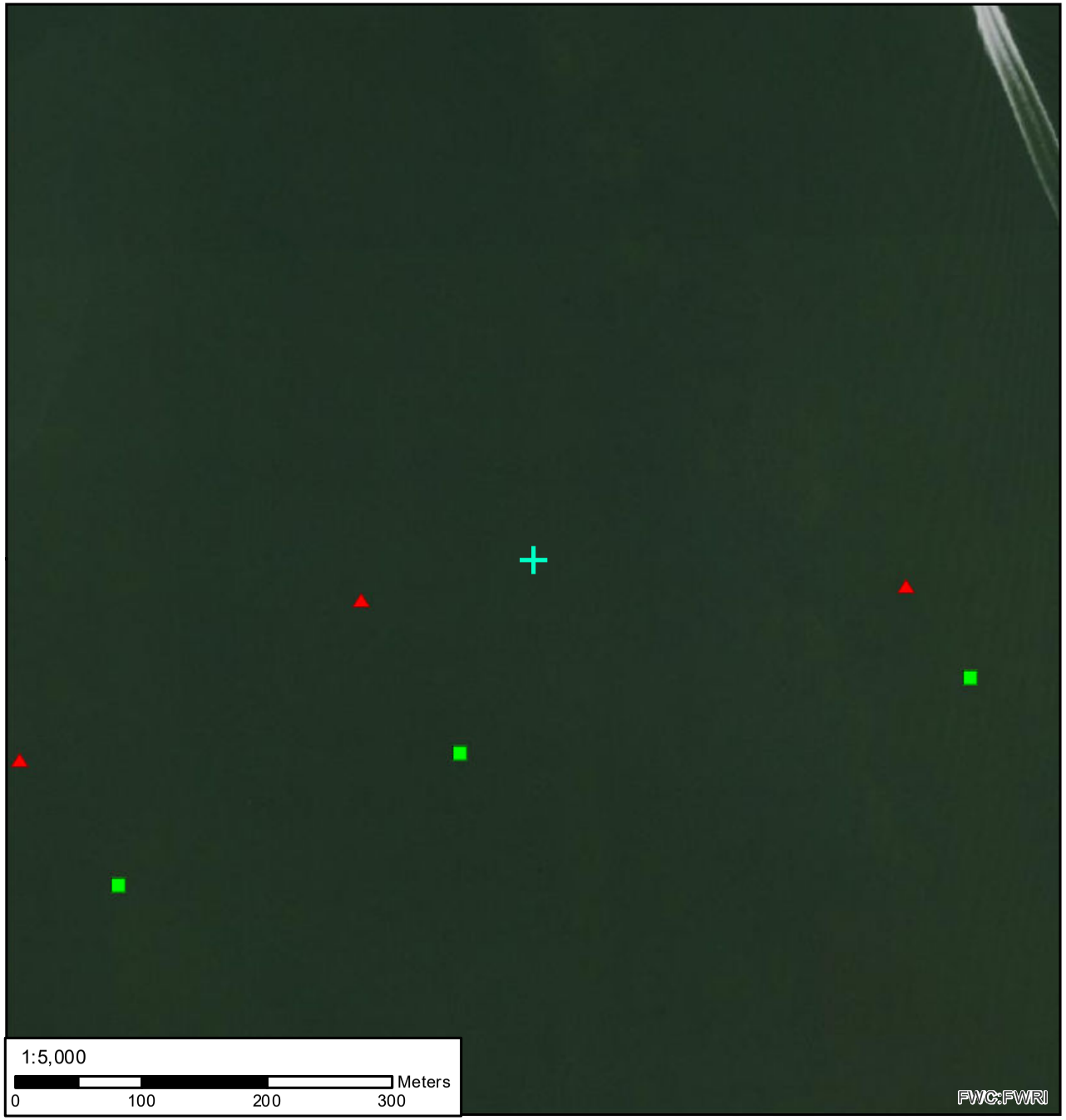
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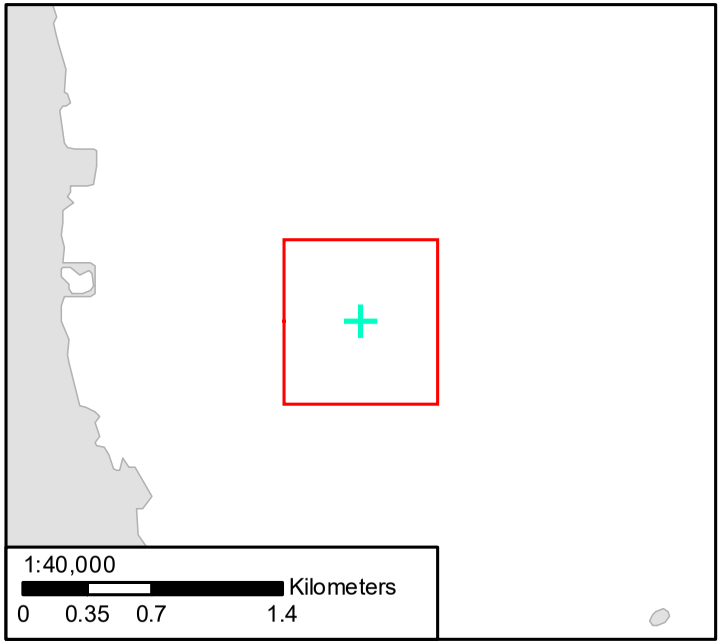
CMM shark scavenging

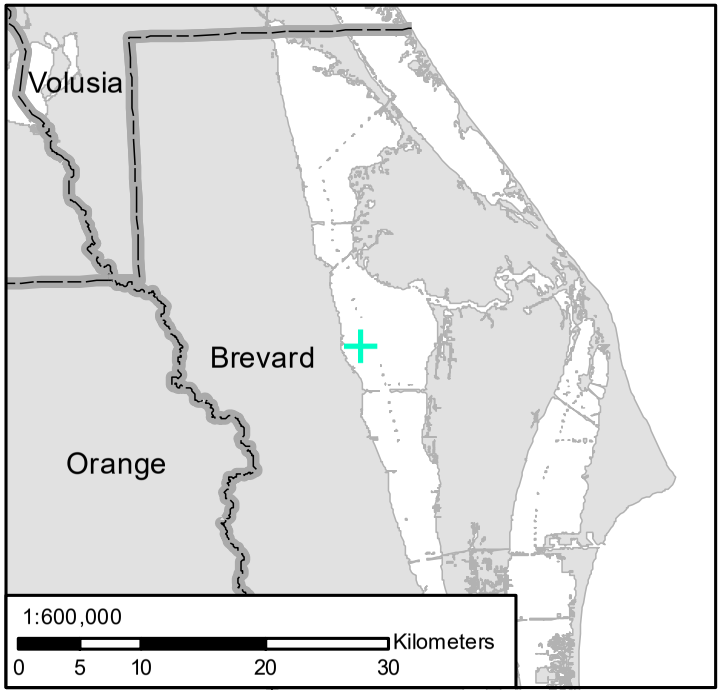


Verified Location of Manatee Carcass MEC20064

Report Date: 3/13/2020 **Received Date:** 3/13/2020 **Received By:** FWC Intern-K. Etherton







Location: Titusville, Brevard County

Latitude: 28.56026°N **Longitude:** -80.78173°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20064
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4094 **FWC District**: Northeast
Sex: Male **Length (cm)**: 145 **Estimated** 150 **Weight (kg)** N/T
Date reported: 13 March 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 13 March 2020 **By**: FWC Intern- K. Etherton
Date necropsied: 14 March 2020 **By**: FWC- WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 1.67 kM E of 4450 South Washington Avenue

Carcass Orientation: Floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☑ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Cold stress- peanut head, longitudinal folds on ventrum, linear lesion with caseous material, cobblestone like skin, wet and bloody lungs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20065**
Date of Report: 2020-Mar-15
Filed By: FWC EC Field Station

FWC Case # 4242 **FWC Region:** NE

Sex: Female **Length:** 250 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-15 **By:** FWC-WDG

DATE NECROPSIED: 2020-Mar-16 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.37982 **N**

County: Brevard **Longitude:** -80.69678 **W**

Waterway: Sykes Creek

Location description: Merritt Island, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Abscess(es); Depleted fat(s); Serous fat(s); Crumbly feces; Dry feces; Relatively empty duodenum; Adhered lung with abscesses; Fluid in airways; Misshapen liver; Black specks parietal pleura, peritoneum, abdominal fat.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20065

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20065
SPECIES *T. manatus latirostris*
RECOVERY DATE 15 March 2020
NECROPSY DATE 16 March 2020
GENDER Female **TL** 250 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 15 March 2020, at 1209 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek in Merritt Island, Brevard County. FWC case number 4242 was assigned. The complainant, Kristin Black (407-222-0004), described a dead manatee, belly-up and against the rocks. At 1212 hrs, WDG received a photo of the carcass. WDG arrived at Artemis Blvd/Scorpious Court at 1415 hrs, towed the carcass via kayak, and loaded it via Ezy-Lift at 1450 hrs. The carcass was transported to the EC Field Station arriving at 1540 hrs. **16 March**, at 1012 hrs, a field necropsy was completed. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid and ropey pink material exuded from the nares. A moderate brown algal mat was present on the remaining epidermis of the right lateral aspect. There were abscesses exuding purulent yellow fluid at the mid lateral aspects of both flippers (see photos). Two small well-healed scars were observed on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, serous abdominal and mesenteric fat and a small amount of gassy omental fat. There were black specks on the peritoneum and abdominal fat (see photo).

STOMACH The stomach contained 750 mL of moist, moderately chewed, leafy, stringy, woody, fibrous, yellow to brown ingesta mixed with pink woody pieces (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 25 mL of wet, well-chewed, fibrous, woody, green to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a small amount of watery, tan fluid throughout. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 500 mL of moist, moderately digested, stringy, fibrous, woody, light brown to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The proximal and mid colon contained moist, moderately formed, moderately digested, stringy, fibrous, woody, brown feces. The distal colon contained dry, crumbly, poorly formed, moderately digested, stringy, fibrous, woody, brown feces. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was pink to red on serosal surfaces and tan on cut surfaces.

SPLEEN The spleen was mottled tan and black on serosal surfaces, and dark purple to tan on cut surfaces.

LIVER The right liver lobe appeared enlarged with a rounded shape and had rounded margins, and the left liver lobe was very small with sharp margins (see photo). The right liver lobe was mostly soft, but the lateral-most aspect was firm. Serosal surfaces were light gray to black and cut surfaces were mostly brown (see photo) except for those of the lateral-most aspect which were mottled light pink and black. Serosal surfaces of the left lobe were light gray and cut surfaces were mottled light pink and black (see photos).

GALLBLADDER The gallbladder contained a scant amount of orange to black bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate, serous reproductive fat. The diameter of the uterus was small. No scars were present. There were no follicles on the ovaries.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable.

HEART There was a small amount of gassy epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was torn due to decomposition. The right hemidiaphragm was intact. There were black specks on the right parietal pleura (see photos). The lungs were soft and friable. Serosal surfaces were mottled grey, pink, and black and cut surfaces were dark pink. The right lung primary airway contained an abundant amount of watery, red fluid. The left lung primary airway contained a small amount of watery, red fluid and a mild infection of dead trematodes. The dorsal lateral aspect of the left lung was adhered to the parietal pleura at the mid aspect and proximal one-quarter (see photos). The adhesion at the proximal one-quarter contained a small amount of caseous, light yellow material (see photo).

HEAD & NECK REGIONS There was a small amount of viscous, pink fluid in the trachea.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Abscesses flippers
- Depleted, serous fat
- Adhered lung with abscesses
- Fluid in airways
- Dry, crumbly feces
- Relatively empty duodenum
- Misshapen liver
- Black specks parietal pleura, peritoneum, abdominal fat
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

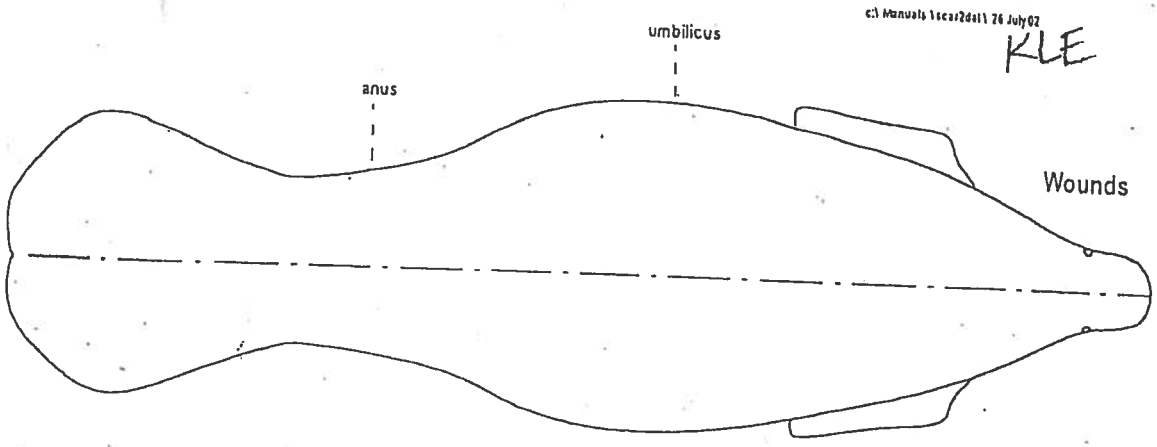
Sara M. Wappes
Kelly L. Etherton (FWC intern)

REPORT FILED BY Etherton / Wappes

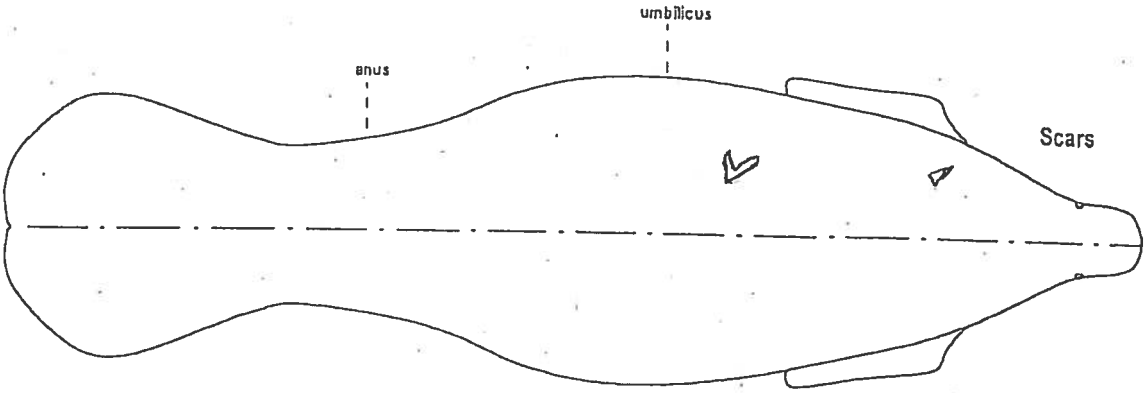
Date 3/16/20 Field I.D. MEC20065

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KLE



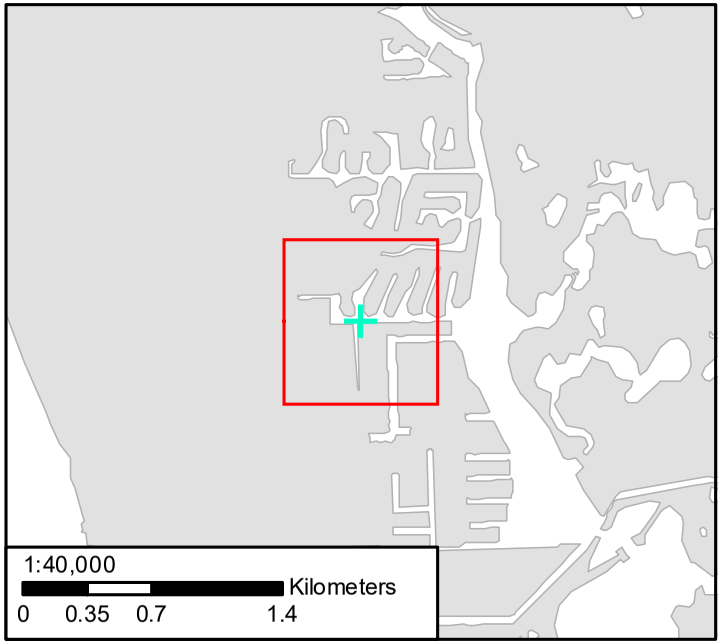
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Width																				
Depth																				
Distance																				

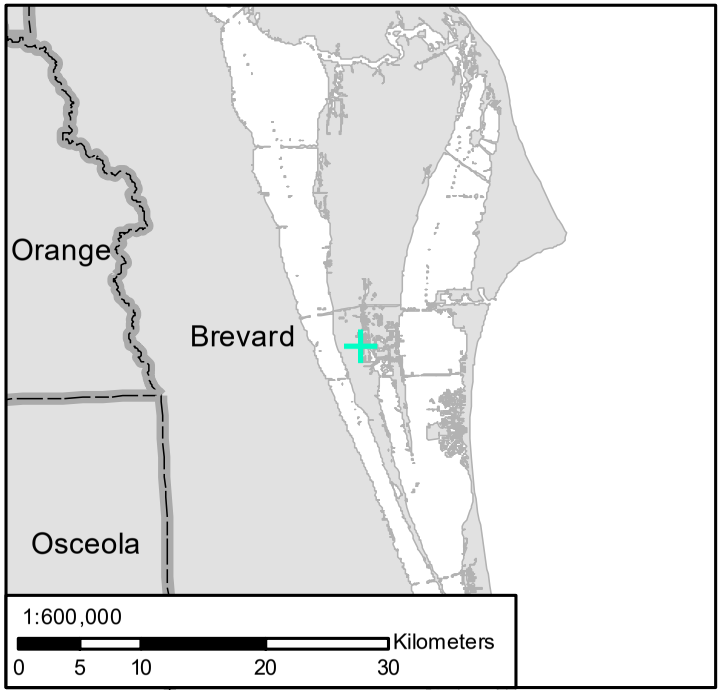


Verified Location of Manatee Carcass MEC20065

Report Date: 3/15/2020 **Received Date**: 3/15/2020 **Received By**: FWC-WDG







Location: Merritt Island, Brevard County

Latitude: 28.37982°N **Longitude**: -80.69678°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20065
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4242 **FWC District**: Northeast
Sex: Female **Length (cm)**: 250 **Estimated** _____ **Weight (kg)** _____
Date reported: 15 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 15 March 2020 **By**: FWC-WDG
Date necropsied: 16 March 2020 **By**: FWC-SMW, FWC intern-K. Etherton

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Sykes Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 65 m SW of 1335 Scorpious Court

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Left lobe of liver shrunken and firm, left lung adhered to body wall at 2 locations, caseous material at adhesions, skeleton NVL, pus-filled abscess on external flipper, internal organs friable and/or autolyzed

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20066**
Date of Report: 2020-Mar-16
Filed By: FWC EC Field Station

FWC Case # 4341 **FWC Region:** NE

Sex: Male **Length:** 272 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-16 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Mar-17 **By:** FWC-CMM,SMW

DATE NECROPSIED: 2020-Mar-17 **By:** FWC-CMM,SMW

LOCATION: **State:** FL **Latitude:** 27.90925 **N**

County: Brevard **Longitude:** -80.50694 **W**

Waterway: Indian River

Location description: Grant-Valkaria, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured vertebra(e); Luxated rib(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Hemothorax; Hemoabdomen; Torn lung(s); Torn liver; Torn parietal pleura; Organ pallor; Torn small intestine, abdominal wall; Hemorrhagic lung parenchyma; Loose ingesta in abdominal cavity; Fluid in right pleural cavity; Sediment in airways; Vegetation in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Bleached epidermis; Wet lower GI contents. Macroalgae in GI tract.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20066

MORPHOMETRICS:

Total length:	272 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20066
SPECIES *T. manatus latirostris*
RECOVERY DATE 17 March 2020
NECROPSY DATE 17 March 2020
GENDER Male **TL** 272 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 16 March 2020, at 1535 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Grant-Valkaria, Brevard County. FWC case number 4341 was assigned. The complainant, Shane MacDonald (321-987-7764), described a dead manatee on Spoil Island #47. At 1541 hrs, SMW verified the carcass via photograph. **17 March**, SMW and FWC biologist-Carley M. Metcalf arrived at the Christenson's Landing boat ramp at 0910 hrs, launched the Key West boat, located the carcass at 0935 hrs, and completed a field necropsy by 1218 hrs. The remains were left onsite.

EXTERNAL Almost all of the epidermis was present and the outer-most layer was sloughing. The carcass was distended with gas. There was a fresh watercraft-related wound series on the mid left lateral aspect which consisted of a wide linear wound (#1) and four parallel propeller wounds (#2 – 5) caudal and mostly perpendicular to wound #1. Wounds #1, 2 and 5 were superficial. Wounds #3 and 4 penetrated the dermis. Bloody fluid exuded from wound #3. There was a moderate brown algal mat on the lateral aspects. Numerous bleached spots were observed on the lateral aspects and dorsal fluke. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. The fluke margin had two well-healed mutilations at the 2 and 3 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal fat and moderate omental and mesenteric fat. There were 200 mL of loose ingesta in the abdominal cavity (see photo). There were 800 mL of loose, well-formed blood clots in the cranial abdomen associated with a liver tear.

STOMACH The stomach contained 8.5 L of moist, moderately chewed, stringy, green, and orange to brown ingesta mixed with green and red macroalgae (see photo). The contents were coated in a thin layer of viscous, pink mucus. The mucosa was stained light pink. No parasites were observed.

DUODENUM The duodenum contained 2.5 L of wet, well-chewed, stringy, yellow to brown ingesta mixed with yellow to green macroalgae (see photo). The mucosa was stained light pink. No parasites were observed.

JEJUNUM & ILEUM The proximal and distal small intestine contained watery, brown fluid. Some sections also contained moist, moderately chewed, poorly formed, leafy, stringy, green to brown ingesta mixed with yellow and green macroalgae. There was an approximately one-meter long section in the mid small intestine that contained opaque yellow fluid that corresponded with yellow stained mucosa (see photo). The mucosa was otherwise unremarkable. There were three tears in the mid small intestine associated with left rib tip 9 (see photos). The tear margins were rounded. No parasites were grossly observed throughout.

CECUM The cecum contained 3 L of wet, moderately digested, leafy, stringy, green to brown digesta mixed with yellow, green, and red macroalgae. The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained wet, poorly digested, poorly formed, stringy, fibrous, tacky, green feces mixed with yellow and red macroalgae. The mid colon contained wet, moderately digested, poorly formed, stringy, fibrous, tacky, green feces mixed with yellow and red macroalgae. The distal colon contained wet, well-digested, poorly formed, stringy, green feces mixed with yellow and red macroalgae (see photo). The mucosa in the proximal and mid colon was white and sloughing. The mucosa in the distal colon was black and

sloughing. No parasites were observed throughout.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red to black on cut surfaces.

LIVER The liver was soft. The right liver lobe was gray to black on serosal surfaces and brown on cut surfaces. The left liver lobe was pink to purple on serosal surfaces and pink to brown on cut surfaces. There was a tear on the dorsal aspect of the left lobe which was associated with luxated left rib 9 (see photo) and surrounded by loose, well-formed blood clots.

GALLBLADDER The gallbladder contained 25 mL of slightly viscous, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The testes and the seminal vesicles were medium-sized. There was no fluid on cut surfaces of epididymides or seminal vesicles.

KIDNEYS There was moderate perirenal fat. The kidneys were tan on serosal surfaces (see photo, pallor). On cut surfaces, the cortices were tan and the medullae were pink (see photo). The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 75 mL of watery, pink-tinged fluid. The mucosa was unremarkable.

HEART There was a small amount of epicardial fat. The heart was light pink on serosal surfaces. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left pleural cavity contained 1.2 L of watery, red fluid and 300 mL of loose, well-formed blood clots (see photo). The left lung was light pink to dark red on serosal surfaces and gray to pink on cut surfaces. The left lung had one tear at the dorsal lateral aspect of the cranial one-quarter due to luxated left rib #9 which was associated with hemorrhagic lung parenchyma (see photo). The right pleural cavity contained 1 L of watery, red fluid. The right lung was light pink and light purple to black on serosal surfaces and red on cut surfaces. The right primary airway contained a small amount of dirt. No parasites were observed in either lung.

HEAD & NECK REGIONS There was a small amount of watery, red fluid in the trachea. There were yellow macroalgae in the mouth (see photo).

SKELETON The tip of the left transverse process of T8 was fractured (see photo). Left rib 9 was luxated which tore the parietal pleura, left lung, and liver. The tip of left rib 9 tore the small intestine and abdominal wall (see photos). There was shredded, hemorrhagic muscle surrounding left rib 9 (see photo). All trauma was deep to wound #1.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wounds
- Fractured vertebra
- Luxated rib

- Shredded, hemorrhagic muscle
- Blood clots
- Hemothorax
- Hemoabdomen
- Torn lung, liver, small intestine, parietal pleura, abdominal wall
- Hemorrhagic lung parenchyma
- Loose ingesta abdominal cavity
- Fluid in right pleural cavity
- Sediment in airways
- Kidney pallor
- Wet lower GI contents
- Macroalgae in mouth, GI tract
- Bleached epidermis

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

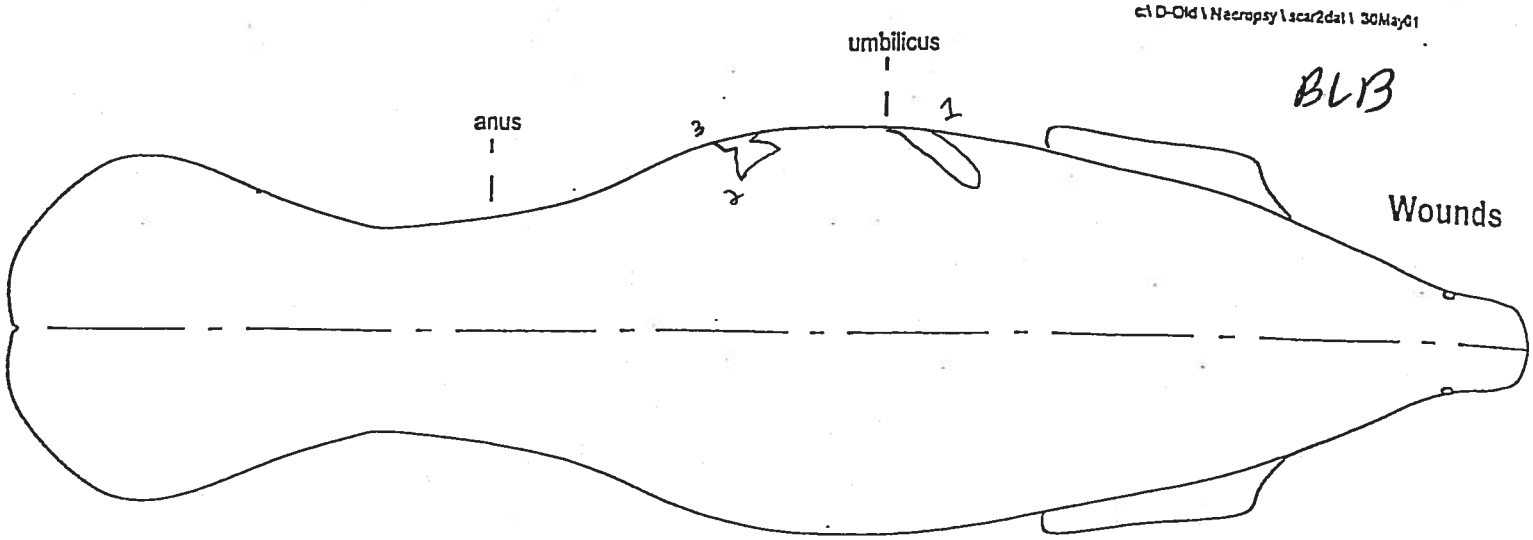
Carley M. Metcalf
Sara M. Wappes

REPORT FILED BY Metcalf / Wappes

Date _____ Field I.D. MEC20066

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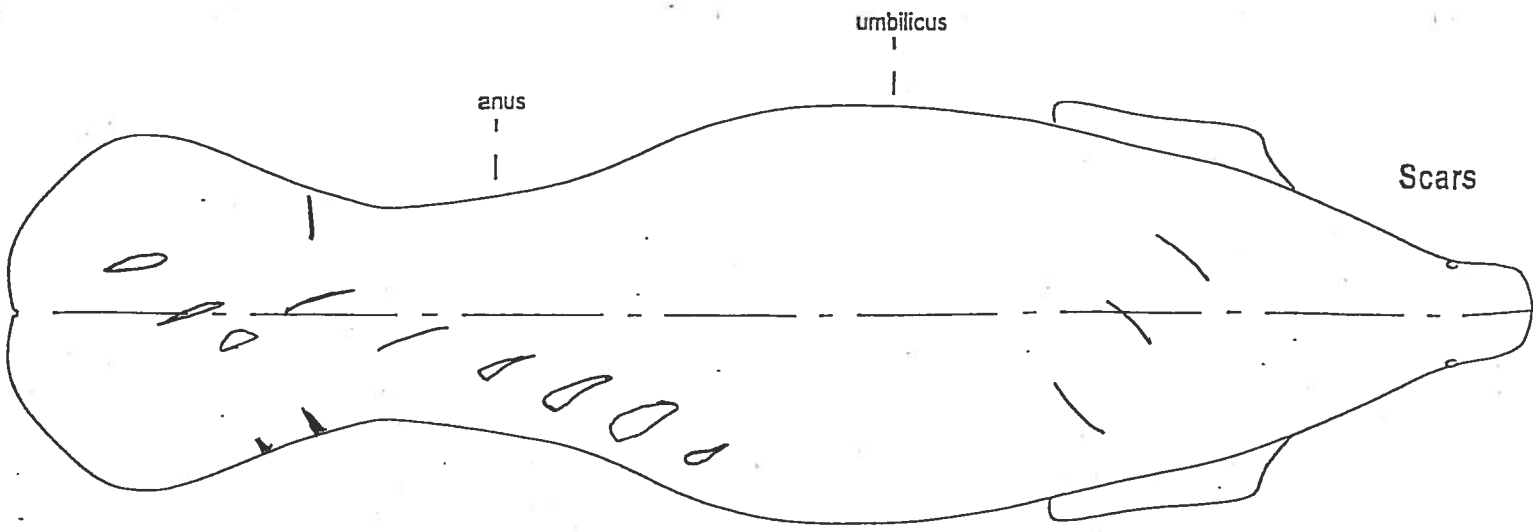
BLB



Wounds

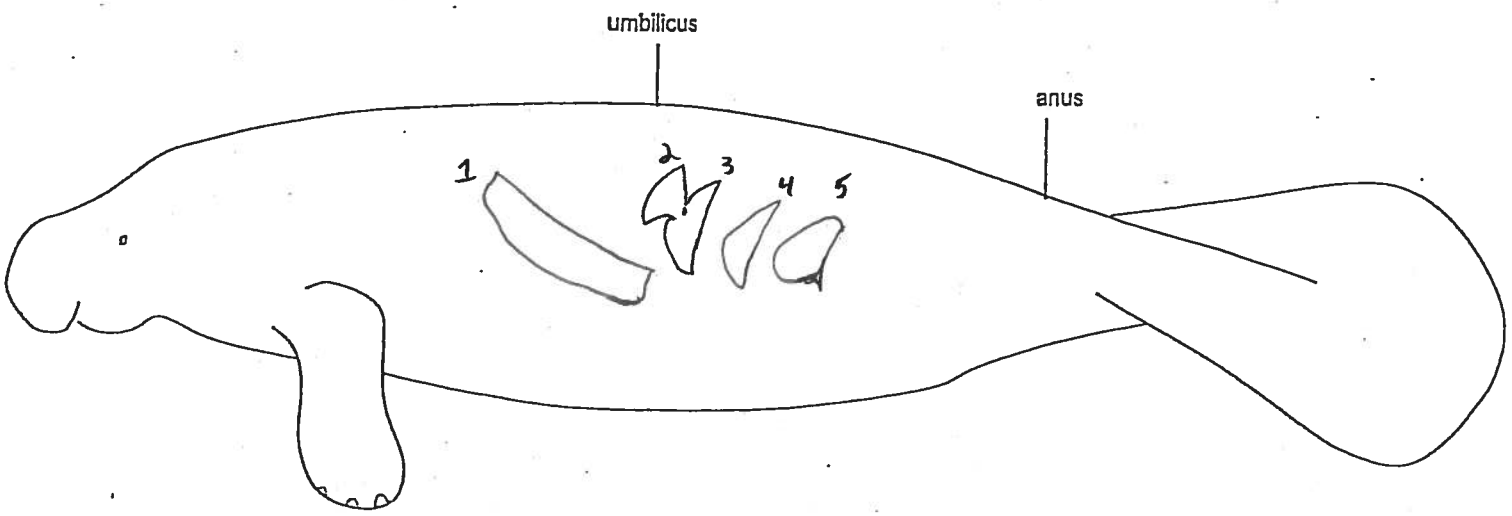
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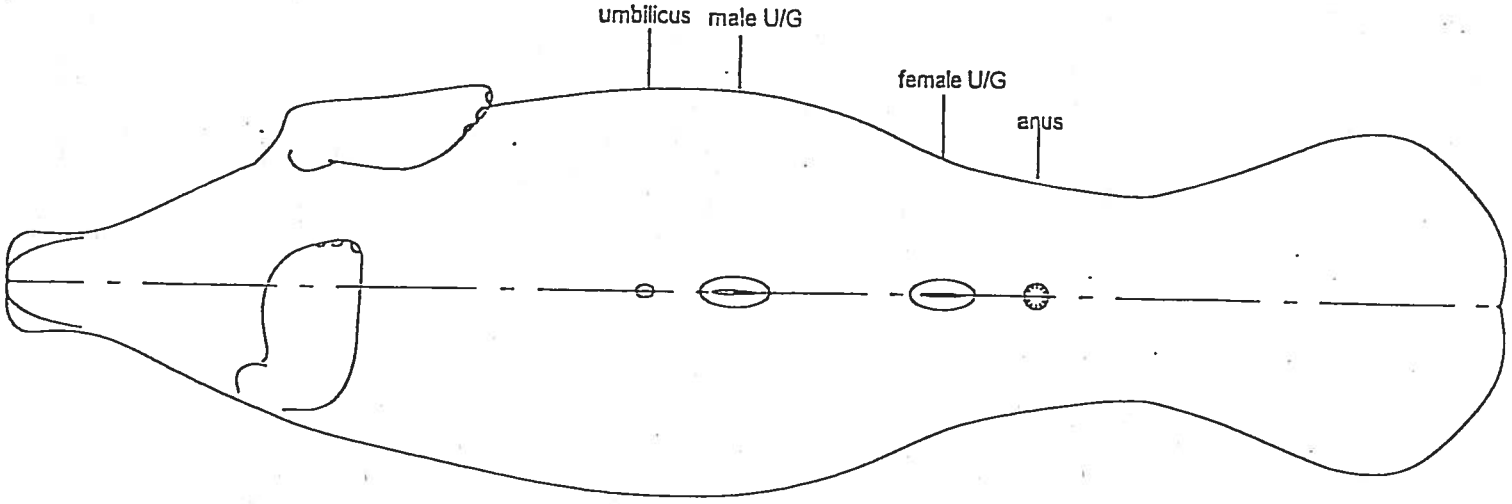
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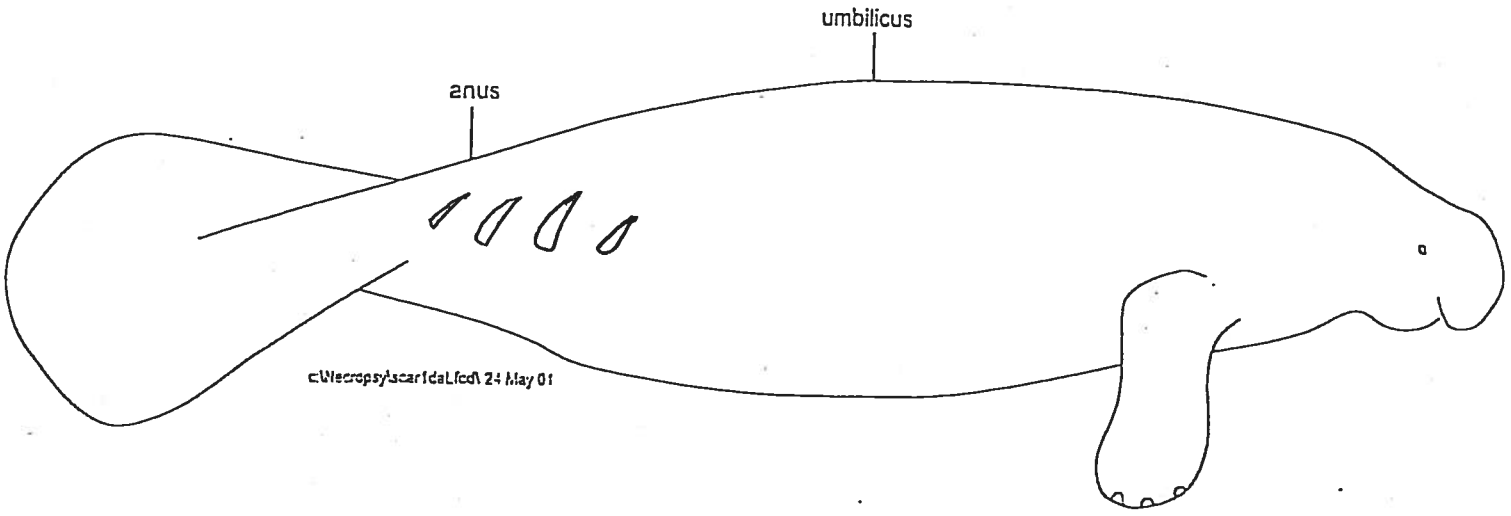


Scars

FIELD I.D. MEC20066

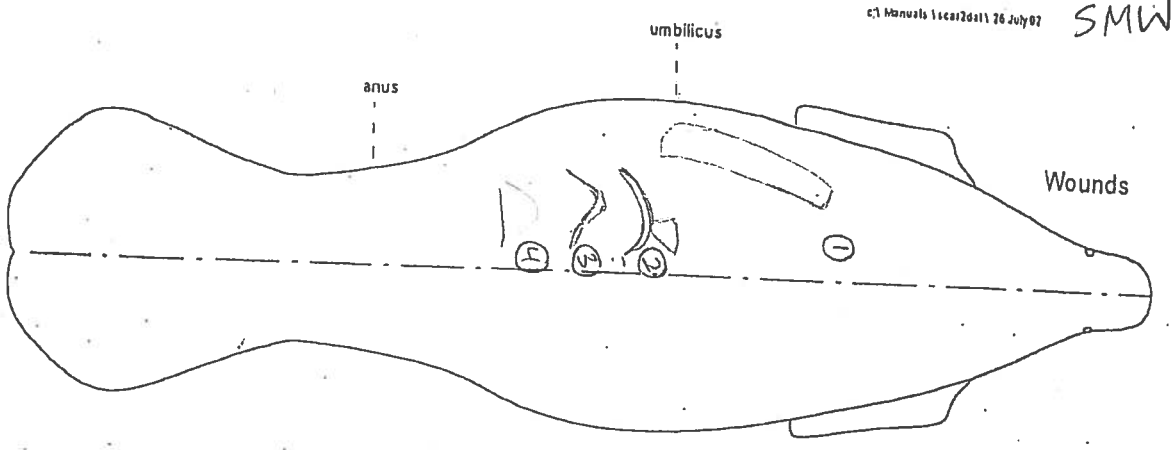






Date 1 Mar 2020 Field I.D. MEC200066

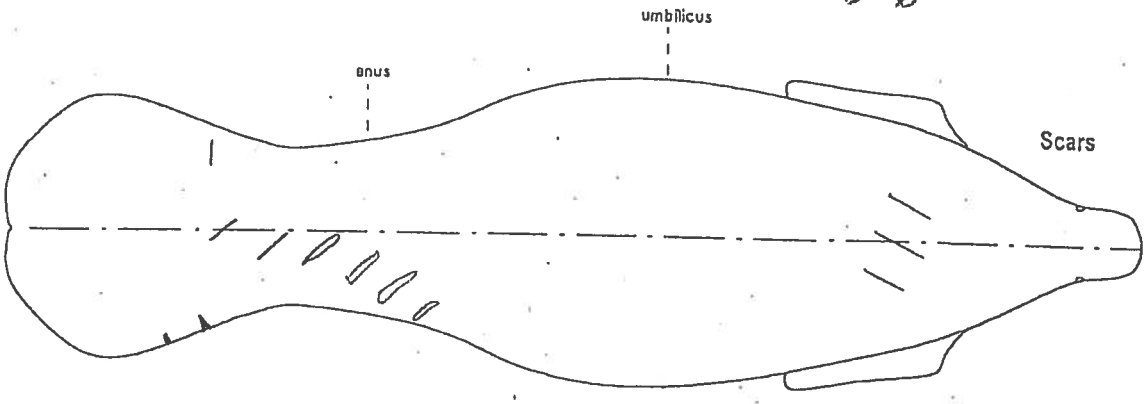
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Width	1.1	.7	1.8	7.5																
Depth	–	3.0	6.0	–																
Distance		9.5	12.5																	

Width of wound 2 w/o scrape: 3.5cm

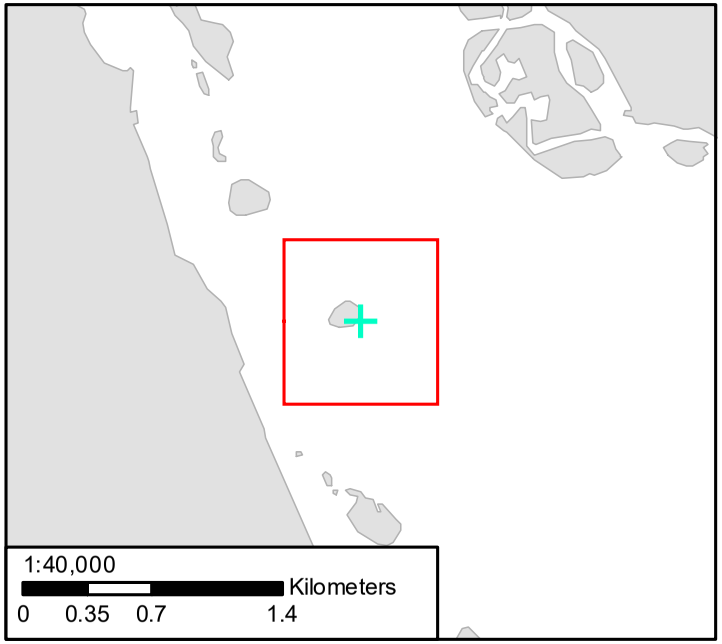
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W-7
D-Ø

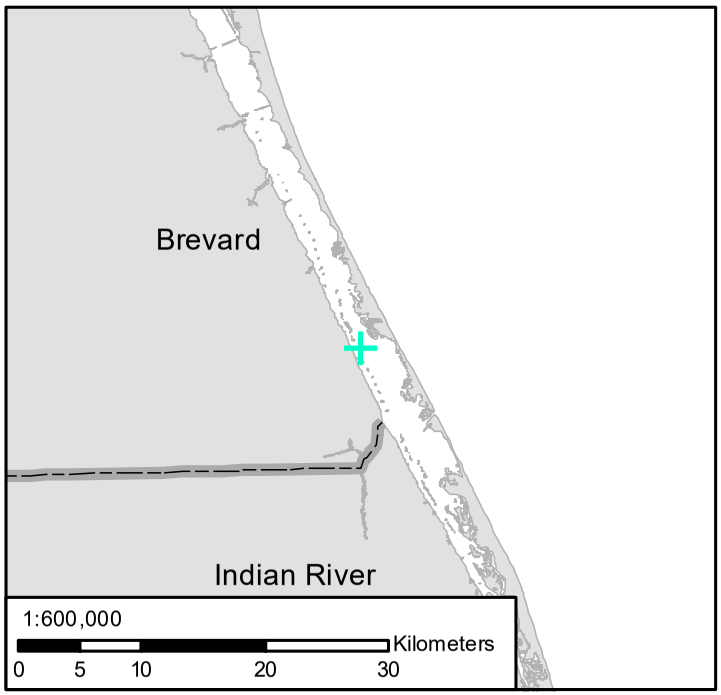


Verified Location of Manatee Carcass MEC20066

Report Date: 3/16/2020 **Received Date:** 3/17/2020 **Received By:** FWC-CMM,SMW







Location: Grant-Valkaria, Brevard County **Latitude:** 27.90925°N **Longitude:** -80.50694°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20066
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4341 **FWC District**: Northeast
Sex: Male **Length (cm)**: 272 **Estimated** _____ **Weight (kg)** _____
Date reported: 16 March 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 17 March 2020 **By**: FWC-CMM, SMW
Date necropsied: 17 March 2020 **By**: FWC-CMM, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Grant-Valkaria, 747 meters East of 6545 US Highway 1

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: hemorrhagic tissue surrounding right rib #9, blood clotting, punctured lung, punctured liver, punctured mid small intestine

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach contents

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20067**
Date of Report: 2020-Mar-21
Filed By: FWC EC Field Station

FWC Case # 4698 **FWC Region:** NE

Sex: Male **Length:** 290 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-21 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Mar-22 **By:** FWC-SMW
DATE NECROPSIED: 2020-Mar-22 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.31093 **N**
County: Brevard **Longitude:** -80.68751 **W**
Waterway: Indian River
Location description: Merritt Island, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Hemorrhagic muscle; Shredded muscle; Blood clots; Hemothorax; Torn hemidiaphragm(s); Torn lung(s); Torn parietal pleura; Organ pallor; Collapsed lung(s); Bloody nares; Hemorrhagic lung parenchyma; Fluid in airways; Congested mesenteries; Vegetation in mouth; Fluid in abdominal cavity, right pleural cavity.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Healing watercraft wound(s); Bleached epidermis; Fluid-filled duodenum. Wet lower GI contents. Macroalgae in GI tract. Actual length of the remains was 284 cm.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20067

MORPHOMETRICS:

Total length:	290 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20067 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 22 March 2020 **NECROPSY DATE** 22 March 2020
GENDER Male **TL** 290 **cm** (est) **WT** N/T **kg** **CONDITION** Moderately Decomposed

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HISTORY 21 March 2020, at 1901 hrs, FWC on-call biologist-Brandon L. Bassett (BLB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Merritt Island, Brevard County. FWC case number 4698 was assigned. The complainant, Jacqueline Harrison (321-508-2094), stated that the carcass was dorsum-up and hadn't moved in two hours. BLB received a photo from the complainant, but could not verify the carcass from it. At 1931 hrs, BLB forwarded the information to the EC Field Station and requested FWC LE assistance to verify the carcass. **22 March**, FWC biologist-Sara M. Wappes (SMW) arrived at the reported location at 0910 hrs, located the carcass at 0920 hrs, and canceled the request for FWC officer assistance at 0940 hrs. SMW walked the carcass to a nearby private boat ramp, loaded it via Ezy-Lift at 1025 hrs, and transported it to the EC Field Station at 1145 hrs. A field necropsy was completed by 1415 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL All of the epidermis was present, but the top layer was sloughing. The carcass was slightly distended with gas. Watery, bloody fluid exuded from the nares. There was a fresh linear superficial watercraft-related wound on the mid dorsal aspect (wound #8). A healing watercraft-related wound pattern was present cranial to wound #8 which consisted of a long linear wound (#1) cranial and perpendicular to six parallel wounds (#2 – 7). The healing wounds penetrated into the dermis. The fluke margin had numerous irregular-shaped, well-healed mutilations between the 4 and 8 o'clock positions. There was a moderate brown algal mat on the dorsal and lateral aspects. A mild infestation of copepods was present on the ventrum near the axillae. The epidermis of the flippers was slightly bleached. A minimum of one well-healed linear scar was present on the dorsal peduncle. Actual length of the remains was 284 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, omental, and mesenteric fat. The abdominal cavity contained approximately 2 L of watery, red fluid.

STOMACH The stomach contained 5.6 L of moist, well-chewed, fibrous, woody, brown ingesta mixed with yellow macroalgae. The ingesta was covered in a thick layer of viscous, light pink mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 650 mL of watery, yellow to brown fluid mixed with a small amount of well-chewed, stringy, brown ingesta and yellow macroalgae. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested. The proximal small intestine contained viscous, gray fluid. The distal small intestine contained watery, yellow fluid. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 1 L of wet, well-digested, fibrous, woody, brown digesta mixed with yellow and red macroalgae. The mucosa was unremarkable. No parasites were observed.

COLON The mesentery was severely congested (see photo). The proximal colon contained wet, poorly formed, moderately digested, fibrous, woody, tan to brown feces. The distal colon contained very moist, well-digested, poorly formed, slightly stringy, green to brown feces. The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was white to tan on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red to black on cut surfaces.

LIVER The margins of the liver were rounded. The liver was slightly soft. Serosal surfaces were gray to blue and black and cut surfaces were red to brown.

GALLBLADDER The gallbladder contained 125 mL of slightly viscous, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The seminal vesicles were large and contained a large amount of tan fluid. The testes were large. There was no fluid on cut surfaces of the epididymides.

KIDNEYS There was moderate perirenal fat. The kidneys were gray to tan on serosal surfaces (pallor). On cut surfaces of the right kidney, the cortices and medullae were pink. The corticomedullary boundaries were indistinct. On cut surfaces of the left kidney, the cortices were gray to tan and the medullae were pink (see photo). The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 75 mL of watery, clear urine. The mucosa was unremarkable.

HEART There was abundant epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was torn due to fractured left rib 11 (see photo). The right hemidiaphragm was intact. The left pleural cavity contained 4 L of loose, well-formed blood clots (see photo) and 1.8 L of watery, red fluid. The right pleural cavity contained 200 mL of watery, red fluid. The left lung was punctured by left rib 11 at the mid aspect and by left rib 12 on the medial aspect at the caudal one-third. The punctures were surrounded by hemorrhagic lung parenchyma. The left lung was collapsed, and white to light pink on serosal and cut surfaces (pallor, see photo). The right lung was pink on serosal surfaces and red on cut surfaces (see photo). There was a small area on the caudal tip of the right lung that was dark red on serosal and cut surfaces. The primary airways of both lungs contained an abundant amount of viscous, red fluid (see photo).

HEAD & NECK REGIONS There was a large thatch of yellow macroalgae and seagrass in the mouth (see photo).

SKELETON Left rib 10 was surrounded by hemorrhagic tissue at the rib head (see photo). Left ribs 11 and 12 had oblique, comminuted fractures at the proximal one-quarter. The fractures were surrounded by blood clots and hemorrhagic tissue. The fracture of left rib 11 tore the parietal pleura, left lung, and left hemidiaphragm. The fracture of left rib 12 tore the parietal pleura and left lung. Left rib 13 had an oblique fracture at the proximal one-quarter. The fracture and the rib head of left rib 13 were surrounded by hemorrhagic tissue. There was a small area of hemorrhagic tissue at the head of left rib 14. All trauma was deep to wound #8.

OTHER There was shredded, hemorrhagic tissue deep to wound #8.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh superficial watercraft wound
- Bloody nares
- Fractured ribs

- Shredded, hemorrhagic tissue
- Blood clots
- Hemothorax
- Torn hemidiaphragm, parietal pleura, lung
- Hemorrhagic lung parenchyma
- Collapsed lung
- Fluid in airways
- Kidney pallor
- Congested mesenteries
- Vegetation in mouth
- Fluid in abdominal cavity, right pleural cavity
- Healing watercraft wounds
- Bleached epidermis
- Fluid-filled duodenum
- Wet lower GI contents
- Macroalgae in GI tract

PROBABLE CAUSE OF DEATH Watercraft; Impact, Acute

NECROPSY CONDUCTED BY

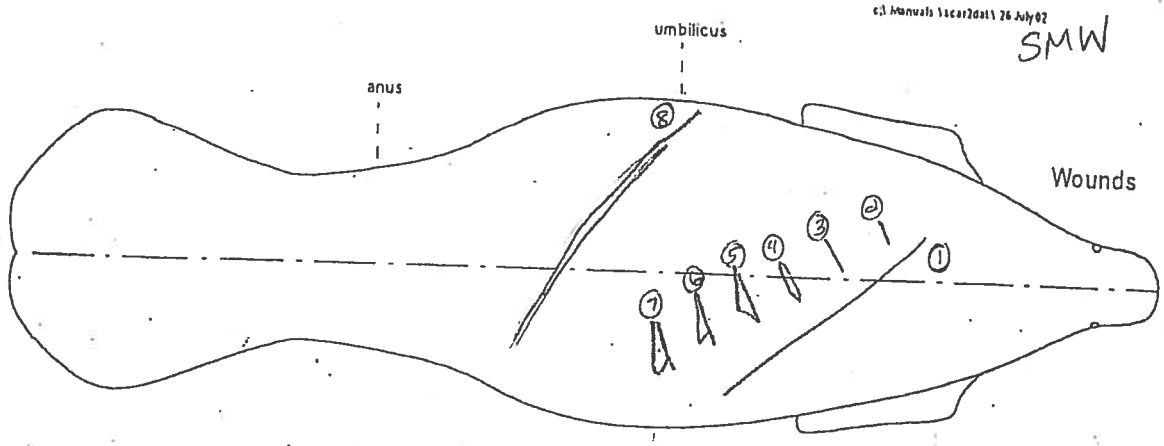
Sara M. Wappes
Brittiny Bennett (FWC volunteer)
Yagen Gutierrez (FWC volunteer)

REPORT FILED BY Wappes

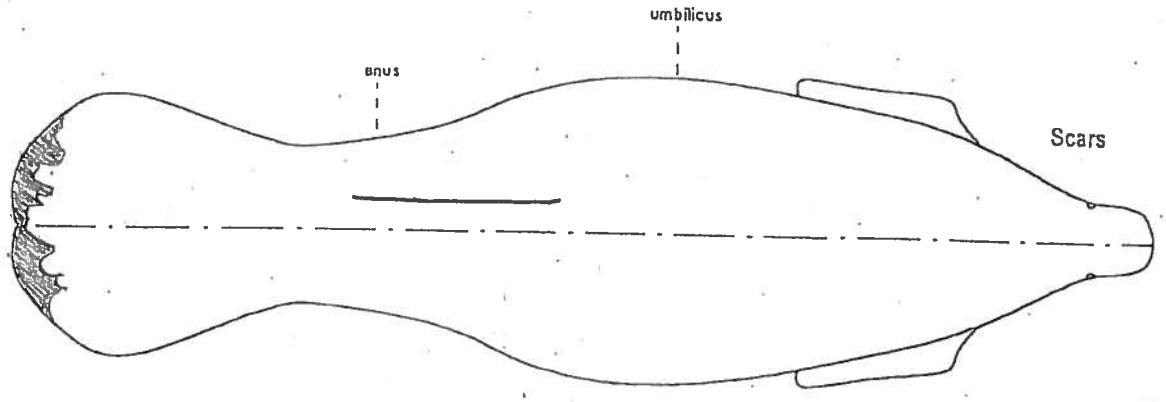
Date 22 MAR 2020 Field I.D. MEC20067

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SMW

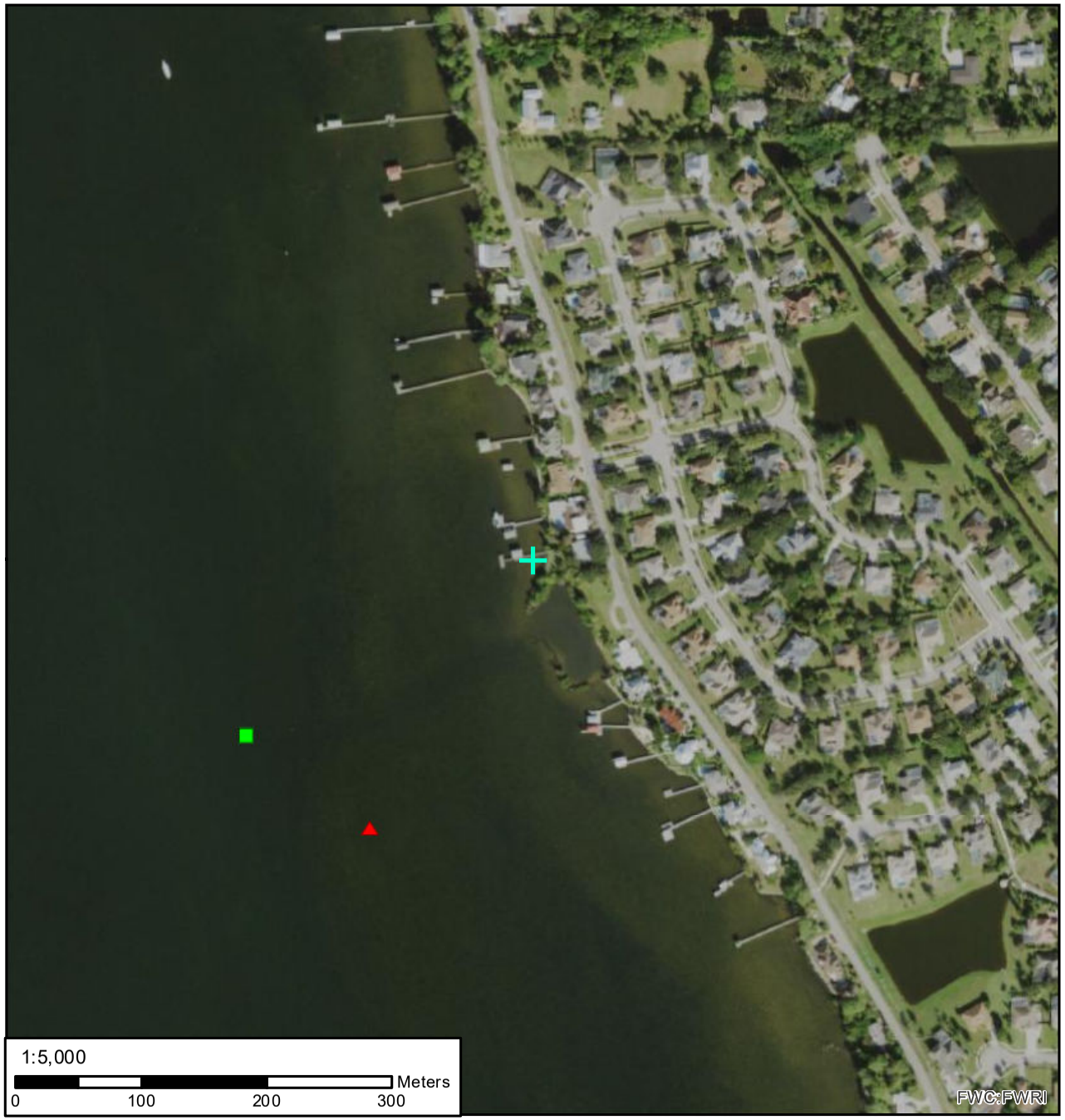


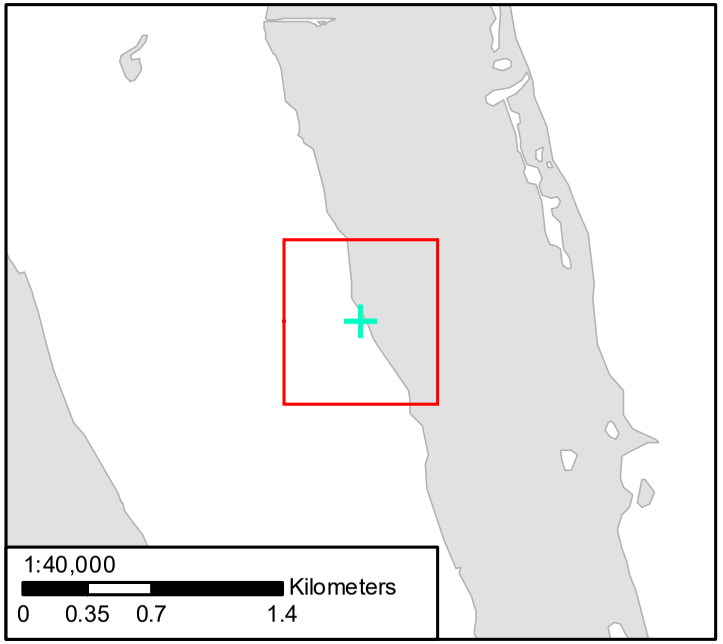
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Length	6.0	6.0	14.5	13.6	17.0	19.0	13.2	64.0												
Width	1.5	0.4	1.6	2.3	4.1	4.0	2.6	1.7												
Depth	0.9	0.2	0.5	0.9	0.7	0.8	0.9	-												
Distance		11.2	12.3	12.5	12.0	11.7														

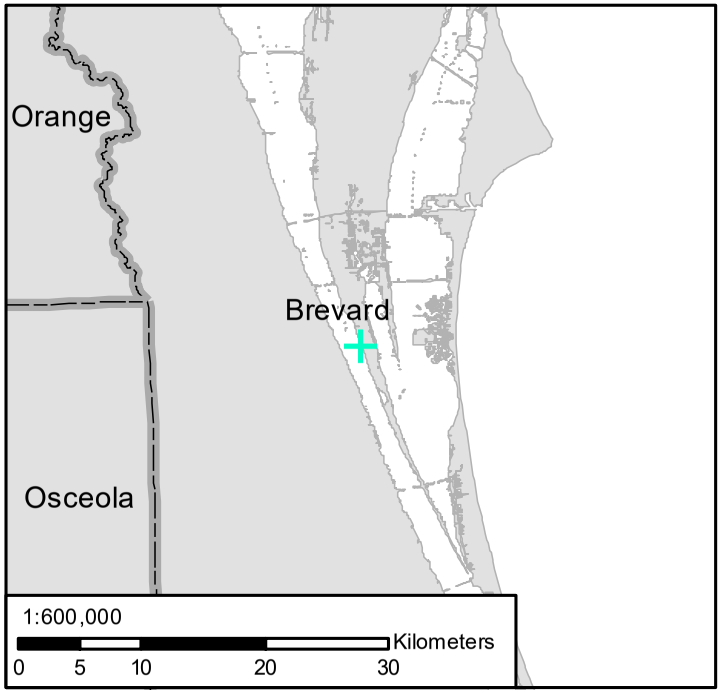


Verified Location of Manatee Carcass MEC20067

Report Date: 3/21/2020 **Received Date**: 3/22/2020 **Received By**: FWC-SMW







Location: Merritt Island, Brevard County

Latitude: 28.31093°N **Longitude**: -80.68751°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20067
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4698 **FWC District**: Northeast
Sex: Male **Length (cm)**: 284 **Estimated** 290 **Weight (kg)** _____
Date reported: 21 March 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 22 March 2020 **By**: FWC-SMW
Date necropsied: 22 March 2020 **By**: FWC-SMW, FWC vol-B. Bennett

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 45 m W of 2655 S Tropical Trail.

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☑ Watercraft Collision: Impact; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered

Explain: Superficial external wound, fractured ribs, punctured lung, blood clots.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20069**
Date of Report: 2020-Mar-28
Filed By: FWC EC Field Station

FWC Case #
FWC Region: NE

Sex: Male **Length:** 270 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-28 **By:** FWC Volunteer to FWC-SMW
DATE COLLECTED: 2020-Mar-29 **By:** FWC-SMW
DATE NECROPSIED: 2020-Mar-29 **By:** FWC-SMW

LOCATION:
State: FL
County: Indian River
Waterway: Indian River
Location description: Vero Beach, floating

Latitude: 27.79449 **N**
Longitude: -80.42321 **W**

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Hemorrhagic muscle; Blood clots; Hemothorax; Torn lung (s); Torn parietal pleura; Torn hemidiaphragm(s); Fractured kidney(s); Organ pallor; Torn cecum; Loose GI contents in abdominal cavity; Sediment in airway.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. Stomach contents in alcohol.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon. Cobblestone-like epidermis; Thick algal mat. Shark scavenging. Actual length of the remains was 267 cm.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20069

MORPHOMETRICS:

Total length:	270 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20069
SPECIES *T. manatus latirostris*
RECOVERY DATE 29 March 2020
NECROPSY DATE 29 March 2020
GENDER Male **TL** 270 **cm** (est) **WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 28 March 2020, at 1030 hrs, FWC biologist-Sara M. Wappes (SMW) received a call from FWC volunteer-Paul Lins (PL) regarding a dead manatee near the kayak launch at Pelican Island National Wildlife Refuge in the Indian River, Vero Beach, Indian River County. PL stated that the carcass was adult-sized and ventrum up with its flippers up. At 1036 hrs, SMW received a photo of the carcass. A field necropsy was planned for the following morning. **29 March**, SMW and FWC intern-Kelly Etherton arrived at the kayak launch at 0915 hrs, launched kayaks, and located the carcass at 0930 hrs. A field necropsy was completed by 1205 hrs. The remains were left onsite.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas. The cranial ventrum, lateral aspects of the head, and left dorsal neck region were severely shark scavenged. There was an eroded superficial watercraft-related wound series on the mid dorsum which consisted of a long linear wound (#1) and two short parallel wounds (#2 and 3) caudal and perpendicular to the right aspect of wound #1. There was a moderate brown algal mat on the dorsal aspect and a thick brown algal mat on the dorsal and lateral aspects. Thin patches of cobblestone-like epidermis were present on the ventrum. Small irregular-shaped lesions were present on all aspects. There was a minimum of four well-healed, watercraft-related scar patterns on the lateral aspects. Actual length of the remains was 267 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, mesenteric and omental fat. The abdominal cavity contained 200 mL of loose digesta (see photo), an abundant amount of watery, red fluid, and a few loose, well-formed blood clots.

STOMACH The stomach contained 10.5 L of moist, moderately chewed, very stringy, pink to green ingesta (see photos). The ingesta were coated in a thin layer of viscous, pink mucus. The mucosa was unremarkable. There was a moderate infection of live and dead nematodes.

DUODENUM The duodenum contained 3.2 L of wet, moderately chewed, stringy, spongy, green to brown ingesta. The mucosa was unremarkable. There was a mild infection of live nematodes.

JEJUNUM & ILEUM The small intestine had sections that contained watery, green to brown fluid mixed with a small amount of moderately chewed, stringy, green to brown ingesta, and sections that were empty of contents. The mucosa was unremarkable. There was a mild infection of dead trematodes.

CECUM The cecum had two tears due to fractured left ribs 12 and 13 (see photos). The cecum contained at least 900 mL of wet, moderately digested, stringy, green to brown digesta (see photo). The mucosa was unremarkable. There was a mild infection of dead trematodes.

COLON The proximal and mid colon contained wet, poorly formed, moderately digested, stringy, leafy, green to brown feces (see photo). The distal colon contained moist, well-formed, well-digested, stringy, green to brown feces. There was a 13 cm long piece of >30 lb test diameter clear monofilament in the contents. The mucosa was unremarkable throughout. There was a moderate infection of dead trematodes in the proximal colon.

PANCREAS The pancreas was soft. Serosal and cut surfaces were light pink.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and pink on cut surfaces.

LIVER The liver was soft. The margins of the liver were rounded. The liver was tan to black on serosal surfaces and pink to brown on cut surfaces (see photo).

GALLBLADDER The gallbladder contained 100 mL of slightly viscous, yellow to orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The seminal vesicles were small and contained a small amount of milky, tan fluid. The testes were medium-sized. There was no fluid on cut surfaces of the epididymides.

KIDNEYS There was a small amount of perirenal fat. There were loose, well-formed blood clots in the cranial aspect of the kidney capsule (see photos). The left kidney was torn at the dorsal cranial one-third due to fractured left rib 14 (see photo). The kidneys were tan, light pink and dark grey on serosal surfaces (pallor). On cut surfaces, the cortices were light pink and the medullae were pink. The corticomedullary boundaries were mostly indistinct.

URINARY BLADDER The urinary bladder contained a scant amount of pink-tinged urine. The mucosa was unremarkable.

HEART There was moderate, gassy epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was torn due to fractured left ribs 12 and 13. The right hemidiaphragm was torn due to decomposition. The left pleural cavity contained 1 L of loose, well-formed blood clots, one loose bone fragment, and 600 mL of watery, red fluid (see photo). The right pleural cavity contained approximately 200 mL of watery, red fluid. The left lung was punctured thorough the medial caudal one-third due to fractured left ribs 12 and 13 and on the mid dorsal aspect due to fractured left rib 11. The right lung was soft and friable. Both lungs were pink to black on serosal surfaces and dark pink on cut surfaces. The left lung was bloody on cut surfaces. There was a moderate infection of dead trematodes in the airways of both lungs (see photo). The right lung primary airway contained a small amount of dirt.

HEAD & NECK REGIONS The trachea had a severe infection of dead trematodes (see photo).

SKELETON Left rib 10 had transverse fractures at the proximal one-quarter and mid one-third. Left rib 11 had a closed transverse fracture at the proximal one-quarter and a transverse fracture at the mid one-third which tore the parietal pleura and left lung. Left rib 12 had a transverse fracture at the rib head. Left rib 13 had a transverse fracture at the proximal one-quarter. The fractures of left ribs 12 and 13 tore the parietal pleura, left lung, left hemidiaphragm, and cecum. Left rib 14 had an oblique fracture at the proximal one-quarter which tore the parietal pleura and kidney. Left rib 15 had an oblique fracture at the proximal one-quarter which tore the parietal pleura. All fractures were surrounded by loose, well-formed blood clots and hemorrhagic tissue and were associated with wound #1.

OTHER There was hemorrhagic muscle deep to wound #1 (see photo).

COMMENTS

SIGNIFICANT FINDINGS

- Superficial watercraft wounds
- Fractured ribs
- Hemorrhagic tissue

- Blood clots
- Hemothorax
- Torn parietal pleura, lung, hemidiaphragm, kidney, cecum
- Sediment in airway
- Loose GI contents, fluid, blood clots in abdominal cavity
- Kidney pallor
- Thick algal mat
- Cobblestone-like epidermis
- Monofilament in colon
- Shark scavenging

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

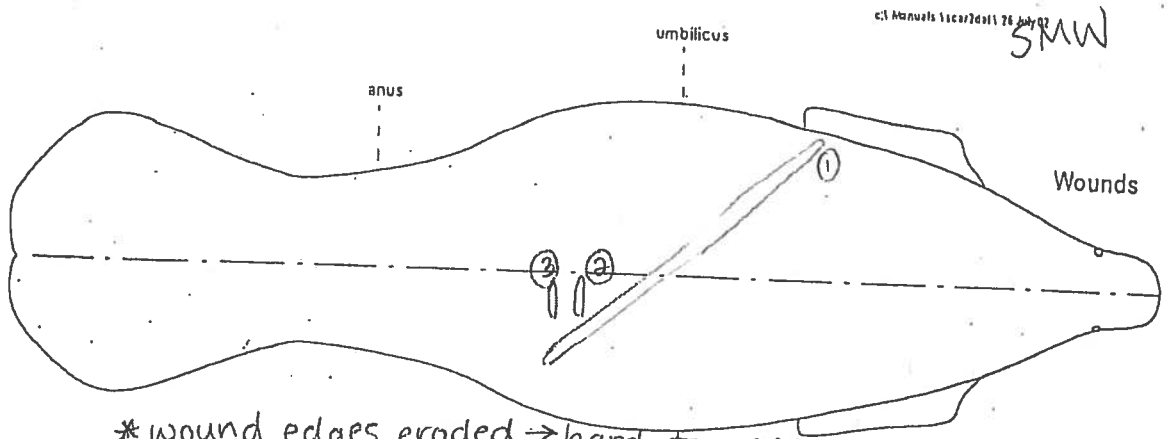
NECROPSY CONDUCTED BY

Sara M. Wappes
Kelly Etherton (FWC intern)

REPORT FILED BY Etherton / Wappes

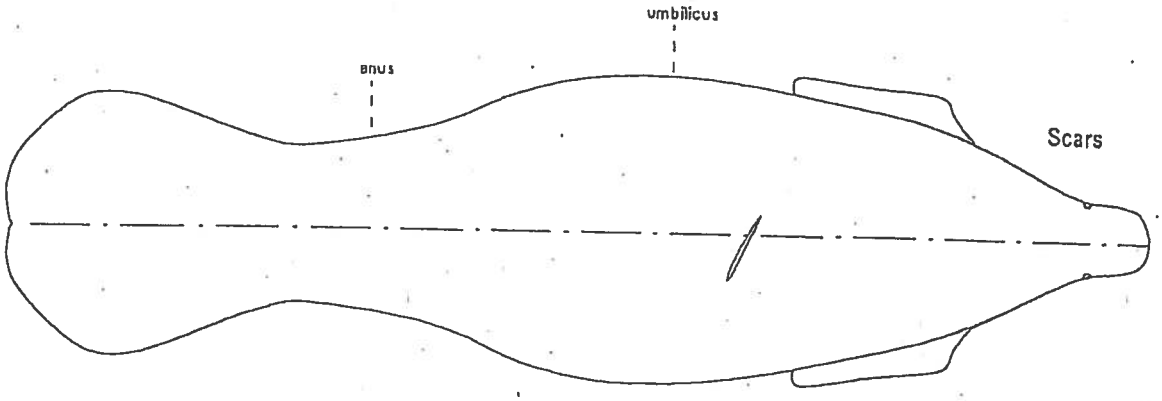
Date 29 Mar 2020 Field I.D. MEC20069

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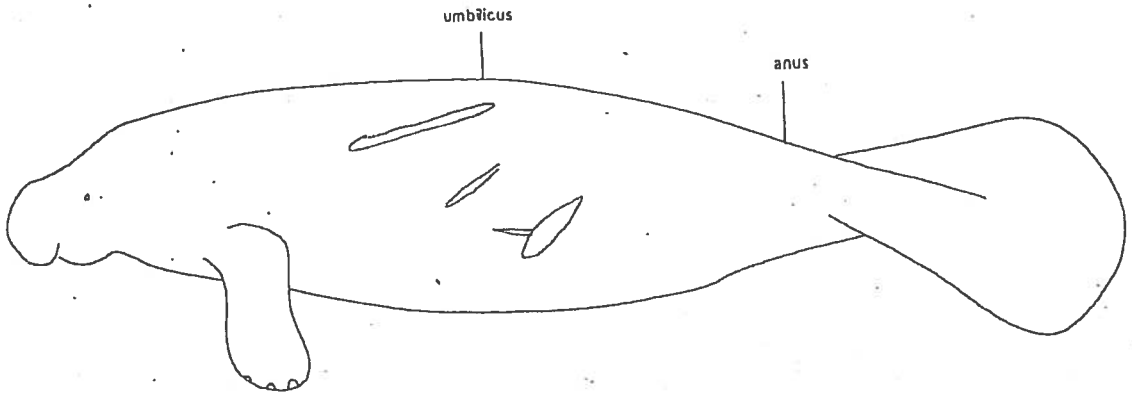


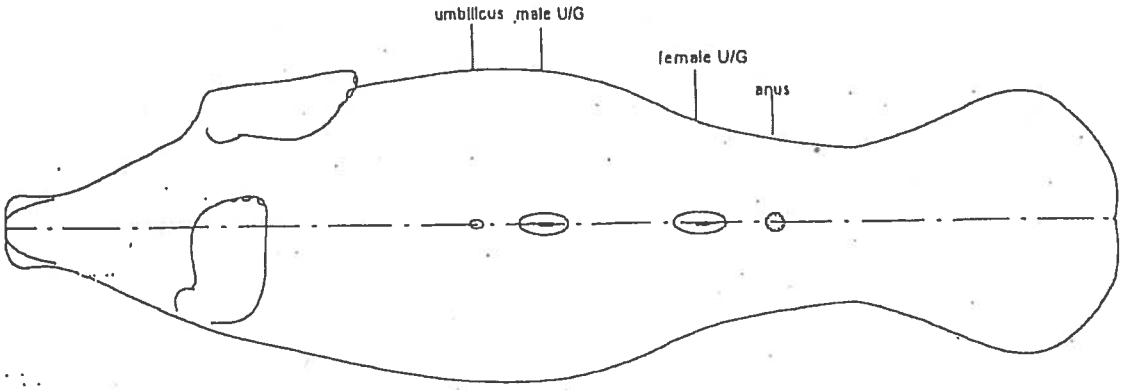
*wound edges eroded → hard to measure

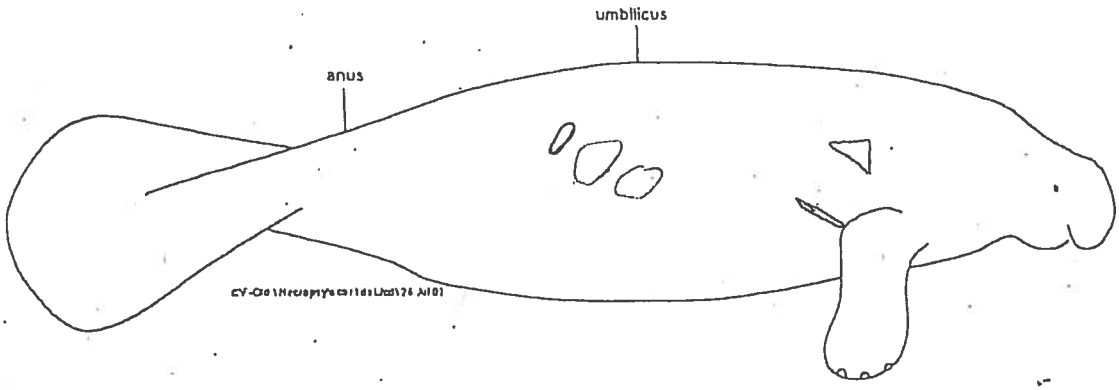
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Width	3	2	1.2																	
Depth	0	0	0																	
Distance		7.0																		



FIELD I.D. MEC20069



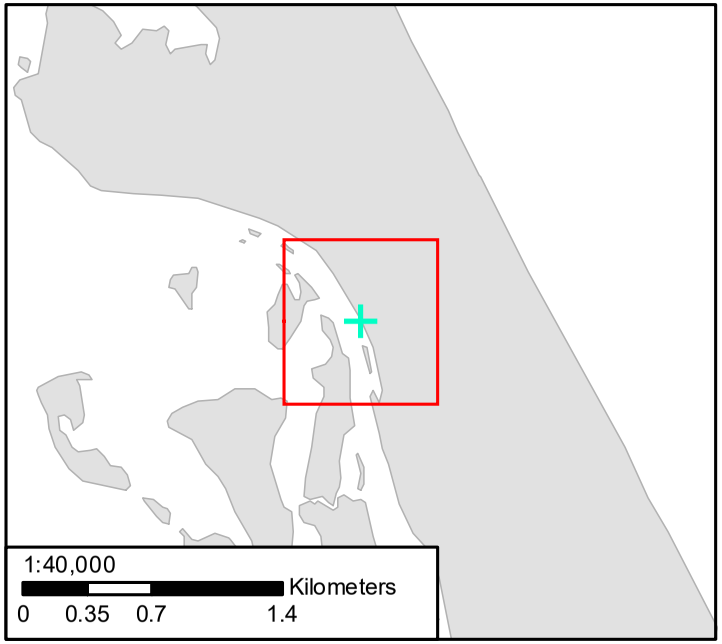


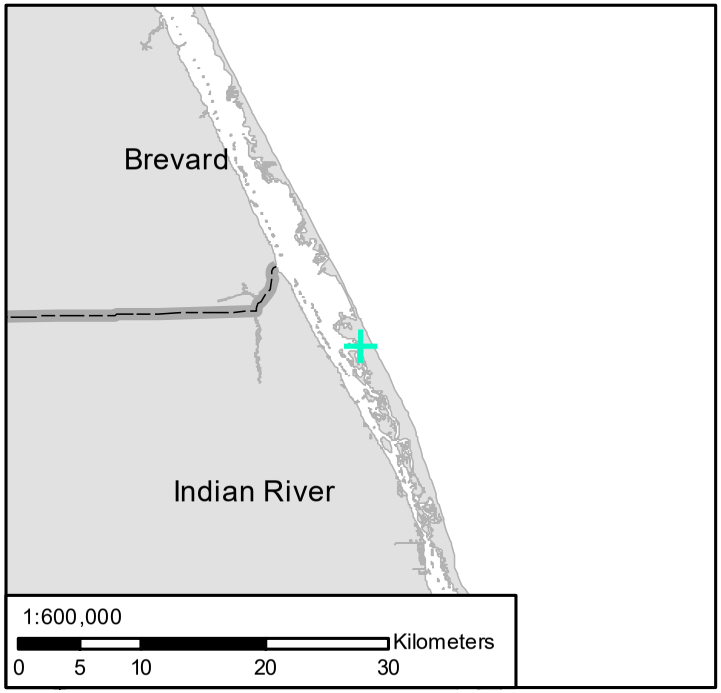


Verified Location of Manatee Carcass MEC20069

Report Date: 3/28/2020 **Received Date:** 3/29/2020 **Received By:** FWC-SMW







Location: Vero Beach, Indian River County

Latitude: 27.79449°N **Longitude:** -80.42321°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20069
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Male **Length (cm)**: 267 **Estimated** 270 **Weight (kg)** N/T
Date reported: 28 March 2020 **By**: FWC Vol-P. Lins to FWC-SMW
Date collected: 29 March 2020 **By**: FWC-SMW, FWC Intern-K.Etherton
Date necropsied: 29 March 2020 **By**: FWC-SMW, FWC Intern-K.Etherton

LOCATION INFORMATION: State FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 340 m NW of 10895 Savannah Drive.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: External wound series, fractured ribs, blood clots, punctured cecum, punctured parietal pleura, hemidiaphragm and lung.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☑ Other Stomach

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20070**
Date of Report: 2020-Mar-30
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Male **Length:** 210 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-30 **By:** Citizen to FWC-Donna Szemer

DATE COLLECTED: 2020-Mar-31 **By:** FWC-SMW,CMM

DATE NECROPSIED: 2020-Mar-31 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 27.5634 **N**

County: Indian River **Longitude:** -80.3624 **W**

Waterway: Indian River

Location description: Vero Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Dry, hard feces; Relatively empty GI tract; Thickened duodenum mucosa; Bloody small intestine-, cecum-, proximal colon contents; Adhered small intestine, colon with abscess; Sediment in airways, lung parenchyma; Congested mesentery.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Bleached epidermis; Shark scavenging. Actual length of the remains was 207 cm.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20070

MORPHOMETRICS:

Total length:	210 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20070
SPECIES *T. manatus latirostris*
RECOVERY DATE 31 March 2020
NECROPSY DATE 31 March 2020
GENDER Male **TL** 210 **cm** (est) **WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 30 March 2020, at 1649 hrs, FWC biologist-William D. Greer (WDG) received an email from FWC-Donna Szemer regarding a dead manatee in the Indian River in Vero Beach, Indian River County. The complainant, Joseph Archer (727-270-1997), stated that the carcass was 5.5 feet long and gray in color. At 1712 hrs, WDG received a photo, but it was inconclusive, so the complainant agreed to take another photo the next morning. **31 March**, at 1015 hrs, WDG received a photo of the carcass. FWC biologists-Sara M. Wappes and Carley M. Metcalf arrived at Round Island State Park boat ramp at 1150 hrs, launched the Key West boat, located the carcass at 1250 hrs, and towed it to a nearby spoil island. A field necropsy was completed by 1400 hrs. The remains were left onsite.

EXTERNAL Almost all of the epidermis was present but sloughing. The mid to cranial ventrum was severely shark scavenged. The right flipper was missing due to scavenging, and the GI tract protruded from the scavenged area. There were bleached spots in the epidermis on the ventral and lateral aspects. A minimum of two well-healed watercraft-related scar patterns was observed on the cranial left lateral aspect. Actual length of the remains was 207 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal fat and a small amount of mesenteric fat. The omental fat was missing due to scavenging. Internal organs were missing unless mentioned below.

STOMACH The stomach was torn and empty of contents. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 50 mL of moist, well-chewed, slightly stringy, pink to brown ingesta (see photo). The mucosa was purple to black and coated with raised, irregular, coalescing, necrotic, yellow, brown and pink plaques (see photos). There was a mild infection of dead nematodes.

JEJUNUM & ILEUM The small intestine was friable when handled and detached at both ends. There was an approximately two-meter-long piece of detached small intestine that was adhered to the proximal colon and associated with caseous yellow material (see photos). There was viscous, gray fluid on one side of the adhesion and bloody, red fluid on the other. The mucosa was autolyzed. There was a moderate infection of pinpoint trematodes visible in photos.

CECUM The cecum contained 25 mL of bloody, red fluid (see photo). The mucosa was pink to red. There was a mild infection of dead trematodes.

COLON The mesentery was mildly congested (see photo). The portion of the proximal colon that was proximal to the small intestine adhesion contained bloody, red fluid (see photo). A moderate infection of pinpoint trematodes was observed in photos. The portion of the proximal colon that was distal to the adhesion contained a small amount of moist, well-digested, poorly formed, stringy, light brown digesta. The distal-most 0.5 meter contained dry, hard, well-digested, well-formed, stringy, green to brown feces (see photo). The remainder of the distal colon and the mid colon were missing. The mucosa was autolyzed throughout. No parasites observed beyond the colon portion that contained bloody fluid.

LIVER A small portion of liver remained and was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained yellow.

REPRODUCTIVE There was moderate reproductive fat. The testes were small. The seminal vesicles and epididymides were not examined.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa had patches of light pink staining.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right hemidiaphragm was distended due to gas in the right pleural cavity. The lungs were pink to red and black on serosal surfaces. On cut surfaces, the right lung was dark red and bloody, and the left lung was pink to red. There was an abundant amount of sediment in the lung parenchyma (see photos). The primary airways contained a moderate amount of sediment and small shell fragments (see photo).

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Necrotic plaques duodenum mucosa
- Bloody small intestine, cecum, proximal colon contents
- Adhered small intestine, colon with abscess
- Dry, hard feces
- Relatively empty GI tract
- Sediment in airways, lung parenchyma
- Congested mesentery
- Bleached spots epidermis
- Shark scavenging
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

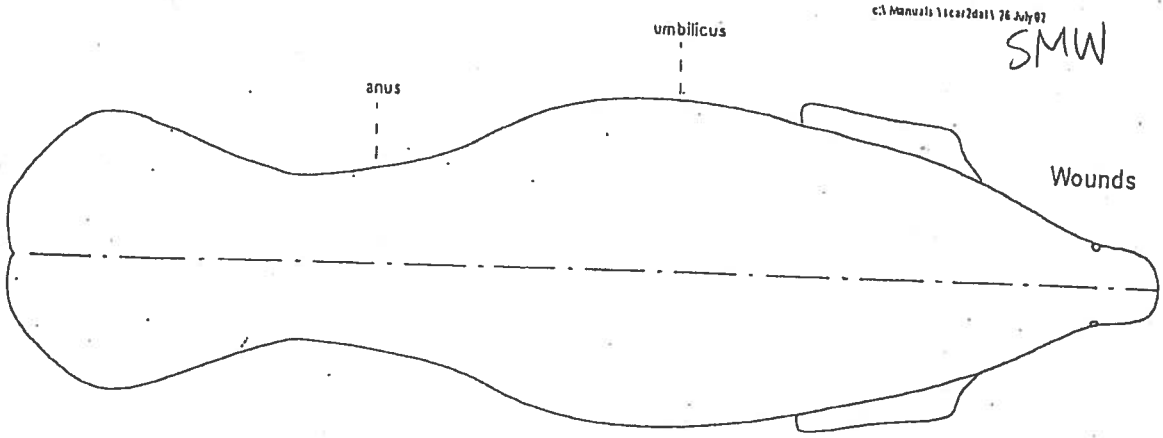
Sara M. Wappes
Carley M. Metcalf

REPORT FILED BY Wappes

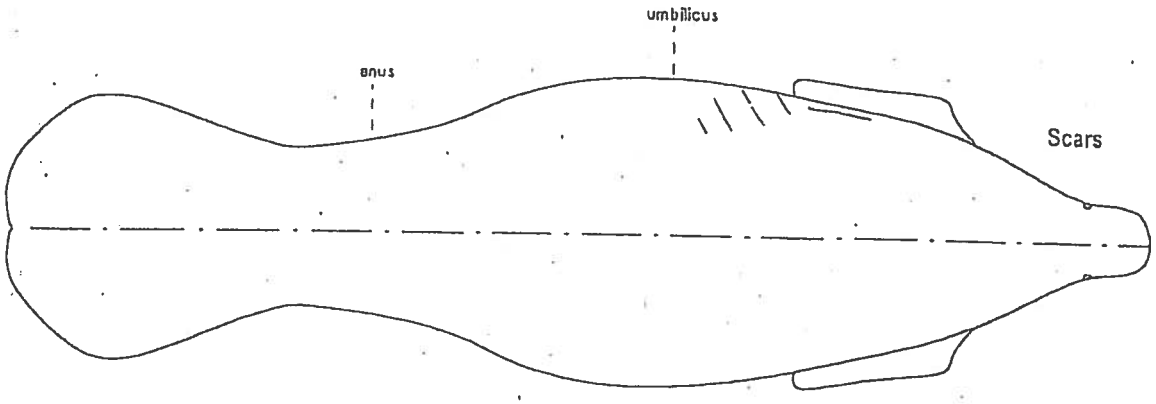
Date 31 Mar 2020 Field I.D. MFC20070

c:\ Manuals \ scar2dat \ 26 July 02

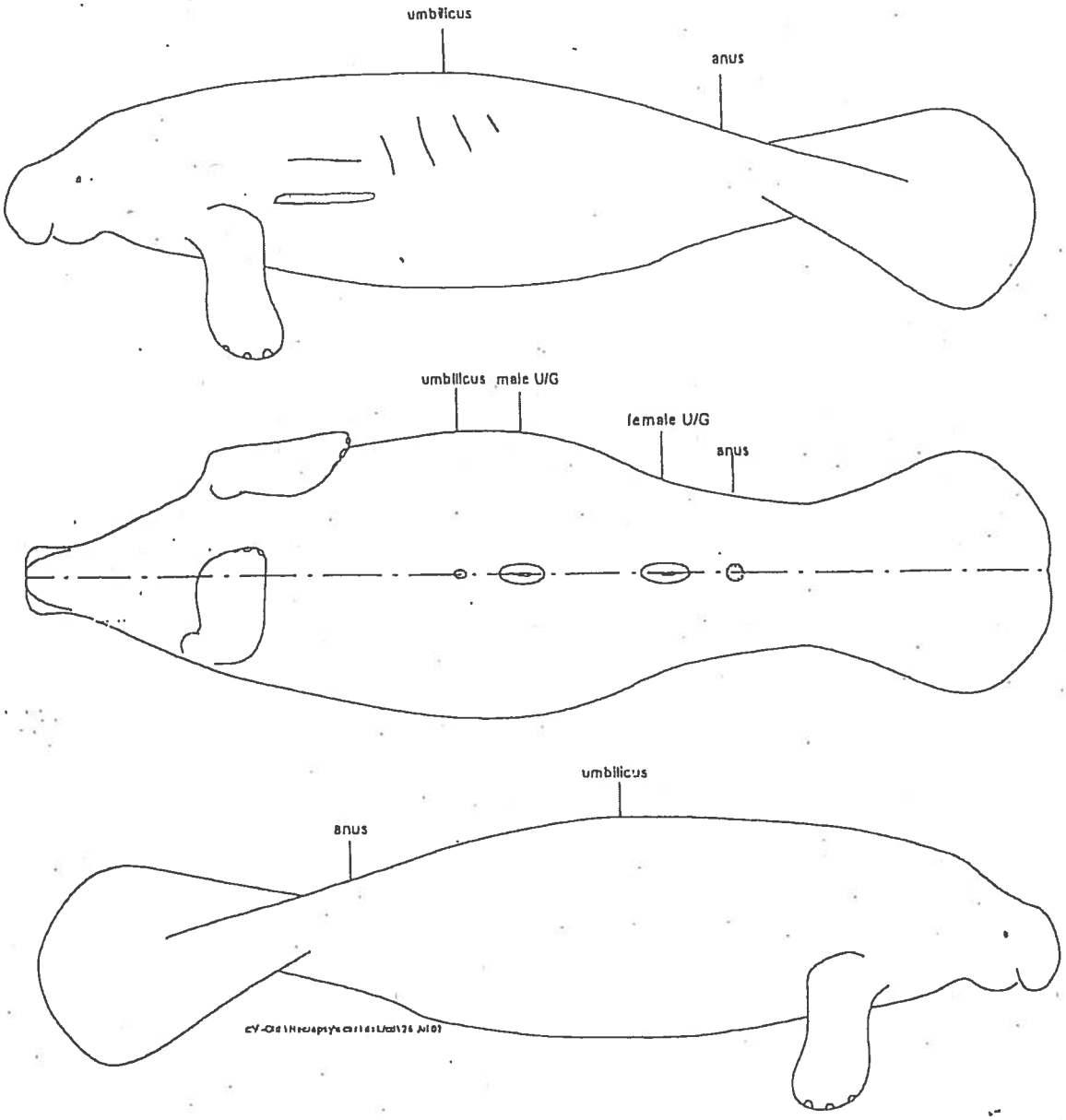
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Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



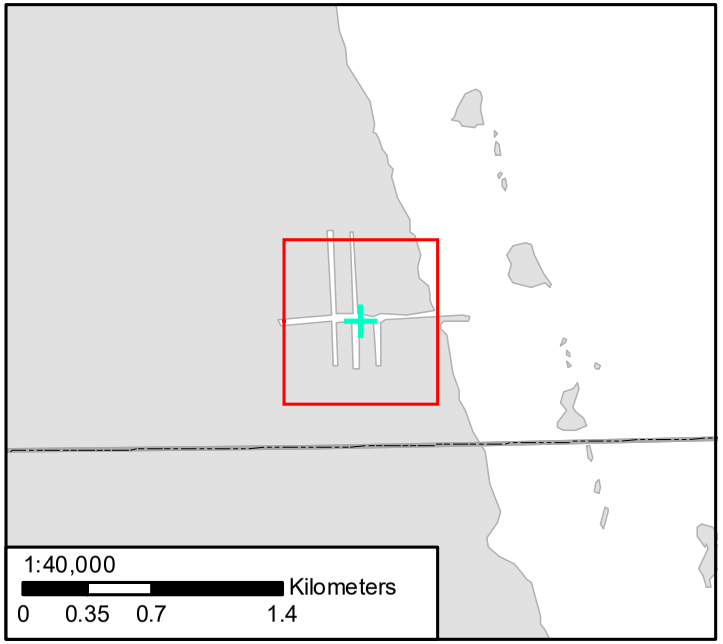
FIELD I.D. MEC20070

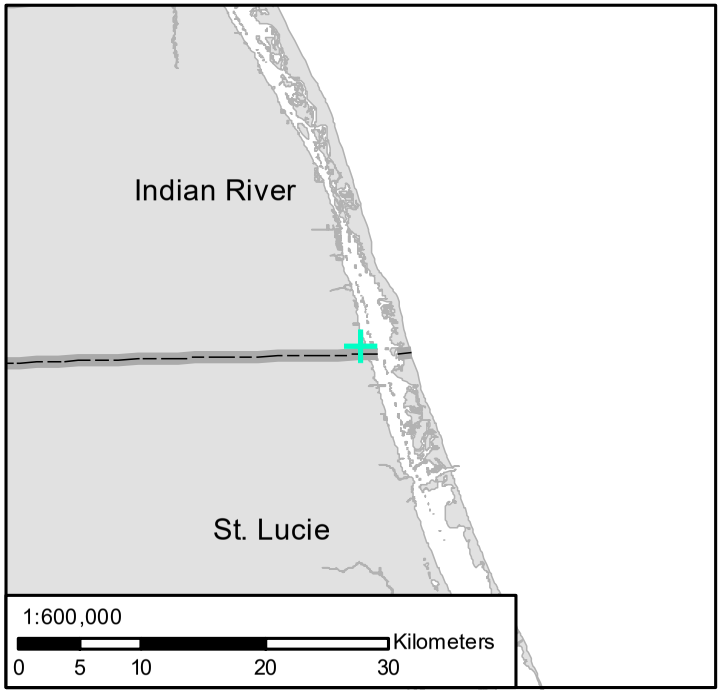


Verified Location of Manatee Carcass MEC20070

Report Date: 3/30/2020 **Received Date:** 3/31/2020 **Received By:** FWC-SMW,CMM







Location: Vero Beach, Indian River County **Latitude:** 27.5634°N **Longitude:** -80.3624°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20070
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Male **Length (cm)**: 207 **Estimated** 210 **Weight (kg)** _____
Date reported: 30 March 2020 **By**: Citizen to FWC-Donna Szemer
Date collected: 31 March 2020 **By**: FWC-SMW, CMM
Date necropsied: 31 March 2020 **By**: FWC- SMW, CMM

LOCATION INFORMATION: State FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 20 meters NW of 2165 6th Court SE

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: scavenging, bloody red fluid in cecum and proximal colon, small intestine and large intestine adhered at one section, caseous material at adhesion, dirt in lungs, autolyzed and/or missing internal organs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20072**
Date of Report: 2020-Apr-13
Filed By: FWC EC Field Station

FWC Case # 6174 **FWC Region:** NE

Sex: Unknown **Length:** 150 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-13 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.55844 **N**
County: Brevard **Longitude:** -80.79783 **W**
Waterway: Indian River
Location description: Titusville, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Peanut-shaped head; Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Found dorsum-up.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20072

MORPHOMETRICS:

Total length:	150 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20072 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 150 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 13 April 2020, at 1134 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville, Brevard County. FWC case number 6174 was assigned. The complainant, Mark Harper (321-338-0374), stated that the carcass was grounded, dorsum-up, and 6 feet long. He had watched the manatee for 15 minutes and never saw it take a breath. At 1146 hrs, SMW received photos of the carcass. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied. The carcass was left onsite.

EXTERNAL From photographs – All of the dorsal epidermis was present. The carcass had a peanut-shaped head. There was a thin brown algal mat on the dorsum. A few barnacles were present on the dorsum. There were areas of raised lumps on the mid to caudal dorsal aspect.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Peanut-shaped head
- Found grounded dorsum up

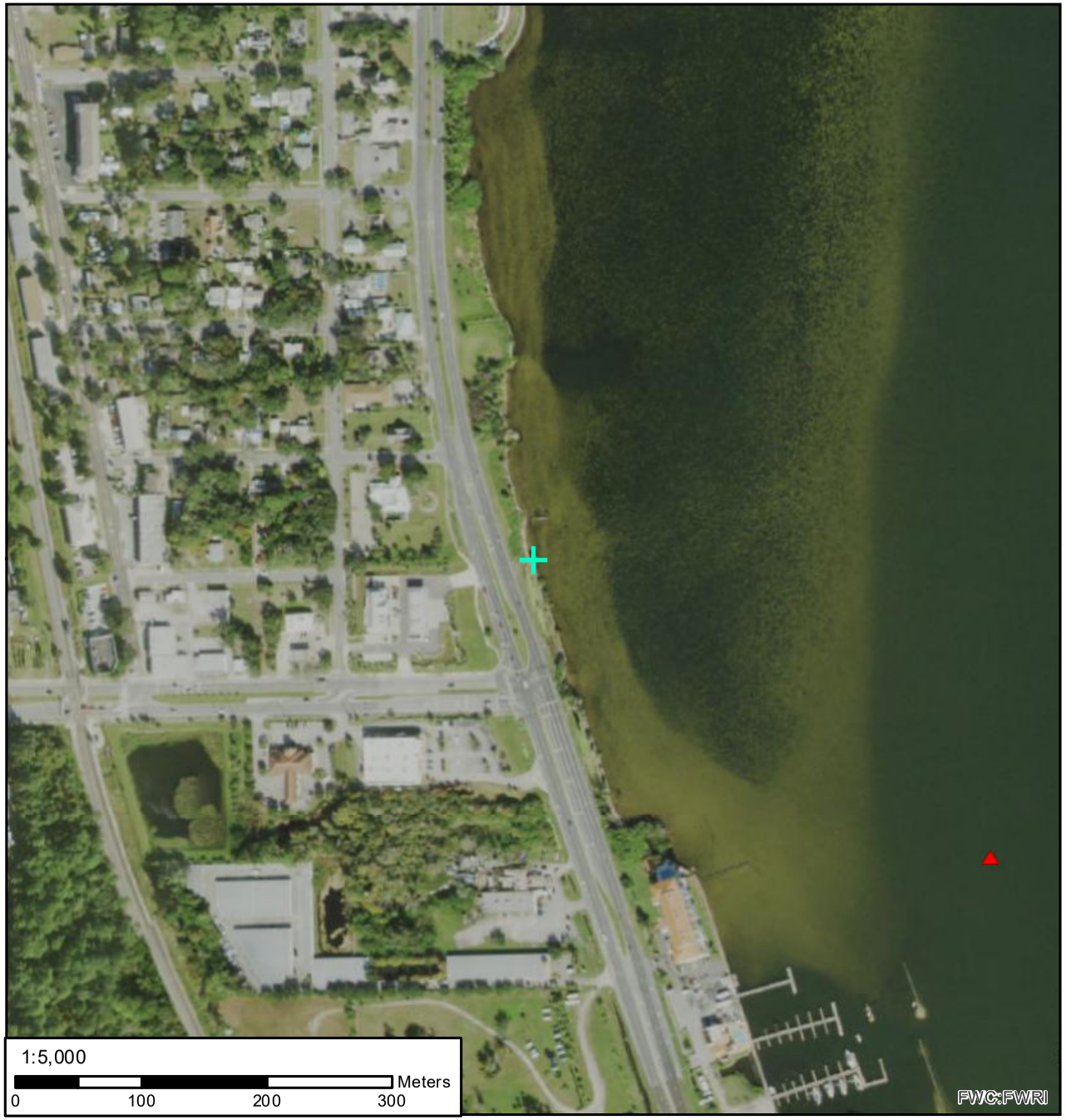
PROBABLE CAUSE OF DEATH Verified; Perinatal (Not Necropsied)

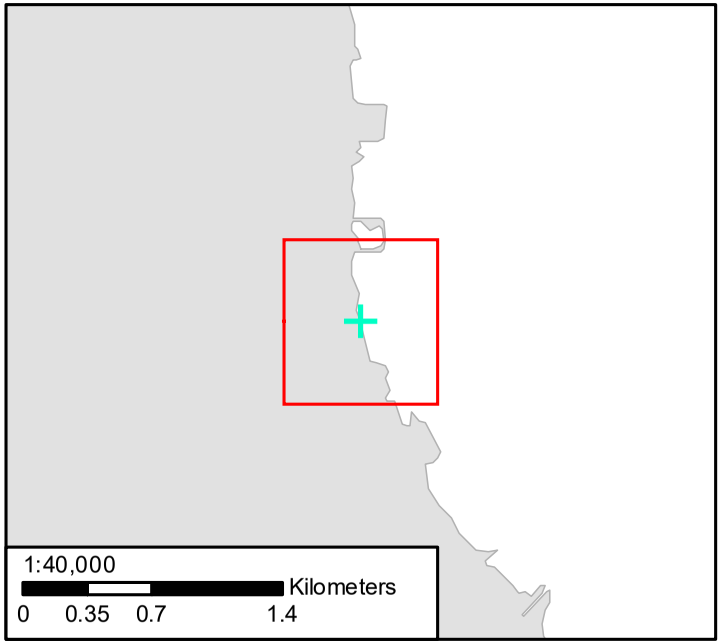
NECROPSY CONDUCTED BY N/A

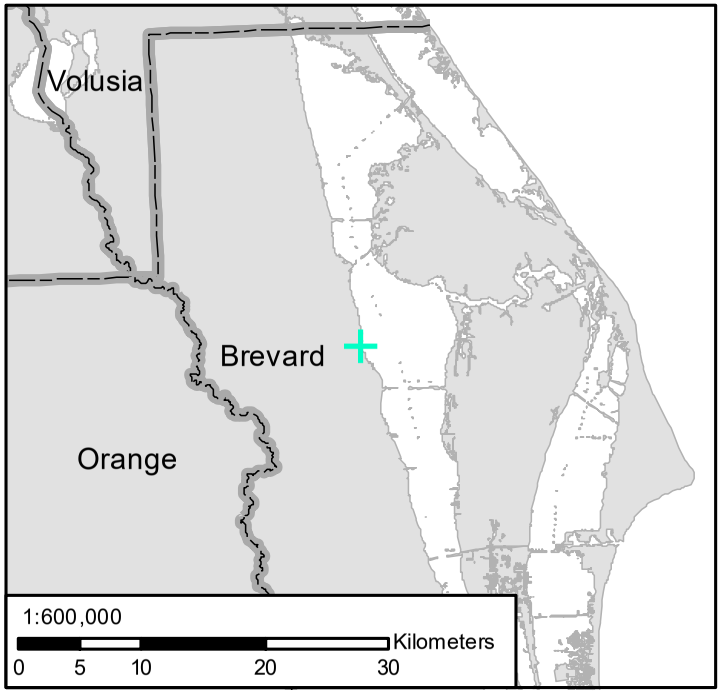
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20072

Report Date: 4/13/2020 **Received Date**: **Received By**:







Location: Titusville, Brevard County

Latitude: 28.55844°N **Longitude**: -80.79783°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20072
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6174 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 13 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 125 m SE of 137 Birch Street.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20073**
Date of Report: 2020-Apr-13
Filed By: FWC EC Field Station

FWC Case # 6198 **FWC Region:** NE

Sex: Male **Length:** 150 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-13 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.01771 **N**
County: Brevard **Longitude:** -80.59011 **W**
Waterway: Turkey Creek
Location description: Palm Bay, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through photograph and FWC Officer. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20073

MORPHOMETRICS:

Total length:	150 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20073 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 150 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 13 April 2020, at 1530 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in Turkey Creek in Palm Bay, Brevard County. FWC case number 6198 was assigned. The complainant, Nicholas (321-961-4170), stated that the carcass was belly-up and three feet long. SMW received a photo of the carcass at 1536 hrs and requested FWC LE assistance to secure it at 1549 hrs. FWC Officer-Joshua Beck arrived at the carcass at 1847 hrs and secured it to remote shoreline in Turkey Creek Sanctuary at 1907 hrs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph – Approximately 70% of the ventral epidermis was present but sloughing. The carcass was distended with gas. There were transverse folds on the ventrum. A small amount of tissue protruded from the umbilicus. The fluke margin was scalloped.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through photograph and FWC Officer
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

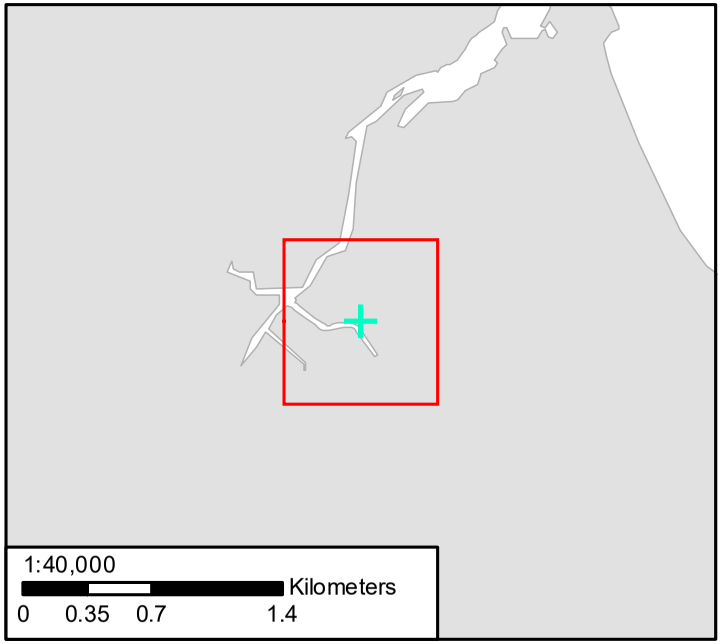
NECROPSY CONDUCTED BY N/A

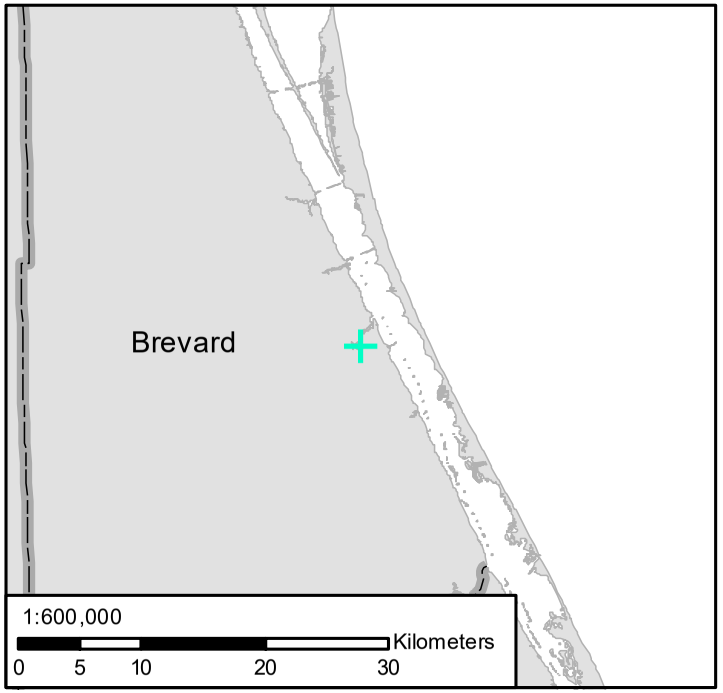
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20073

Report Date: 4/13/2020 **Received Date:** **Received By:**







Location: Palm Bay, Brevard County

Latitude: 28.01771°N **Longitude:** -80.59011°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20073
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6198, 6233, 6[illegible] **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 140 **Weight (kg)** N/T
Date reported: 13 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 13 April 2020 **By**: FWC-Officer Joshua Beck
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Turkey Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 35 m NE of 889 Vance Circle NE.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied. Also perinatal-sized.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other Complainant

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20074**
Date of Report: 2020-Apr-14
Filed By: FWC EC Field Station

FWC Case # 6249 **FWC Region:** NE

Sex: Unknown **Length:** 130 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-14 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.01766 **N**
County: Brevard **Longitude:** -80.59015 **W**
Waterway: Turkey Creek
Location description: Palm Bay, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Verified through complainant photograph. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20074

MORPHOMETRICS:

Total length:	130 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20074 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 130 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 14 April 2020, at 1102 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in Turkey Creek in Palm Bay, Brevard County. FWC case number 6249 was assigned. The complainant, Caroline Cardew (321-480-6203), stated that the carcass was three feet long and dorsum-up. A small gator was taking bites out of it. At 1207 hrs, SMW received a photo of the carcass. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - Approximately 10% of the dorsal epidermis was present but sloughing. The carcass was distended with gas. The dermis of the head was torn due to scavenging. Flies were present on the carcass.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph
- Scavenging

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

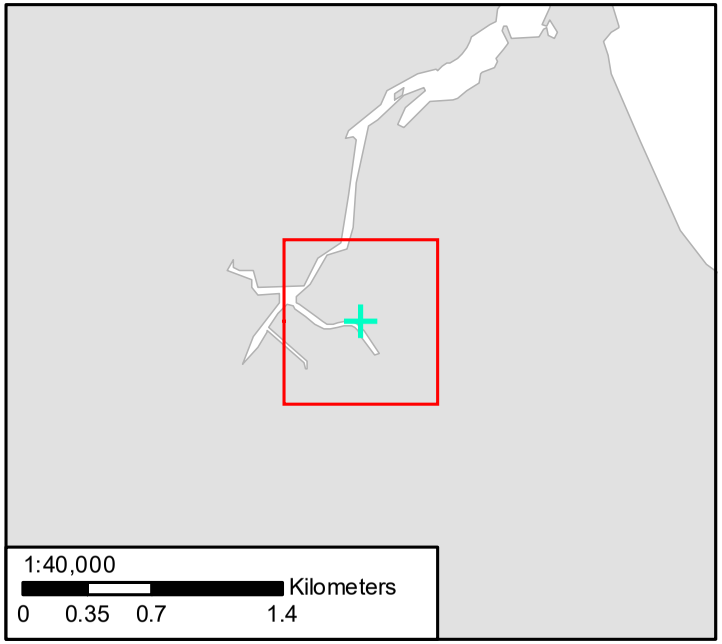
NECROPSY CONDUCTED BY N/A

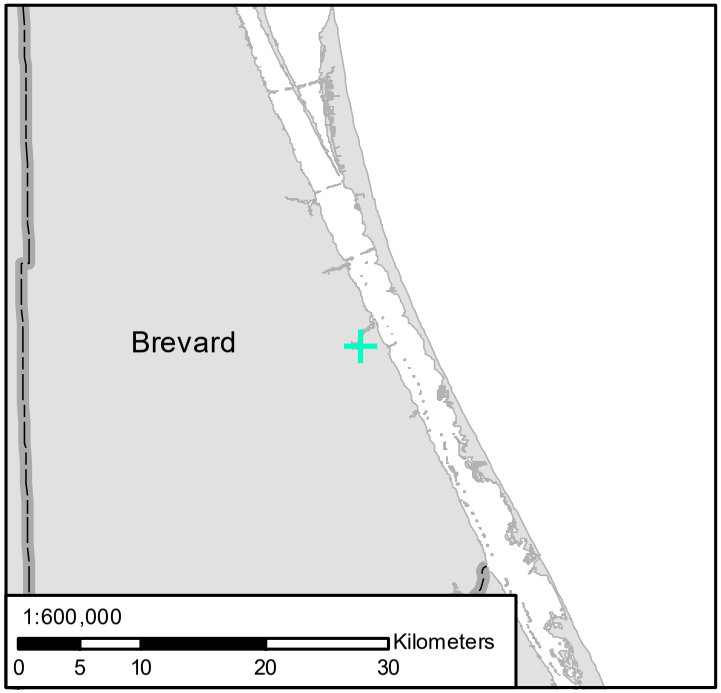
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20074

Report Date: 4/14/2020 **Received Date:** **Received By:**







Location: Palm Bay, Brevard County

Latitude: 28.01766°N **Longitude:** -80.59015°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20074
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6249 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 130 **Weight (kg)** _____
Date reported: 14 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Turkey Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 30 m NE of 889 Vance Circle.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20075**
Date of Report: 2020-Apr-16
Filed By: FWC EC Field Station

FWC Case # 6423 **FWC Region:** NE

Sex: Female **Length:** 305 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-16 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Apr-19 **By:** FWC-SMW

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.32745 **N**
County: Brevard **Longitude:** -80.71398 **W**
Waterway: Indian River
Location description: Rockledge, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: An external workup was performed. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not necropsied.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Also FWC case number 6366. Scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20075

MORPHOMETRICS:

Total length:	305 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20075
SPECIES *T. manatus latirostris*
RECOVERY DATE 19 April 2020
NECROPSY DATE N/A
GENDER Female **TL** 305 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 16 April 2020, at 0841 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Rockledge, Brevard County. FWC case number 6366 was assigned. The complainant, Ken Renard (517-398-6544), stated that the carcass was nine feet long, ventrum-up, and drifting south on the east side of the channel. **17 April**, at 0921 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from Dispatch regarding the same dead manatee. FWC case number 6423 was assigned. The complainant, Victoria (478-955-0834), said the carcass was floating near the seawall, belly-up with flippers sticking up in the air. CMM received a photo of the carcass at 0928 hrs and requested FWC LE assistance to tow it at 0931 hrs. Due to inclement weather, the request could not be fulfilled until the following morning. **18 April,** at 0928 hrs, FWC Officer Rasey responded to the carcass via land and informed CMM that it was in an area that was inaccessible by boat. Due to approaching inclement weather, he could not wait for assistance. CMM requested LE assistance for the following morning. **19 April**, at 1507 hrs, FWC Officer-Seth Loeffler was dispatched and agreed to meet SMW at the carcass to assist with relocation. At 1622 hrs, Officer Loeffler secured the carcass to his boat. SMW arrived at 1624 hrs and completed an external workup by 1640 hrs. Officer Loeffler towed the carcass to a remote shoreline. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not necropsied. **21 April**, at 0916 hrs, SMW received a text alert from Dispatch regarding a large dead manatee on land near Indian River, Merritt Island, Brevard County. FWC case number 6722 was assigned. The complainant, Korinn Braben (321-848-03650), stated that the carcass was completely beached with vultures on it. At 0936 hrs, SMW received verification photos. SMW checked with Officer Loeffler and he had left the carcass in 1-2 foot of water about one mile south of the current carcass location. Based on location and genetics sample missing from the tail it was determined to be the same carcass. No additional action was taken. The remains were left on site.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. Patches of dorsal dermis were eroded due to decomposition. The carcass was dorsoventrally flattened due to decomposition. A thin brown algal mat was present on the remaining epidermis. There were rents at the anus and urogenital opening due to scavenging and/or decomposition. A minimum of three well-healed watercraft-related scar patterns was observed on the caudal dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

COMMENTS

SIGNIFICANT FINDINGS

- External workup conducted, but necropsy not performed
- Scavenging

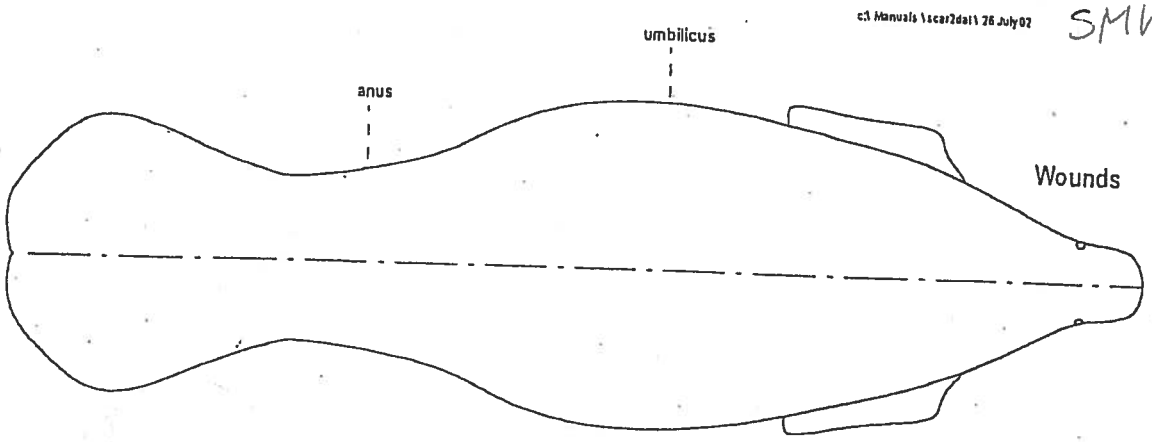
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

NECROPSY CONDUCTED BY N/A

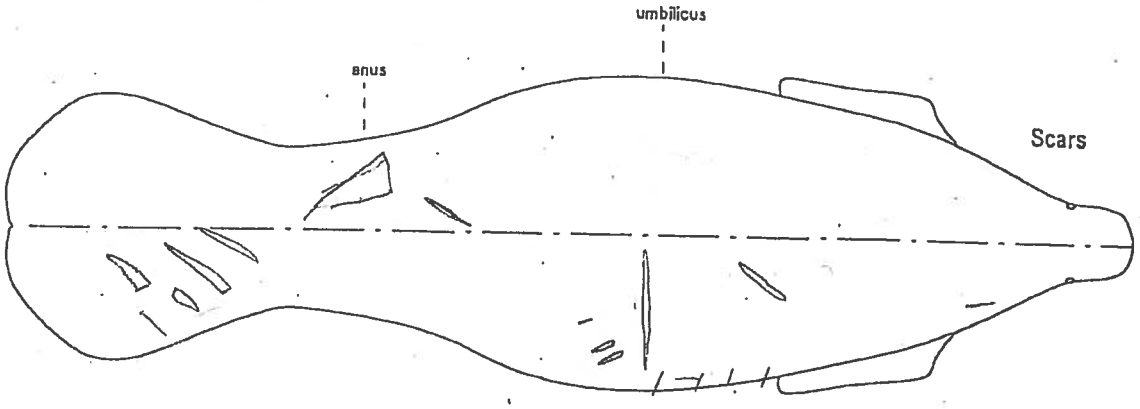
REPORT FILED BY Wappes

Date 19 APR 2020 Field I.D. MEC20075

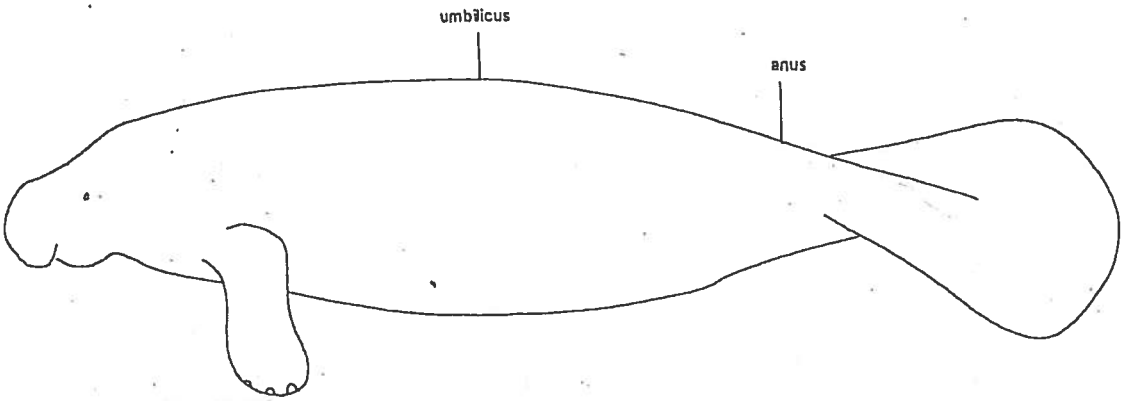
c:\ Manuals \ scar2dat \ 26 July 02 SMW

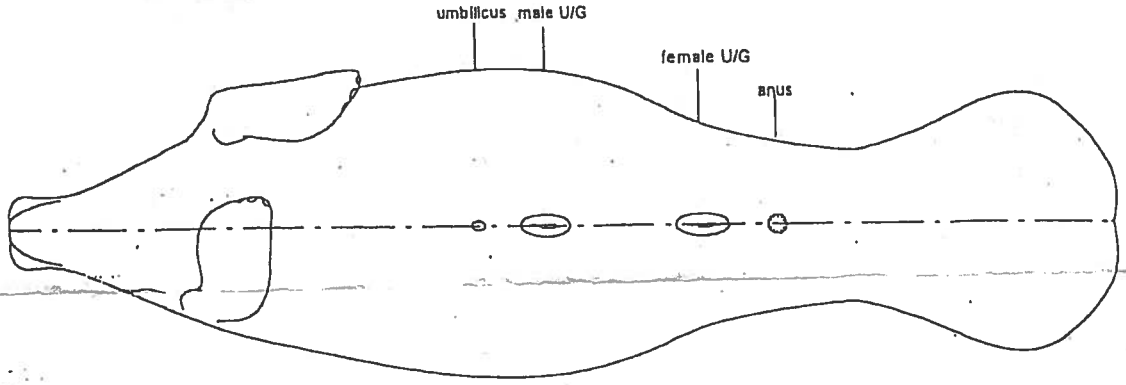


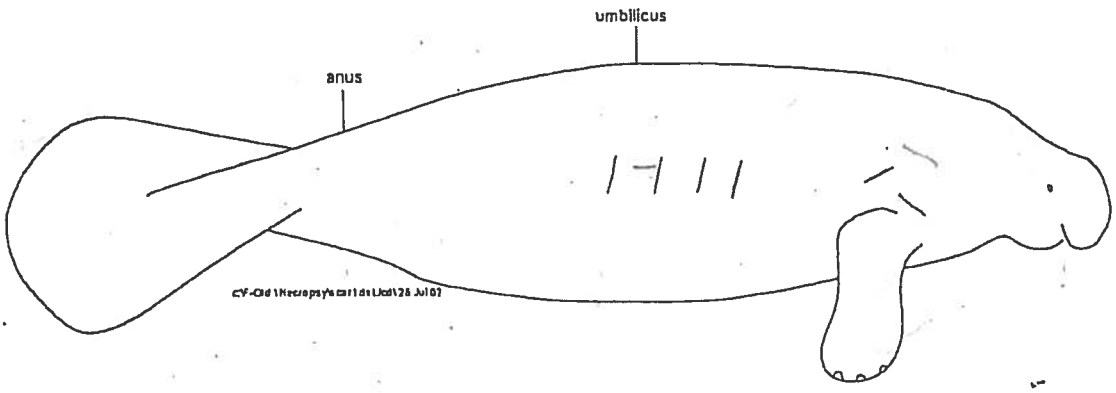
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. MEC20075



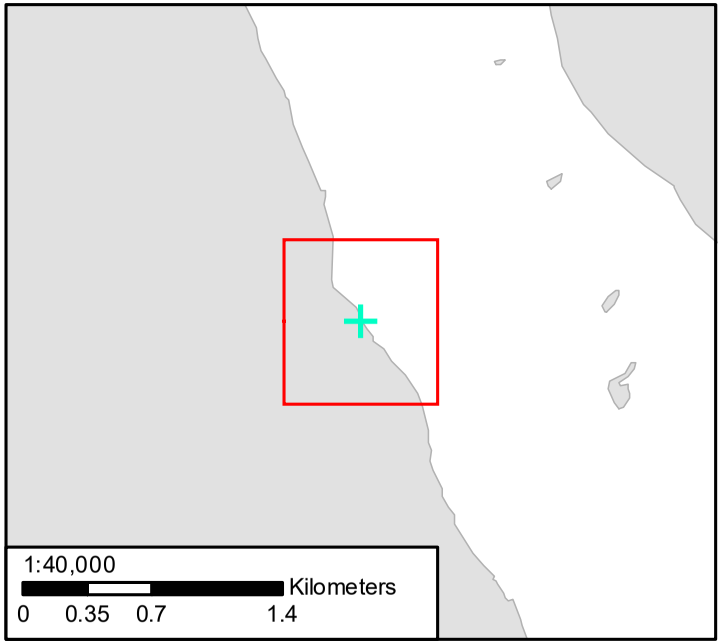


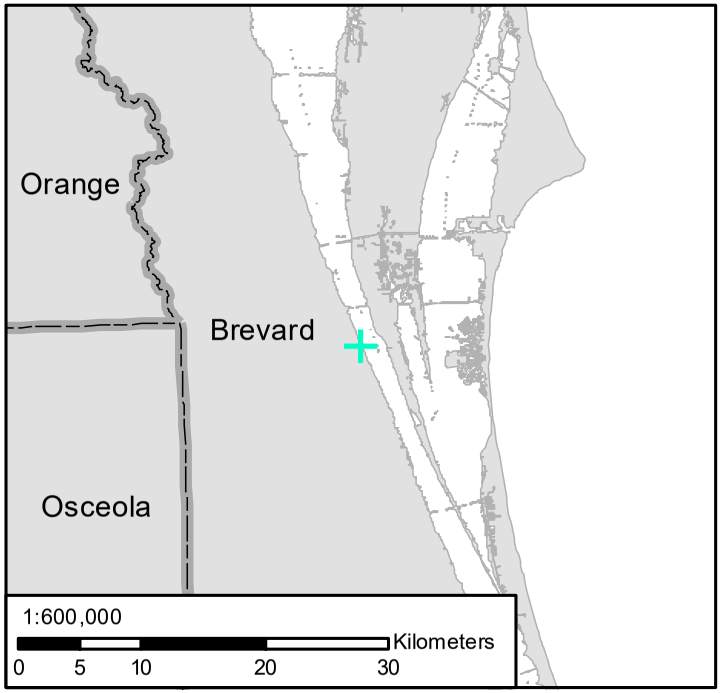


Verified Location of Manatee Carcass MEC20075

Report Date: 4/16/2020 **Received Date**: 4/19/2020 **Received By**: FWC-SMW







Location: Rockledge, Brevard County

Latitude: 28.32745°N **Longitude**: -80.71398°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20075
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6366, 6423, 6584 **FWC District**: Northeast
Sex: Female **Length (cm)**: 305 **Estimated** _____ **Weight (kg)** _____
Date reported: 17 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 19 April 2020 **By**: FWC-SMW, FWC-Officer Seth Loeffler
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Rockledge, approximately 60 m E of 1277 Rockledge Drive.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied. An external work up was completed.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: Unknown **PREGNANT**: Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20076**
Date of Report: 2020-Apr-18
Filed By: FWC EC Field Station

FWC Case # 6522 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-18 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.40574 **N**
County: Brevard **Longitude:** -80.64291 **W**
Waterway: Banana River
Location description: Cape Canaveral, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20076

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20076 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 18 April 2020, at 1651 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near the Canaveral Lock in the Banana River in Cape Canaveral, Brevard County. FWC case number 6522 was assigned. The complainant, Adam Brady (321-458-6528), stated that the manatee was very decomposed and just skin and loose bones were present. At 1703 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a follow up text alert from Dispatch regarding the carcass. At 1749 hrs, CMM received a verification photo. DMB also received a verification photo and forwarded the information to the EC Field Station at 2115 hrs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - All of the epidermis was missing. The remains consisted mostly of loose skin and bones. The skeleton was exposed. Many bones were loose.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

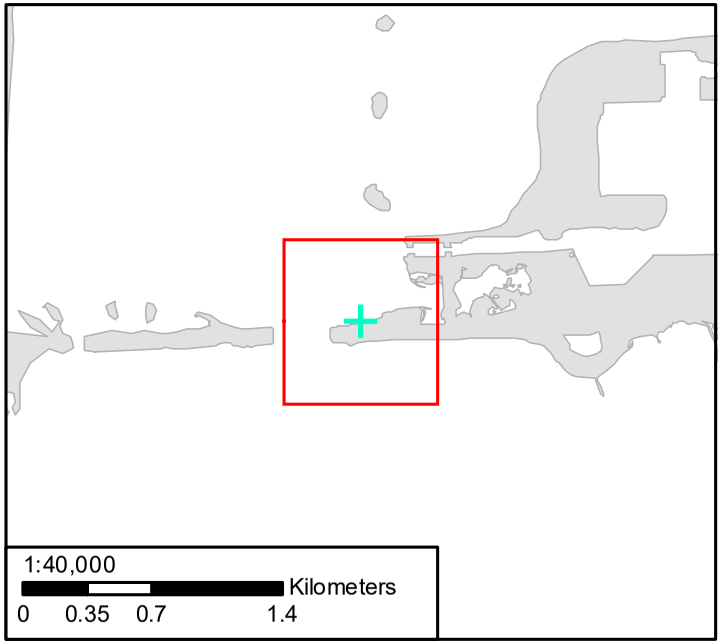
NECROPSY CONDUCTED BY N/A

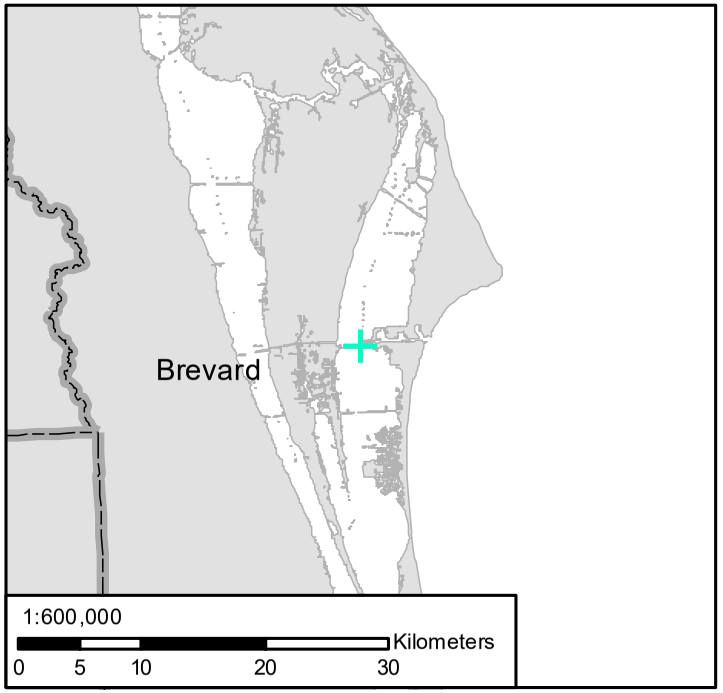
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20076

Report Date: 4/18/2020 **Received Date:** **Received By:**







Location: Cape Canaveral, Brevard County

Latitude: 28.40574°N **Longitude:** -80.64291°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20076
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6522 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 250 **Weight (kg)** _____
Date reported: 18 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Cape Canaveral, approximately 1.2 km WSW of the Rodney S. Ketcham boat ramp.
Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: All bones luxated. Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20077**
Date of Report: 2020-Apr-18
Filed By: FWC EC Field Station

FWC Case # 6542 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-18 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.8406 **N**
County: Indian River **Longitude:** -80.47111 **W**
Waterway: Indian River
Location description: Sebastian, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20077

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20077 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 18 April 2020, at 1854 hrs, FWC on-call biologist-Denise M. Boyd received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Sebastian, Indian River County. FWC case number 6542 was assigned. The complainant, Carl Richards (772-663-2922), stated that the carcass was 7 to 8 feet long and slightly decomposing. DMB received a verification photo and forwarded the information to the EC Field Station at 2130 hrs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - Approximately 60% of the dorsal epidermis was present but sloughing. The carcass was distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

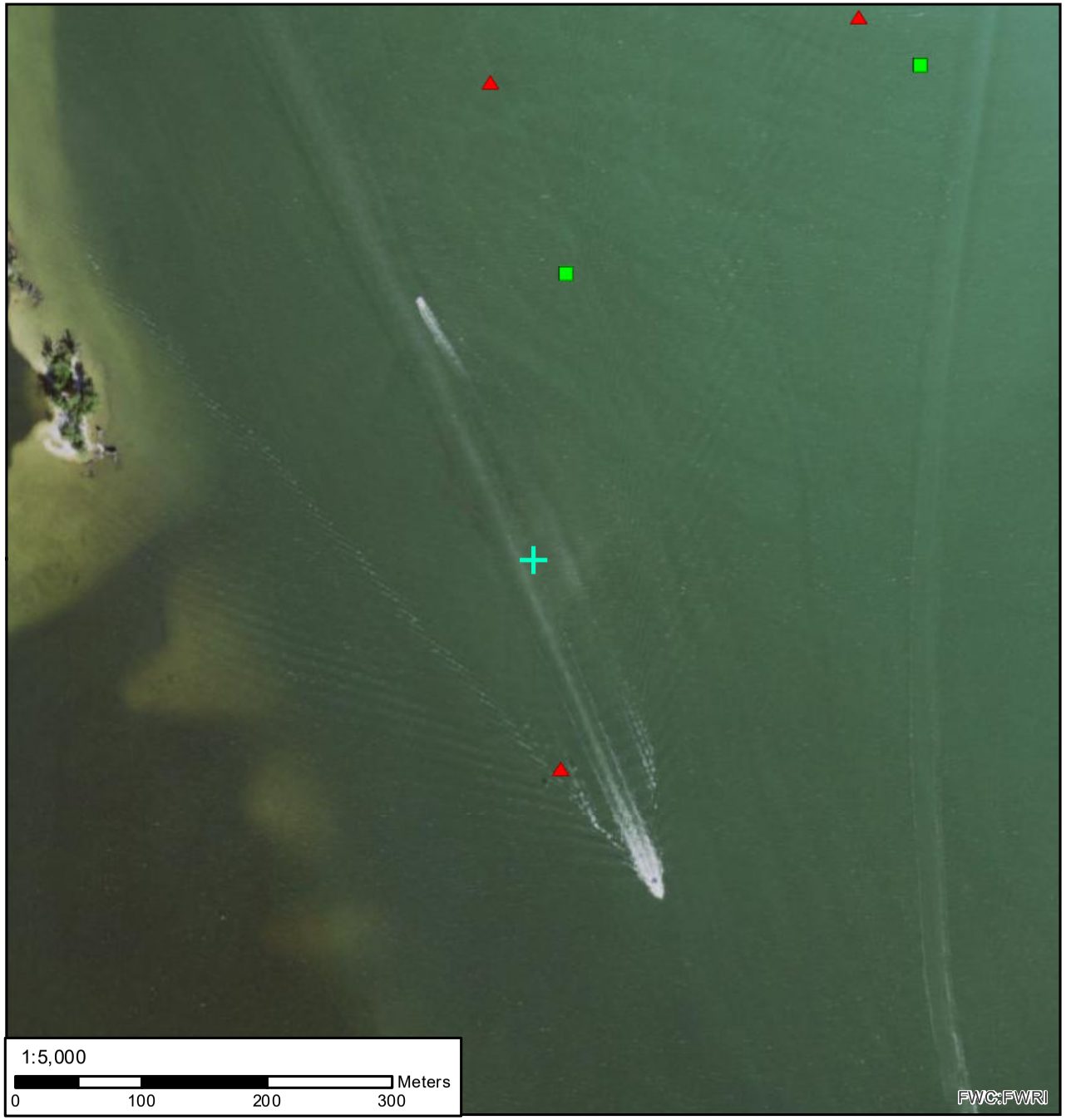
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

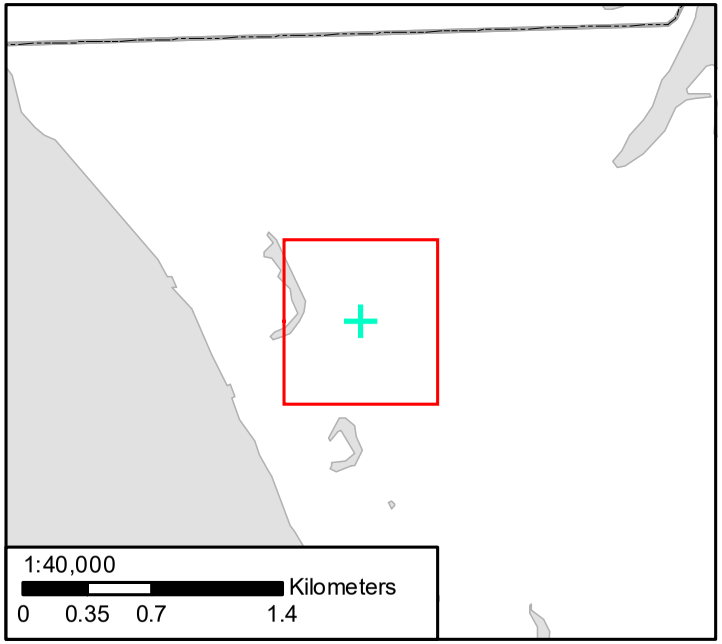
NECROPSY CONDUCTED BY N/A

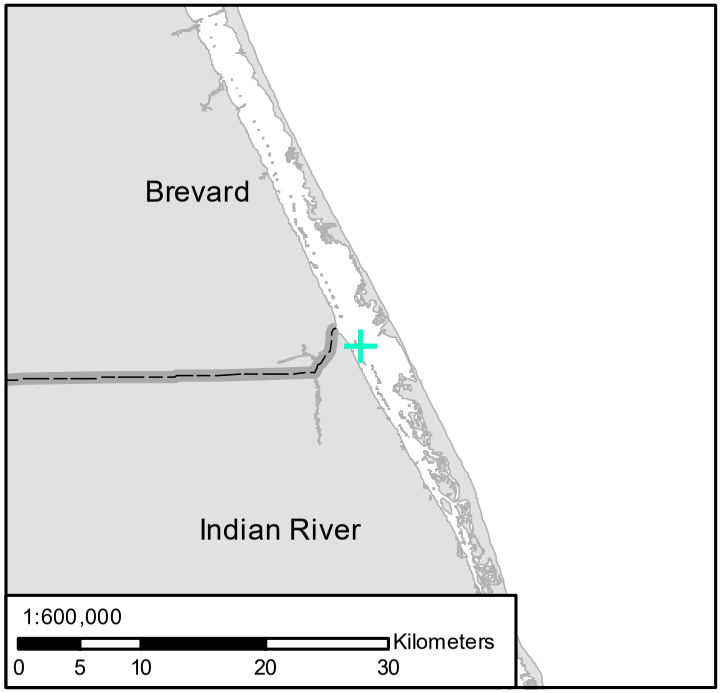
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20077

Report Date: 4/18/2020 **Received Date:** **Received By:**







Location: Sebastian, Indian River County

Latitude: 27.8406°N **Longitude:** -80.47111°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20077
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6542 **FWC District:** Northeast
Sex: Undetermined **Length (cm):** _____ **Estimated** 240 **Weight (kg)** _____
Date reported: 18 April 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By:** _____
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: State FL **County:** Indian River **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Sebastian, approximately 845 m E of 13489 N Indian River Drive.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20078**
Date of Report: 2020-Apr-19
Filed By: FWC EC Field Station

FWC Case # 6599 **FWC Region:** NE

Sex: Unknown **Length:** 300 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-19 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.83476 **N**
County: Brevard **Longitude:** -80.51949 **W**
Waterway: Sebastian River
Location description: Micco, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20078

MORPHOMETRICS:

Total length:	300 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20078 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 300 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 19 April 2020, at 1406 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near the spillway on the Sebastian River in Micco, Brevard County. FWC case number 6599 was assigned. The complainant, Gary Crosby (561-254-7945), stated that the carcass was nine feet long with vultures on it. At 1412 hrs, SMW received a verification photo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the dorsal epidermis was missing. The carcass was distended with gas. Bird droppings were present on the dorsum. Vultures were present on the carcass.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Scavenging

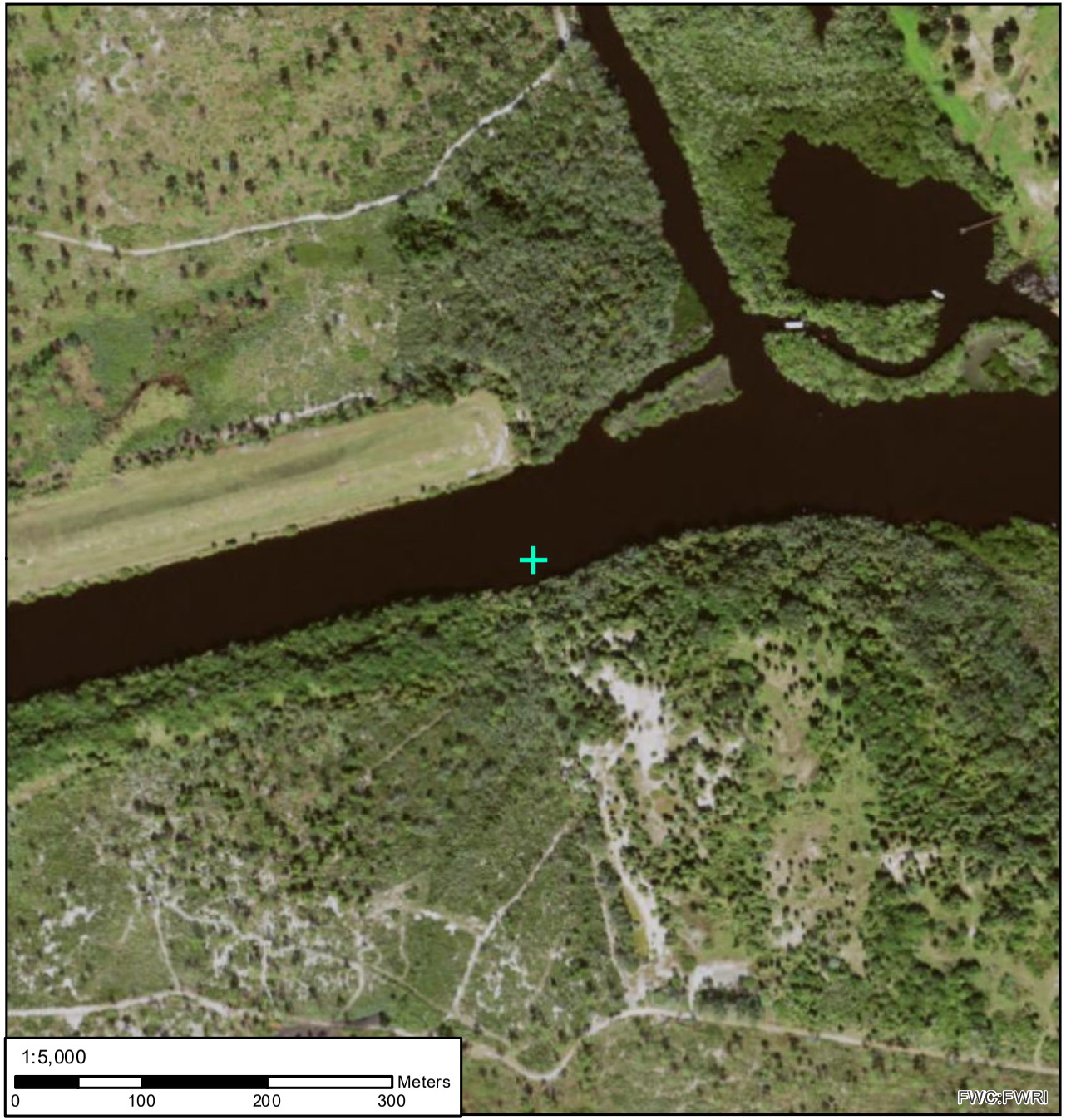
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

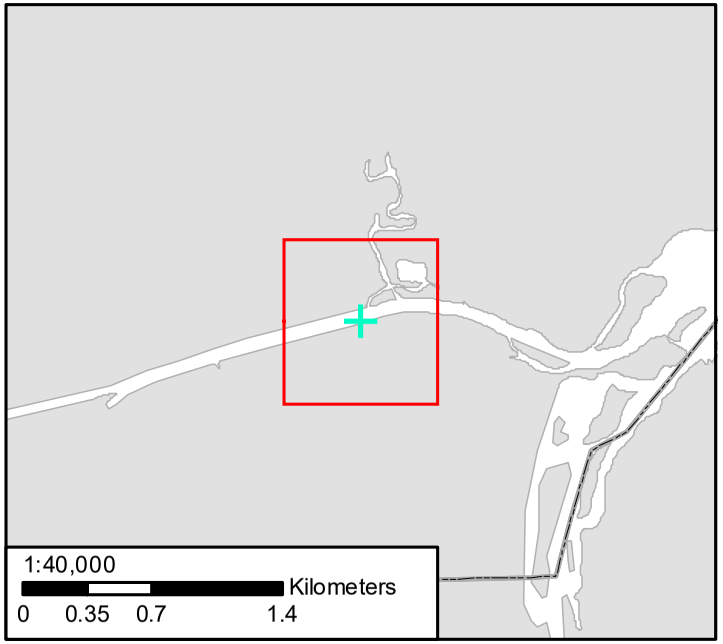
NECROPSY CONDUCTED BY N/A

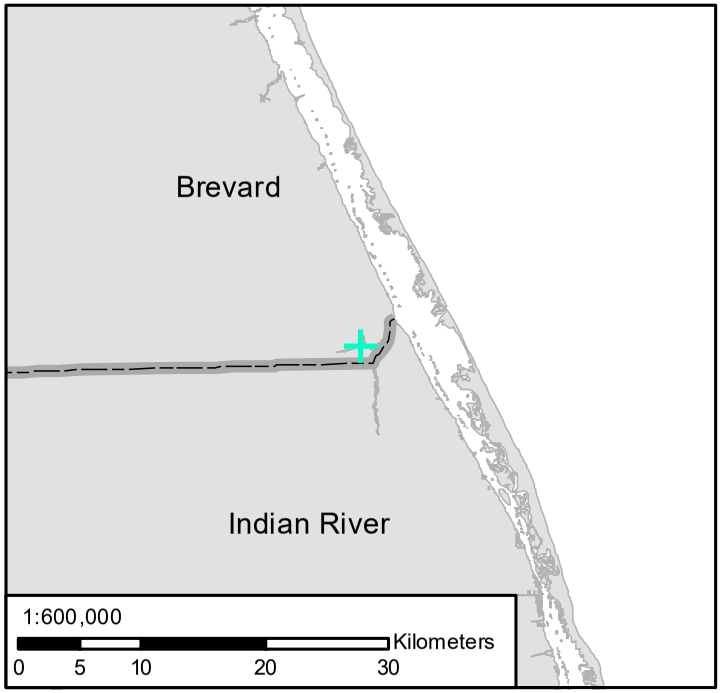
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20078

Report Date: 4/19/2020 **Received Date**: **Received By**:







Location: Micco, Brevard County

Latitude: 27.83476°N **Longitude**: -80.51949°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20078
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6599 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 290 **Weight (kg)** _____
Date reported: 19 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Sebastian River
Latitude: N _____ **Longitude**: W _____
Locality description: Micco, approximately 640 m SW of 9574 Fleming Grant Rd.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20079**
Date of Report: 2020-Apr-21
Filed By: FWC EC Field Station

FWC Case # 6728 **FWC Region:** NE

Sex: Unknown **Length:** 300 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-21 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.86978 **N**
County: Volusia **Longitude:** -80.79574 **W**
Waterway: Mosquito Lagoon
Location description: Oak Hill, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20079

MORPHOMETRICS:

Total length:	300 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20079 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 300 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 21 April 2020, at 1046 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon in Oak Hill, Volusia County. FWC case number 6728 was assigned. The complainant, Dennis Renfro (352-455-8812), stated that the carcass was ventrum-up and 9 to 10 feet long. At 1134 hrs, SMW received a verification photo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - Almost all of the ventral and left lateral epidermis was missing. The carcass was dorsoventrally flattened. Parts of the fluke margin appeared to be missing from the 6 to 10 o'clock position. The dermis of the face was eroded due to decomposition.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

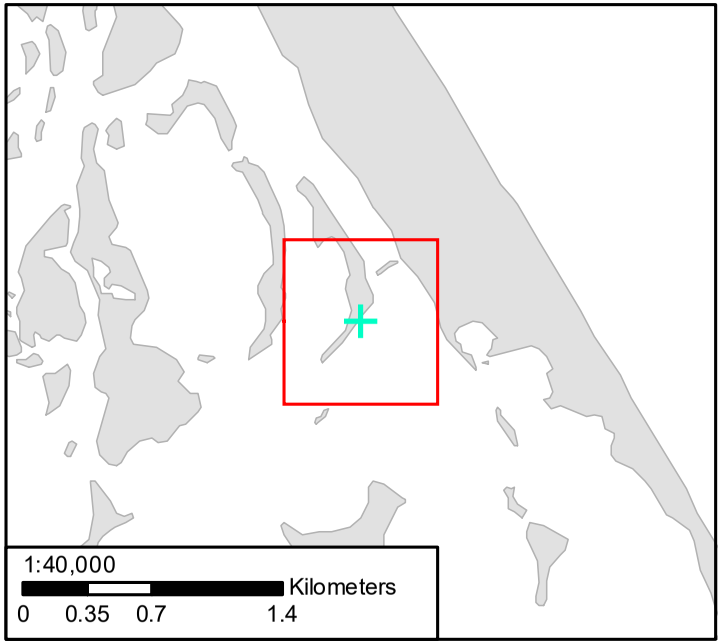
NECROPSY CONDUCTED BY N/A

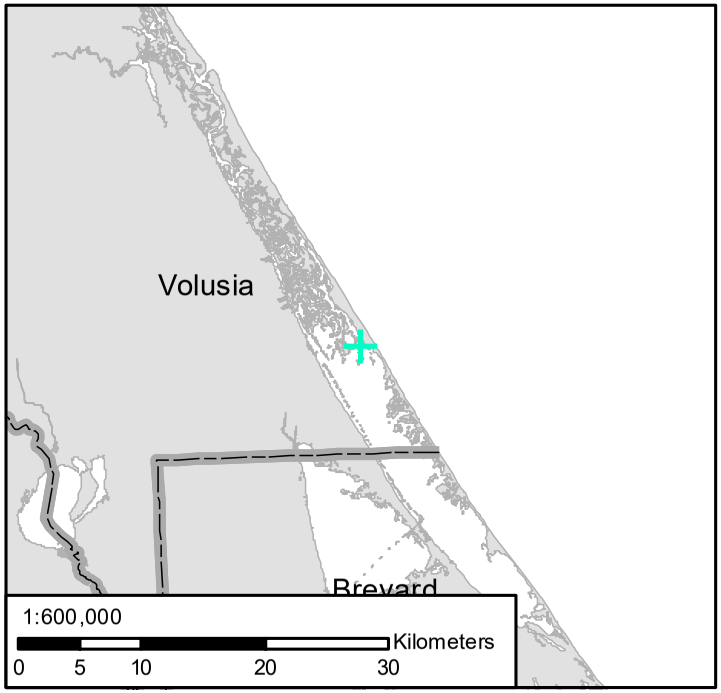
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20079

Report Date: 4/21/2020 **Received Date:** **Received By:**







Location: Oak Hill, Volusia County

Latitude: 28.86978°N **Longitude:** -80.79574°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20079
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6728 **FWC District:** Northeast
Sex: Undetermined **Length (cm):** _____ **Estimated** 290 **Weight (kg)** _____
Date reported: 21 April 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By:** _____
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: **State** FL **County:** Volusia **Waterway:** Mosquito Lagoon
Latitude: N _____ **Longitude:** W _____
Locality description: Oak Hill, approximately 3.8 km ENE of 446 E Halifax Avenue.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20080**
Date of Report: 2020-Apr-25
Filed By: FWC EC Field Station

FWC Case # 6978 **FWC Region:** NE

Sex: Male **Length:** 150 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-25 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.75363 **N**
County: Seminole **Longitude:** -81.08416 **W**
Waterway: Lake Harney
Location description: Geneva, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Abnormal body shape. Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20080

MORPHOMETRICS:

Total length:	150 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20080
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Male **TL** 150 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 25 April 2020, at 1300 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee on the western edge of Lake Harney in Geneva, Seminole County. FWC case number 6978 was assigned. The complainant, Reade Taylor (321-303-8786), stated the manatee was 6 feet long, ventrum-up, and the insides were spilling out. At 1306 hrs, CMM received a verification photo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs – All of the ventral epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the mouth. A portion of the GI tract and bloody fluid exuded from the umbilical region. There were transverse folds on the ventrum which were bleached. The fluke had bleached folds. The cranial half of the carcass appeared disproportionally long. The body appeared to be indented at mid ventrum. The caudal half of the carcass was more distended than the cranial half.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Fetal folds
- Abnormal body shape

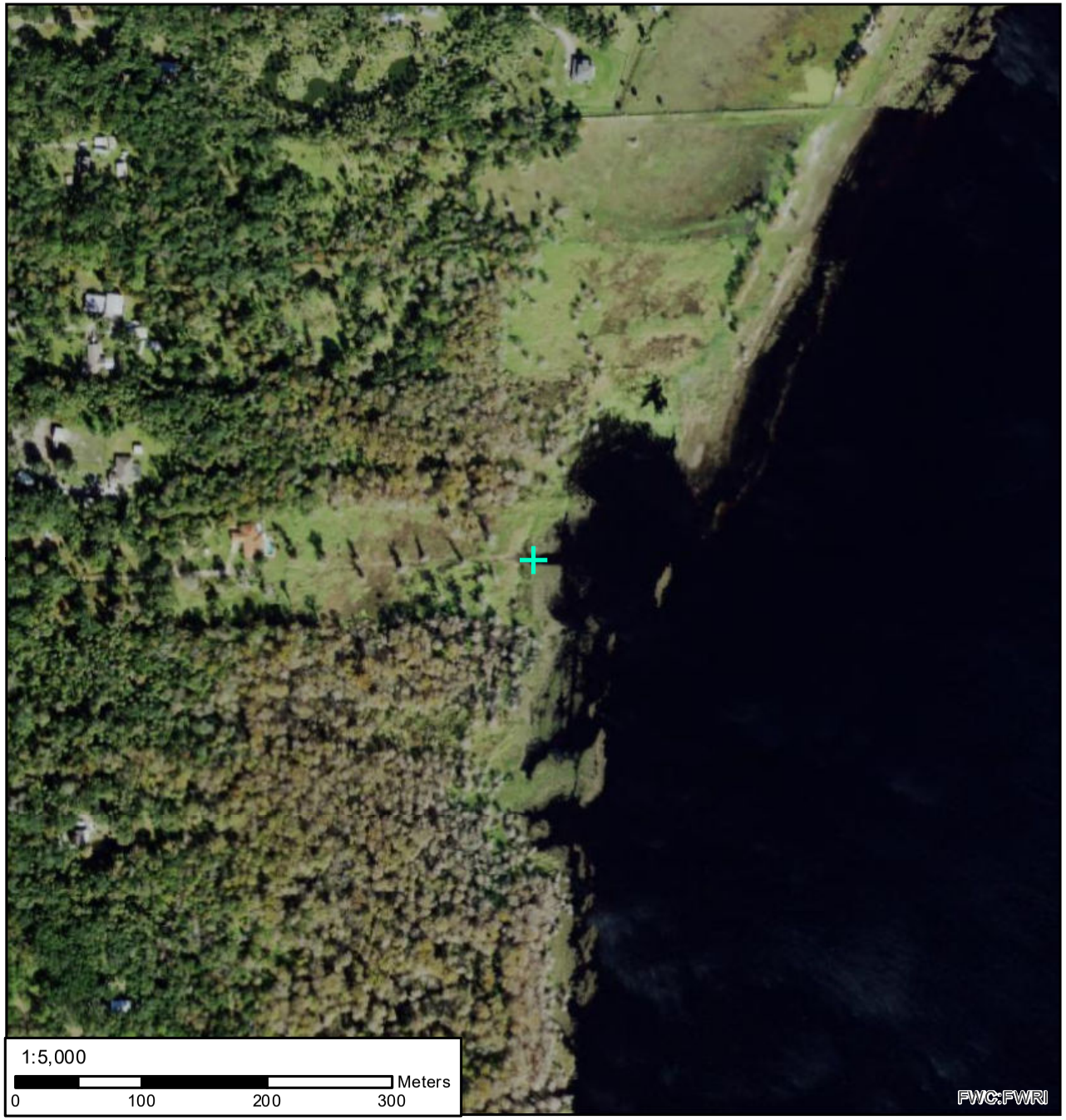
PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

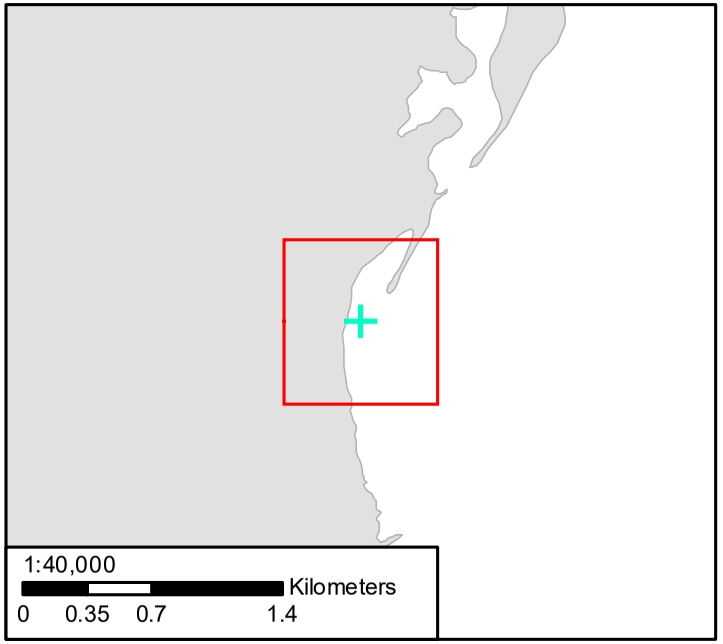
NECROPSY CONDUCTED BY N/A

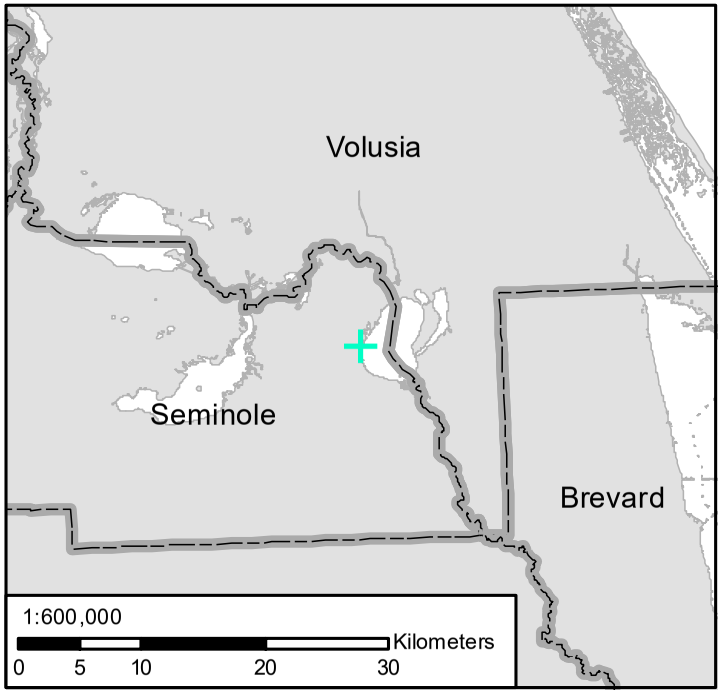
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20080

Report Date: 4/25/2020 **Received Date:** **Received By:**







Location: Geneva, Seminole County

Latitude: 28.75363°N **Longitude:** -81.08416°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20080
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6978 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 25 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Seminole **Waterway**: Lake Harney
Latitude: N _____ **Longitude**: W _____
Locality description: Geneva, approximately 60 m E of 741 Winona Drive

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20081**
Date of Report: 2020-Apr-25
Filed By: FWC EC Field Station

FWC Case # 6979 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-25 **By:** BCSO to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.41243 **N**
County: Brevard **Longitude:** -80.63322 **W**
Waterway: Banana River
Location description: Cape Canaveral, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20081

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20081 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 25 April 2020, at 1413 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee on the shore of the Banana River in Cape Canaveral, Brevard County. FWC case number 6979 was assigned. The complainant, Brevard Sheriff's Office-Deputy Postleweight, stated that the manatee was 8 feet long and decomposed. At 1418 hrs, CMM received a verification photo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - All of the ventral epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There were many large rents due to decomposition and/or scavenging on the ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

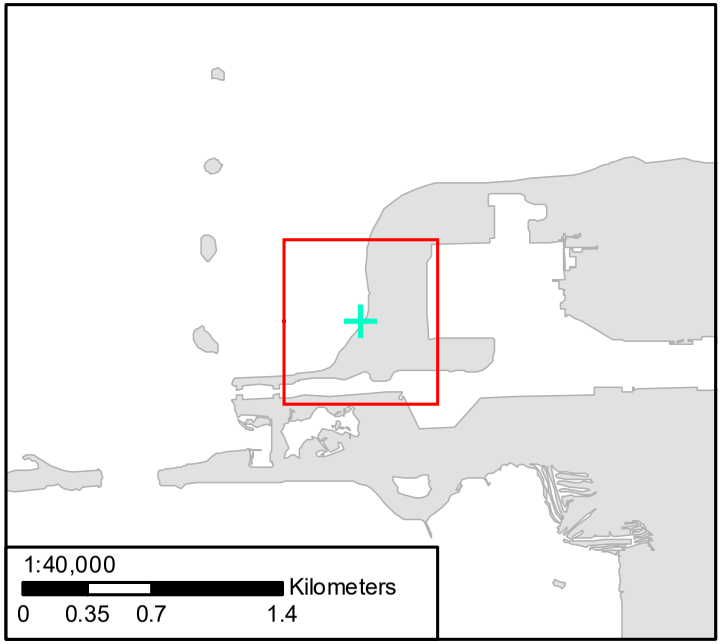
NECROPSY CONDUCTED BY N/A

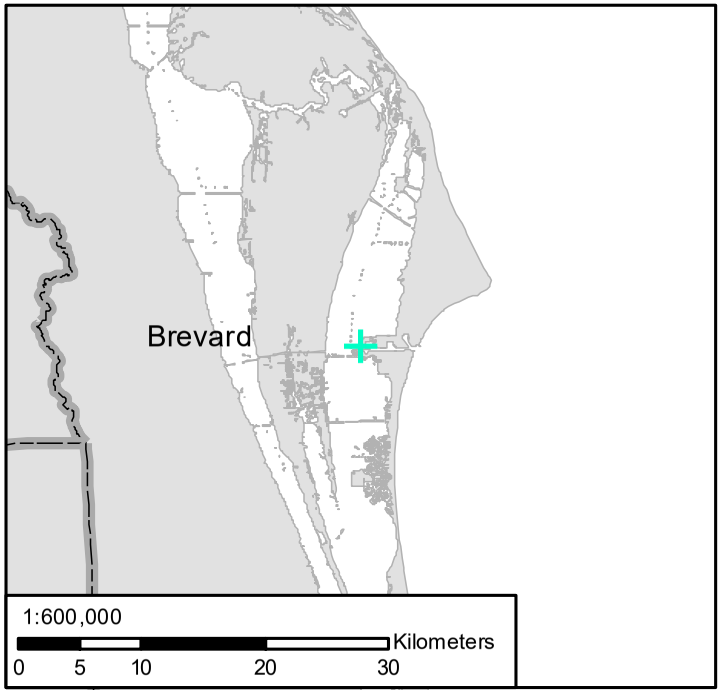
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20081

Report Date: 4/25/2020 **Received Date**: **Received By**:







Location: Cape Canaveral, Brevard County

Latitude: 28.41243°N **Longitude**: -80.63322°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20081
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6979 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** N/T
Date reported: 25 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Cape Canaveral, approximately 250 m SW of the westernmost building at 9155 Charles M Rowland Drive
Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20082**
Date of Report: 2020-Apr-23
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Unknown **Length:** 300 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-23 **By:** Citizen via Facebook post to FWC-WDG

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION:
State: FL
County: Brevard
Waterway: Banana River
Location description: Merritt Island, sunken

Latitude: 28.20164 **N**
Longitude: -80.63422 **W**

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to the stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20082

MORPHOMETRICS:

Total length:	300 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20082 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 300 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 23 April 2020, at 1717 hrs, FWC off-duty biologist-William D. Greer (WDG) received a message through Facebook regarding a dead manatee in Banana River in Merritt Island, Brevard County. The complainant, Christine Rogel (321-361-6907), stated that her daughter had found a manatee skeleton while kayaking and had collected the skull. At 1720 hrs, WDG received a photo of the manatee skull next to a tape measure. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph – Only the skull was photographed, which was missing all soft tissue.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

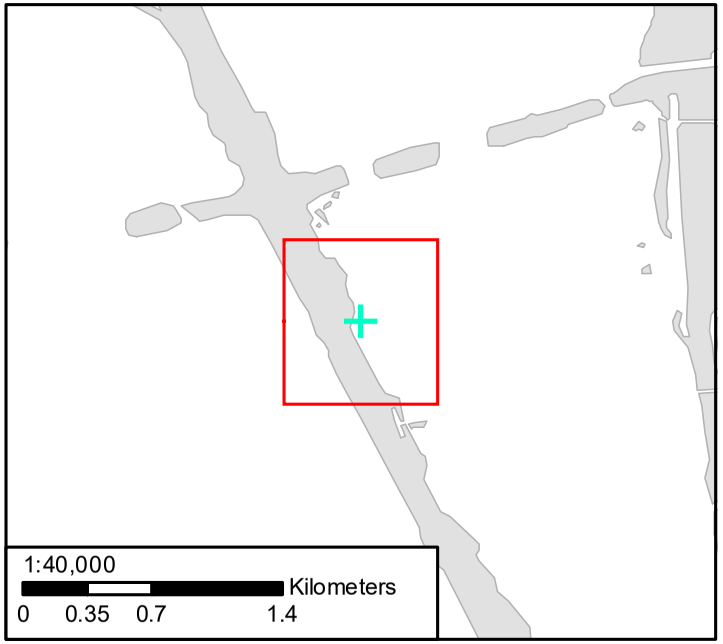
NECROPSY CONDUCTED BY N/A

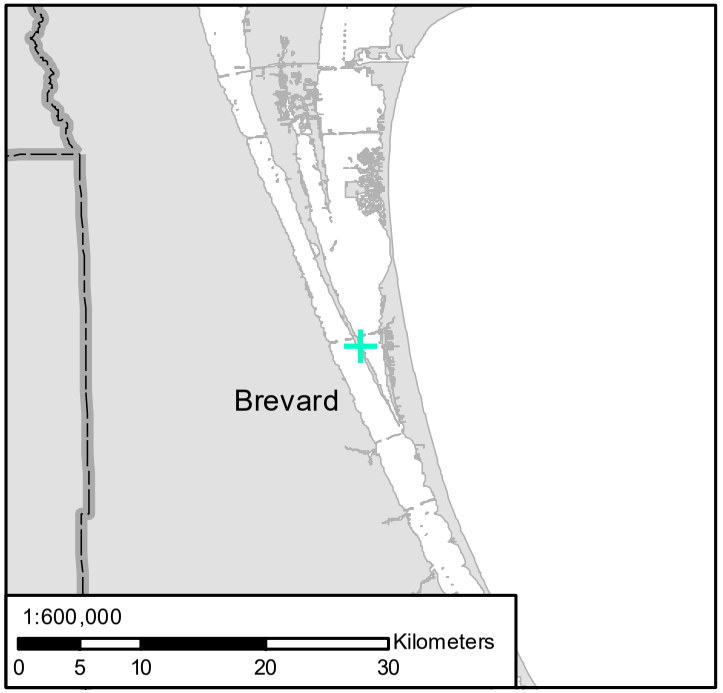
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20082

Report Date: 4/23/2020 **Received Date:** **Received By:**







Location: Merritt Island, Brevard County **Latitude:** 28.20164°N **Longitude:** -80.63422°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20082
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 300 **Weight (kg)** N/T
Date reported: 23 April 2020 **By**: Citizen to FWC-WDG
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 75 m SE of 8630 South Tropical Trail

Carcass Orientation: Sunken

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to the stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20084**
Date of Report: 2020-Apr-27
Filed By: FWC EC Field Station

FWC Case # 7175 **FWC Region:** NE

Sex: Unknown **Length:** 280 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.89181 **N**
County: Volusia **Longitude:** -80.83852 **W**
Waterway: Mosquito Lagoon
Location description: Oak Hill, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to the stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20084

MORPHOMETRICS:

Total length:	280 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20084 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 280 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 27 April 2020, at 1944 hrs, FWC on-call biologist-Anna L. Panike (ALP) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Mosquito Lagoon in Oak Hill, Volusia County. FWC case number 7175 was assigned. The complainant, Nick Bonura (985-775-1002), stated that the manatee was belly-up, stuck in shallow water and was gray in color. At 1950 hrs, ALP received a photo of the carcass and forwarded the information to EC Field Station staff. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the ventral epidermis was present. The carcass was distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

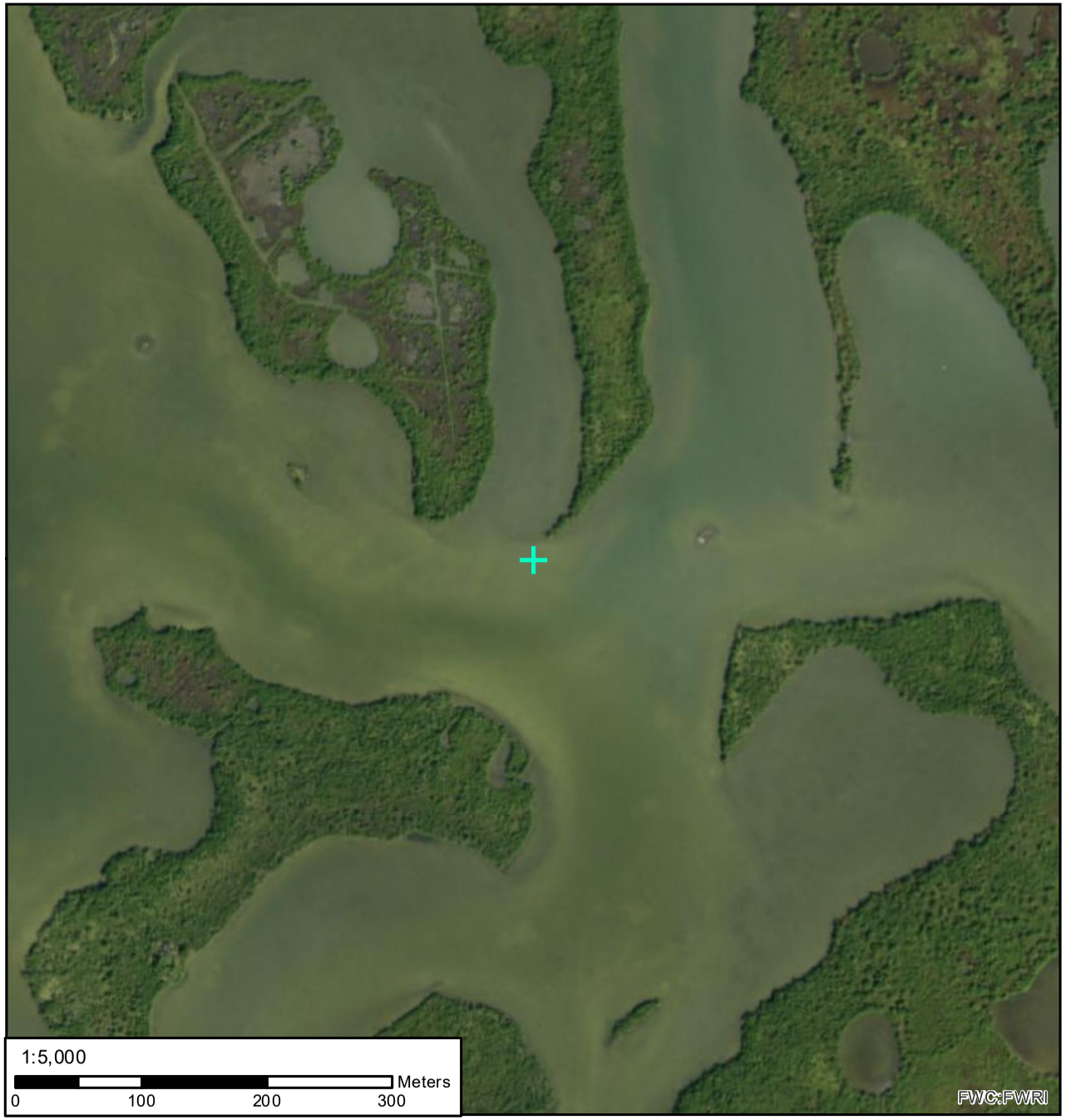
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

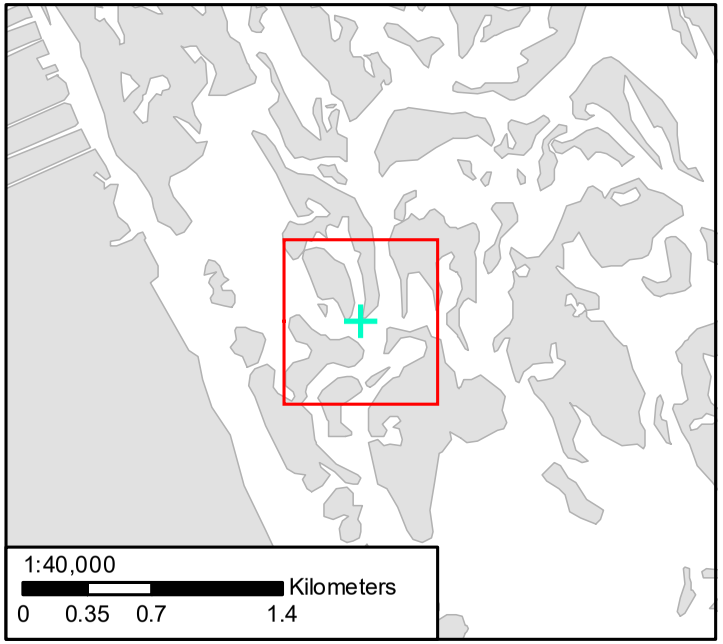
NECROPSY CONDUCTED BY N/A

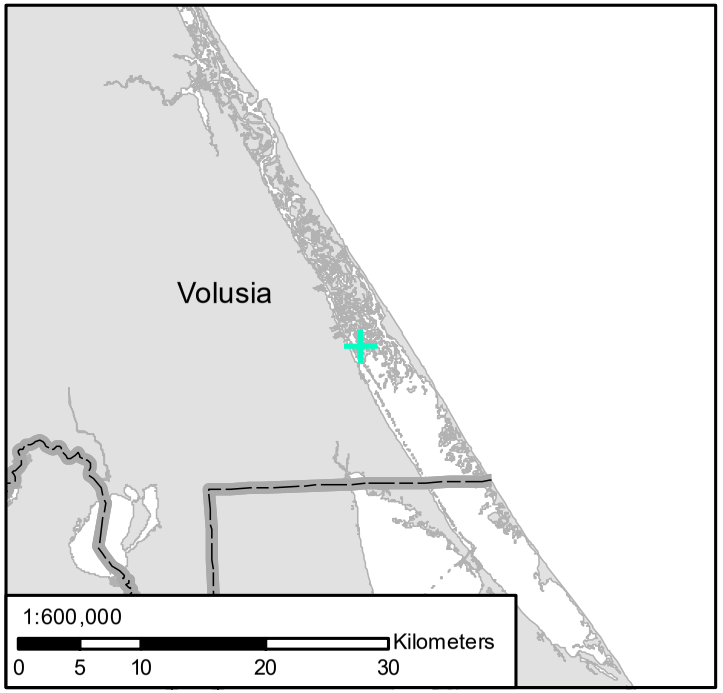
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20084

Report Date: 4/27/2020 **Received Date:** **Received By:**







Location: Oak Hill, Volusia County

Latitude: 28.89181°N **Longitude:** -80.83852°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20084
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7175 **FWC District:** Northeast
Sex: Undetermined **Length (cm):** _____ **Estimated** 275 **Weight (kg)** N/T
Date reported: 27 April 2020 **By:** Citizen to FWC NE Dispatch- Orlando
Date collected: _____ **By:** _____
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: State FL **County:** Volusia **Waterway:** Mosquito Lagoon
Latitude: N _____ **Longitude:** W _____
Locality description: Oak Hill, approximately 950 m ENE of 623 Riverside Landing Drive

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to the stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20085**
Date of Report: 2020-Apr-29
Filed By: FWC EC Field Station

FWC Case # 7293 **FWC Region:** NE

Sex: Unknown **Length:** 215 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-29 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.07457 **N**
County: Brevard **Longitude:** -80.61727 **W**
Waterway: Crane Creek
Location description: Melbourne, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20085

MORPHOMETRICS:

Total length:	215 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20085 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 215 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 29 April 2020, at 1152 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Crane Creek in Melbourne, Brevard County. FWC case number 7293 was assigned. The complainant, Mitch Needleman (321-768-7752), stated that the manatee was 6 to 8 feet long, bloated, and floating. At 1607 hrs, CMM requested FWC LE assistance to verify the carcass. At 1713 hrs, CMM received a verification photo from FWC Officer-Morgan Maslo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph – From the portion of carcass visible, approximately 60% of the epidermis was present but sloughing. The carcass was distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

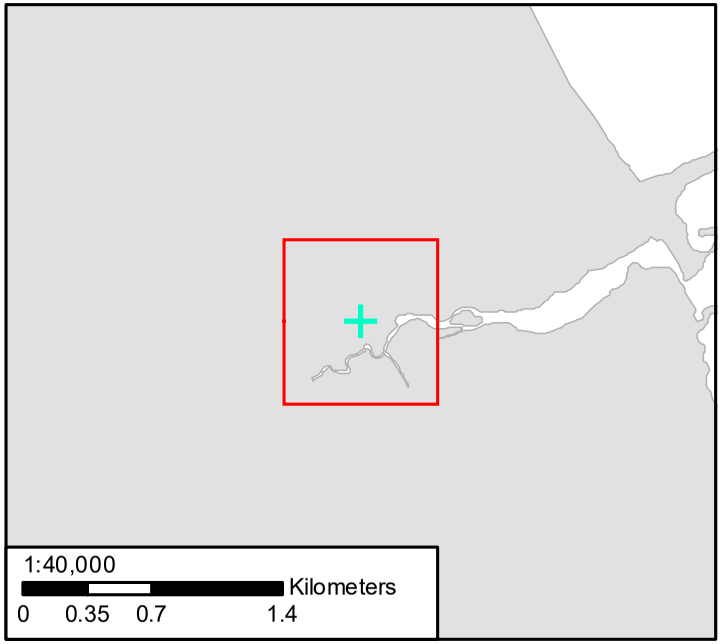
NECROPSY CONDUCTED BY N/A

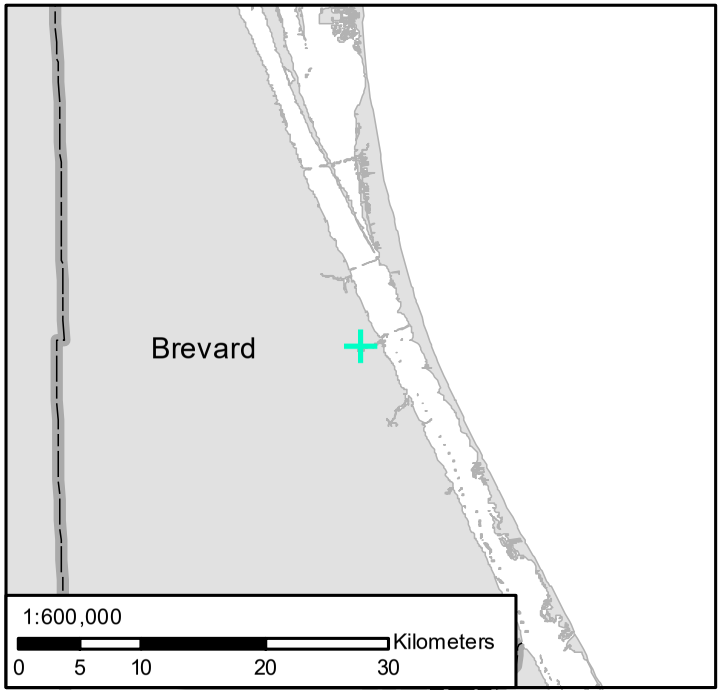
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20085

Report Date: 4/29/2020 **Received Date**: **Received By**:







Location: Melbourne, Brevard County **Latitude**: 28.07457°N **Longitude**: -80.61727°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20085
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7293 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 215 **Weight (kg)** N/T
Date reported: 29 April 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Crane Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 45 m NE of 2317 Bignonia Street

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20086**
Date of Report: 2020-May-01
Filed By: FWC EC Field Station

FWC Case # 7422 **FWC Region:** NE

Sex: Female **Length:** 300 **cm** (estimated-2) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.92509 **N**
County: Brevard **Longitude:** -80.51768 **W**
Waterway: Indian River
Location description: Grant-Valkaria, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Watercraft wound(s); Verified through photographs and FWC biologist. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Other (Wounds).

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20086

MORPHOMETRICS:

Total length:	300 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20086
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Female **TL** 300 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 01 May 2020, at 0758 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Grant-Valkaria, Brevard County. FWC case number 7422 was assigned. The complainant, Jeff Jackson (321-795-3767), advised that there was a gray, dead manatee floating near his dock. At 0818 hrs, CMM received a verification photo. At 0838 hrs, CMM requested FWC LE assistance to tow the carcass. FWC Officer-Heidi Johnson (HJ) was assigned and CMM offered to assist due to the shallow water. CMM met HJ at Christenson's boat ramp. HJ and CMM arrived at the carcass at 1055 hrs and secured it in a less populated area at 1123 hrs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL All of the epidermis was present. There was a fresh watercraft-related wound series on the caudal left dorsum which consisted of five parallel propeller wounds and a long linear wound to the left of and perpendicular to the propeller wounds. Light red fluid exuded from two propeller wounds which penetrated the dermis. The remaining propeller wounds and the linear wound were superficial. There were several scrapes on the cranial aspect. A moderate green algal mat was present. There was a well-healed mutilation between the 5 and 7 o'clock positions of the fluke margin. No watercraft-related scars were observed. PIT tag scan was not performed.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through photographs and FWC biologist
- Fresh watercraft wounds

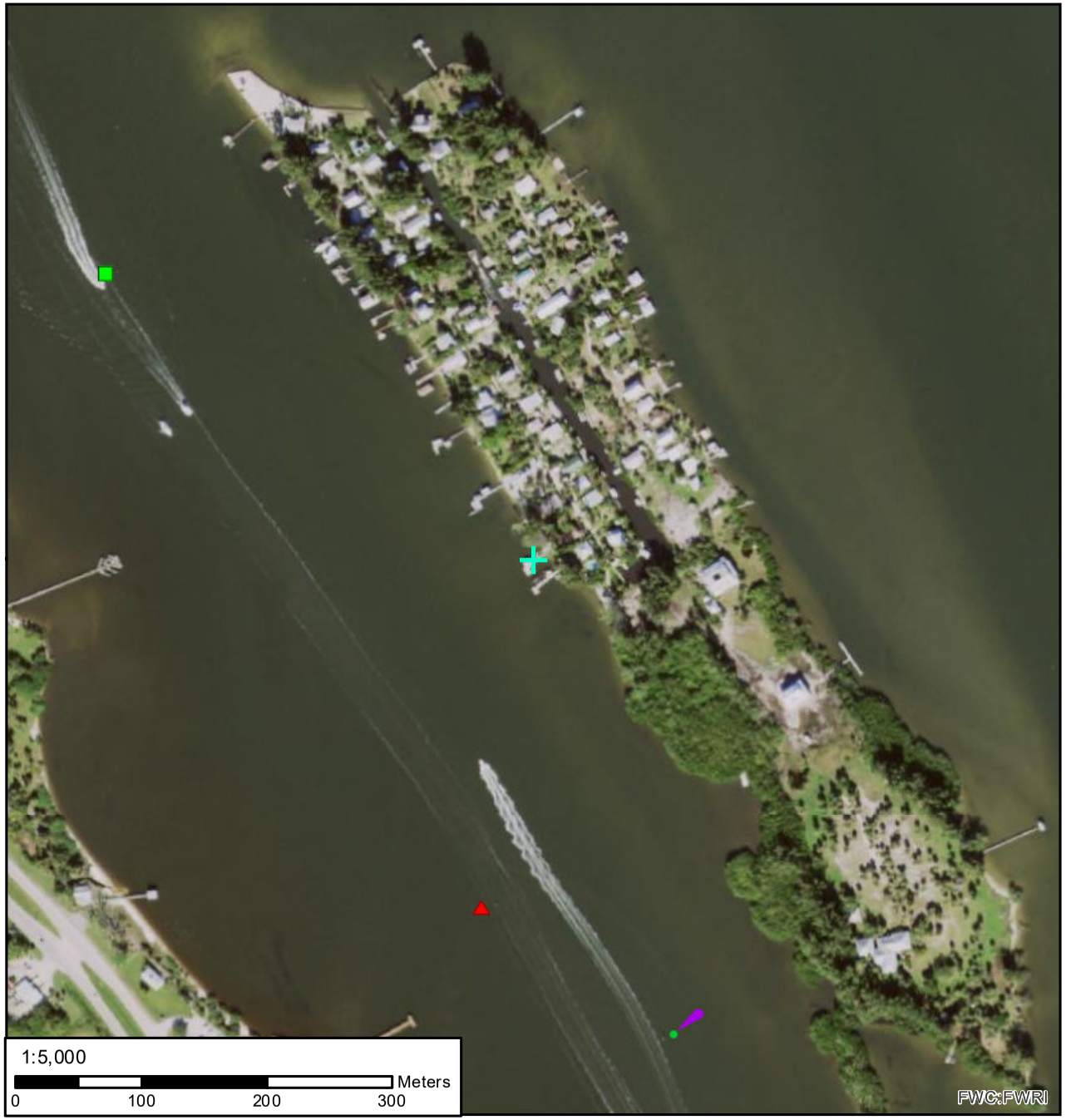
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

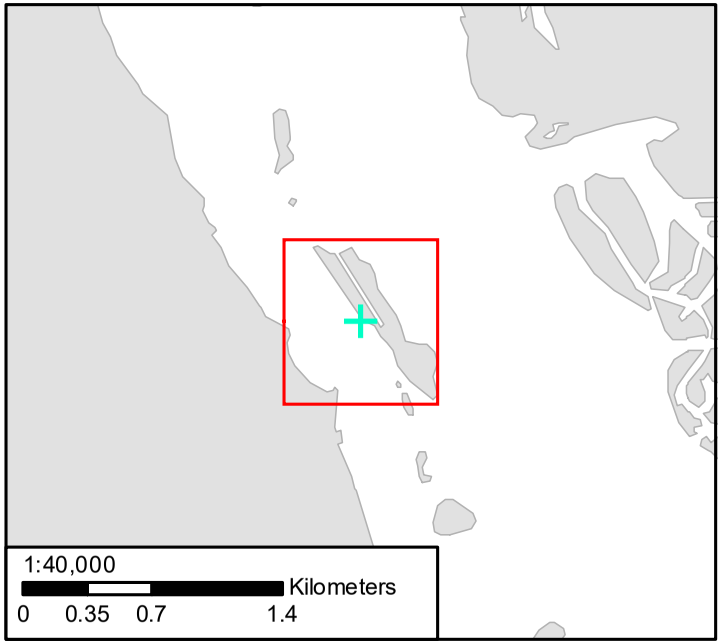
NECROPSY CONDUCTED BY N/A

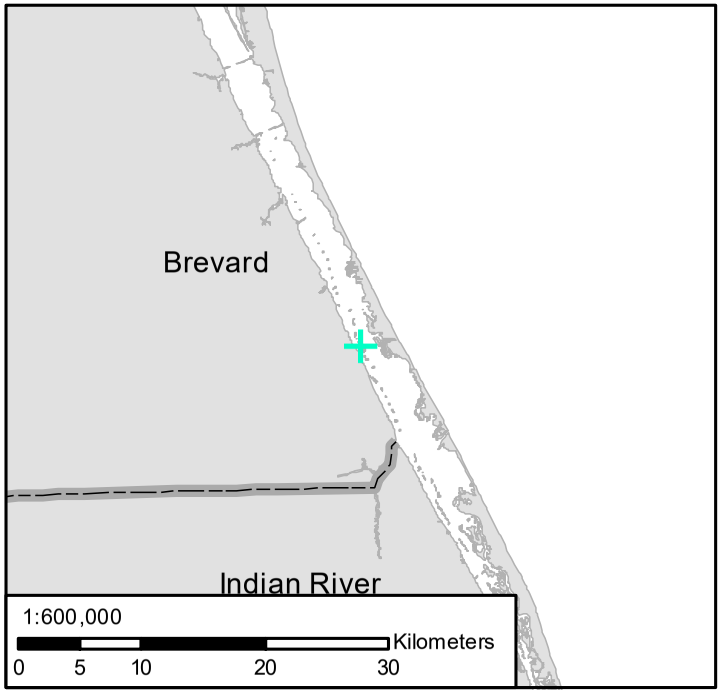
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20086

Report Date: 5/1/2020 **Received Date:** **Received By:**







Location: Grant-Valkaria, Brevard County

Latitude: 27.92509°N **Longitude:** -80.51768°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20086
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7422 **FWC District:** Northeast
Sex: Female **Length (cm):** _____ **Estimated** 300 **Weight (kg)** N/T
Date reported: 01 May 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 01 May 2020 **By:** FWC-Officer Heidi Johnson, FWC-CMM
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: **State** FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Grant-Valkaria, approximately 40 m SW of 25 VIP Island Unit A (on Grant Farm Island)
Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not necropsied.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☑ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS: CMM met Ofc. Johnson at Christenson's boat ramp to assist in re-locating the carcass since it was reported in extremely shallow water. FWC photos taken on CMM's work cell phone.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20087**
Date of Report: 2020-May-01
Filed By: FWC EC Field Station

FWC Case # 7815 **FWC Region:** NE

Sex: Female **Length:** 300 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.60274 **N**
County: Brevard **Longitude:** -80.78374 **W**
Waterway: Indian River
Location description: Titusville, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case number 7452. Scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20087

MORPHOMETRICS:

Total length:	300 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20087 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 300 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 01 May 2020, at 1459 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville, Brevard County. FWC case number 7452 was assigned. The complainant, Scott (407-330-2058), advised that the manatee was belly-up and the flippers were sticking up. At 1528 hrs, CMM received a verification photo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied. **06 May**, at 0845 hrs, CMM received a text alert from Dispatch regarding the same carcass. FWC case number 7815 was assigned. The complainant provided a photo of the carcass that confirmed it was female.

EXTERNAL From photograph - Approximately 80% of the left lateral epidermis was present but sloughing. The carcass was distended with gas. Internal organs protruded from the caudal ventrum. Bird droppings were present on the ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Scavenging

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

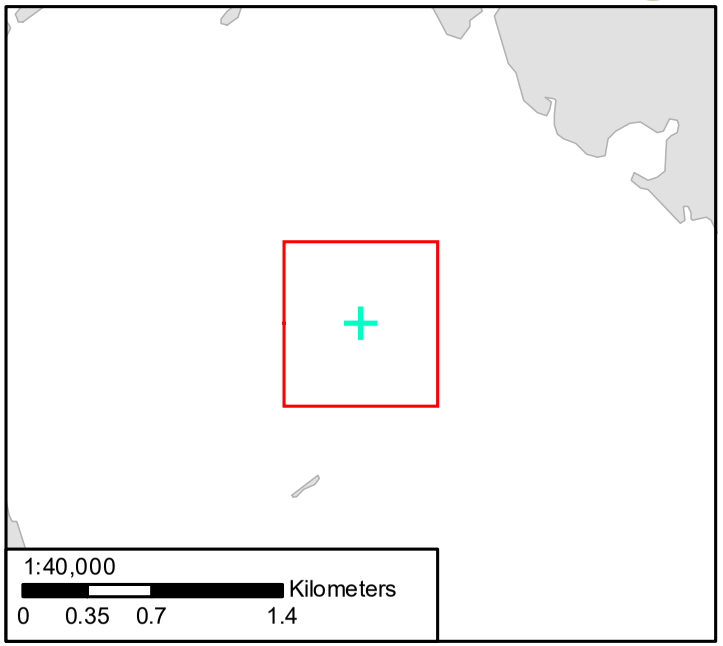
NECROPSY CONDUCTED BY N/A

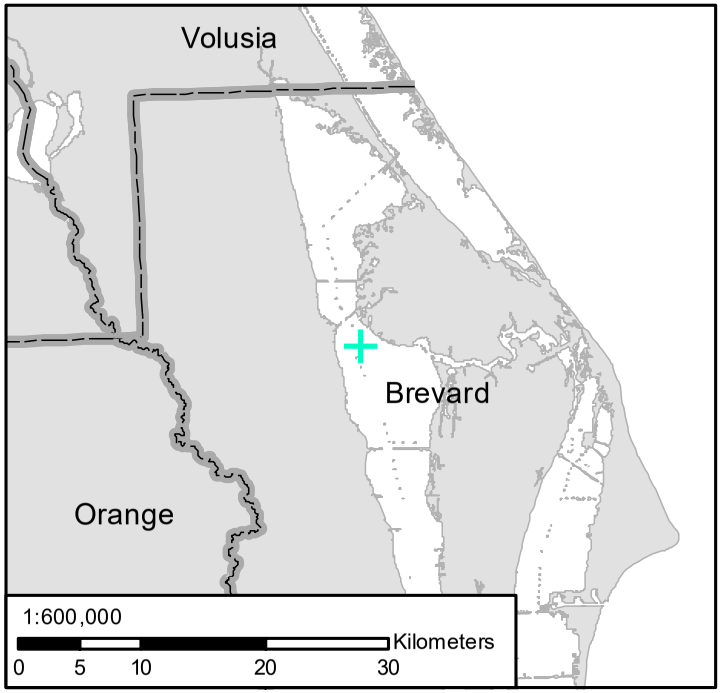
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20087

Report Date: 5/1/2020 **Received Date:** **Received By:**







Location: Titusville, Brevard County

Latitude: 28.60274°N **Longitude:** -80.78374°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20087
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7452, 7815 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 01 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 2 km ENE of 1212 Riverside Drive

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20088**
Date of Report: 2020-May-02
Filed By: FWC EC Field Station

FWC Case # 7540 **FWC Region:** NE

Sex: Male **Length:** 280 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-02 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.89057 **N**
County: Volusia **Longitude:** -80.83849 **W**
Waterway: Mosquito Lagoon
Location description: Oak Hill, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Cobblestone-like epidermis; Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20088

MORPHOMETRICS:

Total length:	280 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20088 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 280 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 02 May 2020, at 1438 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding dead manatees in Mosquito Lagoon in Oak Hill, Volusia County. FWC case number 7540 was assigned. The complainant, Scott Kidwell (404-431-7131), reported two dead baby manatees. At 1441 hrs, CMM received photographs from the complainant. Based on the location, one of the carcasses was identified as MEC20084. The other carcass (MEC20088) had not yet been reported. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied. The remains were left onsite.

EXTERNAL From photographs - All the ventral epidermis was present. The carcass was slightly distended with gas. There were patches of cobblestone-like epidermis on the ventrum and flippers.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Cobblestone-like epidermis

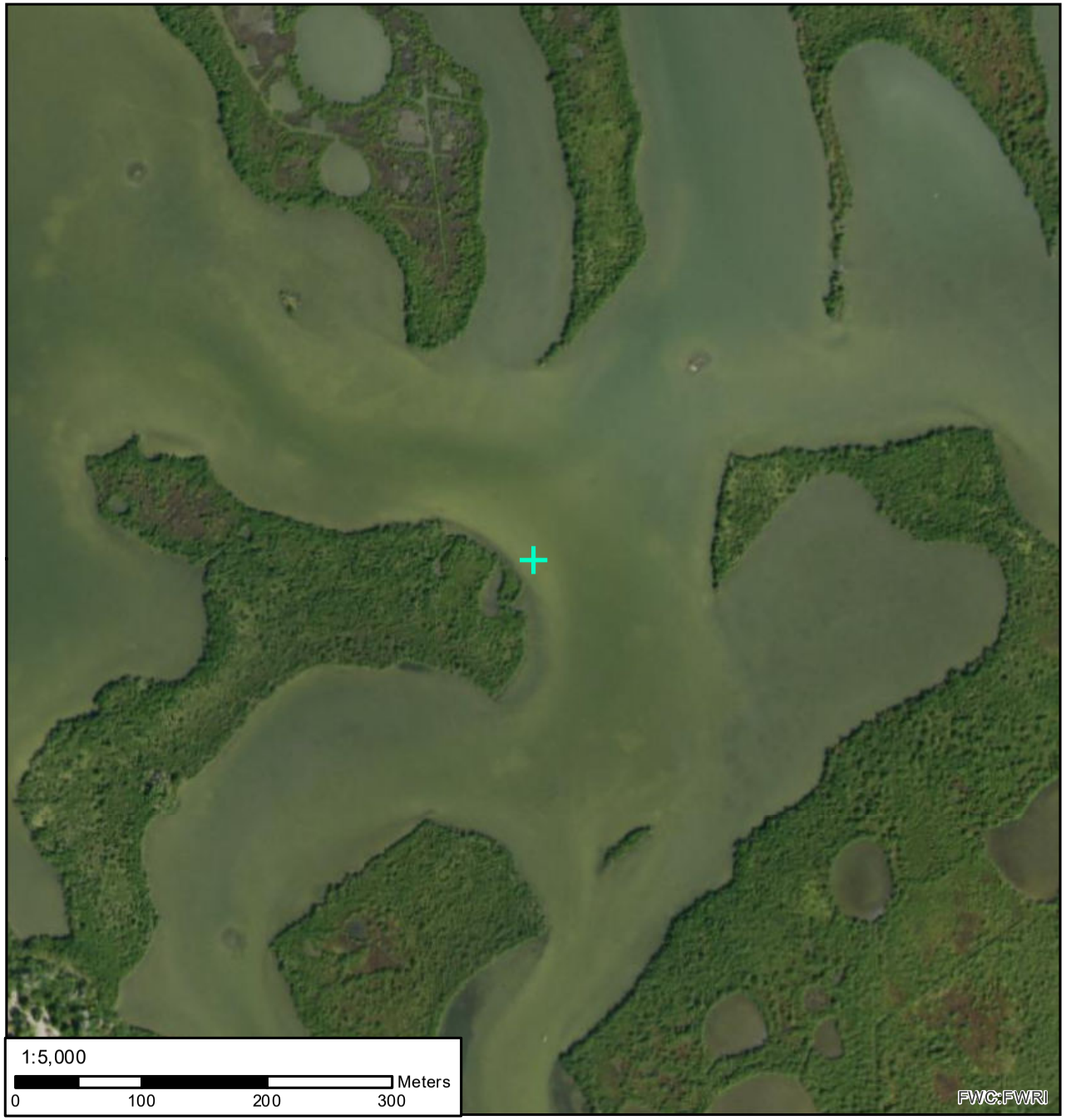
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

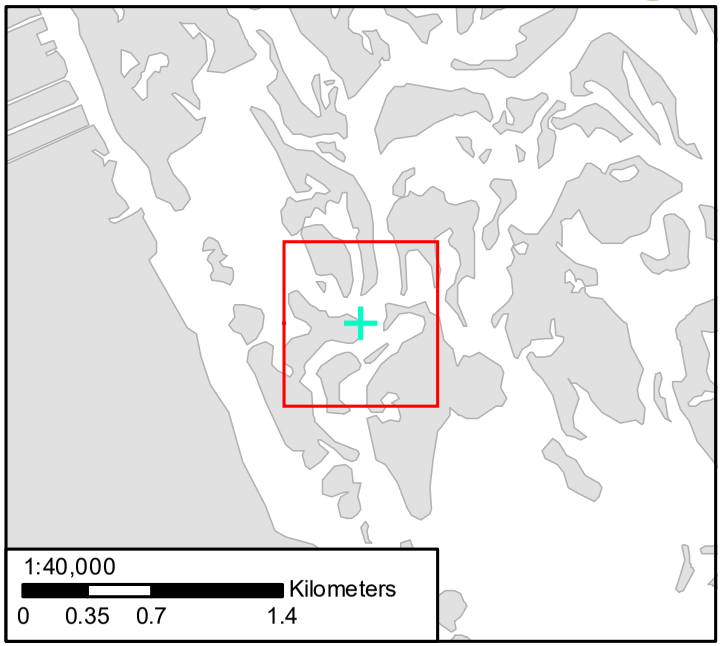
NECROPSY CONDUCTED BY N/A

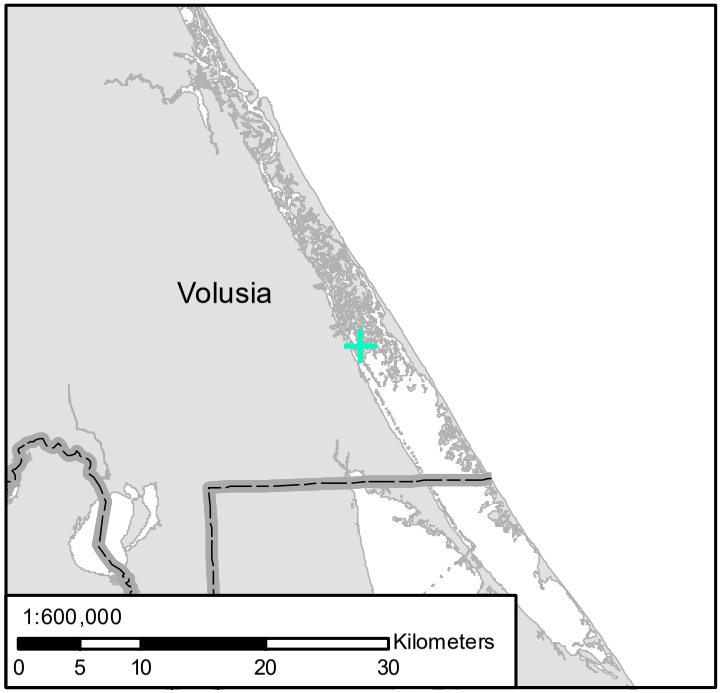
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20088

Report Date: 5/2/2020 **Received Date:** **Received By:**







Location: Oak Hill, Volusia County

Latitude: 28.89057°N **Longitude:** -80.83849°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20088
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7540 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 275 **Weight (kg)** N/T
Date reported: 02 May 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 980 m E of 639 Riverside Landing Drive

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20089**
Date of Report: 2020-May-03
Filed By: FWC EC Field Station

FWC Case # 7627 **FWC Region:** NE

Sex: Male **Length:** 335 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-03 **By:** Brevard County Deputy to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.74188 **N**
County: Brevard **Longitude:** -80.74276 **W**
Waterway: Mosquito Lagoon
Location description: Allenhurst, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Bleached epidermis; Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20089

MORPHOMETRICS:

Total length:	335 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20089 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 335 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 03 May 2020, at 1327 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon in Allenhurst, Brevard County. FWC case number 7627 was assigned. The complainant, Brevard County Deputy Trimmer, stated that the carcass was 11 to 12 feet long and floating belly-up near the channel. At 1335 hrs, SMW received a verification photo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the ventral epidermis was present. The carcass was distended with gas. Bleached spots were visible on the epidermis of the ventrum. There was a thin brown algal mat on the left lateral aspect.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Bleached spots epidermis

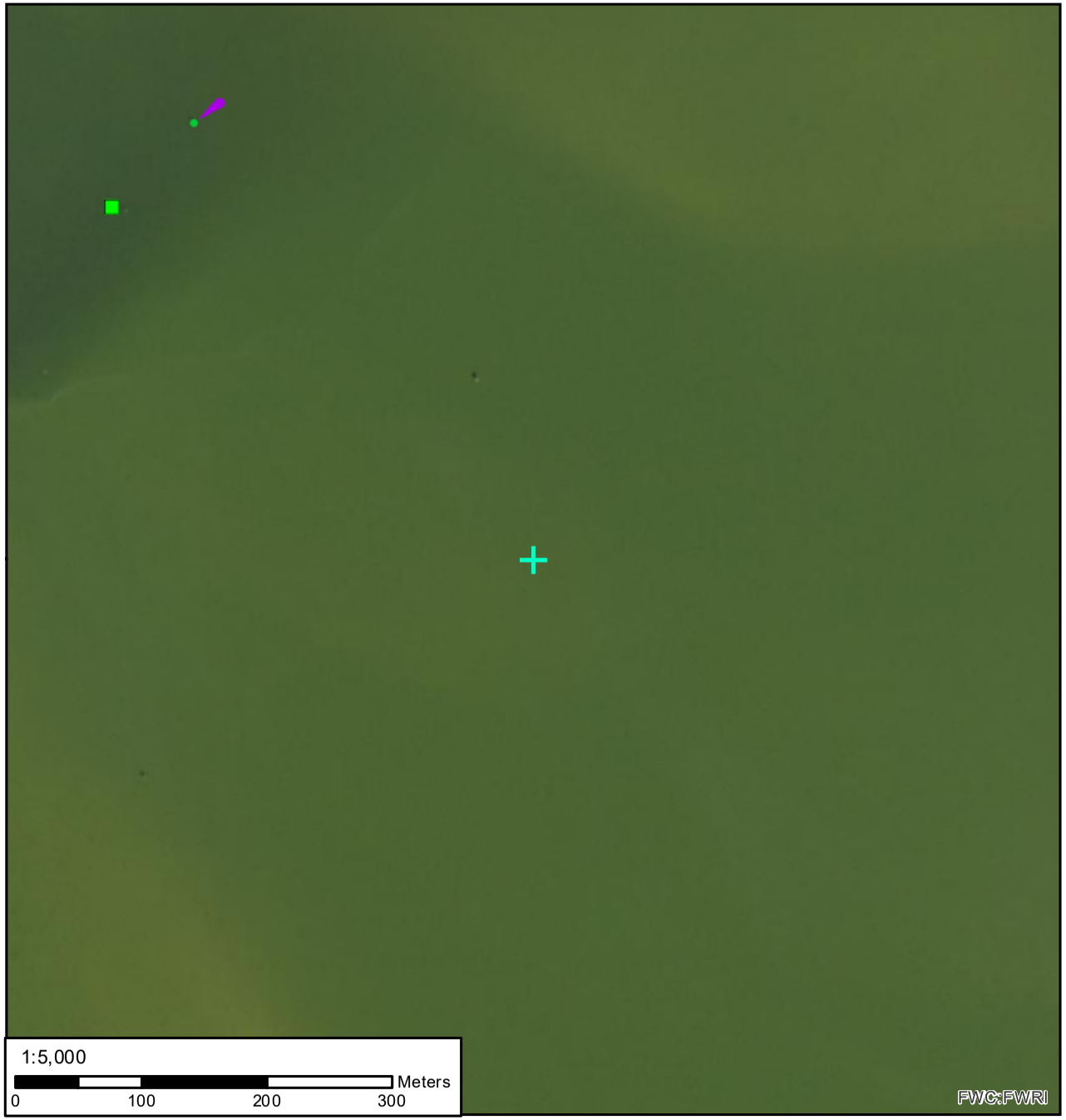
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

NECROPSY CONDUCTED BY N/A

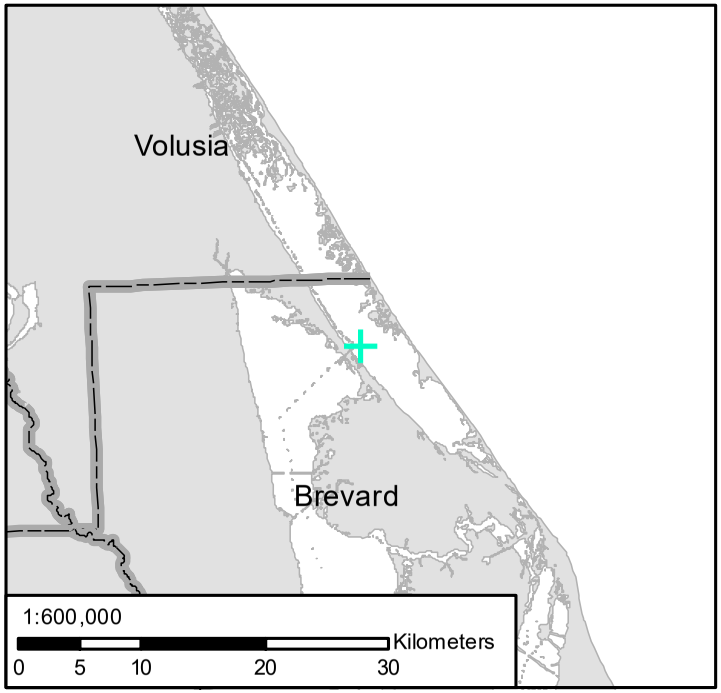
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20089

Report Date: 5/3/2020 **Received Date:** **Received By:**







Location: Allenhurst, Brevard County

Latitude: 28.74188°N **Longitude:** -80.74276°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20089
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7627 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 335 **Weight (kg)** _____
Date reported: 03 May 2020 **By**: Brevard County Sheriff to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 1.7 km NE of Bairs Cove boat ramp.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20090**
Date of Report: 2020-May-03
Filed By: FWC EC Field Station

FWC Case # 7627 **FWC Region:** NE

Sex: Female **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.92368 **N**
County: Brevard **Longitude:** -80.49913 **W**
Waterway: Indian River
Location description: Melbourne Beach, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20090

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20090 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 03 May 2020, at 1356 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near Haulover Canal, Brevard County. Dispatch originally thought it was a second report of MEC20089 and assigned FWC case number 7627. After speaking with the complainant, Karen McLaughlin (321-848-8416), it was determined to be a new carcass (MEC20090). Karen stated that the dead manatee was near the Aquarina boat ramp in the Indian River in Melbourne Beach. She also stated that the carcass was eight feet long, belly-up, with all skin intact. At 1407 hrs, SMW received a verification photo. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the ventral epidermis was present. The carcass was distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

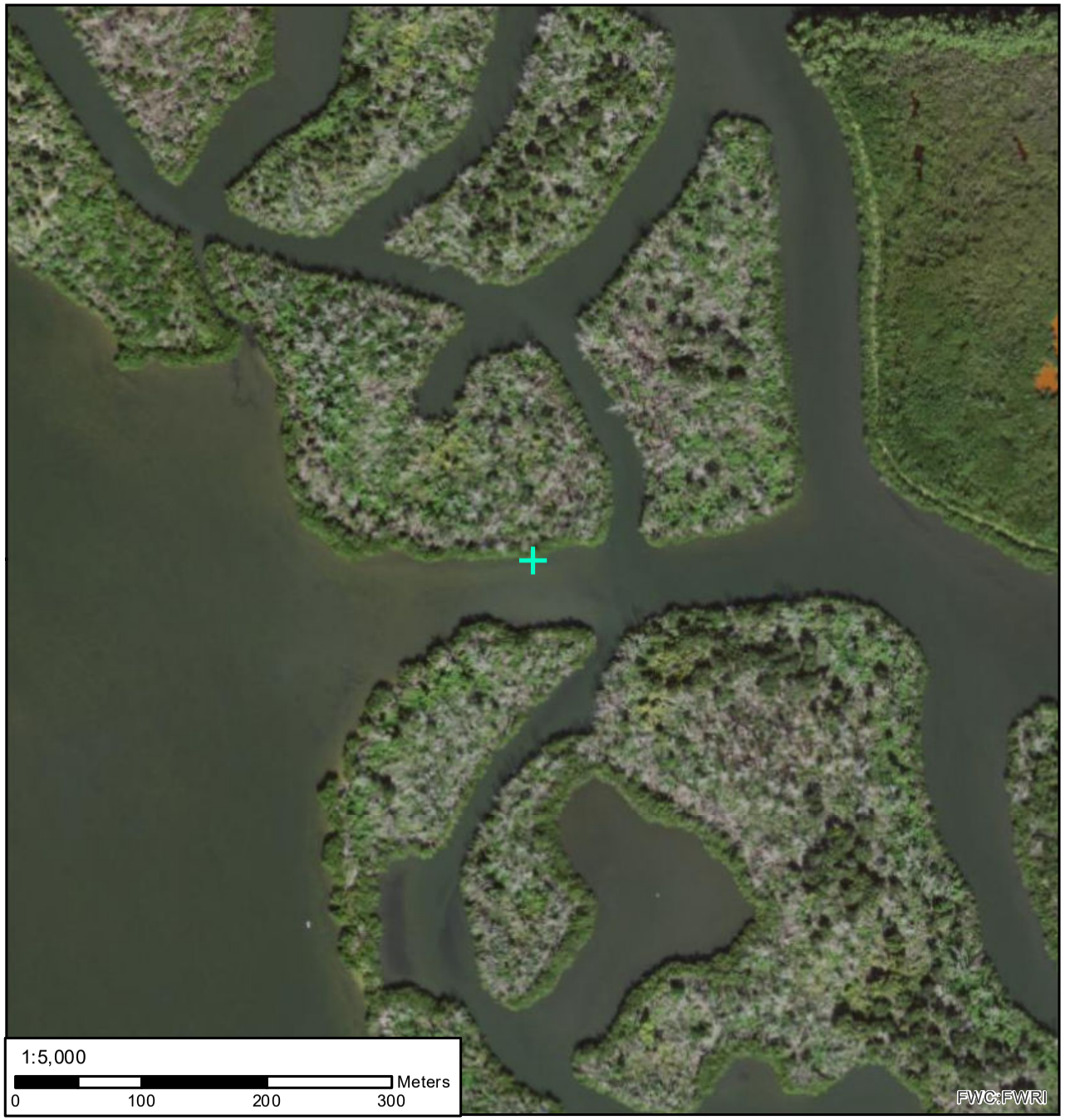
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

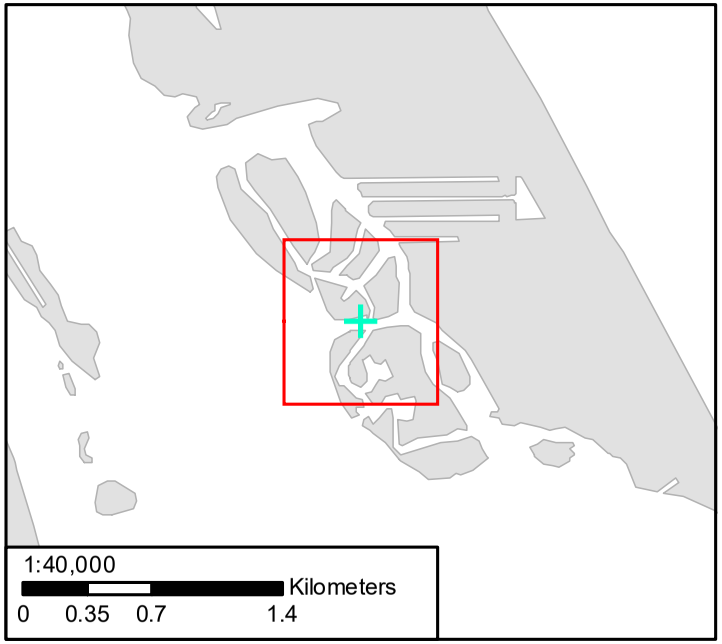
NECROPSY CONDUCTED BY N/A

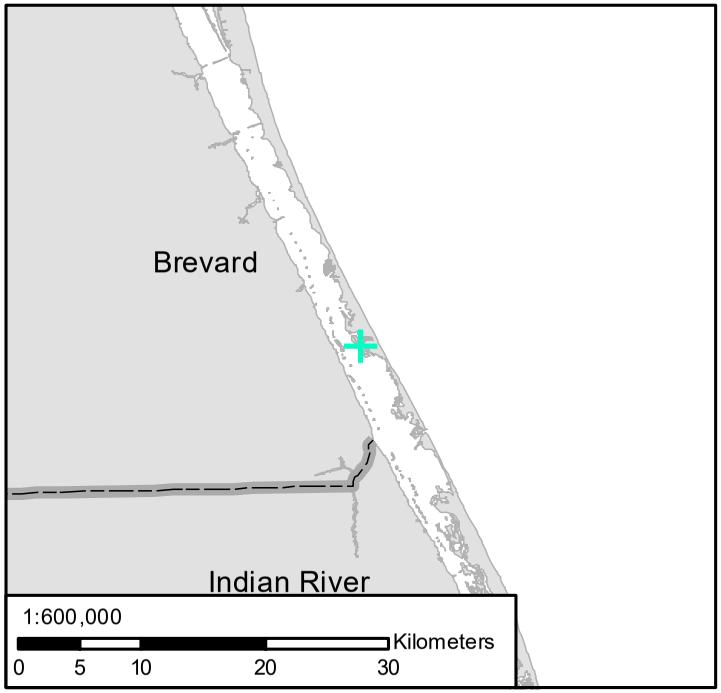
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20090

Report Date: 5/3/2020 **Received Date:** **Received By:**







Location: Melbourne Beach, Brevard County **Latitude:** 27.92368°N **Longitude:** -80.49913°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20090
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7627 (2nd complainant) **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** _____
Date reported: 03 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne Beach, approximately 515 m SSW of 395 Beverly Court.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20091**
Date of Report: 2020-May-03
Filed By: FWC EC Field Station

FWC Case # 7657 **FWC Region:** NE

Sex: Female **Length:** 180 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.18779 **N**
County: Brevard **Longitude:** -80.61443 **W**
Waterway: Banana River
Location description: Satellite Beach, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Bleached epidermis; Cobblestone-like epidermis; Healing skin lesions; Necrotic lesion nose. Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20091

MORPHOMETRICS:

Total length:	180 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20091 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 180 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 03 May 2020, at 1730 hrs, FWC on-call biologist-Molly R. Schubert (MRS) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River in Satellite Beach, Brevard County. FWC case number 7657 was assigned. The complainant, Dave Rider (321-693-3730), stated that the carcass was about 6 feet long, dorsum-up, and grounded behind his home. At 1855 hrs, MRS received a photo of the carcass from the complainant. At 1904 hrs, MRS forwarded the information to EC Field Station staff and requested an officer to tow the carcass to a remote location. At 2000 hrs, FWC Lt. Lightsey arrived and stated the water was too shallow to reach the carcass. **04 May**, the complainant secured the carcass to the end of his dock. **05 May**, FWC Officer Kearney secured the carcass in Sampson's Island Preserve at 1352 hrs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - Approximately 90% of the visible dorsal epidermis was present but sloughing. There were numerous small healing linear lesions on the dorsum. There were two parallel watercraft-related scars or wounds on the dorsal aspect. A thin brown algal mat was observed on the right aspect. Patches of cobblestone-like epidermis were present on the dorsum. The epidermis of the face was bleached. There were necrotic lesions associated with the nares.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Bleached, cobblestone epidermis
- Healing skin lesions
- Necrotic lesions nose

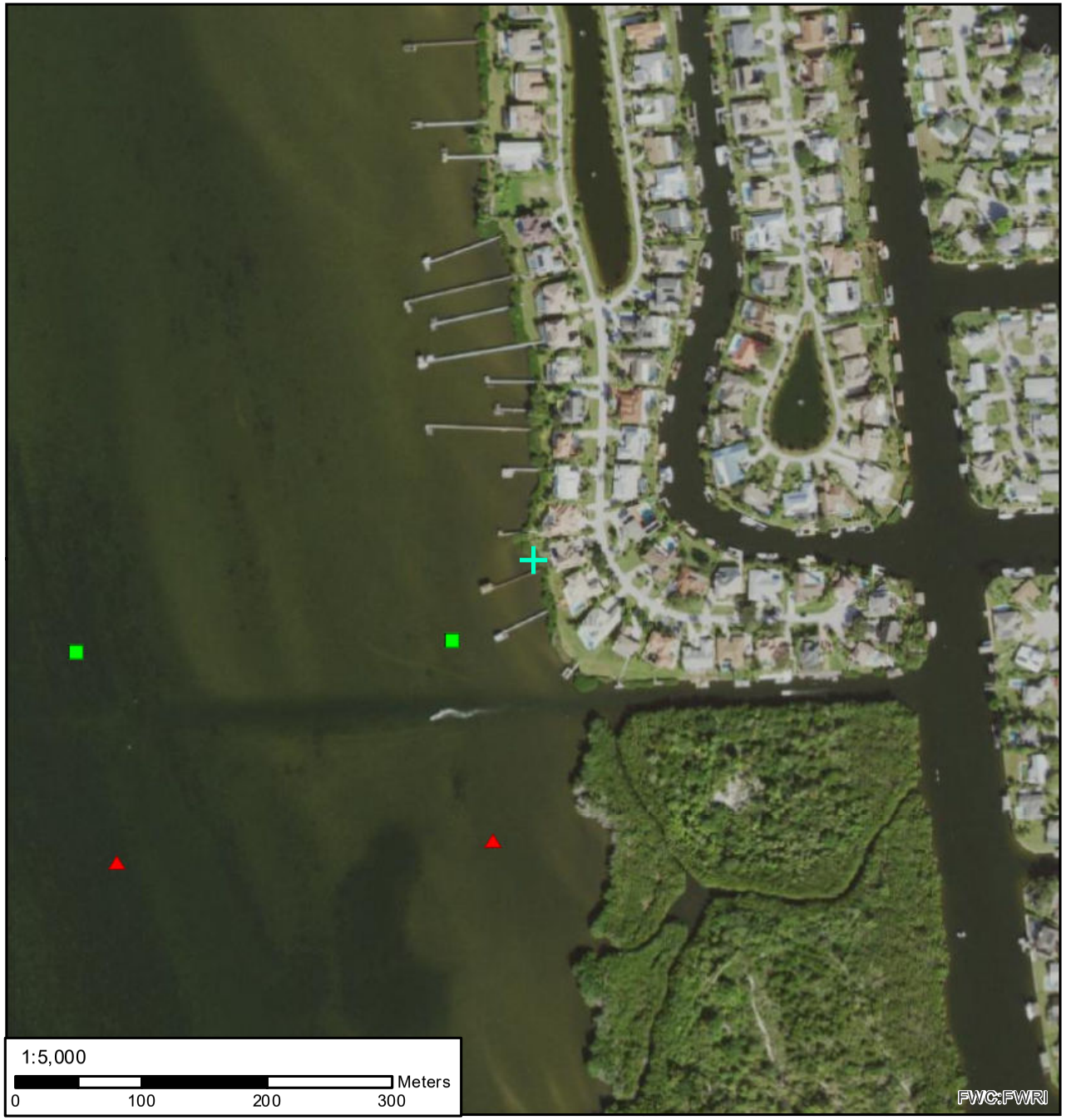
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

NECROPSY CONDUCTED BY N/A

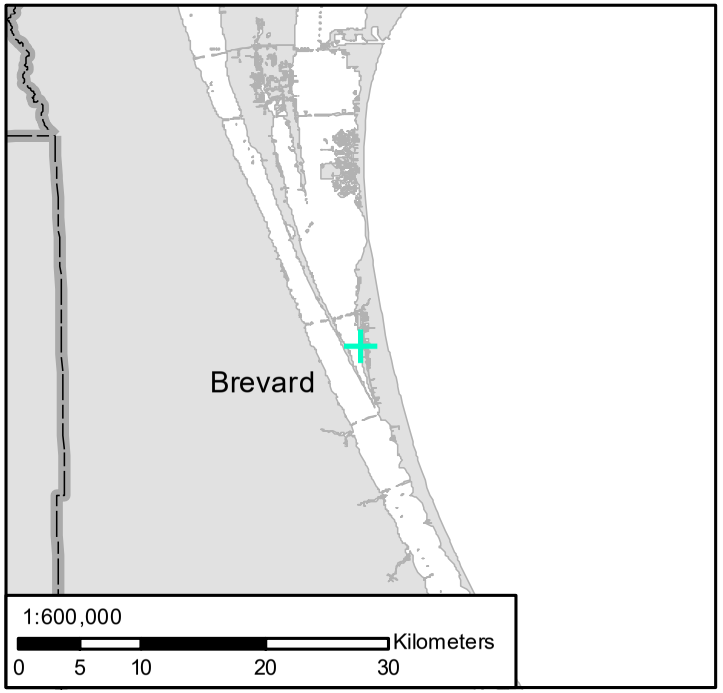
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20091

Report Date: 5/3/2020 **Received Date**: **Received By**:







Location: Satellite Beach, Brevard County

Latitude: 28.18779°N **Longitude**: -80.61443°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20091
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7657 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 03 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 30 m W of 890 Loggerhead Island Drive
Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to the stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20092**
Date of Report: 2020-May-06
Filed By: FWC EC Field Station

FWC Case # 7893 **FWC Region:** NE

Sex: Male **Length:** 180 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-06 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.39172 **N**
County: Brevard **Longitude:** -80.69186 **W**
Waterway: Sykes Creek
Location description: Merritt Island, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Bleached epidermis; Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case number 7855.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20092

MORPHOMETRICS:

Total length:	180 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20092 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 180 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 06 May 2020, at 1607 hrs, FWC biologist-Carley M. Metcalf received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek in Merritt Island, Brevard County. FWC case number 7855 was assigned. The complainant, Peggy Woolf (703-860-1315), stated that the carcass was belly-up, gray, and under her neighbor's dock. **07 May**, at 0839 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding the same dead manatee. FWC case number 7893 was assigned. The original complainant stated that the carcass was now under her dock. At 0854 hrs, SMW received a verification photograph and requested FWC LE assistance to tow the carcass. At 1133 hrs, FWC Officer-Heidi Johnson secured the carcass to a remote shoreline. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - Almost all of the ventral epidermis was present but sloughing. The carcass was distended with gas. There were bleached spots on the lateral aspects, flippers, and ventral fluke.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Bleached epidermis

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

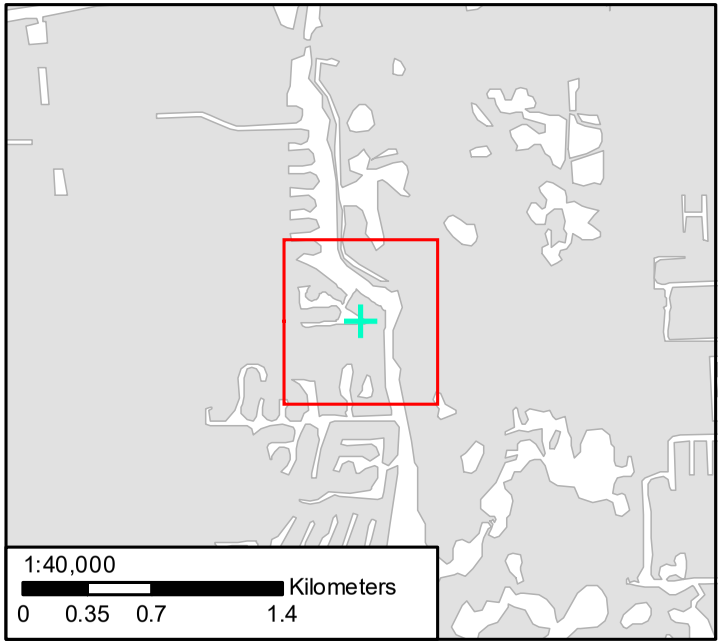
NECROPSY CONDUCTED BY N/A

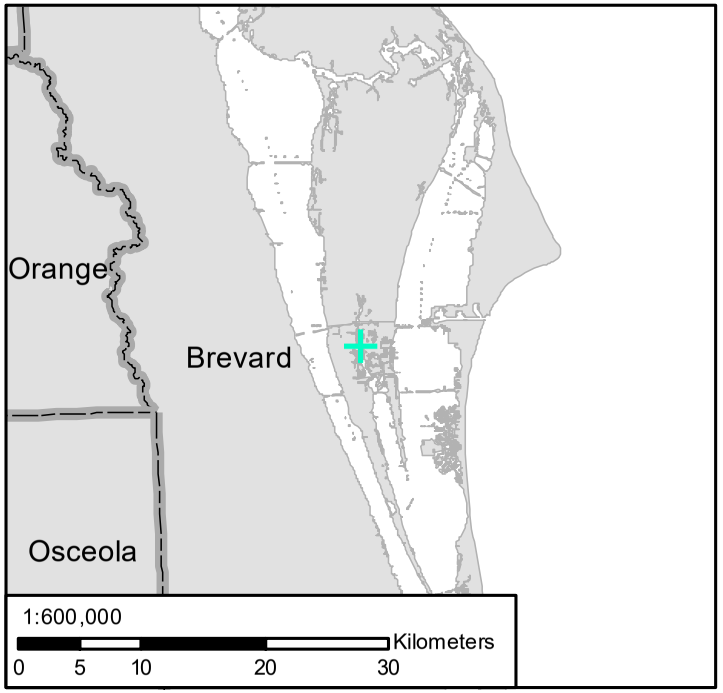
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20092

Report Date: 5/6/2020 **Received Date**: **Received By**:







Location: Merritt Island, Brevard County

Latitude: 28.39172°N **Longitude**: -80.69186°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20092
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7855, 7893 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 185 **Weight (kg)** _____
Date reported: 06 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 07 May 2020 **By**: FWC-Officer Heidi Johnson
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Sykes Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 25 m W of 1950 Sykes Creek Drive.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**

Natural: ☐ Cold Stress ☐ Other (includes Red Tide)

Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered

Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:

☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:

☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:

☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20093**
Date of Report: 2020-May-08
Filed By: FWC EC Field Station

FWC Case # 7982 **FWC Region:** NE

Sex: Female **Length:** 280 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-08 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.62055 **N**
County: Brevard **Longitude:** -80.77705 **W**
Waterway: Indian River
Location description: Titusville, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20093

MORPHOMETRICS:

Total length:	280 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20093
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Female **TL** 280 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 08 May 2020, at 1100 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Catfish Creek in the Indian River in Titusville, Brevard County. FWC case number 7982 was assigned. The complainant, Larkin (352-630-0103), reported the manatee as belly-up and grounded. At 1102 hrs, CMM received photo verification of the carcass. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - Approximately 80% of the ventral epidermis was present but sloughing. The carcass was dorsoventrally flattened. Vultures were present on the carcass.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph
- Scavenging

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

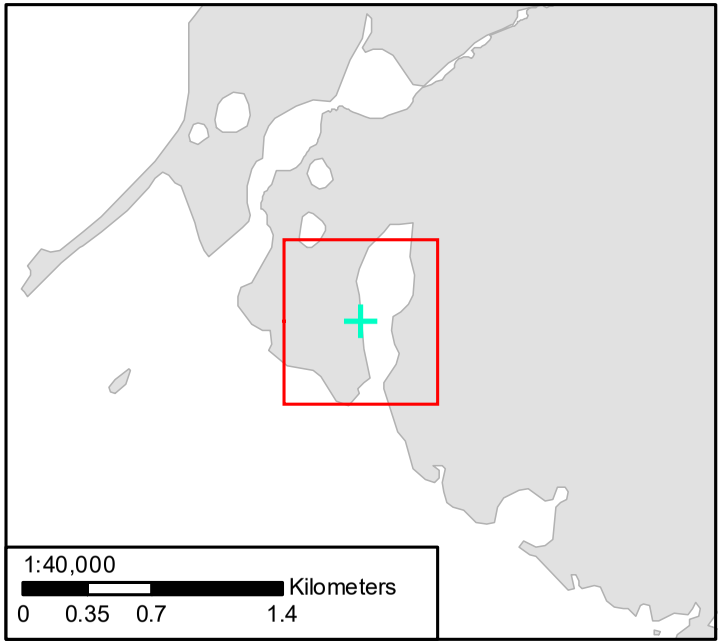
NECROPSY CONDUCTED BY N/A

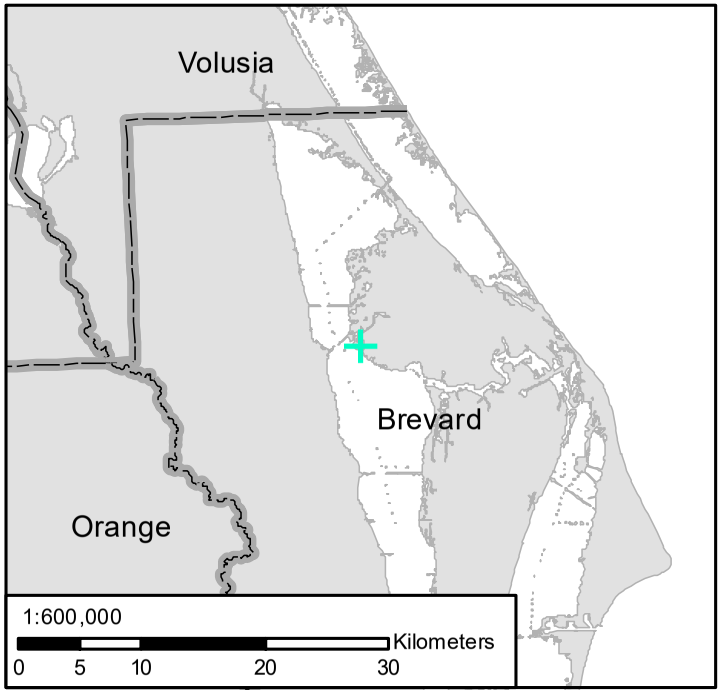
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20093

Report Date: 5/8/2020 **Received Date:** **Received By:**







Location: Titusville, Brevard County

Latitude: 28.62055°N **Longitude:** -80.77705°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20093
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7982, 8228 **FWC District:** Northeast
Sex: Female **Length (cm):** _____ **Estimated** 245 **Weight (kg)** N/T
Date reported: 08 May 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By:** _____
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: **State** FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Titusville, approximately 2.6 km ENE of 3 Indian River Avenue

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20094**
Date of Report: 2020-May-08
Filed By: FWC EC Field Station

FWC Case # 7991 **FWC Region:** NE

Sex: Male **Length:** 300 **cm** (estimated-2) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-08 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.07758 **N**
County: Brevard **Longitude:** -80.59801 **W**
Waterway: Indian River
Location description: Melbourne, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Watercraft wound(s); Verified by FWC biologist. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20094

MORPHOMETRICS:

Total length:	300 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20094 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 300 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 08 May 2020, at 1215 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Melbourne, Brevard County. FWC case number 7991 was assigned. The complainant, Katy Teckham (321-501-7006), described a manatee that had been in the same spot all day which she thought might be dead. CMM received a photo but it was unclear if the manatee was dead or alive. At 1242 hrs, CMM arrived at the site and verified the carcass. CMM secured the carcass to the neighboring dock and requested FWC LE assistance to tow it to a more secluded area. **10 May**, at 1441 hrs, FWC Officer Cybula secured the manatee in a less populated area. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL All of the epidermis was present. A thin brown algal mat was present on the dorsal aspect. There was a superficial long linear watercraft-related wound on the left dorsal caudal aspect.

COMMENTS

SIGNIFICANT FINDINGS

- Verified by FWC biologist
- Watercraft wound

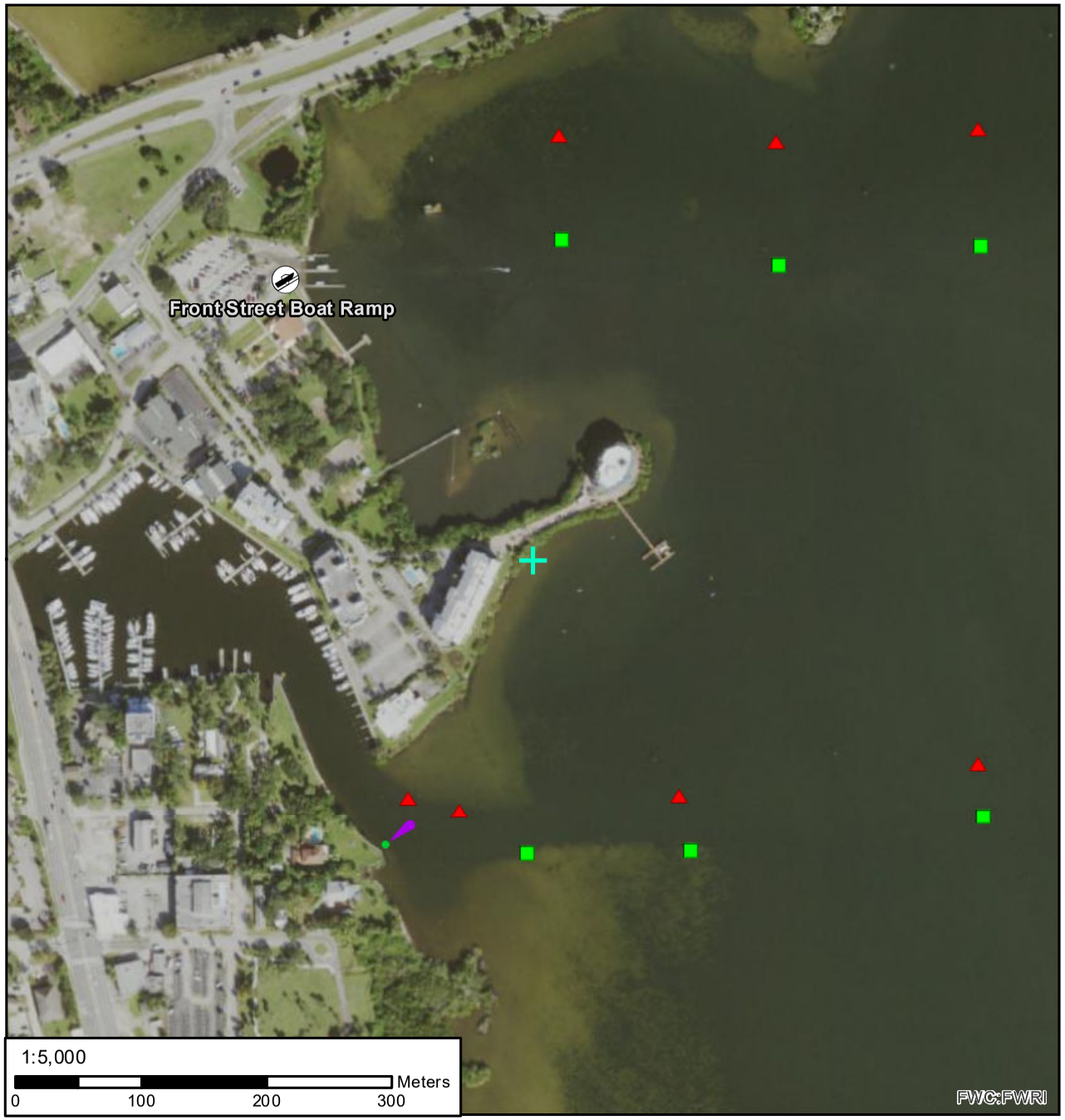
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

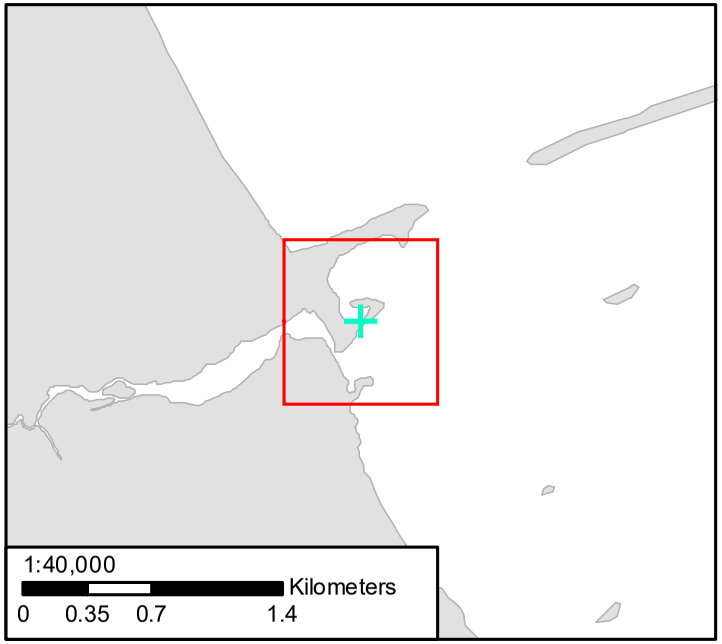
NECROPSY CONDUCTED BY N/A

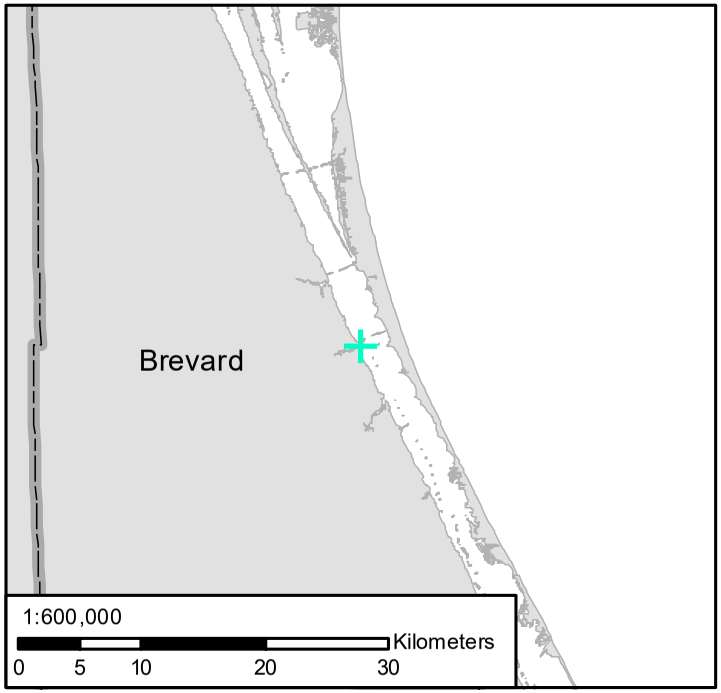
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20094

Report Date: 5/8/2020 **Received Date:** **Received By:**







Location: Melbourne, Brevard County **Latitude:** 28.07758°N **Longitude:** -80.59801°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20094
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7991 **FWC District:** Northeast
Sex: Male **Length (cm):** _____ **Estimated** 305 **Weight (kg)** N/T
Date reported: 08 May 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 10 May 2020 **By:** FWC Officer-Cybula
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: State FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Melbourne, approximately 60 m NE of 2600 Front Street
Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20095**
Date of Report: 2020-May-08
Filed By: FWC EC Field Station

FWC Case # 8019 **FWC Region:** NE

Sex: Unknown **Length:** 200 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-08 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.75805 **N**
County: Brevard **Longitude:** -80.76382 **W**
Waterway: Mosquito Lagoon
Location description: Allenhurst, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case number 8003.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20095

MORPHOMETRICS:

Total length:	200 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20095 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 200 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 08 May 2020, at 1407 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon in Allenhurst, Brevard County. FWC case number 8003 was assigned. The complainant, Tim Board (321-795-5456), described a small dead manatee grounded on the shoals across from the Beacon 42 boat ramp. At 1534 hrs, CMM received a video of the manatee but could not verify if it was dead. At 1525 hrs, CMM received a text alert from Dispatch regarding a dead manatee in the Mosquito Lagoon. FWC case number 8019 was assigned. The complainant, Jeanette Hobbs (305-393-4434), described the manatee as belly-up, six feet long, and grounded on shoals. At 1557 hrs, CMM received photos of the carcass. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs – All of the ventral epidermis was missing. The carcass was dorsoventrally flattened. The tissue of the face was eroded due to decomposition.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

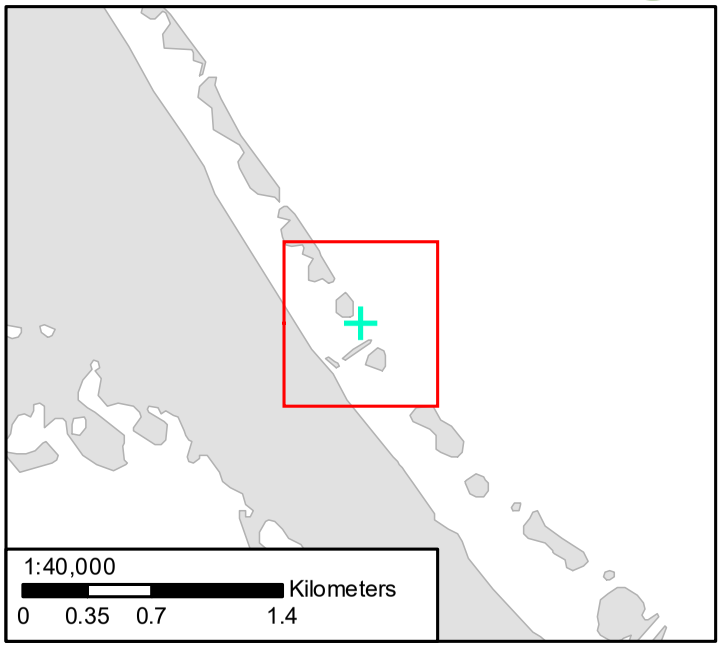
NECROPSY CONDUCTED BY N/A

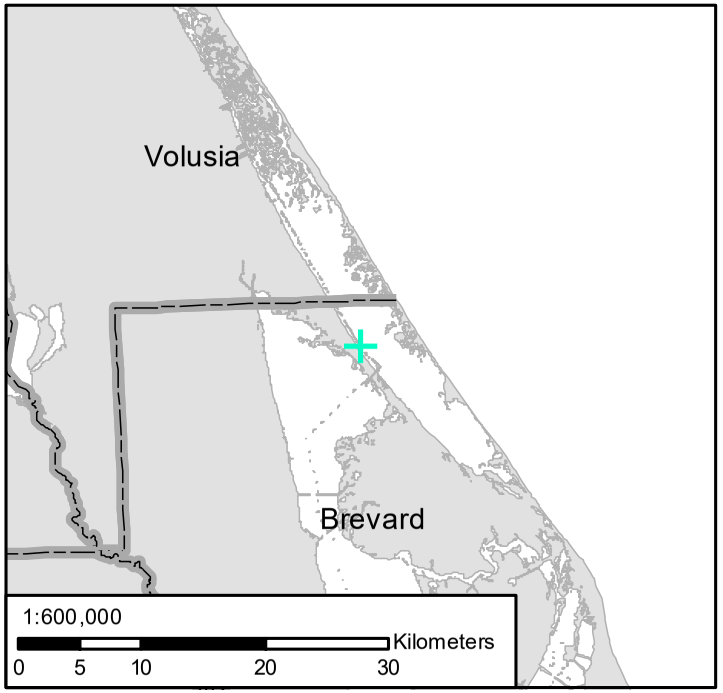
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20095

Report Date: 5/8/2020 **Received Date**: **Received By**:







Location: Allenhurst, Brevard County

Latitude: 28.75805°N **Longitude**: -80.76382°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20095
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8003, 8019 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 180 **Weight (kg)** N/T
Date reported: 08 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 295 m ENE of Beacon 42 Boat Ramp

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to a stay-at-home order during the Covid-19 pandemic, the carcass was not collected or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20096**
Date of Report: 2020-May-15
Filed By: FWC EC Field Station

FWC Case # 8728 **FWC Region:** NE

Sex: Male **Length:** 250 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-15 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.88073 **N**
County: Volusia **Longitude:** -80.84335 **W**
Waterway: Indian River North
Location description: Oak Hill, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Watercraft wound(s); Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

Known boat strike report.

REMARKS:

PIT tag scan not performed. Also FWC case number 8625.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20096

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20096 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 15 May 2020, at 1528 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon in Oak Hill, Volusia County. FWC case number 8625 was assigned. The complainant, Brandon Ferri (386-690-4824), described a dead, five-foot-long manatee in a shallow area. The complainant said he knew the manatee was dead because he hit something while on plane and when he turned around to check what it was, he found the manatee floating. The complainant touched the manatee but there was no response, and the complainant left the area. At 1538 hrs, CMM received a photo of the manatee from the complainant. Based on the photo, it was unclear if the manatee was dead. CMM requested FWC LE assistance to confirm if the manatee was dead or alive. At 1720 hrs, FWC Officer Goodreau reported inclement weather hindered a thorough search, but from a quick scan of the area he could not find any manatees. **16 May**, at 1814 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from Dispatch regarding a dead manatee in the Indian River North in Oak Hill. FWC case number 8728 was assigned. The complainant, Cordene (570-228-5861), stated that the carcass was belly-up and 5 to 6 feet long. At 1822 hrs, ARH received verification photos and forwarded them to the EC Field Station. The photos confirmed that the carcass was the same animal from the reported boat strike the day before. At 1822 hrs, ARH requested FWC LE assistance to tow and relocate carcass. No officers were available that night. **17 May**, no officers were available. At 1700 hrs, the tow request was canceled. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the ventral epidermis was present. There appeared to be a watercraft-related wound pattern on the mid left lateral aspect which consisted of a long linear wound and at least two parallel propeller wounds 90 degrees to and ventral to the linear wound. The carcass was slightly distended with gas. There was a mild infestation of barnacles on the ventrum. A moderate brown algal mat was present on the left lateral aspect.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Watercraft wounds

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

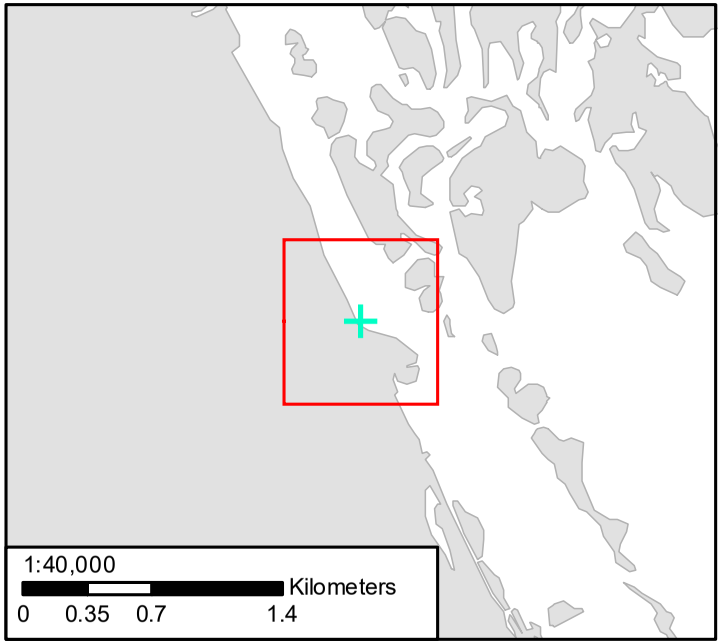
NECROPSY CONDUCTED BY N/A

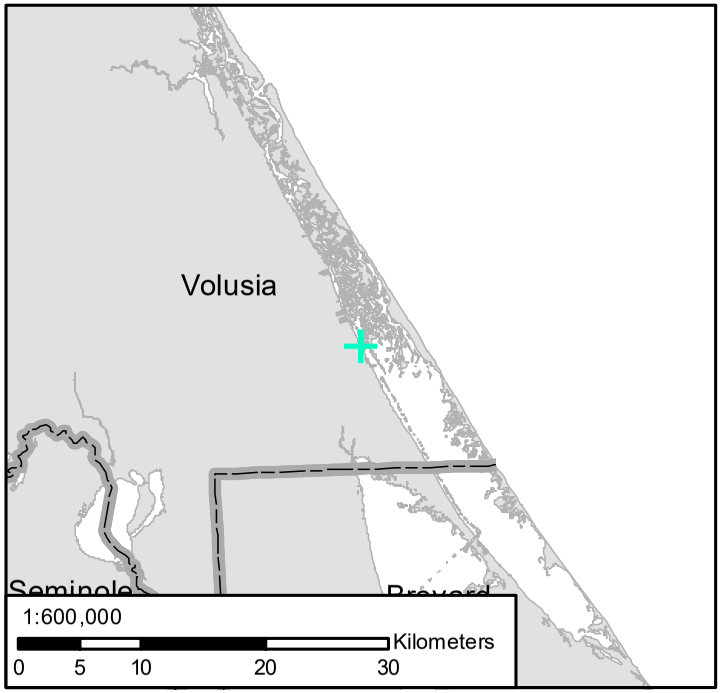
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20096

Report Date: 5/15/2020 **Received Date:** **Received By:**







Location: Oak Hill, Volusia County

Latitude: 28.88073°N **Longitude:** -80.84335°W

Map Created: 3/29/2021

Reported Boat Strike of a Manatee

Florida Fish and Wildlife Conservation Commission
Fish & Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South
St. Petersburg, Florida 33711
FAX: 727-893-2907

RBS- EC2020May15 Date 05/15/2020 Time 1528 hrs

FWC-LE Region NE Incident # 8625

Field MEC20096 FWRI staff filing report C. Metcalf

Person Reporting Incident ○ Witness ◉ Operator ○ Third Party

Name Brandon Ferri

Phone 386-690-4824 E-mail onthespotcharters@yahoo.com

Vessel Information

Make/Model 2015 beavertail vengeance Make of Engine suzuki

Vessel Length 18 ft HP of Engine 90

Hull Type Pontoon Prop Size/Pitch

Propulsion outboard

Description of Incident - Location

City Oak Hill County Volusia

Waterway Mosquito Lagoon Speed Zone Unregulated

Latitude 28.885915 Longitude -80.838732

Location description 730 m E of 259 Golden bay Boulevard

Description of Incident - Activity catching bait for fishing charter

Boat speed (mph) 20 Estimated? ◉ Yes ○ No Speedometer? ○ Yes ◉ No

Water depth (ft) 1.5 Estimated? ◉ Yes ○ No Depthmeter? ○ Yes ◉ No

Boat was... On plane/Cruising and Unmarked area/waterway

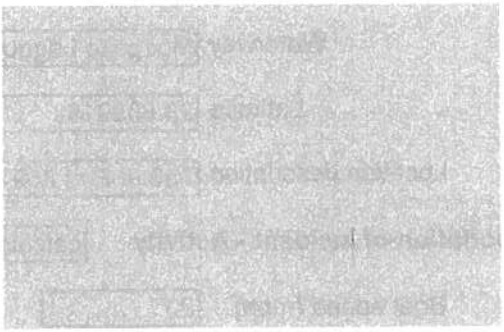
Number of manatees struck 1 Manatee Injured? Suspected

Est. size of manatee (ft) 5 Number of manatees seen in the area 2

Description of Incident - Activity

15 May 2020, at 1528 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Mosquito Lagoon in Oak Hill, Volusia County. FWC case number 8625 was assigned. The complainant, Brandon Ferri (386-690-4824), described a dead, five foot manatee in a shallow area. The complainant said he knew the manatee was dead because he hit something while on plane and when he turned around to check what it was, he found the manatee floating. The complainant touched the manatee but there was no response and the complainant left the area. At 1538 hrs, CMM received a photo of the manatee from the complainant. Based on the photo, it was unclear if the manatee was deceased. CMM requested FWC LE assistance to help confirm if the manatee was deceased or alive and possibly injured. At 1720 hrs, FWC LE Ofc. Goodreau contacted CMM for location details. FWC LE Ofc. Goodreau reported inclement weather hindered a thorough search but he was able to look in and around the area and could not find any manatees. 16 May, at 1814 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from Dispatch regarding a deceased manatee in the Indian River North in Oak Hill, Volusia County. FWC case number 8728 was assigned. The complainant, Cordene (570-228-5861), stated that the carcass was belly up and 5-6 feet long. At 1822 hrs, ARH received verification photos and forwarded them to the EC field station. The photos confirmed that the carcass was the same animal from the reported boat strike the day before. Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.





Outcome

- (●) Mortality - M EC20096
- ( ) Assessed - Not Rescued
- ( ) Not Located / GOA
- ( ) Rescue - R_____
- ( ) Unsuccessful Rescue
- ( ) No Response Requested/Needed

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20096
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8625, 8728 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** _____
Date reported: 16 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 90 m NNW of 469 River Road.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS: Same animal as the RBS_EC2020May15 report.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20097**
Date of Report: 2020-May-18
Filed By: FWC EC Field Station

FWC Case # 8877 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-18 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.70958 **N**
County: Brevard **Longitude:** -80.73414 **W**
Waterway: Indian River
Location description: Allenhurst, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20097

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20097 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 18 May 2020, at 0806 hrs, FWC biologist-Sara M. Wappes received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at the Merritt Island National Wildlife Refuge in Dummit Creek in Allenhurst, Brevard County. FWC case number 8877 was assigned. The complainant, David Cannon, stated that the carcass was seen the day before and sent a verification photo. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - Approximately 80% of the visible epidermis was present but sloughing. The carcass was distended with gas. The dermis of the flippers and face was eroded due to decomposition.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

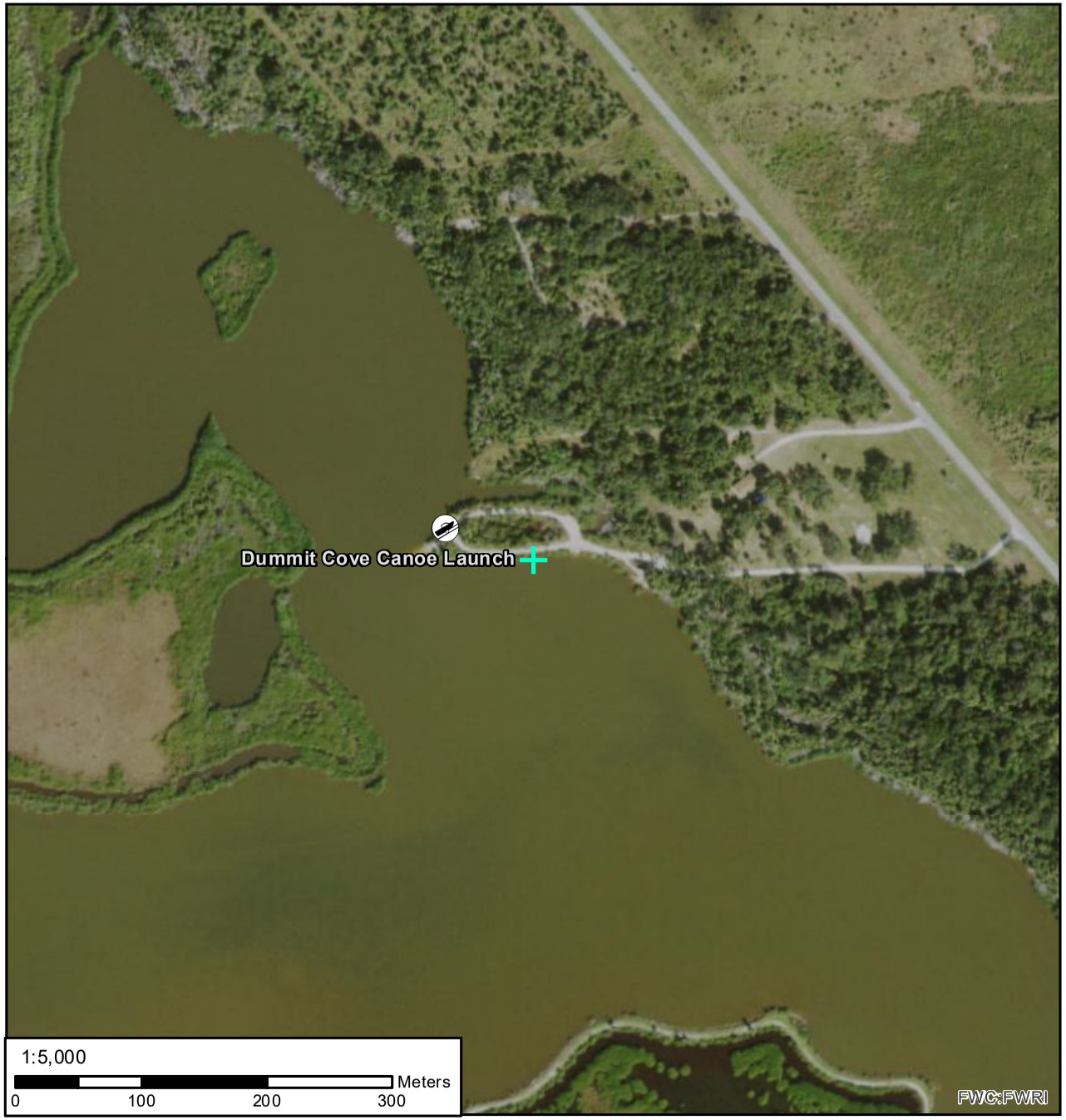
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

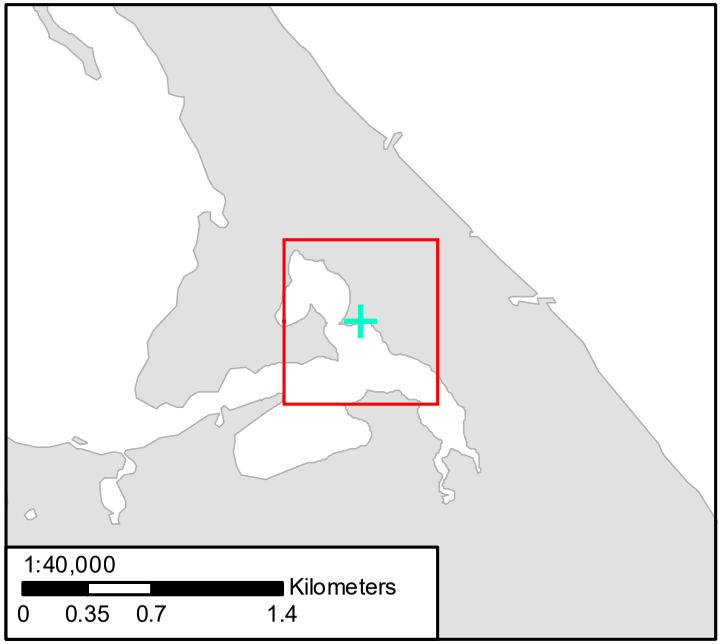
NECROPSY CONDUCTED BY N/A

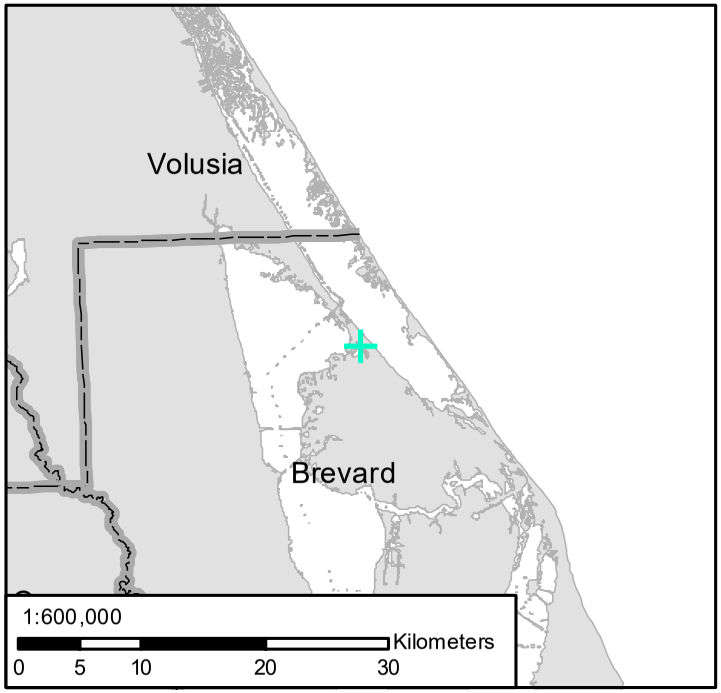
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20097

Report Date: 5/18/2020 **Received Date:** **Received By:**







Location: Allenhurst, Brevard County

Latitude: 28.70958°N **Longitude:** -80.73414°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20097
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8877 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** _____
Date reported: 18 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Dummit Creek (Indian Ri
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 385 m W of the intersection of Dummit Cove Rd and Courtenay Pkwy N.
Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20098**
Date of Report: 2020-May-19
Filed By: FWC EC Field Station

FWC Case # 8984 **FWC Region:** NE

Sex: Female **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-19 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.89974 **N**
County: Volusia **Longitude:** -80.85864 **W**
Waterway: Indian River North
Location description: Oak Hill, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20098

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20098 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 19 May 2020, at 1158 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River North in Oak Hill, Volusia County. FWC case number 8984 was assigned. The complainant, Pam Welch (407-405-3865), stated that the carcass was belly-up with intestines protruding. At 1202 hrs, SMW received a verification photo and requested FWC LE assistance to tow the carcass to a secluded location. At 1639 hrs, FWC Officer-Ken Thornton secured the carcass to a remote shoreline. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - Almost all of the ventral epidermis was present but sloughing. The carcass was distended with gas. There was a rent due to decomposition on the caudal ventrum through which portions of the GI tract protruded. There was a small amount of mesenteric fat on the visible colon portion. The fluke margin had a small well-healed mutilation between the 3 and 4 o'clock positions.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

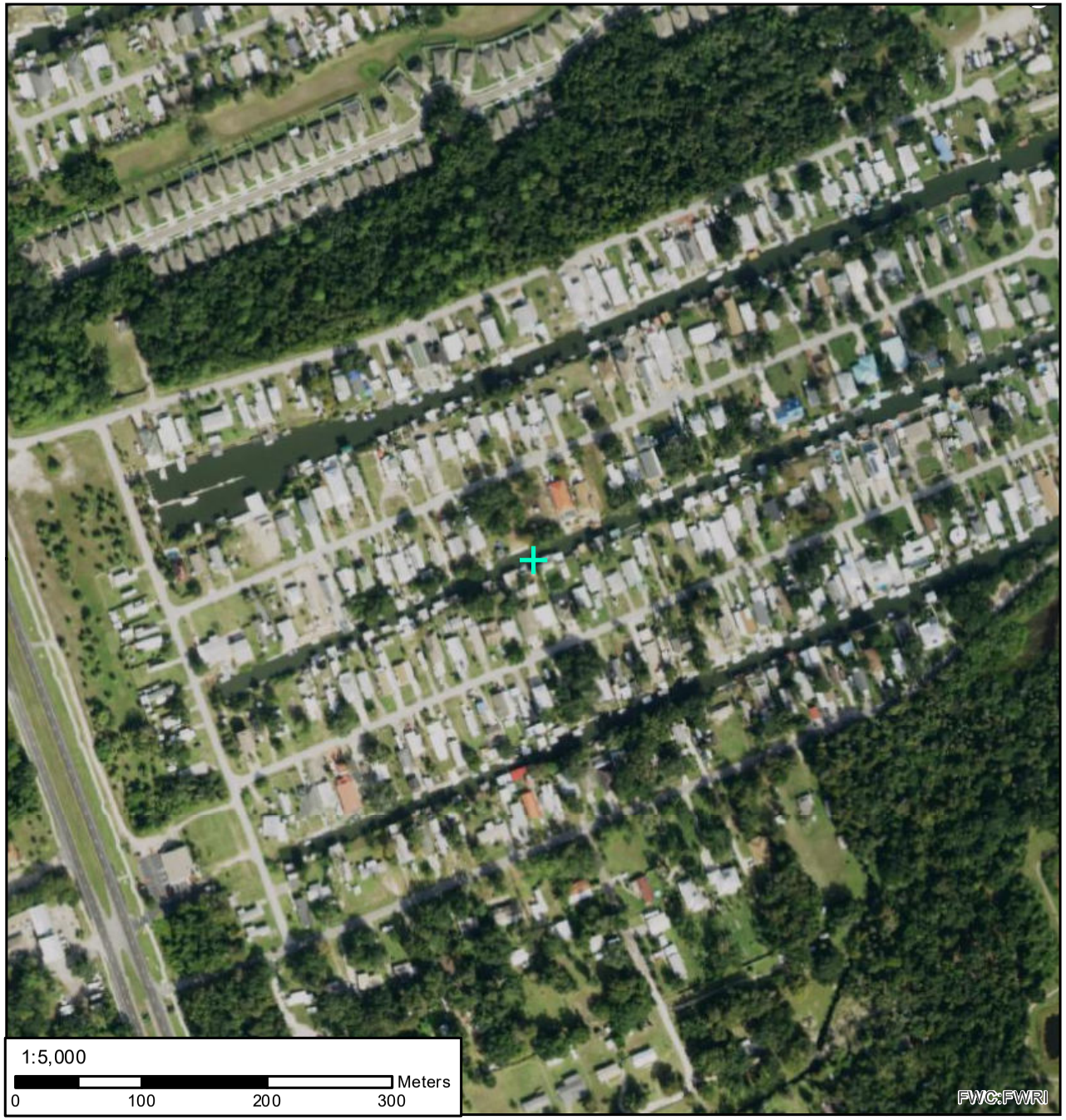
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

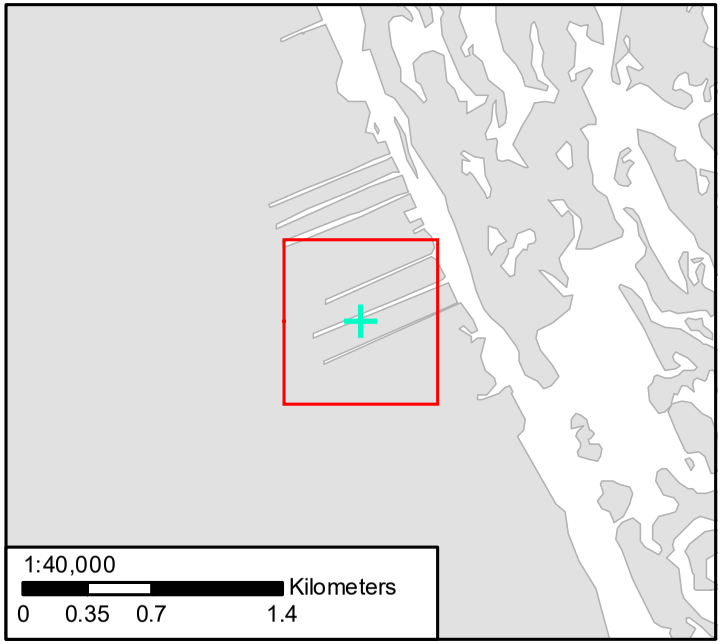
NECROPSY CONDUCTED BY N/A

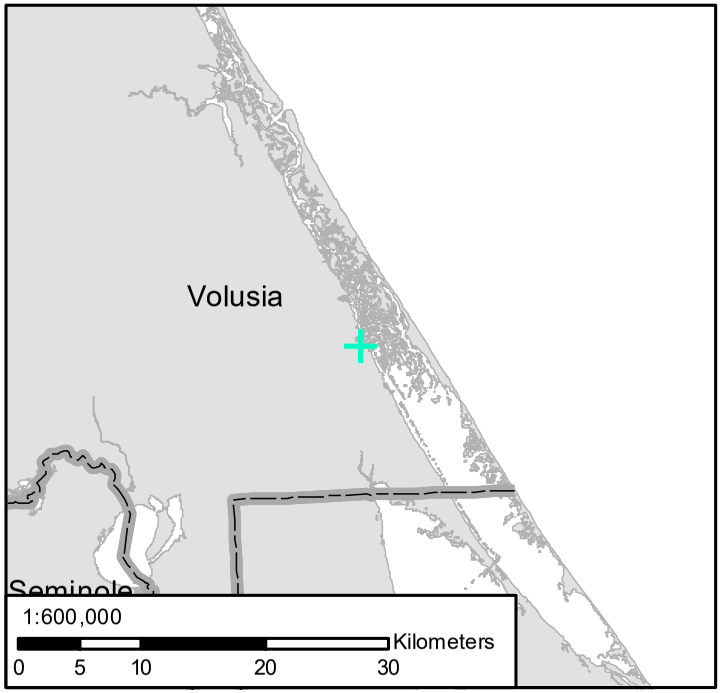
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20098

Report Date: 5/19/2020 **Received Date:** **Received By:**







Location: Oak Hill, Volusia County

Latitude: 28.89974°N **Longitude:** -80.85864°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20098
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8984 **FWC District:** Northeast
Sex: Female **Length (cm):** _____ **Estimated** 200 **Weight (kg)** _____
Date reported: 19 May 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 19 May 2020 **By:** FWC-Ofc. Ken Thornton
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: **State** FL **County:** Volusia **Waterway:** Indian River North
Latitude: N _____ **Longitude:** W _____
Locality description: Oak Hill, approximately 45 m N of 176 Gary Avenue.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20099**
Date of Report: 2020-May-19
Filed By: FWC EC Field Station

FWC Case # 9047 **FWC Region:** NE

Sex: Unknown **Length:** 275 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-19 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.03041 **N**
County: Brevard **Longitude:** -80.57972 **W**
Waterway: Turkey Creek
Location description: Palm Bay, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Penetrating propeller wounds. Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case numbers 8975, 9003, and 9013.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20099

MORPHOMETRICS:

Total length:	275 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20099 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 275 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 19 May 2020, at 1041 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Turkey Creek in Palm Bay, Brevard County. FWC case number 8975 was assigned. The complainant, Mary King (321-626-9592), stated that the carcass was back-up and hadn't breathed in 45 minutes. At 1052 hrs, WDG received a verification photo and requested FWC LE assistance to tow the carcass away from the residential canal. No officers were available that day. The EC Field Station received two additional reports of the carcass throughout the day. FWC case numbers 9003 and 9013 were assigned. **20 May**, at 0857 hrs, FWC biologist-Sara M. Wappes received a text alert from Dispatch regarding a dead manatee at the Palm Bay Marina in Turkey Creek. FWC case number 9047 was assigned. The complainant, Janet Webb (321-723-0851), stated that the carcass was back-up with gashes out of it. SMW updated the location in the request for FWC LE assistance. FWC Officer Wiggly arrived at the carcass at 1033 hrs and secured it to some mangroves at 1100 hrs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the dorsal epidermis was present but slightly sloughing. There was a fresh watercraft-related wound series on the mid right dorso-lateral aspect. The series consisted of at least five parallel propeller wounds, three of which penetrated deeply into the body. At least four parallel propeller wounds crossed with the first five wounds at a 45-degree angle. A minimum of one well-healed watercraft-related scar series was observed on the caudal dorsum. There was a thin green algal mat on the dorsum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Penetrating propeller wounds

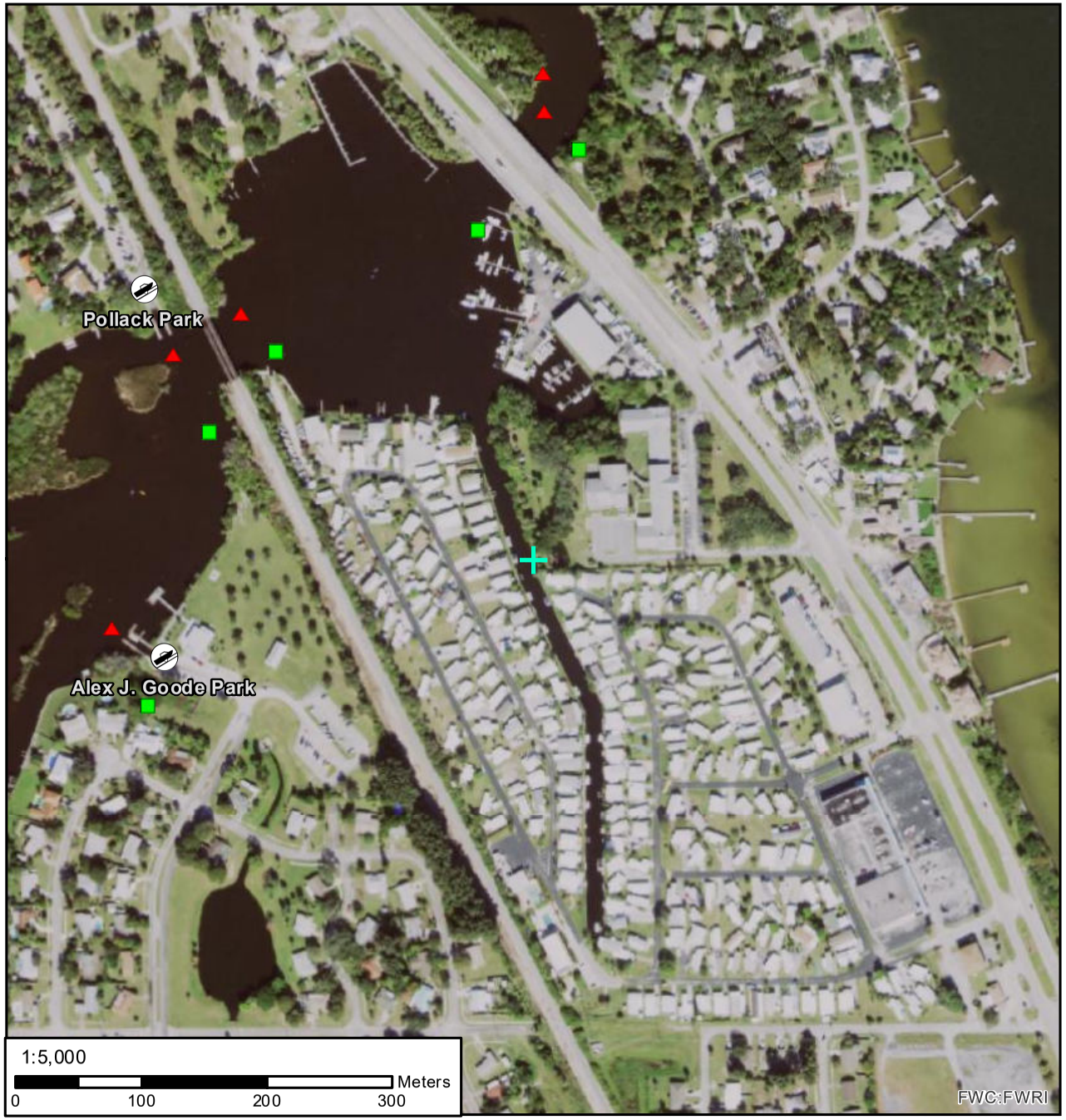
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

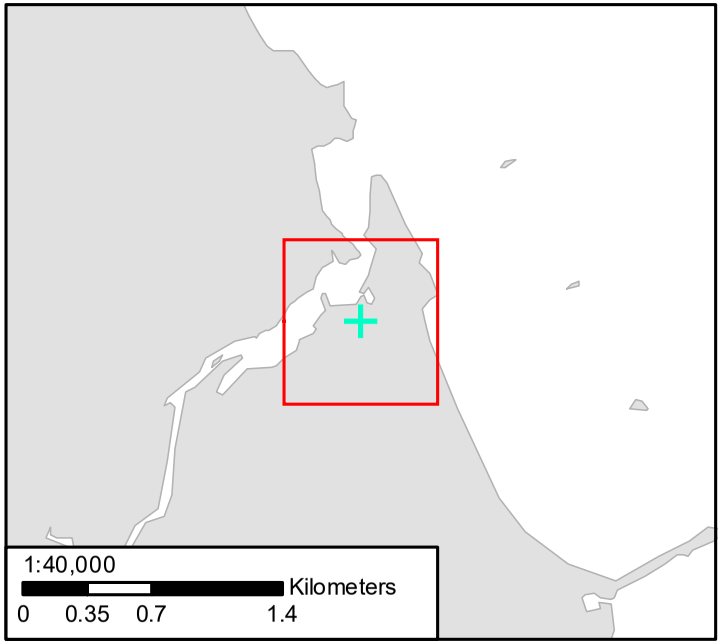
NECROPSY CONDUCTED BY N/A

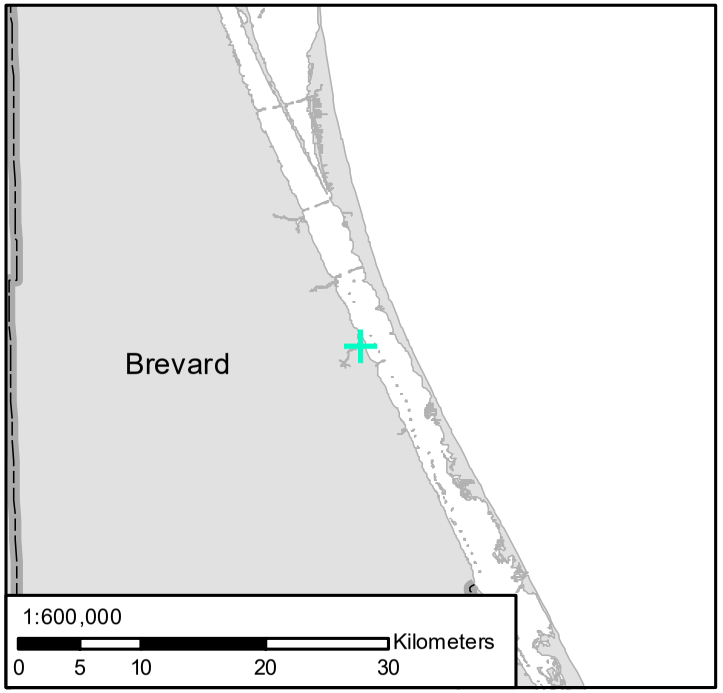
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20099

Report Date: 5/19/2020 **Received Date:** **Received By:**







Location: Palm Bay, Brevard County

Latitude: 28.03041°N **Longitude:** -80.57972°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20099
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8975, 9003, 9013, 9047 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 275 **Weight (kg)** _____
Date reported: 19 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 20 May 2020 **By**: FWC-Officer Wiggly
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Turkey Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 25 m E of 3000 Indian River Drive NE.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**

Natural: ☐ Cold Stress ☐ Other (includes Red Tide)

Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered

Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:

☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:

☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:

☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20100**
Date of Report: 2020-May-20
Filed By: FWC EC Field Station

FWC Case # 9065 **FWC Region:** NE

Sex: Male **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-20 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.03215 **N**
County: Brevard **Longitude:** -80.58009 **W**
Waterway: Turkey Creek
Location description: Palm Bay, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Placenta; Verified by FWC officer and photographs. Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20100

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20100
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Male **TL** 120 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 20 May 2020, at 1247 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf in Turkey Creek in Palm Bay, Brevard County. FWC case number 9065 was assigned. The complainant, Janet Webb (321-723-0851), stated that the carcass was three to four feet in length, still gray and floating. At 1307 hrs, WDG received a photo confirming the carcass and requested FWC LE assistance to tow it to a remote location. At 1400 hrs, FWC Officer Wiggly confirmed the carcass from land and relayed the information to FWC Officer Beck who was coming on duty shortly. At 1713 hrs, Officer Beck secured the carcass on land in a remote area of Turkey Creek. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs – Almost of the ventral and right lateral epidermis was present. The epidermis was smooth without epibiota. Transverse folds were present on the ventrum. The umbilical cord and part of the placenta were present. The fluke was folded and scalloped.

COMMENTS

SIGNIFICANT FINDINGS

- Verified by FWC officer and through photographs
- Fetal folds
- Placenta

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

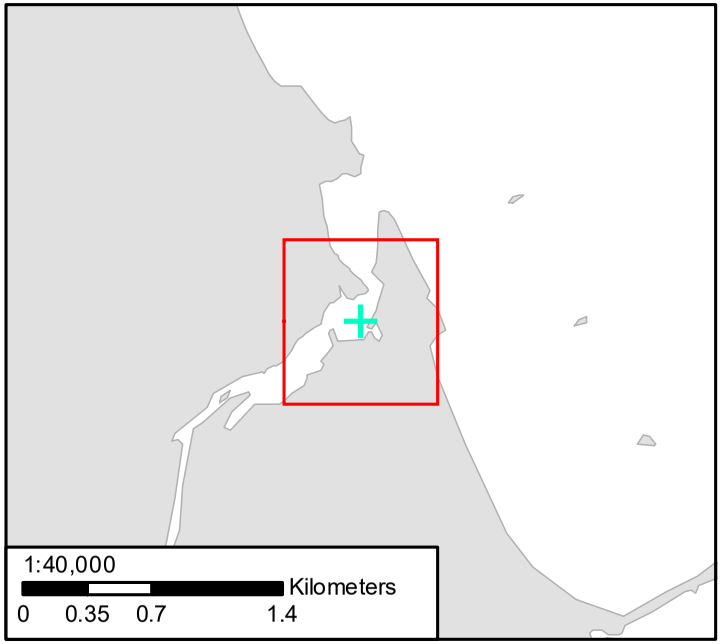
NECROPSY CONDUCTED BY N/A

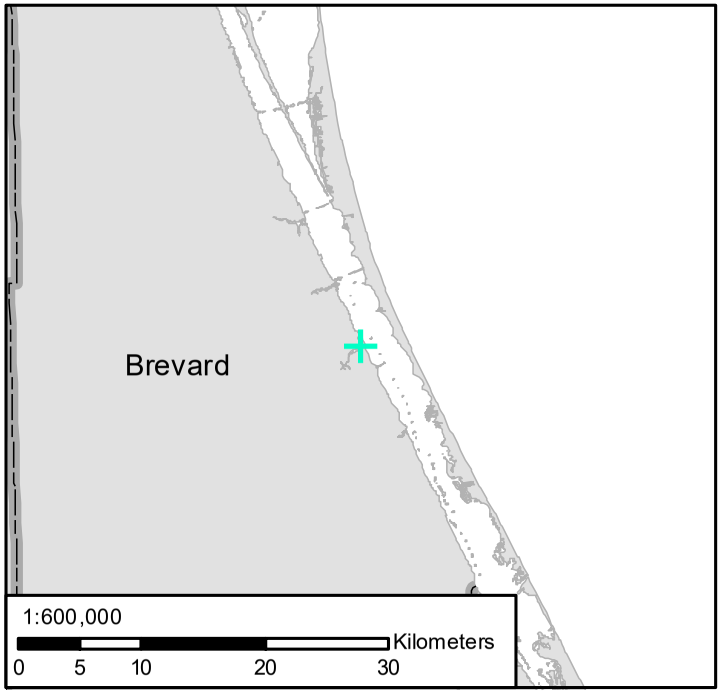
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20100

Report Date: 5/20/2020 **Received Date:** **Received By:**







Location: Palm Bay, Brevard County

Latitude: 28.03215°N **Longitude:** -80.58009°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20100
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9065 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 120 **Weight (kg)** N/T
Date reported: 20 May 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 20 May 2020 **By**: FWC Ofc. Beck
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Turkey Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 90 m W of 4350 Dixie Highway NE

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.
Umbilical skirt still attached, smooth skin with no epibiota, scalloped fluke, fetal folds.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20101**
Date of Report: 2020-May-24
Filed By: FWC EC Field Station

FWC Case # 9409 **FWC Region:** NE

Sex: Female **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-24 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.31963 **N**
County: Brevard **Longitude:** -80.61666 **W**
Waterway: Banana River
Location description: Cocoa Beach, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic and stage of decomposition, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20101

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20101 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 120 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 24 May 2020, at 0907 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in Banana River, Cocoa Beach, Brevard County. FWC case number 9409 was assigned. The complainant, Ms. Johnson (321-278-8915), stated that the carcass was belly-up and 3.5 to 4 feet long. At 0915 hrs, SMW received a photo of the carcass and requested FWC LE assistance to tow it out of the residential canal. At 1224 hrs, FWC Officer-Morgan Maslo secured the carcass to mangroves in a remote location. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the epidermis was present but sloughing. The carcass was distended with gas. There were superficial scrapes on the right lateral aspect. Transverse folds were present on the ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

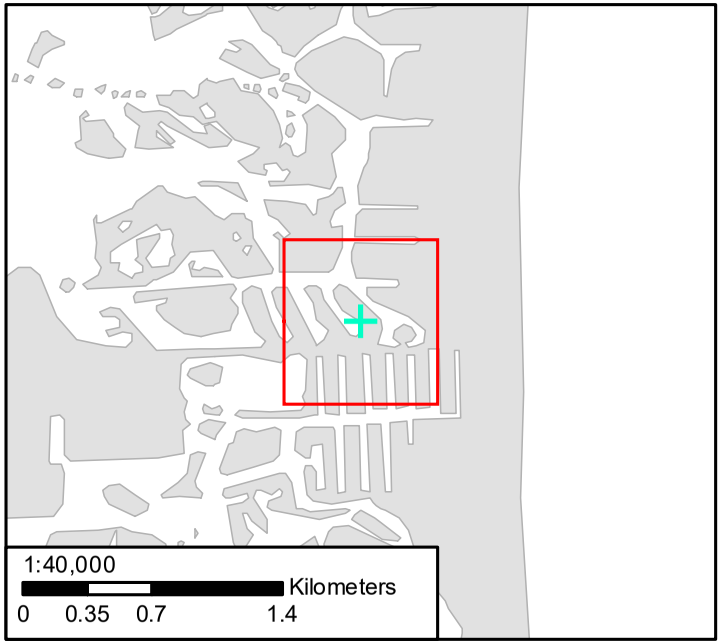
NECROPSY CONDUCTED BY N/A

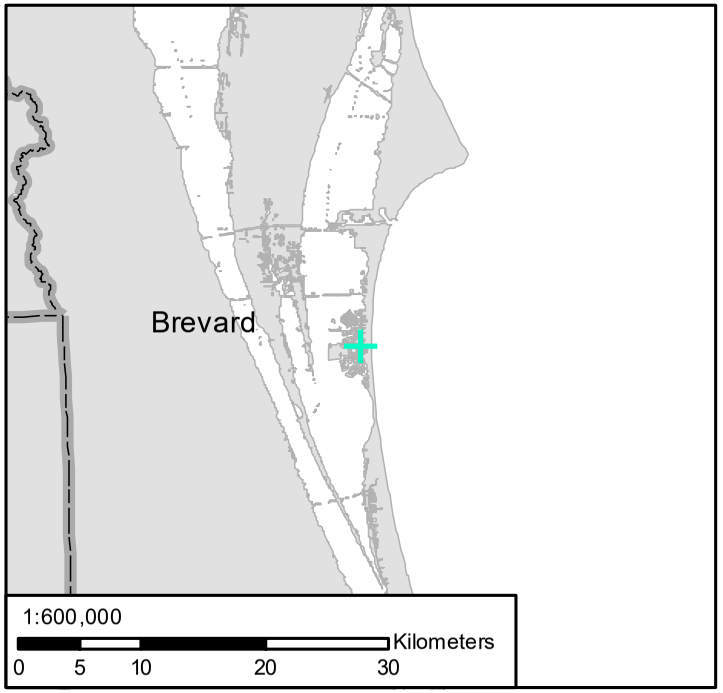
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20101

Report Date: 5/24/2020 **Received Date**: **Received By**:







Location: Cocoa Beach, Brevard County

Latitude: 28.31963°N **Longitude**: -80.61666°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20101
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9409 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 120 **Weight (kg)** _____
Date reported: 24 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 24 May 2020 **By**: FWC-Officer Morgan Maslo
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa Beach, approximately 35 m E of 28 Azalea Drive.
Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20102**
Date of Report: 2020-May-25
Filed By: FWC EC Field Station

FWC Case # 9547 **FWC Region:** NE

Sex: Female **Length:** 280 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-25 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.92307 **N**
County: Volusia **Longitude:** -80.84152 **W**
Waterway: Mosquito Lagoon
Location description: Edgewater, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20102

MORPHOMETRICS:

Total length:	280 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20102 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 280 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 25 May 2020, at 1537 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Mosquito Lagoon in Edgewater, Volusia County. FWC case number 9547 was assigned. The complainant, Mike Jones (941-504-5327), stated that the manatee was nine feet long and in the mangroves. At 1539 hrs, WDG received a confirmation photo from the complainant. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs – All of the left lateral and ventral epidermis was present. The carcass was slightly distended with gas. There was a moderate brown algal mat on the left lateral aspect.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

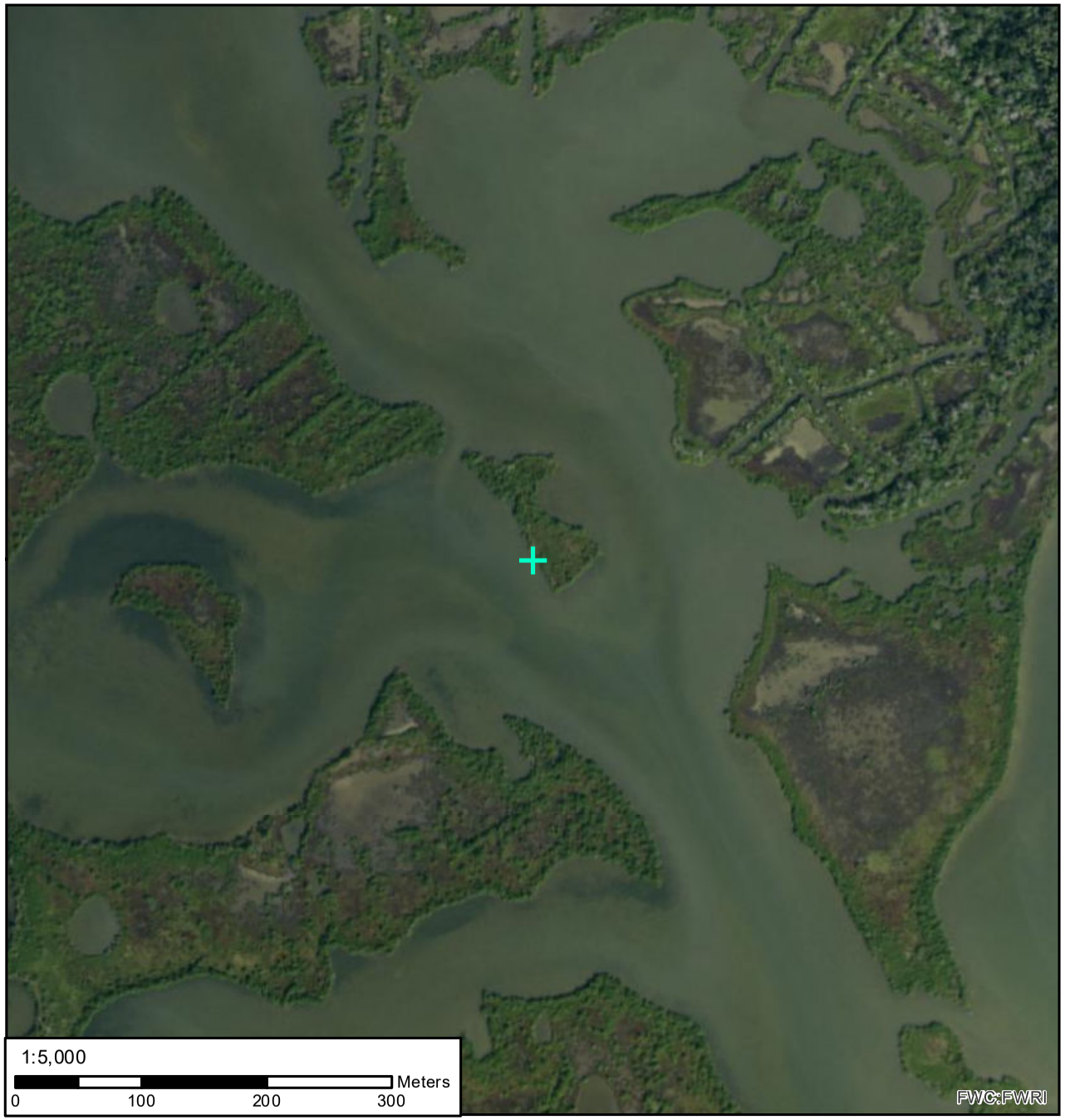
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

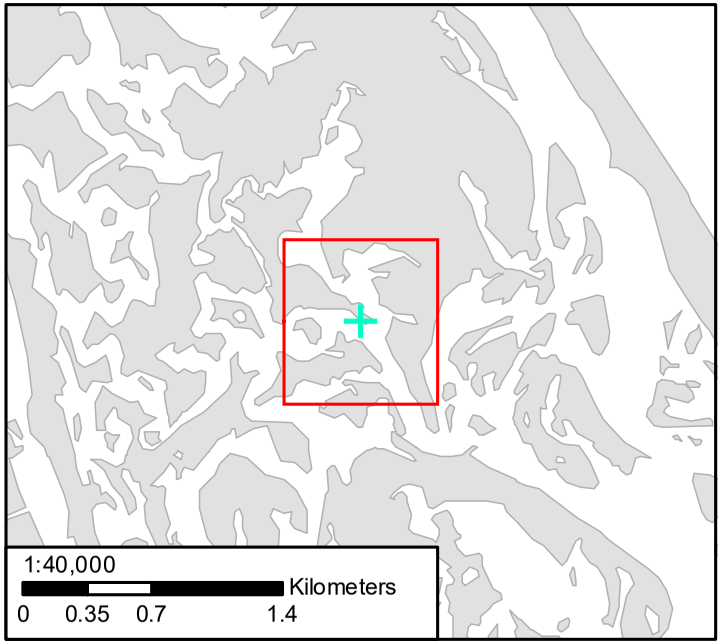
NECROPSY CONDUCTED BY N/A

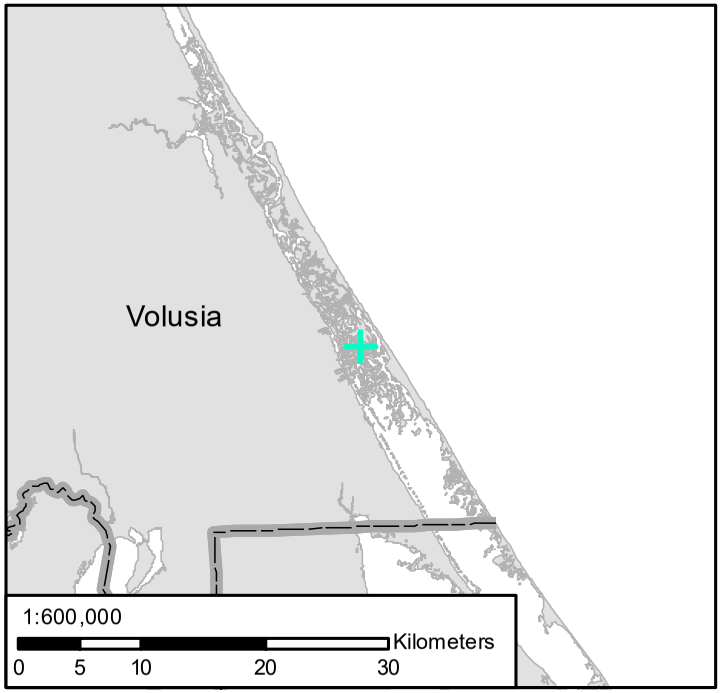
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20102

Report Date: 5/25/2020 **Received Date:** **Received By:**







Location: Edgewater, Volusia County

Latitude: 28.92307°N **Longitude:** -80.84152°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20102
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9547 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 275 **Weight (kg)** N/T
Date reported: 25 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Edgewater, approximately 2.07 kM ENE of 4318 Whiting Way

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20103**
Date of Report: 2020-May-30
Filed By: FWC EC Field Station

FWC Case # 9941 **FWC Region:** NE

Sex: Male **Length:** 151 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-30 **By:** Kennedy Point Marina-Bruce to FWC-SMW

DATE COLLECTED: 2020-May-31 **By:** FWC-SMW

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.55481 **N**
County: Brevard **Longitude:** -80.79619 **W**
Waterway: Indian River
Location description: Titusville, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Cobblestone-like epidermis; Peanut-shaped head; Healing skin lesions; Flat ventrum; Peduncle folds. Verified through photographs and FWC biologist. External workup performed. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not necropsied.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20103

MORPHOMETRICS:

Total length:	151 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20103
SPECIES *T. manatus latirostris*
RECOVERY DATE 30 May 2020
NECROPSY DATE N/A
GENDER Male **TL** 151 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 30 May 2020, at 1622 hrs, FWC biologist-Sara M. Wappes (SMW) received a text from Kennedy Point Marina-Bruce regarding a dead manatee at the Kennedy Point Marina in Indian River, Titusville, Brevard County. Bruce stated that the manatee was small, fresh, and dorsum-up. At 1802 hrs, SMW received a photo of the carcass and requested FWC LE assistance to move it due to carcass response and necropsy restrictions during the COVID-19 pandemic. FWC case number 9941 was assigned. No officers were available that night. **31 May**, at 0941 hrs, SMW canceled the request for officer assistance after receiving permission to recover MEC20103 and MEC20104. At 0955 hrs, FWC Officer Luce reported that he was unable to access the carcass via boat. SMW arrived at Kennedy Point Marina at 1115 hrs and loaded the carcass into the truck at 1150 hrs. After recovering MEC20104, SMW transported both carcasses to a remote area of the Merritt Island National Wildlife Refuge and completed an external work-up on MEC20103 by 1435 hrs. The remains of both carcasses were left onsite.

EXTERNAL Almost all of the epidermis was present but sloughing. The carcass had a slight peanut-shaped head. The ventrum was flat. Folds were present in the ventral peduncle. There was cobblestone-like epidermis on the ventrum. A moderate brown algal mat was present on the dorsal and lateral aspects. A small healing linear lesion was observed on the right lateral aspect. There was a mild infestation of barnacles on the fluke. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

COMMENTS External workup performed, but necropsy not conducted.

SIGNIFICANT FINDINGS

- Verified through photographs and by FWC biologist
- Cobblestone-like epidermis
- Peanut-shaped head
- Flat ventrum
- Peduncle folds
- Healing skin lesion

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

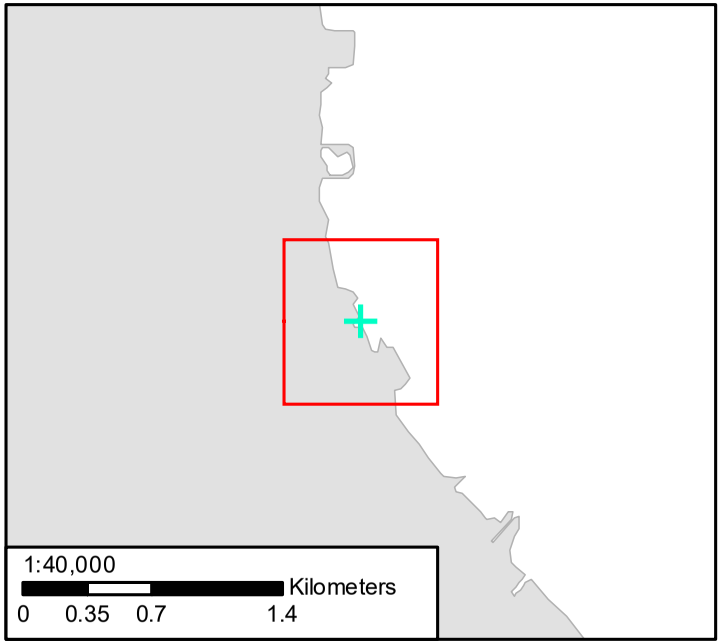
NECROPSY CONDUCTED BY N/A

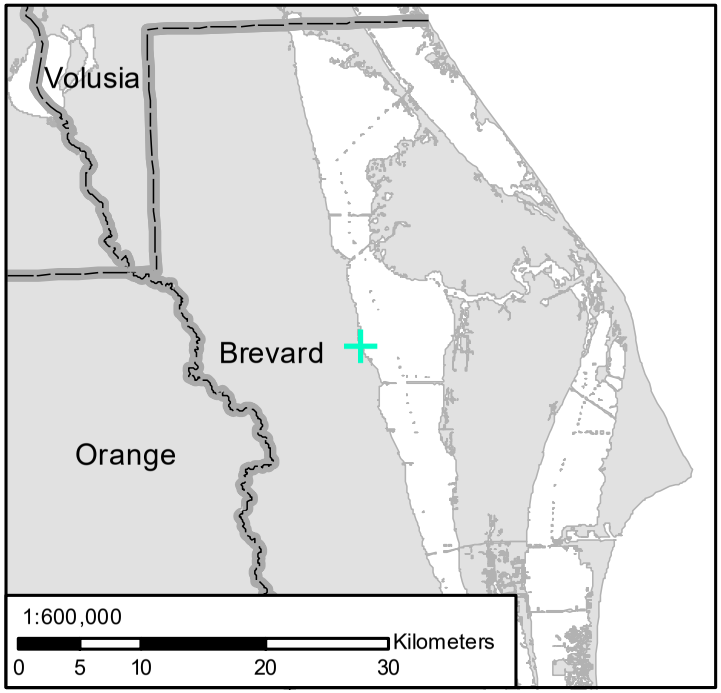
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20103

Report Date: 5/30/2020 **Received Date**: 5/31/2020 **Received By**: FWC-SMW







Location: Titusville, Brevard County

Latitude: 28.55481°N **Longitude**: -80.79619°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20103
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9941 **FWC District:** Northeast
Sex: Male **Length (cm):** 151 **Estimated** _____ **Weight (kg)** _____
Date reported: 30 May 2020 **By:** Kennedy Point Marina-Bruce to FWC-SMW
Date collected: 31 May 2020 **By:** FWC-SMW
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: State FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Titusville, approximately 25 m SE of 4749 S Washington Avenue.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not necropsied.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Carcass was dorsum up

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20104**
Date of Report: 2020-May-30
Filed By: FWC EC Field Station

FWC Case # 9958 **FWC Region:** NE

Sex: Male **Length:** 132 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-30 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-May-31 **By:** FWC-SMW

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.93429 **N**
County: Volusia **Longitude:** -80.87235 **W**
Waterway: Indian River North
Location description: Edgewater, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Emaciated; Abscess(es); Verified by FWC biologist. External workup performed. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not necropsied.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Other (Abscess).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20104

MORPHOMETRICS:

Total length:	132 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20104
SPECIES *T. manatus latirostris*
RECOVERY DATE 31 May 2020
NECROPSY DATE N/A
GENDER Male **TL** 132 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 30 May 2020, at 2036 hrs, FWC on-call biologist-Denise M. Boyd received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River North, Edgewater, Volusia County. FWC case number 9958 was assigned. The complainant, Julie Oakley (407-257-2765), stated that the carcass was under three feet long and she had secured it to her dock, but it was too dark to take a picture of it. **31 May**, at 0850 hrs, FWC biologist-Sara M. Wappes (SMW) received a photo of the carcass and requested FWC LE assistance to move it from the residential canal. At 0930 hrs, SMW was notified that no officers would be available that day. SMW arrived at the residence at 1252 hrs, loaded the carcass into the truck at 1300 hrs, and transported it and MEC20103 to a remote area of the Merritt Island National Wildlife Refuge. SMW completed an external work-up by 1415 hrs. The remains were left onsite. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, a necropsy was not performed.

EXTERNAL All of the epidermis was present. The carcass appeared thin and was dorsoventrally flattened. The carcass had a peanut-shaped head. There were longitudinal and transverse folds on the ventrum. There was a thin brown algal mat on the dorsal and lateral aspects. A mild infestation of barnacles was observed on the fluke. There was a large abscess on the caudal left ventrum. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

COMMENTS An external workup was performed, but a necropsy was not conducted.

SIGNIFICANT FINDINGS

- Verified by FWC biologist
- Emaciated
- Fetal folds
- Abscess

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

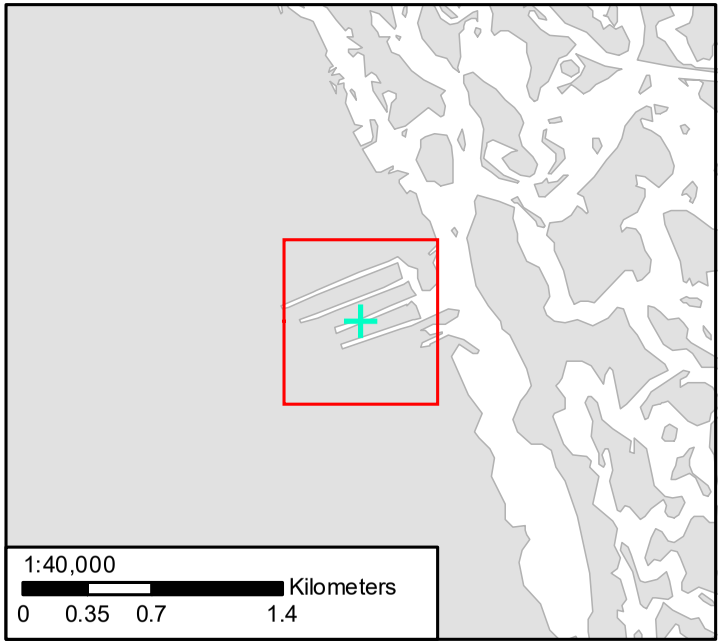
NECROPSY CONDUCTED BY N/A

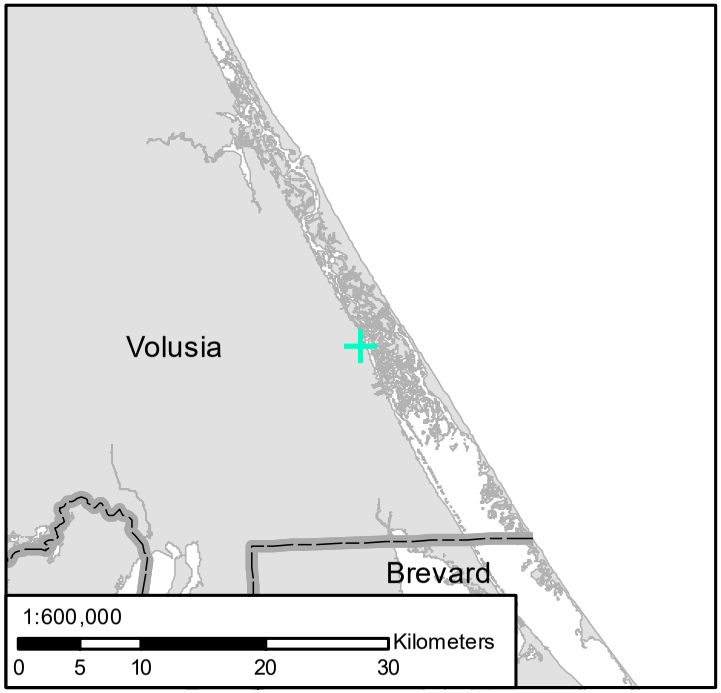
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20104

Report Date: 5/30/2020 **Received Date**: 5/31/2020 **Received By**: FWC-SMW







Location: Edgewater, Volusia County

Latitude: 28.93429°N **Longitude**: -80.87235°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20104
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9958 **FWC District**: Northeast
Sex: Male **Length (cm)**: 132 **Estimated** _____ **Weight (kg)** _____
Date reported: 30 May 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 31 May 2020 **By**: FWC-SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: Edgewater, approximately 25 m NE of 153 Hibiscus Road.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Carcass was dorsum up

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20105**
Date of Report: 2020-Jun-01
Filed By: FWC EC Field Station

FWC Case # 10089 **FWC Region:** NE

Sex: Male **Length:** 315 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jun-01 **By:** FWC-SMW,CMM

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.43451 **N**
County: Brevard **Longitude:** -80.71883 **W**
Waterway: Indian River
Location description: Merritt Island, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified by FWC biologists and photographs. External work-up performed. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not necropsied. Found dorsum-up in mud.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20105

MORPHOMETRICS:

Total length:	315 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20105
SPECIES *T. manatus latirostris*
RECOVERY DATE 01 June 2020
NECROPSY DATE N/A
GENDER Male **TL** 315 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 01 June 2020, at 1148 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Merritt Island, Brevard County. FWC case number 10089 was assigned. The complainant, Rick Corsillo (321-759-4264), described a dead, gray, 10-foot-long manatee grounded dorsum-up in mud. At 1204 hrs, CMM received photo verification of the carcass. Due to a manatee rescue (REC2016), an immediate response was not possible. At 1445 hrs, on the way back from the rescue, FWC biologist-Sara M. Wappes (SMW) and CMM arrived at the address and determined the carcass was too large to fit into the back of a truck. SMW and CMM performed an external work up and secured the carcass pending towing by an FWC Officer. A request for LE assistance was submitted at 1450 hrs. **02 June**, at 0840 hrs, FWC Officer-Dan Rasey responded but was unable to tow the carcass due to poor weather conditions. **03 June**, at 0930 hrs, Officer Rasey towed the carcass to an area southwest of the reported address. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not necropsied.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas. There were rents due to decomposition at the axillae. A mild barnacle infestation was present on the dorsal aspect. No watercraft-related wounds were observed. Several well-healed scars were grossly observed on the dorsal aspect. The fluke margin had a large well-healed mutilation at the 5 o'clock position and a small well-healed mutilation at the 8 o'clock position. PIT tag scan was negative. A genetics sample was collected.

COMMENTS

SIGNIFICANT FINDINGS

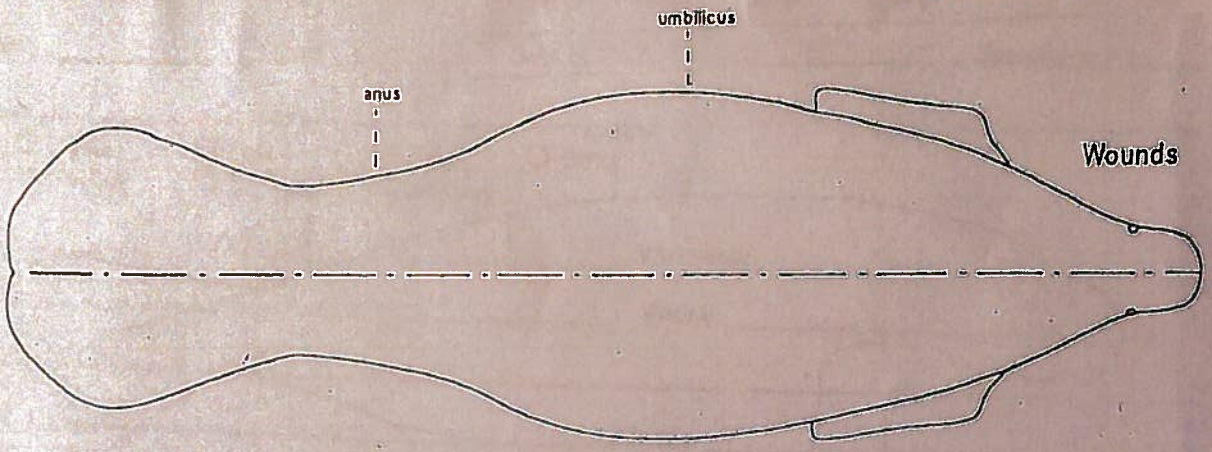
- Verified by FWC biologists and photographs
- Found dorsum-up in mud

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

NECROPSY CONDUCTED BY N/A

REPORT FILED BY Greer / Metcalf

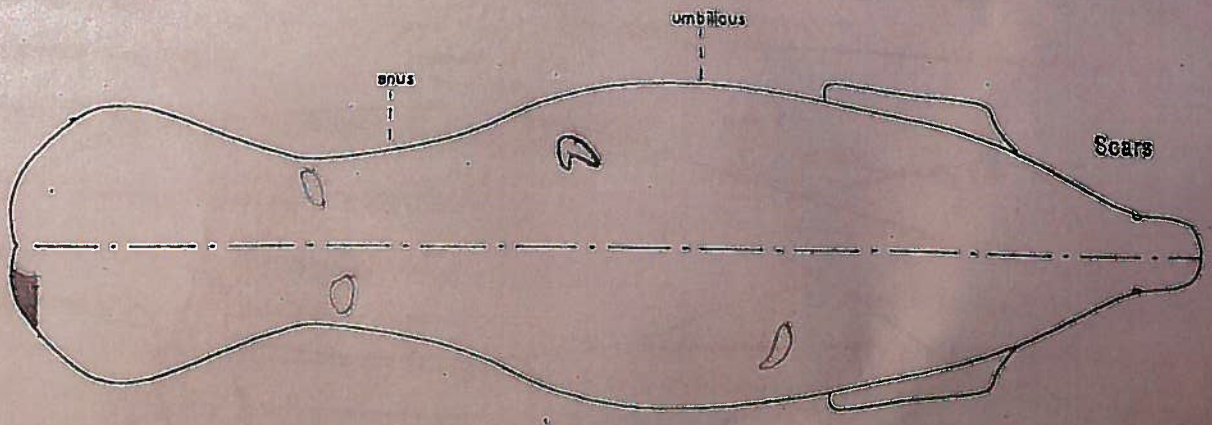
Date 01 June 2020 Field I.D. MEC20105



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Number																				
Length																				
Width																				
Depth																				
Distance																				

CMM

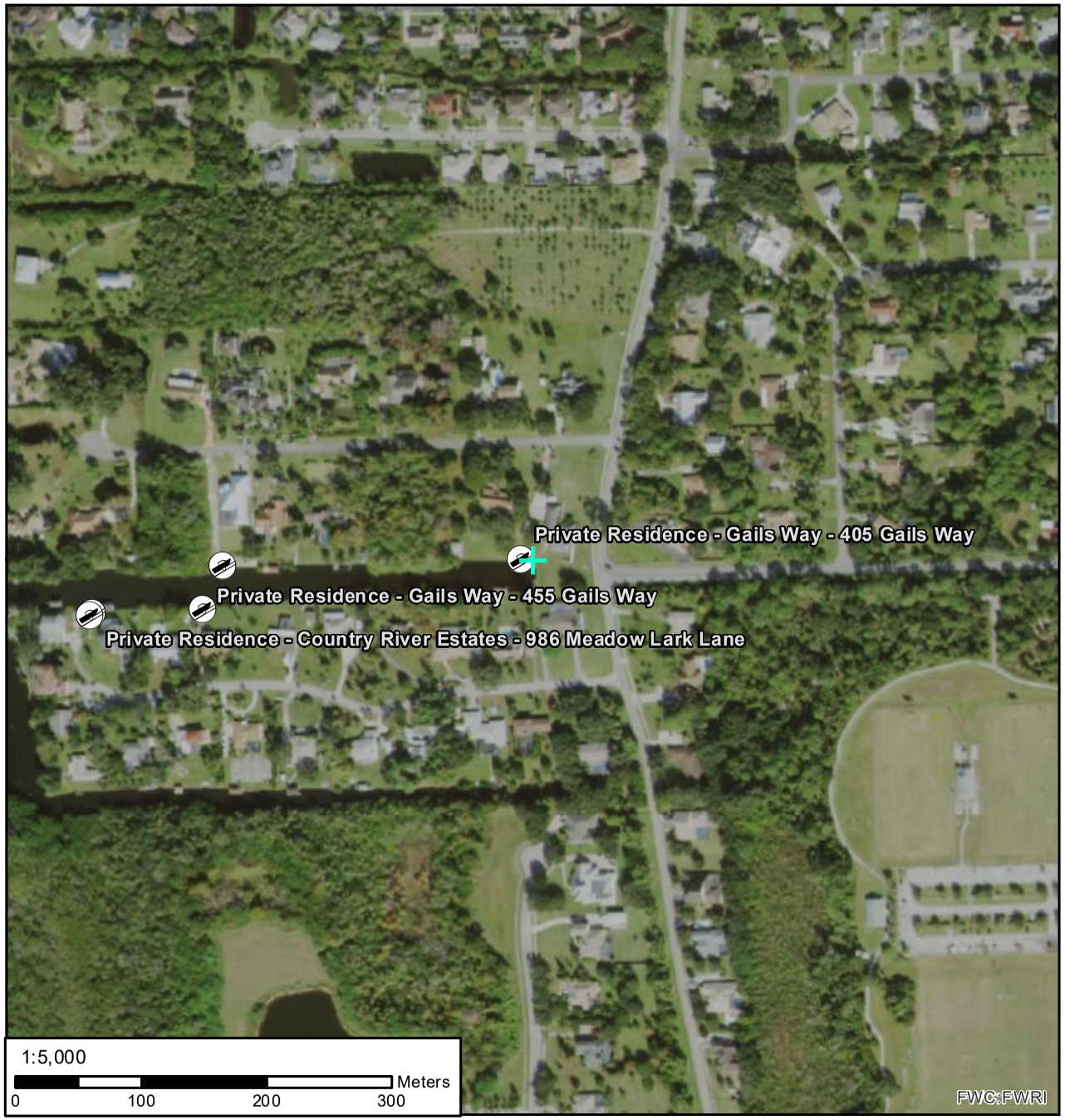
MEC20105
01 June 2020

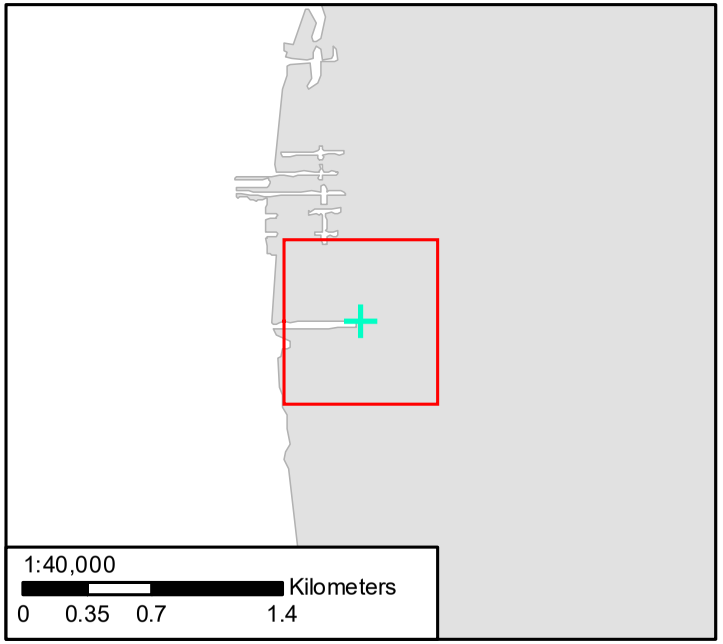


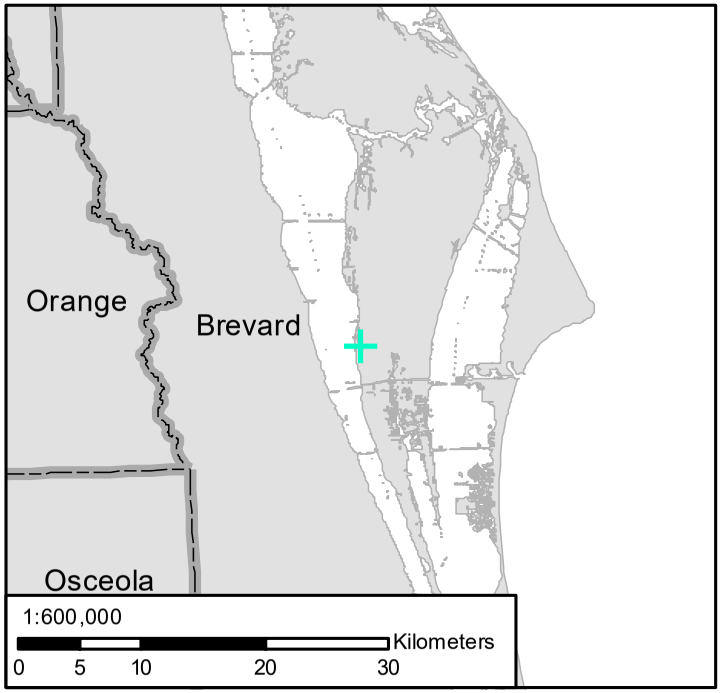
Scar Datsht Sep 2002

Verified Location of Manatee Carcass MEC20105

Report Date: 6/1/2020 **Received Date:** 6/1/2020 **Received By:** FWC-SMW,CMM







Location: Merritt Island, Brevard County

Latitude: 28.43451°N **Longitude:** -80.71883°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20105
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 10089 **FWC District:** Northeast
Sex: Male **Length (cm):** 315 **Estimated** _____ **Weight (kg)** N/T
Date reported: 01 June 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 03 June 2020 **By:** FWC-Ofc. Dan Rasey
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: State FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Merritt Island, approximately 30 m SW of 405 Gails Way

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20106**
Date of Report: 2020-Jun-12
Filed By: FWC EC Field Station

FWC Case # 11081 **FWC Region:** NE

Sex: Male **Length:** 330 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-12 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jun-14 **By:** FWC-SMW

DATE NECROPSIED: 2020-Jun-14 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.55858 **N**

County: Brevard **Longitude:** -80.79775 **W**

Waterway: Indian River

Location description: Titusville, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Macroalgae in GI tract; Fluid in right pleural cavity; Sediment in airways; Specks abdominal fat.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case numbers 10984, 11014, 11021, 11023, 11029, and 11038.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20106

MORPHOMETRICS:

Total length:	330 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20106 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 14 June 2020 **NECROPSY DATE** 14 June 2020
GENDER Male **TL** 330 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 12 June 2020, at 2018 hrs, FWC on-call biologist-Brandon L. Bassett (BLB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Titusville, Brevard County. FWC case number 10984 was assigned. The complainant, Shauna (321-271-9165), stated that the carcass was dorsum-up and fresh, and her fiancé had dragged it across the shallows to shore. At 2051 hrs, BLB received a verification photo and forwarded the information to the EC Field Station. **13 June**, at 0924 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from Dispatch regarding the carcass. FWC case number 11014 was assigned. The complainant, Renee Eberharter (321-987-5974), stated that the carcass was bloated and dorsum-up. At 1004 hrs, CMM received a photo verifying that it was the same carcass. Plans were made to field necropsy the carcass the next day when additional personnel were available. CMM received four additional reports of the carcass. FWC case numbers 11021, 11023, 11029, and 11038 were assigned. **14 June**, at 0829 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding the same dead manatee. FWC case number 11081 was assigned. The complainant, Angie Sneed (503-926-2927), stated that the carcass was washed ashore. SMW and FWC intern-Kelly Etherton arrived at the carcass at 1025 hrs, walked it to a nearby remote shoreline, and completed a field necropsy at 1218 hrs. The remains were left onsite.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas. A large portion of the GI tract protruded from a rent at the mid ventrum due to decomposition. A minimum of two well-healed watercraft-related scar patterns was grossly observed on the dorsum. There was a well-healed scar at the cranial margin of the distal one-quarter of the right flipper. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, mesenteric, and omental fat. There were black specks on the abdominal fat.

STOMACH The stomach contained 20 L of moist, well-chewed, stringy, green to brown ingesta mixed with yellow macroalgae and black and white banded vegetation. The ingesta were coated in a thin layer of white to pink mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 2 L of wet, well-chewed, stringy, green to brown ingesta mixed with yellow and green macroalgae and black and white banded vegetation. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine was friable when handled. The proximal small intestine contained viscous, gray to dark brown fluid. A portion of unattached small intestine (presumed to be the mid small intestine) contained viscous, gray to brown fluid mixed with a scant amount of moist, leafy, stringy, well-chewed, green to black vegetation. The distal small intestine contained wet, poorly formed, well-chewed, stringy, green to brown ingesta. The mucosa was autolyzed. No parasites were grossly observed throughout.

CECUM The cecum contained 3 L of moist, well-digested, stringy, yellow to brown digesta. The mucosa was unremarkable. No parasites were observed.

COLON The portion of the colon that was outside of the body cavity was friable when handled. The distal-most half meter of colon contained moist, moderately formed, well-digested, stringy, green to brown feces. The remainder of the colon contained wet, poorly formed, moderately digested, stringy, fibrous, green to brown

feces mixed with green macroalgae and black and white banded vegetation. The mucosa was unremarkable in the distal colon and autolyzed in the proximal and mid colon. There was a moderate infection of dead trematodes in the proximal colon.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled white and black on serosal surfaces, and pink to dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft and friable. Serosal surfaces were purple to black and cut surfaces were pink to brown.

GALLBLADDER The gallbladder contained 100 mL of watery, orange to brown bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The seminal vesicles were large and contained a large amount of watery, tan fluid. The testes were large.

KIDNEYS No perirenal fat was observed. The kidneys were soft and friable. Serosal surfaces were light pink to dark pink. On cut surfaces, the cortices were pink and the medullae were red. The corticomedullary boundaries were indistinct in the right kidney and slightly distinct in the left kidney.

URINARY BLADDER The urinary bladder contained 200 mL of flocculent, pale yellow urine. The mucosa was unremarkable.

HEART There was moderate epicardial fat. The heart was soft and friable. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left hemidiaphragm was distended due to gas in the pleural cavity (see photos). No fluid was observed in the left pleural cavity. The right pleural cavity contained approximately 300 mL of watery, red fluid. The lungs were soft. The left lung was light pink on serosal surfaces. The right lung was light pink to dark pink on serosal surfaces. Both lungs were dark red on cut surfaces. The primary airways contained a scant amount of watery, red fluid and a moderate amount of sediment and small shell fragments.

HEAD & NECK REGIONS There was a small amount of sediment in the trachea. Otherwise, NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Sediment in airways
- Fluid in right pleural cavity
- Macroalgae in GI tract
- Specks abdominal fat

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

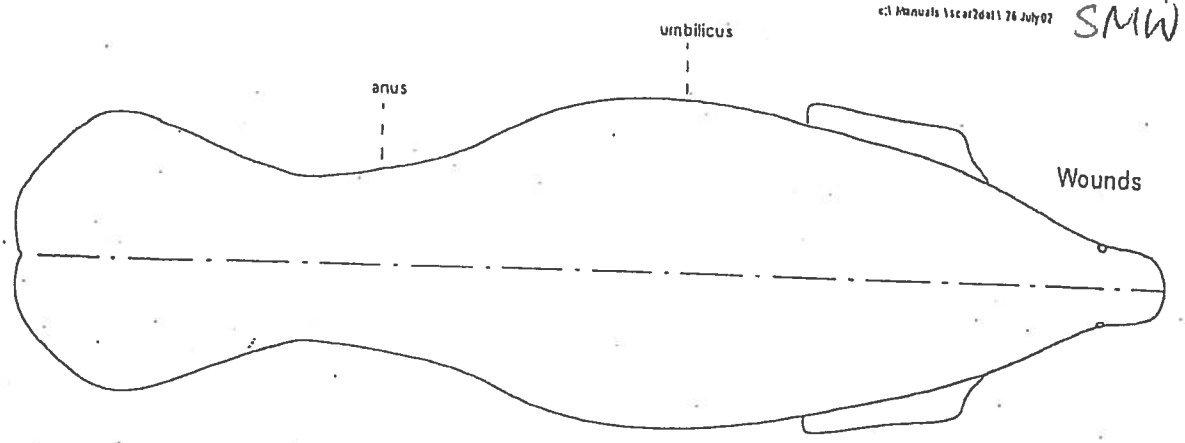
NECROPSY CONDUCTED BY

Sara M. Wappes
Kelly Etherton (FWC intern)

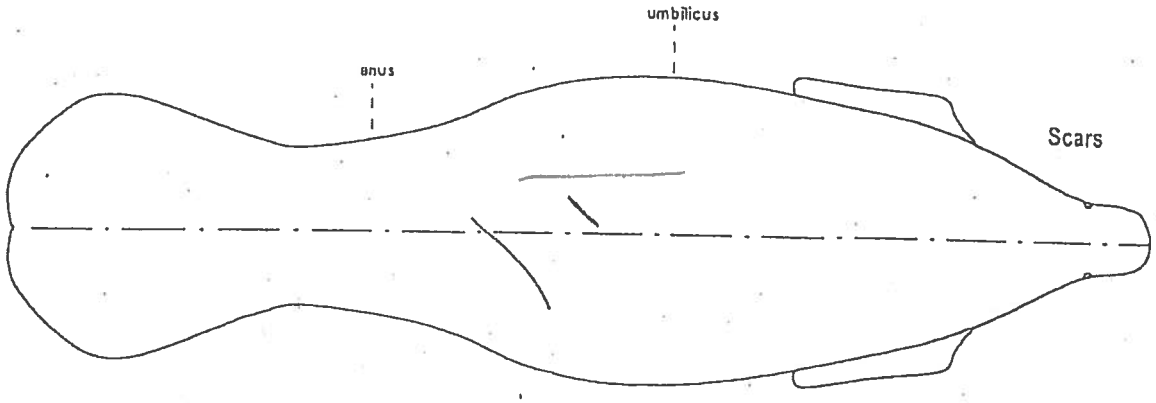
REPORT FILED BY Wappes

Date 14 JUN 2020 Field I.D. MEC20106

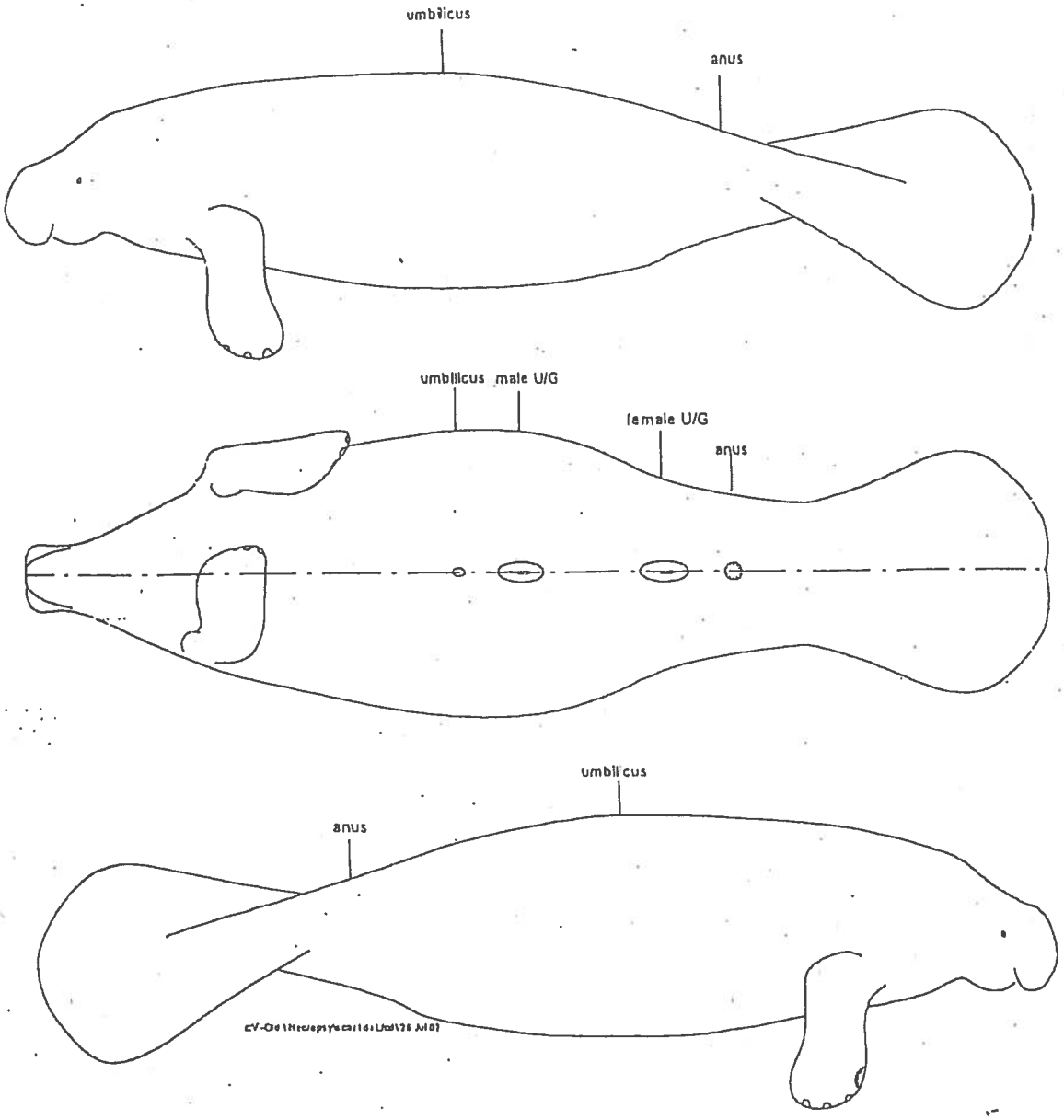
c:\ Manuals \ scar2dat1 26 July02 SMW



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

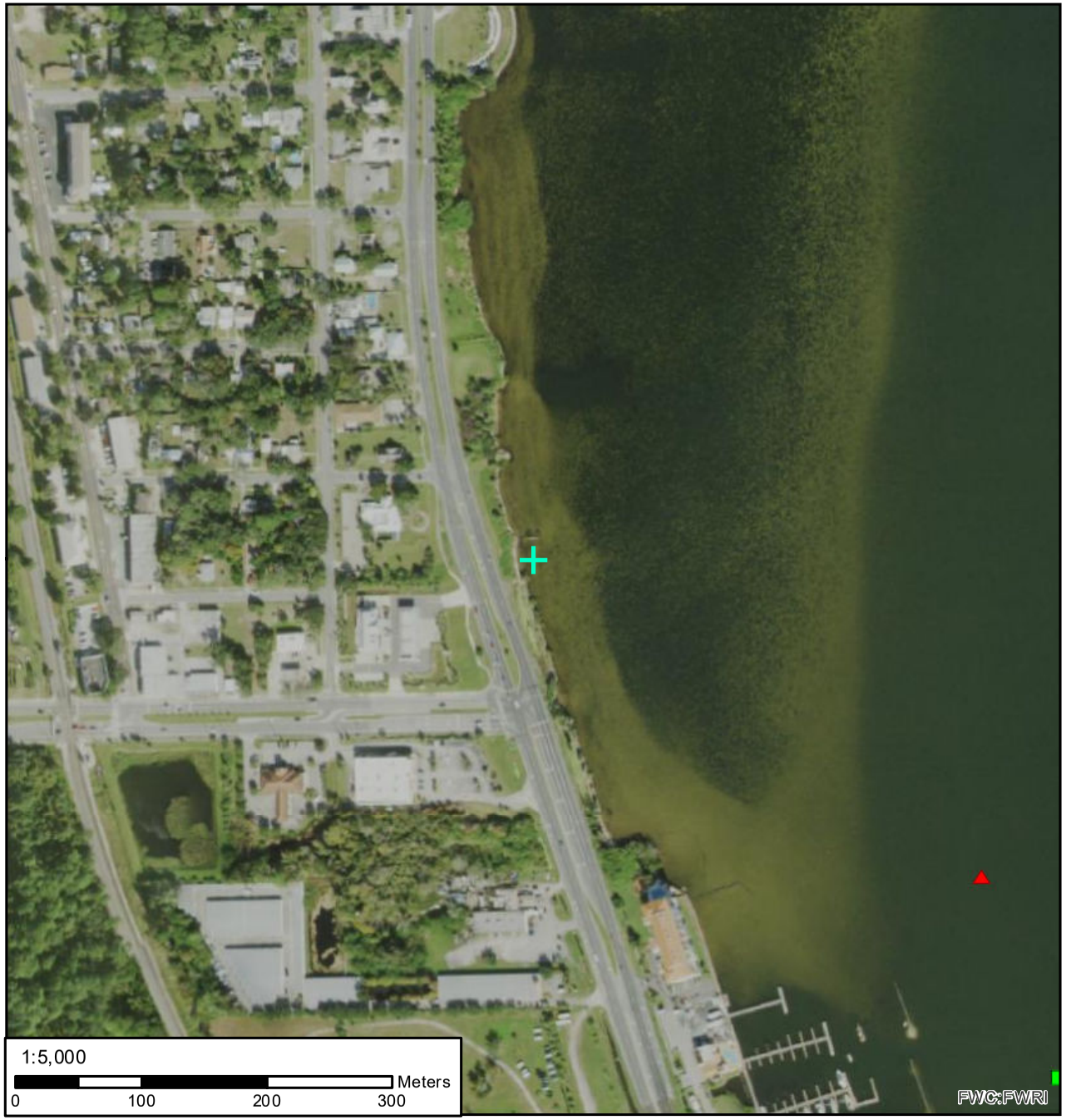


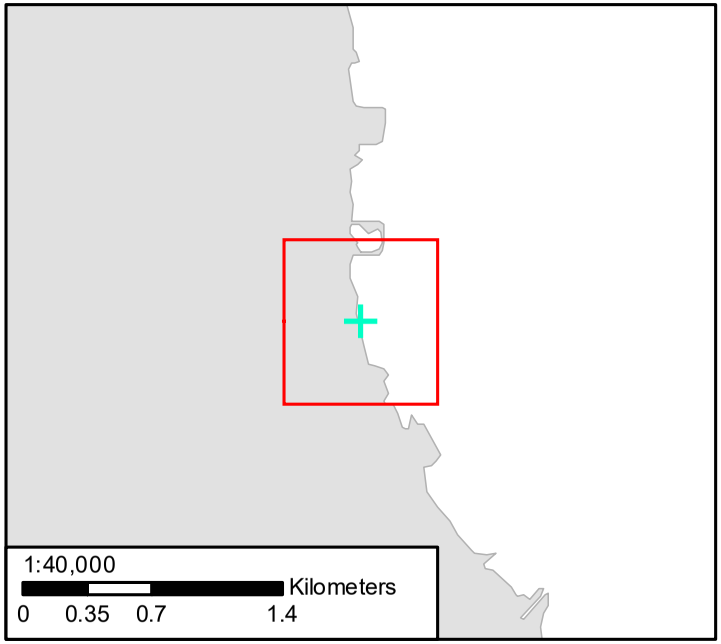
FIELD I.D. MEC20106

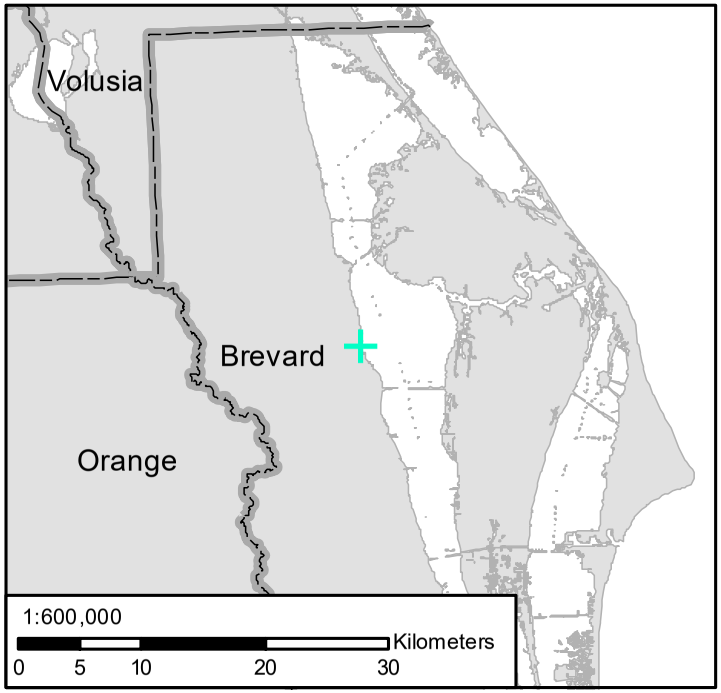


Verified Location of Manatee Carcass MEC20106

Report Date: 6/12/2020 **Received Date**: 6/14/2020 **Received By**: FWC-SMW







Location: Titusville, Brevard County

Latitude: 28.55858°N **Longitude**: -80.79775°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20106
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 10984, 11014, 11021, 11023 **FWC District**: Northeast
Sex: Male **Length (cm)**: 330 **Estimated** _____ **Weight (kg)** N/T
Date reported: 12 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 14 June 2020 **By**: FWC-SMW, FWC Intern-K. Etherton
Date necropsied: 14 June 2020 **By**: FWC-SMW, FWC Intern-K. Etherton

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 120 m ESE of 137 Birch Street.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Internal organs and GI tract soft and friable

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☐ Cranial ☑ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20107**
Date of Report: 2020-Jun-07
Filed By: FWC EC Field Station

FWC Case # 10534 **FWC Region:** NE

Sex: Female **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-07 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.3215 **N**
County: Brevard **Longitude:** -80.66032 **W**
Waterway: Banana River
Location description: Merritt Island, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)
EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through complainant photographs and FWC Officer.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20107

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20107 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 120 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 07 June 2020, at 1104 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River, Merritt Island, Brevard County. FWC case number 10534 was assigned. The complainant, Bill (904-806-4777), stated that the carcass looked like a stillborn with a possible amniotic sac still attached. At 1113 hrs, SMW received a verification photo and requested FWC LE assistance to remove the carcass from the residential canal. FWC Officer-Morgan Maslo arrived at the residential canal by land at 1317 hrs, recovered the carcass, and transported it to a nearby remote area in the Ulumay Wildlife Sanctuary at 1414 hrs. Due to the carcass size and significant decomposition, the carcass was not necropsied.

EXTERNAL From photographs - Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. A portion of the GI tract protruded from a rent at the umbilicus. A few transverse folds were observed on the ventrum. The fluke was folded. No watercraft-related wounds or scars were grossly observed.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs and FWC Officer
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

NECROPSY CONDUCTED BY N/A

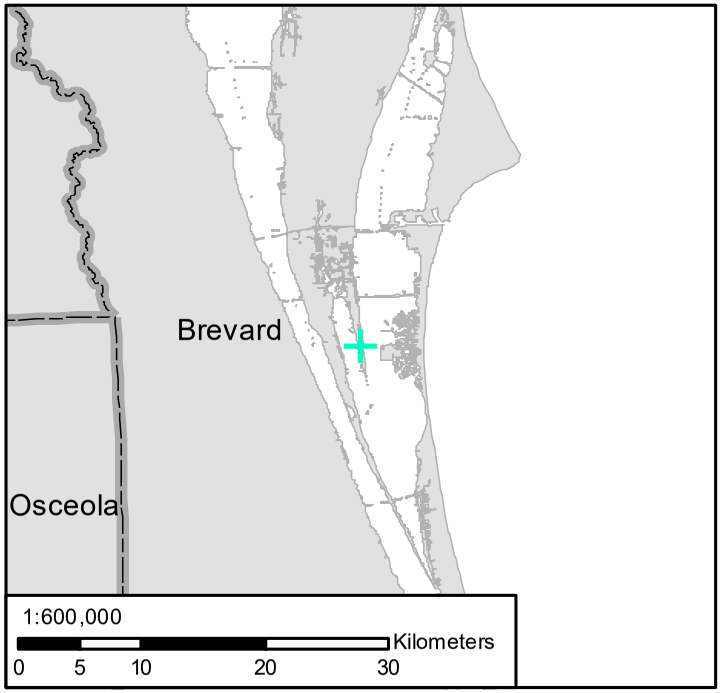
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20107

Report Date: 6/7/2020 **Received Date**: **Received By**:







Location: Merritt Island, Brevard County

Latitude: 28.3215°N **Longitude**: -80.66032°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20107
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 10534 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 120 **Weight (kg)** _____
Date reported: 07 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 07 June 2020 **By**: FWC-Officer Morgan Maslo
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 30 m NE of 2090 Newfound Harbor Drive.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20108**
Date of Report: 2020-Jun-15
Filed By: FWC EC Field Station

FWC Case # 11181 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.8942 **N**
County: Volusia **Longitude:** -80.83553 **W**
Waterway: Mosquito Lagoon
Location description: Oak Hill, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to state of decomposition and carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20108

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20108 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 15 June 2020, at 1642 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon, Oak Hill, Volusia County. FWC case number 11181 was assigned. The complainant, Michael Moesch (772-530-2544), stated that the carcass had been seen on 13 June 2020 at approximately 1100 hrs. At 1705 hrs, SMW received a photo of the carcass. Due to significant decomposition and carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - Approximately 80% of the ventral epidermis was present. The carcass was distended with gas. Portions of the GI tract protruded from a rent on the caudal ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

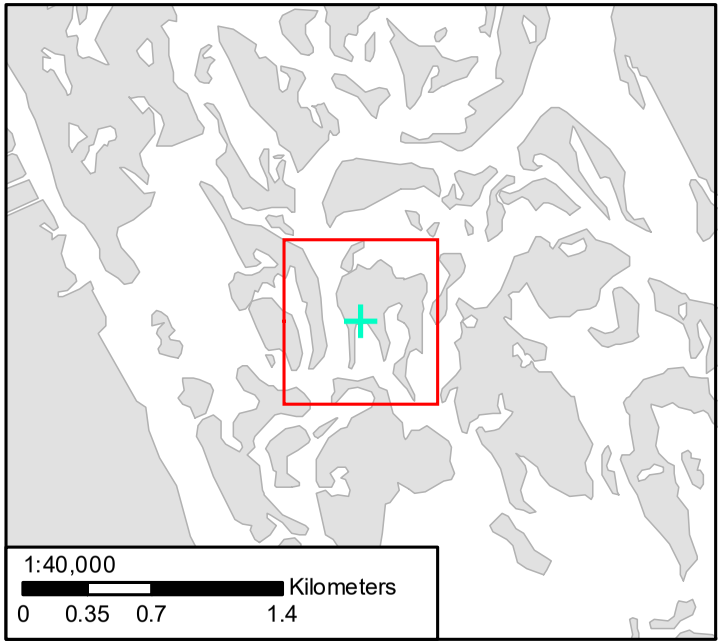
NECROPSY CONDUCTED BY N/A

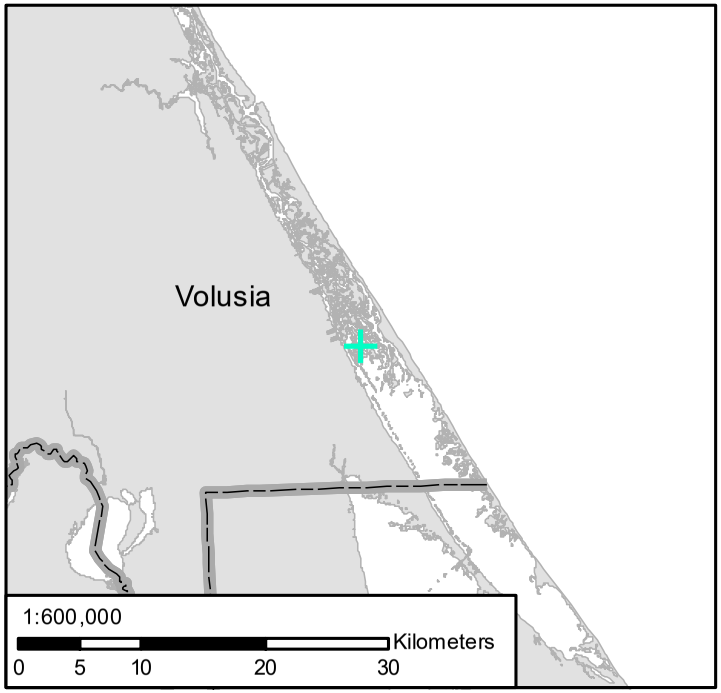
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20108

Report Date: 6/15/2020 **Received Date:** **Received By:**







Location: Oak Hill, Volusia County

Latitude: 28.8942°N **Longitude:** -80.83553°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20108
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11181 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 215 **Weight (kg)** _____
Date reported: 15 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 1.35 km ENE of 651 Riverside Landing Drive.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20109**
Date of Report: 2020-Jun-18
Filed By: FWC EC Field Station

FWC Case # 11350 **FWC Region:** NE

Sex: Male **Length:** 256 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-18 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jun-18 **By:** FWC-SMW

DATE NECROPSIED: 2020-Jun-18 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.89558 **N**

County: Volusia **Longitude:** -80.85243 **W**

Waterway: Indian River North

Location description: Oak Hill, floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Sub-luxated rib(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Dark line kidney(s); Fluid from nares; Torn abdominal wall, colon; Loose feces in abdominal cavity; Congested mesenteries, fat, peritoneum; Seagrass in mouth; Black specks lung serosa, parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in stomach. Healing watercraft wound(s); Adhered stomach and liver. Adhered duodenum and hemidiaphragm. Macroalgae in GI tract. Grey spots epidermis.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20109

MORPHOMETRICS:

Total length:	256 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fluid in seminal vesicles.

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20109
SPECIES *T. manatus latirostris*
RECOVERY DATE 18 June 2020
NECROPSY DATE 18 June 2020
GENDER Male **TL** 256 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 18 June 2020, at 1056 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at Riverwood RV Park in the Indian River North, Oak Hill, Volusia County. FWC case number 11350 was assigned. The complainant, Sharon (386-345-3922), stated that the carcass was ventrum-up and fresh. At 1107 hrs, SMW received a verification photo. SMW and Volusia County Marine Mammal Stranding Team-Chad Murch arrived at a private boat ramp at Riverwood RV Park at 1350 hrs, launched the Key West boat, towed the carcass to a nearby spoil island, and completed a field necropsy by 1650 hrs. The remains were left onsite.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The carcass was distended with gas. Watery, red fluid exuded from the nares. There was a healing watercraft-related wound series on the left caudal dorsum which consisted of two superficial parallel wounds (#1 and 2). There was a fresh watercraft-related wound series on the caudal right lateral aspect which consisted of three parallel propeller cuts (wounds #3 – 5). Wound #4 cut into the muscle. Wounds #3 and 5 cut into the dermis. The epidermis was scraped off the caudal right dorsum and lateral aspect cranial to wounds #3-5. There were numerous superficial scrapes on the mid dorsum. There was a thin brown algal mat on the lateral aspects. Numerous circular grey spots were present on the lateral aspects. A minimum of seven well-healed watercraft-related scar patterns was observed on the dorsal aspect and fluke. The fluke margin had one small, well-healed mutilation at the 3 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, mesenteric, and omental fat. The peritoneum and abdominal fat were severely congested (see photos). The abdominal cavity contained a minimum of 6 L of watery, green to brown feces mixed with a small amount of well-digested, slightly fibrous, green to brown vegetation (see photo). The abdominal wall was torn due to right rib tips 11 - 14 (see photos). There was one loose, well-formed blood clot in the abdominal cavity (see photo).

STOMACH A portion of the stomach serosa near the cardiac gland was strongly adhered to the left lobe of the liver (see photos). The stomach contained 6.2 L of moist, well-chewed, fibrous, stringy, green to brown ingesta mixed with green macroalgae (see photo). There was a 220 cm long piece of tan monofilament in the contents. There was a mild infection of live and dead nematodes. The mucosa was unremarkable.

DUODENUM The caudal portion of the duodenum was strongly adhered to the right hemidiaphragm. The duodenum contained 2.7 L of wet, well-chewed, fibrous, stringy, green to brown ingesta mixed with green macroalgae (see photo). There was a mild infection of live nematodes. The mucosa was unremarkable.

JEJUNUM & ILEUM The mesentery was severely congested. The proximal small intestine contained watery, brown to black fluid mixed with a small amount of well-chewed, fibrous, green to brown vegetation. The distal small intestine contained wet, poorly formed, well-chewed, fibrous, stringy, green to brown ingesta. No parasites were grossly observed throughout. The mucosa was unremarkable.

CECUM A round firm mass (approximately 1 cm diameter) protruded from the serosal tip of each diverticula (see photo). The cecum contained 900 mL of very moist, moderately digested, fibrous, stringy, yellow to brown digesta (see photo). There was a mild infection of dead trematodes. The mucosa was gray to black.

COLON The mesentery was severely congested. The distal-most one meter of colon contained moist, well-formed, well-digested, slightly fibrous, green to brown feces. The remainder of the colon contained wet, poorly

formed, well-digested, fibrous, green to brown feces. There was a perforation of the colon wall which was associated with a small, well-formed blood clot (see photo). There was a moderate infection of dead trematodes in the proximal colon. The proximal colon mucosa had gray to black spots (see photo). The remainder of the mucosa was unremarkable.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was brown to dark purple on serosal surfaces and pink to brown on cut surfaces.

GALLBLADDER The gallbladder contained 100 mL of watery, yellow-orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The seminal vesicles were large and contained tan fluid. The testes were medium-sized.

KIDNEYS There was a small amount of perirenal fat. The kidneys were tan to pink on serosal surfaces. On cut surfaces, the cortices were pink and the medullae were dark pink. There was a dark red to black line at the corticomedullary boundaries of the right kidney. The corticomedullary boundaries were indistinct in the left kidney.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable.

HEART There was a small amount of epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the parietal pleura (see photo). The left lung was dark pink on serosal surfaces and the right lung was light pink on serosal surfaces (see photo). There were black specks on the caudal half of the right lung serosa (see photo). Both lungs were dark red on cut surfaces. The primary airways were clear.

HEAD & NECK REGIONS There was a small thatch of seagrass in the mouth (see photo).

SKELETON Left ribs 9 and 10 were slightly subluxated but did not perforate the parietal pleura (see photos). Right rib tips 11 - 14 tore the abdominal wall and were surrounded by shredded, hemorrhagic tissue, small well-formed blood clots, and feces. There was hemorrhagic tissue lateral to right ribs 11 – 14. The trauma was associated with the region of missing epidermis cranial to the fresh watercraft wounds.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wounds
- Fluid from nares
- Subluxated ribs
- Shredded, hemorrhagic tissue
- Blood clots
- Torn abdominal wall, colon

- Loose feces in abdominal cavity
- Congested mesenteries, fat, peritoneum
- Dark line kidney
- Seagrass in mouth
- Adhered stomach and liver
- Adhered duodenum and hemidiaphragm
- Healing watercraft wounds
- Grey spots epidermis
- Macroalgae in GI tract
- Monofilament in stomach contents
- Black specks right lung, parietal pleura

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

Sara M. Wappes
Chad Murch (Volusia County)

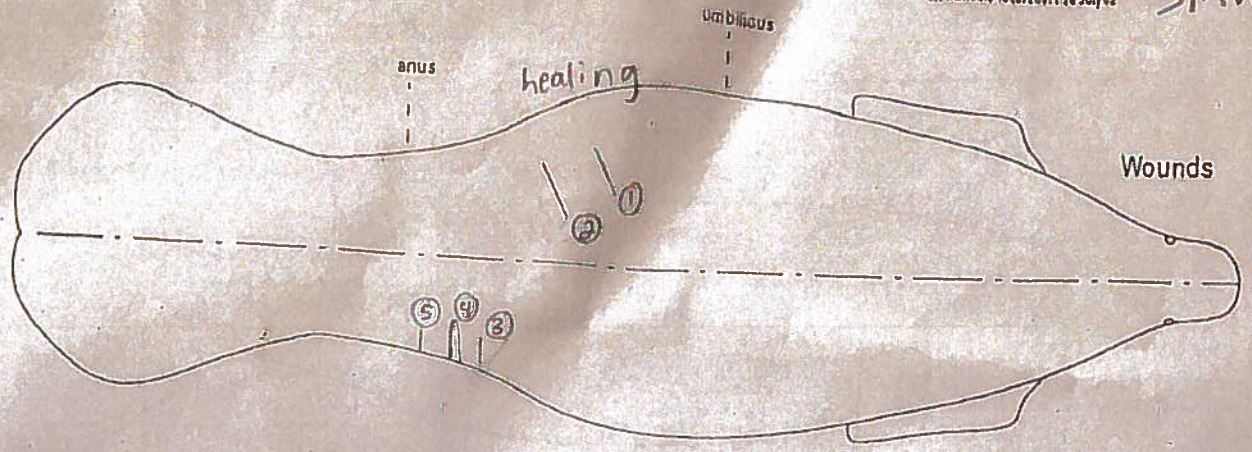
REPORT FILED BY Wappes

Date 18 Jun 2020

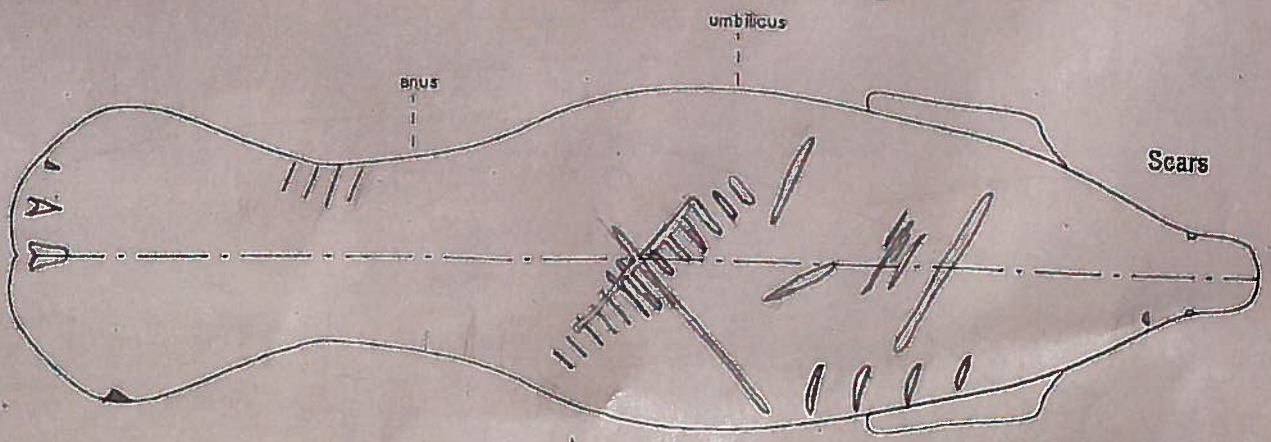
Field I.D. MEC20109

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SMW



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	11.0	10.5	12.0	15.4	6.2															
Width	0.2	0.2	0.2	1.9	0.6															
Depth	0.4	0.2	0.2	1.1	0.4															
Distance	13.5	–	5.6	6.5																

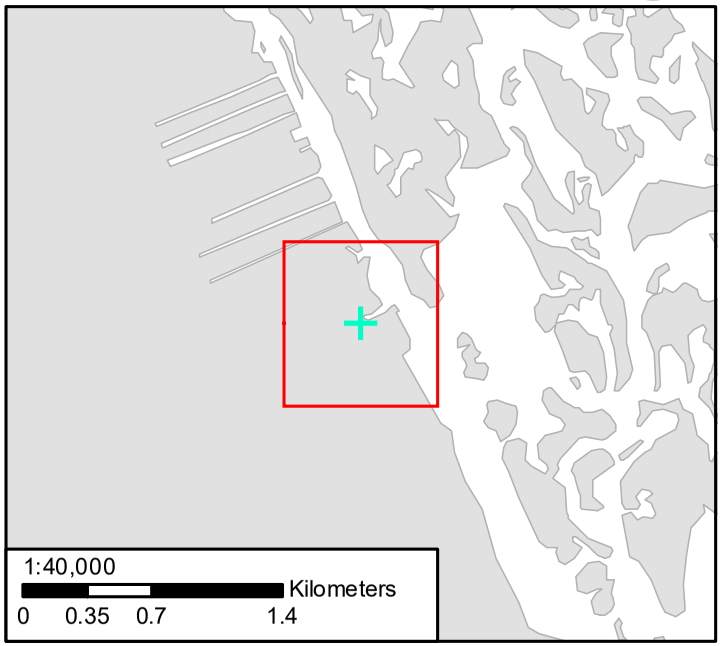


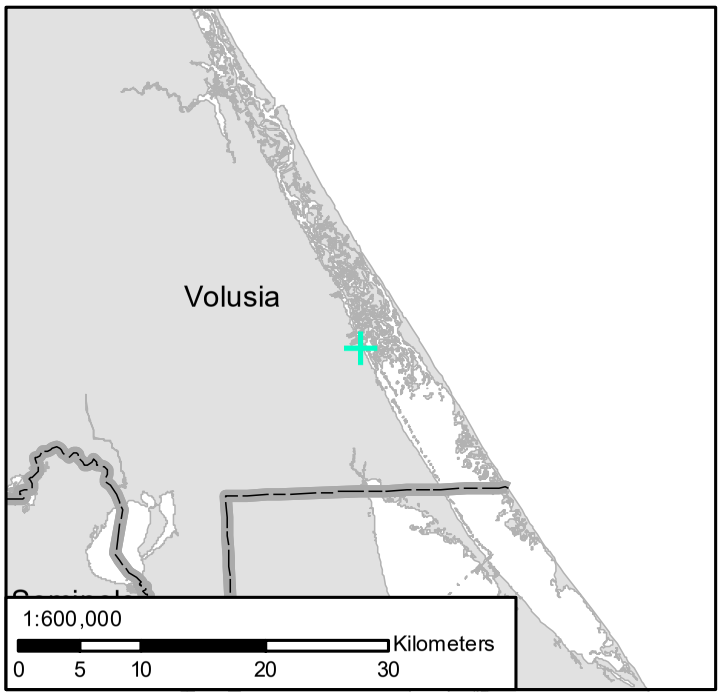
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Verified Location of Manatee Carcass MEC20109

Report Date: 6/18/2020 **Received Date**: 6/18/2020 **Received By**: FWC-SMW







Location: Oak Hill, Volusia County

Latitude: 28.89558°N **Longitude**: -80.85243°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20109
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11350 **FWC District:** Northeast
Sex: Male **Length (cm):** 256 **Estimated** _____ **Weight (kg)** _____
Date reported: 18 June 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 18 June 2020 **By:** FWC-SMW, Volusia County-C. Murch
Date necropsied: 18 June 2020 **By:** FWC-SMW, Volusia County-C. Murch

LOCATION INFORMATION: **State** FL **County:** Volusia **Waterway:** Indian River North
Latitude: N _____ **Longitude:** W _____
Locality description: Oak Hill, approximately 110 m W of 290 HH Burch Road.

Carcass Orientation: Floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: 2 external wound series (not associated with trauma), abdominal cavity filled with watery GI contents, heavy congestion, perforation in distal colon with blood clot, stomach adhered to liver, duodenum adhered to hemidiaphragm, tips of right ribs 11-14 punctured parietal pleura.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR:** No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20110**
Date of Report: 2020-Jun-18
Filed By: FWC EC Field Station

FWC Case # 11365 **FWC Region:** NE

Sex: Male **Length:** 216 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-18 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jun-18 **By:** FWC-SMW

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.73762 **N**
County: Brevard **Longitude:** -80.75413 **W**
Waterway: Haulover Canal
Location description: Allenhurst, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. External workup performed. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not necropsied.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20110

MORPHOMETRICS:

Total length:	216 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20110
SPECIES *T. manatus latirostris*
RECOVERY DATE 18 June 2020
NECROPSY DATE N/A
GENDER Male **TL** 216 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 18 June 2020, at 1459 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Haulover Canal, Allenhurst, Brevard County. FWC case number 11365 was assigned. The complainant, Tina Hendricks (828-400-9266), described a possibly dead manatee, beached and dry. At 1528 hrs, CMM received a photo verifying the carcass. FWC biologist-Sara M. Wappes arrived at the Manatee Observation Deck at 1745 hrs and completed an external work-up by 1815 hrs. The remains were left onsite. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not necropsied.

EXTERNAL All of the epidermis was present. There was a thin brown algal mat on the lateral aspects. A minimum of one well-healed watercraft-related scar pattern was observed on the left cranial aspect. The fluke margin had one well-healed, irregularly shaped mutilation at the 7 o'clock position. Copious frank blood exuded from the caudal left lateral incision. PIT tag scan was negative. A genetics sample was collected.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph and by FWC biologist
- External workup performed but necropsy not conducted

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

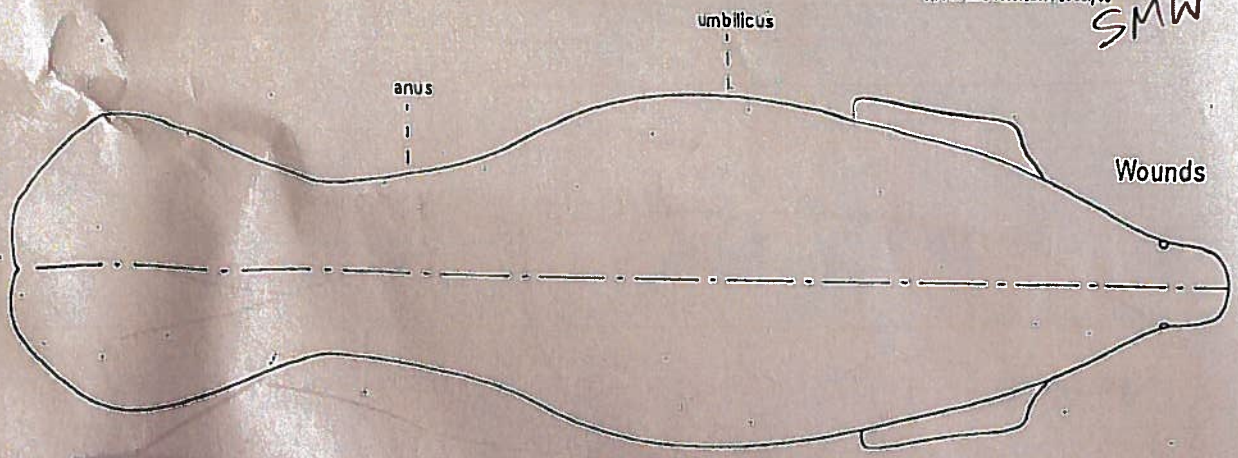
NECROPSY CONDUCTED BY N/A

REPORT FILED BY Wappes

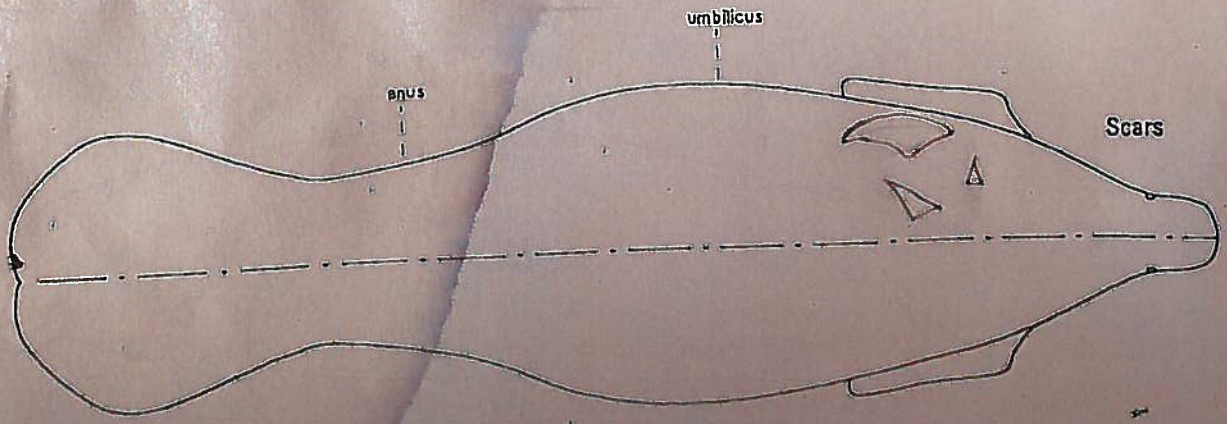
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SMW

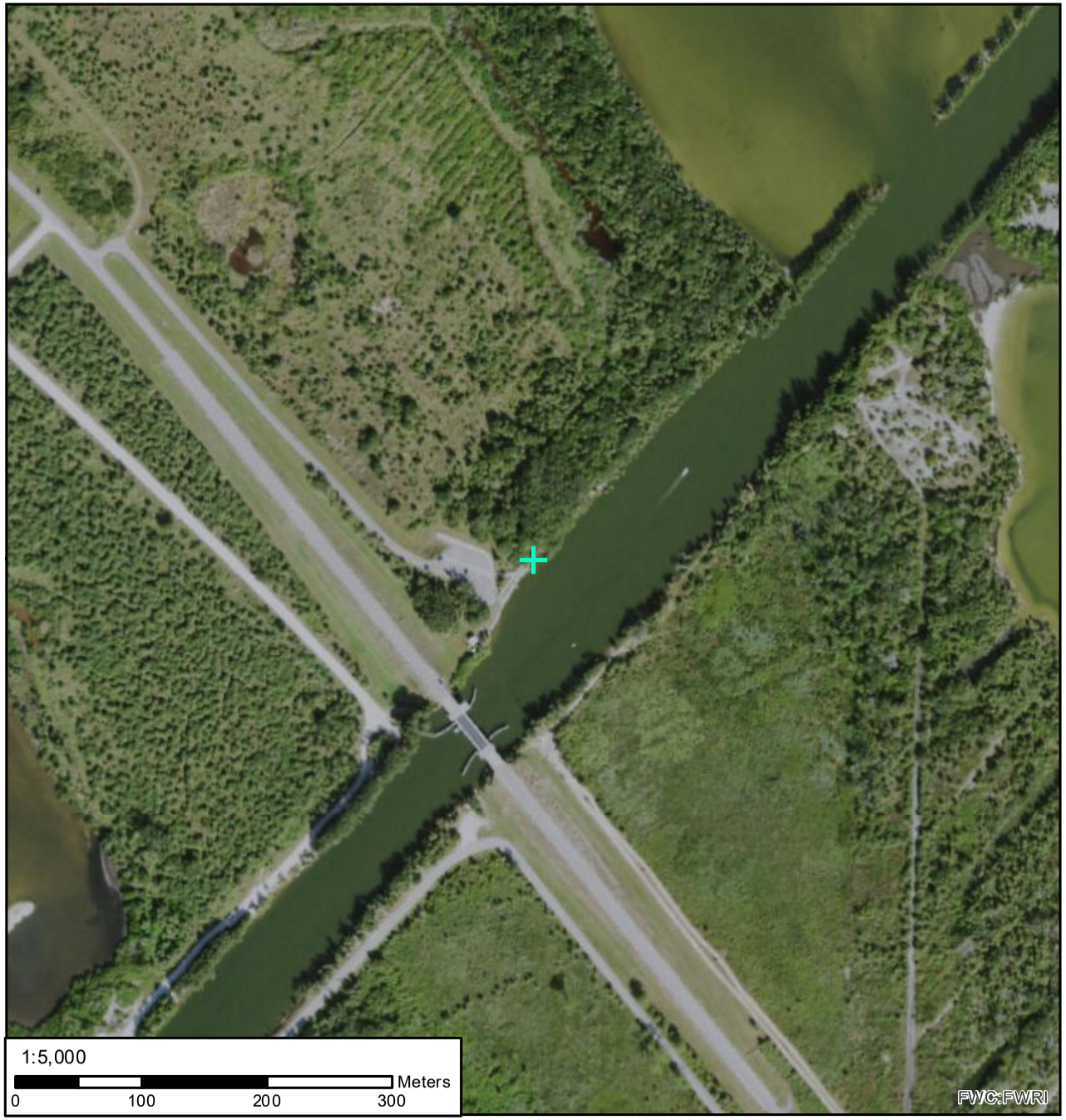


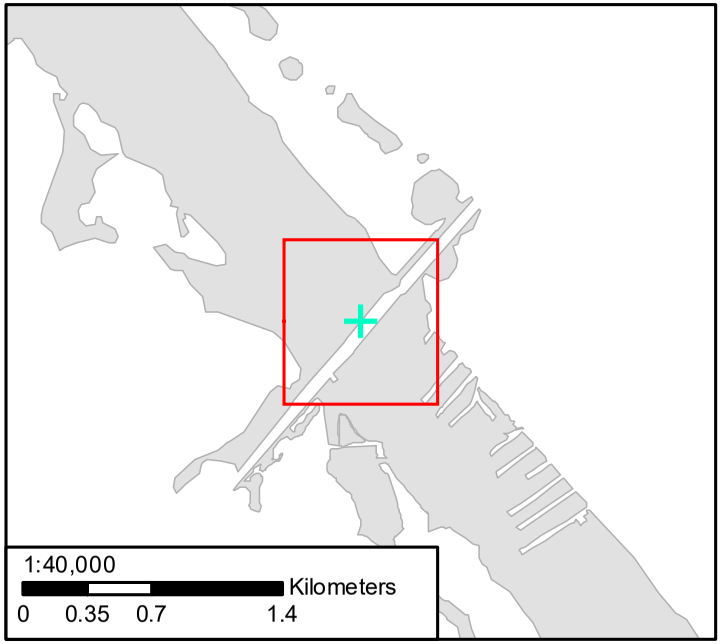
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Width																				
Depth																				
Distance																				

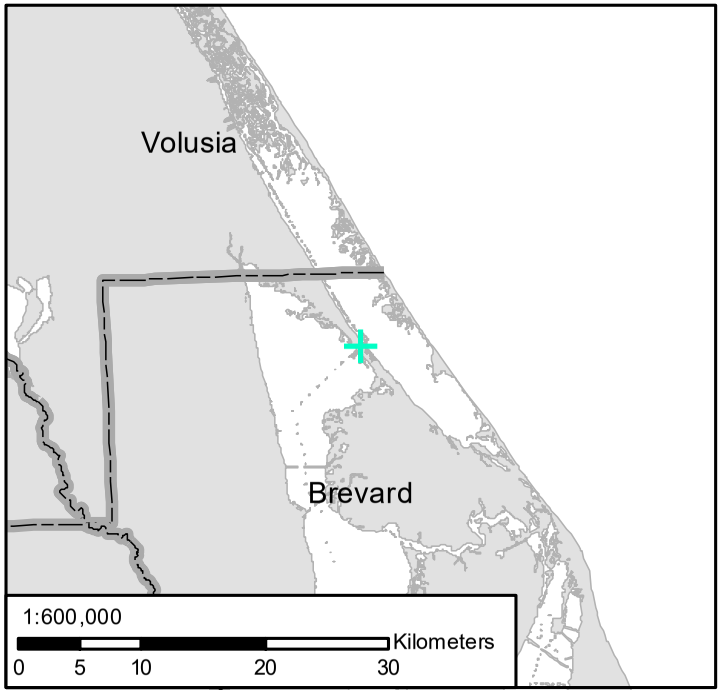


Verified Location of Manatee Carcass MEC20110

Report Date: 6/18/2020 **Received Date**: 6/18/2020 **Received By**: FWC-SMW







Location: Allenhurst, Brevard County

Latitude: 28.73762°N **Longitude**: -80.75413°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20110
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11365 **FWC District:** Northeast
Sex: Male **Length (cm):** 216 **Estimated** _____ **Weight (kg)** _____
Date reported: 18 June 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 18 June 2020 **By:** FWC-SMW
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: State FL **County:** Brevard **Waterway:** Haulover Canal
Latitude: N _____ **Longitude:** W _____
Locality description: Allenhurst, approximately 580 m NE of Bairs Cove boat ramp.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not necropsied. An external work up was performed.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20111**
Date of Report: 2020-Jun-19
Filed By: FWC EC Field Station

FWC Case # 11469 **FWC Region:** NE

Sex: Male **Length:** 250 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-19 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.63066 **N**
County: Indian River **Longitude:** -80.36285 **W**
Waterway: Indian River
Location description: Vero Beach, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through photographs and FWC Officer. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case numbers 11401, 11405, 11451, and 11468.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20111

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20111 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 19 June 2020, at 0701 hrs, FWC on-call biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Vero Beach, Indian River County. FWC case number 11401 was assigned. The complainant, Cassie Edwards (772-913-2319), described an 8-foot-long dead manatee floating in the water. At 0748 hrs, NJG received video verification and forwarded the information to the EC Field Station. At 0757 hrs, FWC biologist-Carley M. Metcalf (CMM) requested LE assistance to tow the carcass. At 0904 hrs, CMM received a text alert from Dispatch regarding a dead manatee or dolphin in the Indian River, Vero Beach. FWC case number 11405 was assigned. The complainant, Tyler Harvey (772-359-5388), described a gray, dead manatee floating belly-up. At 0907 hrs, CMM received a verification photo. At 1035 hrs, FWC Officer-Joshua Mock (JM) agreed to tow the carcass to an area accessible via truck for a field necropsy. Due to inclement weather conditions, the tow could not take place until the following day. At 2010 hrs, NJG received a text alert from Dispatch regarding the carcass. FWC case number 11451 was assigned. The complainant, Chase Cornell (772-538-4105), described a freshly dead, six-foot-long manatee floating belly-up. At 2111 hrs, NJG received an inconclusive video taken while the vessel was on a plane. At 2025 hrs, NJG forwarded the information to the EC Field Station and updated Dispatch. **20 June**, CMM received a text alert from Dispatch regarding the carcass. FWC case number 11468 was assigned. The complainant, Ken Miller (772-234-9051), described a dead manatee floating south down the Indian River. No photos were available. CMM received two additional reports regarding the carcass. FWC case number 11469 was assigned. At 1214 hrs, JM proceeded to the carcass. At 1423 hrs, JM arrived at the carcass and towed it to a remote location. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs – Almost all of the ventral epidermis was present but sloughing. Red fluid exuded from the nares. The carcass was slightly distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through photographs and FWC Officer

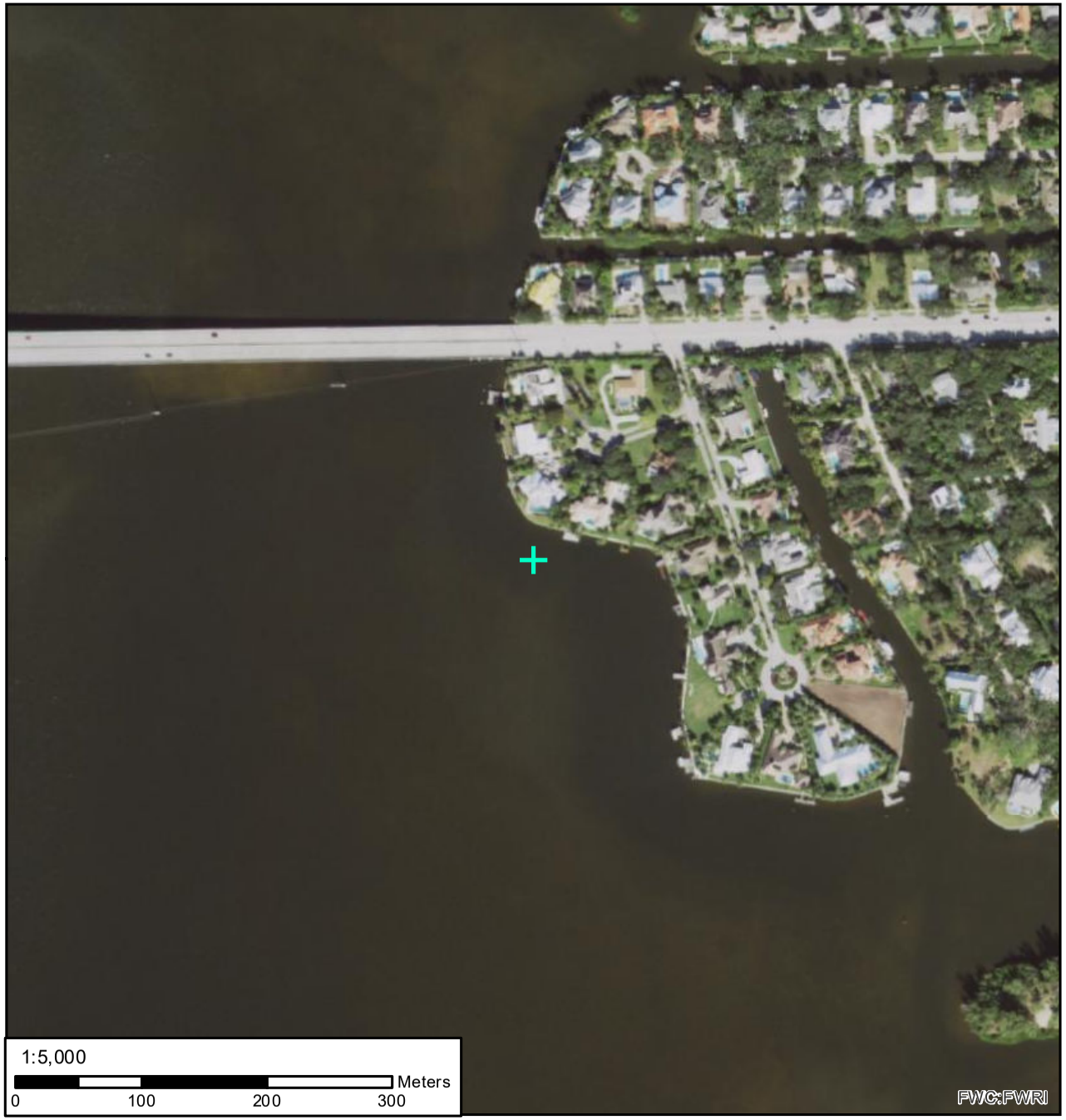
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

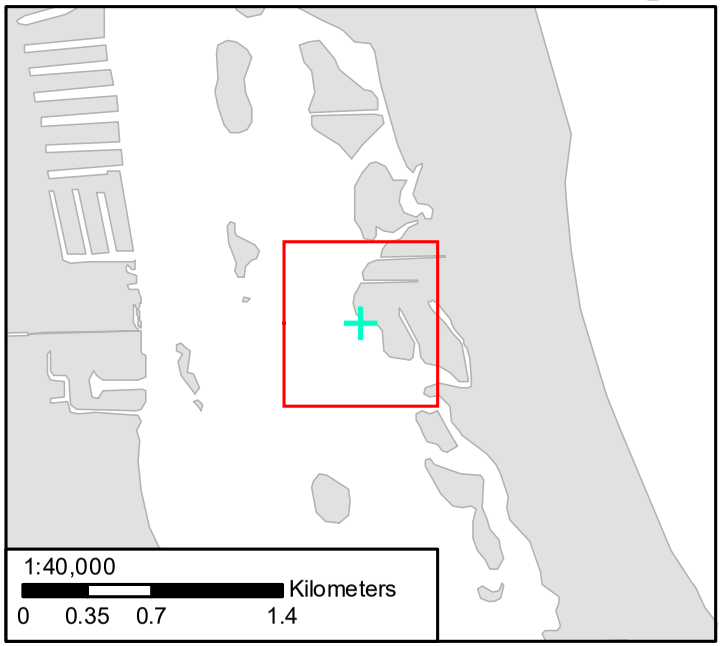
NECROPSY CONDUCTED BY N/A

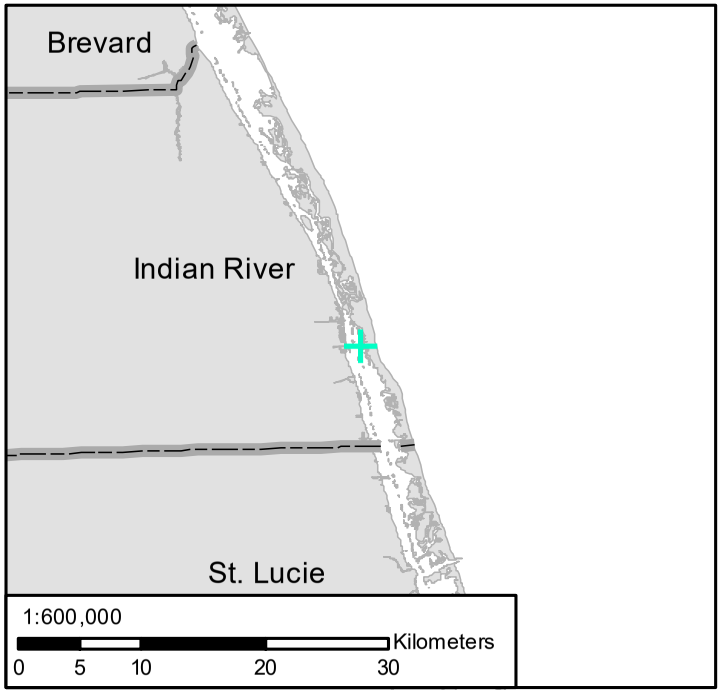
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20111

Report Date: 6/19/2020 **Received Date:** **Received By:**







Location: Vero Beach, Indian River County

Latitude: 27.63066°N **Longitude:** -80.36285°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #**MEC20111
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11401, 11405, 11451, 11468, 1 **FWC District**: Northeast
Sex: Male ☑ **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** N/T
Date reported: 19 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 20 June 2020 **By**: FWC-Officer Joshua Mock
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 45 m SW of 607 Lantana Lane

Carcass Orientation: Floating ☑

CONDITION: Confirmed; Not Recovered ☑

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed ☑
Left side: _____ Right side: _____

REMARKS: length estimate - 4 - officer estimate

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20112**
Date of Report: 2020-Jun-27
Filed By: FWC EC Field Station

FWC Case # 11998 **FWC Region:** NE

Sex: Female **Length:** 247 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jun-27 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Jun-27 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 28.06188 **N**

County: Brevard **Longitude:** -80.59191 **W**

Waterway: Indian River

Location description: Palm Bay, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Rope in stomach, duodenum, small intestine. Wet lung(s); Fluid from nares; Plicated small intestine; Intussusception of small intestine; Linear lesion small intestine mucosa, wall; Torn small intestine; Viscous, dark red fluid in distal small intestine, cecum, proximal colon; Congested peritoneum, mesentery, urinary bladder mucosa; Sediment, shells in airways.

PHOTOGRAPHS TAKEN: Lateral, Scar, Cranial, Internal, Other (Skin lesion).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Skin lesions; Bleached epidermis.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20112

MORPHOMETRICS:

Total length:	247 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20112 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 27 June 2020 **NECROPSY DATE** 27 June 2020
GENDER Female **TL** 247 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 27 June 2020, at 0825 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Melbourne, Brevard County. FWC case number 11998 was assigned. The complainant, Ray Walton (321-333-8666), stated that the manatee was floating belly-up. At 0851 hrs, CMM received photo verification of the carcass. At 1030 hrs, CMM and FWC biologist-William D. Greer (WDG) arrived at the Front Street boat ramp in Melbourne and launched the EC Field Station Key West boat. The carcass was located and towed to a remote area at 1105 hrs where a field necropsy was completed by 1243 hrs. The remains were left on site.

EXTERNAL All of the epidermis was present. Watery red fluid exuded from the nares. The carcass was distended with gas. There was a moderate dark green algal mat on the dorsal aspect. A few bleached spots were observed on the dorsum and ventral fluke and peduncle. A 17 cm long superficial linear lesion was observed on the mid right dorsum. There was a well-healed scar on the ventral fluke. No watercraft-related wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, omental, and mesenteric fat. The peritoneum was mildly congested (see photo).

STOMACH The stomach contained 2.9 L of moist, poorly chewed, very fibrous, stringy, dark green ingesta. There was a 0.3 cm diameter yellow rope attached to a baseball-sized clump of fibrous ingesta in the stomach contents. The rope continued through the duodenum into the small intestine and its total length was 327 cm. The portion in the stomach had a baseball-sized clump of fibrous ingesta around the end of it (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 800 mL of wet, moderately chewed, very fibrous, stringy, dark green ingesta. The yellow rope from the stomach continued through the duodenum and into the small intestine (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The yellow rope from the stomach and duodenum continued through the small intestine, and the entire small intestine was plicated around the rope. The mid small intestine had an approximately 60 cm long intussusception (see photo). There was a linear, yellow lesion throughout most of the small intestine mucosa and wall that matched the width of the rope. There was an approximately 10 cm long tear in the mid small intestine wall (see photo). The proximal and mid small intestine contained a small amount of well-chewed, fibrous, stringy, yellow to brown ingesta. The distal small intestine contained a moderate amount of viscous, dark red fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 75 mL of viscous, dark red fluid (see photo). The mucosa was stained dark red. No parasites were observed.

COLON The proximal colon contained viscous, dark red fluid (see photo). The mid colon contained very moist, well-formed, well-digested, stringy, fibrous, dark green to brown feces. The distal colon contained moist, hard, well-formed, well-digested, stringy, fibrous, dark green to brown feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was not observed.

SPLEEN The spleen was mottled dark gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained approximately 10 mL of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE No reproductive fat was observed. The diameter of uterus was small. No scars were present. Both ovaries contained numerous fluid-filled follicles (maximum diameter 1.1 cm).

KIDNEYS No perirenal fat was observed. The kidneys were tan to gray on serosal surfaces. On cut surfaces, the cortices were tan and the medullae were dark red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was congested.

HEART There was moderate, gassy epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were gassy. Serosal surfaces were gray to pink, and cut surfaces were dark red and wet (see photo). The left lung primary airway contained a moderate amount of sand and small shells and a small amount of watery, clear fluid. The right lung primary airway contained a small amount of sand and small shells and a small amount of watery, clear fluid (see photos). No parasites were observed.

HEAD & NECK REGIONS The trachea contained a moderate amount of sand (see photo).

SKELETON NVL.

COMMENTS

SIGNIFICANT FINDINGS

- Fluid from nares
- Yellow rope in stomach, duodenum, and small intestine
- Plicated small intestine
- Intussusception of small intestine
- Linear lesion in small intestine mucosa, wall
- Torn small intestine
- Viscous, dark red fluid in distal small intestine, cecum, proximal colon
- Wet lungs
- Sediment, shells in airways
- Congested peritoneum, mesentery, urinary bladder mucosa
- Skin lesion
- Bleached spots epidermis
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Human; Other

NECROPSY CONDUCTED BY

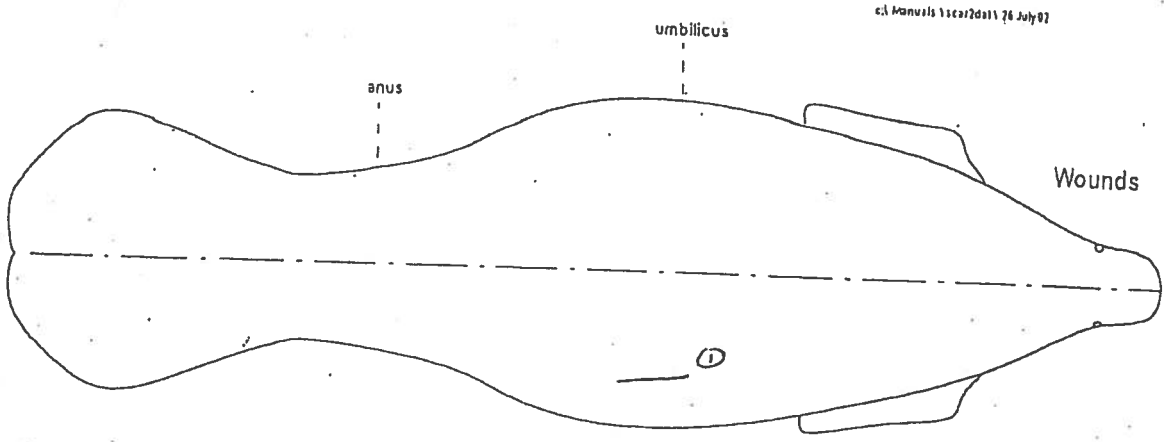
William D. Greer

Carley M. Metcalf

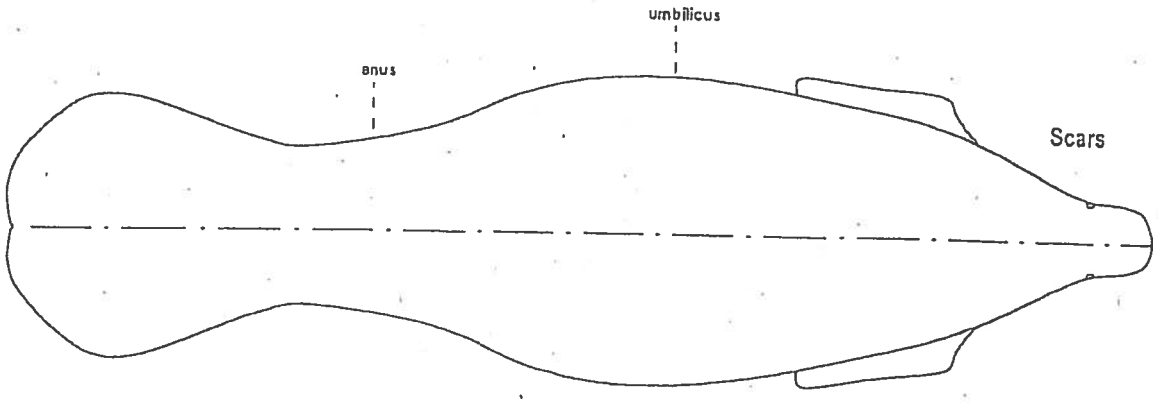
REPORT FILED BY Greer

Date 27 JUN 2020 Field I.D. MEC20112.

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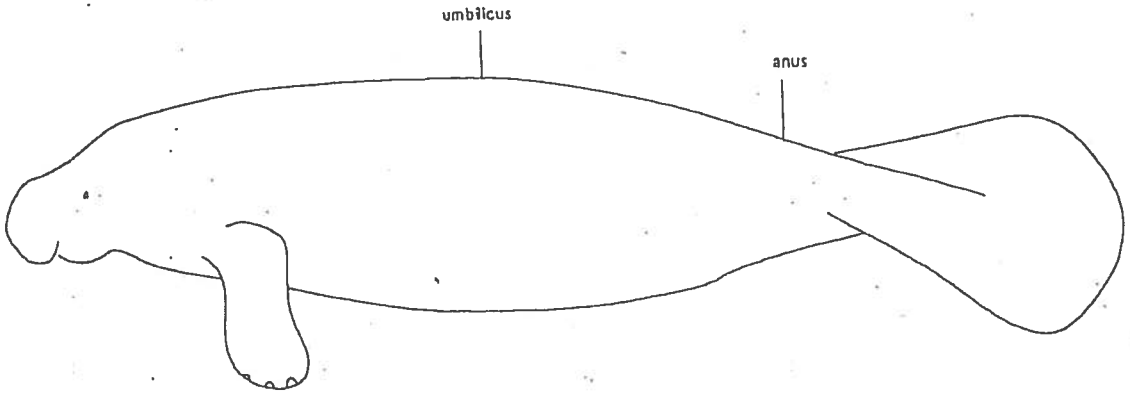


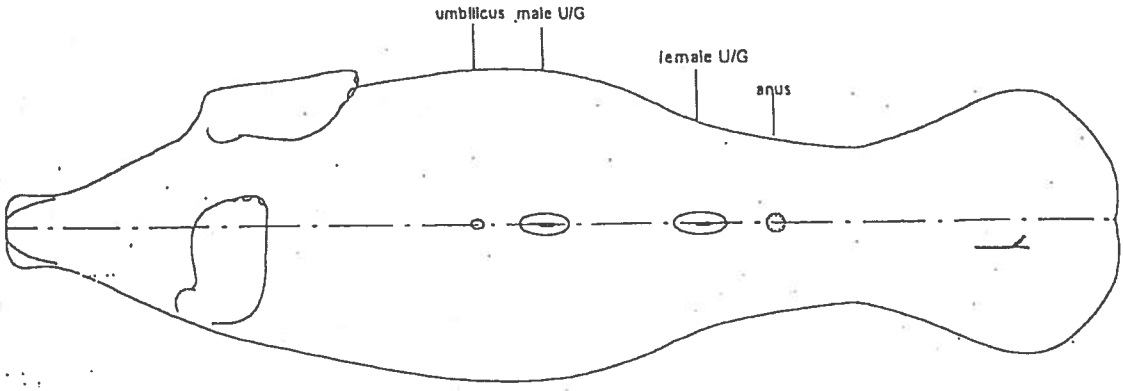
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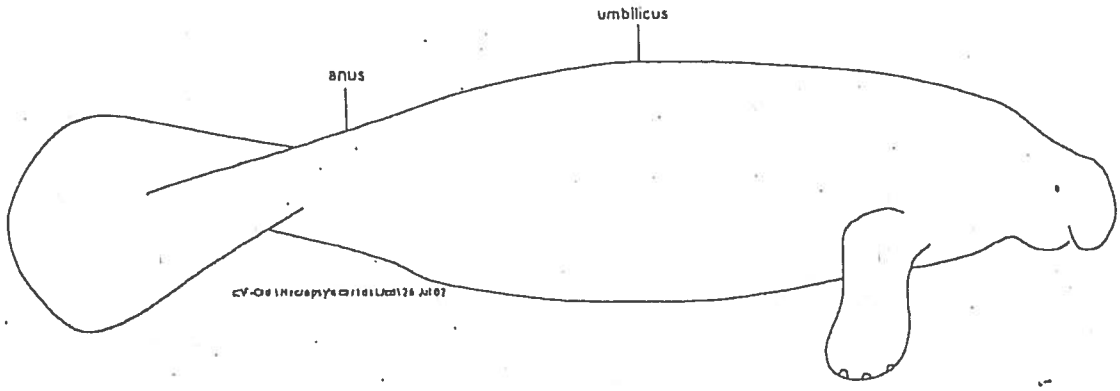


FIELD I.D. MEC20112

W06



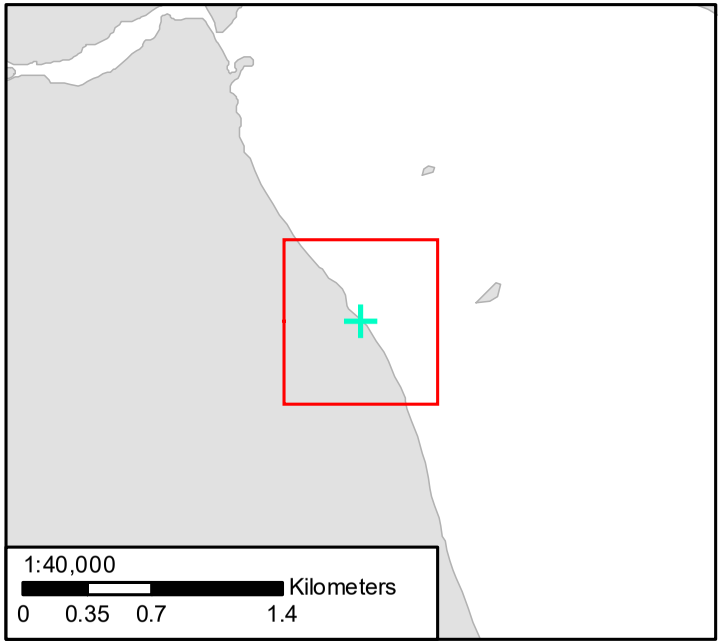


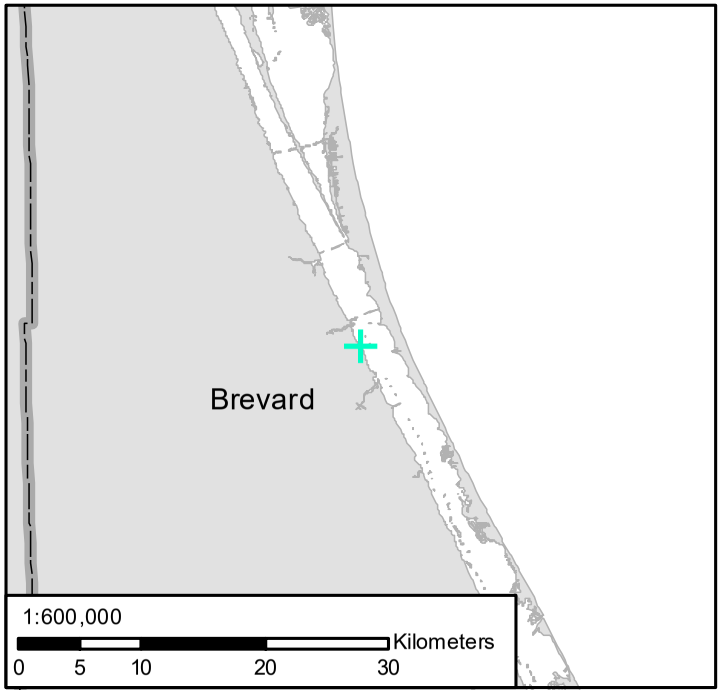


Verified Location of Manatee Carcass MEC20112

Report Date: 6/27/2020 **Received Date:** 6/27/2020 **Received By:** FWC-WDG,CMM







Location: Palm Bay, Brevard County

Latitude: 28.06188°N **Longitude:** -80.59191°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20112
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11998 **FWC District**: Northeast
Sex: Female **Length (cm)**: 247 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 27 June 2020 **By**: FWC- WDG, CMM
Date necropsied: 27 June 2020 **By**: FWC- WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 45 m NE of 2445 Riverview Drive NE

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☑ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: 327 cm 1/8 in rope from stomach to small intestine. Small intestinal wall cut by rope, pus present throughout small intestine. Bloody contents in distal small intestine, cecum and proximal colon.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☐ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20113**
Date of Report: 2020-Jun-28
Filed By: FWC EC Field Station

FWC Case # 12044 **FWC Region:** NE

Sex: Unknown **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-28 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.3257 **N**
County: Brevard **Longitude:** -80.68858 **W**
Waterway: Indian River
Location description: Merritt Island, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)
EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20113

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20113 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 120 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 28 June 2020, at 0737 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Indian River, Merritt Island, Brevard County. FWC case number 12044 was assigned. The complainant, Pete (321-266-1772), stated that the carcass was gray in color and less than 4 feet long. At 0741 hrs, WDG received a photo verifying the carcass and requested FWC LE assistance to tow it to a remote location. Due to the carcass size and significant decomposition, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the left ventral epidermis was present but sloughing. The carcass was distended with gas. The fluke was scalloped. There were transverse folds on the ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

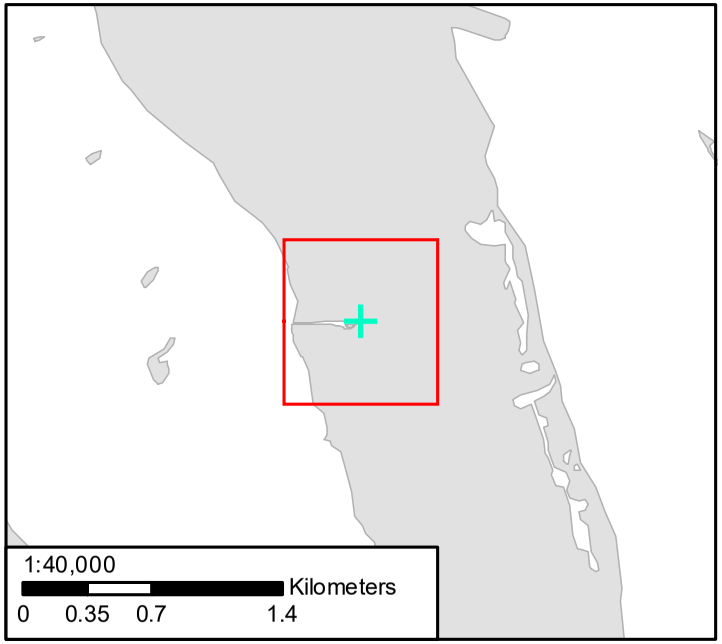
NECROPSY CONDUCTED BY N/A

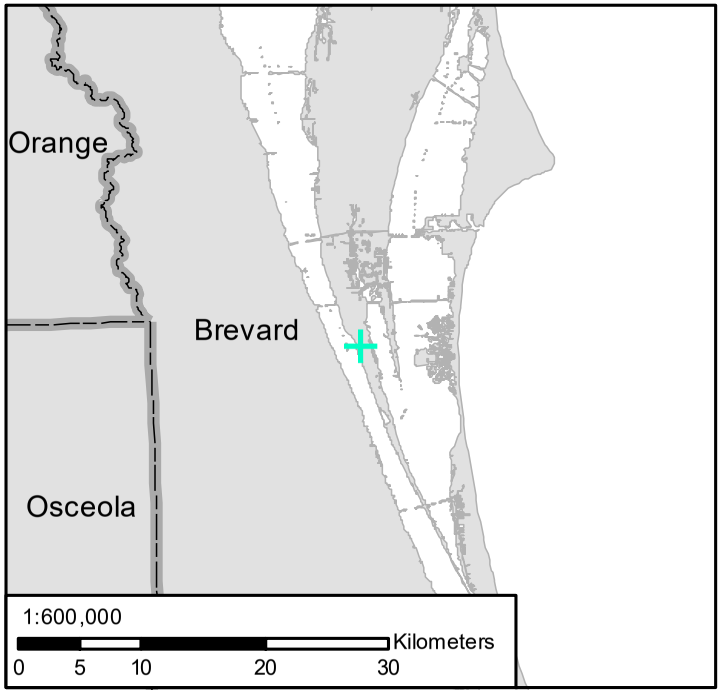
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20113

Report Date: 6/28/2020 **Received Date**: **Received By**:







Location: Merritt Island, Brevard County **Latitude**: 28.3257°N **Longitude**: -80.68858°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20113
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12044 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 120 **Weight (kg)** N/T
Date reported: 28 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 25 m S of 485 Greenview Road

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS: Size estimate from complainant

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20114**
Date of Report: 2020-Jun-29
Filed By: FWC EC Field Station

FWC Case # 12113 **FWC Region:** NE

Sex: Male **Length:** 150 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-29 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.37004 **N**
County: Brevard **Longitude:** -80.69305 **W**
Waterway: Sykes Creek
Location description: Merritt Island, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)
EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified by FWC Officer and photographs.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20114

MORPHOMETRICS:

Total length:	150 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20114
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Male **TL** 150 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 29 June 2020, at 0729 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek in Merritt Island, Brevard County. FWC case number 12113 was assigned. The complainant, Kathy (813-508-8177), stated that the manatee was gray and bloated and appeared to be smaller in size. At 0738 hrs, WDG received a photo from the complainant but due to glare, it was inconclusive. At 0740 hrs, WDG requested FWC LE assistance. At 1322 hrs, FWC Officer-Morgan Maslo verified the carcass and towed it to a remote area nearby. Due to the carcass size and significant decomposition, the carcass was not recovered or necropsied.

EXTERNAL From photographs - Approximately 60% of the epidermis was present but sloughing. The epidermis was smooth without any epibiota. There were transverse folds on the ventrum. The fluke was scalloped. There were large rents on the mid ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified by FWC Officer and photographs
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

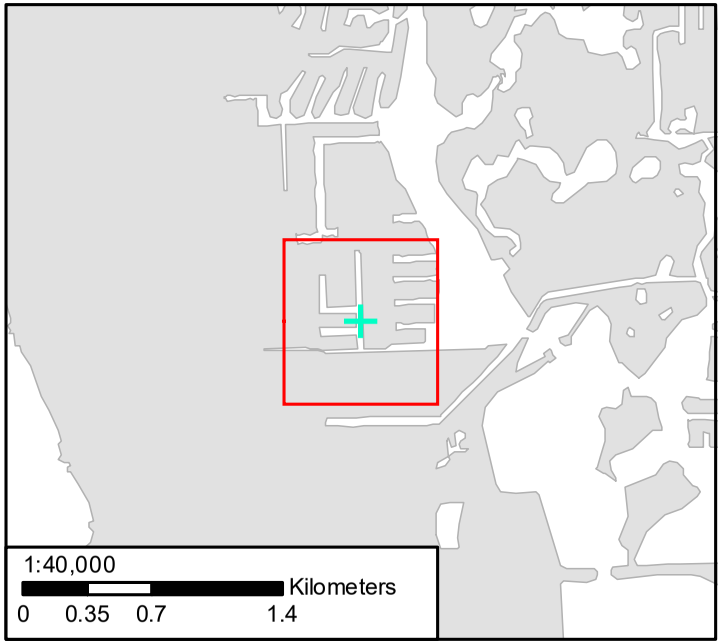
NECROPSY CONDUCTED BY N/A

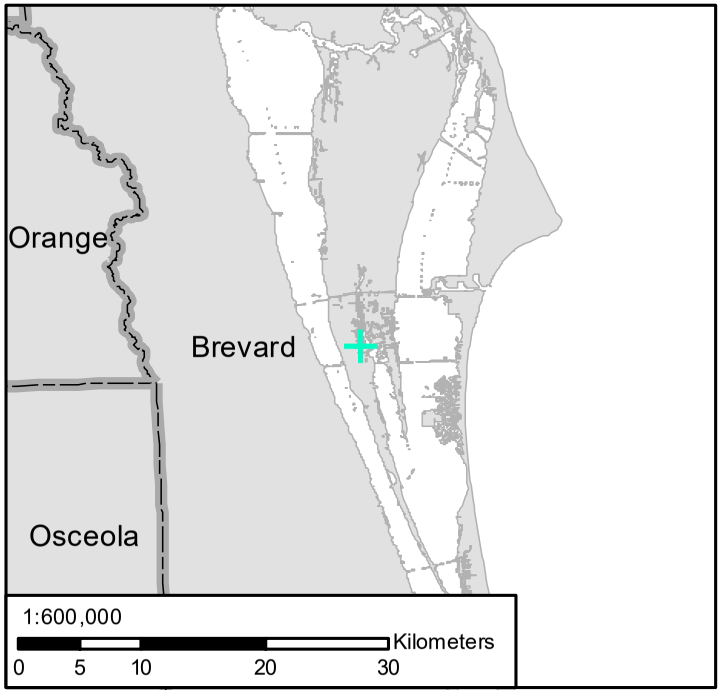
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20114

Report Date: 6/29/2020 **Received Date**: **Received By**:







Location: Merritt Island, Brevard County

Latitude: 28.37004°N **Longitude**: -80.69305°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20114
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12113 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 120 **Weight (kg)** N/T
Date reported: 29 June 2020 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 29 June 2020 **By**: FWC Ofc. Maslo
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Sykes Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 30 m W of 775 East Richland Avenue

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS: Size estimate from officer.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20115**
Date of Report: 2020-Jun-29
Filed By: FWC EC Field Station

FWC Case # 12170 **FWC Region:** NE

Sex: Male **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-29 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.365 **N**
County: Brevard **Longitude:** -80.69427 **W**
Waterway: Sykes Creek
Location description: Merritt Island, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)
EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case number 12109.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20115

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20115
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Male **TL** 120 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 29 June 2020, at 0758 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek in Merritt Island, Brevard County. FWC case number 12109 was assigned. The complainant, David Thompson (321-266-9370), stated that the manatee was gray and about three feet long, but he was unable to take a photo. **30 June**, at 0717 hrs, WDG received a text alert from Dispatch regarding a dead manatee in Sykes Creek. FWC case number 12170 was assigned. The complainant, Christine Revas (321-223-2759), stated that the manatee was three to four feet long and was turning white. At 0739 hrs, WDG received a photo of the carcass from the complainant. At 0740 hrs, WDG requested FWC LE assistance to tow the carcass. At 0917 hrs, FWC Officer-Seth Loeffler towed the carcass to a remote area nearby. Due to the carcass size and significant decomposition, the carcass was not recovered or necropsied.

EXTERNAL From photographs - Approximately 60% of the ventral epidermis was present but sloughing. The carcass was dorsoventrally flattened. There were faint transverse folds on the ventrum. There were rents at the umbilicus and anus through which white to yellow material exuded. Flies were present on the carcass.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

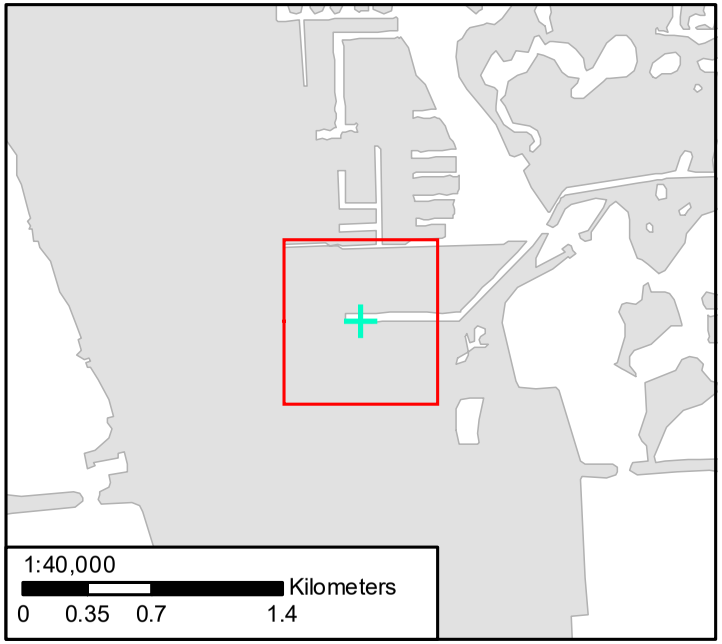
NECROPSY CONDUCTED BY N/A

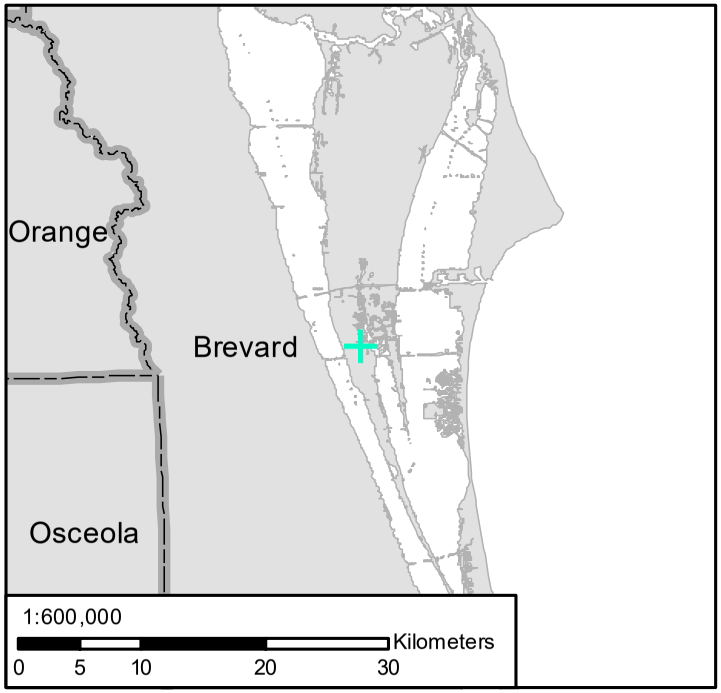
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20115

Report Date: 6/29/2020 **Received Date**: **Received By**:







Location: Merritt Island, Brevard County **Latitude**: 28.365°N **Longitude**: -80.69427°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20115
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12109, 12170 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 105 **Weight (kg)** N/T
Date reported: 29 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 30 June 2020 **By**: FWC Ofc. Seth Loeffler
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Sykes Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 30 m S of 285 Needle Blvd
Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS: Size estimate from officer

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20116**
Date of Report: 2020-Jun-30
Filed By: FWC EC Field Station

FWC Case # 12175 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-30 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.92157 **N**
County: Brevard **Longitude:** -80.51457 **W**
Waterway: Indian River
Location description: Grant-Valkaria, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20116

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20116 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 30 June 2020, at 1001 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at VIP Island in Indian River, Grant-Valkaria, Brevard County. FWC case number 12175 was assigned. The complainant, Jason Mole (352-275-4500), stated that the carcass was subadult-sized and bloated. At 1005 hrs, SMW received a verification photo. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph – Almost all of the right ventral epidermis was present but sloughing. The carcass was distended with gas. There was a moderate brown algal mat on the left lateral aspect.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

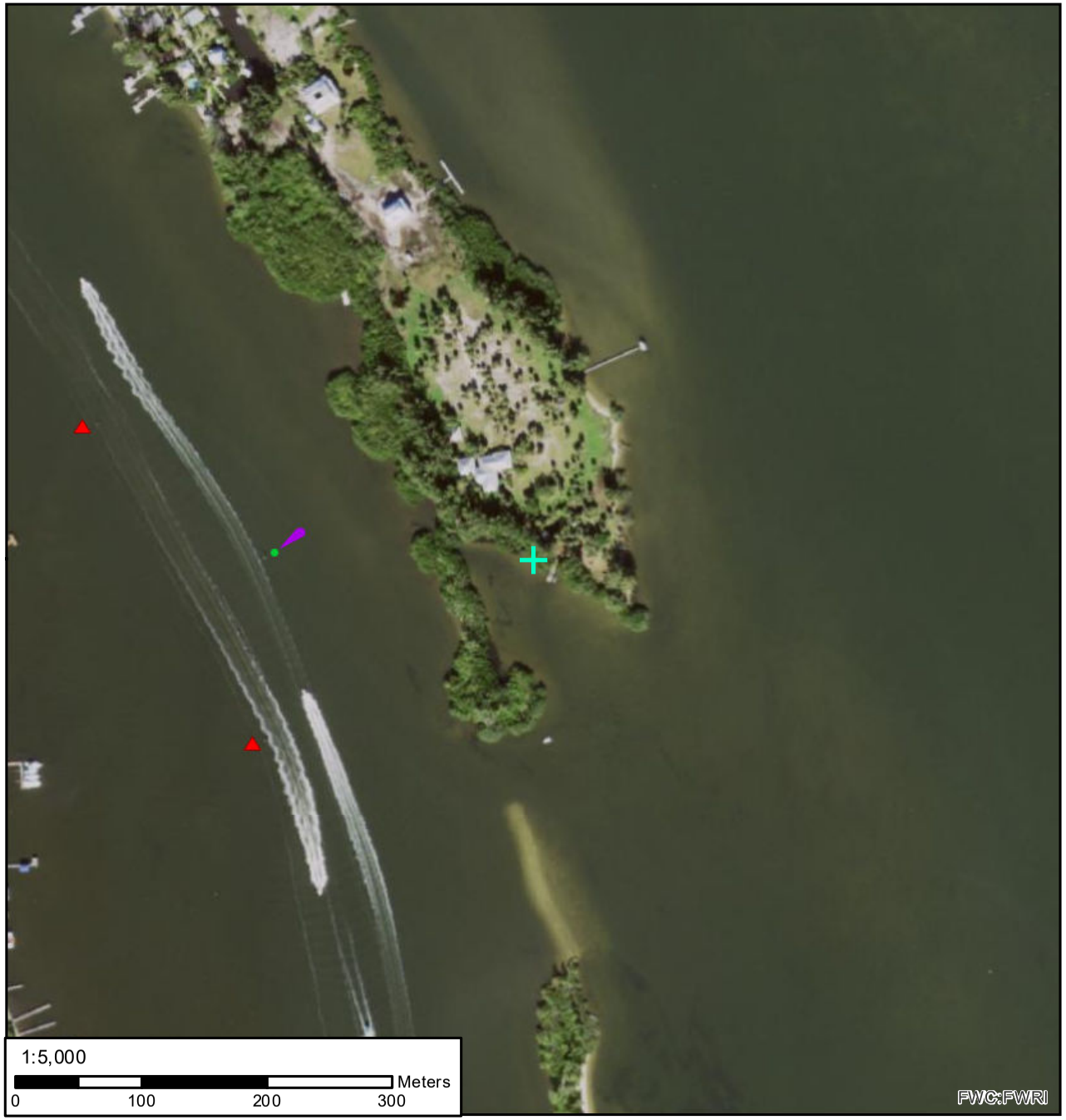
PROBABLE CAUSE OF DEATH Verified; Not Recovered

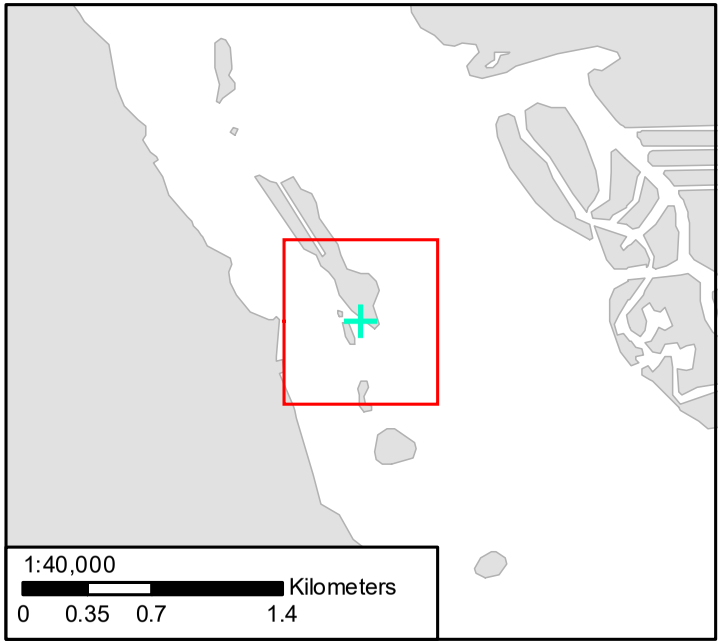
NECROPSY CONDUCTED BY N/A

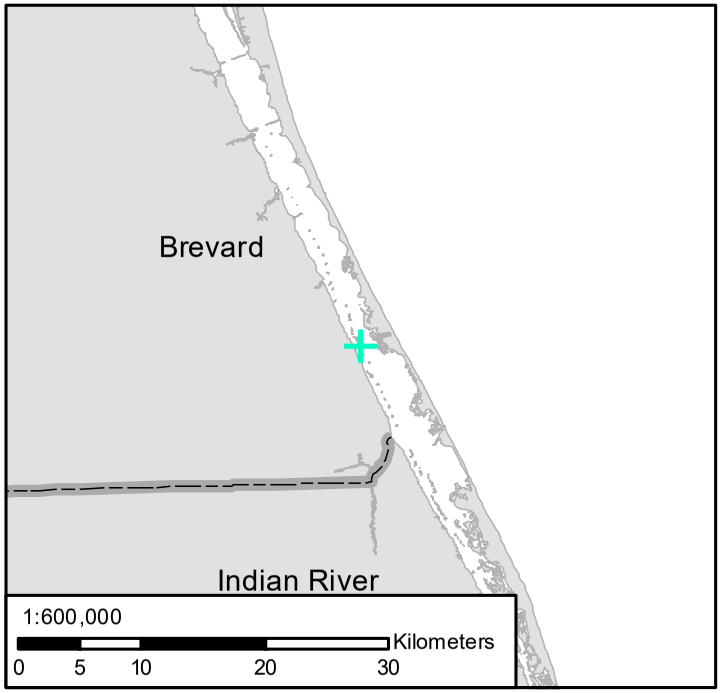
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20116

Report Date: 6/30/2020 **Received Date**: **Received By**:







Location: Grant-Valkaria, Brevard County

Latitude: 27.92157°N **Longitude**: -80.51457°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20116
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12175 **FWC District:** Northeast
Sex: Undetermined **Length (cm):** _____ **Estimated** 215 **Weight (kg)** _____
Date reported: 30 June 2020 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By:** _____
Date necropsied: _____ **By:** _____

LOCATION INFORMATION: **State** FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Grant-Valkaria, approximately 75 m SSE of 10 Grant Island.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Due to carcass response and necropsy restrictions during the Covid-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS: 4- Size estimated from photo without point of reference with complainant guess.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20117**
Date of Report: 2020-Jun-30
Filed By: FWC EC Field Station

FWC Case # 12186 **FWC Region:** NE

Sex: Female **Length:** 287 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-30 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jun-30 **By:** FWC-WDG,CMM

DATE NECROPSIED: 2020-Jun-30 **By:** FWC-WDG,CMM

LOCATION: **State:** FL **Latitude:** 28.32339 **N**

County: Brevard **Longitude:** -80.61751 **W**

Waterway: Banana River

Location description: Cocoa Beach, floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Luxated rib(s); Hemorrhagic muscle; Torn muscle; Hemothorax; Hemoabdomen; Blood clots; Torn parietal pleura; Torn hemidiaphragm(s); Torn kidney capsule (s); Torn lung(s); Fractured kidney(s); Organ pallor; Bloody lung(s); Fluid from nares; Hemorrhagic lung parenchyma; Frothy fluid in airways; Congested mesentery.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Lactating. Uterine Scar. A field necropsy was performed. Also FWC case number 12185.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20117

MORPHOMETRICS:

Total length:	287 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20117
SPECIES *T. manatus latirostris*
RECOVERY DATE 30 June 2020
NECROPSY DATE 30 June 2020
GENDER Female **TL** 287 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 30 June 2020, at 1215 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River, Cocoa Beach, Brevard County. FWC case number 12185 was assigned. The complainant, Chris Navarro (321-863-3593), stated that the manatee observer from their dredging project had verified the dead manatee and it was located one-half mile outside of their dredging area. At 1226 hrs, SMW received a verification photo. At 1228 hrs, SMW received a text alert from Dispatch regarding the same carcass. FWC case number 12186 was assigned. The complainant, Greg (321-427-2932), stated that the carcass was large and fresh. At 1231 hrs, SMW received a photo of the carcass. FWC biologists-William D. Greer and Carley M. Metcalf arrived at the Holiday Lane boat ramp at 1350 hrs, launched the Key West boat, towed the carcass to a remote location, and completed a field necropsy by 1630 hrs. The remains were left onsite.

EXTERNAL All of the epidermis was present. The carcass was distended with gas. Watery red fluid exuded from the nares. There was a superficial linear watercraft-related wound on the right caudal dorsum. A mild infestation of barnacles was observed on the caudal dorsum and a moderate infestation of barnacle scars was observed on the dorsal and lateral aspects. There was a moderate dark green to brown algal mat on the dorsal aspect. A minimum of six well-healed watercraft-related scar patterns was observed on the dorsal aspect. The fluke margin was irregular but well-healed between the 5 and 7 o'clock positions. Both teats were lactating. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, omental, and mesenteric fat. There were 2.75 L of loose, well-formed blood clots in the abdominal cavity (see photo).

STOMACH The stomach contained 8.6 L of moist, moderately chewed, fibrous, stringy, dark green ingesta (see photo). The contents were coated in white mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 4.5 L of wet, well-chewed, fibrous, stringy, dark green ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested (see photo). Some sections of the small intestine contained watery brown fluid mixed with a moderate amount of moderately chewed, leafy, light green to brown ingesta and other sections were empty of contents. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 2.8 L of wet, poorly digested, fibrous, stringy, leafy, green to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The proximal and mid colon contained very moist, moderately digested, moderately formed, stringy, leafy, light brown to green feces. The distal colon contained moist, well-digested, well-formed, stringy, brown feces. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was light pink on serosal surfaces and red on cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft. Serosal surfaces were blue to purple and cut surfaces were brown.

GALLBLADDER The gallbladder contained approximately 20 mL of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The diameter of the right uterine horn was relatively small. The left uterine horn was distended and had a scar (see photo). Both ovaries contained numerous fluid-filled follicles (maximum diameter 1.6 cm).

KIDNEYS There was moderate perirenal fat. The dorsal and ventral aspects of the right kidney capsule were torn at the mid-medial aspect due to luxated right rib 14. The kidneys were pale tan on serosal surfaces (pallor). On cut surfaces, the cortices and medullae were pale red. The corticomedullary boundaries were indistinct. The right kidney had at least two tears surrounded by loose, well-formed blood clots, which were deep to luxated right rib 14 and fractured right rib 15 (see photo).

URINARY BLADDER The urinary bladder contained 50 mL of pink-tinged urine. The mucosa was unremarkable.

HEART There was moderate epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was intact. The right hemidiaphragm was torn due to luxated right rib 14. The right pleural cavity contained 3 L of loose, well-formed blood clots. The caudal medial aspect of the right lung was punctured by luxated right rib 14 which was associated with loose, well-formed blood clots and hemorrhagic parenchyma (see photo). The lungs were mottled light pink and blue on serosal surfaces, and dark red and bloody on cut surfaces. There was a small amount of white froth in both lung primary airways.

HEAD & NECK REGIONS There was clear, frothy fluid in the trachea. Otherwise NVL.

SKELETON Right rib 14 was luxated and the head tore the parietal pleura, kidney capsule, hemidiaphragm, kidney, and right lung. Right rib 15 had an oblique fracture at the proximal one-third which tore the parietal pleura. Right rib 16 had an oblique fracture at the mid one-third (see photos). All rib trauma was associated with the watercraft wound.

OTHER There was torn, hemorrhagic tissue deep to the watercraft wound on the caudal right dorsum.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh superficial watercraft wound
- Fluid from nares
- Fractured, luxated rib
- Blood clots
- Torn, hemorrhagic tissue
- Hemothorax
- Hemoabdomen
- Torn parietal pleura, kidney capsule, hemidiaphragm, lung
- Hemorrhagic lung parenchyma
- Fractured kidney

- Kidney pallor
- Frothy fluid in airways
- Bloody lungs
- Congested mesentery
- Uterine scar
- Lactating

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

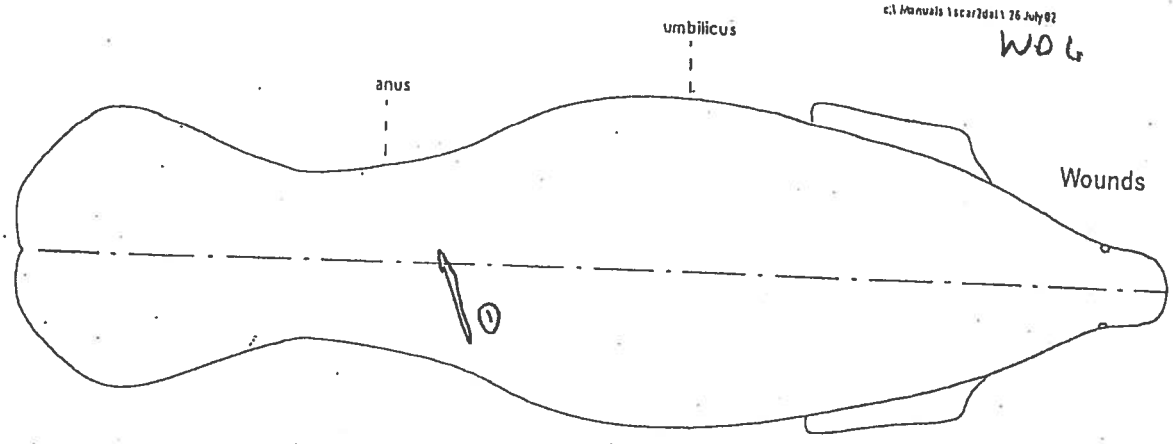
William D. Greer
Carley M. Metcalf

REPORT FILED BY Greer / Metcalf

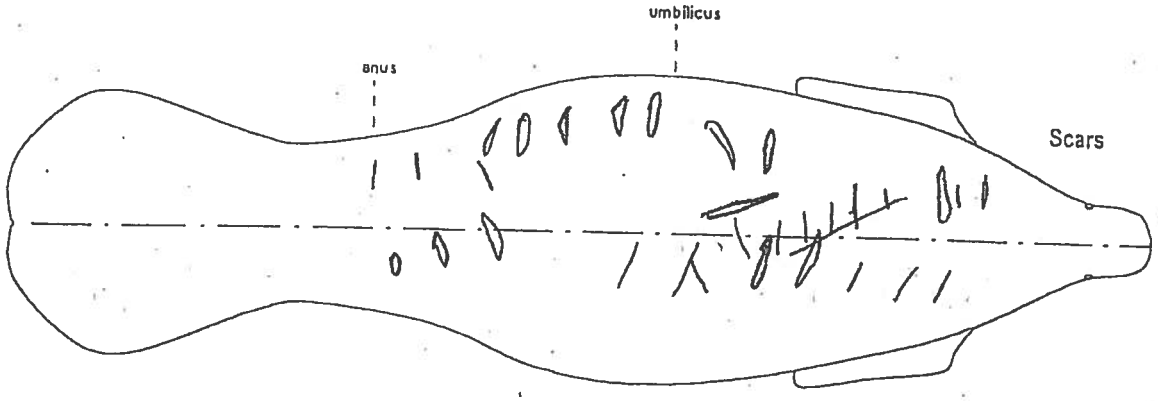
Date 30 JUN 2020 Field I.D. MEC20117

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WDG

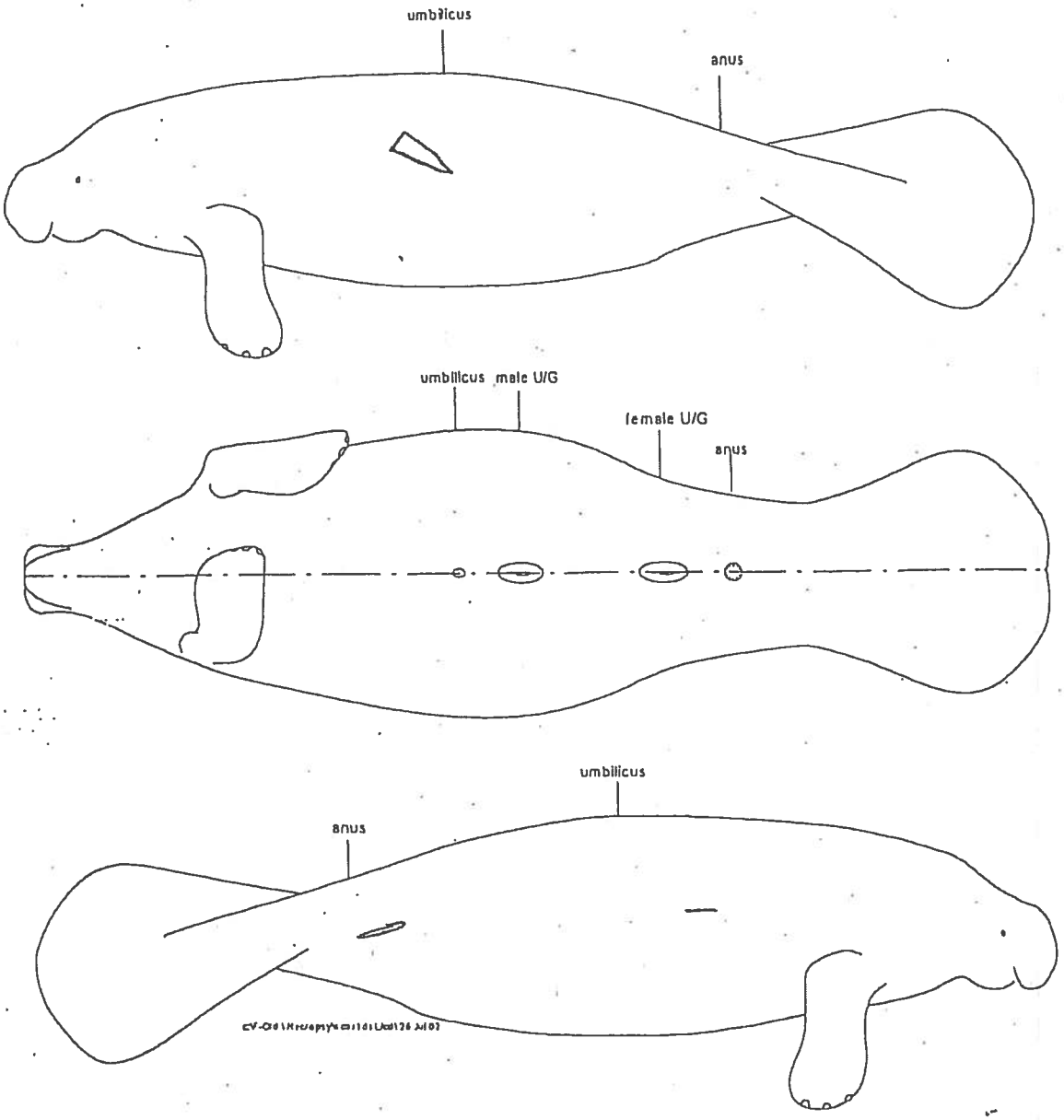


Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	34																			
Width	.2																			
Depth	.1																			
Distance																				



FIELD I.D. MEL20117

W06

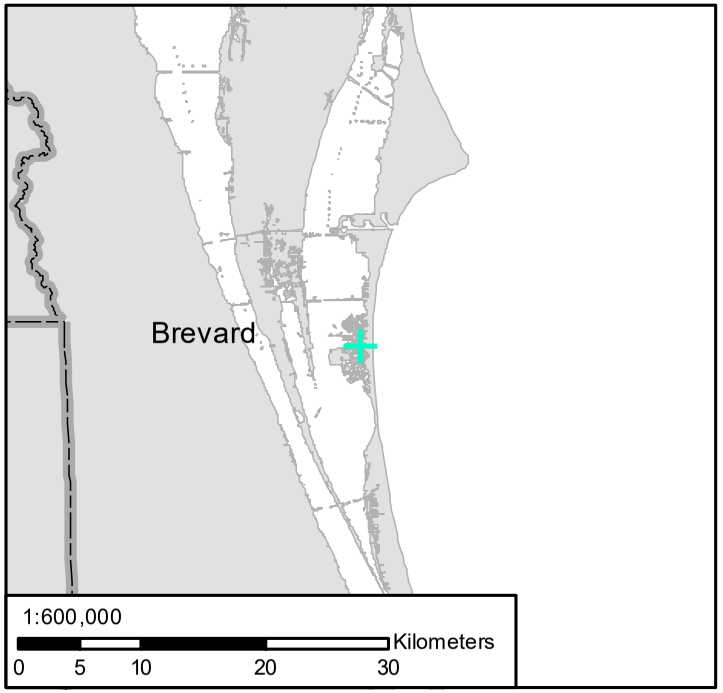


Verified Location of Manatee Carcass MEC20117

Report Date: 6/30/2020 **Received Date**: 6/30/2020 **Received By**: FWC-WDG,CMM







Location: Cocoa Beach, Brevard County

Latitude: 28.32339°N **Longitude**: -80.61751°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #**MEC20117
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12185, 12186 **FWC District**: Northeast
Sex: Female ☑ **Length (cm)**: 287 **Estimated** _____ **Weight (kg)** N/T
Date reported: 30 June 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 30 June 2020 **By**: FWC-WDG, CMM
Date necropsied: 30 June 2020 **By**: FWC-WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa Beach, approximately 75 meters W of 517 Naish Avenue

Carcass Orientation: Floating ☑

CONDITION: Moderately Decomposed ☑

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Acute ☑
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: External wound, fractured ribs, blood clots, punctured hemidiaphragm, parietal pleura, lung and kidney

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: Yes ☐ **PREGNANT**: No ☐ **UTERINE SCAR**: Yes ☐
UTERINE HORNS: Distended ☐

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative ☐
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20118**
Date of Report: 2020-Jul-01
Filed By: FWC EC Field Station

FWC Case # 12313 **FWC Region:** NE

Sex: Female **Length:** 100 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-01 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.39168 **N**
County: Brevard **Longitude:** -80.69207 **W**
Waterway: Sykes Creek
Location description: Merritt Island, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)
EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case number 12276.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20118

MORPHOMETRICS:

Total length:	100 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20118 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 100 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 01 July 2020, at 1601 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek, Merritt Island, Brevard County. FWC case number 12276 was assigned. The complainant, Mrs. Prior (321-453-6883), stated that there was a possible dead manatee under her neighbor's dock. CMM received a photo that was inconclusive at 1626 hrs and requested FWC LE assistance to verify and tow the carcass to a remote location at 1700 hrs. **02 July**, at 1055 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding the same carcass. FWC case 12313 was assigned. The complainant, Sheryl Murphy (321-453-2368), stated that the carcass was very small and decomposed. At 1105 hrs, SMW received a verification photo. At 1343 hrs, FWC Officer-Seth Loeffler secured the carcass at a nearby secluded location. Due to the size and significant decomposition, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the visible epidermis was missing. The carcass was dorsoventrally flattened. There were rents due to scavenging and/or decomposition at the anus and umbilicus. Faint transverse folds were present on the ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

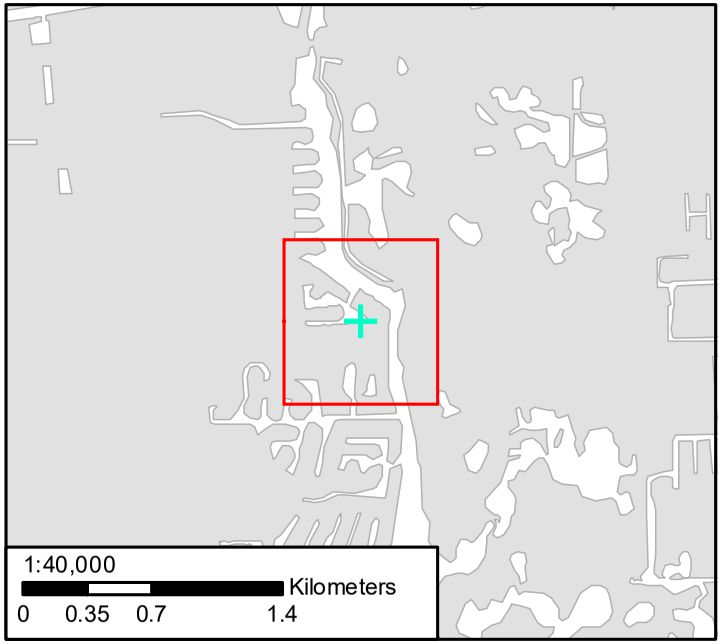
NECROPSY CONDUCTED BY N/A

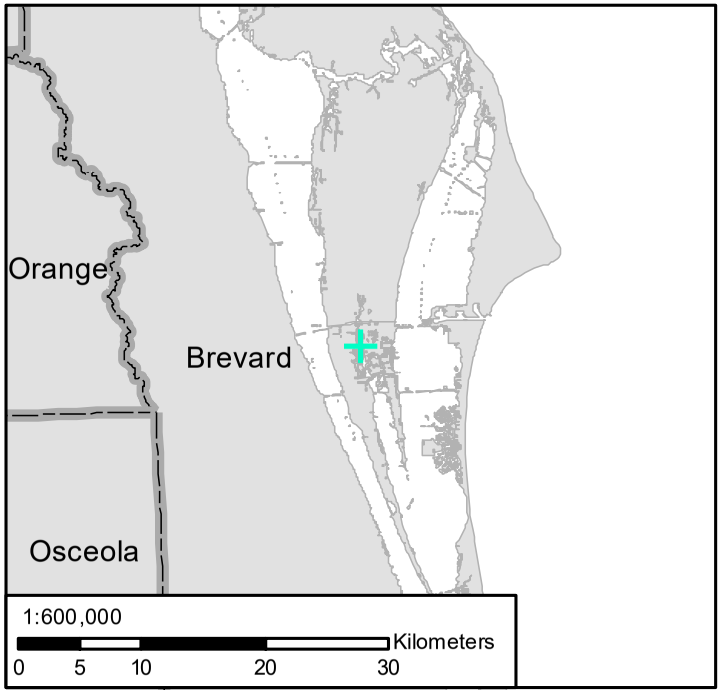
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20118

Report Date: 7/1/2020 **Received Date:** **Received By:**







Location: Merritt Island, Brevard County

Latitude: 28.39168°N **Longitude:** -80.69207°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20118
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12276, 12313 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 105 **Weight (kg)** _____
Date reported: 01 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 02 July 2020 **By**: FWC-Ofc. Seth Loeffler
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Sykes Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 25 m NNE of 1970 Sykes Creek Drive.

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20120**
Date of Report: 2020-Jul-04
Filed By: FWC EC Field Station

FWC Case # 12451 **FWC Region:** NE

Sex: Female **Length:** 128 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-04 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jul-05 **By:** FWC-SMW

DATE NECROPSIED: 2020-Jul-05 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.36033 **N**

County: Brevard **Longitude:** -80.61156 **W**

Waterway: Banana River

Location description: Cocoa Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Undetermined: Too Decomposed; The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Fetal folds; Scavenging.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20120

MORPHOMETRICS:

Total length:	128 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20120
SPECIES *T. manatus latirostris*
RECOVERY DATE 05 July 2020
NECROPSY DATE 05 July 2020
GENDER Female **TL** 128 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 04 July 2020, at 1442 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Banana River, Cocoa Beach, Brevard County. FWC case number 12451 was assigned. The complainant, Michelle (321-307-0746), stated that the carcass was grey, but the intestines were exposed. At 1445 hrs, SMW received a verification photo and requested FWC LE assistance to tow the carcass to a remote area. **05 July**, at 1318 hrs, FWC Captain Bond informed SMW that no officers were available that day and availability for the next days was uncertain. At 1700 hrs, SMW arrived at a nearby location, launched a kayak, and recovered the carcass by 1720 hrs. SMW transported the carcass to the EC Field Station by 1630 hrs and completed a field necropsy by 1645 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 20% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. There were rents due to decomposition and/or scavenging at the umbilicus and anus. Faint transverse folds were present on the ventrum. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered or missing. All internal organs were missing. There was a dead catfish in the abdominal cavity.

HEAD & NECK REGIONS The bone sutures of the skull were loose due to young age and/or decomposition.

SKELETON All ribs were luxated and most vertebrae were separated due to decomposition.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs
- Scavenging
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

NECROPSY CONDUCTED BY

Sara M. Wappes

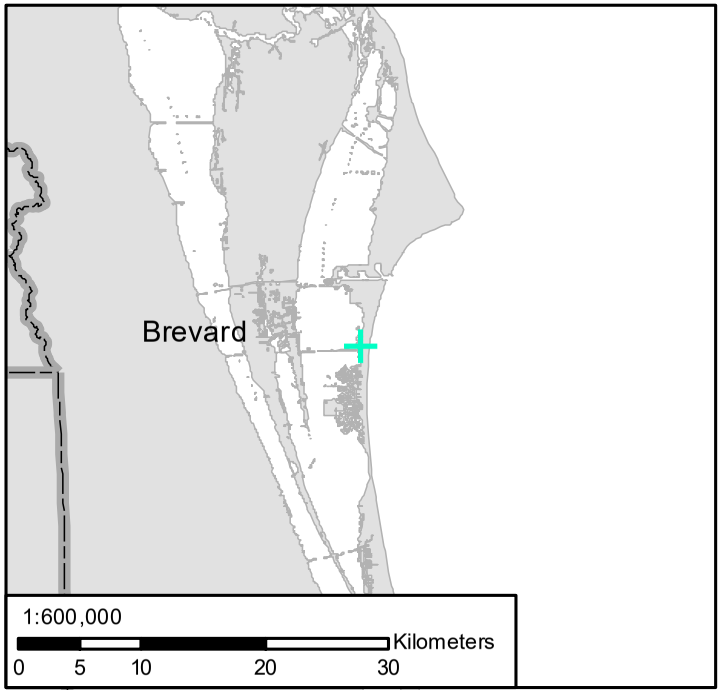
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20120

Report Date: 7/4/2020 **Received Date**: 7/5/2020 **Received By**: FWC-SMW







Location: Cocoa Beach, Brevard County

Latitude: 28.36033°N **Longitude**: -80.61156°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20120
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12451 **FWC District**: Northeast
Sex: Female **Length (cm)**: 128 **Estimated** _____ **Weight (kg)** _____
Date reported: 04 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 05 July 2020 **By**: FWC-SMW
Date necropsied: 05 July 2020 **By**: FWC-SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa Beach, approximately 20 m S of 363 Barrello Lane.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☑ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: All internal organs missing, all bones luxated.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20121**
Date of Report: 2020-Jul-05
Filed By: FWC EC Field Station

FWC Case # 12563 **FWC Region:** NE

Sex: Unknown **Length:** 280 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-05 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.34373 **N**
County: Brevard **Longitude:** -80.72019 **W**
Waterway: Indian River
Location description: Rockledge, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified through complainant photograph. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case number 12508.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20121

MORPHOMETRICS:

Total length:	280 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20121 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 280 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 05 July 2020, at 0954 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Rockledge, Brevard County. FWC case number 12508 was assigned. The complainant, Shirley Schell (540-305-9000), stated that the carcass was small adult sized. At 0957 hrs, SMW received a verification photo and requested FWC LE assistance to tow the carcass to a remote location. No officers were available that day. **06 July**, at 0950 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from Dispatch regarding the same dead manatee. FWC case number 12563 was assigned. The complainant, Marcellus Benson (636-751-3455), stated that the carcass was about nine feet long. At 0955 hrs, CMM called Dispatch to link the cases. At 1513 hrs, Dispatch informed SMW that no officers would be available to respond to the case that day or in the future. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photograph - Approximately 50% of the dorsal epidermis was present. The carcass was dorsoventrally flattened due to decomposition. The flippers were eroded due to decomposition and/or scavenging. There was a moderate green algal mat on the dorsal aspect. There appeared to be a series of short parallel propeller wounds or scars on the right lateral aspect. Some tissue from the caudal ventrum was eroded and stringy due to decomposition.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

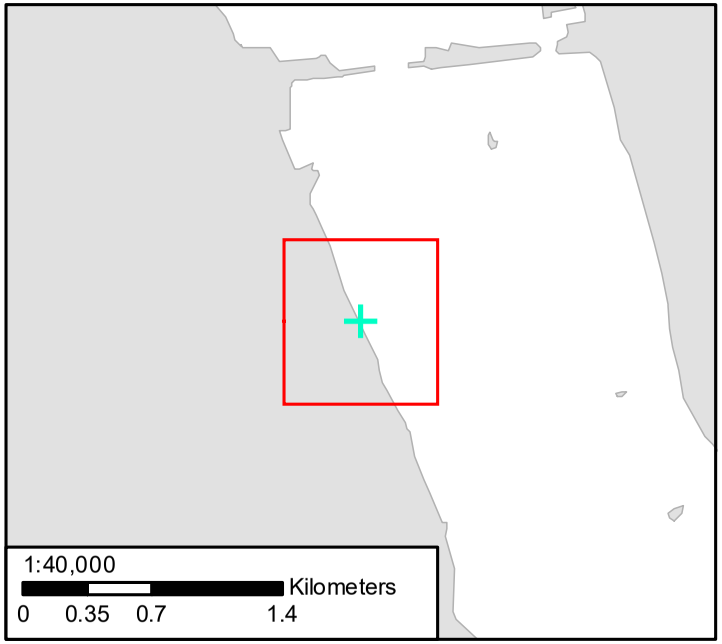
NECROPSY CONDUCTED BY N/A

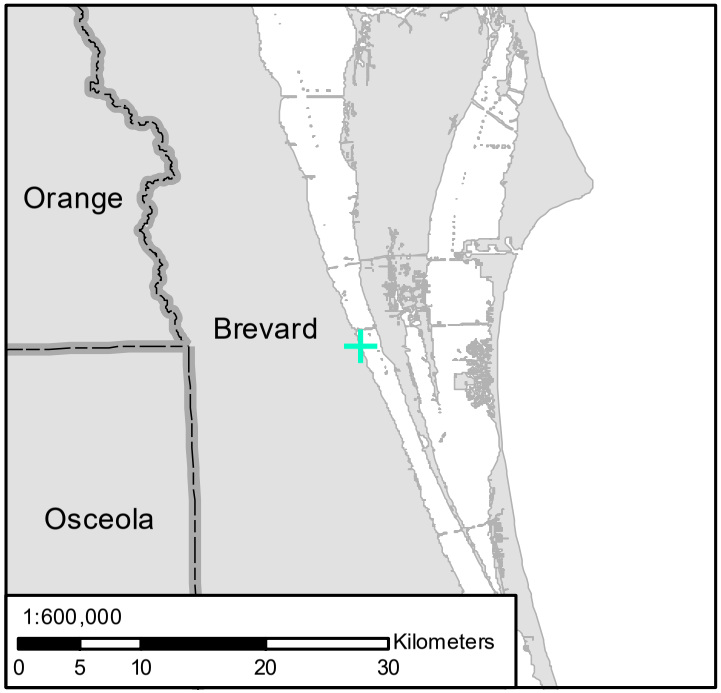
REPORT FILED BY Wappes

Verified Location of Manatee Carcass MEC20121

Report Date: 7/5/2020 **Received Date**: **Received By**:







Location: Rockledge, Brevard County

Latitude: 28.34373°N **Longitude**: -80.72019°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20121
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12508, 12563 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** _____
Date reported: 05 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Rockledge, approximately 40 m NE of 607 Rockledge Drive.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20122**
Date of Report: 2020-Jul-09
Filed By: FWC EC Field Station

FWC Case # 12813 **FWC Region:** NE

Sex: Male **Length:** 123 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-09 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jul-11 **By:** FWC-CMM

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.02144 **N**
County: Brevard **Longitude:** -80.59618 **W**
Waterway: Turkey Creek
Location description: Palm Bay, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Scavenging. Verified through complainant photograph and FWC biologist. External work-up performed, but necropsy not conducted.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20122

MORPHOMETRICS:

Total length:	123 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20122
SPECIES *T. manatus latirostris*
RECOVERY DATE 11 July 2020
NECROPSY DATE N/A
GENDER Male **TL** 123 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 09 July 2020, at 1630 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Turkey Creek, Palm Bay, Brevard County. FWC case number 12813 was assigned. The complainant, Cheri O'Neal (305-323-7963), stated that there was a dead baby manatee in the canal behind her residence. At 1641 hrs, CMM received photo verification. Based on time of day, a tow was not coordinated. **11 July**, at 0829 hrs, CMM arrived at the residence and performed an external work-up of the carcass. Due to the small size and significant decomposition, the carcass was not necropsied. At 0920 hrs, CMM launched a kayak at the residence and towed the carcass to a remote location to decompose.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was distended with gas. There were rents on the face due to scavenging, and rents at the umbilicus and urogenital opening due to decomposition and/or scavenging. A few transverse folds were present on the ventrum. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

COMMENTS External work-up performed, but necropsy not conducted.

SIGNIFICANT FINDINGS

- Verified by complainant photograph and FWC biologist
- Fetal folds
- Scavenging

PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

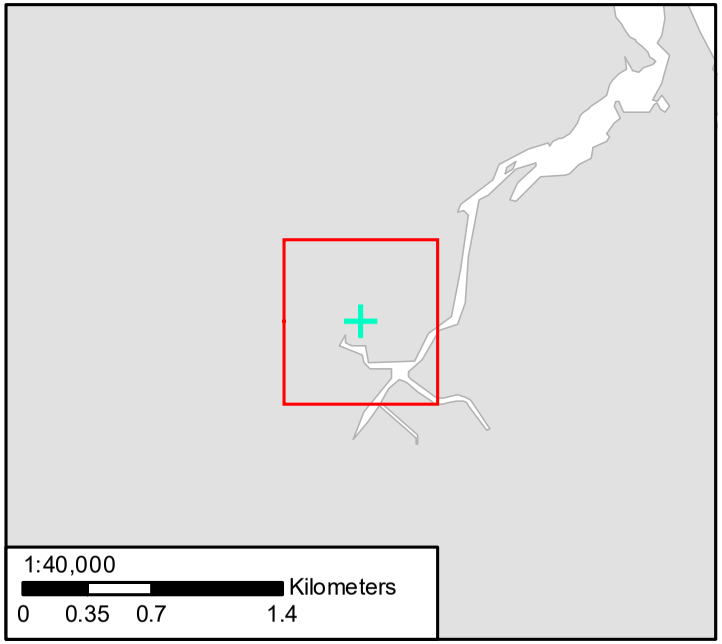
NECROPSY CONDUCTED BY N/A

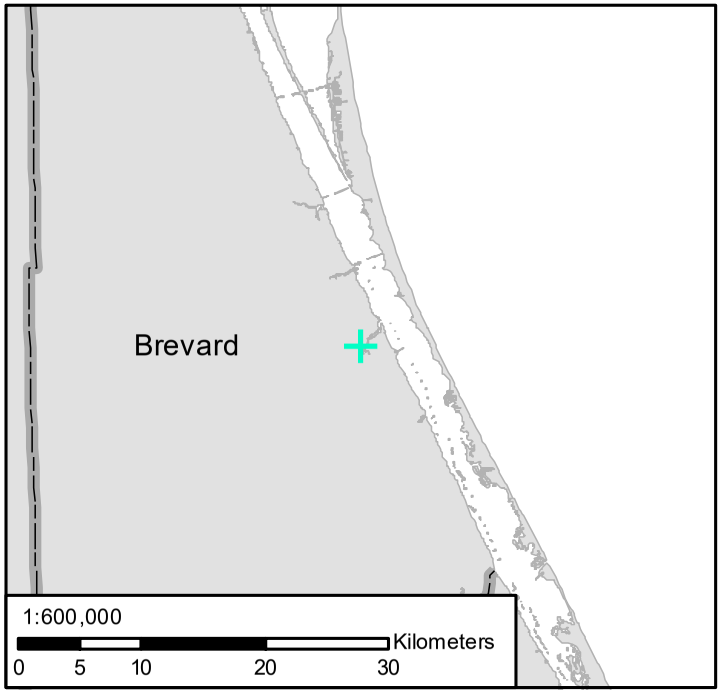
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20122

Report Date: 7/9/2020 **Received Date**: 7/11/2020 **Received By**: FWC-CMM







Location: Palm Bay, Brevard County

Latitude: 28.02144°N **Longitude**: -80.59618°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #**MEC20122
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12813 **FWC District**: Northeast
Sex: Male **Length (cm)**: 123 **Estimated** _____ **Weight (kg)** N/T
Date reported: 09 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 11 July 2020 **By**: FWC-CMM
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Turkey Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 20 meters SW of 974 Citrus Avenue NE

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: An external work up was performed and the carcass was towed to a separate location to naturally decompose

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20123**
Date of Report: 2020-Jul-10
Filed By: FWC EC Field Station

FWC Case # 12849 **FWC Region:** NE

Sex: Male **Length:** 275 **cm** (estimated-2) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-10 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.96269 **N**
County: Brevard **Longitude:** -80.51279 **W**
Waterway: Indian River
Location description: Melbourne Beach, grounded

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through photograph and FWC staff.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20123

MORPHOMETRICS:

Total length:	275 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20123
SPECIES *T. manatus latirostris*
RECOVERY DATE 10 July 2020
NECROPSY DATE N/A
GENDER Male **TL** 275 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 10 July 2020, at 0806 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee with a calf present in Indian River in Melbourne Beach, Brevard County. FWC case number 12849 was assigned. The complainant, Patricia Robertson (704-576-6087), stated that there was a manatee on its back that had not taken a breath with a 4-foot-long calf present. At 0812 hrs, CMM received a photo of the carcass and smaller manatee from the complainant. At 0915 hrs, CMM and FWC biologist-William D. Greer (WDG) arrived at the Melbourne Shores Community boat ramp and confirmed the reported calf was a juvenile or small adult attempting to mate with the carcass. WDG and CMM collected necropsy gear and the jon boat from the EC Field Station, returned to the community ramp, and launched the jon boat at 1000 hrs. During the recovery attempt, the weather began deteriorating making recovery difficult and ultimately unsafe. Due to unsafe conditions, forecasted inclement weather, and lack of social distancing and mask wearing by residents at the boat ramp (despite staff requests), the carcass was secured with a rope to a secluded section of mangroves at 1215 hrs. The carcass was not necropsied.

EXTERNAL All of the ventral epidermis was present. The dorsum was not examined. The carcass was distended with gas. A small round scar was present just cranial to the anus. PIT tag scan was not performed. A genetics sample was collected.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through photograph and FWC staff

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

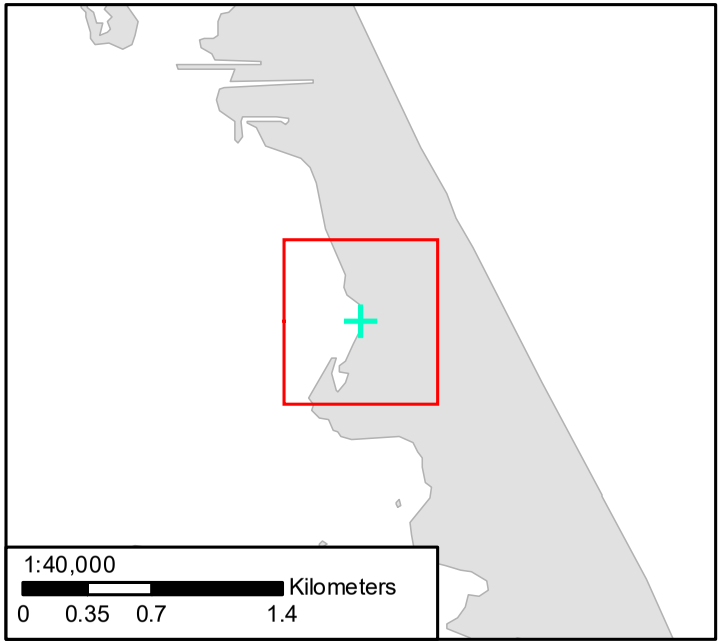
NECROPSY CONDUCTED BY N/A

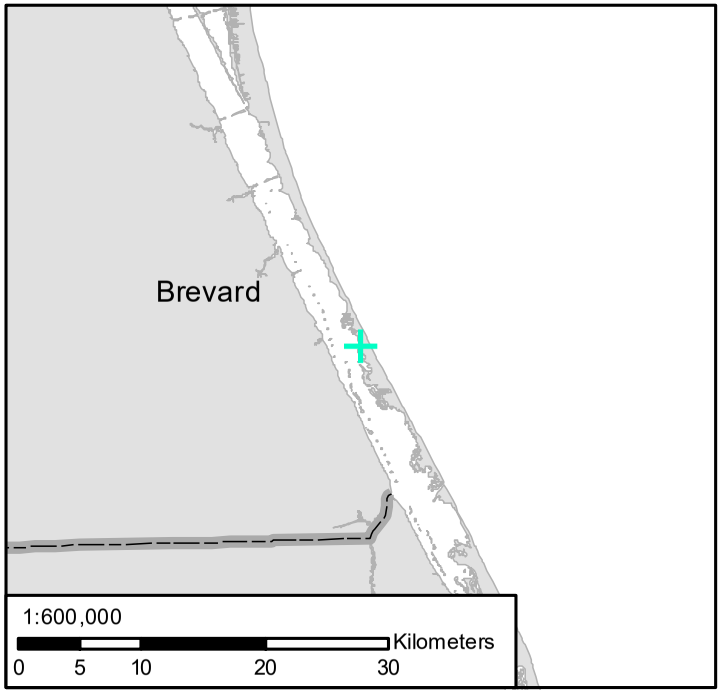
REPORT FILED BY Greer

Verified Location of Manatee Carcass MEC20123

Report Date: 7/10/2020 **Received Date:** **Received By:**







Location: Melbourne Beach, Brevard County **Latitude:** 27.96269°N **Longitude:** -80.51279°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20123
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12849 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 275 **Weight (kg)** N/T
Date reported: 10 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 July 2020 **By**: FWC- WDG, CMM
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne Beach, approximately 35 m SW of 5940 Riverside Drive
Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Staff attempted to recover for necropsy but due to unsafe weather conditions were unable to complete a field necropsy.

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20124**
Date of Report: 2020-Jul-14
Filed By: FWC EC Field Station

FWC Case # 13177 **FWC Region:** NE

Sex: Female **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-14 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.89576 **N**
County: Volusia **Longitude:** -80.85211 **W**
Waterway: Indian River North
Location description: Oak Hill, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Also FWC case numbers 13125, 13141, and 13153.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20124

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20124 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 14 July 2020, at 1629 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River North, Oak Hill, Volusia County. FWC case number 13125 was assigned. The complainant, Charles Templeton (386-566-2650), stated that there was a possible dead manatee floating near the mangroves. At 1642 hrs, CMM received a photo that was inconclusive, and it was decided to await further reports. At 1843 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a text alert from Dispatch regarding the carcass. FWC case number 13141 was assigned. The complainant, Jennifer (386-490-5964), stated that the manatee was large and wedged under a dock. At 1909 hrs, DMB received an inconclusive photo and forwarded the information to the EC Field Station. Plans were made to tow the carcass the following day because staff would be in the Oak Hill area for a manatee release. **15 July**, response by EC Field Station staff was delayed due to an orphaned calf rescue (RWC2018). At 0829 hrs, FWC biologist-William D. Greer (WDG) received a text alert from Dispatch regarding the carcass. FWC case number 13153 was assigned. The complainant, Dino Bonaventura (386-846-2991), stated that the manatee was white, bloated, and beached at the Lopez RV Park boat ramp. At 0842 hrs, WDG received a photo verifying the carcass. WDG called Dispatch to request an officer to tow the carcass, but none were available. WDG relayed that information to the complainant who offered to move it from the boat ramp area. The carcass was not secured. At 1253 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert regarding the carcass. FWC case number 13177 was assigned. The complainant, Drew Cavanaugh (352-223-7897), stated that the manatee was white, belly-up, and large. A photo was not provided. WDG requested LE assistance and FWC Officer-Jessica Pelzo was dispatched at 1538 hrs. Officer Pelzo could not locate the carcass. No additional reports were received and the carcass was not recovered or necropsied.

EXTERNAL From photographs - Approximately 50% of the ventral epidermis was present but sloughing. The carcass was distended with gas. Flies were present on the carcass.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

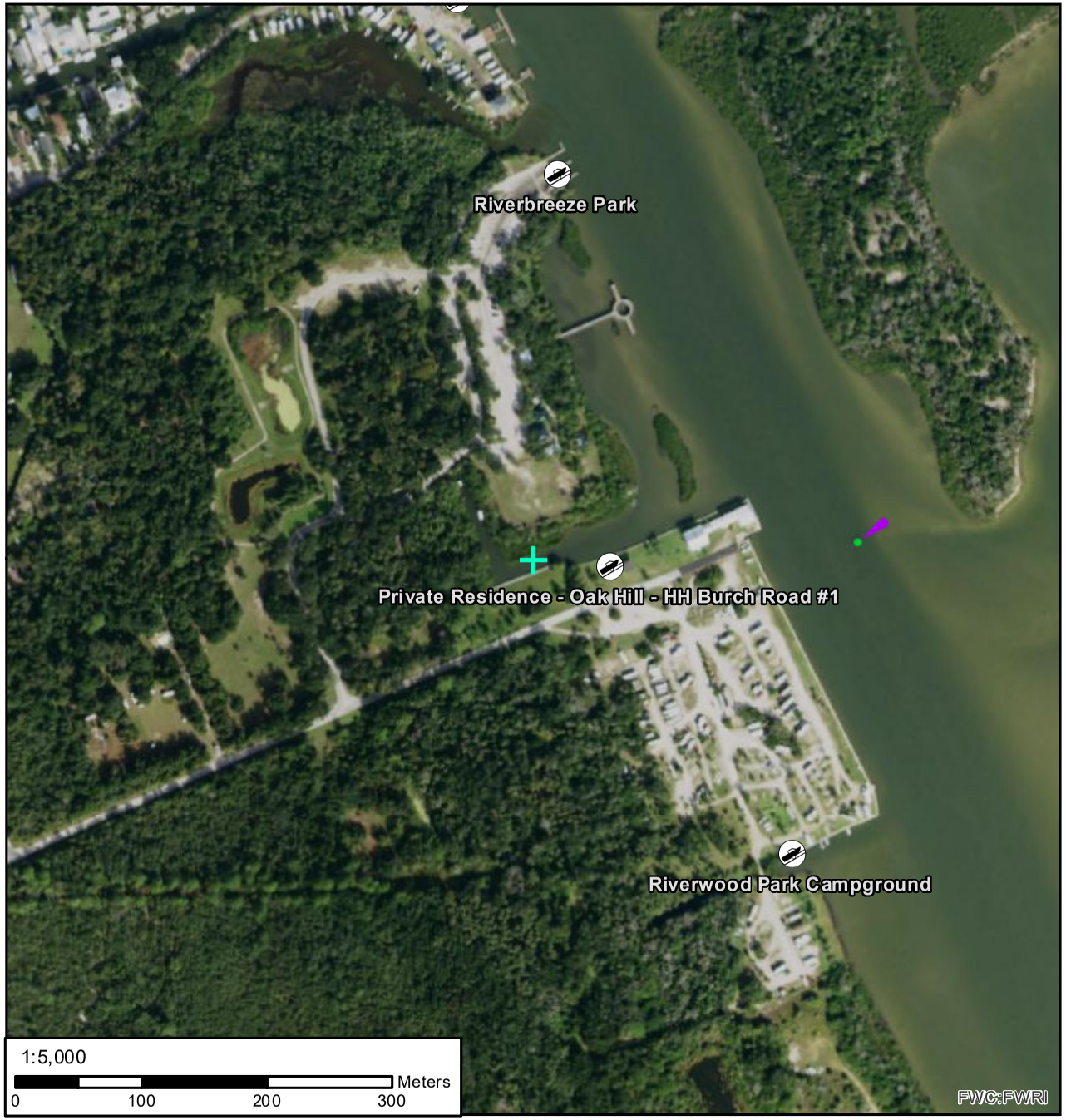
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

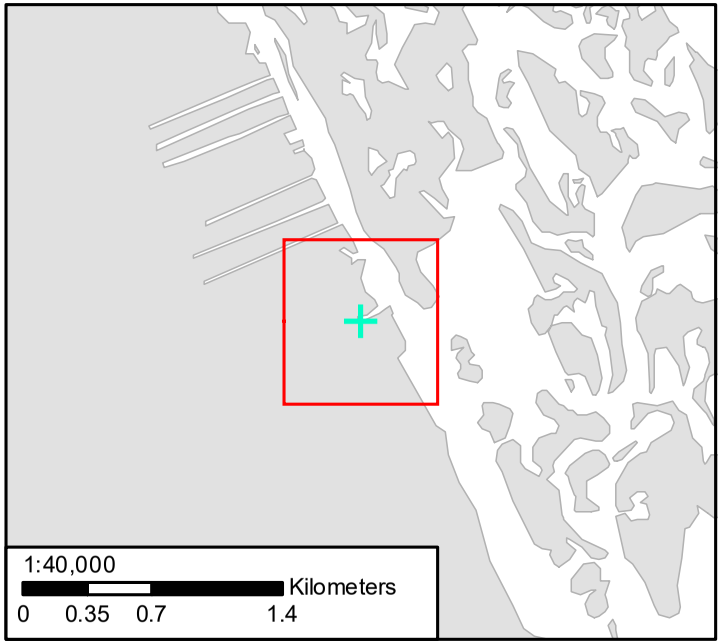
NECROPSY CONDUCTED BY N/A

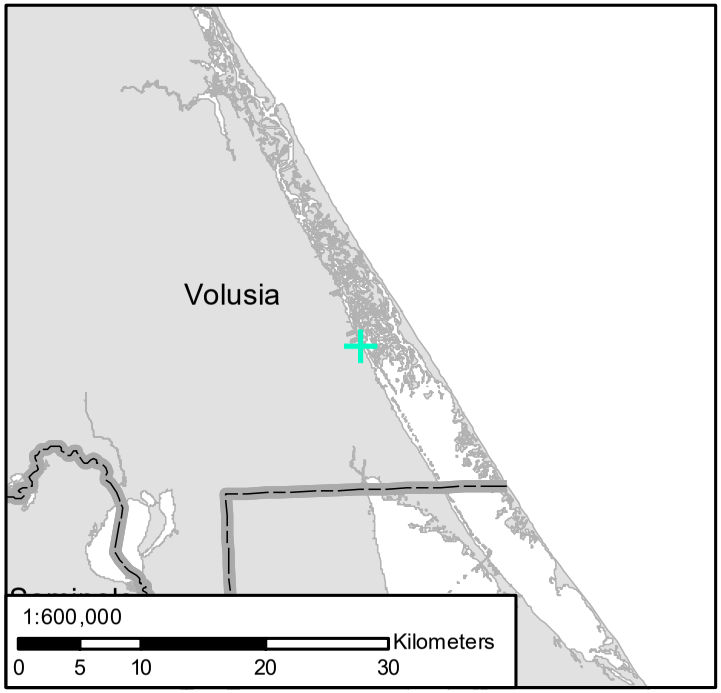
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20124

Report Date: 7/14/2020 **Received Date:** **Received By:**







Location: Oak Hill, Volusia County

Latitude: 28.89576°N **Longitude:** -80.85211°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #**MEC20124
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13125, 13141, 13153, 13177 **FWC District**: Northeast
Sex: Female ☐ **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** N/T
Date reported: 14 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 80 meters WNW of 290 H H Burch Road

Carcass Orientation: Floating ☐

CONDITION: Confirmed; Not Recovered ☐

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed ☐
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20125**
Date of Report: 2020-Jul-15
Filed By: FWC EC Field Station

FWC Case # 13186 **FWC Region:** NE

Sex: Male **Length:** 313 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-15 **By:** FWC Officer Humphrey to FWC-WDG

DATE COLLECTED: 2020-Jul-16 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2020-Jul-16 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.40739 **N**

County: Brevard **Longitude:** -80.71109 **W**

Waterway: Barge Canal

Location description: Merritt Island, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Fractured rib(s); Luxated rib(s); Sub-luxated rib(s); Fractured vertebra(e); Hemorrhagic muscle; Shredded muscle; Blood clots; Hemoabdomen; Blue paint mid dorsum; Bloody nares; Torn abdominal wall; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Sighting history.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in stomach. Macroalgae in GI tract. Scavenging. Known as MIPS ID BC702, first sighted on 08 Jan 2009 at Berkeley Street Canal.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20125

MORPHOMETRICS:

Total length:	313 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20125
SPECIES *T. manatus latirostris*
RECOVERY DATE 16 July 2020
NECROPSY DATE 16 July 2020
GENDER Male **TL** 313 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 15 July 2020, at 0958 hrs, FWC biologist-William D. Greer (WDG) received a phone call from FWC Officer-Jordan Humphrey (JH) regarding a dead manatee in the Barge Canal in Merritt Island, Brevard County. JH stated that the manatee was back-up, dead, and quite large. WDG requested a photo and asked JH to tow the carcass to a remote location. At 1002 hrs, JH sent WDG a photo of the carcass via text. At 1010 hrs, JH informed WDG that she was unable to secure the carcass and would not be able to tow it. EC Field Station staff were at SeaWorld Orlando dropping off REC2018 and assisting with loading REC2014 for release at Blue Spring State Park and were unable to respond. At 1521 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Barge Canal. FWC case number 13186 was assigned. The complainant, Scott McClain (813-245-8527), stated that the manatee was large, gray, and back-up. At 1548 hrs, CMM received a photo via text from the complainant. **16 July**, at 1030 hrs, WDG and FWC biologist-Sara M. Wappes launched the Key West boat from the Cape Crossing boat ramp in Merritt Island. The carcass was located and towed to a nearby spoil island where a field necropsy was completed at 1240 hrs. The remains were left onsite.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the nares. There was a thin brown algal mat on the dorsal and lateral aspects. A small area of faint blue paint was observed on the mid left dorsal aspect, and the dermis underneath was discolored grey. There were rents on the right flipper due to scavenging. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. No watercraft wounds were grossly observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. There were loose, well-formed blood clots in the abdominal cavity (see photo).

STOMACH The stomach contained 15.2 L of moist, moderately chewed, stringy, tubular, green, red and yellow macroalgae (see photo). The ingesta were coated in white to pink mucus. The mucosa was stained pink. No parasites were observed. An approximately 15 cm long piece of >10lb test diameter clear monofilament line was observed in the contents.

DUODENUM The duodenum contained 2.1 L of wet, moderately chewed, stringy, tubular, yellow and green macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was friable when handled. The small intestine was mostly empty of contents, but some sections contained moist, poorly chewed, stringy, tubular, yellow to green macroalgae. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 3.5 L of wet, moderately digested, stringy, tubular, yellow and green digesta including macroalgae. The mucosa was black and sloughing. No parasites were observed.

COLON The colon was friable when handled and contained moist, poorly formed, moderately digested, stringy, green to brown feces throughout. The mucosa was autolyzed. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was mottled grey and black on serosal surfaces, and dark red on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained approximately 10 mL of slightly viscous, orange to brown bile. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The kidneys were missing due to decomposition and/or trauma.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was gassy.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition and/or trauma. The lungs were soft, friable, gassy, and autolyzed. The primary airways were clear. No parasites were observed.

HEAD & NECK REGIONS There was one piece of poorly chewed seagrass in the mouth (see photo).

SKELETON Left ribs 8 - 11 had oblique fractures at the proximal one-quarter. Left ribs 12 and 13 were luxated. Left rib 14 was sub-luxated. Left rib tips 11 and 12 tore the abdominal wall. There were shredded, hemorrhagic tissue and well-formed blood clots surrounding the fractured and luxated ribs (see photos). The tips of the left transverse processes of T10 and T11 were fractured (see photos).

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Blue paint, discolored grey mid left dorsum
- Bloody nares
- Fractured, (sub)luxated ribs
- Fractured vertebrae
- Shredded, hemorrhagic muscle
- Hemoabdomen
- Blood clots
- Torn abdominal wall
- Seagrass in mouth
- Macroalgae in GI tract
- Monofilament in stomach
- Autolyzed, missing internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes

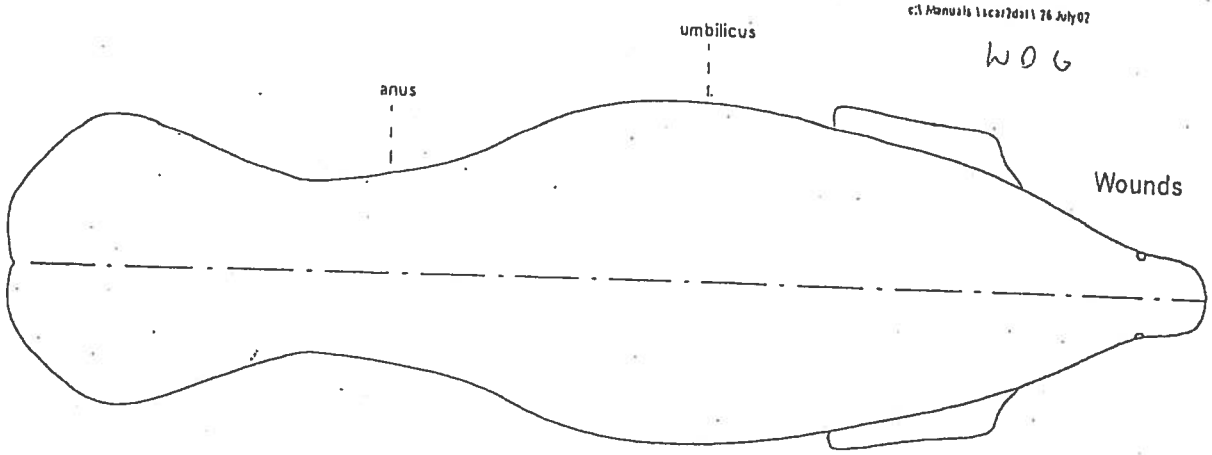
REPORT FILED BY Greer / Wappes

Date 16 JULY 2020

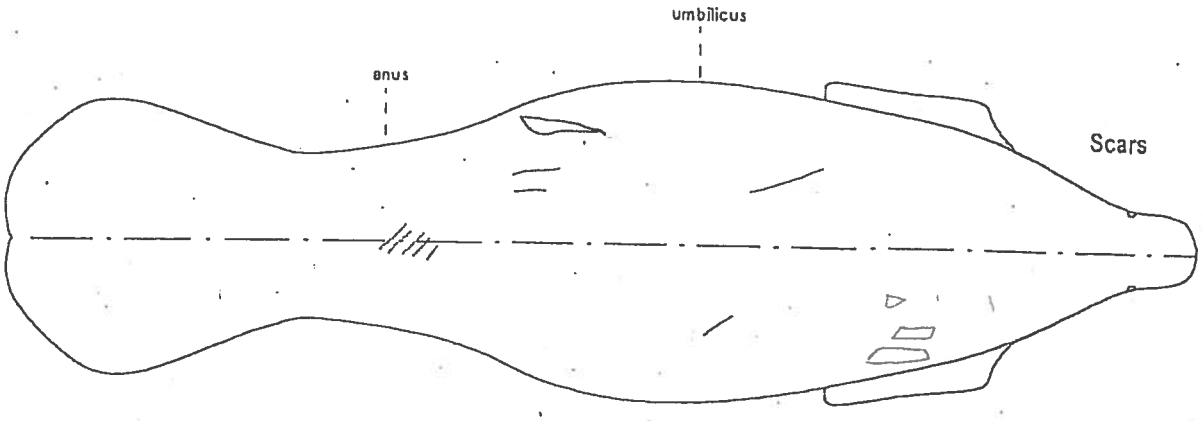
Field I.D. MEC20125.

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WOG

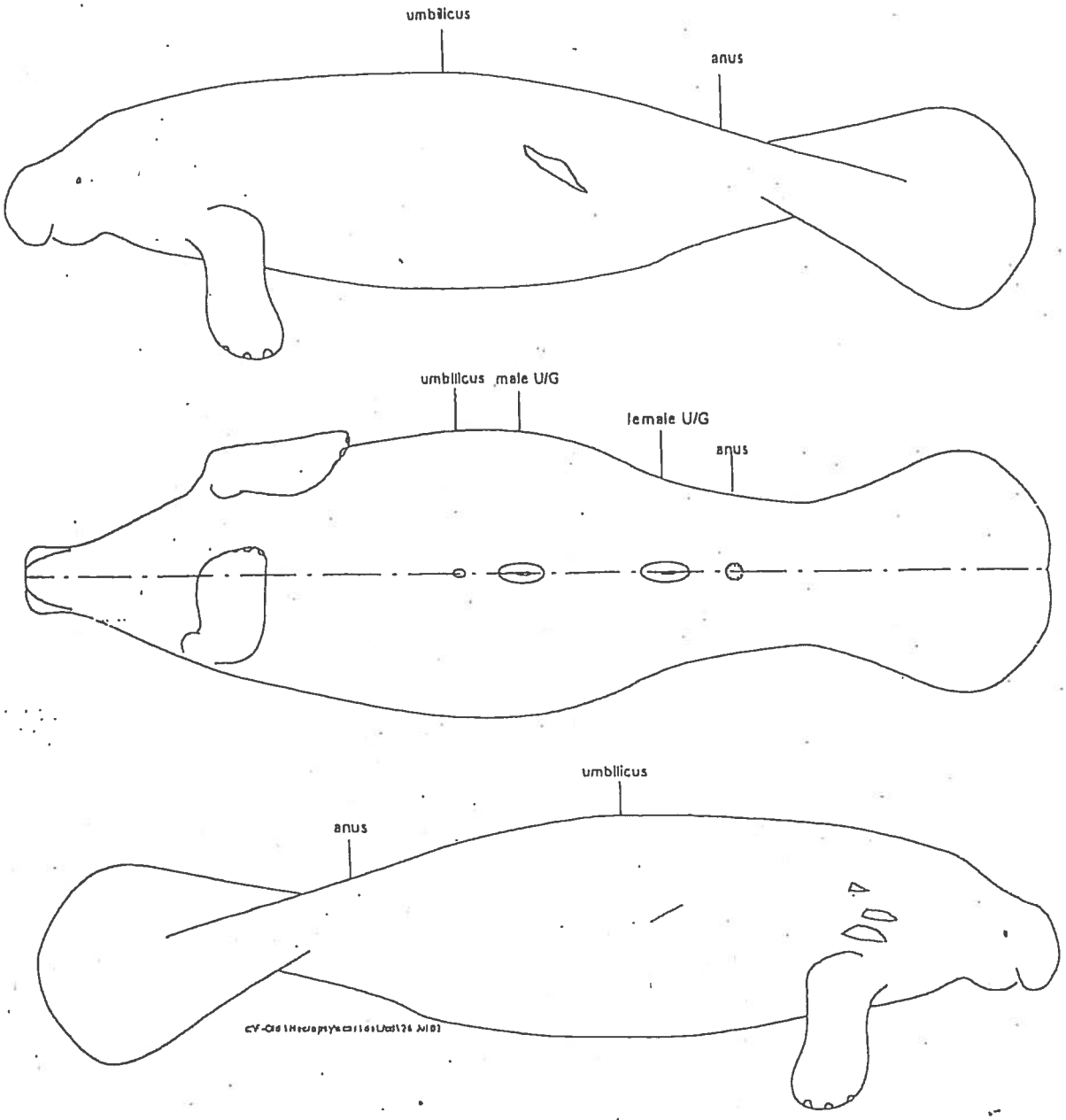


Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



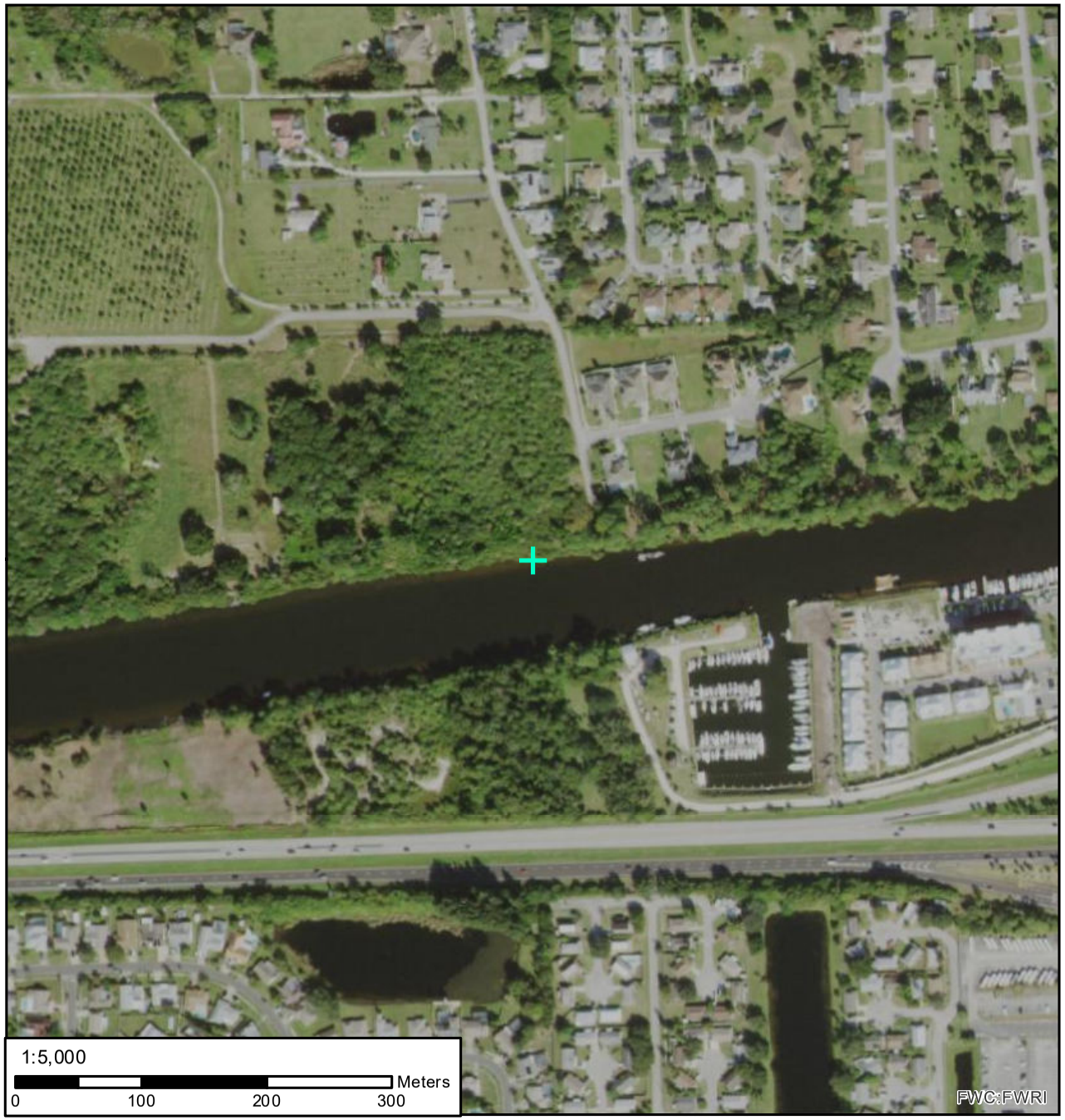
FIELD I.D. MEC 23125

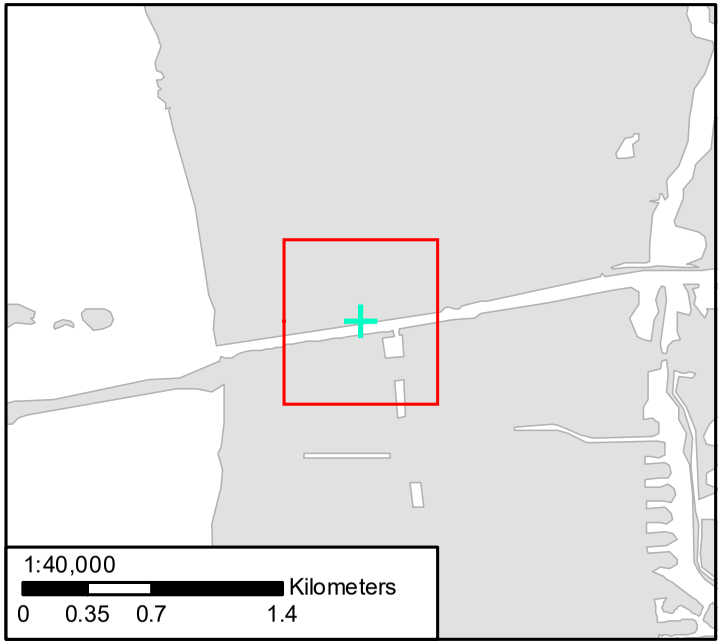
WDG

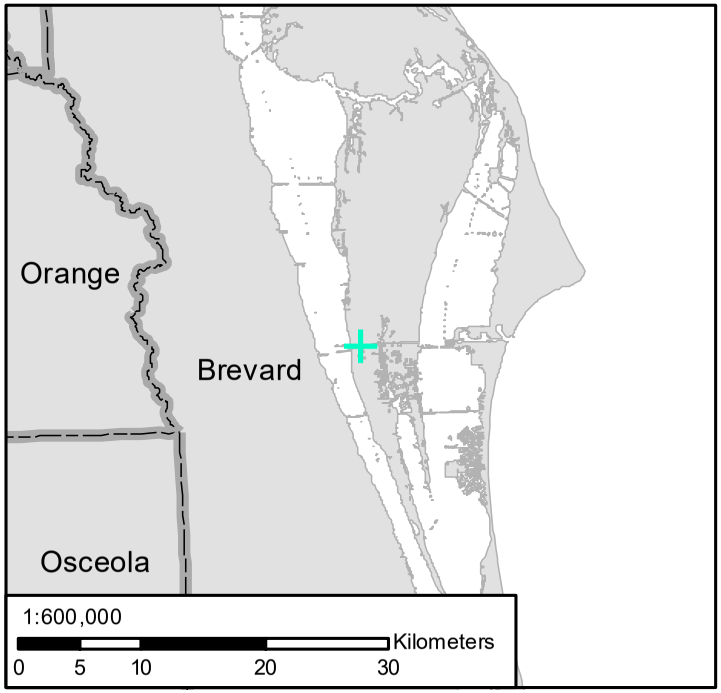


Verified Location of Manatee Carcass MEC20125

Report Date: 7/15/2020 **Received Date**: 7/16/2020 **Received By**: FWC-WDG,SMW







Location: Merritt Island, Brevard County

Latitude: 28.40739°N **Longitude**: -80.71109°W

Map Created: 3/29/2021

Bassett, Brandon

From: Rood, Kari
Sent: Friday, July 17, 2020 10:30 PM
To: Howell, Amber; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Boyd, Denise; Burns, Allison; Davidson, Emily; Deutsch, Chip; deWit, Martine; Edwards, Holly; Faucett, Blake; Fontaine, Christine; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Martz, Meg; Metcalf, Carley; Nader, Ana; Panike, Anna; Peek, Austin; Schubert, Molly; sheri@mote.org; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC20125=BC702

MEC20125=BC702

Carcass location: Not available yet
Male

First sighted 1/8/09 at Berkeley Street Canal
Last sighted 5/1/13 at Indian River, Riverside Inn
USGS should be able to provide a complete sighting history if needed.

Verifiers: HONAKER & KAH – 7/17/20

Sighting records are not to be used without permission from FWC, MML, and/or USGS, as appropriate.

Kari A. Rood
Manatee Photo-identification
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, FL 33701

Direct line: (727) 502-4737
Main line: (727) 896-8626
Kari.Rood@MyFWC.com
http://MyFWC.com
http://MyFWC.com/research/

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20125
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13186 **FWC District**: Northeast
Sex: Male **Length (cm)**: 313 **Estimated** _____ **Weight (kg)** N/T
Date reported: 15 July 2020 **By**: FWC Ofc. Jordan Humphrey to FWC-WDG
Date collected: 16 July 2020 **By**: FWC-WDG, SMW
Date necropsied: 16 July 2020 **By**: FWC-WDG, SMW

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Barge Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 95 m SW of 161 Edgewater Way

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: 3 fractured ribs, 2 luxated ribs, 1 subluxated rib, well-formed blood clots, hemorrhagic tissue associated with fractured ribs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: No external wound was observed. Carcass was dorsum up.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20127**
Date of Report: 2020-Jul-23
Filed By: FWC EC Field Station

FWC Case # 13703 **FWC Region:** NE

Sex: Male **Length:** 223 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-23 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jul-24 **By:** FWC-WDG,SMW,CMM

DATE NECROPSIED: 2020-Jul-24 **By:** FWC-WDG,SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.4909 **N**
County: Brevard **Longitude:** -80.77414 **W**
Waterway: Indian River
Location description: Cocoa, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Monofilament in small intestine. Depleted fat(s); Bloody nares; Plication, intussusception on small intestine; Linear, necrotic yellow lesions small intestine-, duodenum mucosa; Bloody small intestine contents; Sand in duodenum, colon; Fluid in pleural cavities.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Healing skin lesions; Also FWC case numbers 13694 and 13700.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20127

MORPHOMETRICS:

Total length:	223 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20127
SPECIES *T. manatus latirostris*
RECOVERY DATE 24 July 2020
NECROPSY DATE 24 July 2020
GENDER Male **TL** 223 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 23 July 2020, at 1250 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Cocoa, Brevard County. FWC case number 13694 was assigned. The complainant, Clyde McCoy (352-874-8646), described a belly-up, dead manatee floating past his apartment complex. At 1255 hrs, CMM received a photo of the carcass. A response was planned for the following day. At 1504 hrs, CMM received a text alert from Dispatch regarding the same manatee. FWC case number 13700 was assigned. The complainant, Tom McCool (260-402-1633), reported an injured or possibly dead manatee. At 1515 hrs, CMM received a photo of the carcass. At 1619 hrs, CMM received a text alert from Dispatch about the same manatee. FWC case number 13703 was assigned. The complainant, Troy (478-538-9709), described a belly-up manatee grounded in the cove next to his apartment complex and sent a photo. **24 July**, at 1117 hrs, CMM and FWC biologist-Sara M. Wappes (SMW) launched the Key West boat at the OUC boat ramp and towed the carcass to the boat ramp. FWC biologist-William D. Greer (WDG) performed an external work-up and loaded the carcass into the carcass trailer by 1221 hrs while SMW and CMM towed MEC20129. WDG transported the carcass to the Brevard County Landfill at 1330 hrs along with MEC20127, MEC20128, and MEC20129. A field necropsy was completed by 1456 hrs.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the nares. The eyes were bulging due to decomposition. Several small healing lesions were observed on all aspects. One well-healed round scar was observed on the dorsal fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal and omental fat. There was moderate mesenteric fat.

STOMACH The stomach contained 5.5 L of moist, poorly chewed, stringy, leafy, orange, green, and brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 2 L of moist, poorly chewed, stringy, leafy, orange, green, and brown ingesta mixed with a small amount of watery, green fluid and sand (see photo). The mucosa was unremarkable except for a linear necrotic yellow lesion near the opening to the jejunum (see photo). No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained wet, poorly chewed, leafy, fibrous, orange to brown ingesta mixed with watery, brown fluid. The mid small intestine contained watery, bloody, red to brown fluid. The entire mid small intestine was plicated. A >10 lb test diameter, clear monofilament line was found in the mid small intestine. The monofilament was partially tangled within clumps of ingesta and initially measured 118 cm long. When detangled from the ingesta and straightened, the line measured 176 cm long. The proximal portion of the mid small intestine had a 15 cm long intussusception which involved a total length of 38 cm of intestine. The distal portion of the mid small intestine had an approximately 30 cm long intussusception (this portion was not measured due to being partly undone before being observed). There was a linear, necrotic yellow lesion throughout the mid small intestine wall that matched the width of the monofilament line (see photos). The proximal portion of the distal small intestine contained watery, red fluid. The distal portion of the distal small intestine contained watery, brown fluid. The mucosa of the proximal and distal small intestine was unremarkable. No parasites were grossly observed throughout.

CECUM The cecum contained 950 mL of moist, poorly digested, stringy, fibrous, green to brown digesta. The

mucosa was black and sloughing. No parasites were observed.

COLON The proximal colon contained moist, poorly digested, moderately formed, stringy, fibrous, green to brown feces. The mid colon contained moist, well-digested, moderately formed, stringy, fibrous, green to brown feces mixed with a small amount of sand. The distal colon contained moist, moderately formed, well-digested, leafy, stringy, fibrous, green to brown feces. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of reproductive fat. The seminal vesicles were small and empty of contents. The testes were small.

KIDNEYS There was a small amount of perirenal fat. The kidneys were brown to light pink on serosal surfaces. On cut surfaces, the cortices were pink to brown and the medullae were pink. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 75 mL of flocculent, pink urine. The mucosa was unremarkable.

HEART There was a small amount of epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. Each pleural cavity contained approximately 300 mL of watery, red fluid. The lungs were pink to black on serosal surfaces and dark pink to red on cut surfaces. No parasites were observed. There was a small amount of watery, red fluid in the primary airways.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Depleted fat
- Monofilament in small intestine
- Plication and intussusception of small intestine
- Bloody small intestine contents
- Linear necrotic lesions in small intestine-, duodenum mucosa
- Sand in duodenum, colon
- Fluid in pleural cavities
- Healing skin lesions

- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Human; Other

NECROPSY CONDUCTED BY

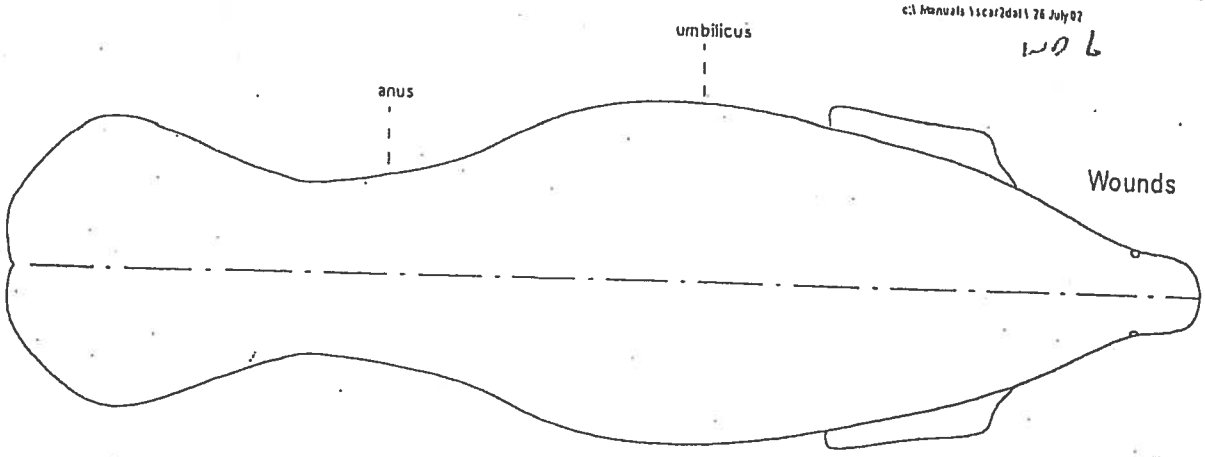
William D. Greer
Sara M. Wappes
Carley M. Metcalf

REPORT FILED BY Metcalf / Greer

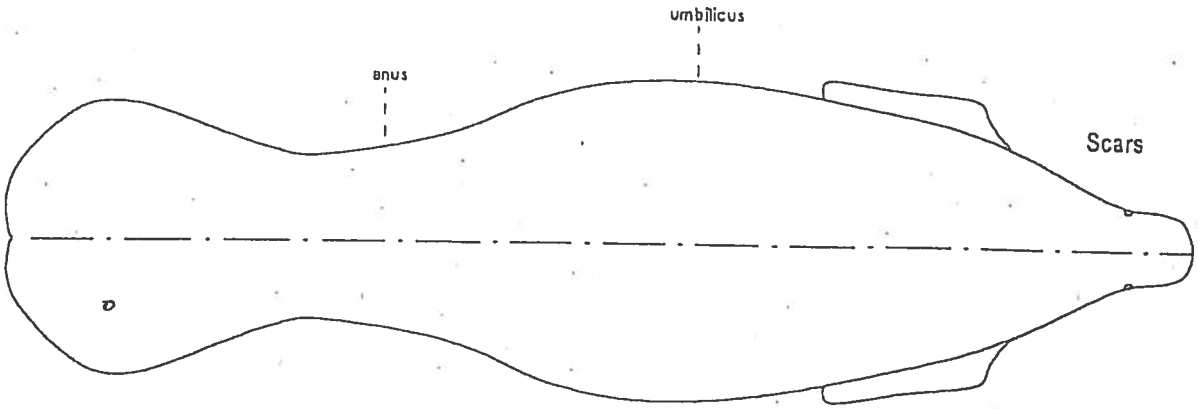
Date 24 JULY 2020 Field I.D. MEC 20-127

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NOL



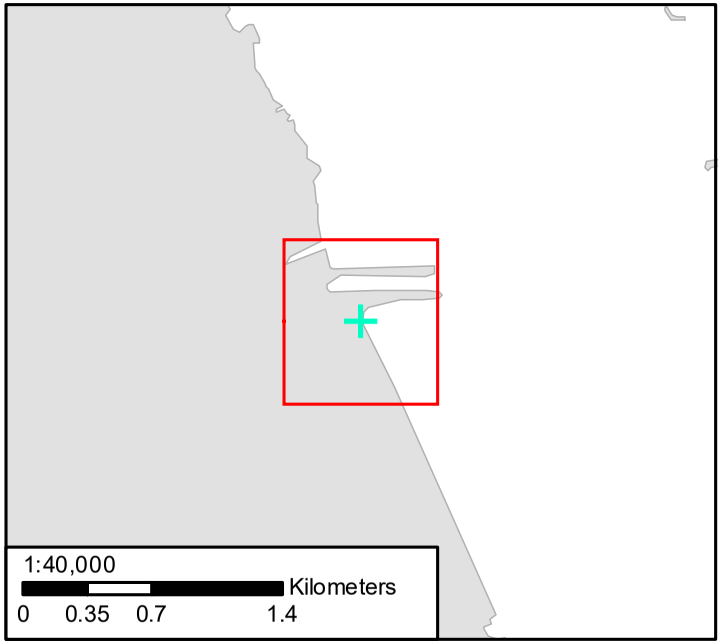
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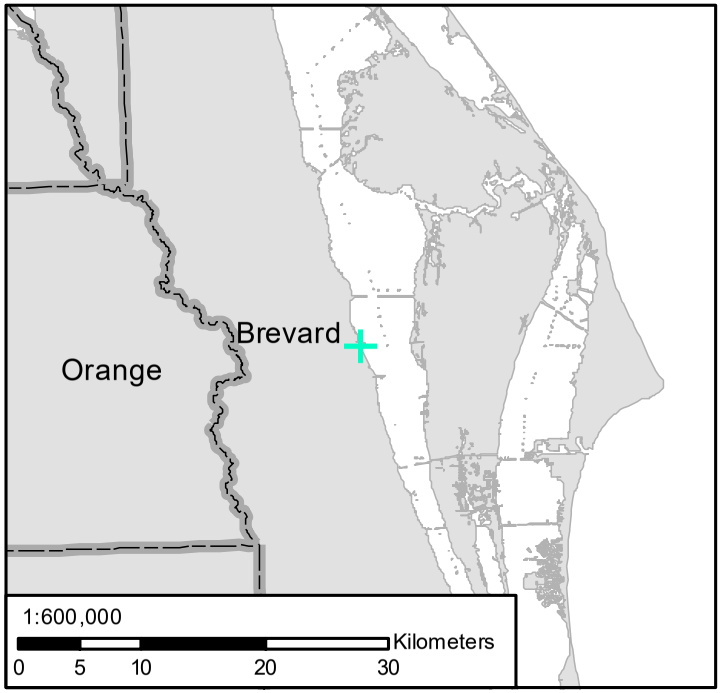


Verified Location of Manatee Carcass MEC20127

Report Date: 7/23/2020 **Received Date:** 7/24/2020 **Received By:** FWC-WDG,SMW,CMM







Location: Cocoa, Brevard County **Latitude:** 28.4909°N **Longitude:** -80.77414°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20127
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13694, 13700, 13703 **FWC District**: Northeast
Sex: Male **Length (cm)**: 223 **Estimated** _____ **Weight (kg)** N/T
Date reported: 23 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 24 July 2020 **By**: FWC-SMW, WDG, CMM
Date necropsied: 24 July 2020 **By**: FWC-SMW, WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 30 meters NE of 7460 US-1

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☑ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: 176 cm of clear mono-filament from duodenum to small intestine. Line adhered to intestine wall, pus present throughout small intestine. Bloody contents in distal and mid small intestine.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20128**
Date of Report: 2020-Jul-23
Filed By: FWC EC Field Station

FWC Case # 13711 **FWC Region:** NE

Sex: Female **Length:** 323 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-23 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Jul-24 **By:** FWC-WDG,SMW,CMM
DATE NECROPSIED: 2020-Jul-24 **By:** FWC-WDG,SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.4526 **N**
County: Brevard **Longitude:** -80.76125 **W**
Waterway: Indian River
Location description: Cocoa, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Wet lung(s); Bloody lung(s); Bloody nares; Fluid in pleural cavities; Sediment in primary airways; Macroalgae in GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed. Fabric in stomach.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20128

MORPHOMETRICS:

Total length:	323 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right	17	7.3
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20128
SPECIES *T. manatus latirostris*
RECOVERY DATE 24 July 2020
NECROPSY DATE 24 July 2020
GENDER Female **TL** 323 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 23 July 2020, at 1751 hrs, FWC on-call biologist-Anna L. Panike (ALP) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Cocoa, Brevard County. FWC case number 13711 was assigned. The complainant, Pat Beall (321-480-8066), stated that there was a large dead manatee in a mating herd in shallow water. At 1833 hrs, ALP received a video of the carcass from the complainant and forwarded the information to EC Field Station staff. **24 July**, at 1020 hrs, FWC biologists-William D. Greer (WDG), Sara M. Wappes (SMW) and Carley M. Metcalf (CMM) arrived at the Port St. John boat ramp and launched the Key West boat. The carcass was towed to the boat ramp and WDG loaded it into a carcass trailer at 1117 hrs. EC Field Station staff then collected MEC20127 and MEC20129. WDG arrived at the Brevard County Landfill at 1330 hrs with all three carcasses. A field necropsy was completed by 1630 hrs.

EXTERNAL Approximately 50% of the epidermis was present but sloughing. Bloody fluid exuded from the nares. The carcass was distended with gas. There was a rent at the urogenital opening due to decomposition through which a portion of the colon protruded. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal and right lateral aspect. There was one well-healed linear scar along the midline of the ventrum. Three well-healed circular mutilations were observed between the 3 and 5 o'clock positions of the fluke margin. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 18 L of moist, poorly chewed, stringy, leafy, green ingesta mixed with red and yellow macroalgae and black and white banded vegetation (see photo). The contents were coated in white to pink mucus. There was a 68 x 15 cm piece of black cloth in the contents that had the texture and consistency of pantyhose (see photo). The mucosa was stained slightly pink. No parasites were observed.

DUODENUM The duodenum contained 5.6 L of wet, poorly chewed, stringy, leafy, green ingesta mixed with yellow and black and white banded macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained wet, moderately chewed, poorly formed, leafy, green ingesta mixed with tubular yellow macroalgae, black and white banded macroalgae, and watery, green fluid. The mid small intestine contained moist, moderately chewed, poorly formed, leafy, green ingesta mixed with tubular yellow macroalgae and black and white banded macroalgae. The distal small intestine contained viscous, gray fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 3.8 L of moist, poorly digested, stringy, leafy, green digesta mixed with tubular, yellow macroalgae and black and white banded macroalgae (see photo). The mucosa was sloughing. No parasites were observed.

COLON The proximal and mid colon contained moist, poorly formed, poorly digested, stringy, slightly fibrous, slightly leafy, tubular, yellow to brown feces. The distal colon contained moist, poorly formed, well-digested, slightly stringy, homogeneous, dark green feces. The mucosa was sloughing throughout. The proximal and mid colon mucosa was white, and the distal colon mucosa was black.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft and friable. Serosal surfaces were mottled blue and gray, and cut surfaces were brown.

GALLBLADDER The gallbladder contained a scant amount of slightly viscous, dark orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of reproductive fat. The uterus was contracted. The right uterine horn contained a scar (7.3 cm wide x 17 cm circumference). The ovaries were not examined.

KIDNEYS There was scant perirenal fat. The left kidney was tan to brown on serosal surfaces. The right kidney was gray to tan on serosal surfaces. On cut surfaces of both kidneys, the cortices were tan and the medullae were pink to red. The corticomedullary boundaries were distinct in the left kidney and indistinct in the right kidney.

URINARY BLADDER The urinary bladder contained a scant amount of watery, red-tinged fluid. The mucosa was unremarkable.

HEART There was moderate, gassy epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left pleural cavity contained 1.7 L and the right pleural cavity contained 2.9 L of watery, red-tinged fluid. The lungs were mottled gray and pink on serosal surfaces, and dark red, bloody and wet on cut surfaces (see photo). The primary airways contained a small amount of sediment (see photo). No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Bloody nares
- Wet, bloody lungs
- Sediment in primary airways
- Fluid in pleural cavities
- Macroalgae in GI tract
- Fabric in stomach
- Uterine scar

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

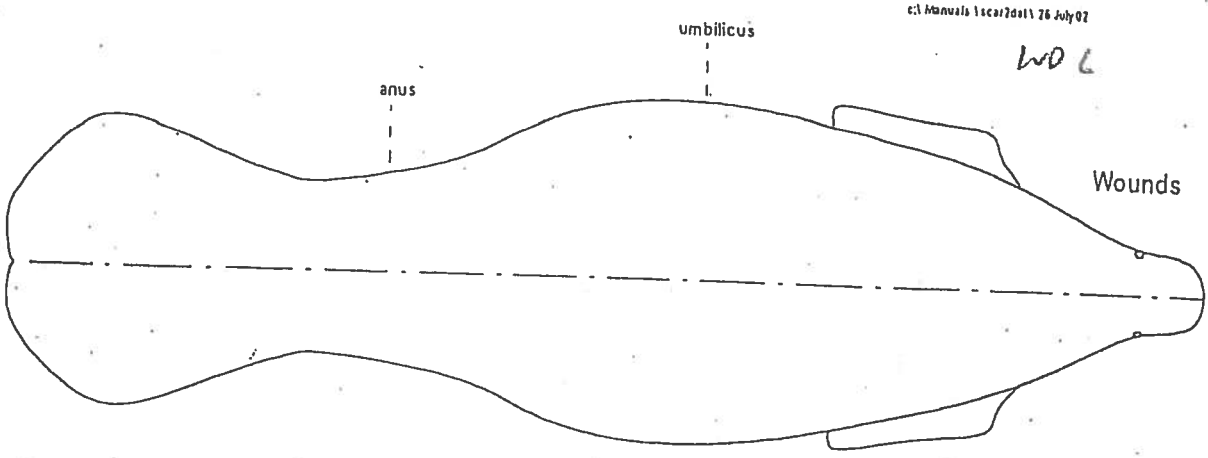
William D. Greer
Sara M. Wappes
Carley M. Metcalf

REPORT FILED BY Greer

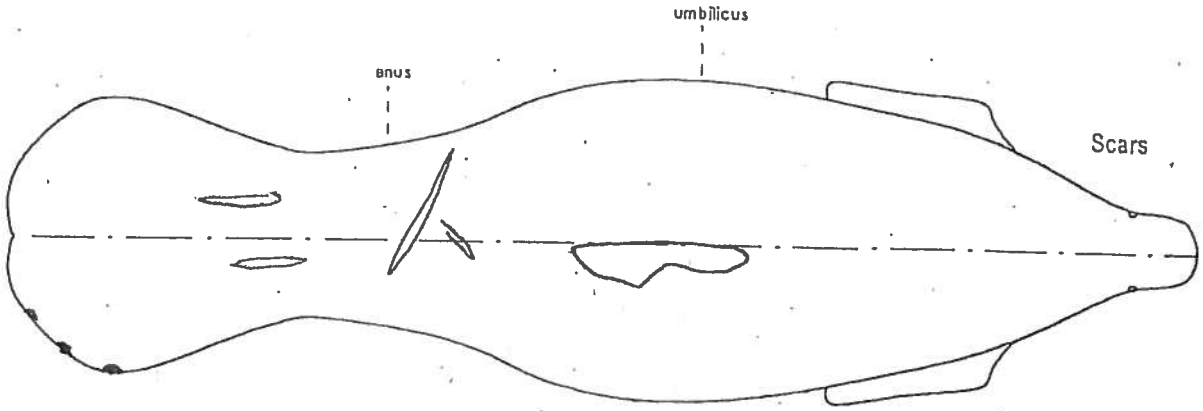
Date 24 July 2020 Field I.D. MRC20128

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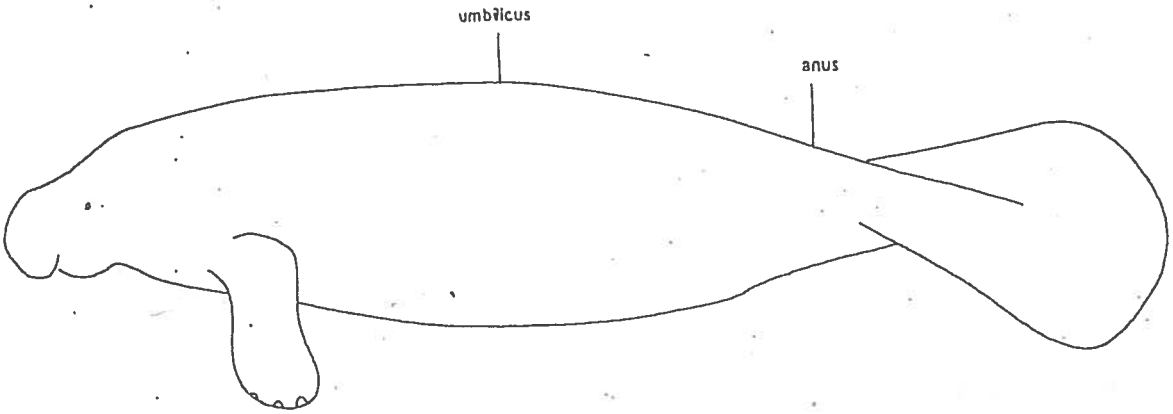
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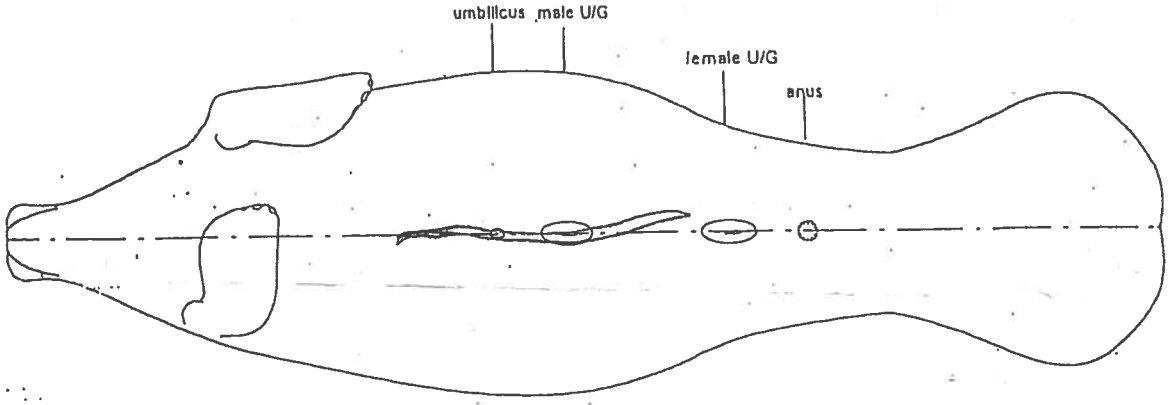


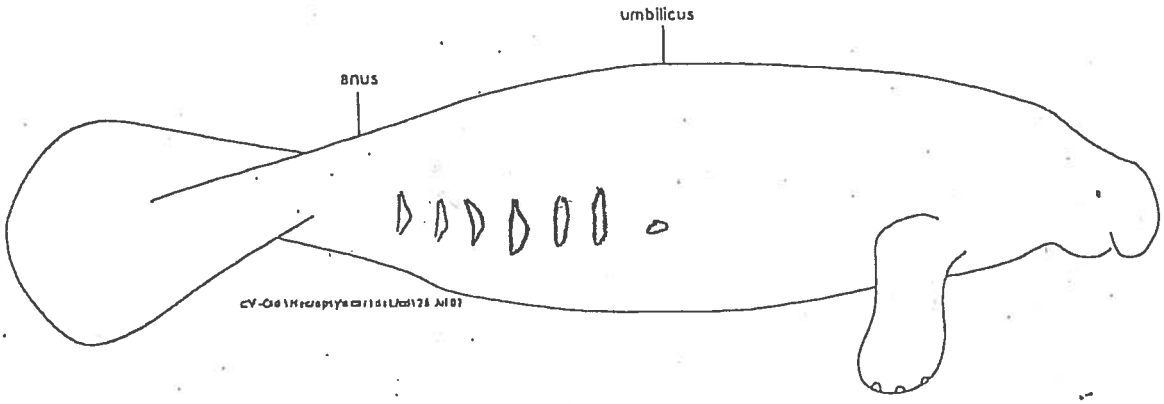
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FIELD I.D. MEC20128



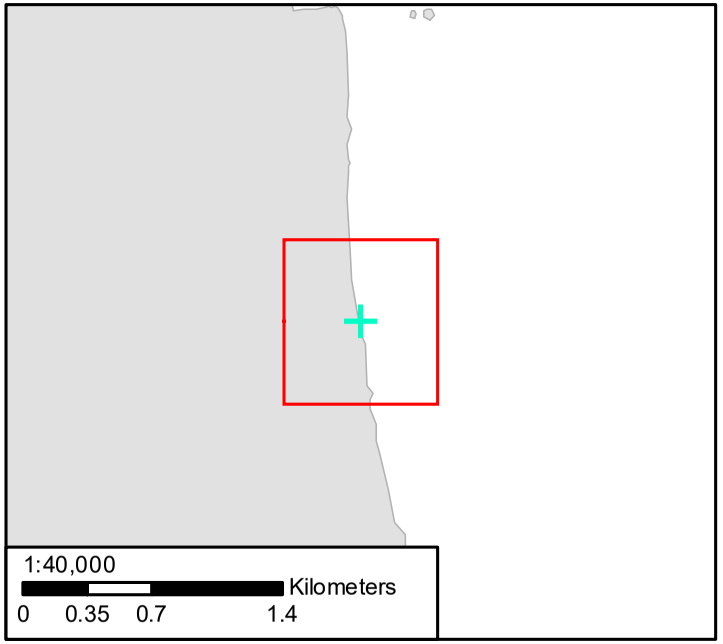


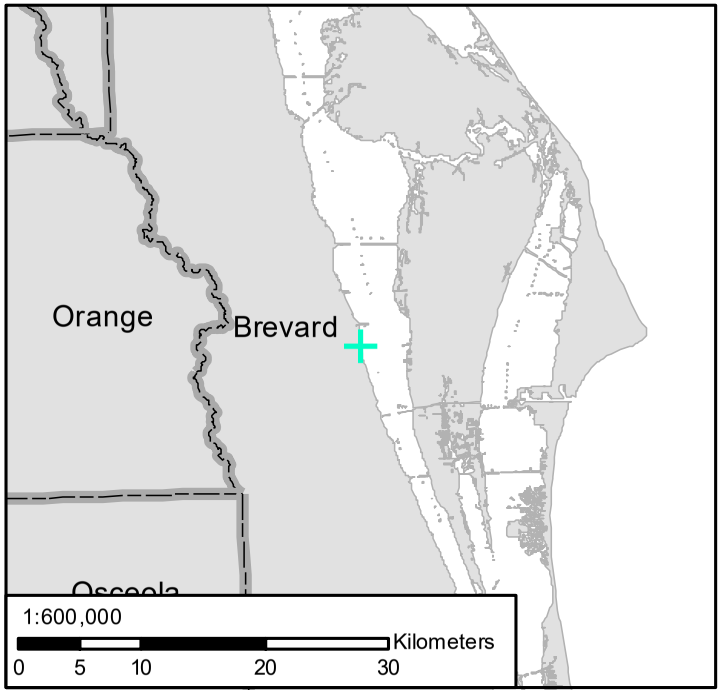


Verified Location of Manatee Carcass MEC20128

Report Date: 7/23/2020 **Received Date:** 7/24/2020 **Received By:** FWC-WDG,SMW,CMM







Location: Cocoa, Brevard County **Latitude:** 28.4526°N **Longitude:** -80.76125°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20128
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13711 **FWC District**: Northeast
Sex: Female **Length (cm)**: 323 **Estimated** _____ **Weight (kg)** N/T
Date reported: 23 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 24 July 2020 **By**: FWC-SMW, WDG, CMM
Date necropsied: 24 July 2020 **By**: FWC-SMW, WDG, CMM

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 35 meters SE of 100 Sea Grass Lane

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20129**
Date of Report: 2020-Jul-23
Filed By: FWC EC Field Station

FWC Case # 13719 **FWC Region:** NE

Sex: Male **Length:** 252 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-23 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Jul-24 **By:** FWC-WDG,SMW,CMM
DATE NECROPSIED: 2020-Jul-24 **By:** FWC-WDG,SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.51506 **N**
County: Brevard **Longitude:** -80.78204 **W**
Waterway: Indian River
Location description: Titusville, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Dry, hard feces; Empty stomach, duodenum.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20129

MORPHOMETRICS:

Total length:	252 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20129
SPECIES *T. manatus latirostris*
RECOVERY DATE 24 July 2020
NECROPSY DATE 24 July 2020
GENDER Male **TL** 252 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 23 July 2020, at 1849 hrs, FWC on-call biologist-Anna L. Panike (ALP) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Titusville, Brevard County. FWC case number 13719 was assigned. The complainant, Nabil Itani (321-795-5223), stated that the manatee was floating behind his residence with vultures on it. At 1900 hrs, ALP received a verification photo and forwarded the information to the EC Field Station. **24 July**, at 1110 hrs, FWC biologists-Sara M. Wappes and Carley M. Metcalf arrived at the OUC boat ramp, launched the Key West boat, and towed MEC20127 then MEC20129. FWC biologist-William D. Greer loaded the carcass into the carcass trailer, along with MEC20127 and MEC20128, by 1252 hrs and transported all three carcasses to the Brevard County Landfill by 1330 hrs. A field necropsy was completed by 1516 hrs.

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There was a rent due to decomposition and/or scavenging on the head near the left eye. A minimum of one well-healed watercraft-related scar pattern was observed on the dorsal aspect. The fluke margin and the dermis on the cranial ventrum were eroded due to decomposition. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. There were loose feces in the abdominal cavity. Internal organs were missing unless mentioned below.

STOMACH The stomach contained a scant amount of watery, gray fluid (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained a small amount of watery, gray fluid (see photo). The mucosa was autolyzed. No parasites were observed.

CECUM The cecum contained 500 mL of wet, poorly digested, fibrous, stringy, yellow to brown digesta. The mucosa was autolyzed. No parasites were observed.

COLON The distal-most two meters of colon remained and contained dry, hard, well-formed, moderately digested, stringy, fibrous, green to brown feces (see photo). There were several unattached portions of colon which all contained moist, well-formed, well-digested, homogeneous, slightly stringy, green to brown feces. The mucosa was autolyzed throughout. No parasites were observed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER A small portion of the liver remained which was liquified.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was torn and empty of contents. The mucosa was unremarkable.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM The right hemidiaphragm was torn due to decomposition. The lungs were soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON The ribs were luxated and sub-luxated due to decomposition.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Empty stomach, duodenum
- Dry, hard feces

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

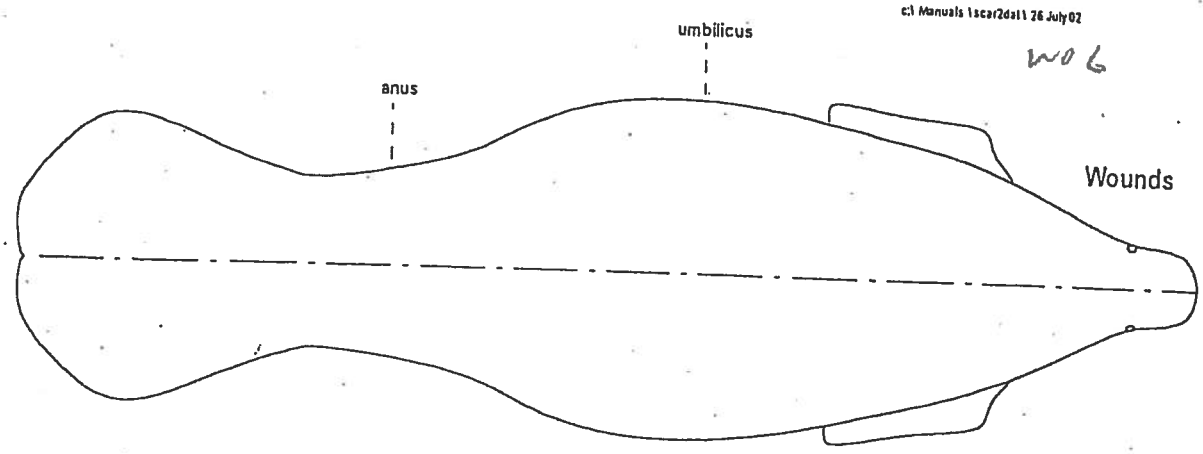
William D. Greer
Sara M. Wappes
Carley M. Metcalf

REPORT FILED BY Wappes

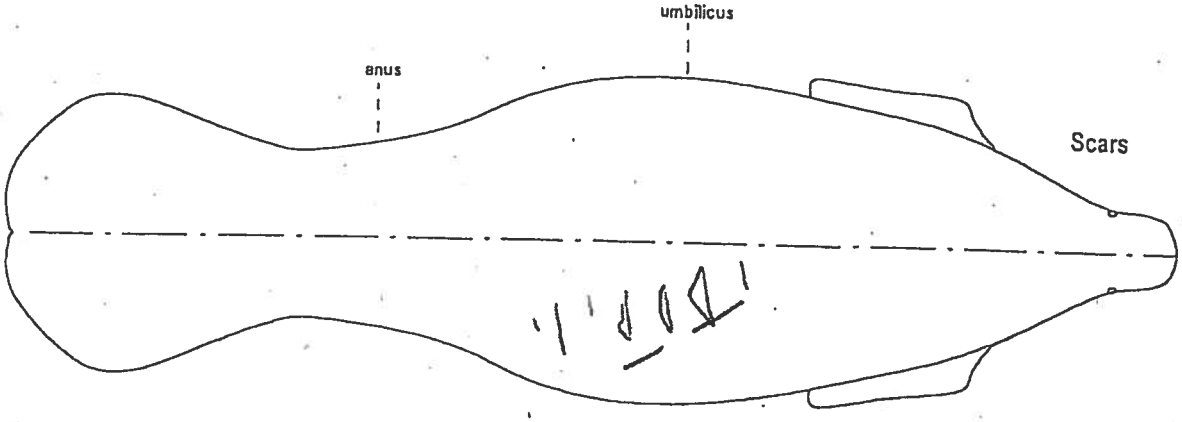
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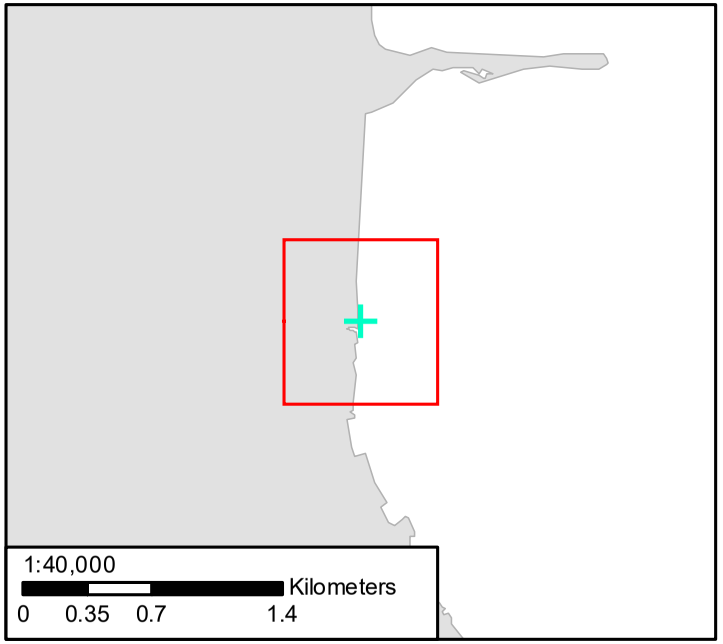
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Width																				
Depth																				
Distance																				

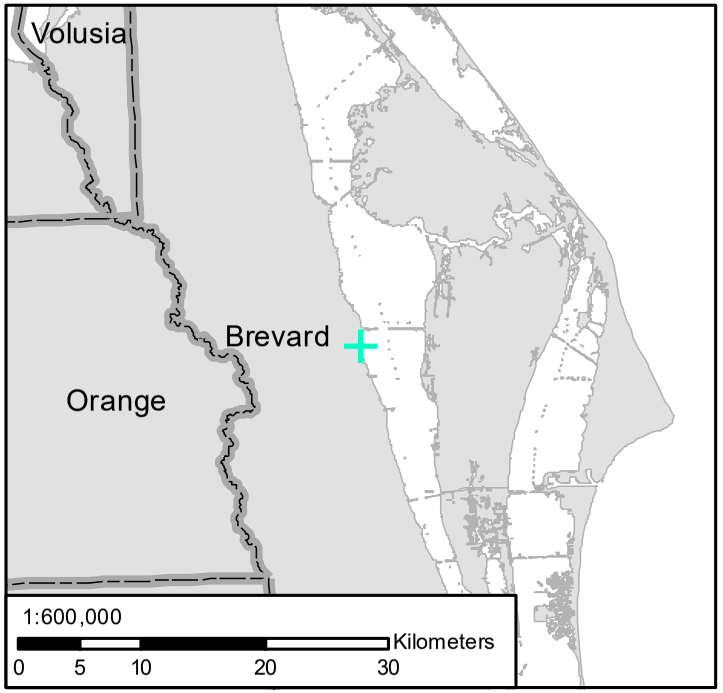


Verified Location of Manatee Carcass MEC20129

Report Date: 7/23/2020 **Received Date:** 7/24/2020 **Received By:** FWC-WDG,SMW,CMM







Location: Titusville, Brevard County

Latitude: 28.51506°N **Longitude:** -80.78204°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20129
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13719 **FWC District**: Northeast
Sex: Male **Length (cm)**: 252 **Estimated** _____ **Weight (kg)** N/T
Date reported: 23 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 24 July 2020 **By**: FWC-SMW, WDG, CMM
Date necropsied: 24 July 2020 **By**: FWC-SMW, WDG, CMM

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 30 m E of 6735 Riveredge Drive
Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☐ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20130**
Date of Report: 2020-Jul-26
Filed By: FWC EC Field Station

FWC Case # 13875 **FWC Region:** NE

Sex: Female **Length:** 324 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-26 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Jul-27 **By:** FWC-WDG,SMW
DATE NECROPSIED: 2020-Jul-27 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.14976 **N**
County: Brevard **Longitude:** -80.60329 **W**
Waterway: Banana River
Location description: Indian Harbour Beach, floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Wet lung(s); Dry, hard feces; Crumbly feces; Large volume of constipation feces; Severely gas distended proximal and mid colon; Fluid-filled duodenum; Bloody nares; Congested mesentery, colon wall, peritoneum, abdominal fat; Enlarged spleen; Fluid in airways; Macroalgae in GI tract; 900 mL of bile in gallbladder.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Healing wounds).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Live animal photos.

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed. Healing watercraft wound(s); Observed alive and caudally buoyant 3 days prior to report as carcass. Also FWC case numbers 13684, 13787, and 13869.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20130

MORPHOMETRICS:

Total length:	324 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20130 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 27 July 2020 **NECROPSY DATE** 27 July 2020
GENDER Female **TL** 324 **cm WT** N/T **kg** **CONDITION** Moderately Decomposed

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HISTORY 23 July 2020, at 0958 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding an injured manatee in the Grand Canal, Satellite Beach, Brevard County. FWC case number 13684 was assigned. The complainant, Ronald Culp (910-381-7661), stated that the manatee could not submerge and was floating level in the water. At 1007 hrs, SMW received a verification photograph. At 1030 hrs, SMW arrived at the Tortoise Island Clubhouse and launched a kayak. SMW confirmed that the manatee had a second-year calf and was caudally buoyant, with no fresh watercraft wounds, and could submerge for a few seconds before popping back to the surface. The decision was made to monitor the animal for the next couple of days to see if the buoyancy resolved on its own. **24 July**, at 1724 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from Dispatch regarding an injured manatee in the Banana River, Indian Harbour Beach. FWC case number 13787 was assigned. The complainant, Angie Rogers (321-368-5614), stated that the manatee was very large and couldn't submerge with 60% of its body out of the water. **25 July**, at 0741 hrs, ARH received a photo and forwarded it to the EC Field Station. **26 July**, at 0730 hrs, ARH received a text from Dispatch regarding a dead manatee in the Banana River, Indian Harbour Beach. FWC case number 13869 was assigned. The complainant, James Brye (305-733-3099), stated that the carcass was dorsum-up and he had seen it while biking. At 0740 hrs, ARH requested FWC LE assistance to verify the carcass and forwarded the information to the EC Field Station. No officers were available that day. At 1104 hrs, SMW received a text from Dispatch regarding the carcass. FWC case number 13875 was assigned. The complainant, FWC Lieutenant Lightsey, stated that he had received a call regarding a dead manatee at Telemar Marina. SMW arrived at Telemar Marina at 1110 hrs, located the carcass at 1112 hrs, and confirmed the presence of the second-year calf. The decision was made to not recover the carcass until the following day in order to allow the calf to wean itself. At 1320 hrs, SMW updated the request for FWC LE assistance for the following morning and secured the carcass at Telemar Marina. **27 July**, at 0835 hrs, SMW canceled the request for officer assistance. FWC biologist-William D. Greer and SMW arrived at the Eau Gallie Causeway boat ramp at 1020 hrs, launched the Key West boat, and towed the carcass to a secluded area of Samson's Island. A field necropsy was completed by 1320 hrs.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas. Viscous, red fluid exuded from the nares. There was a mostly healed watercraft-related wound series on the cranial dorsum consisting of four parallel wounds (#1 – 4). There was a moderate brown algal mat on the lateral aspects. A minimum of eight well-healed watercraft-related scar patterns was observed on the dorsal and left lateral aspects. The fluke margin had one well-healed mutilation at the 3 o'clock position and multiple small irregular-shaped mutilations between the 4 and 7 o'clock positions. The teats were not lactating. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, omental, and mesenteric fat. There was a small amount of congestion in the peritoneum and abdominal fat (see photo).

STOMACH The stomach contained 24 L of moist, moderately chewed, stringy, leafy, green to brown ingesta mixed with yellow macroalgae and black and white banded vegetation (see photo). The ingesta were coated with a thin layer of viscous, white mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 4.5 L of watery, green fluid mixed with well-chewed, yellow macroalgae and well-chewed, black and white banded vegetation (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, gray fluid mixed with a small amount of green and brown vegetation. The mid small intestine contained watery, dark orange fluid. The distal small intestine contained watery, brown fluid. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 3 L of moist, moderately digested, stringy, leafy, green to brown digesta mixed with yellow macroalgae and black and white banded vegetation (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The mesentery was moderately congested. The congestion was most severe at the transition from mid to distal colon. The proximal and mid colon were severely distended with gas (maximum diameter approximately 20 cm) and contained a large amount of moist, poorly formed, poorly digested, stringy, leafy, slightly fibrous, green to brown feces. The distal colon contained dry, hard, well-formed, poorly digested, stringy, fibrous, brown feces (maximum diameter approximately 13 cm). An approximate 60 cm section of contents in the distal colon was dry and crumbly. The colon wall was moderately congested at the transition from the mid to distal colon, where the dry, hard feces began. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was enlarged. Serosal surfaces were mottled white, gray, and black, and cut surfaces were red.

LIVER The margins of the liver were rounded. The liver was soft. Serosal surfaces were pink to blue and brown and cut surfaces were brown.

GALLBLADDER The gallbladder contained 900 mL of watery, yellow to black bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The uterus was contracted. The left uterine horn contained a scar. Both ovaries contained numerous fluid-filled follicles (maximum diameter 1.2 cm).

KIDNEYS There was moderate perirenal fat. The kidneys were pink to tan on serosal surfaces. On cut surfaces, the cortices were light pink to tan and the medullae were red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 20 mL of flocculent, white fluid. The mucosa was unremarkable.

HEART There was abundant, gassy epicardial fat. The heart was soft and friable. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were light pink to black on serosal surfaces and red and wet on cut surfaces. The primary airways contained a moderate amount of watery, red fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER There was no trauma deep to the healing watercraft wounds.

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Severely gas distended proximal and mid colon
- Large volume of fry, hard, crumbly feces distal colon (constipation)
- Congested mesentery, colon wall, peritoneum, abdominal fat
- Fluid-filled duodenum
- Enlarged spleen
- Fluid in airways
- Wet lungs
- 900 mL of bile in gallbladder
- Healing watercraft wounds
- Macroalgae in GI tract
- Uterine scar
- Observed floating high when alive

PROBABLE CAUSE OF DEATH Natural; Other

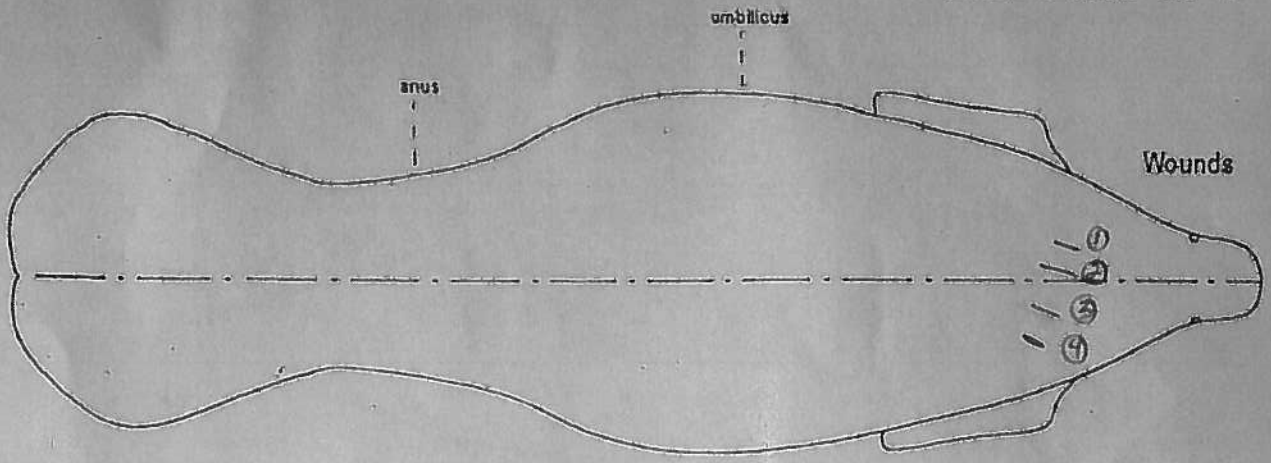
NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes

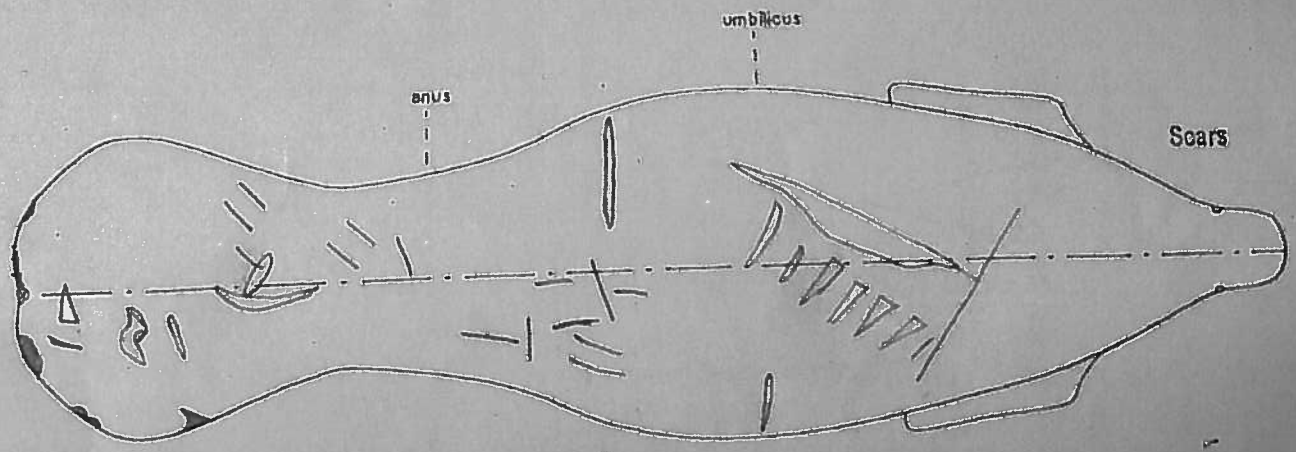
REPORT FILED BY Wappes / Greer

Date 28 JULY 2020 Field I.D. MEC20130

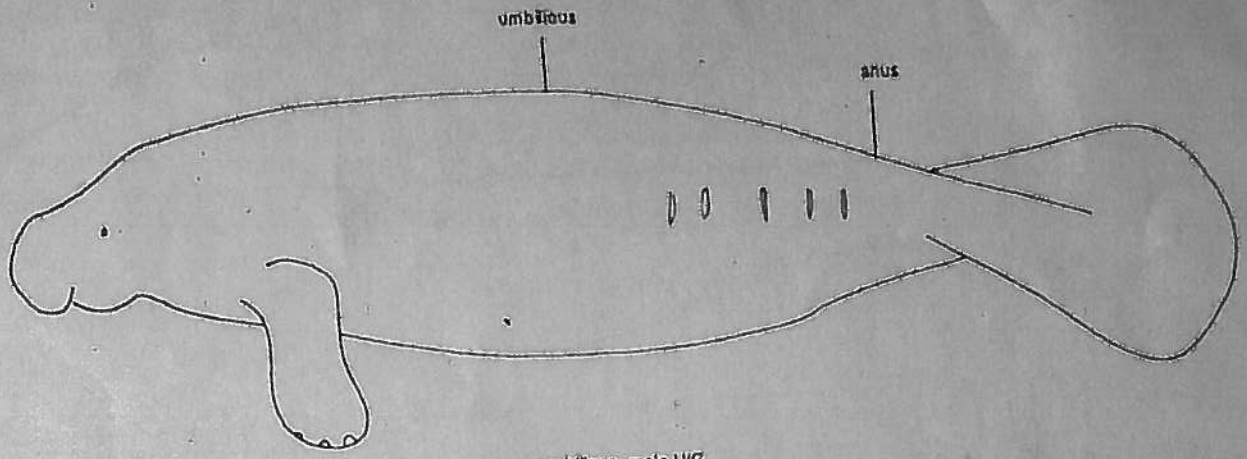
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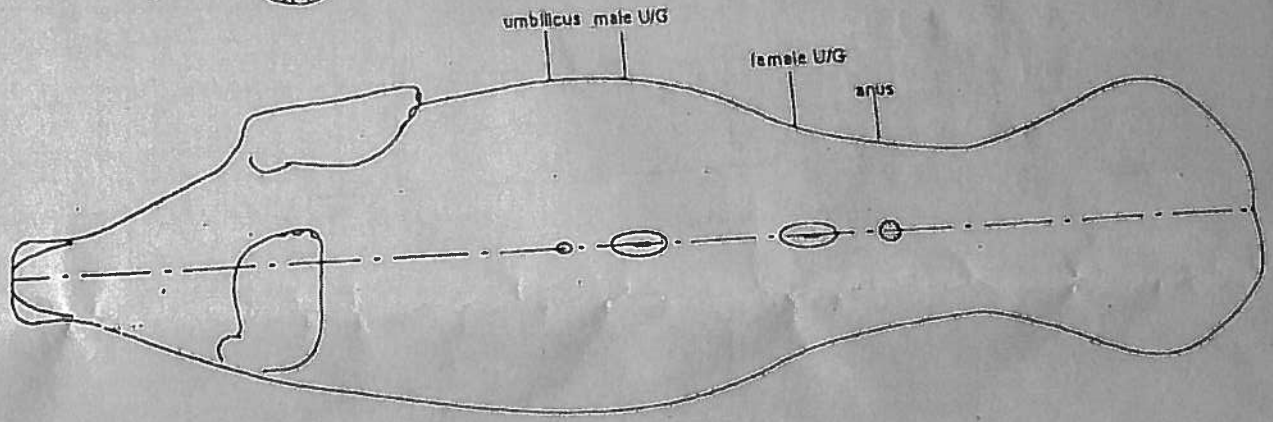


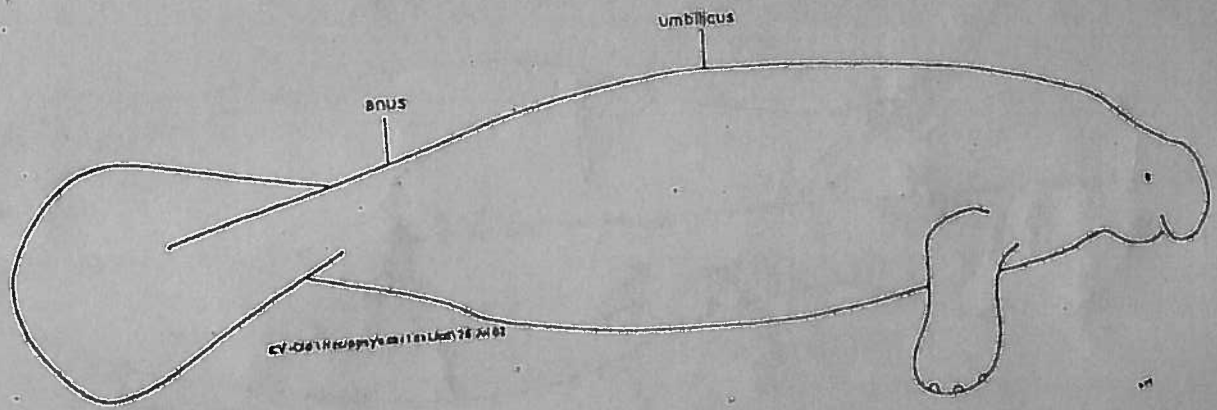
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Width	0.1	0.2	0.4	0.2																
Depth	0.1	0.1	0.2	0.2																
Distance	10.5	9.5	8.8																	



FIELD I.D. MEC20130





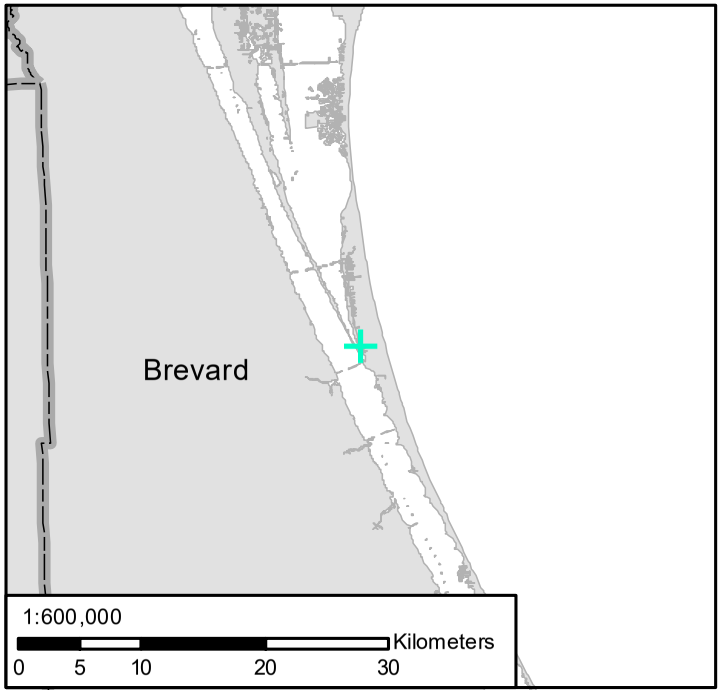


Verified Location of Manatee Carcass MEC20130

Report Date: 7/26/2020 **Received Date:** 7/27/2020 **Received By:** FWC-WDG,SMW







Location: Indian Harbour Beach, Brevard County **Latitude:** 28.14976°N **Longitude:** -80.60329°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20130
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13684, 13787, 13869, 13875 **FWC District**: Northeast
Sex: Female **Length (cm)**: 324 **Estimated** _____ **Weight (kg)** _____
Date reported: 26 July 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 27 July 2020 **By**: FWC-WDG, SMW
Date necropsied: 27 July 2020 **By**: FWC-WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Indian Harbour Beach, approximately 110 m N of 514 Eleuthera Lane.

Carcass Orientation: Floating

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☑ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered

Explain: Observed caudally buoyant (and alive) 3 days prior. Impaction in distal colon. Dry, hard feces in distal colon.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20131**
Date of Report: 2020-Jul-27
Filed By: FWC NE Field Station

FWC Case # 13937 **FWC Region:** NE

Sex: Female **Length:** 261 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Jul-27 **By:** FWC-NJG

DATE NECROPSIED: 2020-Jul-28 **By:** FWC-NJG,ACP

LOCATION: **State:** FL **Latitude:** 28.8958 **N**

County: Volusia **Longitude:** -80.81242 **W**

Waterway: Mosquito Lagoon

Location description: Oak Hill, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Luxated rib(s); Fractured rib(s); Hemothorax; Torn lung(s); Torn parietal pleura; Organ pallor; Blood clots; Shredded muscle; Hemorrhagic muscle.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wound).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20131

MORPHOMETRICS:

Total length:	261 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20131 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 27 July 2020 **NECROPSY DATE** 28 July 2020
GENDER Female **TL** 261 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 27 July 2020, at 1102 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon, Oak Hill, Volusia County. FWC case number 13937 was assigned. The complainant, Keith Mizelle (407-467-9226), reported the dead manatee beached on a sandbar south of Turner Flats and provided a photo and coordinates. Due to EC Field Station staff responding to multiple other carcasses, WDG requested assistance from FWC biologist-Nadia J. Gordon (NJG). At 1123 hrs, NJG contacted Volusia County Marine Mammal Stranding Team (VCMMST)-Chad Murch for assistance to recover and tow the carcass. Chad and VCMMST volunteer-Stacy Burke located the carcass at 1425 hrs, provided updated coordinates, and towed it to the Cape Canaveral boat ramp before 1530 hrs. NJG arrived at the boat ramp at 1841 hrs, loaded the carcass by 1859 hrs, and transported it to the NE Field Station arriving at 2120 hrs. **28 July**, at 0814 hrs, FWC biologist-Allison C. Burns transported the carcass to Buck Island where a field necropsy was conducted. Due to a manatee rescue response, not all internal organs were examined.

EXTERNAL Almost all of the epidermis was present but sloughing. The carcass was distended with gas. The eyes were bulging due to decomposition. Red fluid exuded from the right naris. There was a wide superficial watercraft-related wound on the mid right dorsum. Bloody fluid exuded from an eroded area of the wound. There was a moderate, light green algal mat on the lateral aspects. A minimum of one well-healed watercraft-related scar pattern was observed on the dorsum. There was a large well-healed mutilation at the 9 o'clock position of the fluke and a small well-healed mutilation at the 5 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, gassy abdominal, omental, and mesenteric fat.

STOMACH The stomach contained approximately 6 L of moist, fibrous, well-chewed, green and yellow ingesta. The ingesta were coated in tan mucus. There was a mild infection of live nematodes. The mucosa was not examined.

DUODENUM The duodenum was not examined.

JEJUNUM & ILEUM A small section of the small intestine was examined and contained gray fluid. The mucosa was gray. No parasites were grossly observed.

CECUM The cecum contained approximately 1.75 L of moist, fibrous, dark green digesta. The mucosa was sloughing. No parasites were observed.

COLON The distal colon contained moist, well-formed, well-digested, green feces. The mucosa was unremarkable. No parasites were observed. The remainder of the colon was not examined.

PANCREAS The pancreas was gassy. Serosal surfaces were tan. Cut surfaces were not examined.

SPLEEN The spleen was not examined.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained approximately 10 mL of dark yellow bile. The mucosa was not examined.

REPRODUCTIVE There was abundant reproductive fat. The reproductive organs were not examined.

KIDNEYS There was moderate perirenal fat. The kidneys were pale pink to tan on serosal surfaces. Cut surfaces were not examined.

URINARY BLADDER The bladder was not examined.

HEART The heart was not examined.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were approximately 2.85 L of bloody fluid and approximately 200 mL of loose, well-formed blood clots in the right pleural cavity. The left lung was pale pink on serosal surfaces. The right lung was light pink to red on serosal surfaces. The right lung was torn on the mid dorsal aspect due to luxated right ribs 7 and 8.

HEAD & NECK REGIONS NVL.

SKELETON Right rib 6 had a transverse fracture at the mid one-third that tore the parietal pleura. Right ribs 7 and 8 were luxated and tore the parietal pleura and right lung. The rib trauma was surrounded by shredded, hemorrhagic tissue and loose, well-formed blood clots, and was deep to the watercraft-related wound on the right dorsum.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Superficial watercraft wound
- Fractured, luxated ribs
- Blood clots
- Shredded, hemorrhagic tissue
- Hemothorax
- Torn right lung, parietal pleura
- Kidney pallor
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

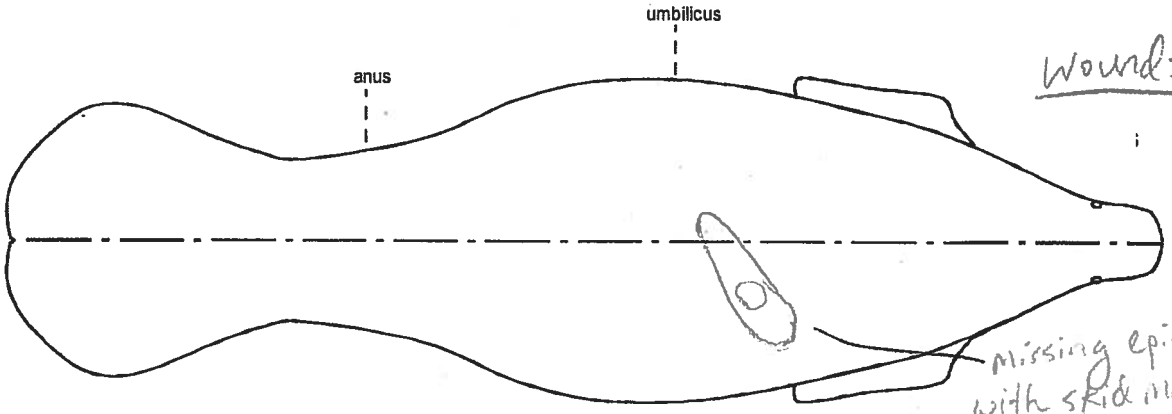
NECROPSY CONDUCTED BY

Nadia J. Gordon
Allison C. Burns

REPORT FILED BY Gordon / Burns

Date 28 July 2020 Field I.D. MEC 20131

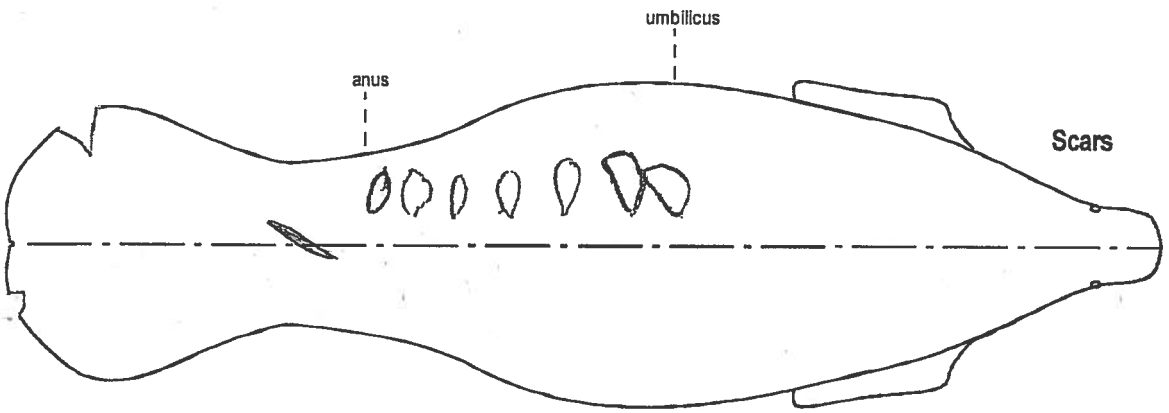
c:\ Manuals \ scar2dat \ 26 July02



Wounds

missing epidermis with skid mark appearan & eroded/peakin center

Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	40 cm																			
Width	9.5 cm																			
Depth	—																			
Distance																				

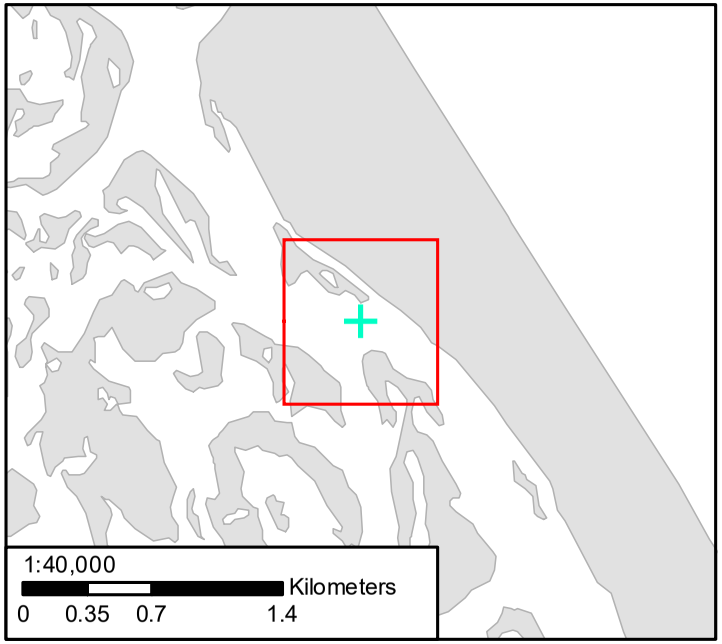


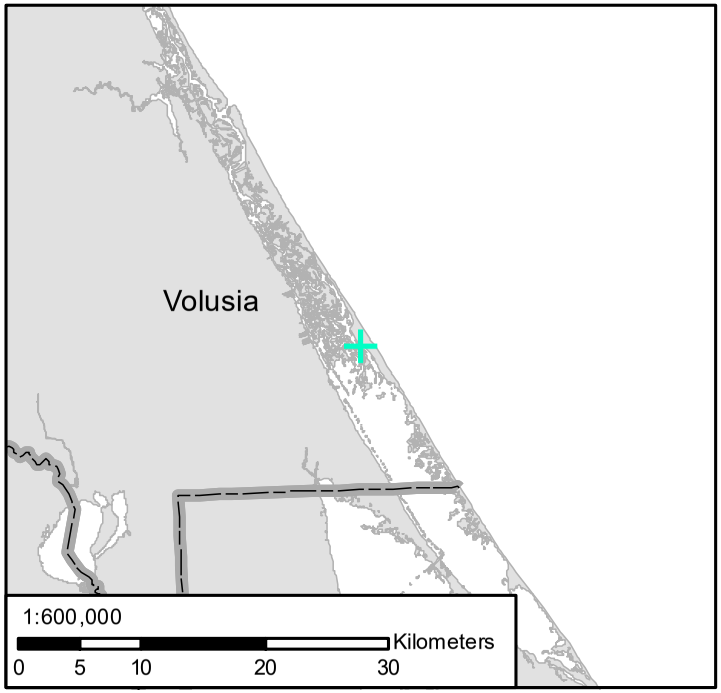
Scars

Verified Location of Manatee Carcass MEC20131

Report Date: 7/27/2020 **Received Date**: 7/27/2020 **Received By**: FWC-NJG







Location: Oak Hill, Volusia County

Latitude: 28.8958°N **Longitude**: -80.81242°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20131
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13937 **FWC District**: Northeast
Sex: Female **Length (cm)**: 261 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 July 2020 **By**: Complainant to Dispatch
Date collected: 27 July 2020 **By**: Volusia County Marine Mammal Stranding and Nadia J. Gordon
Date necropsied: 28 July 2020 **By**: N. Gordon, Allison C. Burns

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N 28.895782 **Longitude**: W -80.812223
Locality description: Oak Hill; 3.5 Km NE of 275 Golden Bay Boulevard

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: fractured and dislocated right ribs; large well-formed blood clots associated with right lung and fractured rib

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20132**
Date of Report: 2020-Aug-08
Filed By: FWC EC Field Station

FWC Case # 14655 **FWC Region:** NE

Sex: Unknown **Length:** 250 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-08 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.40566 **N**
County: Brevard **Longitude:** -80.64979 **W**
Waterway: Banana River
Location description: Merritt Island, grounded

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20132

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20132 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 08 August 2020, at 0816 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River, Cape Canaveral, Brevard County. FWC case number 14655 was assigned. The complainant, Monica Howard (407-414-6164), described a white, dead manatee grounded on the rocks. At 0826 hrs, CMM received photo verification. Based on significant decomposition, the carcass was not recovered or necropsied.

EXTERNAL From photograph - All of the ventral epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. The ventrum was severely eroded with numerous rents due to decomposition and/or scavenging. The muzzle, fluke margin, and flippers were severely eroded due to decomposition.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

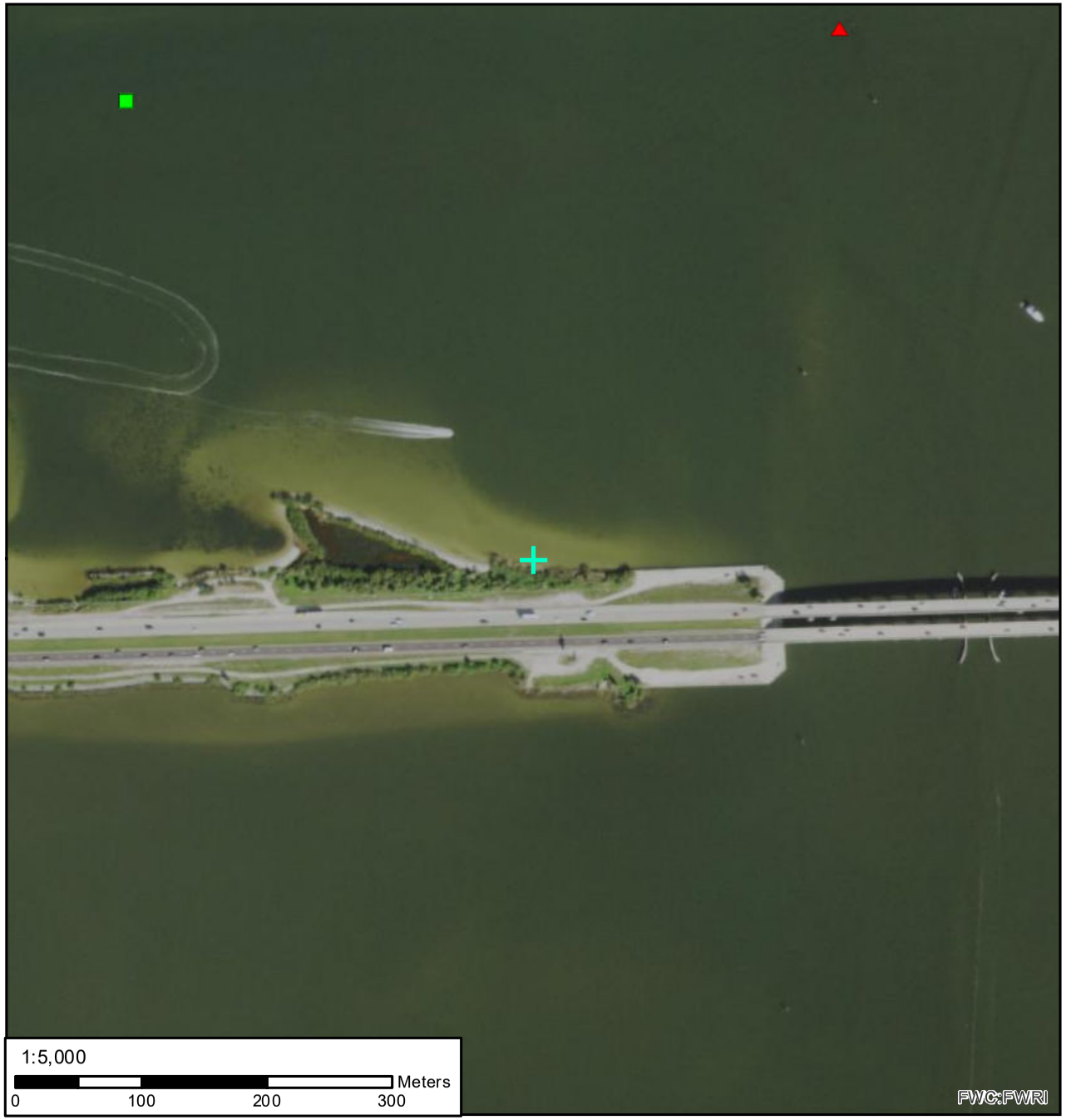
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

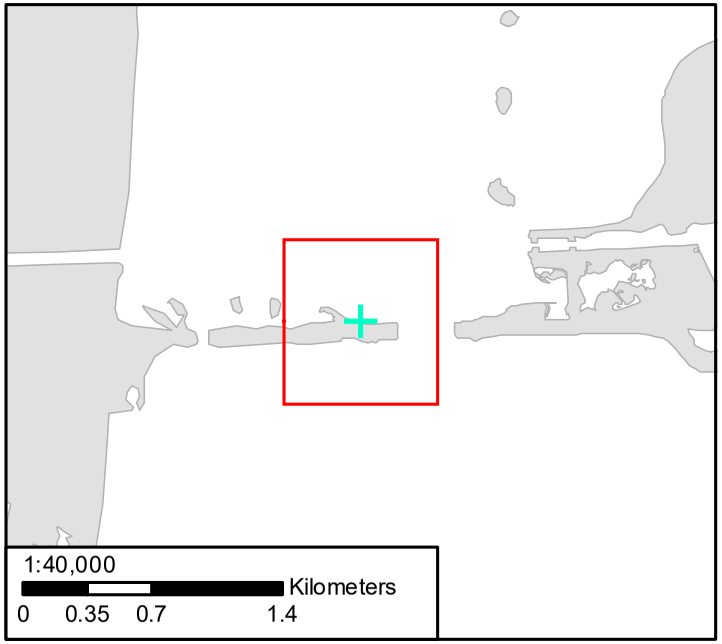
NECROPSY CONDUCTED BY N/A

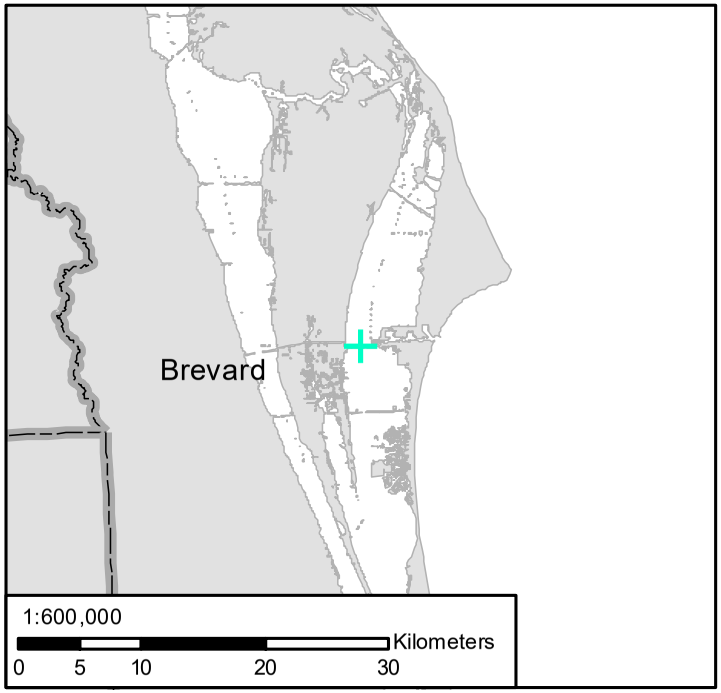
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20132

Report Date: 8/8/2020 **Received Date:** **Received By:**







Location: Merritt Island, Brevard County **Latitude:** 28.40566°N **Longitude:** -80.64979°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20132
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14655 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 245 **Weight (kg)** N/T
Date reported: 08 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 1.4 km ESE of 1750 Sea Ray Drive.
Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20133**
Date of Report: 2020-Aug-08
Filed By: FWC EC Field Station

FWC Case # 14678 **FWC Region:** NE

Sex: Male **Length:** 258 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-08 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Aug-09 **By:** FWC-SMW

DATE NECROPSIED: 2020-Aug-09 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.07431 **N**

County: Brevard **Longitude:** -80.61059 **W**

Waterway: Crane Creek

Location description: Melbourne, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Chronic; Chronic watercraft wound(s); Emaciated; Dry, hard feces; Relatively empty GI tract; Remodeling rib fracture; Caseous material in left pleural cavity.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20133

MORPHOMETRICS:

Total length:	258 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20133
SPECIES *T. manatus latirostris*
RECOVERY DATE 09 August 2020
NECROPSY DATE 09 August 2020
GENDER Male **TL** 258 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 08 August 2020, at 1315 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Crane Creek, Melbourne, Brevard County. FWC case number 14678 was assigned. The complainant, Mindy (321-474-6186), stated that the carcass was belly-up with flippers flat to its chest. SMW requested officer assistance to verify the carcass, but no officers were in the area. SMW arrived at Crane Creek Promenade at 1445 hrs, launched a kayak, and verified the carcass at 1456 hrs. The carcass was left onsite. **09 August**, at 0904 hrs, SMW received a text alert from Dispatch regarding the same dead manatee in Crane Creek. The complainant, Mike McIntosh (321-914-2838), stated that the carcass was free floating behind his residence. SMW arrived at his residence at 0950 hrs, launched a kayak, and towed the carcass to a nearby island where a field necropsy was completed by 1140 hrs. The remains were left onsite.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The peduncle was thin, concave on the ventral aspect, and curved to the left. The outline of the peduncle vertebrae was visible. The remainder of the carcass was distended with gas. There was one chronic watercraft-related wound series on the left cranial to mid dorsum which consisted of a wide, eroded, open wound that was 90 degrees and caudal to two mostly healed parallel linear wounds. The open wound communicated with the left pleural cavity. A remodeled rib was visible deep in the wound. A minimum of one well-healed watercraft-related scar pattern was observed on the cranial dorsum. There was a small well-healed circular mutilation at the 8 o'clock position of the fluke margin. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal and omental fat was rendered. There was moderate, gassy mesenteric fat.

STOMACH The stomach contained moist, poorly chewed, fibrous, stringy, yellow to brown ingesta mixed with a moderate amount of sand (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained a scant amount of viscous, gritty, yellow to tan fluid (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained a scant amount of viscous, gray fluid. The distal small intestine contained a small amount of viscous, yellow to orange fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained a small amount of slightly viscous, opaque, yellow to orange fluid (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained a scant amount of viscous, gritty, yellow to orange fluid mixed with a scant amount of well-digested, yellow to brown vegetation. The mid colon contained a small amount of moist, poorly formed, moderately digested, fibrous, yellow to brown feces. The distal colon contained dry, hard, well-formed, moderately digested, fibrous, yellow to brown feces. The feces had a small diameter and the colon wall was thickened in the distal colon.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained yellow to green-black.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable.

HEART The heart was soft and friable. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The right hemidiaphragm was intact. The left hemidiaphragm was torn due to decomposition and/or trauma. The dorsal aspect of the left hemidiaphragm had small patches of caseous, yellow material (see photo). Only the cranial portion of the left lung remained. Both lungs were soft, friable, and autolyzed, but the left lung was more autolyzed. The right lung serosa had a few small, circular areas of caseous pale yellow material.

HEAD & NECK REGIONS NVL.

SKELETON Left rib 6 had a remodeling fracture at the proximal one-quarter (see photo) associated with the open healing watercraft wound.

OTHER An abundant amount of caseous, tan to yellow material exuded from the wound while towing and manipulating the carcass (see photos).

COMMENTS

SIGNIFICANT FINDINGS

- Chronic, open watercraft wound
- Emaciated
- Remodeling rib fracture
- Caseous material left pleural cavity
- Dry, hard feces
- Relatively empty GI tract
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Watercraft (Chronic)

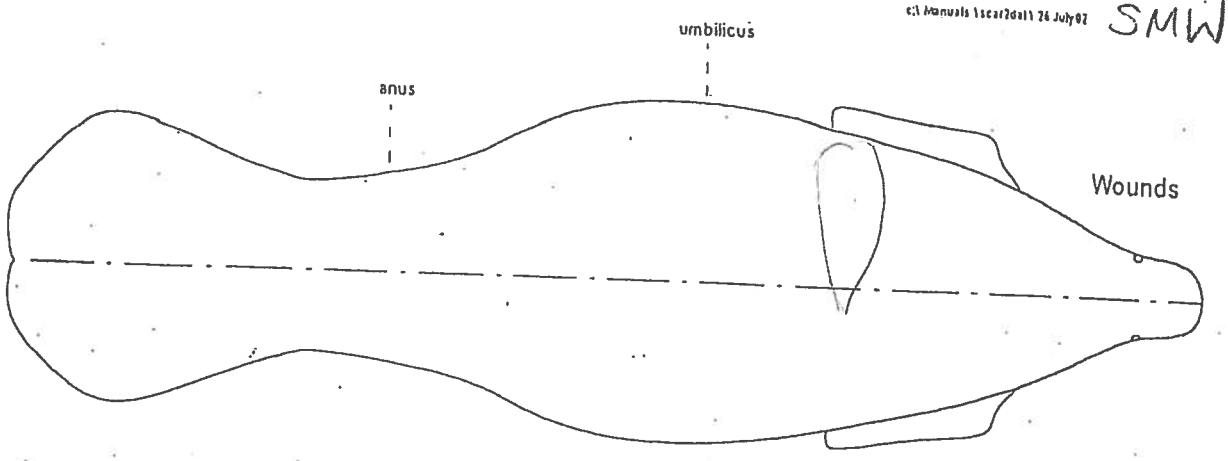
NECROPSY CONDUCTED BY

Sara M. Wappes

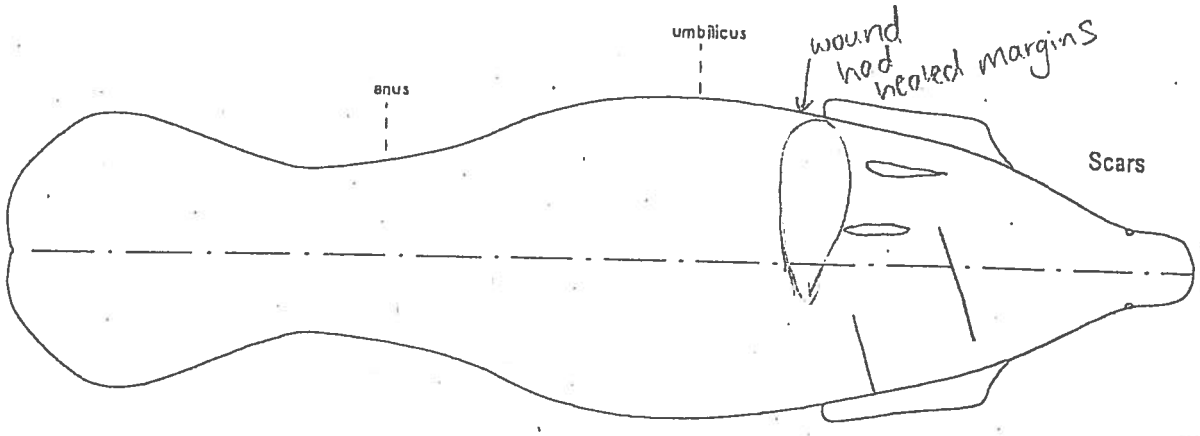
REPORT FILED BY Wappes

Date 09 AUG 2020 Field I.D. MEC20133

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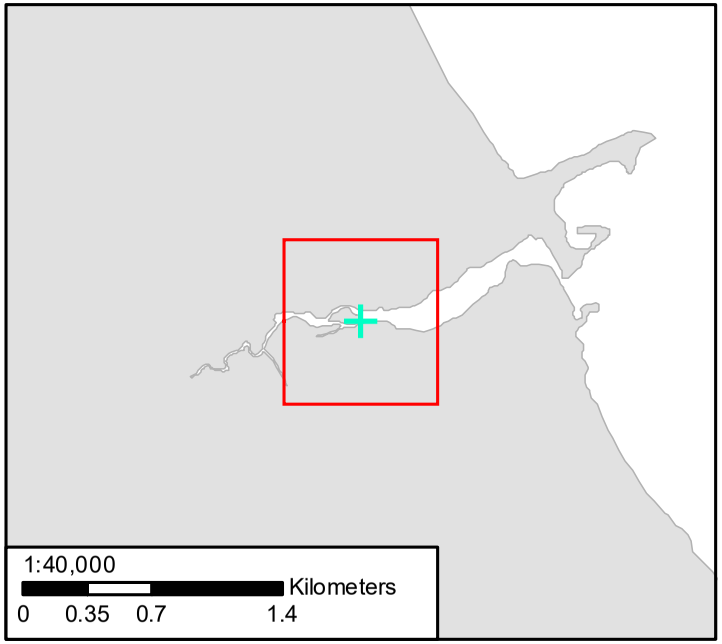
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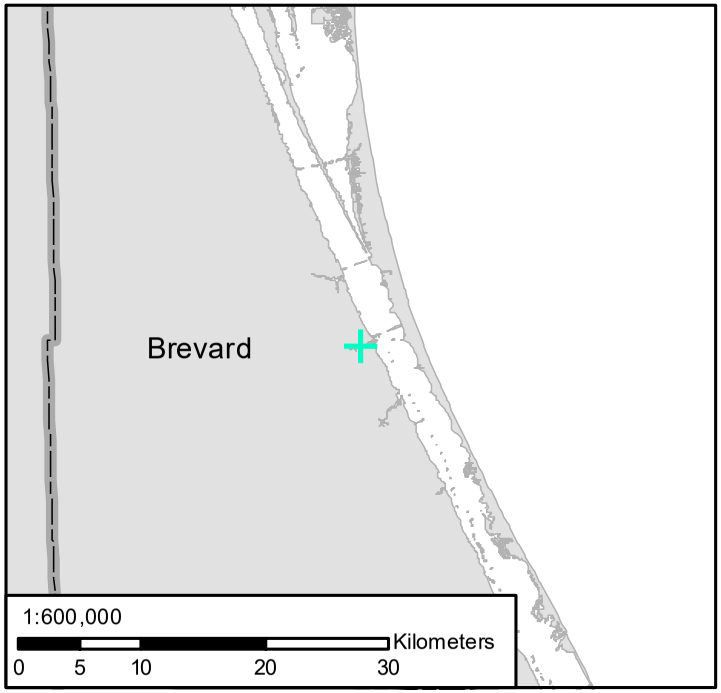


Verified Location of Manatee Carcass MEC20133

Report Date: 8/8/2020 **Received Date**: 8/9/2020 **Received By**: FWC-SMW







Location: Melbourne, Brevard County

Latitude: 28.07431°N **Longitude**: -80.61059°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20133
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14678 **FWC District**: Northeast
Sex: Male **Length (cm)**: 258 **Estimated** _____ **Weight (kg)** _____
Date reported: 08 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 09 August 2020 **By**: FWC-SMW
Date necropsied: 09 August 2020 **By**: FWC-SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Crane Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 190 m S of 611 E Melbourne Avenue

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Chronic
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Healing external wound, healing/remodeled rib, caseous material in left pleural cavity, markedly thin with dry, hard feces in distal colon, remainder of GI tract relatively empty

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20134**
Date of Report: 2020-Aug-12
Filed By: FWC EC Field Station

FWC Case # 14909 **FWC Region:** NE

Sex: Male **Length:** 124 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-12 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Aug-12 **By:** FWC-WDG,CMM

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.4048 **N**
County: Brevard **Longitude:** -80.63477 **W**
Waterway: Banana River
Location description: Cape Canaveral, grounded

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Peanut-shaped head; Bloody nares. Verified by FWC biologists. External work-up performed, but necropsy not conducted.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Possible calf of SWFTm2028b, genetic analysis pending.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20134

MORPHOMETRICS:

Total length:	124 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20134
SPECIES *T. manatus latirostris*
RECOVERY DATE 12 August 2020
NECROPSY DATE N/A
GENDER Male **TL** 124 **cm WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 12 August 2020, at 1006 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River, Cape Canaveral, Brevard County. FWC case number 14909 was assigned. The complainant, Tiara Thornton (321-806-0129), described a two-foot-long dead manatee on its side on shore. A verification photo could not be provided. CMM and FWC biologist-William D. Greer (WDG) were close to Cape Canaveral for the release of a rehabilitated mom/calf pair. WDG and CMM arrived at the carcass at 1100 hrs, loaded it at 1105 hrs, and completed an external work-up at 1230 hrs. Due to the carcass size, a necropsy was not performed. The carcass was disposed of at the Brevard County Landfill.

EXTERNAL All of the epidermis was present. There was a moderate brown algal mat on the dorsum. Bloody fluid exuded from the nares. The carcass had a slight peanut-shaped head. There were transverse folds on the ventrum. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

COMMENTS Possible calf of SWFTm2028b, genetic analysis pending. External work-up performed, but necropsy not conducted.

SIGNIFICANT FINDINGS

- Verified by FWC biologists
- Fetal folds
- Slight peanut-shaped head
- Bloody nares

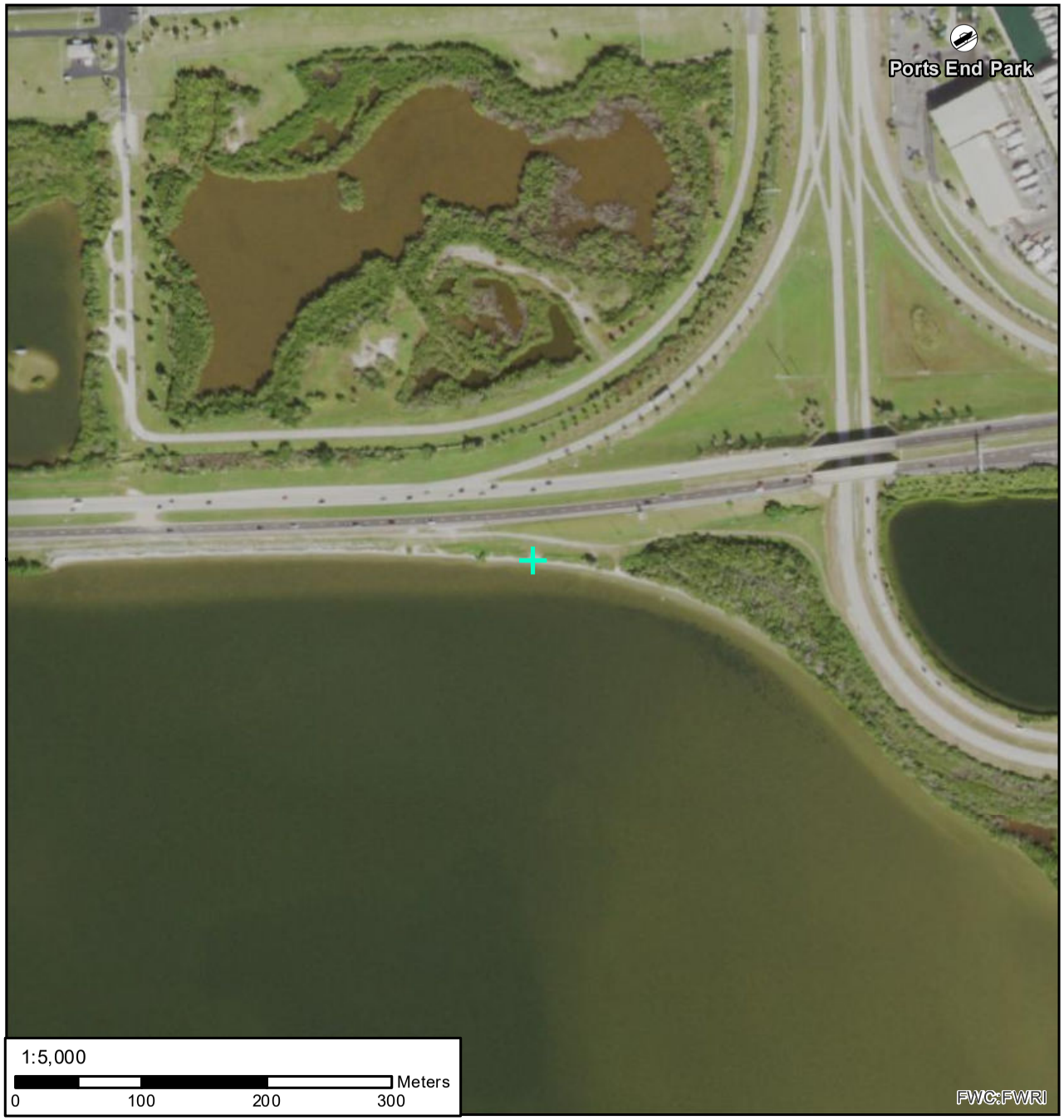
PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

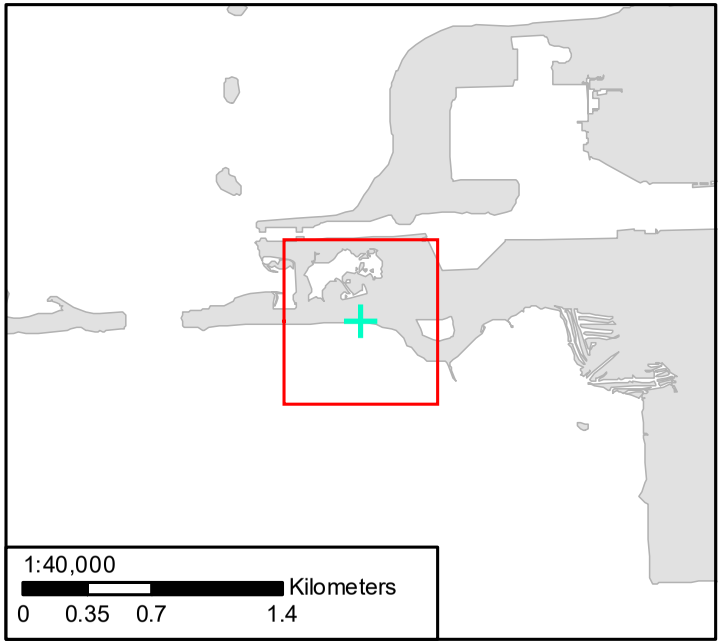
NECROPSY CONDUCTED BY N/A

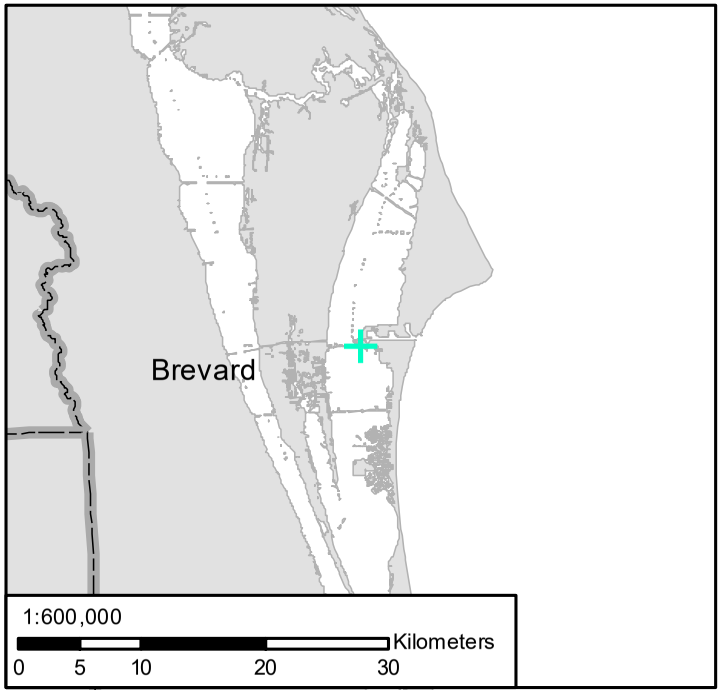
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20134

Report Date: 8/12/2020 **Received Date**: 8/12/2020 **Received By**: FWC-WDG,CMM







Location: Cape Canaveral, Brevard County

Latitude: 28.4048°N **Longitude**: -80.63477°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20134
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14909 **FWC District**: Northeast
Sex: Male **Length (cm)**: 124 **Estimated** _____ **Weight (kg)** N/T
Date reported: 12 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 12 August 2020 **By**: FWC-CMM, WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Cape Canaveral, approximately 470 m SW of 960 Mullet Road.

Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: external work up completed by CMM and WDG

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20135**
Date of Report: 2020-Aug-16
Filed By: FWC EC Field Station

FWC Case # 15127 **FWC Region:** NE

Sex: Female **Length:** 278 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-16 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Aug-16 **By:** FWC-SMW

DATE NECROPSIED: 2020-Aug-17 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.88365 **N**

County: Volusia **Longitude:** -80.84489 **W**

Waterway: Indian River North

Location description: Oak Hill, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Acute; Watercraft wound(s); Fractured rib(s); Luxated rib(s); Hemorrhagic muscle; Blood clots; Organ pallor; Torn parietal pleura; Torn cecum, duodenum, abdominal wall; Fluid in left pleural cavity; Displaced rib; Fluid in pleural cavity; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wound).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20135

MORPHOMETRICS:

Total length:	278 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20135
SPECIES *T. manatus latirostris*
RECOVERY DATE 16 August 2020
NECROPSY DATE 17 August 2020
GENDER Female **TL** 278 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 16 August 2020, at 1020 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River North, Oak Hill, Volusia County. FWC case number 15127 was assigned. The complainant, Sherrie Gillette (407-416-4929), stated that the carcass was belly-up and full grown. At 1023 hrs, SMW received a verification photo and requested FWC LE assistance to tow the carcass. At 1130 hrs, FWC Officer-Jessica Pelzo secured the carcass at the private community boat ramp at Lighthouse Cove. SMW arrived at the boat ramp at 1311 hrs, loaded the carcass into the carcass trailer by 1340 hrs, and transported it to the EC Field Station arriving at 1515 hrs. **17 August**, at 0950 hrs, a field necropsy was completed. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The carcass was distended with gas. There was one elongated triangular watercraft-related wound on the mid right dorsum which penetrated into the body cavity. A portion of the colon, small intestine, right lung, and bloody fluid came out of the wound. There was a rent at the urogenital opening due to decomposition through which a portion of the colon protruded. There was a moderate green algal mat on the lateral aspects. A minimum of one well-healed watercraft-related scar pattern was observed on the dorsal aspect and head. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal and omental fat was rendered. There was abundant, gassy mesenteric fat. The abdominal wall was torn at the mid right lateral aspect deep to the watercraft wound.

STOMACH The stomach contained 8.7 L of moist, poorly chewed, stringy, fibrous, green ingesta (see photo). The mucosa was autolyzed. There was a mild infection of dead nematodes.

DUODENUM The duodenum was torn due to trauma and/or decomposition (see photo) and contained at least 3.1 L of moist, poorly chewed, stringy, fibrous, green ingesta (see photo). The mucosa was autolyzed. There was a mild infection of dead nematodes.

JEJUNUM & ILEUM The small intestine was friable when handled and contained watery, gray fluid mixed with a small amount of well-chewed, fibrous, green vegetation. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum and one diverticula were torn due to trauma and/or decomposition (see photo). The cecum contained at least 1.2 L of moist, poorly digested, stringy, fibrous, green digesta (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The colon contained moist, moderately formed, moderately digested, fibrous, stringy, green to brown feces throughout. The mucosa was autolyzed. There was a moderate infection of dead trematodes in the proximal colon. No parasites were observed in the mid or distal colon.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was mottled gray and black on serosal surfaces and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft and friable. Serosal surfaces were light

purple to brown and cut surfaces were pink to brown.

GALLBLADDER The gallbladder contained approximately 50 mL of watery, yellow to orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate, gassy reproductive fat. The diameter of the uterus was small. No scars were present. Both ovaries contained numerous fluid-filled follicles (maximum diameter 1.0 cm).

KIDNEYS The perirenal fat was rendered. The kidneys were soft and friable. The left kidney was tan on serosal surfaces (pallor, see photo). On cut surfaces, the cortices were tan and the medullae were light pink. The right kidney was pink to brown on serosal surfaces. On cut surfaces, the cortices were pink to brown and the medullae were pink. The corticomedullary boundaries of both kidneys were indistinct.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was gassy.

HEART The epicardial fat was rendered. The heart ventricles were soft, and the atria were friable. Valves were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was intact. The left pleural cavity contained approximately 2 L of watery, red fluid. The right hemidiaphragm was torn due to trauma and/or decomposition. A portion of the right lung protruded through the watercraft wound (see photos). The lungs were soft and friable. Serosal surfaces were pink to black and cut surfaces were red.

HEAD & NECK REGIONS There was a small thatch of poorly chewed seagrass in the mouth (see photo).

SKELETON Right rib 11 had a transverse fracture at the distal one-third. Right rib 12 was luxated and displaced between ribs 13 and 14. Right rib 13 had an oblique fracture at the proximal one-quarter. Right rib 14 had an oblique, comminuted fracture at the proximal one-third. All fractures were surrounded by blood clots and hemorrhagic tissue (see photo). The rib trauma was associated with the watercraft wound.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft-related wound
- Fractured, luxated ribs
- Displaced rib
- Hemorrhagic tissue
- Blood clots
- Fluid in left pleural cavity
- Kidney pallor
- Torn cecum, duodenum, abdominal wall, parietal pleura
- Seagrass in mouth

PROBABLE CAUSE OF DEATH Watercraft (Acute)

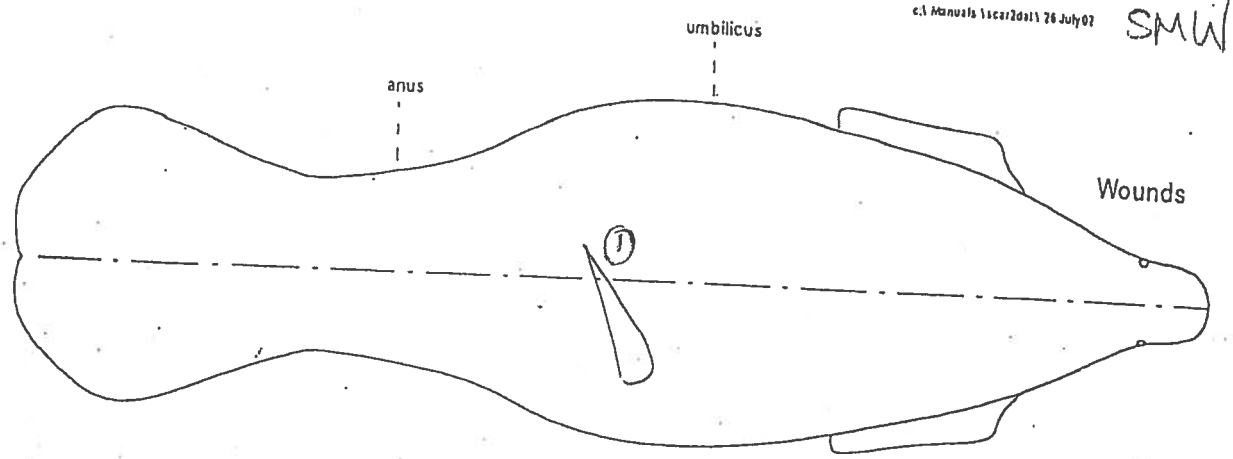
NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes

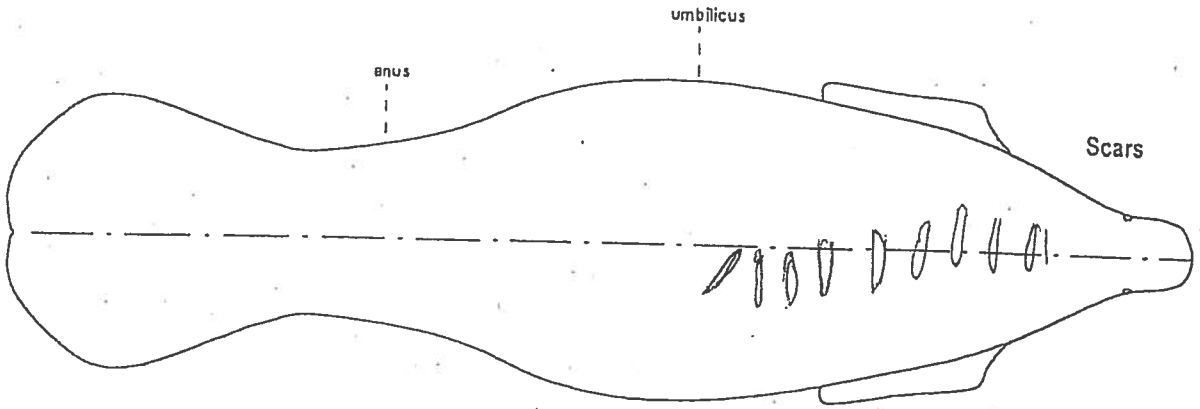
REPORT FILED BY Wappes

Date 17 AUG 2020 Field I.D. MFC20135

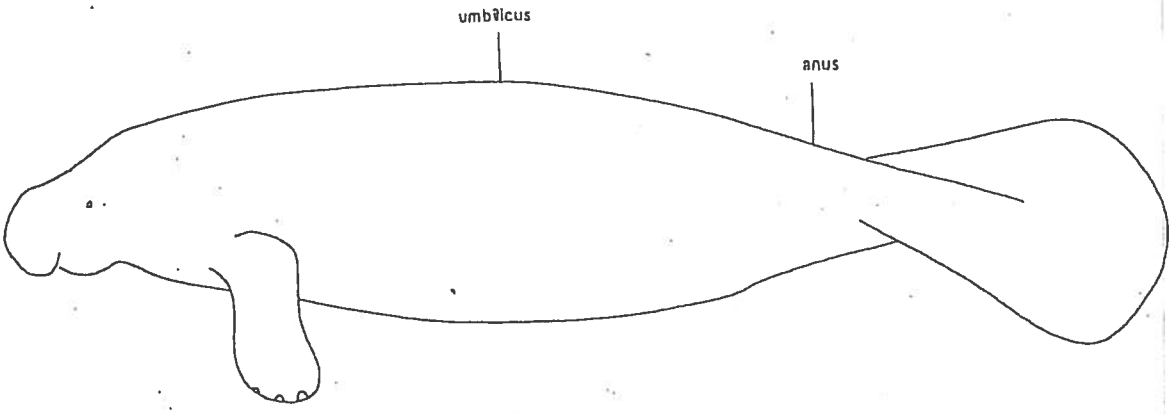
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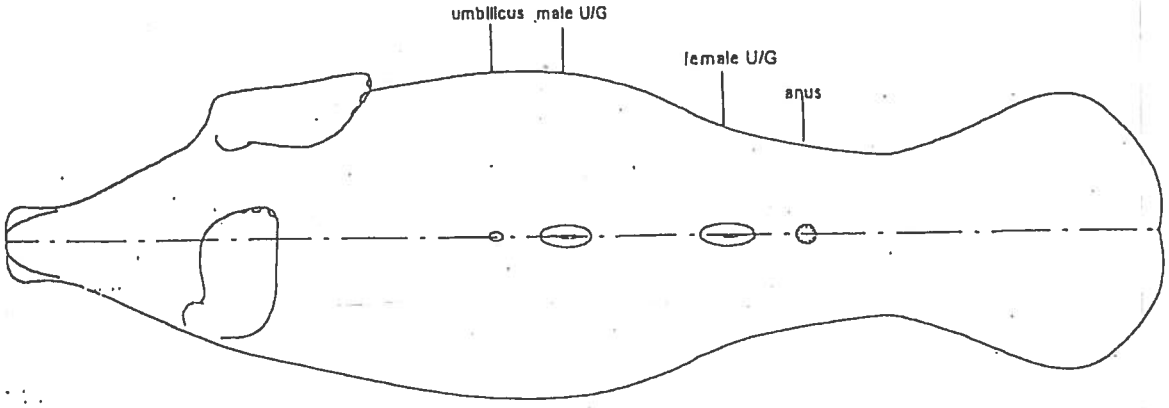


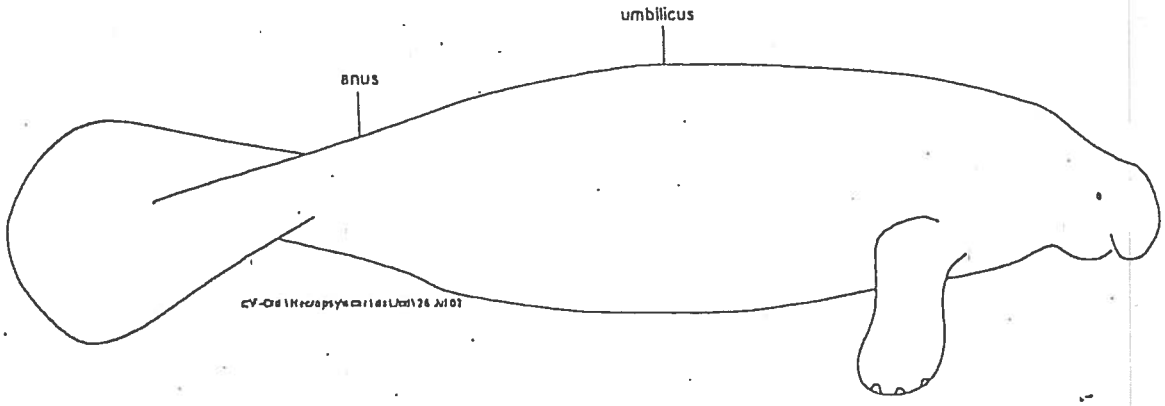
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FIELD I.D. MFC 20125

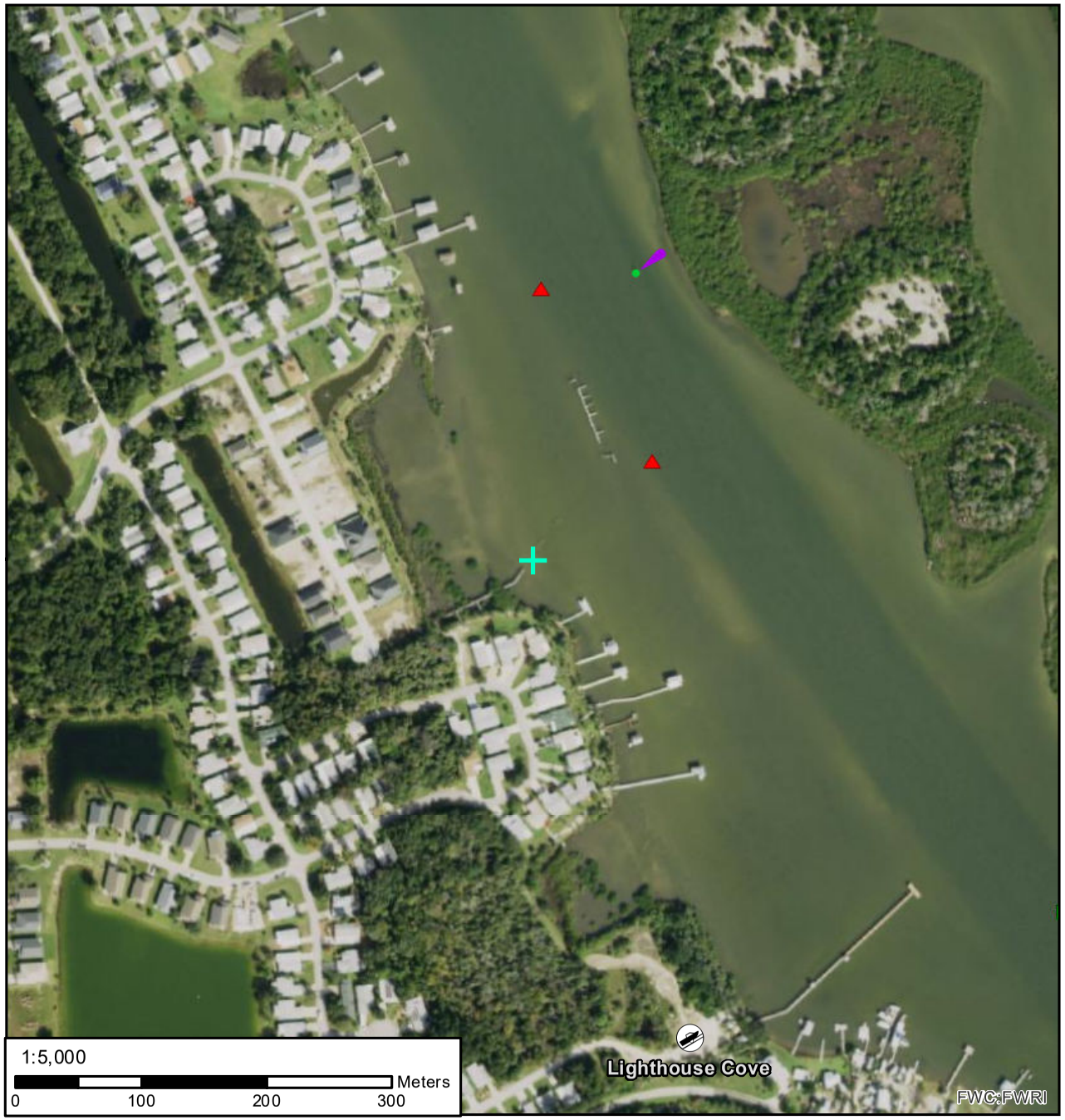


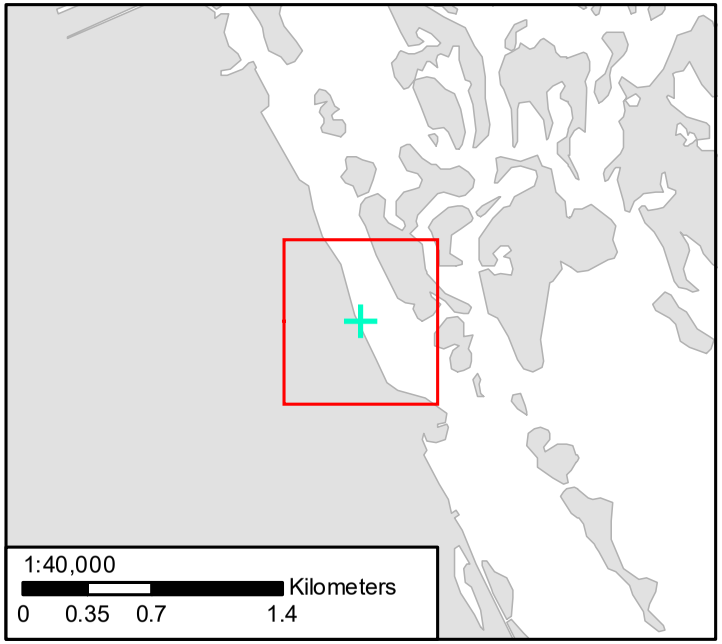


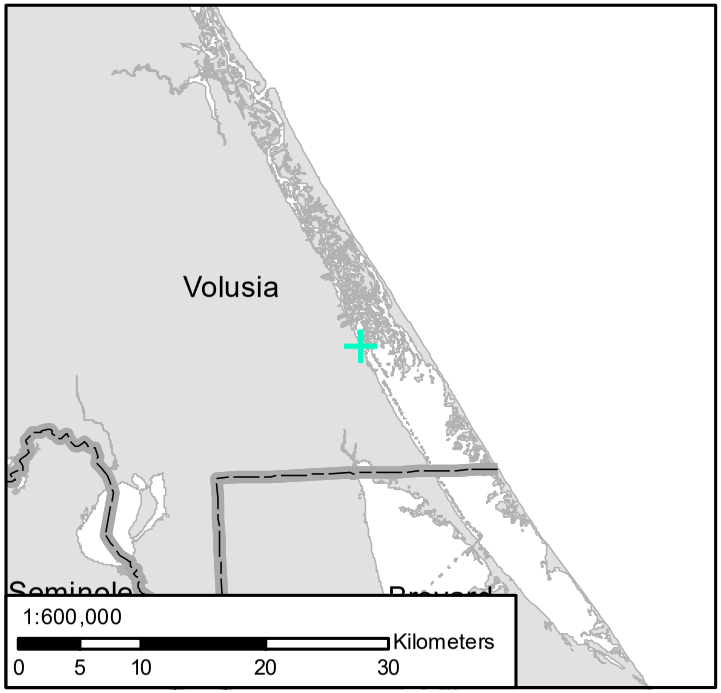


Verified Location of Manatee Carcass MEC20135

Report Date: 8/16/2020 **Received Date**: 8/16/2020 **Received By**: FWC-SMW







Location: Oak Hill, Volusia County

Latitude: 28.88365°N **Longitude**: -80.84489°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20135
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 15127 **FWC District**: Northeast
Sex: Female **Length (cm)**: 278 **Estimated** _____ **Weight (kg)** _____
Date reported: 16 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 16 August 2020 **By**: FWC-SMW
Date necropsied: 17 August 2020 **By**: FWC-WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 70 m N of 357 Marsh Landing Loop.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Undetermined; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Deep external wound, fractured and luxated ribs, blood clots, kidney pallor, internal organs friable

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20136**
Date of Report: 2020-Aug-17
Filed By: FWC EC Field Station

FWC Case # 15066 **FWC Region:** NE

Sex: Male **Length:** 215 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-17 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.76756 **N**
County: Brevard **Longitude:** -80.77025 **W**
Waterway: Mosquito Lagoon
Location description: Allenhurst, grounded

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20136

MORPHOMETRICS:

Total length:	215 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20136 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 215 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 15 August 2020, at 0807 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon, Allenhurst, Brevard County. FWC case number 15066 was assigned. The complainant, Pam Mistyhn (321-795-4915), stated that there was a dead manatee near the Beacon 42 boat ramp. CMM left a voicemail for the complainant. The carcass was not verified. **17 August**, at 1138 hrs, the complainant contacted CMM and described a belly-up manatee, grounded on shore, with its flippers sticking up in the air. At 1151 hrs, CMM received a verification photo taken on 15 August. No further reports were received.

EXTERNAL Based on photographs - All of the ventral epidermis was present but sloughing. The carcass was distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

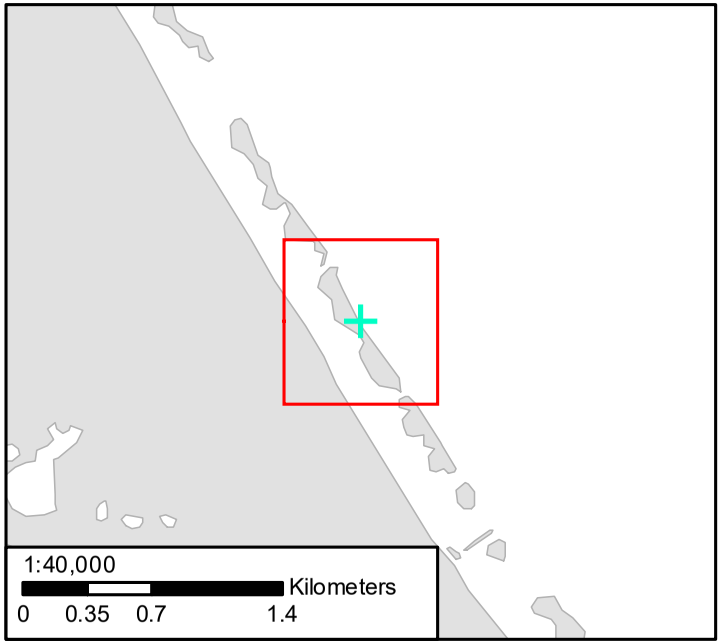
NECROPSY CONDUCTED BY N/A

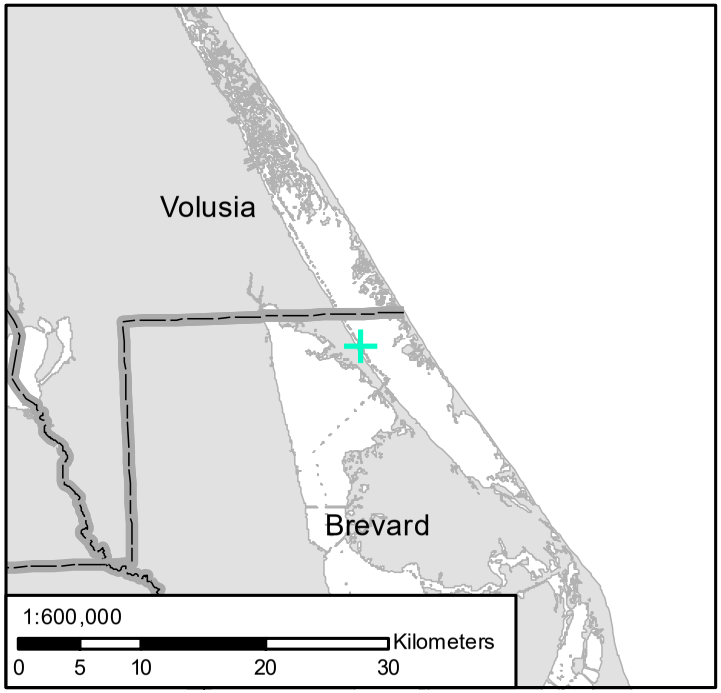
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20136

Report Date: 8/17/2020 **Received Date:** **Received By:**







Location: Allenhurst, Brevard County **Latitude:** 28.76756°N **Longitude:** -80.77025°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20136
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 15066 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** 215 **Weight (kg)** N/T
Date reported: 17 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 1.31 km NNW of Beacon 42 Boat Ramp
Carcass Orientation: Grounded

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20137**
Date of Report: 2020-Aug-21
Filed By: FWC EC Field Station

FWC Case # 15398 **FWC Region:** NE

Sex: Female **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-21 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.81988 **N**
County: Volusia **Longitude:** -81.12654 **W**
Waterway: St. Johns River
Location description: Osteen, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)
EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through complainant photographs.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20137

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20137
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Female **TL** 120 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Necropsied

HISTORY 21 August 2020, at 1240 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the St. Johns River, Osteen, Volusia County. FWC case number 15398 was assigned. The complainant, Jay Atkinson (407-416-1379), stated that there was a dead, bloated manatee calf at the Iron Bend in the St. Johns River. At 1139 hrs, CMM received photo verification. Due to the carcass size and significant decomposition, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the epidermis was present. The carcass was distended with gas. There was a thin brown algal mat on all aspects. A few transverse folds were present of the ventrum. No watercraft-related wounds or scars were observed.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Fetal folds

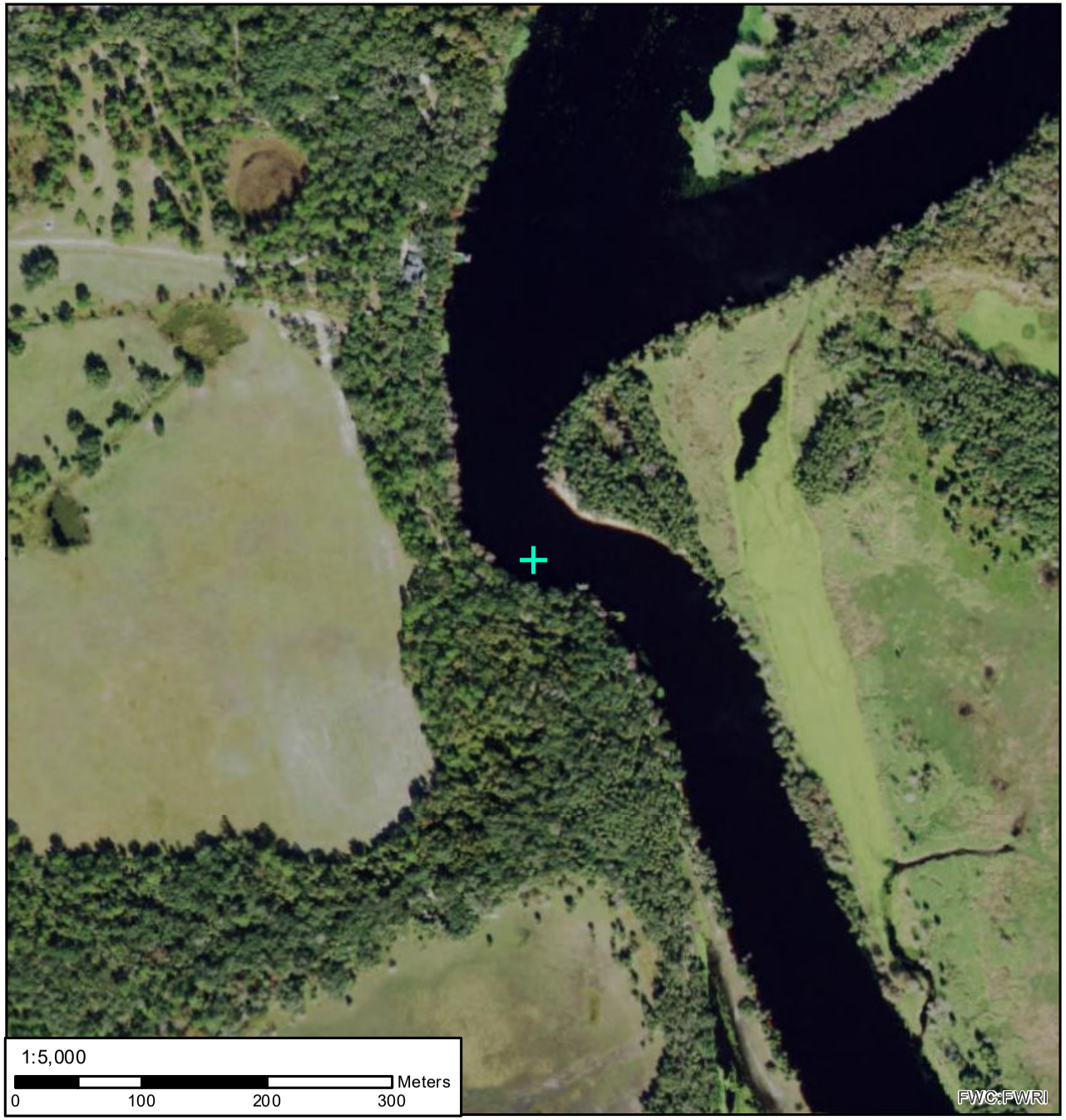
PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

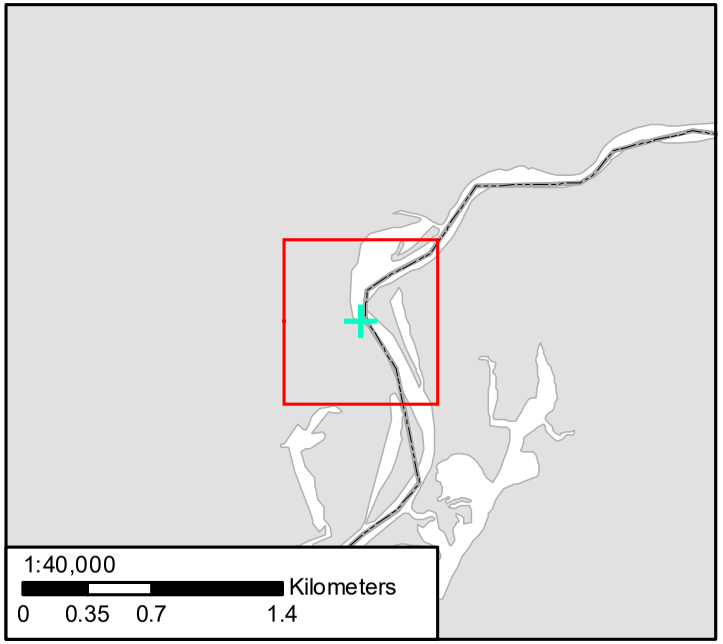
NECROPSY CONDUCTED BY N/A

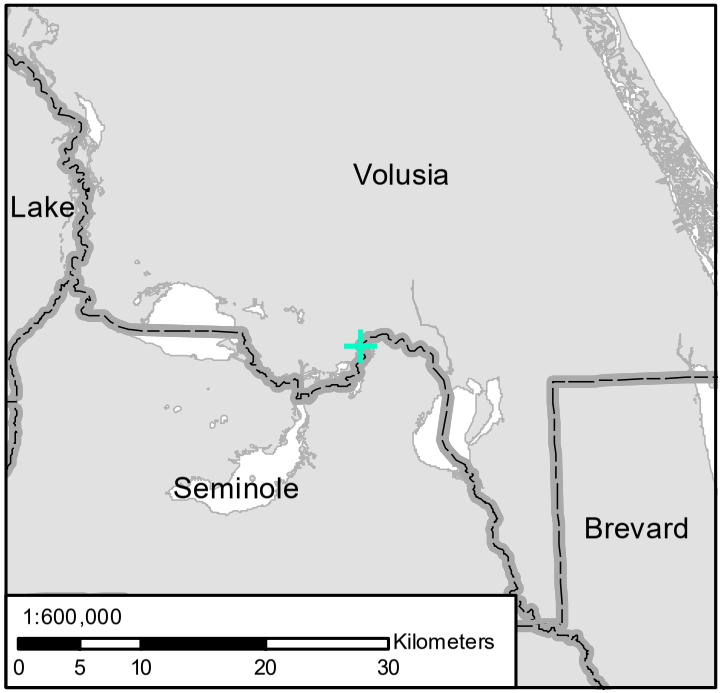
REPORT FILED BY Metcalf / Greer

Verified Location of Manatee Carcass MEC20137

Report Date: 8/21/2020 **Received Date:** **Received By:**







Location: Osteen, Volusia County

Latitude: 28.81988°N **Longitude:** -81.12654°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20137
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 15398 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** 120 **Weight (kg)** N/T
Date reported: 21 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: St. Johns River
Latitude: N _____ **Longitude**: W _____
Locality description: Osteen, approximately 260 meters SSE of 732 Lemon Bluff Road

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☑ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20138**
Date of Report: 2020-Aug-23
Filed By: FWC EC Field Station

FWC Case # 15517 **FWC Region:** NE

Sex: Female **Length:** 315 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-23 **By:** Citizen to FWC NE Field Station
DATE COLLECTED: 2020-Aug-23 **By:** FWC-SMW,CMM
DATE NECROPSIED: 2020-Aug-23 **By:** FWC-SMW,CMM

LOCATION: **State:** FL **Latitude:** 28.03118 **N**
County: Brevard **Longitude:** -80.57999 **W**
Waterway: Turkey Creek
Location description: Palm Bay, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Chronic; Emaciated; Remodeled rib; Chronic right hemothorax with fibrin; Sediment in airways; Fluid in left pleural cavity; Relatively empty upper GI tract; Eroded skin lesions associated with rib tips.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Healing wound).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed. Monofilament in colon. Plastic straw in colon. Plastic bag in colon. Also FWC case number 14927. Observed alive and lethargic on 12 and 13 August 2020. Known as MIPS ID RB542, first sighted on 18 Feb 1991 at the Riviera Beach Power Plant. Healing curved linear wound.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20138

MORPHOMETRICS:

Total length:	315 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20138
SPECIES *T. manatus latirostris*
RECOVERY DATE 23 August 2020
NECROPSY DATE 23 August 2020
GENDER Female **TL** 315 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 12 August 2020, at 1334 hrs, FWC biologist-Carley M. Metcalf (CMM) received a text alert from FWC NE Dispatch-Orlando regarding a possibly sick manatee in Turkey Creek, Palm Bay, Brevard County. FWC case number 14927 was assigned. The complainant, Debbie (321-258-4492), stated that the manatee was lethargic and in shallow water. At 1355 hrs, CMM received a verification photo and told the complainant to call if the manatee was still there the next day. **13 August**, at 0940 hrs, FWC biologist-William D. Greer arrived at the manatee's location and assessed that the peduncle looked thin, but head shape and respirations were normal. In consultation with state rescue coordinator-Andrew J. Garrett, it was decided to monitor the manatee. No further live animal reports were received. **23 August**, at 0919 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding a dead manatee in Turkey Creek. FWC case number 15517 was assigned. The complainant, Lisa (386-793-9061), stated the manatee was belly-up and full grown. At 0927 hrs, SMW received a verification photo and requested FWC LE assistance to tow the carcass, but an officer wasn't available until 1600 hrs. SMW and CMM arrived at the Pollack Park boat ramp at 1112 hrs, launched the Key West boat, towed the carcass to nearby secluded shoreline, and completed a field necropsy by 1415 hrs. The remains were left onsite.

EXTERNAL Approximately 30% of the epidermis was present but sloughing. The carcass was distended with gas. The carcass was markedly thin with the outline of the ribs visible. Watery, red fluid exuded from the nares. There was one healing, superficial, slightly curved linear wound on the mid right dorsum. The tissue surrounding the urogenital region was torn due to decomposition and/or scavenging. There were eroded lesions associated with the rib tips in the dermis of the caudal left ventrum. A minimum of eighteen well-healed watercraft-related scar patterns was observed on the dorsal and left lateral aspect. The fluke margin was slightly irregular but well-healed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered.

STOMACH The stomach contained a small amount of watery, brown fluid mixed with 500 mL of moist, poorly chewed, stringy, green to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained a small amount of watery, gray to brown fluid mixed with a scant amount of well-chewed, yellow to green vegetation (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained watery, light gray fluid throughout, and some sections also contained wet, poorly chewed, poorly formed, very stringy, very leafy, green to brown ingesta. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 1 L of dry, poorly digested, very stringy, yellow to brown digesta (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained dry, poorly digested, moderately formed, very stringy, very leafy, green to brown feces. The mid colon contained slightly moist, poorly digested, well-formed, very stringy, leafy, brown feces. There were a 3.5 cm long piece of red plastic straw, a 4.1 cm long piece of green monofilament, and a 15.3 cm long piece of gray plastic bag in the contents (see photo). The distal colon contained slightly moist, moderately digested, well-formed, stringy, leafy, brown feces. The mucosa was autolyzed throughout.

No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a small amount of watery, yellow to orange bile. The mucosa was bile-stained.

REPRODUCTIVE The uterine horns were contracted and eachs contained a scar. The ovaries were soft, friable, and autolyzed.

KIDNEYS The kidneys were mottled gray and black on serosal surfaces. On cut surfaces, the cortices were mottled gray and black and the medullae were pink. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 125 mL of watery, pink-tinged urine. The mucosa was unremarkable.

HEART The heart was soft and friable. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was torn due to decomposition. The right hemidiaphragm was intact. Both pleural cavities contained an abundant amount of watery, red fluid. There was 6 L of large old blood clots and fibrin walled off in the right pleural cavity dorsal to the right lung (see photos). The lungs were soft. The right lung was gray to black on serosal surfaces. The left lung was pink to gray on serosal surfaces. Both lungs were pink to red on cut surfaces. The right lung primary airway contained a moderate amount of dirt. The left lung primary airway contained a scant amount of dirt.

HEAD & NECK REGIONS NVL.

SKELETON Right rib 10 was remodeled from the distal one-third to the rib tip (see photos) which was near a well-healed scar caudal to the healing wound.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Eroded skin lesions associated with rib tips
- Remodeled rib
- Chronic right hemothorax with fibrin
- Sediment in airways
- Fluid in left pleural cavity
- Relatively empty upper GI tract
- Healing wound
- Autolyzed internal organs
- Monofilament, plastic straw, plastic bag in mid colon
- Uterine scars

PROBABLE CAUSE OF DEATH Watercraft (Chronic)

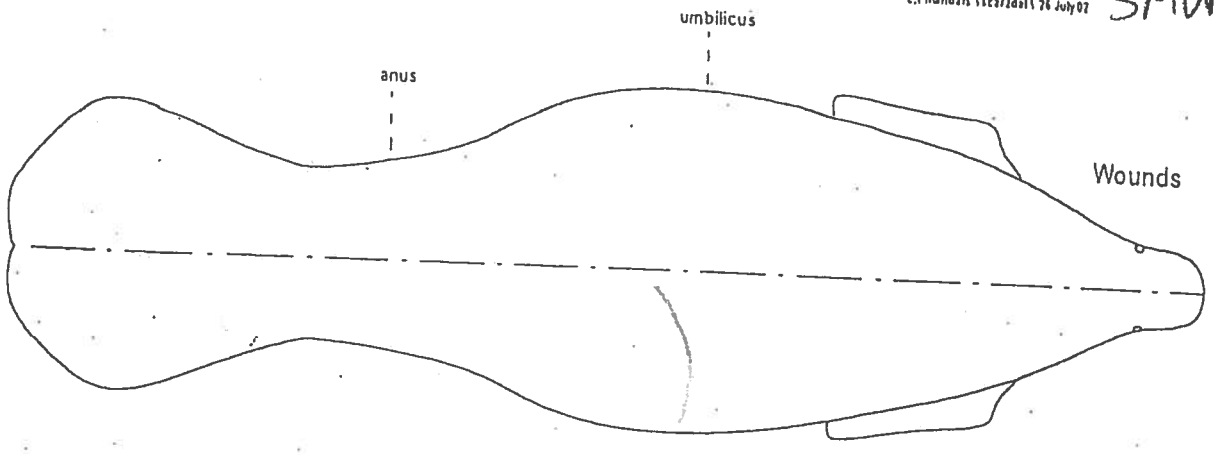
NECROPSY CONDUCTED BY

Sara M. Wappes
Carley M. Metcalf

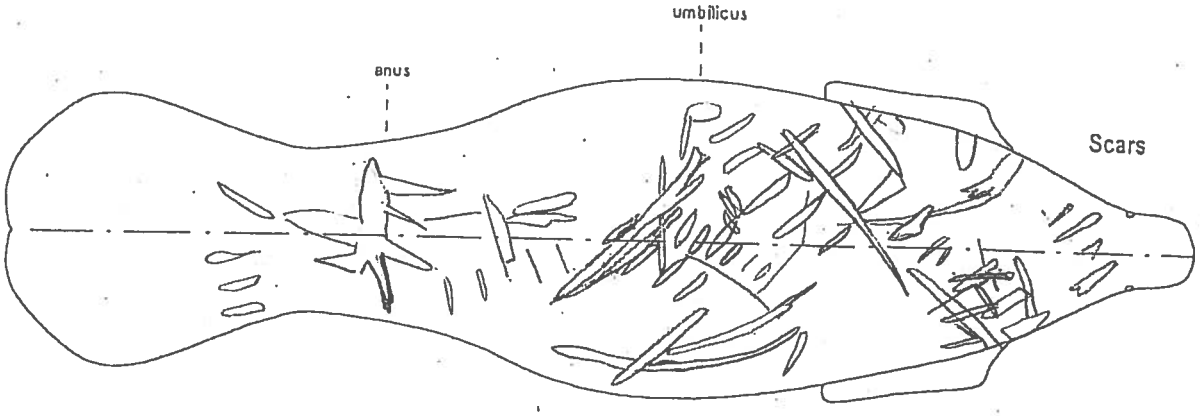
REPORT FILED BY Wappes

Date 23 AUG 2020 Field I.D. MEC20138

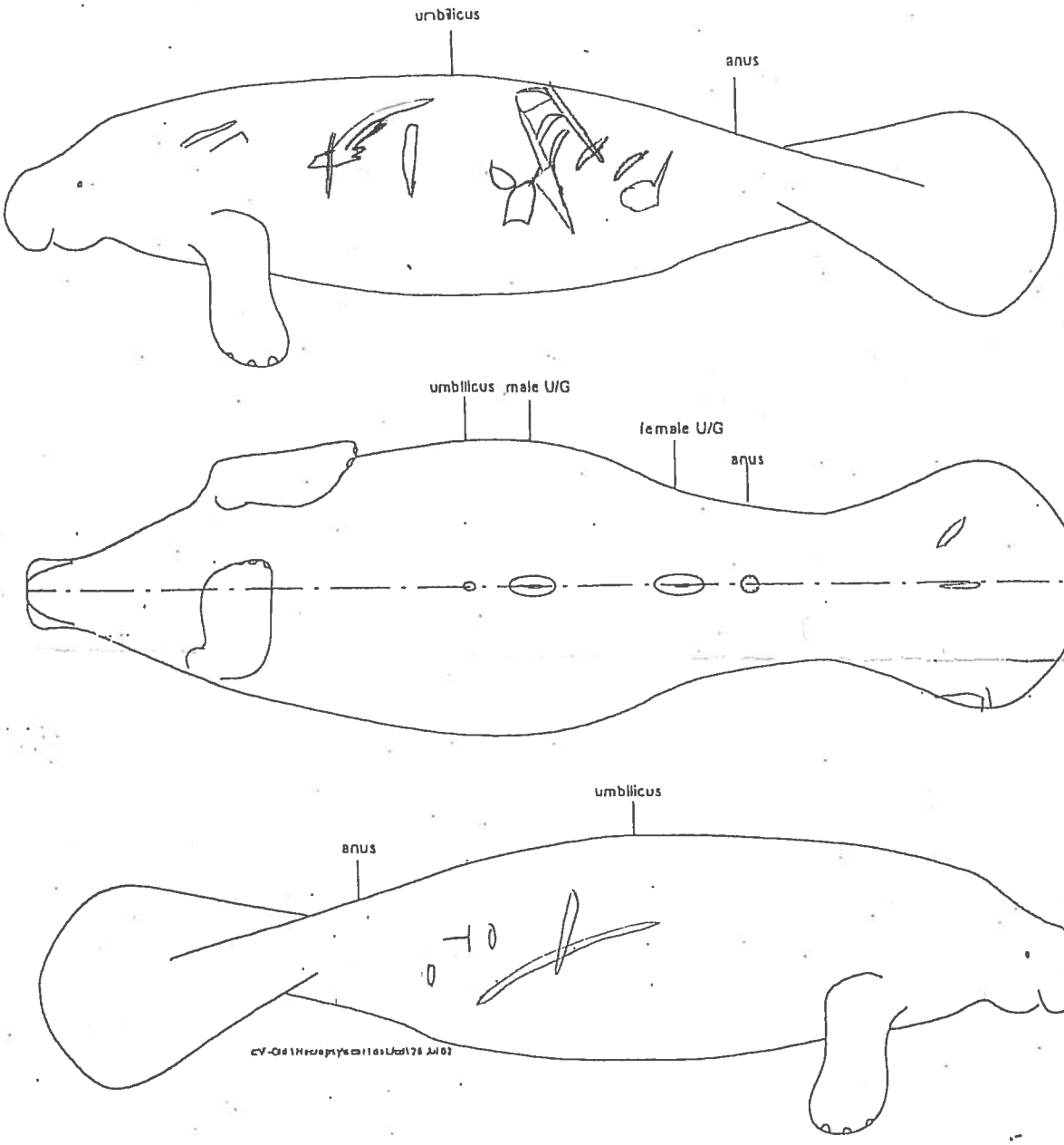
c:\ Manuals \ scar2dat \ 26 July 02 SMW



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Distance																				



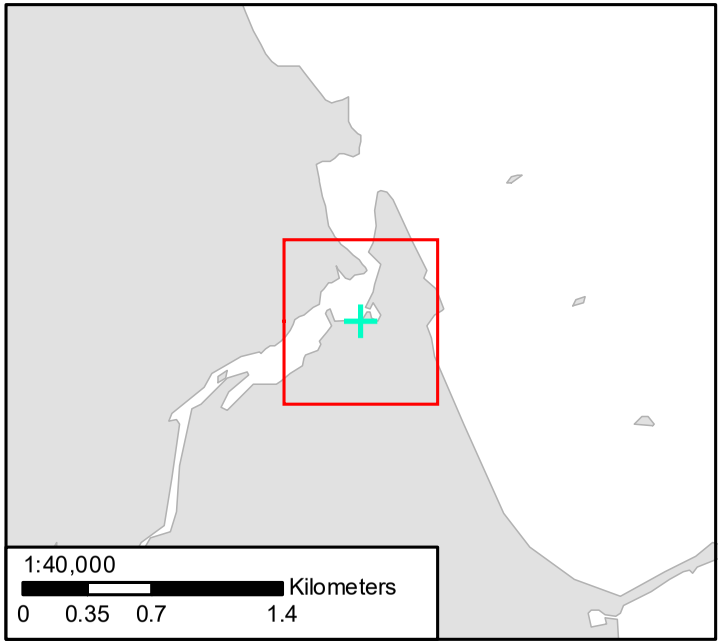
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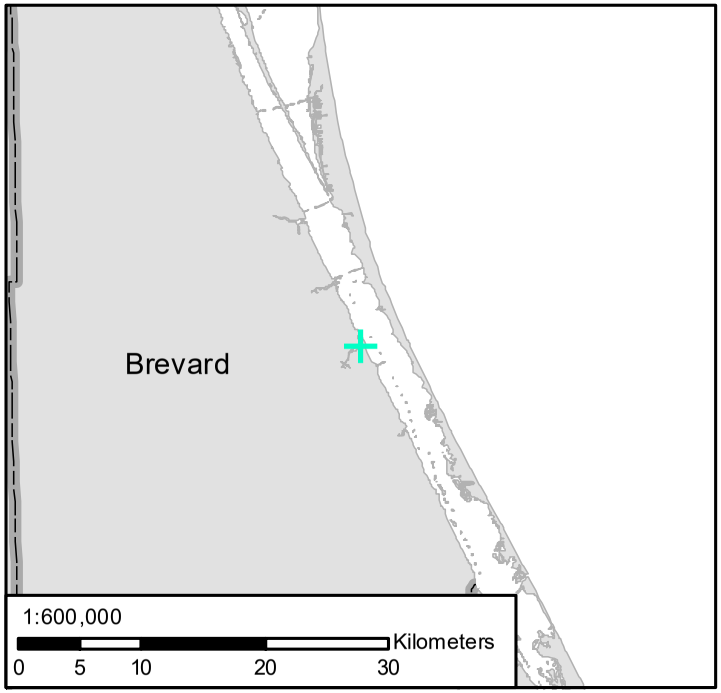


Verified Location of Manatee Carcass MEC20138

Report Date: 8/23/2020 **Received Date:** 8/23/2020 **Received By:** FWC-SMW,CMM







Location: Palm Bay, Brevard County **Latitude:** 28.03118°N **Longitude:** -80.57999°W

Map Created: 3/29/2021

Bassett, Brandon

From: Rood, Kari
Sent: Tuesday, September 8, 2020 4:52 PM
To: Howell, Amber; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Boyd, Denise; Burns, Allison; Davidson, Emily; Deutsch, Chip; deWit, Martine; Edwards, Holly; Faucett, Blake; Fontaine, Christine; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Martz, Meg; Metcalf, Carley; Nader, Ana; Panike, Anna; Peek, Austin; Schubert, Molly; sheri@mote.org; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC20138=RB542

MEC20138=RB542

Carcass location: Turkey Creek, Palm Bay
Female

First sighted 2/18/91 at Riviera Beach Power Plant
Last sighted 2/14/06 at Riviera Beach Power Plant
USGS should be able to provide a complete sighting history if needed.

Verifiers: SMW 8/25/20 & KAH 9/8/20

Sighting records are not to be used without permission from FWC, MML, and/or USGS, as appropriate.

Kari A. Rood
Manatee Photo-identification
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, FL 33701

Direct line: (727) 502-4737
Main line: (727) 896-8626
Kari.Rood@MyFWC.com
http://MyFWC.com
http://MyFWC.com/research/

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20138
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14927, 15517 **FWC District**: Northeast
Sex: Female **Length (cm)**: 315 **Estimated** _____ **Weight (kg)** _____
Date reported: 23 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 23 August 2020 **By**: FWC-SMW, CMM
Date necropsied: 23 August 2020 **By**: FWC-SMW, CMM

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Turkey Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 30 m E of 3028 Indian River Drive NE.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Chronic
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Healing linear wound on right side, right rib 10 remodeled, 6 L fibrin in right pleural cavity, autolyzed internal organs.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MEC20139**
Date of Report: 2020-Aug-27
Filed By: FWC EC Field Station

FWC Case # 15935 **FWC Region:** NE

Sex: Female **Length:** 295 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-27 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Aug-30 **By:** FWC-SMW
DATE NECROPSIED: 2020-Aug-30 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 27.97014 **N**
County: Brevard **Longitude:** -80.54446 **W**
Waterway: Indian River
Location description: Malabar, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Braided line in stomach. Linear, necrotic yellow lesion in stomach wall.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Scar, Fluke, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Actual length of the remains was 289 cm. Also FWC case number 15793. Gender determined from pelvic bone.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MEC20139

MORPHOMETRICS:

Total length:	295 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MEC20139 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 30 August 2020 **NECROPSY DATE** 30 August 2020
GENDER Female **TL** 295 **cm** (est) **WT** N/T **kg** **CONDITION** Badly Decomposed

---

HISTORY 27 August 2020, at 2135 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near Goat Creek, Malabar, Brevard County. FWC case number 15793 was assigned. The complainant, Simon Skarbelis (321-759-3350), stated that the carcass was adult-sized and that he had observed it two days ago. At 2146 hrs, DMB forwarded the information to the EC Field Station. **30 August**, at 1030 hrs, FWC biologist-Sara M. Wappes (SMW) received a call from Dispatch regarding a dead manatee near Goat Creek. FWC case number 15935 was assigned. The complainant, Jeff Davis (937-623-2369), stated that the carcass was all white with vultures on it and was accessible by land. SMW arrived at the mouth of Goat Creek at 1145 hrs, located the carcass at 1158 hrs, and completed a field necropsy by 1230 hrs. The remains were left onsite.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There were multiple rents due to decomposition and/or scavenging throughout the dorsum and ventrum. The skull and ribs were exposed through the rents, and the flippers were missing due to decomposition. The dermis was severely eroded on all aspects. A minimum of one well-healed watercraft-related scar pattern was observed on the right fluke. The fluke margin was largely eroded, and portions were missing either from mutilations or decomposition. Actual length of the remains was 289 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. Internal organs were missing unless mentioned below.

STOMACH The stomach contained approximately 9 L of moist, poorly chewed, very stringy, yellow to green ingesta (see photo). A piece of >40 lb test diameter green braided line was found in the contents (see photo). Approximately 75 cm of the line was surrounded by a large bolus of ingesta in the stomach, and the remaining 150 cm of line extended out of the stomach and ended in a smaller bolus of stringy vegetation and tissue (see photo). There was a necrotic linear yellow lesion in the stomach wall (see photo). The tissue was thickened surrounding the lesion. The mucosa was autolyzed. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON The ribs were luxated and sub-luxated due to decomposition. Otherwise, NVL.

OTHER

COMMENTS Gender determined from pelvic bone.

SIGNIFICANT FINDINGS

- Missing internal organs
- Braided line in stomach entangled in a large ingesta bolus
- Necrotic yellow lesion in stomach wall

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

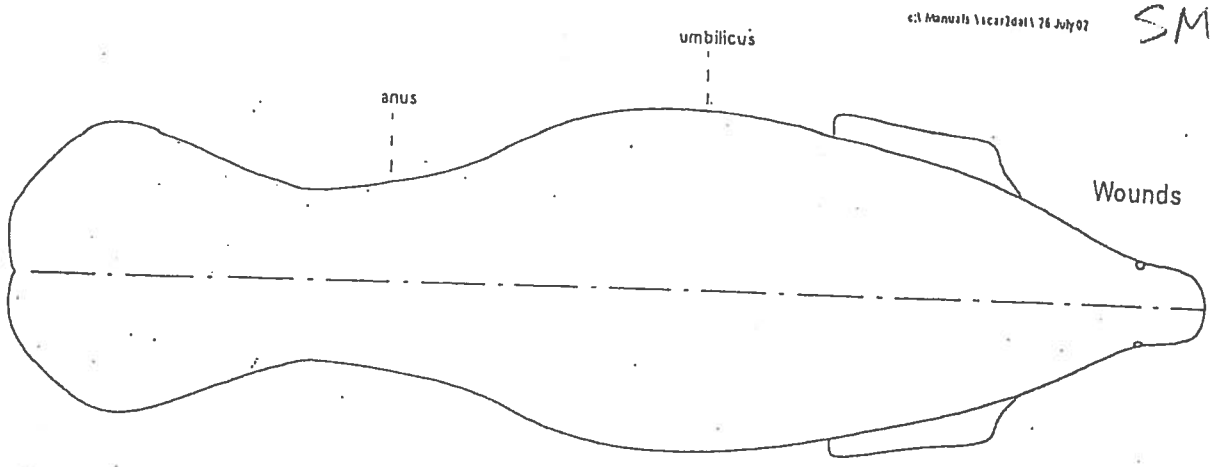
NECROPSY CONDUCTED BY

Sara M. Wappes

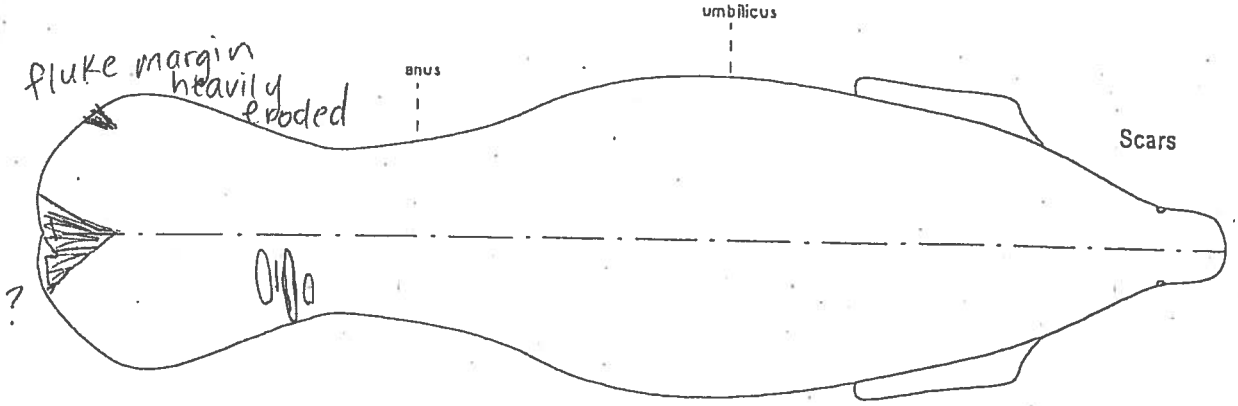
REPORT FILED BY Wappes

Date 30 AUG 2020 Field I.D. MEC20139

c:\Manuals\scar2dat\ 26 July 02 SMW



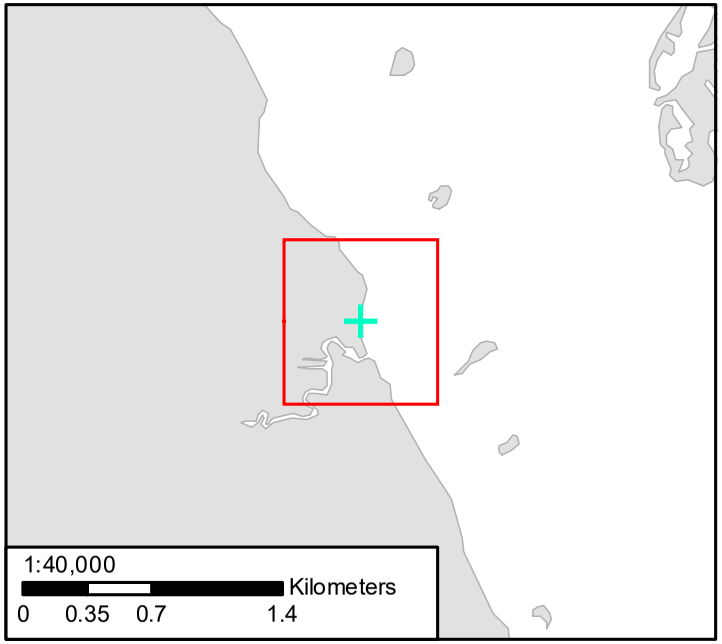
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Length																				
Width																				
Depth																				
Distance																				

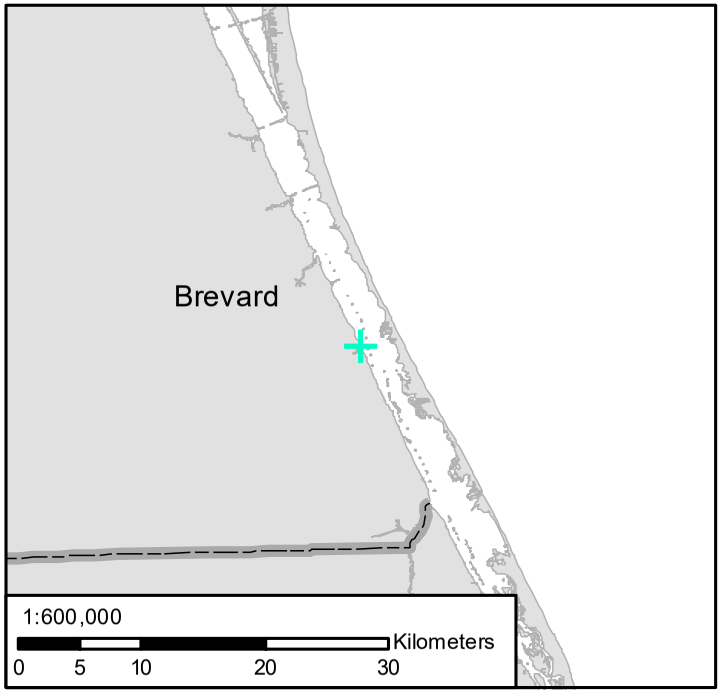


Verified Location of Manatee Carcass MEC20139

Report Date: 8/27/2020 **Received Date**: 8/30/2020 **Received By**: FWC-SMW







Location: Malabar, Brevard County

Latitude: 27.97014°N **Longitude**: -80.54446°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC20139
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 15793, 15935 **FWC District**: Northeast
Sex: Female **Length (cm)**: 289 **Estimated** 295 **Weight (kg)** _____
Date reported: 27 August 2020 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 30 August 2020 **By**: FWC-SMW
Date necropsied: 30 August 2020 **By**: FWC-SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Malabar, approximately 340 m SSE of 3020 Rocky Point Road.

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: All internal organs missing except stomach, stomach contained 215 cm line that extended out of stomach, bones luxated due to decomposition

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☐ L. Lateral ☑ Scars ☑ Fluke ☐ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: Unknown **PREGNANT**: Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: 1- Estimated but remaining carcass measurement taken

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MNE20009**
Date of Report: 2020-Feb-17
Filed By: FWC NE Field Station

FWC Case # 2614 **FWC Region:** NE

Sex: Unknown **Length:** 245 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-17 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Feb-17 **By:** FWC-ACB

DATE NECROPSIED: 2020-Feb-17 **By:** FWC-ACB

LOCATION: **State:** FL **Latitude:** 29.03099 **N**

County: Volusia **Longitude:** -80.94721 **W**

Waterway: Turnbull Creek

Location description: New Smyrna Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Missing most bones.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Actual length of the remains was 237 cm.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MNE20009

MORPHOMETRICS:

Total length:	245 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MNE20009 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 17 February 2020 **NECROPSY DATE** 17 February 2020
GENDER Undetermined **TL** 245 **cm** (est) **WT** N/T **kg** **CONDITION** Badly Decomposed

---

HISTORY 17 February 2020, at 1017 hrs, FWC biologist-Allison C. Burns (ACB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Volusia County, New Smyrna Beach, in a canal off Turnbull Creek. FWC case number 2614 was assigned. The complainant, Robert Staub (724-255-8271), said the carcass was stuck in the mud and wasn't going out with the tide. He sent ACB a photo at 1028 hrs. ACB arrived at the location at 1315 hrs, dragged the carcass with an anchor line to the complainant's dock, loaded it into the Ezy-Lift truck at 1330 hrs, and transported it to Buck Island in Jacksonville. A field necropsy was completed at 1604 hrs.

EXTERNAL All of the epidermis was missing. The remains mostly consisted of pieces of hide. Most soft tissue and dermis were missing. Both eyes were missing. The remaining dermis was severely eroded. The lower jaw and flippers were missing. No watercraft-related scars or wounds were grossly observed. Actual length of the remains was 237 cm. PIT tag scan was negative. A genetic sample was collected.

ABDOMINAL All fat was rendered. Internal organs were missing.

HEAD & NECK REGIONS The top of the skull was disarticulated.

SKELETON Most of the skeleton was missing. The scapulae, two cervical vertebrae, and ten caudal vertebrae were present and disarticulated.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs, dermis, most bones

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

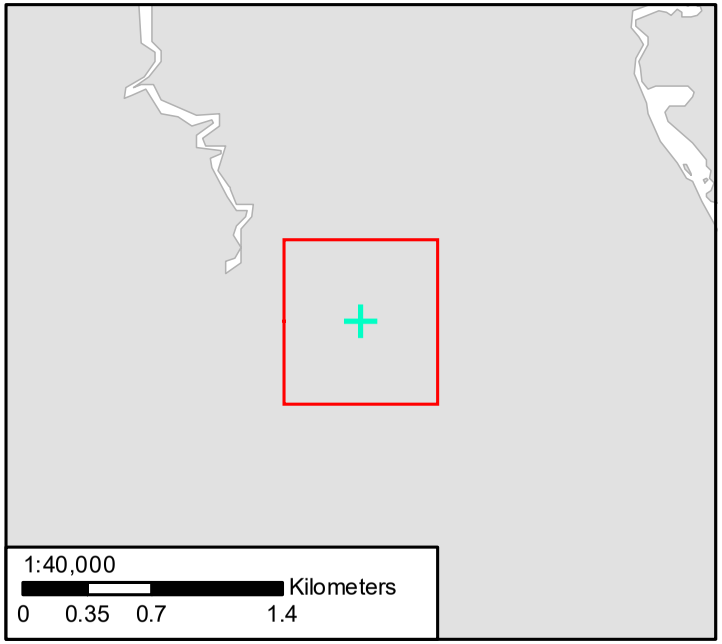
Allison C. Burns

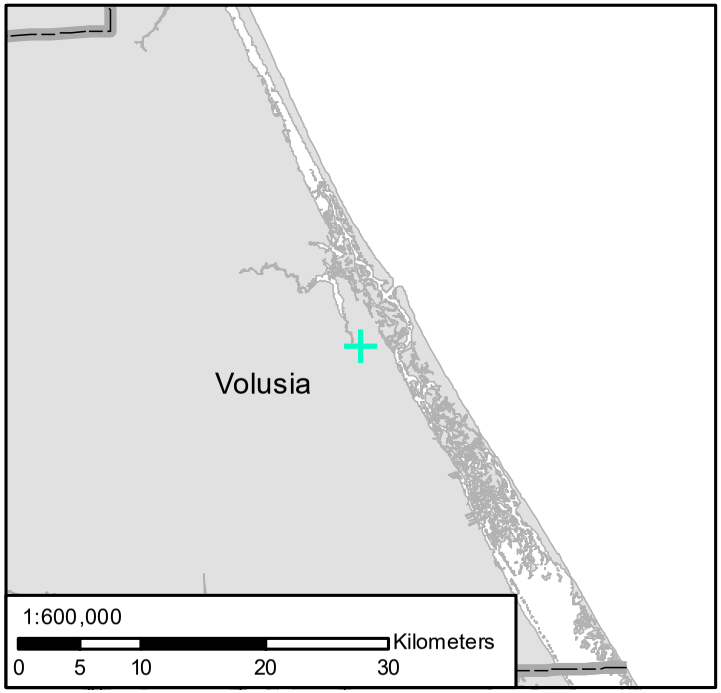
REPORT FILED BY Burns

Verified Location of Manatee Carcass MNE20009

Report Date: 2/17/2020 **Received Date**: 2/17/2020 **Received By**: FWC-ACB







Location: New Smyrna Beach, Volusia County

Latitude: 29.03099°N **Longitude**: -80.94721°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE20009
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2614 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: 237 **Estimated** 245 **Weight (kg)** N/T
Date reported: 17 February 2020 **By**: Robert Staub (724-255-8271)
Date collected: 17 February 2020 **By**: Allison C. Burns
Date necropsied: 17 February 20; **By**: Allison C. Burns

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Turnbull Creek
Latitude: N 29.030997 **Longitude**: W -80.947232
Locality description: New Smyrna Beach, approximately 20 m NE of 734 Pine Shores Circle

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Missing internal organs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☐ Internal ☐ Site ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: Unknown **PREGNANT**: Unknown **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MNE20017**
Date of Report: 2020-Apr-07
Filed By: FWC NE Field Station

FWC Case # 5798 **FWC Region:** NE

Sex: Female **Length:** 120 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-07 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 29.20065 **N**
County: Volusia **Longitude:** -81.01331 **W**
Waterway: Halifax River
Location description: Daytona Beach, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)

EXPLAIN: Verified; Not Necropsied; Fetal folds; Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MNE20017

MORPHOMETRICS:

Total length:	120 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MNE20017 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Female **TL** 120 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

---

HISTORY 07 April 2020, at 2035 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf in a marina off the Halifax River, Daytona Beach, Volusia County. FWC case number 5798 was assigned. The complainant, Billy (386-252-6421), sent verification photos which WDG passed to the NE Field Station. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - Approximately 60% of the ventral epidermis was present but sloughing. The carcass was distended with gas. The umbilical region was distended. A portion of intestine appeared to protrude through the umbilicus. A few faint transverse folds were present on the ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Fetal folds

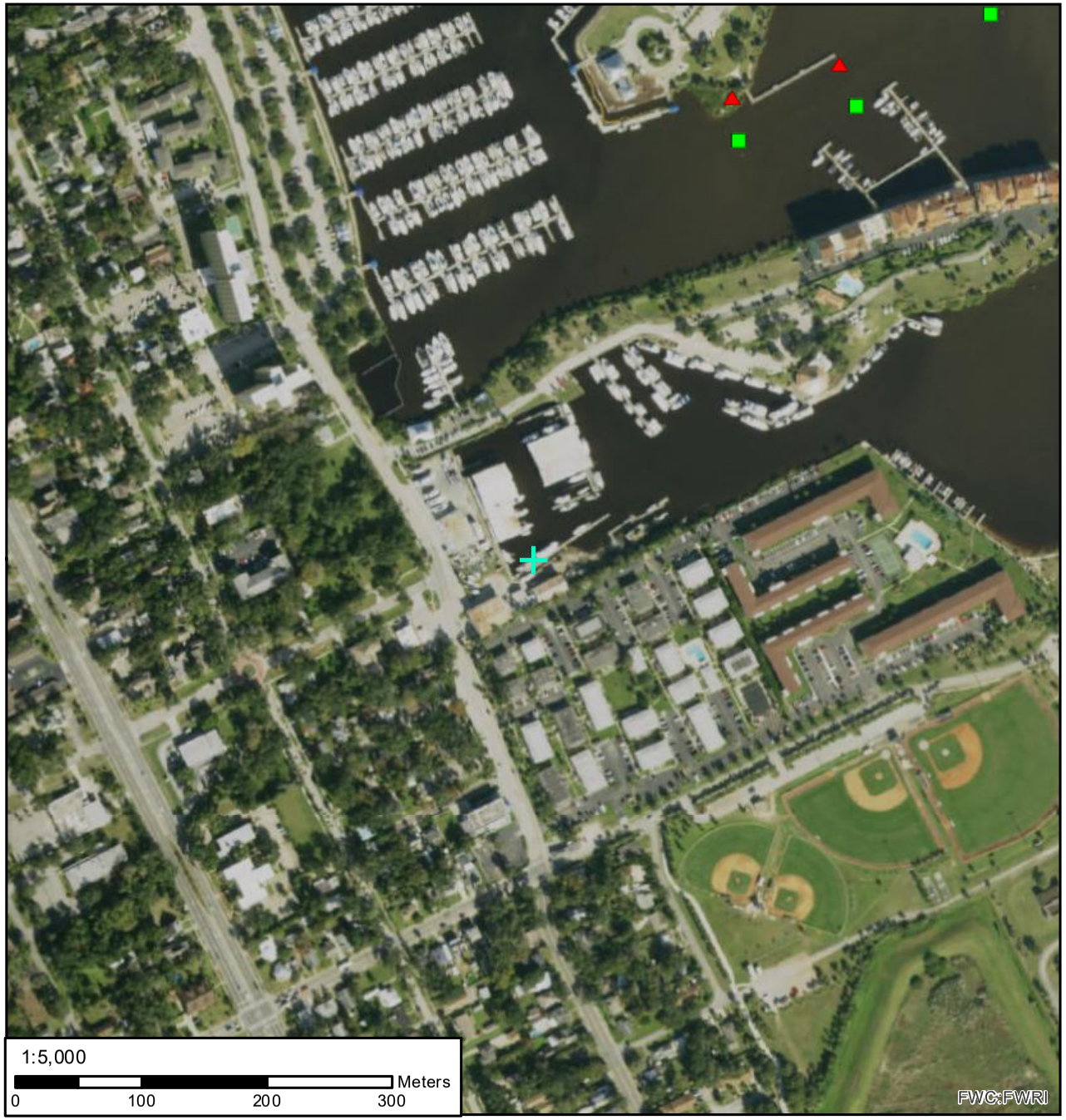
PROBABLE CAUSE OF DEATH Perinatal; Verified (Not Necropsied)

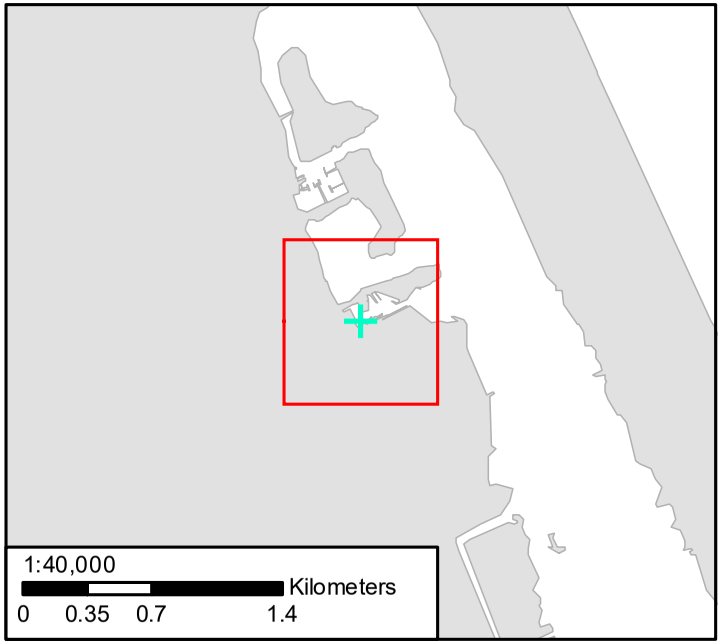
NECROPSY CONDUCTED BY N/A

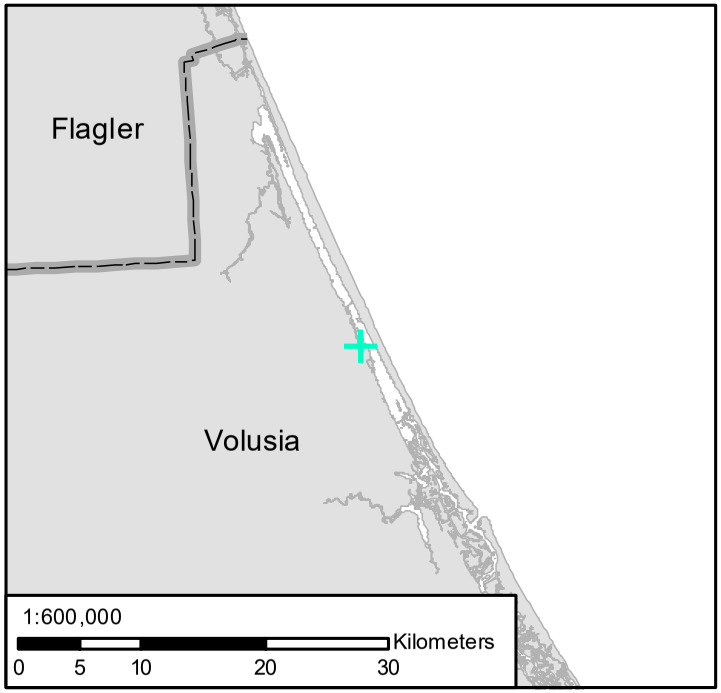
REPORT FILED BY Burns

Verified Location of Manatee Carcass MNE20017

Report Date: 4/7/2020 **Received Date:** **Received By:**







Location: Daytona Beach, Volusia County **Latitude:** 29.20065°N **Longitude:** -81.01331°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE20017
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5798 **FWC District**: Northeast
Sex: Female **Length (cm)**: 120 **Estimated** Yes **Weight (kg)** N/T
Date reported: 07 April 2020 **By**: Citizen to FWC Dispatch
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Halifax River
Latitude: N 29.200648 **Longitude**: W -81.013329
Locality description: Daytona Beach, 65 m SE of 645 South Beach Street

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Other verification photos

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MNE20027**
Date of Report: 2020-Jul-03
Filed By: FWC NE Field Station

FWC Case # 12474 **FWC Region:** NE

Sex: Male **Length:** 281 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jul-03 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2020-Jul-06 **By:** FWC-ACP
DATE NECROPSIED: 2020-Jul-07 **By:** FWC-NJG,ACP

LOCATION: **State:** FL **Latitude:** 29.35621 **N**
County: Volusia **Longitude:** -81.07708 **W**
Waterway: Halifax River
Location description: Ormond Beach, grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Bloody lung(s); Wet stomach, cecum contents; Watery proximal colon contents; Macroalgae in GI tract; Thickened, blistered cecum mucosa; Nodules colon wall. Necropsy findings fit the case description of the ongoing east coast UME. Cause of the event was still under investigation at the time this report was finalized.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Cleft flipper. A field necropsy was performed. Actual length of the remains was 276 cm. Also FWC case number 12411.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MNE20027

MORPHOMETRICS:

Total length:	281 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MNE20027
SPECIES *T. manatus latirostris*
RECOVERY DATE 06 July 2020
NECROPSY DATE 07 July 2020
GENDER Male **TL** 281 **cm** (est) **WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 03 July 2020, at 2110 hrs, FWC on-call biologist-Molly R. Schubert (MRS) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Halifax River, Ormond Beach in Volusia County. FWC case 12411 was assigned. The complainant, Ray Hicks (810-610-3903), reported the manatee was located behind his home at 2588 John Anderson Drive. He provided photos which were too dark to verify a carcass. **04 July**, at 1824 hrs, MRS received a text alert from Dispatch regarding a dead manatee in the Halifax River. FWC case number 12474 was assigned. The complainant, Louise Musselwhite (386-441-3528), sent a photo of the manatee grounded under her dock at 2607 John Anderson Drive. MRS passed the info to NE Field Station biologists. **05 July**, at 0815 hrs, FWC biologist-Allison C. Burns (ACP) called Dispatch and requested assistance to tow the manatee. At 1320 hrs, Dispatch told ACP that FWC Officer-Jessica Pezl could tow the manatee the next day. **06 July**, at 1056 hrs, Officer Pezl informed ACP that the carcass was in tow to the Tomoka State Park boat ramp. ACP arrived at the boat ramp at 1315 hrs, loaded the carcass into the carcass trailer, and transported it to the NE Field Station pending necropsy the next day. **07 July**, at 0840 hrs, ACP met FWC biologist-Nadia J. Gordon at Buck Island. A field necropsy was completed at 1035 hrs.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. Both eyes were missing. The dorsal dermis had patches of severe erosion due to decomposition. The right flipper was cleft (see photo). There were three short, well-healed linear scars on the cranial right lateral aspect. The fluke margin was eroded due to decomposition. Actual length of the remains was 276 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, gassy abdominal fat, and moderate mesenteric and omental fat.

STOMACH The stomach contained approximately 250 mL of wet, well-chewed, dark green macroalgae. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum was missing due to decomposition.

JEJUNUM & ILEUM The small intestine was gassy and contained green fluid. The mucosa was autolyzed. No parasites were observed.

CECUM The cecum was torn and contained at least 150 mL of wet, well-digested, brown to orange macroalgae. The mucosa was thickened, blistered, orange and sloughing (see photo). No parasites were observed.

COLON The proximal colon contained watery, green fluid mixed with a small amount of slightly fibrous, well-digested, green feces. The mucosa was black and sloughing. There was a high concentration of white nodules in the wall. The distal colon contained moist, fibrous, well-digested, well-formed, dark green feces. The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN Only a small part of the spleen remained which was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained thick, viscous, dark green bile. The mucosa was stained green to orange.

REPRODUCTIVE There was abundant reproductive fat. The reproductive tract was gassy and unremarkable.

KIDNEYS Only a portion of each kidney remained which were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was unremarkable.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed, but appeared bloody on cut surfaces. The primary airways contained a small amount of red fluid.

HEAD & NECK REGIONS NVL.

SKELETON Right ribs 1 and 2 were luxated due to decomposition, and the associated muscle was soft and friable in comparison with the surrounding muscle. There was red tissue surrounding right ribs 5 - 7.

OTHER

COMMENTS Necropsy findings fit the case description of the ongoing east coast UME. Cause of this event was still under investigation at the time this report was finalized.

SIGNIFICANT FINDINGS

- Watery proximal colon contents
- Wet stomach, cecum contents
- Thickened, blistered cecum mucosa
- Nodules colon wall
- Macroalgae in GI tract
- Bloody lungs
- Cleft flipper
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Natural; Other

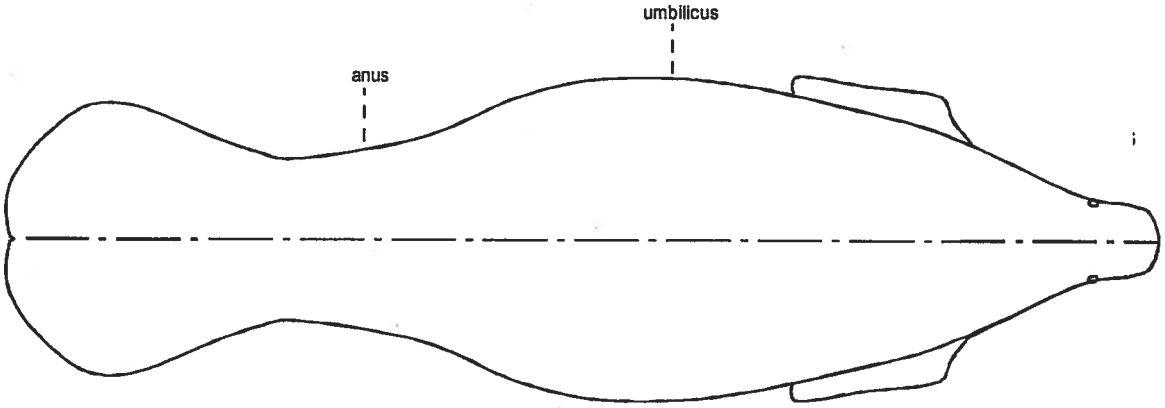
NECROPSY CONDUCTED BY

Nadia J. Gordon
Allison C. Burns

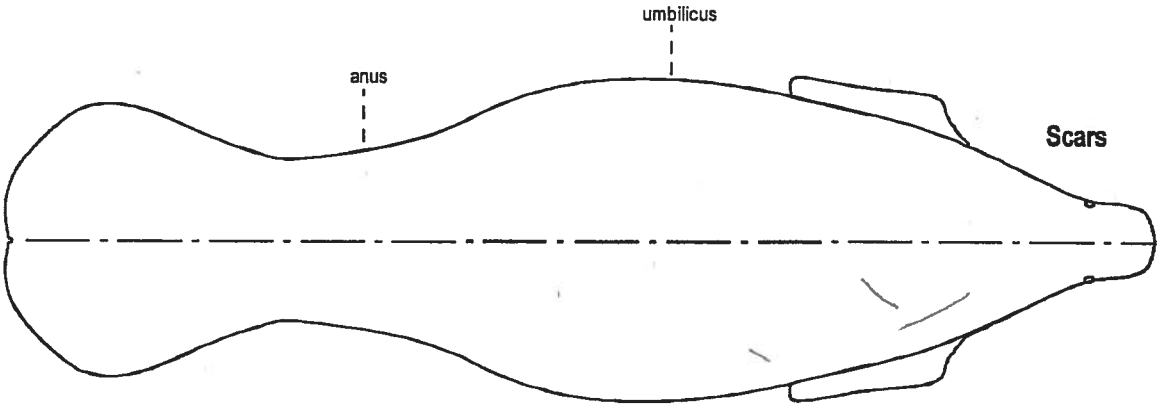
REPORT FILED BY Burns

Date 07 July 2020 Field I.D. MNF 20027

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Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

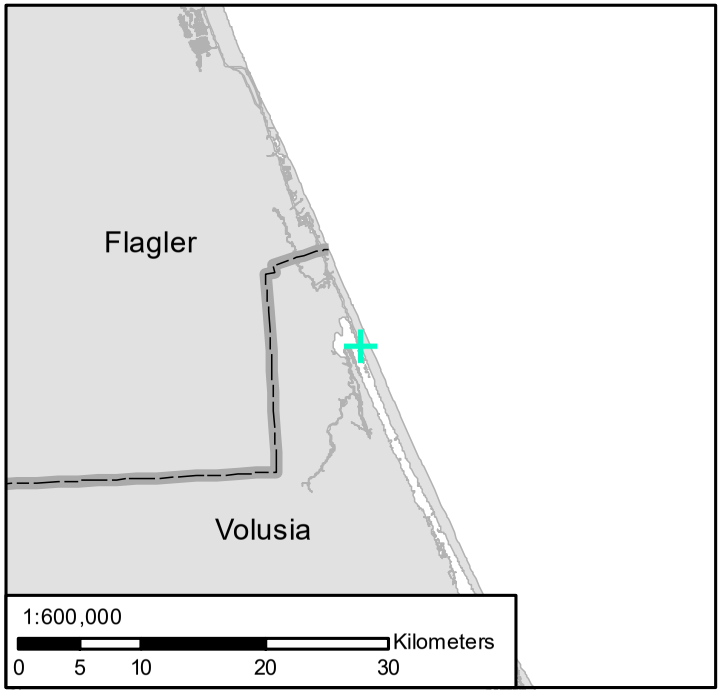


Verified Location of Manatee Carcass MNE20027

Report Date: 7/3/2020 **Received Date**: 7/6/2020 **Received By**: FWC-ACP







Location: Ormond Beach, Volusia County

Latitude: 29.35621°N **Longitude**: -81.07708°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE20027
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12474 **FWC District**: Northeast
Sex: Male **Length (cm)**: 276 **Estimated** 281 **Weight (kg)** N/T
Date reported: 03 July 2020 **By**: Citizen >FWC Dispatch
Date collected: 06 July 2020 **By**: FWC LE-Officer Pezl and Allison C. Burns
Date necropsied: 07 July 2020 **By**: Nadia J. Gordon and Allison C. Burns

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Halifax River
Latitude: N 29.356219 **Longitude**: W -81.077090
Locality description: Ormond Beach, 60 m SW of 2607 John Anderson Drive

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: missing and autolyzed internal organs, bloody lungs, disarticulated ribs

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MNE20031**
Date of Report: 2020-Aug-10
Filed By: FWC NE Field Station

FWC Case # 14796 **FWC Region:** NE

Sex: Female **Length:** 303 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-10 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2020-Aug-10 **By:** FWC-ACP

DATE NECROPSIED: 2020-Aug-11 **By:** FWC-NJG,ACP

LOCATION: **State:** FL **Latitude:** 29.03565 **N**
County: Volusia **Longitude:** -80.92008 **W**
Waterway: Indian River North
Location description: New Smyrna Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Monofilament in colon. Depleted fat(s); Wet lung(s); Peritonitis with necrotic, caseous material; Linear lesions in upper GI tract mucosa; Congested mesenteries, omentum, small intestine-, colon serosa, colon mucosa; Sand in colon; Fluid in pleural cavities; Bloody fluid omentum; Bloody liver.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed. Seeds in stomach, colon.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MNE20031

MORPHOMETRICS:

Total length:	303 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MNE20031
SPECIES *T. manatus latirostris*
RECOVERY DATE 10 August 2020
NECROPSY DATE 11 August 2020
GENDER Female **TL** 303 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 10 August 2020, at 1030 hrs, FWC biologist-Allison C. Burns (ACP) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee being pushed by another manatee. FWC case number 14796 was assigned. The complainant, Russell Becker (386-566-2083), was unable to send a verification photo but described blood coming from the manatee's mouth and said he could tow it to the North Causeway boat ramp. ACP arrived at the boat ramp at 1415 hrs, loaded the carcass into the carcass trailer, and transported it to the NE Field Station pending necropsy the next morning. **11 August**, ACP and FWC biologist-Nadia J. Gordon met at Buck Island in Jacksonville where a field necropsy was completed at 1050 hrs.

EXTERNAL Almost all of the epidermis was present but sloughing. The carcass was distended with gas. The eyes were bulging due to decomposition. Red fluid exuded from the nares. There was a moderate green algal mat on the dorsal and lateral aspects. A moderate infestation of barnacles was present on the dorsal and lateral aspects and ventral fluke. A minimum of six well-healed watercraft-related scar patterns was observed on the dorsum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal and mesenteric fat. There was moderate, gassy omental fat. The mesenteries were severely congested. There was necrotic, caseous, yellow to tan material coating the omentum, mesenteries, and serosa of the small intestine and colon.

STOMACH The omentum was thickened and severely congested. There was 325 mL of bloody fluid within the folds on the omentum. The stomach contained approximately 14 L of moist, fibrous, well-chewed, green ingesta mixed with small seeds. There was a superficial eroded linear yellow lesion near the pyloric sphincter. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained approximately 750 mL of wet, fibrous, well-chewed, green ingesta. There were two eroded linear yellow lesions in the wall. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine serosa had patches of severe congestion. The small intestine contained green fluid mixed with some pieces of green vegetation. There were three short, superficial, linear, purulent, yellow lesions (2.5 cm, 3.0 cm, and 4.0 cm long) in the proximal small intestine mucosa. No parasites were observed.

CECUM The cecum contained approximately 1 L of moist, fibrous, well-digested, green digesta. The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained moist, fibrous, hard, well-formed, poorly digested, dark green feces mixed with little round pieces of seeds and sand. There was a piece of clear monofilament line measuring greater than 200 cm which was wadded up in a large bolus of feces in the proximal colon. The distal colon contained moist, fibrous, well-formed, green feces mixed with sand. The mucosa was sloughing throughout most of the colon. The distal colon mucosa was congestion. No parasites were observed throughout.

PANCREAS The pancreas was gassy. Serosal and cut surfaces were tan to pink.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The margins of the liver were rounded. The liver was dark purple to black on serosal surfaces and black and bloody on cut surfaces.

GALLBLADDER The gallbladder contained approximately 5 mL of red-yellow bile. The mucosa was stained yellow.

REPRODUCTIVE The uterus was contracted. There was a large dark gray to purple scar in the left uterine horn.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was tan and gassy.

HEART There was moderate, gassy epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left pleural cavity contained approximately 6 L of red to purple fluid. The right pleural cavity contained approximately 12 L of red to purple fluid. The lungs were soft, friable, autolyzed, and very wet.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS The superficial linear lesions in the upper GI tract could have been caused by ingested fishing line, but stage of decomposition precluded assessment of severity and connection with the caseous peritonitis.

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Depleted fat
- Peritonitis with necrotic, caseous material
- Bloody fluid in omentum
- Congested mesenteries, omentum, small intestine-, colon serosa, colon mucosa
- Bloody liver
- Wet lungs
- Fluid in pleural cavities
- Sand in colon
- Few small superficial linear lesions in upper GI tract mucosa and wall
- Monofilament in colon
- Seeds in stomach, colon
- Uterine scar

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

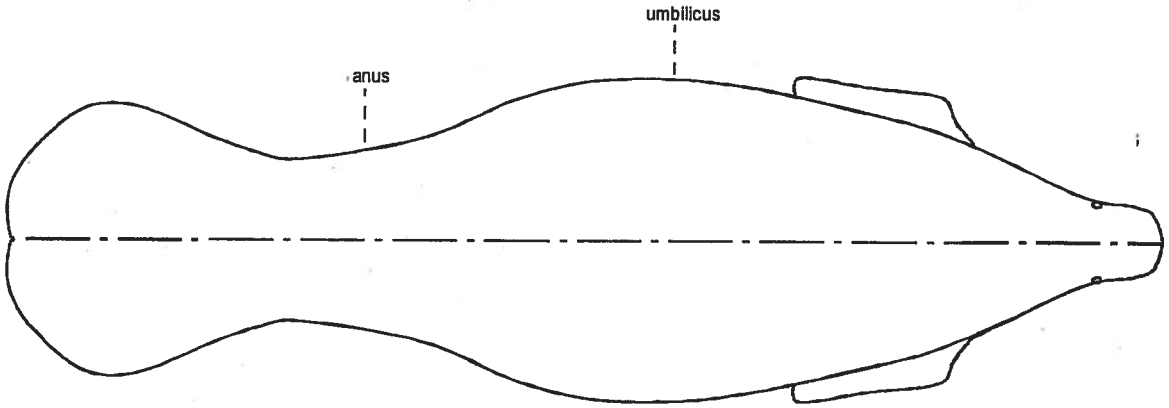
NECROPSY CONDUCTED BY

Nadia J. Gordon
Allison C. Burns

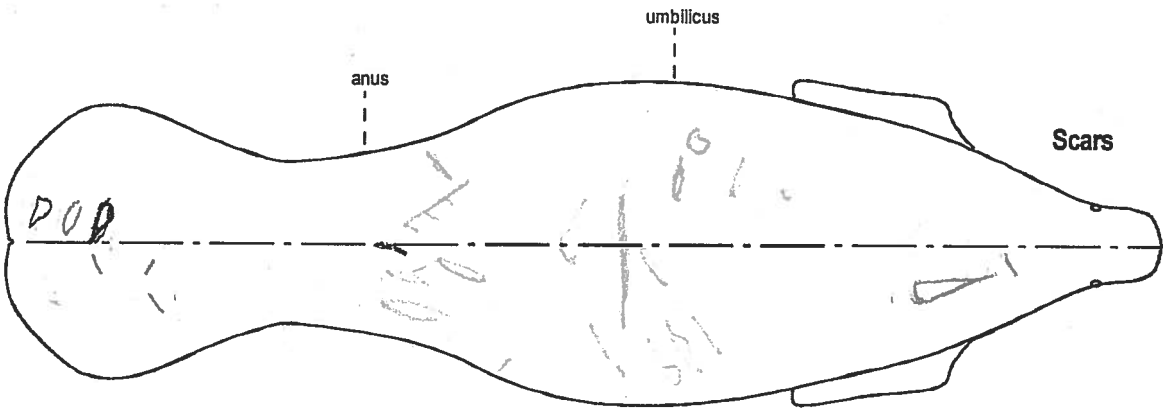
REPORT FILED BY Burns

Date 1 Aug 2000 Field I.D. MNF20031

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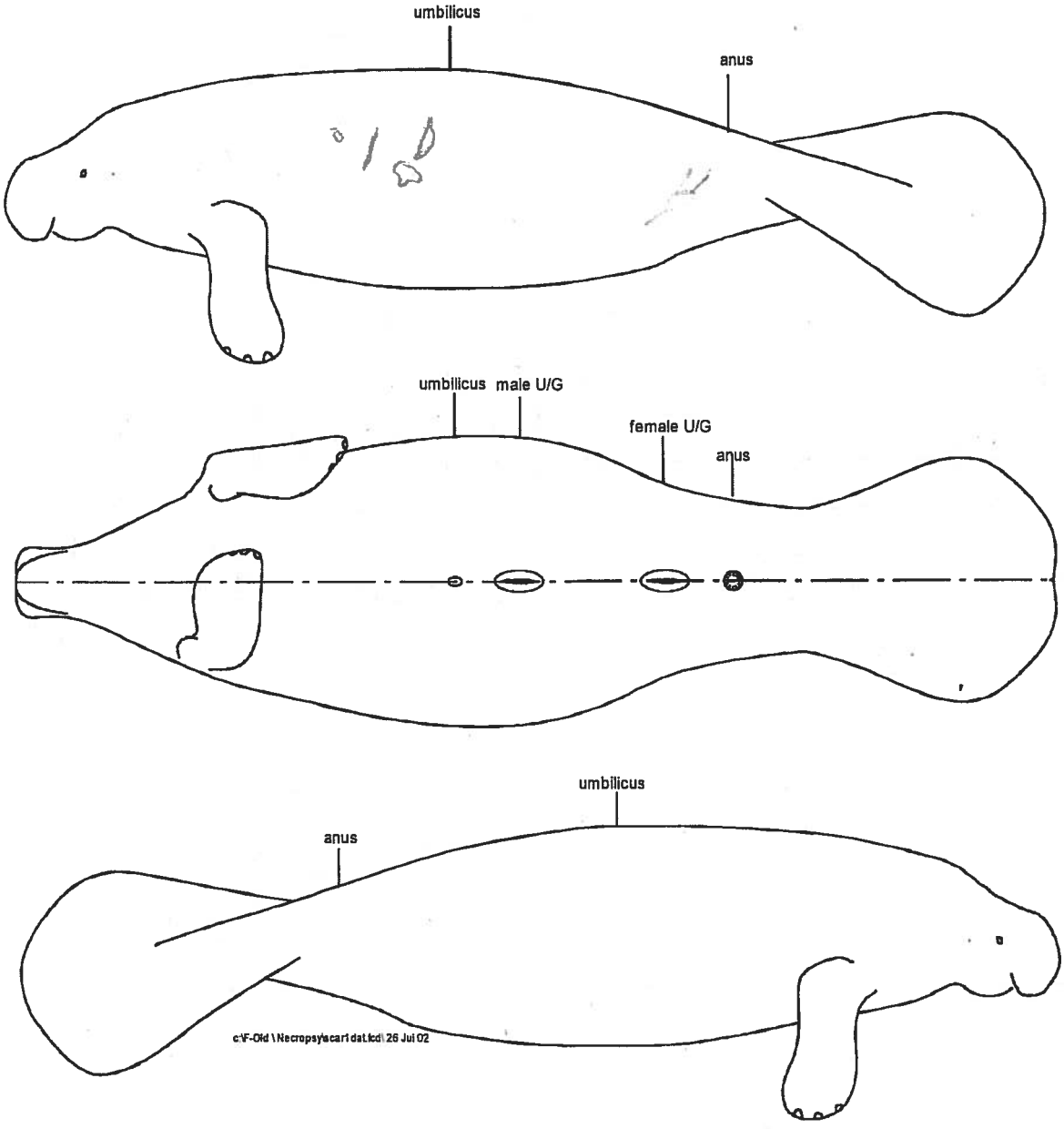


Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



female
303 cm
Volusia, New Smyrna Beach

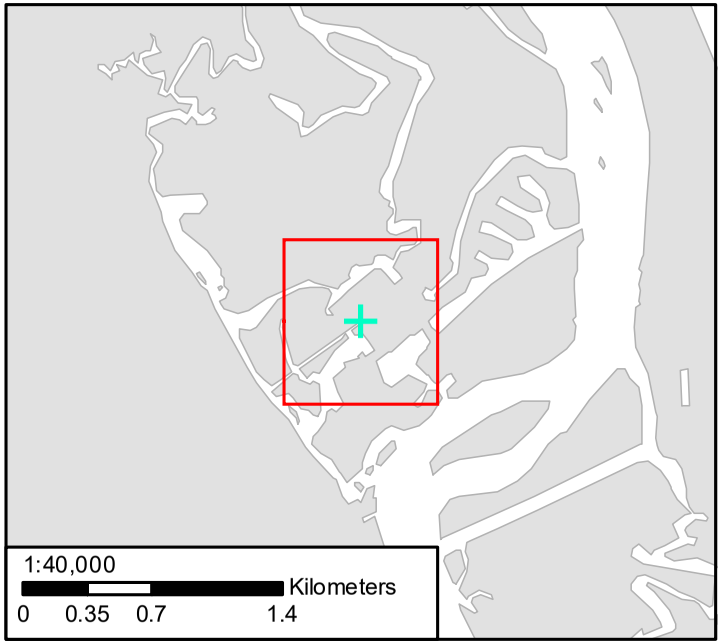
FIELD I.D. MNF20031

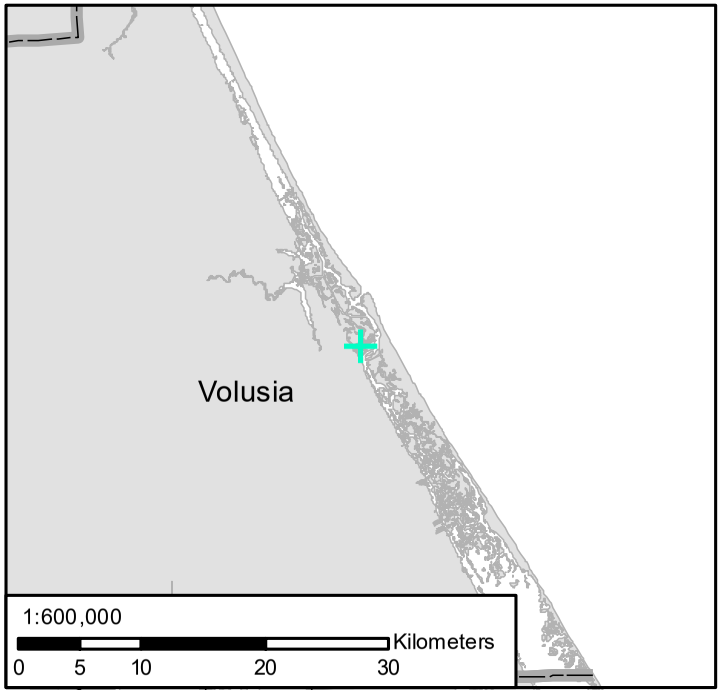


Verified Location of Manatee Carcass MNE20031

Report Date: 8/10/2020 **Received Date**: 8/10/2020 **Received By**: FWC-ACP







Location: New Smyrna Beach, Volusia County

Latitude: 29.03565°N **Longitude**: -80.92008°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE20031
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14796 **FWC District**: Northeast
Sex: Female **Length (cm)**: 303 **Estimated** _____ **Weight (kg)** N/T
Date reported: 10 August 2020 **By**: Citizen to FWC Dispatch
Date collected: 10 August 2020 **By**: Citizen and Allison C. Burns
Date necropsied: 11 August 2020 **By**: Nadia J. Gordon and Allison C. Burns

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N 29.035658 **Longitude**: W -80.920096
Locality description: New Smyrna Beach, 195m WSW of 520 Barracuda Boulevard

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☑ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: HI ingestion,monofilament line in colon, linear lacerations on stomach and small intestine mucosa from line, congested mesenteries, purulent mesenteries

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☐ Verification photograph ☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20003**
Date of Report: 2020-Jan-12
Filed By: FWC SE Field Station

FWC Case # 0471 **FWC Region:** SO-A

Sex: Male **Length:** 253 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-12 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Jan-12 **By:** FWC-AP

DATE NECROPSIED: 2020-Jan-12 **By:** FWC-ARH

LOCATION: **State:** FL **Latitude:** 27.20588 **N**

County: Martin **Longitude:** -80.19431 **W**

Waterway: Indian River

Location description: Stuart, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Watercraft wound(s); Fractured rib(s); Luxated rib(s); Shredded muscle; Hemothorax; Blood clots; Torn parietal pleura; Wet lung(s); Frothy lung; Fibrin in pleural cavity; Fluid in airways; Relatively empty, fluid-filled GI tract; Sediment in GI tract; Congested urinary bladder mucosa; Black specks abdominal fat.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC SE Field Station pending distribution.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Healing watercraft wound(s); Healing skin lesions.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20003

MORPHOMETRICS:

Total length:	253 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20003
SPECIES *T. manatus latirostris*
RECOVERY DATE 12 January 2020
NECROPSY DATE 12 January 2020
GENDER Male **TL** 253 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 12 January 2020, at 0947 hrs, FWC biologist-Austin Peek (AP) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Stuart, Martin County. FWC case number 0471 was assigned. The complainant, Turmaine (772-200-0094), stated that the carcass was grounded under the bridge near Sewall's point. Photo verification was received by 1000 hrs. AP requested FWC LE assistance. AP and FWC intern-Ian Anderson arrived at the carcass by 1106 hrs and walked it into deeper water to an FWC LE vessel by 1210 hrs. FWC Officer-Lonnie Brevik towed the carcass to a nearby boat ramp by 1242 hrs. The carcass was loaded via Ezy-Lift by 1315 hrs. A field necropsy was completed by 1520 hrs. The remains were disposed of at the Palm Beach County Landfill.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The mid right dorso-lateral aspect had one long linear superficial wound (#1) which was caudal and perpendicular to three parallel wounds (#2 – 4). Wounds #2 and 4 were superficial and wound #3 penetrated into the muscle and was through wound #1. The right dorsal peduncle had three superficial parallel healing wounds (#5 - 7). The carcass had a thin brown algal mat. There were numerous barnacle scars on the dorsal and lateral aspects. Several healing linear lesions were observed on the dorsal fluke. A minimum of one well-healed watercraft-related scar pattern was observed. There was a small well-healed mutilation at the 5 o'clock aspect of the fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, omental, and mesenteric fat. There were several black specks on the abdominal fat. The colon and small intestine serosa was discolored dark blue to gray.

STOMACH The stomach contained 100 mL of watery, gray fluid mixed with fine, tan sediment. The mucosa was discolored gray with several raised, white nodules observed. No parasites were observed.

DUODENUM The duodenum contained 75 mL of viscous, gray fluid mixed with fine, tan sediment. The mucosa was discolored gray. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained watery, gray fluid. The distal small intestine contained viscous, yellow to tan mucus. The mucosa was discolored gray throughout. There were numerous prominent Peyer's patches in the wall. No parasites were grossly observed.

CECUM The cecum contained 200 mL of watery, gray fluid mixed with fine, tan sediment. The mucosa was discolored gray. There was a mild infection of dead trematodes.

COLON The proximal colon contained watery, clear to gray fluid. Some sections of the distal colon contained watery, green fluid and other sections were contracted and empty of contents. The mucosa was discolored gray throughout. There was a small infection of dead trematodes.

PANCREAS The pancreas was soft. Serosal and cut surfaces were tan.

SPLEEN The spleen was soft. Serosal surfaces were mottled purple and red, and cut surfaces were red.

LIVER The margins of the liver were mostly rounded. The liver was soft. Serosal surfaces were purple and cut surfaces were red.

GALLBLADDER The gallbladder contained 25 mL of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of reproductive fat. The reproductive organs were moderate in size. No fluid was expressed on cut surfaces of the seminal vesicles or epididymides.

KIDNEYS There was a small amount of perirenal fat. The kidneys were light blue on serosal surfaces. On cut surfaces, the cortices were light blue to gray and the medullae were tan. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder was contracted and empty of contents. The mucosa was moderately congested.

HEART There was moderate epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right hemidiaphragm was distended due to fluid in the right pleural cavity. The right pleural cavity contained 12.75 L of watery, light red fluid and 250 mL of loose, well-formed, resolving blood clots (see photo). The dorsal aspect of the right hemidiaphragm, the right parietal pleura, and the right lung serosa were coated in a large amount of tan fibrin (see photos). The right lung was light pink on serosal surfaces and tan on cut surfaces. The right lung airways were clear. The mucosa was tan. The left lung was light pink to light blue on serosal surfaces, and red, very wet, and frothy on cut surfaces. The airways contained a moderate amount of red-tinged fluid. The mucosa was red. There was a mild infection of dead trematodes in both lung airways.

HEAD & NECK REGIONS There was a severe infection of dead trematodes in the trachea (see photo). The mucosa was red.

SKELETON Right rib 12 had an oblique fracture at the distal one-third which tore the parietal pleura. Right rib 13 was luxated and tore the parietal pleura. There were shredded tissue and loose blood clots associated with the fracture and luxation. All trauma was deep to wound #1.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wounds
- Fractured, luxated ribs
- Shredded tissue
- Blood clots
- Hemothorax with resolving blood clots and fibrin
- Torn parietal pleura
- Wet, frothy lung
- Fluid in airways
- Relatively empty, fluid-filled GI tract
- Sediment in GI tract
- Congested urinary bladder mucosa
- Healing watercraft wounds
- Healing skin lesions
- Black specks abdominal fat

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

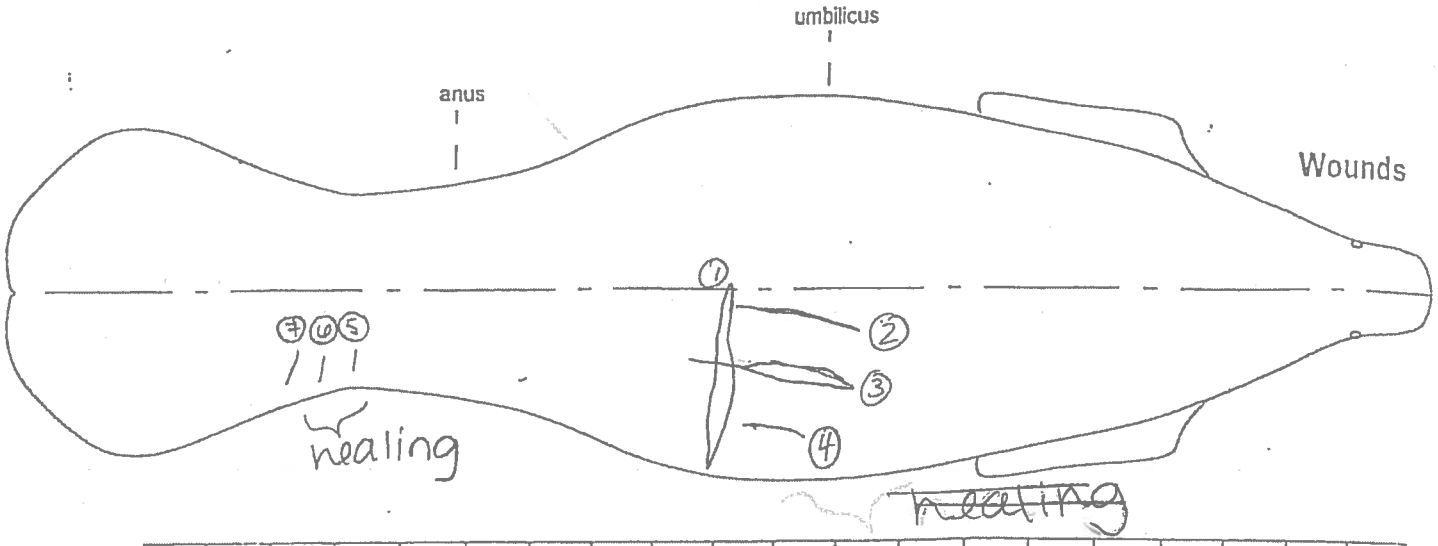
NECROPSY CONDUCTED BY

Amber R. Howell

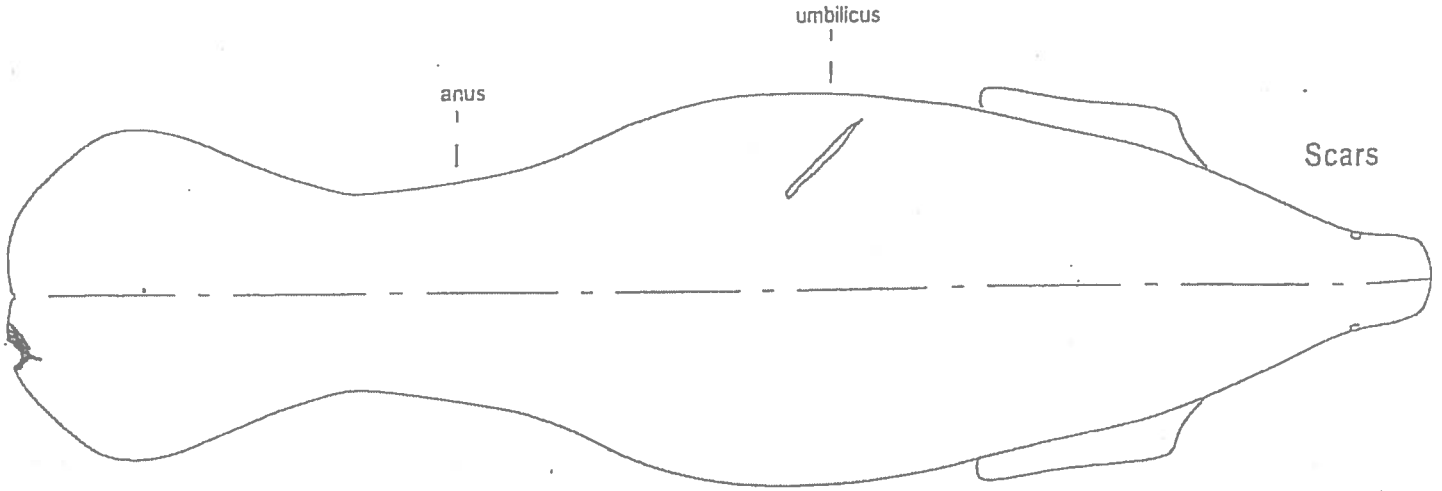
REPORT FILED BY Howell

Date 12 JAN 2020 Field I.D. MSE20003

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Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	27.2	19.0	29.4	10.0																
Width	2.4	0.5	3.0	1.8																
Depth	0	1.8	5.7	2.0																
Distance	X	10.8	13.2	X	X	X														

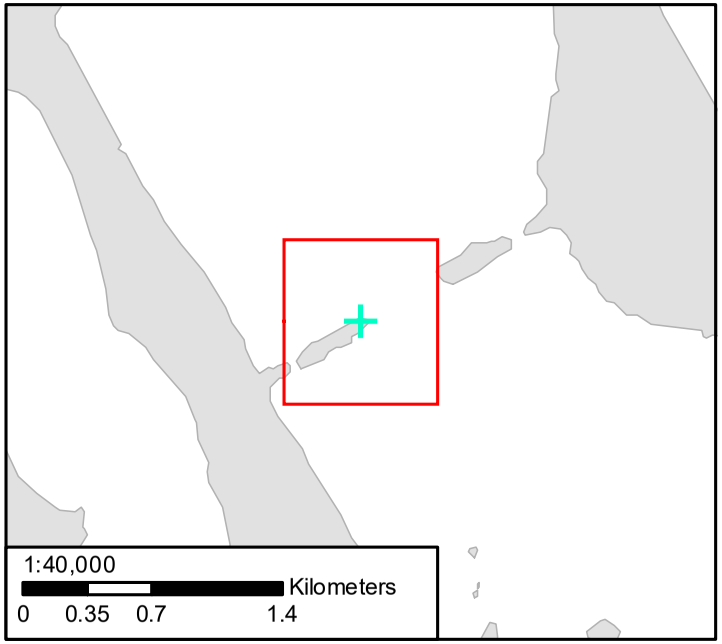


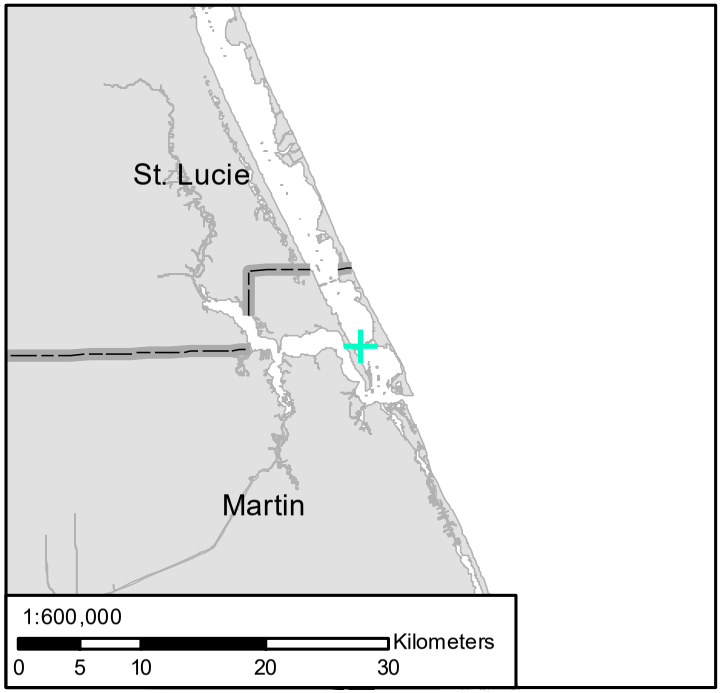
ARH

Verified Location of Manatee Carcass MSE20003

Report Date: 1/12/2020 **Received Date:** 1/12/2020 **Received By:** FWC-AP







Location: Stuart, Martin County

Latitude: 27.20588°N **Longitude:** -80.19431°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20003
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 00471 **FWC District**: South A
Sex: Male **Length (cm)**: 253 **Estimated** _____ **Weight (kg)** N/T
Date reported: 12 January 2020 **By**: Citizen to FWC Dispatch
Date collected: 12 January 2020 **By**: FWC- AP, FWC Intern- Ian Anderson
Date necropsied: 12 Jan 2020 **By**: FWC-ARH

LOCATION INFORMATION: **State** FL **County**: Martin **Waterway**: Indian River
Latitude: N 27.205889 **Longitude**: W -80.194315
Locality description: 660 m NE of 6 N Sewalls Point Rd, Stuart, FL 34996

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Chronic
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: healing watercraft wounds, fibrin coated lung, hemidiaphragm, parietal pleura, distended pleural cavity, hemothorax, relatively empty GI tract

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☑ Other Wounds

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20005**
Date of Report: 2020-Jan-13
Filed By: FWC SE Field Station

FWC Case # 0519 **FWC Region:** SO-A

Sex: Female **Length:** 179 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-13 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Jan-14 **By:** FWC-BMF

DATE NECROPSIED: 2020-Jan-14 **By:** FWC-BMF

LOCATION: **State:** FL **Latitude:** 27.23991 **N**

County: Martin **Longitude:** -80.22186 **W**

Waterway: Indian River

Location description: Jensen Beach, beached

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cold stress lesions; Depleted fat(s); Serous fat(s); Wet lung(s); Dry, hard feces; Crumbly feces; Sand in trachea; Relatively empty, fluid-filled upper GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal, Other (Healing skin lesions).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC SE Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Shark scavenging.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20005

MORPHOMETRICS:

Total length:	179 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20005
SPECIES *T. manatus latirostris*
RECOVERY DATE 14 January 2020
NECROPSY DATE 14 January 2020
GENDER Female **TL** 179 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 13 January 2020, at 1333 hrs, FWC biologist-Blake Faucett (BMF) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Jensen Beach, Martin County. FWC case number 0519 was assigned. The complainant, Sally (603-205-5540), stated that there was a small carcass on the beach near the Environmental Studies Center. A photo was not available. BMF requested assistance from Harbor Branch Oceanographic Institute (HBOI)-Wendy Marks. At 1508 hrs, Dispatch informed BMF that there was a second report of the carcass. The same case number was assigned. The complainant, Marilyn (772-219-1887), reported the carcass in the same location but did not have a photo. At 1538 hrs, Martin County Sheriff's Deputy-Mike Joseph informed FWC biologist-Amber Howell (ARH) that he had been notified about the carcass. At 1650 hrs, HBOI-Wendy secured the carcass. **14 January**, BMF arrived at the carcass at 1130 hrs and completed a field necropsy by 1315 hrs. The remains were disposed of at the Palm Beach County Landfill.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. The majority of the soft tissue of the axillae, head, and neck was missing due to shark scavenging which exposed some ribs. There were multiple healing linear, circular, and pitted cold stress lesions on the dorsal and lateral aspects. Numerous barnacle scars were observed on the caudal aspect, and a mild infestation of barnacles was present on the ventral fluke. A thin brown algal mat was present on the dorsal aspect. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, yellow abdominal fat. There was scant, gassy mesenteric and omental fat.

STOMACH The stomach contained 250 mL of watery, tan fluid mixed with a small amount of moderately chewed, fibrous, stringy, green ingesta. There was an area of black discoloration at the stomach-duodenum juncture (see photo). The remainder of the mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 100 mL of watery, tan fluid mixed with a small amount of moderately chewed, fibrous, stringy, green ingesta. The mucosa was mildly rugose and discolored black. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained thick, viscous, tan mucus. The mucosa was mildly rugose. No parasites were grossly observed.

CECUM The cecum contained 600 mL of moist, leafy, stringy, moderately digested, green digesta mixed with moderately digested, tubular, red and purple macroalgae. The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained dry, crumbly, hard, leafy, stringy, moderately digested, moderately formed, light green and light brown feces. The mid colon contained moist, leafy, stringy, moderately digested, poorly formed, light green and light brown feces. The distal colon contained dry, hard, leafy, stringy, moderately digested, well-formed, light green and light brown feces. The colon wall had areas of red discoloration. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained 10 mL of watery, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant reproductive fat. The diameter of the uterus was small. No scars were observed. No follicles were observed on the ovaries.

KIDNEYS There was a small amount of perirenal fat. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 20 mL of flocculent, red-tinged urine. The mucosa was autolyzed.

HEART There was a small amount of serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The right hemidiaphragm was torn due to decomposition. The left hemidiaphragm was intact. The lungs were soft, friable, and autolyzed. Cut surfaces were slightly wet. The left lung airways contained a small amount of watery, red-tinged fluid. The right lung airways were clear. The mucosa was red. No parasites were observed.

HEAD & NECK REGIONS There was a small amount of gritty, tan sand in the trachea. The mucosa was tan. No parasites were observed.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Healing cold stress lesions
- Depleted, serous fat
- Relatively empty, fluid-filled upper GI tract
- Dry, hard, crumbly feces
- Slightly wet lungs
- Sand in the trachea
- Shark scavenging
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

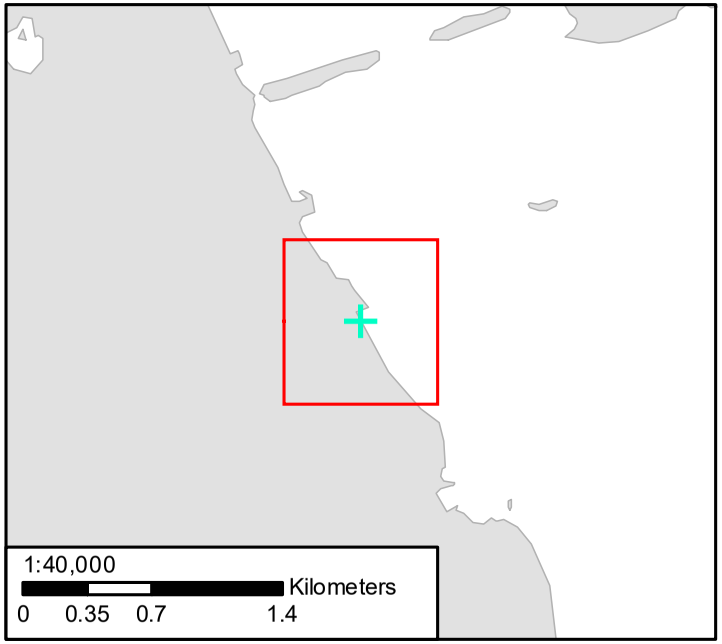
Blake M. Faucett

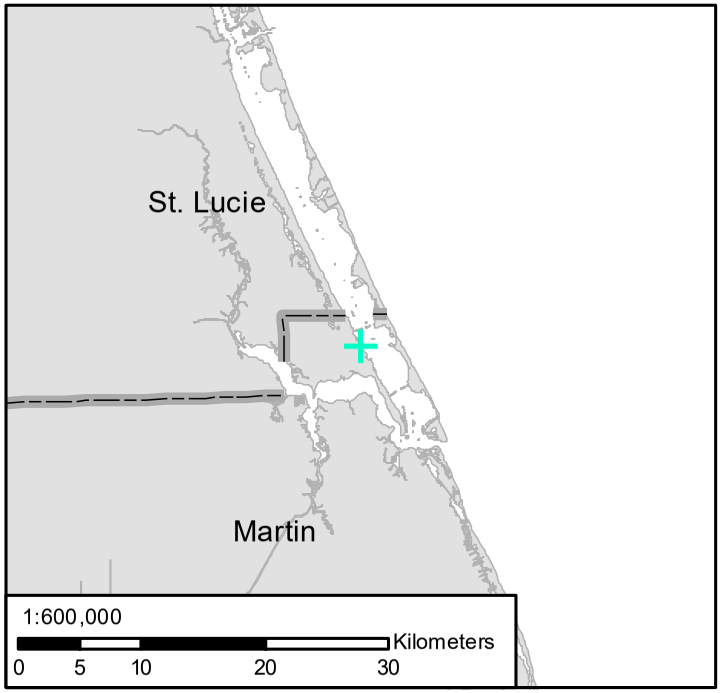
REPORT FILED BY Faucett

Verified Location of Manatee Carcass MSE20005

Report Date: 1/13/2020 **Received Date:** 1/14/2020 **Received By:** FWC-BMF







Location: Jensen Beach, Martin County

Latitude: 27.23991°N **Longitude:** -80.22186°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20005
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 0519 **FWC District**: South A
Sex: Female **Length (cm)**: 179 **Estimated** _____ **Weight (kg)** N/T
Date reported: 13 January 2020 **By**: Citizen to FWC Dispatch
Date collected: 14 January 2020 **By**: FWC-BMF
Date necropsied: 14 Jan 2020 **By**: FWC-BMF

LOCATION INFORMATION: **State** FL **County**: Martin **Waterway**: Indian River
Latitude: N 27.239913 **Longitude**: W -80.221856
Locality description: 110 m 2800 NNE of NE Indian River Dr, Jensen Beach, FL 34957

Carcass Orientation: Beached

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Cold stress lesions, depleted fats, relatively empty upper GI tract, dry hard feces, sand in trachea, red tinged urine.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☑ Other Lesions

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20007**
Date of Report: 2020-Jan-24
Filed By: FWC SE Field Station

FWC Case # 0901 **FWC Region:** SO-A

Sex: Female **Length:** 242 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-24 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Jan-26 **By:** FWC-ARH

DATE NECROPSIED: 2020-Jan-26 **By:** FWC-ARH

LOCATION: **State:** FL **Latitude:** 27.37321 **N**

County: St. Lucie **Longitude:** -80.29091 **W**

Waterway: Indian River

Location description: St. Lucie, beached

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Emaciated; Cold stress lesions; Depleted fat(s); Serous fat(s); Collapsed lung(s); Wet lung(s); Crumbly feces; Dry feces; Frothy lung; Lung abscesses; Mucus in airways; Sand in stomach; Relatively empty duodenum, proximal colon; Congested urinary bladder-, airway mucosa, mesenteries; Black specks parietal pleura, lung serosa.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC SE Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon. String in colon. Macroalgae in GI tract. Remodeled ribs.

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Necropsy Report	
Lat/Long	

Field ID #: MSE20007

MORPHOMETRICS:

Total length:	242 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20007
SPECIES *T. manatus latirostris*
RECOVERY DATE 26 January 2020
NECROPSY DATE 26 January 2020
GENDER Female **TL** 242 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 24 January 2020, at 2156 hrs, FWC on-call biologist-Denise Boyd (DMB) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Ft Pierce, St. Lucie County. FWC case number 0901 was assigned. The complainant, Stephen Harris (772-418-6271), stated that the carcass was beached on his property above the high tide line. No photos were available. DMB requested Stephen to call back if the carcass was still there in the morning. **25 January**, DMB received photo verification at 0755 hrs and passed information to the SE Field Station at 0758 hrs. FWC biologist-Blake Faucett (BMF) was en route at 0830 hrs, but due to a rescue attempt in Tavernier, the necropsy was postponed until the next morning. **26 January**, at 0800 hrs, the complainant informed FWC biologist-Amber Howell (ARH) that the carcass was still there. ARH and FWC intern-Ian Anderson completed a field necropsy on site by 1100 hrs. The remains were disposed of at the Martin County Landfill.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. Copious dead trematodes exuded from the nares. The carcass had a peanut-shaped head. There was a longitudinal fold on the ventrum. The peduncle appeared thin. There were a few small linear cold stress lesions on the lateral and ventral aspects. The eyes were missing due to scavenging. There were bird droppings on the dorsum. A thin green algal mat was present. There were copepods in the body folds on the ventrum. A minimum of five well-healed watercraft-related scar patterns was observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, omental, and mesenteric fat. The mesenteries were moderately congested.

STOMACH The stomach contained 1 L of wet, poorly chewed, light green vegetation mixed with red macroalgae and fine, tan sand. The ingesta were coated in a thick layer of pink mucus. The mucosa was discolored dark blue. There was a moderate infection of dead trematodes observed.

DUODENUM The duodenum contained 25 mL of watery, brown fluid. The mucosa was discolored black. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a scant amount of viscous, tan fluid throughout. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 1 L of moist, fibrous, stringy, poorly digested, light green vegetation mixed with poorly digested red macroalgae. The mucosa was sloughing. No parasites were observed.

COLON Some regions of the proximal colon were contracted and empty of contents and some regions contained watery, homogeneous, green fluid. The mucosa was unremarkable. The distal colon contained dry, crumbly, moderately digested, poorly formed, dark green feces. There were 37 pieces of clear monofilament line (10 and 20lb test diameter) and black string ranging from 5 cm to 44 cm long in the distal colon contents. The mucosa was sloughing. No parasites were observed throughout.

PANCREAS The pancreas was soft. Serosal and cut surfaces were tan.

SPLEEN The spleen was firm. Serosal surfaces were mottled purple and light pink, and cut surfaces were dark pink.

LIVER The margins of the liver were mostly rounded. The liver was firm. Serosal surfaces were purple and cut surfaces were brown.

GALLBLADDER The gallbladder contained 100 mL of viscous, dark yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant, serous reproductive fat. The uterine horns were small in diameter. No scars were observed. No follicles were observed on the ovaries.

KIDNEYS There was a small amount of serous perirenal fat. The kidneys were pink on serosal surfaces. On cut surfaces, the cortices were pink and the medullae were dark pink. The corticomedullary boundaries were distinct.

URINARY BLADDER The bladder was contracted and empty of contents. The mucosa was severely congested.

HEART There was a small amount of serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the parietal pleura and lung serosa. There were three abscesses on the cranial dorsal aspect of the left lung (see photo). The left lung was pink on serosal surfaces and dark pink, wet, and frothy on cut surfaces. The right lung appeared collapsed in the mid aspect (see photo). Serosal surfaces were mostly pink with regions of dark purple to black discoloration at the caudal half (see photo). Cut surfaces were light pink and spongy in the mid aspect. Both lung airways contained a moderate amount of viscous, tan fluid and yellow mucus (see photo). The mucosa was moderately congested. There was a moderate infection of dead trematodes.

HEAD & NECK REGIONS There was an abundant amount of thick, viscous, tan mucus in the trachea. There was a severe infection of dead trematodes. The mucosa was moderately congested.

SKELETON Right ribs 7 and 8 were remodeled at the proximal one-third (see photos).

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Depleted, serous fat
- Lung abscesses
- Collapsed right lung
- Wet, frothy left lung
- Mucus in airways
- Dry, crumbly feces
- Sand in stomach
- Relatively empty duodenum, proximal colon
- Congested mesenteries, urinary bladder-, airway mucosa
- Black specks parietal pleura, lung serosa
- Macroalgae in GI tract
- Monofilament and string in feces
- Remodeled ribs

- Few cold stress lesions

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

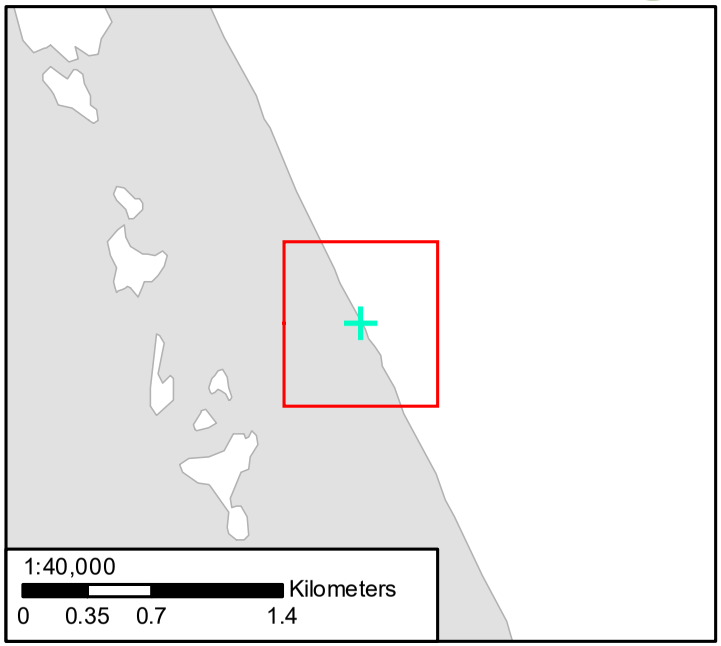
Amber R. Howell
Ian N. Anderson (FWC intern)

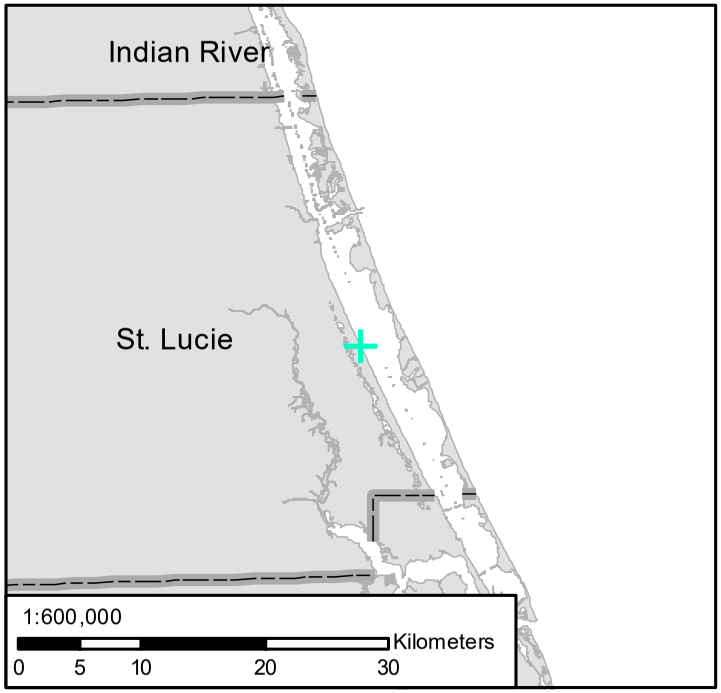
REPORT FILED BY Howell

Verified Location of Manatee Carcass MSE20007

Report Date: 1/24/2020 **Received Date:** 1/26/2020 **Received By:** FWC-ARH







Location: St. Lucie, St. Lucie County

Latitude: 27.37321°N **Longitude:** -80.29091°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20007
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 0901 **FWC District**: South A
Sex: Female **Length (cm)**: 242 **Estimated** _____ **Weight (kg)** N/T
Date reported: 24 January 2020 **By**: Citizen to FWC Dispatch
Date collected: 26 January 2020 **By**: FWC-ARH, FWC Intern- Ian Anderson
Date necropsied: 26 Jan 2020 **By**: FWC-ARH, FWC Intern- Ian Anderson

LOCATION INFORMATION: **State** FL **County**: St Lucie **Waterway**: Indian River
Latitude: N 27.373211 **Longitude**: W -80.290917
Locality description: 90 m ENE of 5643 S. Indian River Dr., Ft Pierce, FL 34982

Carcass Orientation: Beached

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☑ Other ☐ Not Recovered
Explain: thin, serous fats, severe trematode infection nares, trachea, moderate lung airways, mucus lung airways, abscesses on lung, black specks parietal pleura, congested bladder, lung airway, trachea mucosa, dry crumbly feces, 37 pieces mono and string in GI.

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20009**
Date of Report: 2020-Jan-25
Filed By: FWC SE Field Station

FWC Case # 0914 **FWC Region:** SO-A

Sex: Male **Length:** 180 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-25 **By:** Citizen to FWC SO-A Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.1995 **N**
County: Martin **Longitude:** -80.16632 **W**
Waterway: Indian River
Location description: Stuart, floating

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Other (Verification photograph).

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

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Necropsy Report	
Lat/Long	

Field ID #: MSE20009

MORPHOMETRICS:

Total length:	180 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20009
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Male **TL** 180 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Recovered

HISTORY 25 January 2020, at 1122 hrs, FWC biologist-Amber Howell (ARH) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Stuart, Martin County. FWC case number 0914 was assigned. The complainant, Steve Kline (586-864-7645), stated that the carcass was small and visible off the House of Refuge dock. Photo confirmation was received at 1125 hrs. ARH requested FWC LE assistance. At 1220 hrs, ARH received a call from FWC LE stating the area was shallow and not accessible by boat. ARH said that the caller stated it was floating in approximately 7 feet of water, but the officer stated he could not access it and would not be going. ARH contacted FWC volunteer-Jim Moir who agreed to search the area with his vessel. Jim searched from 1300 to 1500 hrs but could not locate a carcass.

EXTERNAL From photograph - All of the ventral epidermis was present. The carcass was slightly distended with gas.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Recovered

NECROPSY CONDUCTED BY N/A

REPORT FILED BY Howell

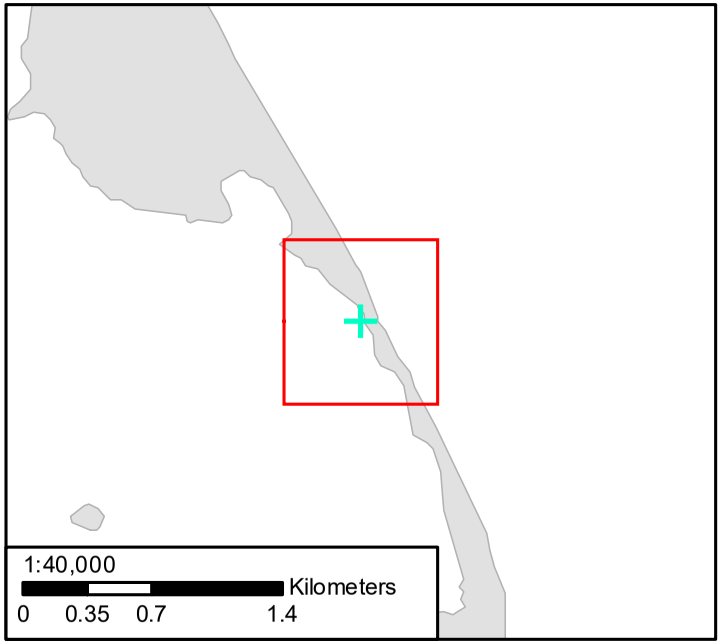
MSE 20004

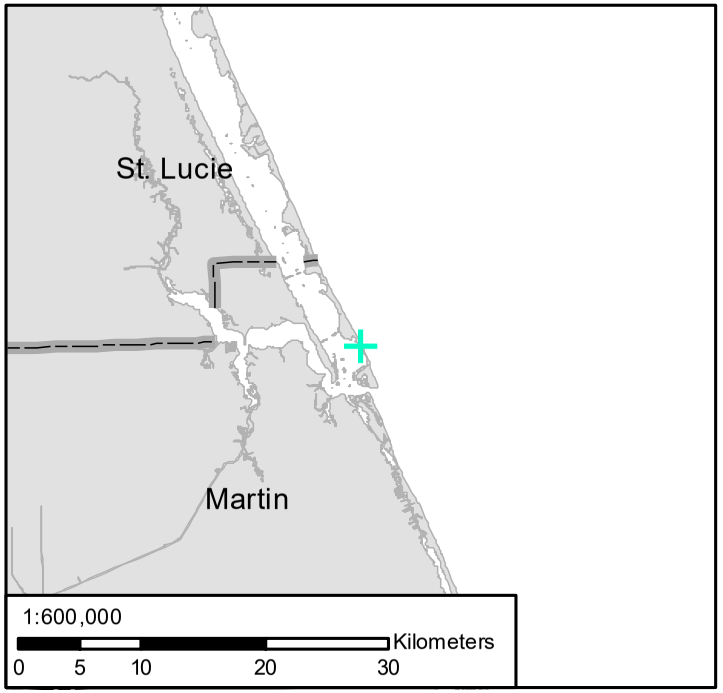


Verified Location of Manatee Carcass MSE20009

Report Date: 1/25/2020 **Received Date:** **Received By:**







Location: Stuart, Martin County **Latitude:** 27.1995°N **Longitude:** -80.16632°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20009
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 0914 **FWC District**: South A
Sex: Male **Length (cm)**: _____ **Estimated** 182 **Weight (kg)** _____
Date reported: 25 January 2020 **By**: Citizen to FWC Dispatch
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State FL **County**: Martin **Waterway**: Indian River
Latitude: N 27.199503 **Longitude**: W -80.166324
Locality description: 215 m SE of 278 SE Macarthur Blvd, Stuart, FL 34996

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☑ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20011**
Date of Report: 2020-Jan-27
Filed By: FWC SE Field Station

FWC Case #
FWC Region: SO-A

Sex: Female **Length:** 197 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-27 **By:** HBOI-Wendy Marks to FWC-ARH
DATE COLLECTED: 2020-Jan-27 **By:** FWC-AP
DATE NECROPSIED: 2020-Jan-28 **By:** FWC-BMF

LOCATION: **State:** FL **Latitude:** 27.53481 **N**
County: St. Lucie **Longitude:** -80.35233 **W**
Waterway: Indian River
Location description: Fort Pierce, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Serous fat(s); Depleted fat(s); Swollen face, cranial aspect; Adhered colon; Gritty texture peritoneum, mesentery, colon serosa, urinary bladder mucosa; Mucus in airways; Relatively empty, fluid-filled upper GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC SE Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon. Plastic in colon.

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Necropsy Report	
Lat/Long	

Field ID #: MSE20011

MORPHOMETRICS:

Total length:	197 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20011
SPECIES *T. manatus latirostris*
RECOVERY DATE 27 January 2020
NECROPSY DATE 28 January 2020
GENDER Female **TL** 197 **cm WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 27 January 2020, at 1020 hrs, FWC biologist-Amber Howell (ARH) received a text from Harbor Branch Oceanographic Institute-Wendy Marks regarding a dead manatee in Fort Pierce, St. Lucie County. Wendy reported the carcass floating in the Harbor Branch Channel and advised that she would tow it to the boat ramp. The carcass was secured at the boat ramp by 1055 hrs. FWC biologist-Austin Peek (AP) and FWC intern-Ian Anderson arrived at the boat ramp by 1450 hrs, loaded the carcass, and transported it to the SE Field Station by 1630 hrs where it was stored overnight. **28 January**, a field necropsy was completed by 1115 hrs. The remains were disposed of at the Martin County Landfill.

EXTERNAL Approximately 30% of the epidermis was present but sloughing. A small amount of watery, red-tinged fluid exuded from the nares. The face and cranial aspect appeared swollen. There were rents at the urogenital opening, anus, and axillae due to scavenging. A thin brown algal mat and a moderate green algal mat was present on the remaining epidermis. The fluke margin was eroded due to decomposition. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, omental, and mesenteric fat. There was a gritty texture on the peritoneum, colon serosa, and colon mesentery.

STOMACH The stomach contained 350 mL of watery, gray fluid mixed with a small amount of moist, fibrous, moderately chewed, tan and dark green ingesta. The mucosa was sloughing. There was a moderate infection of dead nematodes.

DUODENUM The duodenum contained 25 mL of watery, gray fluid mixed with a small amount of moist, fibrous, moderately chewed, tan and dark green ingesta. The mucosa was autolyzed. There was a severe infection of dead nematodes.

JEJUNUM & ILEUM The proximal small intestine contained a small amount of watery, tan fluid. The distal small intestine contained a small amount of moist, fibrous, stringy, moderately chewed, dark green ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 1 L of moist, fibrous, stringy, moderately digested, dark green digesta. The mucosa was autolyzed. No parasites were observed.

COLON Portions of the colon were adhered to itself and to the caudal right aspect of the peritoneum (see photo). The proximal colon contained moist, fibrous, stringy, poorly digested, well-formed, dark green feces. The mid colon contained moist, leafy, stringy, poorly digested, well-formed, brown and dark green feces. There was a 14 x 3 cm piece of black plastic in the mid colon contents. The distal colon contained moist, firm, homogeneous, well-digested, well-formed, dark green feces. There was a 15 cm long piece of 10 lb test diameter black monofilament line in the distal colon contents. The mucosa was autolyzed throughout. No parasites were observed throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was liquified.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE There was scant, serous reproductive fat. The uterine horns were small in diameter. No scars were observed. The ovaries were autolyzed.

KIDNEYS There was scant perirenal fat. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The bladder was contracted and empty of contents. There was a gritty texture on the mucosa.

HEART There was a small amount of gassy epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. The airways contained a moderate amount of viscous, tan mucus (see photo). The mucosa was light pink. There was a severe infection of dead trematodes.

HEAD & NECK REGIONS There was a small amount of viscous, light pink mucus in the trachea. The mucosa had areas of black staining. There was a severe infection of dead trematodes.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Swollen face, cranial aspect
- Depleted, serous fat
- Adhered colon
- Gritty texture peritoneum, mesentery, colon serosa, urinary bladder mucosa
- Relatively empty, fluid-filled upper GI tract
- Mucus in airways
- Monofilament, black plastic in feces
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

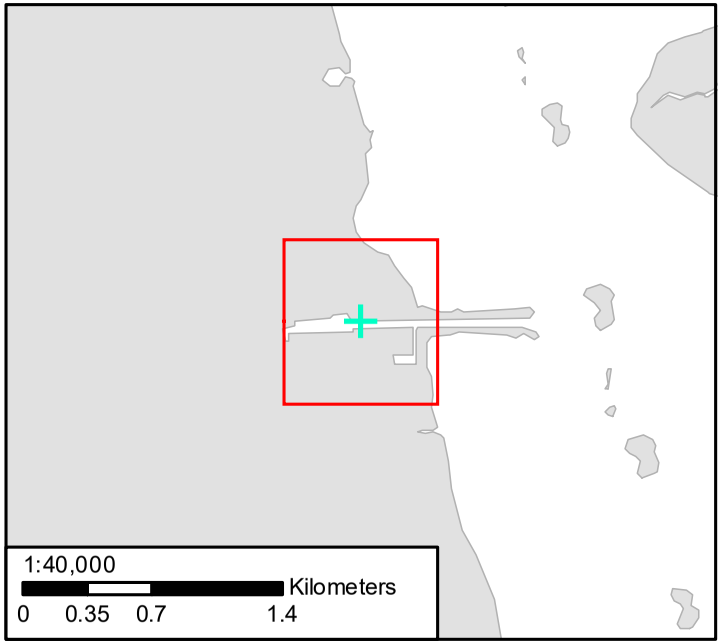
Blake M. Faucett
Cannon Schider-Heisel (FWC Volunteer)

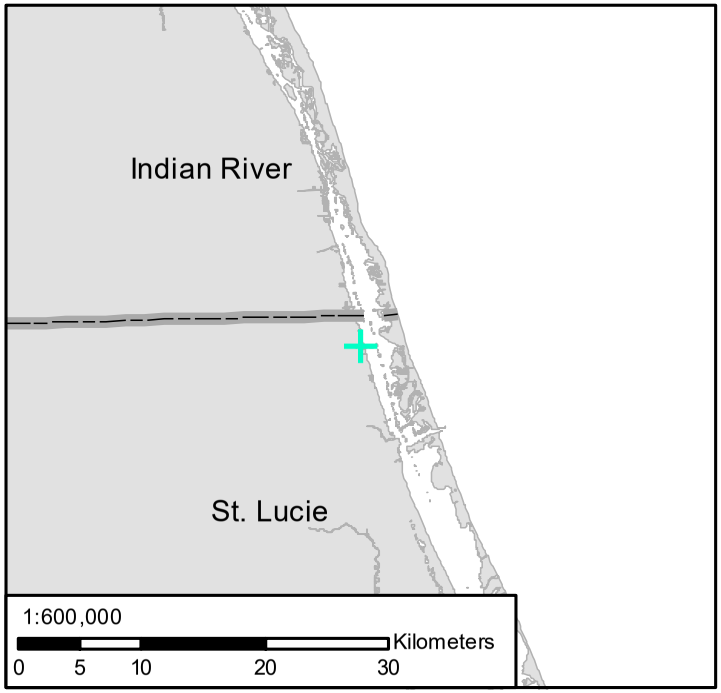
REPORT FILED BY Faucett

Verified Location of Manatee Carcass MSE20011

Report Date: 1/27/2020 **Received Date:** 1/27/2020 **Received By:** FWC-AP







Location: Fort Pierce, St. Lucie County

Latitude: 27.53481°N **Longitude:** -80.35233°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20011
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: South A
Sex: Female **Length (cm)**: 197 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 January 2020 **By**: HBOI-Wendy Marks to FWC-ARH
Date collected: 27 January 2020 **By**: FWC-AP, FWC Intern-Ian Anderson
Date necropsied: 28 Jan 2020 **By**: FWC-BMF, FWC Volunteer-Cannon Schider-Heisel

LOCATION INFORMATION: State FL **County**: St Lucie **Waterway**: HBOI channel
Latitude: N 27.534819 **Longitude**: W -80.352333
Locality description: 160 m NNW of the intersection at S Channel Dr and Aquaculture Loop, Fort Pierce, FL 34946
Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Serous fats, relatively empty upper GI, mucus in lung airways/trachea, hard feces, severe trematode infection in lung airways and trachea, monofilament, black plastic

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☐ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20013**
Date of Report: 2020-Jan-28
Filed By: FWC SE Field Station

FWC Case # 1023 **FWC Region:** SO-A

Sex: Male **Length:** 220 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-28 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Jan-29 **By:** FWC-ARH

DATE NECROPSIED: 2020-Jan-29 **By:** FWC-ARH

LOCATION: **State:** FL **Latitude:** 27.46207 **N**

County: St. Lucie **Longitude:** -80.28824 **W**

Waterway: Atlantic Ocean

Location description: Fort Pierce, beached

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Shark scavenging; Relatively empty, fluid-filled upper GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC SE Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon. Actual length of the remains was 211 cm.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20013

MORPHOMETRICS:

Total length:	220 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20013
SPECIES *T. manatus latirostris*
RECOVERY DATE 29 January 2020
NECROPSY DATE 29 January 2020
GENDER Male **TL** 220 **cm** (est) **WT** N/T **kg**
CONDITION Badly Decomposed

HISTORY 28 January 2020, at 1450 hrs, FWC biologist-Blake Faucett (BMF) received a text alert from FWC SO-A Dispatch-Palm Beach regarding two dead seals or manatees on the beach in Ft Pierce, St. Lucie County. FWC case number 1023 was assigned. Ft Pierce Police Department Officer Carter received a third party report and passed the location to FWC Dispatch but did not have any additional information or photos. BMF asked if Officer Carter could assist with verification, and he agreed. At 1515 hrs, Officer Carter confirmed that there were two dead manatees on the beach and sent photos to BMF. FWC biologist-Amber Howell (ARH) requested Harbor Branch-Wendy Marks to secure the carcasses. Wendy arrived at 1635 hrs and secured MSE20014, but she could not secure MSE200013 due to its decompositional state. Due to time of day, the carcasses were left overnight pending necropsy the following day. **29 January**, a field necropsy was completed by 1045 hrs. The carcass was disarticulated and placed in the ocean to decompose.

EXTERNAL Almost all of the epidermis was missing. Most of the soft tissue of the fluke, peduncle, and cranial-ventral one-third of the carcass was missing due to severe shark scavenging. Both flippers were missing due to scavenging. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsum. Actual length of the remains was 211 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, gassy abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 1.5 L of watery, tan fluid. There was a moderate infection of dead nematodes. The mucosa was autolyzed.

DUODENUM The duodenum contained 50 mL of watery, tan fluid. There was a small infection of dead nematodes. The mucosa was autolyzed.

JEJUNUM & ILEUM The small intestine contained thick, viscous, tan to yellow mucus throughout. No parasites were grossly observed. The mucosa was autolyzed.

CECUM The cecum contained 1 L of moist, fibrous, leafy, well-digested, light green digesta. There was a small infection of dead trematodes. The mucosa was sloughing.

COLON The proximal colon contained wet, fibrous, leafy, well-digested, poorly formed, light green feces. There was a small infection of dead trematodes. There was one 51 cm long piece of 10 lb test diameter clear monofilament line in the contents. The distal colon contained moist, fibrous, well-digested, well-formed, dark green feces. No parasites were observed. The mucosa was sloughing throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained 5 mL of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The reproductive organs were gassy and small. No

fluid was expressed on cut surfaces of the seminal vesicles.

KIDNEYS There was moderate, gassy perirenal fat. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 100 mL of clear, light yellow urine. The mucosa was autolyzed.

HEART The heart was missing due to scavenging.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were soft, friable, and autolyzed. The airways were clear. No parasites were observed. The mucosa was tan.

HEAD & NECK REGIONS The trachea was missing due to scavenging.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Shark scavenging
- Relatively empty, fluid-filled upper GI tract
- Monofilament in colon

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

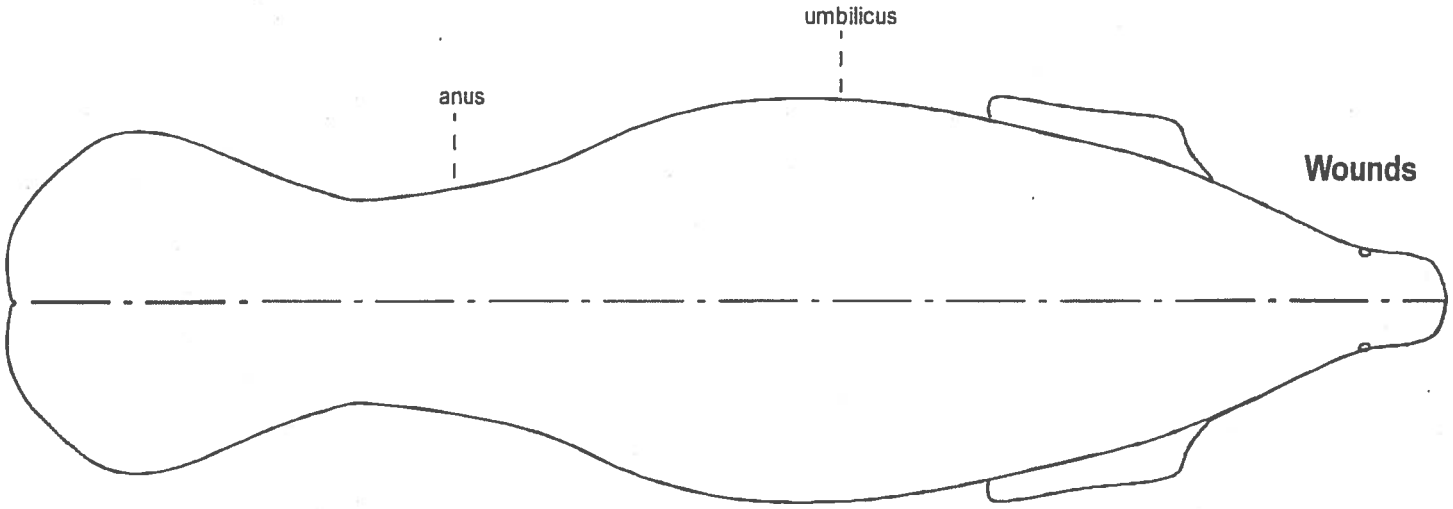
NECROPSY CONDUCTED BY

Amber R. Howell

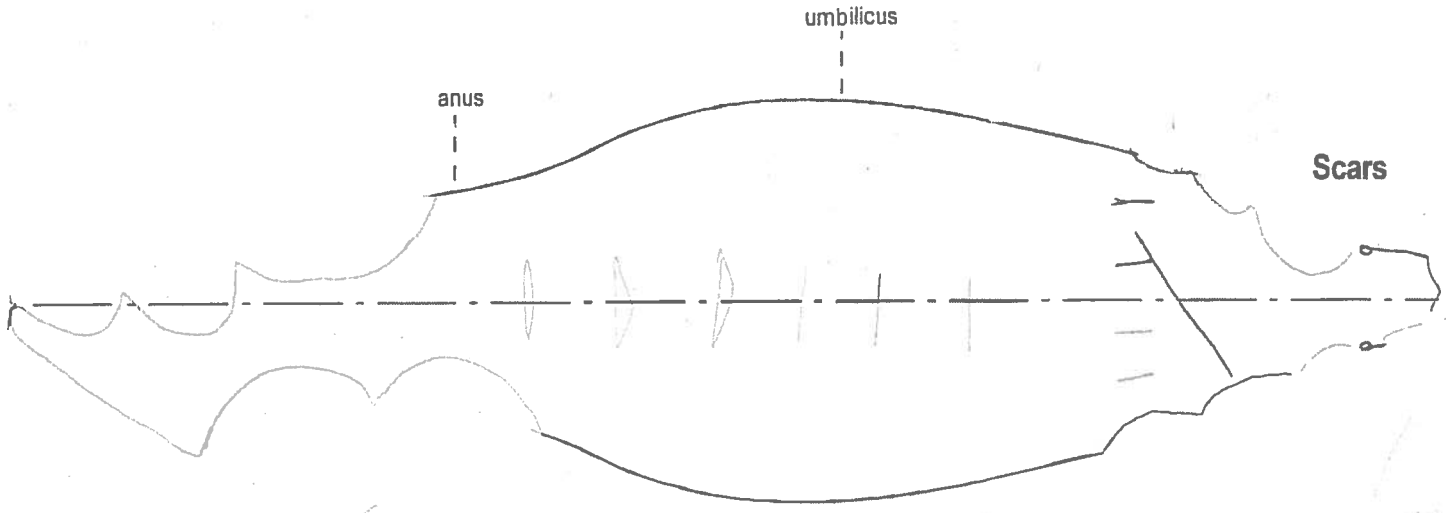
REPORT FILED BY Howell

Date 29 JAN 2020 Field I.D. MSE20013

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Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



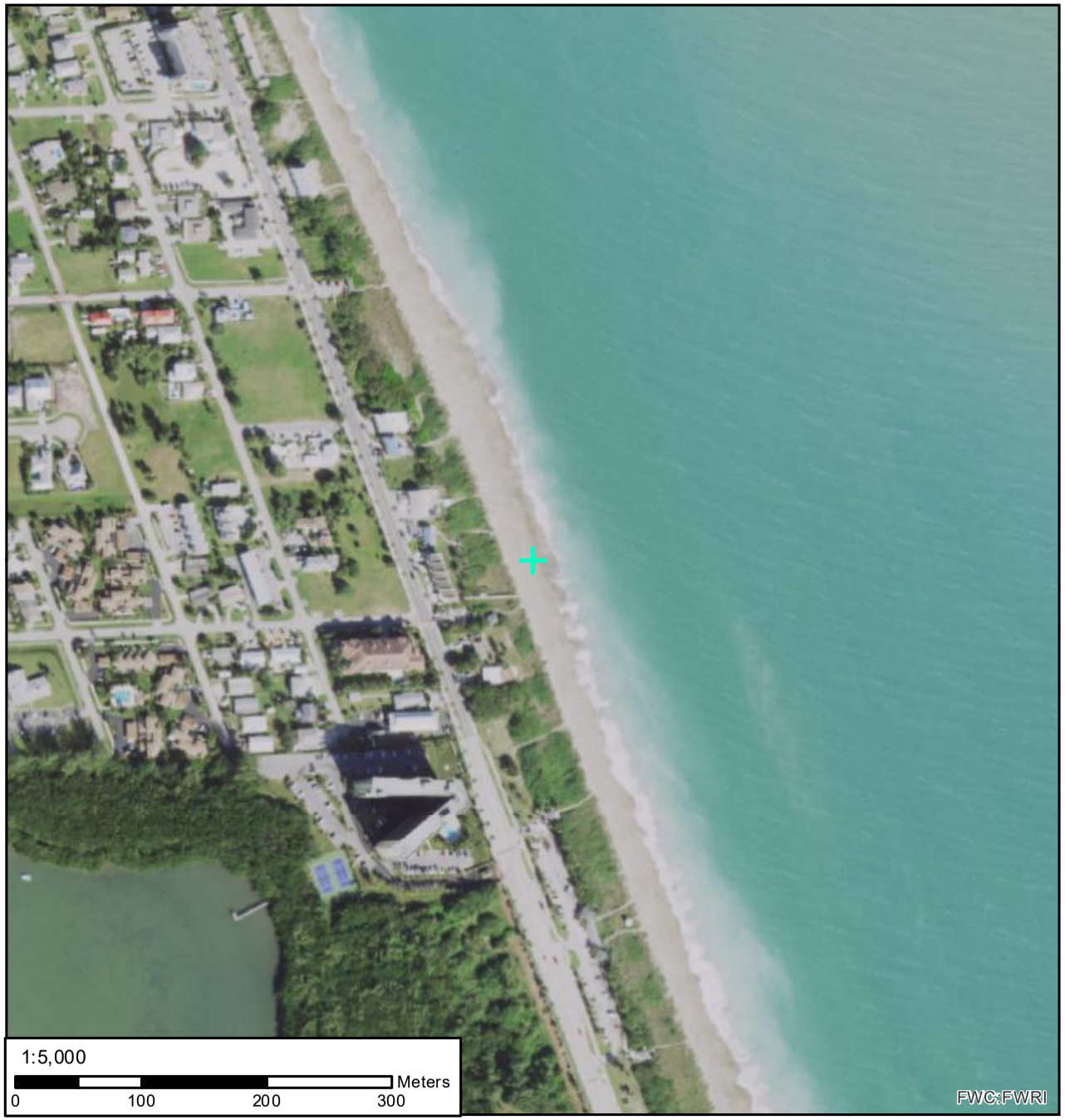
Shark scavenging

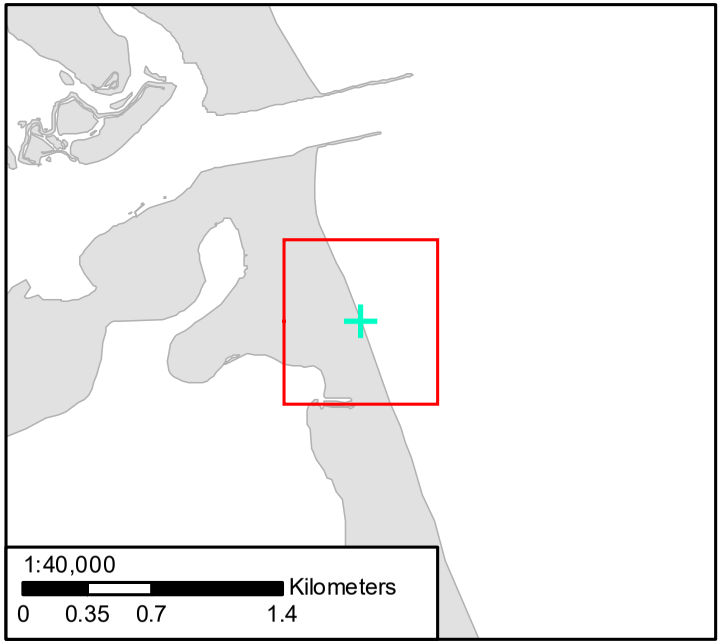
ARM

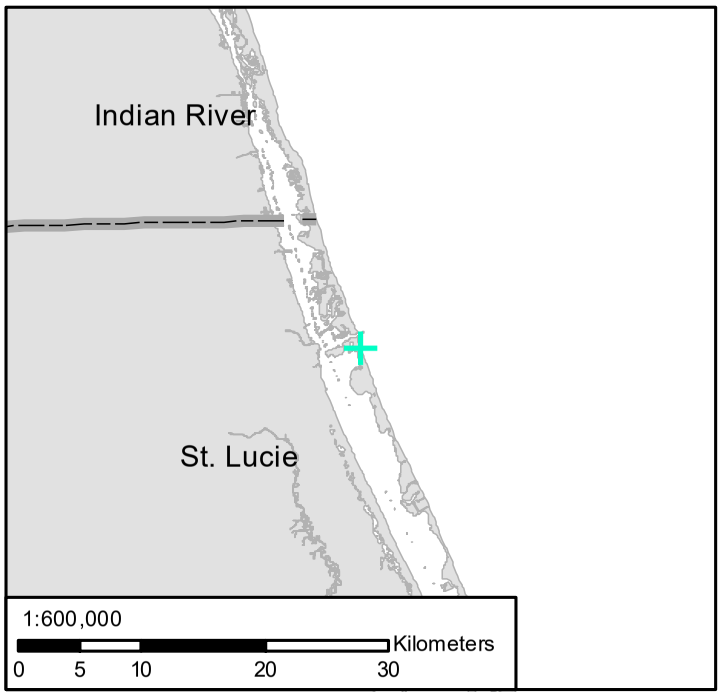
Shark scavenging

Verified Location of Manatee Carcass MSE20013

Report Date: 1/28/2020 **Received Date:** 1/29/2020 **Received By:** FWC-ARH







Location: Fort Pierce, St. Lucie County

Latitude: 27.46207°N **Longitude:** -80.28824°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20013
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1023 **FWC District**: South A
Sex: Male **Length (cm)**: 211 **Estimated** 220 **Weight (kg)** N/T
Date reported: 28 January 2020 **By**: Citizen to FWC Dispatch
Date collected: 29 January 2020 **By**: FWC-ARH
Date necropsied: 29 Jan 2020 **By**: FWC-ARH

LOCATION INFORMATION: **State** FL **County**: St Lucie **Waterway**: Atlantic Ocean
Latitude: N 27.462073 **Longitude**: W -80.288244
Locality description: 85 m ESE of 610 S Ocean Dr, Fort Pierce, FL 34949

Carcass Orientation: Beached

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined

Natural: ☐ Cold Stress ☐ Other (includes Red Tide)

Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered

Explain: Autolyzed internal organs, relatively empty upper GI tract, monofilament in colon

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☐ Internal ☑ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20014**
Date of Report: 2020-Jan-28
Filed By: FWC SE Field Station

FWC Case # 1023 **FWC Region:** SO-A

Sex: Male **Length:** 164 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jan-28 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Jan-29 **By:** FWC-ARH

DATE NECROPSIED: 2020-Jan-29 **By:** FWC-ARH

LOCATION: **State:** FL **Latitude:** 27.46136 **N**

County: St. Lucie **Longitude:** -80.28801 **W**

Waterway: Atlantic Ocean

Location description: Fort Pierce, beached

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cold stress lesions; Cobblestone-like epidermis; Bleached epidermis; Emaciated; Abscess(es); Depleted fat(s); Serous fat(s); Dry, hard feces; Mucus in airways; Empty cecum; High concentration of discolored lymph nodules in cecum wall; Nodules in small intestine; Red small intestine mucosa; Congested airway-, urinary bladder mucosa; Black specks lung serosa, parietal pleura; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC SE Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon. Plastic string in colon.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20014

MORPHOMETRICS:

Total length:	164 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20014
SPECIES *T. manatus latirostris*
RECOVERY DATE 29 January 2020
NECROPSY DATE 29 January 2020
GENDER Male **TL** 164 **cm WT** N/T **kg**
CONDITION Moderately Decomposed

HISTORY 28 January 2020, at 1450 hrs, FWC biologist-Blake Faucett (BMF) received a text alert from FWC SO-A Dispatch-Palm Beach regarding two dead seals or manatees on the beach in Ft Pierce, St. Lucie County. FWC case number 1023 was assigned. Ft Pierce Police Department Officer Carter received a 3rd party report and passed the location to FWC Dispatch but did not have any additional information or photos. BMF asked if Officer Carter could assist with verification, and he agreed. At 1515 hrs, Officer Carter confirmed that there were two dead manatees on the beach and sent photos to BMF. FWC biologist-Amber Howell (ARH) requested Harbor Branch-Wendy Marks attempt to secure the carcasses. Wendy arrived at 1635 hrs and was able to bury a bucket in the sand with a rope tied to MSE20014, but she could not secure MSE200013 due to its decompositional state. Due to time of day, the carcasses were left overnight pending necropsy the following day. **29 January**, a field necropsy was completed by 1045 hrs. The carcass was disarticulated and placed in the ocean to decompose.

EXTERNAL All of the epidermis was present. The carcass had a peanut-shaped head. The peduncle appeared thin. There was an abscess on the right flipper. Cobblestone-like epidermis was present on the dorsal and lateral aspects and ventral fluke. There were a few small cold stress lesions on the lateral aspects. Numerous small pitted lesions were present on the dorsal fluke. The epidermis of the axillae was bleached. There were several barnacle scars on all aspects and a few barnacles on the flippers and dorsal fluke. The carcass had a thin green and brown algal mat. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 1 L of moist, fibrous, leafy, well-chewed, dark green vegetation mixed with well-chewed red macroalgae. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 0.7 L of moist, fibrous, leafy, well-chewed, dark green vegetation mixed with well-chewed red macroalgae. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained moist, fibrous, leafy, well-chewed, dark green vegetation mixed with well-chewed red macroalgae. The mucosa was unremarkable. The distal small intestine contained watery, dark pink fluid. The mucosa was red and had raised red to dark blue nodules (see photo). No parasites were grossly observed.

CECUM The cecum was empty of contents. The mucosa was sloughing. The wall had regions of red discoloration and had a high concentration of prominent lymph nodules some of which had purple borders or were surrounded by dark red tissue (see photo). No parasites were observed.

COLON The proximal colon contained dry, firm, fibrous, well-digested, well-formed, light green feces. There were one 62 cm long piece of 20 lb test diameter clear monofilament line and one 44 cm long piece of black plastic string in the contents. The mucosa was sloughing. The distal colon contained dry, hard, fibrous, well-digested, well-formed, dark green feces. The mucosa was discolored black and sloughing. No parasites were observed throughout.

PANCREAS The pancreas was soft. Serosal and cut surfaces were tan.

SPLEEN The spleen was firm. Serosal surfaces were mottled purple and red, and cut surfaces were red.

LIVER The margins of the liver were mostly rounded. The liver was firm. Serosal surfaces were purple and cut surfaces were dark red.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The reproductive organs were small. No fluid was expressed on cut surfaces of the epididymides or seminal vesicles.

KIDNEYS There was scant, serous perirenal fat. Serosal surfaces were light purple. On cut surfaces, the cortices were light pink and the medullae were dark pink. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 15 mL of light-yellow urine. The mucosa was moderately congested.

HEART There was a small amount of serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the parietal pleura and dorsal aspect of the lungs. The lungs were light purple to light pink on serosal surfaces and light purple on cut surfaces. The airways contained a moderate amount of yellow mucus (see photo). No parasites were observed. The mucosa was moderately congested.

HEAD & NECK REGIONS There was one poorly chewed leafy piece of seagrass in the mouth (see photo). The trachea contained a moderate amount of yellow mucus. The mucosa was moderately congested.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Cold stress lesions
- Cobblestone-like, bleached epidermis
- Abscess on flipper
- Emaciated
- Depleted, serous fat
- Dry, hard feces
- Empty cecum
- Red small intestine mucosa
- Nodules small intestine
- High concentration of discolored lymph nodules in cecum wall
- Congested airway-, urinary bladder mucosa
- Seagrass in mouth
- Mucus in airways
- Black specks lungs, parietal pleura
- Monofilament, plastic string in feces

PROBABLE CAUSE OF DEATH Natural; Cold Stress

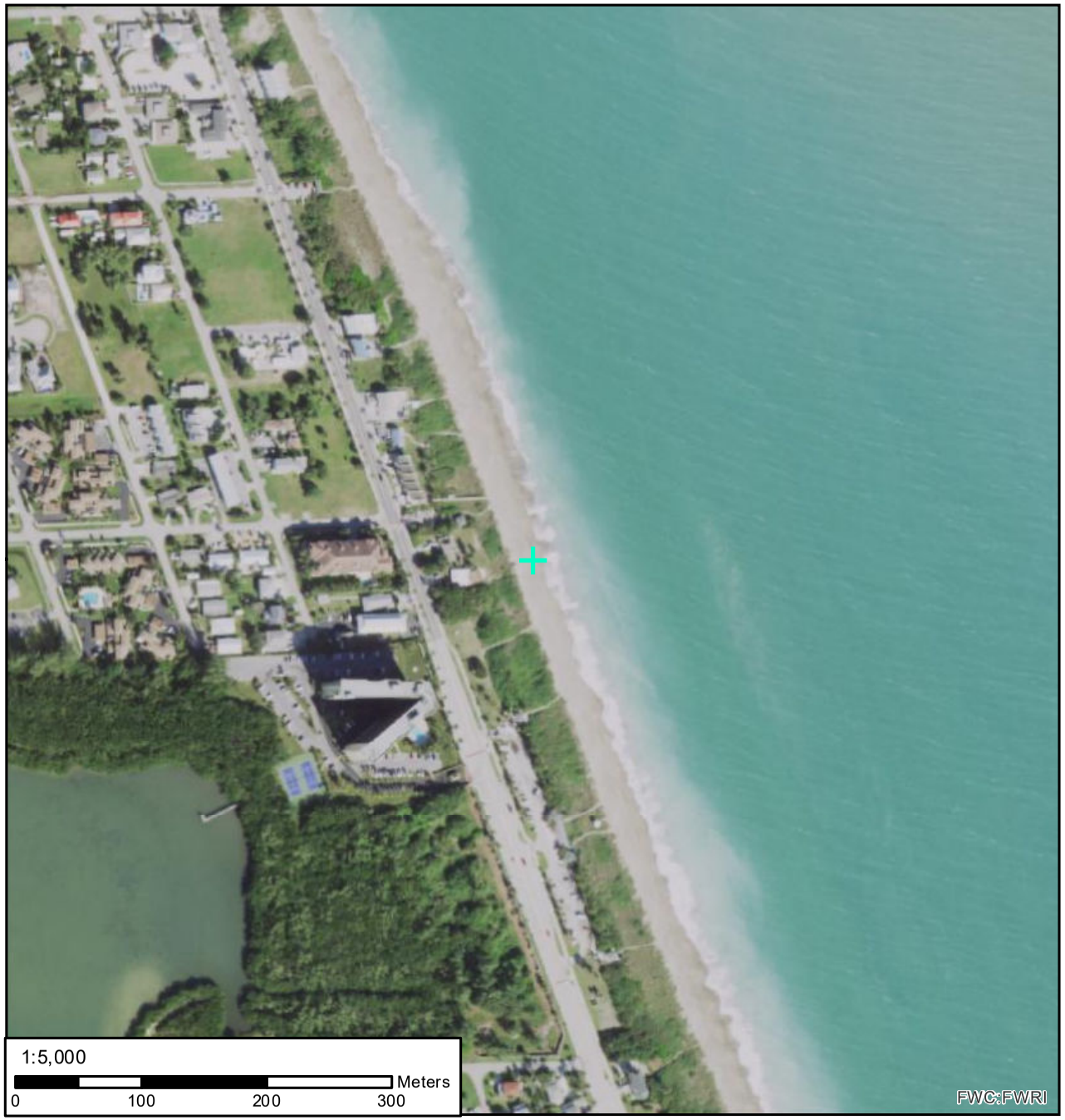
NECROPSY CONDUCTED BY

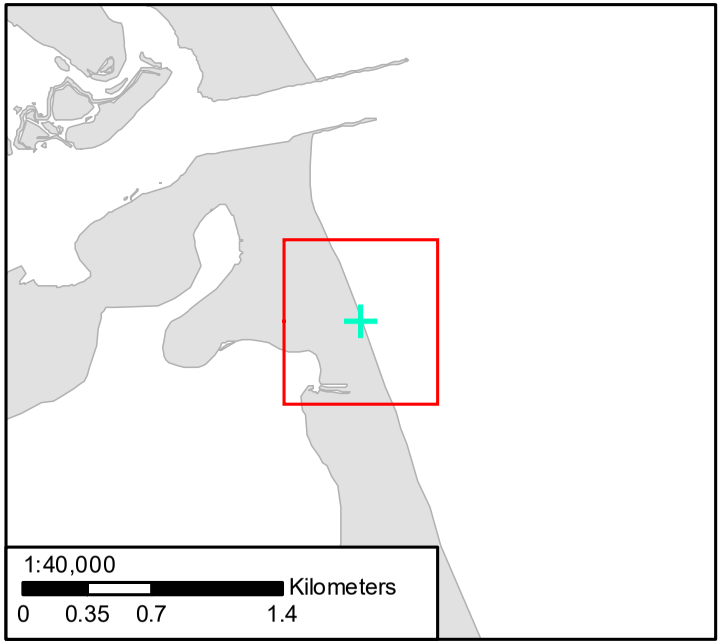
Amber R. Howell

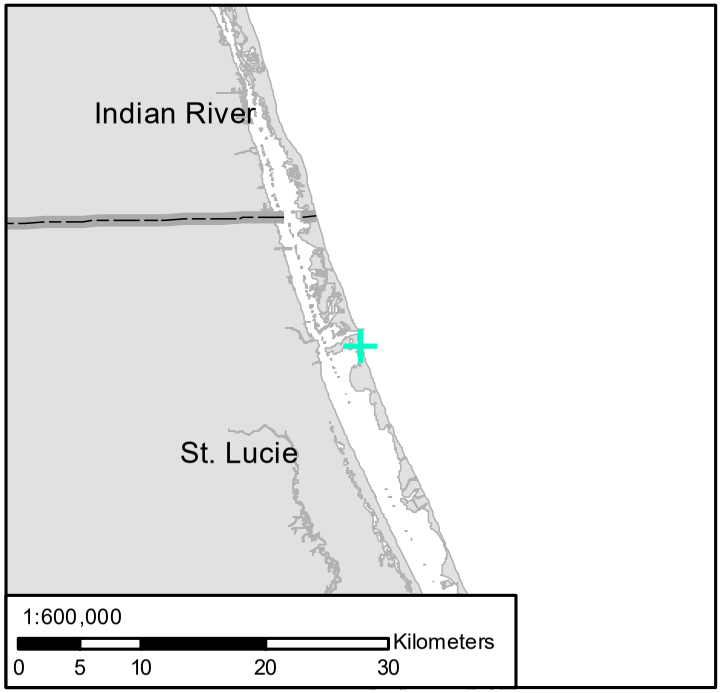
REPORT FILED BY Howell

Verified Location of Manatee Carcass MSE20014

Report Date: 1/28/2020 **Received Date:** 1/29/2020 **Received By:** FWC-ARH







Location: Fort Pierce, St. Lucie County

Latitude: 27.46136°N **Longitude:** -80.28801°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20014
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1023 **FWC District**: South A
Sex: Male **Length (cm)**: 164 **Estimated** _____ **Weight (kg)** N/T
Date reported: 28 January 2020 **By**: Citizen to FWC Dispatch
Date collected: 29 January 2020 **By**: FWC-ARH
Date necropsied: 29 Jan 2020 **By**: FWC-ARH

LOCATION INFORMATION: **State** FL **County**: St Lucie **Waterway**: Atlantic Ocean
Latitude: N 27.461363 **Longitude**: W -80.288012
Locality description: 145m SE of 610 S Ocean Dr., Ft Pierce FL 34949

Carcass Orientation: Beached

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other

Perinatal (≤150 cm): ☐ Natural ☐ Undetermined

Natural: ☑ Cold Stress ☐ Other (includes Red Tide)

Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered

Explain: Cold stress lesions, cobblestone like epidermis, bleached epidermis, abscess on flipper, thin, serous fats, leaf in mouth, mucus in lung airways, trachea, black specks lungs, parietal pleura, dry hard feces, discolored cecum, small intestine mucosa, congestion, mono and plastic in GI

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20039**
Date of Report: 2020-Feb-28
Filed By: FWC SE Field Station

FWC Case # 2354 **FWC Region:** SO-A

Sex: Female **Length:** 330 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Feb-28 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Mar-05 **By:** FWC-BMF

DATE NECROPSIED: 2020-Mar-05 **By:** FWC-BMF

LOCATION: **State:** FL **Latitude:** 27.23013 **N**

County: Martin **Longitude:** -80.21532 **W**

Waterway: Indian River

Location description: Jensen Beach, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Too Decomposed

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Autolyzed and/or missing internal organs. Crumbly feces; Dry feces; Relatively empty GI tract; Gritty texture peritoneum, mesenteries, ribs.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in colon. Also FWC case numbers 2145 and 2333. Actual length of the remains was 325 cm. Tunicates in cecum.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20039

MORPHOMETRICS:

Total length:	330 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20039 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 05 March 2020 **NECROPSY DATE** 05 March 2020
GENDER Female **TL** 330 **cm** (est) **WT** N/T **kg** **CONDITION** Badly Decomposed

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HISTORY 28 February 2020, at 1117 hrs, FWC biologist-Blake Faucett (BMF) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Jensen Beach, Martin County. FWC case number 2145 was assigned. The complainant, Ryan (386-295-1953), stated there was a large dead manatee underneath the dock at the community sailing center. BMF and FWC biologist-Amber Howell (ARH) arrived at the center at 1240 hrs. The manatee was stuck under a floating dock which was lined with large, solid floats and despite numerous attempts, could not be removed. At 1340 hrs, the decision was made to leave the carcass unless it floated from under the dock. **04 March**, at 1440 hrs, BMF received a text alert from Dispatch regarding a dead manatee in Jensen Beach. FWC case number 2333 was assigned. The complainant, Susan (772-334-0936), stated there was a dead manatee to the south of their marina, but no photos were available. BMF sent FWC intern-Ian Anderson to get photo verification and move the carcass closer to shore for a field necropsy the following day. Ian arrived at the reported location at 1645 hrs, located the carcass at 1707 hrs, and sent photo verification. ARH contacted the original complainant, Ryan, and he stated employees at the sailing center were overwhelmed with the smell, so they had removed part of the dock in order to get the carcass out and secured it to a piling nearby. At 1751 hrs, ARH received a text alert from Dispatch regarding the same dead manatee. FWC case number 2354 was assigned. The complainant, Joe (508-776-1842), reported the carcass near the shoreline. **05 March**, BMF and Ian arrived at the carcass at 1005 hrs and completed a field necropsy by 1150 hrs. Due to the size of the manatee and low tide after necropsy, the carcass could not be pulled to deeper water to tuck in the mangroves. The decision was made to return to the carcass when the tide was higher. At 1515 hrs, the carcass was moved into deeper water, tucked in the mangroves, and left on site to decompose.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. The dorsal dermis was eroded. There were rents at the urogenital opening, anus, dorsal head, and on the lateral aspects due to decomposition. Multiple small holes were present on the ventral aspect due to removal efforts when it was stuck under the dock. A minimum of nine well-healed watercraft-related scar patterns was grossly observed on the dorsal aspect. The margins of the fluke and flippers were eroded. Actual length of the remains was 325 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. There was a gritty texture on the peritoneum and the mesenteries.

STOMACH The stomach contained 800 mL of moist, woody, leafy, poorly chewed, tan, brown, and green ingesta. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 500 mL of watery, gray fluid mixed with a small amount of moist, fibrous, stringy, leafy, moderately chewed, green to dark green ingesta. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a moderate amount of watery, gray fluid mixed with a small amount of moist, fibrous, stringy, leafy, moderately chewed, green to dark green ingesta. Peyer's patches were prominent throughout. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 600 mL of moist, fibrous, stringy, leafy, poorly digested, tan, green, and orange digesta. There were three whole tunicates in the contents. The mucosa was autolyzed. No parasites were

observed.

COLON The proximal colon contained dry, crumbly, fibrous, stringy, leafy, poorly digested, moderately formed, brown, tan, and green feces. There were regions of black discoloration in the wall. No parasites were observed. Some sections of the mid colon were empty of contents and other sections contained moist, hard, clay-like, fibrous, leafy, moderately digested, moderately formed, green and brown feces. There were two nests of 30 lb test diameter clear monofilament line (11 cm and 6 cm long; see photo) and one 85 cm long piece of 50 lb test diameter clear monofilament line in the feces (see photo). The wall had areas of black discoloration. A mild infection of dead trematodes was observed. The distal colon contained moist, fibrous, well-digested, well-formed, dark green feces. No parasites were observed. The mucosa was autolyzed throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was liquified.

GALLBLADDER The gallbladder was torn and empty of contents. The mucosa was bile-stained.

REPRODUCTIVE There was moderate, gassy reproductive fat. The uterine horns were contracted. There were greater than twenty follicles on both ovaries. No scars were observed.

KIDNEYS The kidneys were liquified.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was autolyzed.

HEART There was moderate, gassy epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were liquified. The airways were clear. The mucosa was tan. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON There was a gritty texture observed on almost all ribs.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Gritty texture peritoneum, mesenteries, ribs
- Relatively empty GI tract
- Dry, crumbly feces
- Monofilament in colon
- Tunicates in cecum

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

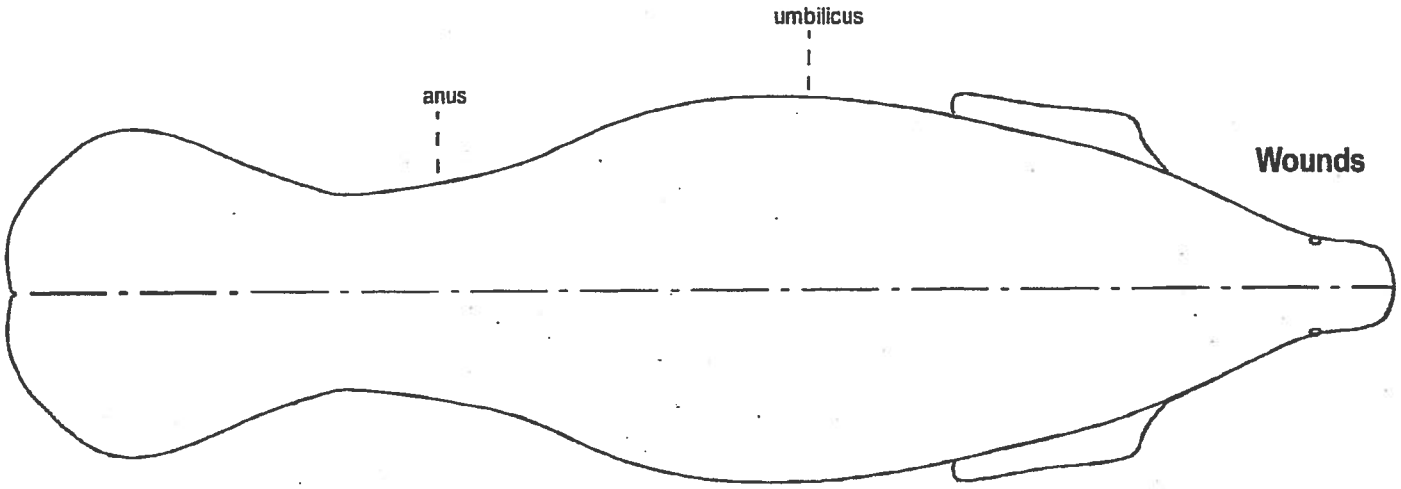
Blake M. Faucett

Ian N. Anderson (FWC intern)

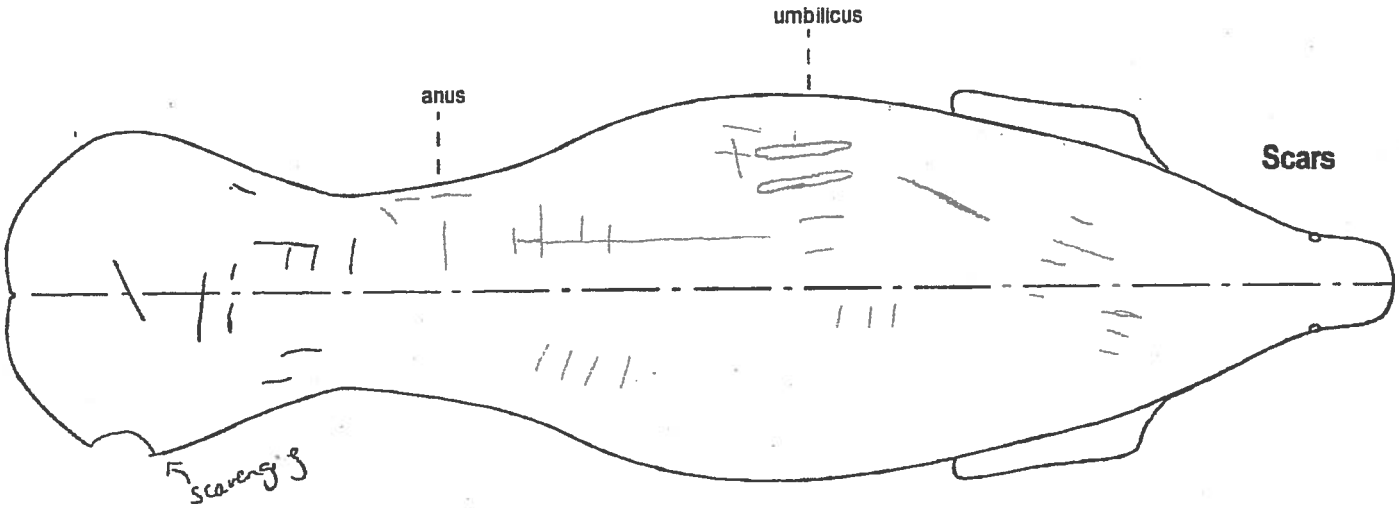
REPORT FILED BY Faucett

Date 05 MAR 2020 Field I.D. MSE20039

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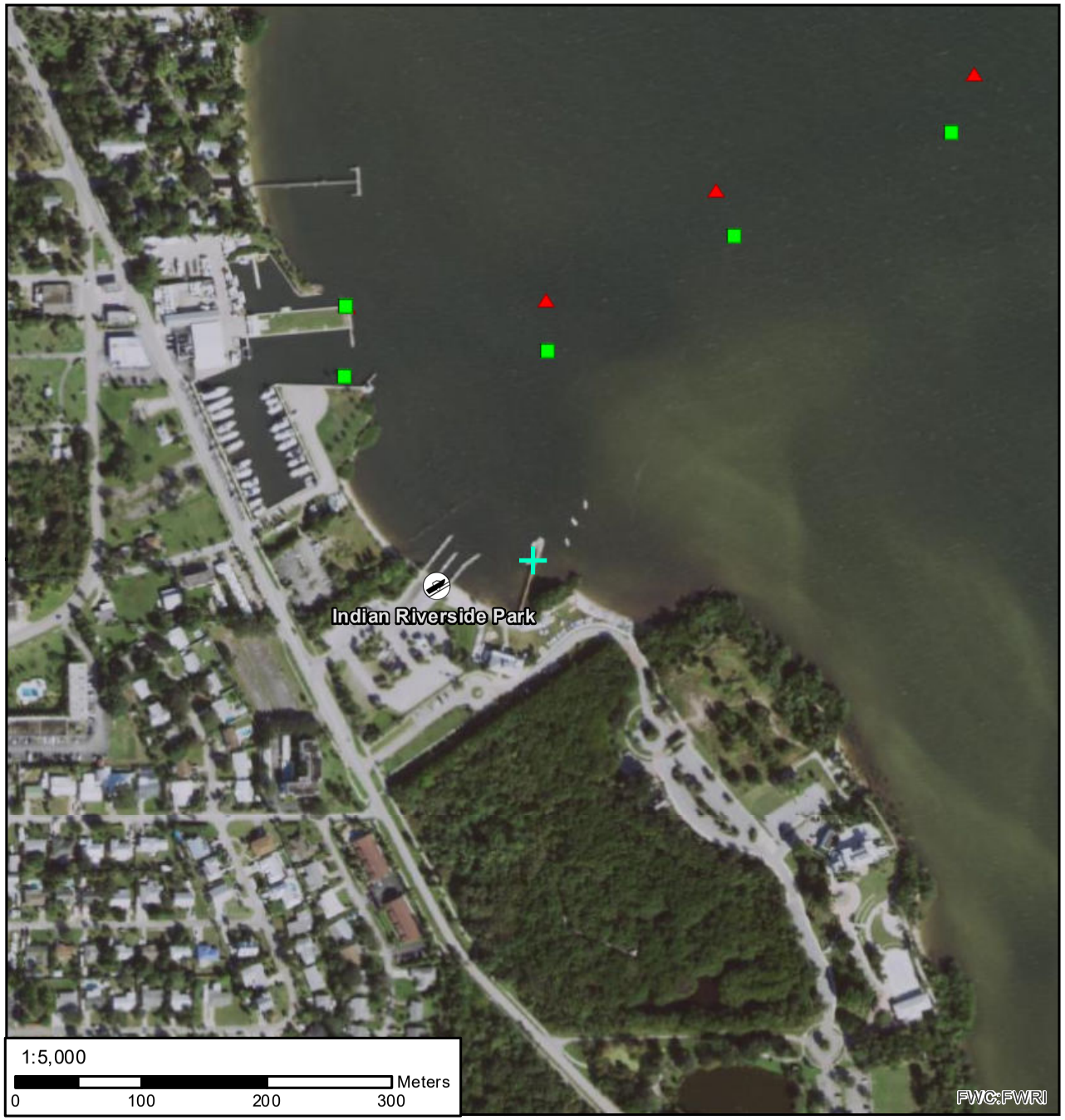
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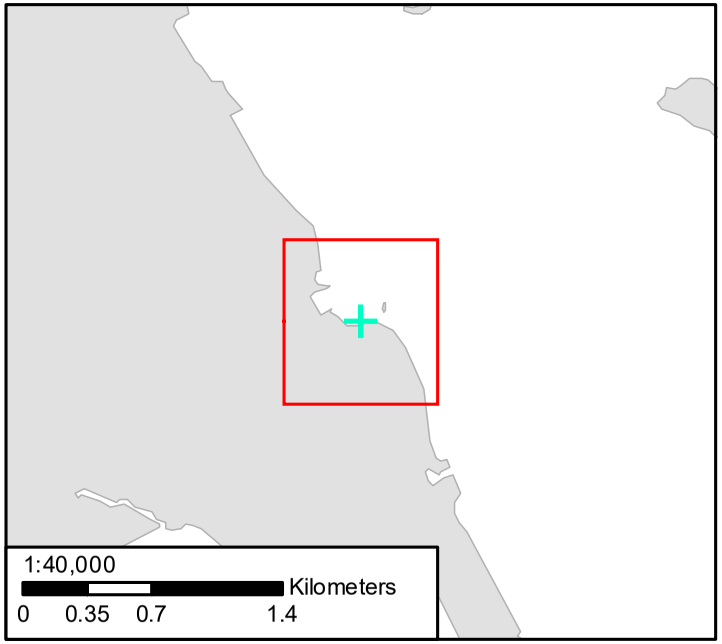


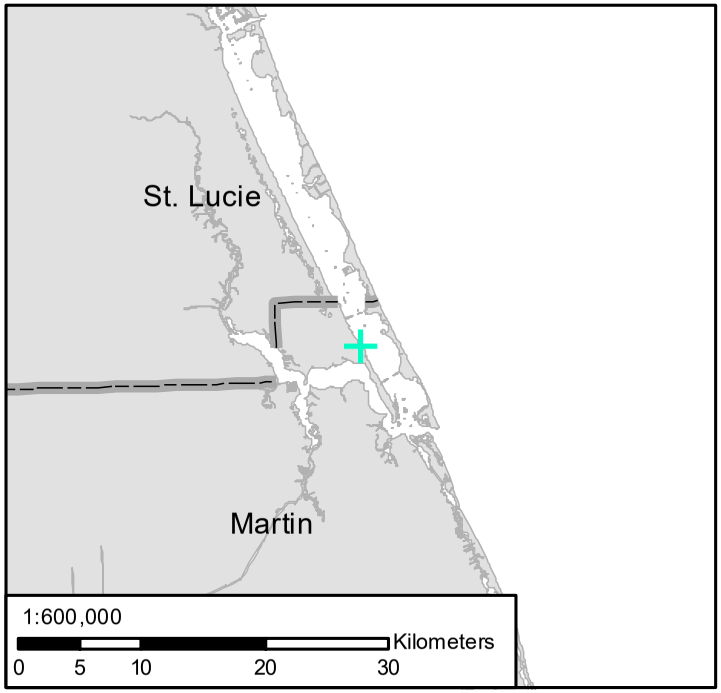
KMF

Verified Location of Manatee Carcass MSE20039

Report Date: 2/28/2020 **Received Date**: 3/5/2020 **Received By**: FWC-BMF







Location: Jensen Beach, Martin County

Latitude: 27.23013°N **Longitude**: -80.21532°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20039
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2145, 2333, 26 **FWC District**: South A
Sex: Female **Length (cm)**: 325 **Estimated** 330 **Weight (kg)** N/T
Date reported: 28 February 2020 **By**: Citizen to FWC Dispatch
Date collected: 05 March 2020 **By**: FWC-BMF, FWC intern- Ian Anderson
Date necropsied: 05 March 2020 **By**: FWC-BMF, FWC intern-Ian Anderson

LOCATION INFORMATION: **State** FL **County**: Martin **Waterway**: Indian River
Latitude: N 27.230140 **Longitude**: W -80.215316
Locality description: Approximately 80 m NNE of 1955 NE Indian River Drive, Jensen Beach, FL 34957
Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Autolyzed organs, gritty texture on peritoneum, mesenteries, ribs, nested monofilmament, discolored duodenum and colon mucosa, undigested tunicates in cecum

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☐ Other _____

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: Genetics sample was collected 28 February.

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20041**
Date of Report: 2020-Mar-03
Filed By: FWC SE Field Station

FWC Case # 2290 **FWC Region:** SO-A

Sex: Male **Length:** 221 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-03 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Mar-04 **By:** FWC-BMF,ARH

DATE NECROPSIED: 2020-Mar-04 **By:** FWC-BMF,ARH

LOCATION: **State:** FL **Latitude:** 27.47129 **N**
County: St. Lucie **Longitude:** -80.3307 **W**
Waterway: Indian River
Location description: Ft. Pierce, grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Emaciated; Cold stress lesions; Bleached epidermis; Serous fat(s); Depleted fat(s); Swollen muzzle; Thick algal-, mud mat; Abscess, nodule in right lung; Mucus, purulent material in airways; Relatively empty, mucus-filled upper GI tract; Discolored GI mucosa; Black specks parietal pleura; Congested mesenteries, peritoneum, parietal pleura, urinary bladder-, airway mucosa.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Cold stress lesions).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20041

MORPHOMETRICS:

Total length:	221 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20041
SPECIES *T. manatus latirostris*
RECOVERY DATE 04 March 2020
NECROPSY DATE 04 March 2020
GENDER Male **TL** 221 **cm WT** N/T **kg**
CONDITION Fresh

HISTORY 03 March 2020, at 1524 hrs, FWC biologist-Blake Faucett (BMF) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a small dead manatee in Fort Pierce, St. Lucie County. FWC case number 2290 was assigned. The complainant, Paul (443-745-6198), did not answer his phone. BMF requested assistance from Harbor Branch Oceanographic Institute-Wendy Marks. At 1611 hrs, Wendy confirmed the manatee was dead, sent photo verification, and stated that she would secure it to a nearby dock. A field necropsy was planned for the following day. **04 March**, a field necropsy was completed by 1020 hrs. The remains were scattered onsite to decompose.

EXTERNAL Almost all of the epidermis was present but sloughing. The carcass was thin and had a peanut-shaped head. The outline of the caudal vertebrae was visible. The ventrum was flat and had longitudinal folds. The muzzle was swollen. A moderate amount of dead trematodes exuded from the nares. Linear and circular cold stress lesions were observed on the lateral and ventral aspects. The epidermis was bleached on all aspects. Copepods were present on the lateral aspects and on the head. There was a thick layer of mud and green and brown algal mat on the dorsal and lateral aspects. Numerous small barnacles were observed on the lateral and ventral aspects. There was one well-healed linear scar on the dorsum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous, abdominal, mesenteric, and omental fat. The mesenteries were moderately congested. The peritoneum was mildly congested.

STOMACH The stomach contained 250 mL of thick, grey mucus. The mucosa was discolored blue to grey. No parasites were observed.

DUODENUM The duodenum contained 100 mL of thick, grey mucus. The mucosa was discolored blue. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, tan mucus. The distal small intestine contained viscous, yellow mucus. The mucosa was slightly rugose, and discolored red with blue regions throughout. No parasites were grossly observed throughout.

CECUM The cecum contained 150 mL of moist, fibrous, well-digested, dark green digesta. The mucosa was sloughing. There was a small infection of dead trematodes.

COLON The proximal colon contained moist, fibrous, well-digested, poorly formed, green feces. There was a mild infection of dead trematodes. The distal colon contained dry, fibrous, stringy, moderately digested, well-formed, green feces. No parasites were observed. The mucosa was sloughing throughout.

PANCREAS The pancreas was firm. Serosal and cut surfaces were pink.

SPLEEN The spleen was firm. Serosal surfaces were mottled light purple and red, and cut surfaces were dark red.

LIVER The liver was firm. The margins of the liver were mostly sharp. Serosal surfaces were dark blue to purple and cut surfaces were dark red.

GALLBLADDER The gallbladder contained 20 mL of light orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The testes were small. There was no fluid expressed on cut surfaces of the epididymides or seminal vesicles.

KIDNEYS There was a small amount of perirenal fat. The kidneys were pink to light red on serosal surfaces. On cut surfaces, the cortices were light red, and the medullae were dark red. The corticomedullary boundaries were mostly indistinct.

URINARY BLADDER The urinary bladder contained 40 mL of flocculent, light yellow urine. The mucosa was moderately congested.

HEART There was a small amount of serous epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact and slightly congested. There were black specks on the parietal pleura (see photo). The parietal pleura was moderately congested. The caudal aspect of the right lung was swollen and had an abscess on the cut surface (see photo). There was a small, hard, dark blue nodule on the dorsal aspect of the right lung serosa. The lungs were mottled light pink and purple on serosal surfaces, and dark red on cut surfaces. The airways contained a moderate amount of viscous, tan mucus mixed with caseous, light yellow material (see photo). The mucosa was dark red and severely congested. There was a mild infection of dead trematodes in the airways.

HEAD & NECK REGIONS There was an abundant amount of thick, yellow to tan mucus in the trachea. A severe infection of dead trematodes was observed (see photo). The mucosa was moderately congested.

SKELETON NVL.

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Cold stress lesions
- Bleached epidermis
- Swollen muzzle
- Thick mud, algal mat
- Serous, depleted fat
- Abscess and nodule in right lung
- Mucus, purulent material in airways
- Relatively empty, mucus-filled upper GI tract
- Discolored mucosa stomach, duodenum, small intestine
- Congested mesenteries, peritoneum, parietal pleura, urinary bladder-, airway mucosa
- Black specks parietal pleura

PROBABLE CAUSE OF DEATH Natural; Cold Stress

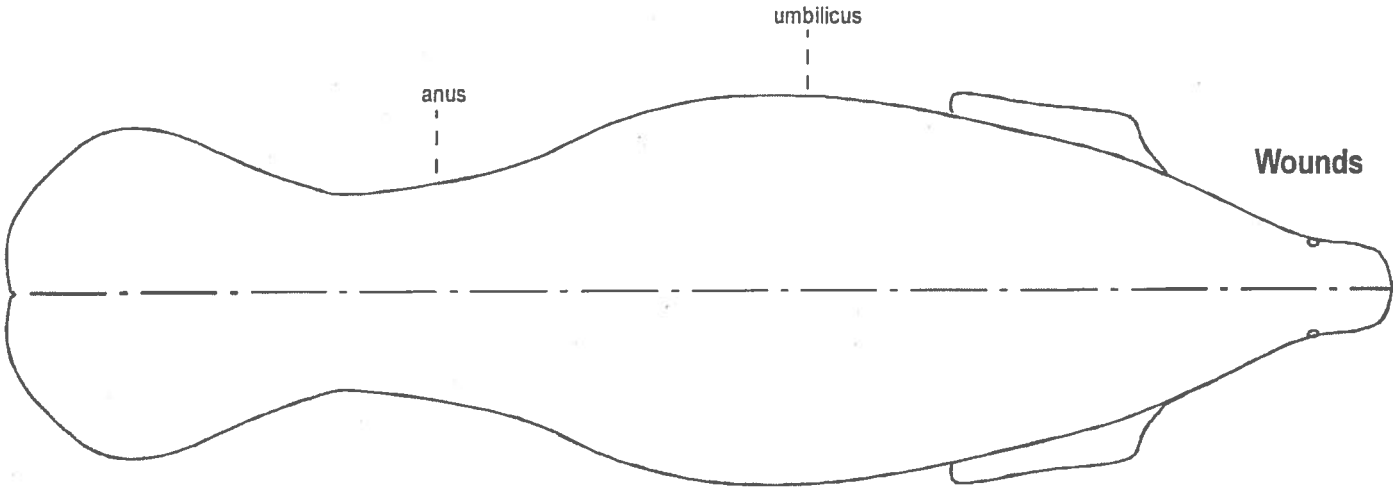
NECROPSY CONDUCTED BY

Amber R. Howell
Blake M. Faucett

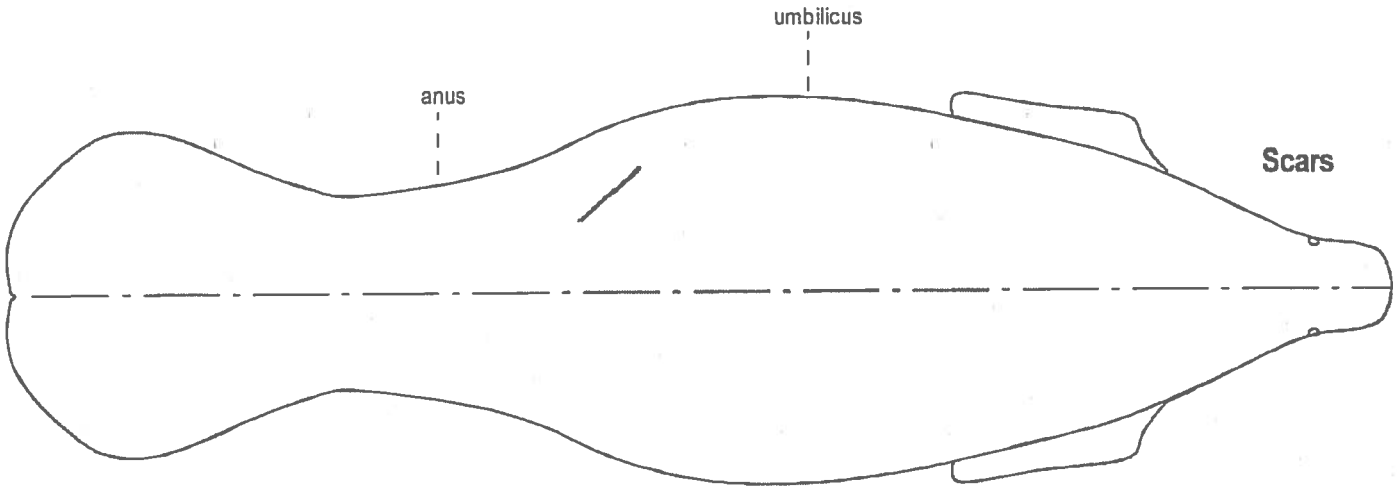
REPORT FILED BY Faucett

Date 04 MAR 2020 Field I.D. MSE20041

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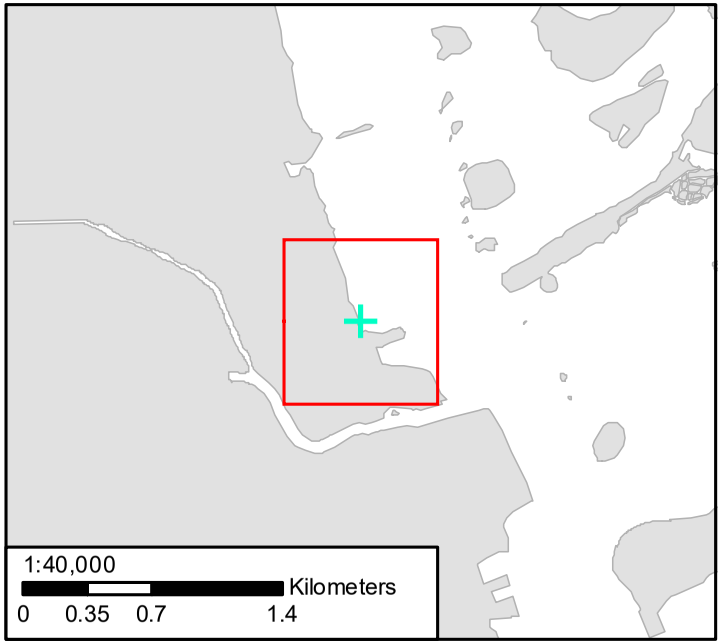


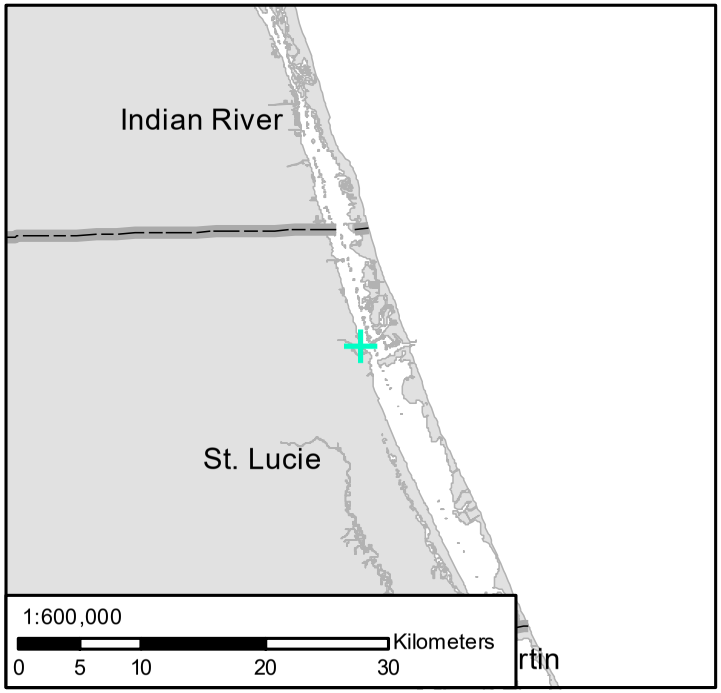
BMF

Verified Location of Manatee Carcass MSE20041

Report Date: 3/3/2020 **Received Date:** 3/4/2020 **Received By:** FWC-BMF,ARH







Location: Ft. Pierce, St. Lucie County **Latitude:** 27.47129°N **Longitude:** -80.3307°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20041
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2290 **FWC District**: South A
Sex: Male **Length (cm)**: 221 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 March 2020 **By**: Citizen to FWC Dispatch
Date collected: 04 March 2020 **By**: FWC- BMF, ARH
Date necropsied: 04 March 2020 **By**: FWC- BMF, ARH

LOCATION INFORMATION: State FL **County**: St. Lucie **Waterway**: Indian River
Latitude: N 27.471296 **Longitude**: W -80.330701
Locality description: Approximately 110 m NE of 28 N Highway A1A, Fort Pierce, FL 34946
Carcass Orientation: Grounded

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:

Human related:	☐ Watercraft Collision: -		
	☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)		
	☐ Other		
Perinatal (≤150 cm):	☐ Natural	☐ Undetermined	
Natural:	☑ Cold Stress	☐ Other (includes Red Tide)	
Undetermined:	☐ Too Decomposed	☐ Other	☐ Not Recovered

Explain: Cold stress lesions, thin with serous fats, bleached epidermis, abscess and nodule in right lung, hyperinflated lung, mucus in lung airways, trachea, relatively empty upper GI, discolored GI mucosa, black specks on parietal pleura, congestion

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☑ Other cold stress lesions

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20045**
Date of Report: 2020-Mar-10
Filed By: FWC SE Field Station

FWC Case # 2568 **FWC Region:** SO-A

Sex: Female **Length:** 190 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Mar-10 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2020-Mar-12 **By:** FWC-ARH

DATE NECROPSIED: 2020-Mar-12 **By:** FWC-ARH,BMF

LOCATION: **State:** FL **Latitude:** 27.17233 **N**
County: Martin **Longitude:** -80.20723 **W**
Waterway: Willoughby Creek
Location description: Stuart, floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cold stress lesions; Cobblestone-like epidermis; Dry, hard feces; Crumbly feces; Empty upper GI tract, cecum; Congested airway mucosa.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Cold stress lesions).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20045

MORPHOMETRICS:

Total length:	190 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20045 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 12 March 2020 **NECROPSY DATE** 12 March 2020
GENDER Female **TL** 190 **cm WT** N/T **kg** **CONDITION** Badly Decomposed

---

HISTORY 10 March 2020, at 1846 hrs, FWC on-call biologist-Denise Boyd (DMB) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Stuart, Martin County. FWC case number 2568 was assigned. The complainant, Ann (469-223-3469), reported a small dead manatee floating in Willoughby Creek behind her property. Photo verification was received at 1930 hrs. Due to the time of day, recovery was planned for the following morning. **11 March**, FWC biologists-Amber Howell (ARH) and Blake Faucett (BMF) searched for the carcass but could not locate it. At 1930 hrs, FWC Officer-Jon Arnold was flagged down by citizens across the creek from the original reported location. They complained about a smell and located a dead manatee deep in the mangroves under their dock. ARH advised Officer Arnold to tuck the carcass in a secluded location away from the address. Officer Arnold stated that he could not find a secluded location, so he towed the dead manatee to a nearby boat ramp by 2030 hrs. **12 March**, ARH arrived at the boat ramp at 0845 hrs and loaded the carcass via Ezy-Lift by 0850 hrs. A field necropsy was completed by 0950 hrs. The remains were disposed of at the Martin County Landfill.

EXTERNAL Almost all of the epidermis was missing at the time of necropsy. Verification photographs showed patches of cobblestone-like epidermis on the ventrum and flippers. A small amount of red-tinged fluid exuded from the nares. A few linear and circular, pitted cold stress lesions were observed on the head, dorsum, and ventral fluke. Small barnacle scars were present on the dorsal aspect of the fluke. There were small patches of thin, brown algal mat and cobblestone-like epidermis on the ventral fluke. There was one well-healed scar on the dorsal fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach was empty of contents. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum was empty of contents. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was empty of contents. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained a scant amount of homogeneous, green paste. The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained dry, firm, stringy, well-digested, well-formed, olive green feces. The mucosa was autolyzed. The distal colon contained dry, hard, crumbly, fibrous, well-digested, poorly formed, dark brown feces. The mucosa was sloughing. No parasites were observed throughout.

PANCREAS The pancreas was liquified.

SPLEEN The spleen was liquified.

LIVER The liver was liquified.

GALLBLADDER The gallbladder was empty of contents. The mucosa was bile-stained.

REPRODUCTIVE The uterine horns were small in diameter. No scars were observed. The ovaries were autolyzed.

KIDNEYS The kidneys were liquified.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was autolyzed.

HEART The heart was liquified.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lateral portion of the right lung was folded medially (see photo). The cranial one-third of the left lung was spongy. The lungs were soft, friable, and autolyzed. The airways contained a small amount of viscous, bloody fluid. There was a moderate infection of dead trematodes. The mucosa was dark red and congested.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

COMMENTS

SIGNIFICANT FINDINGS

- Cold stress lesions
- Cobblestone-like epidermis
- Empty upper GI tract, cecum
- Dry, hard, crumbly feces
- Congested airway mucosa
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

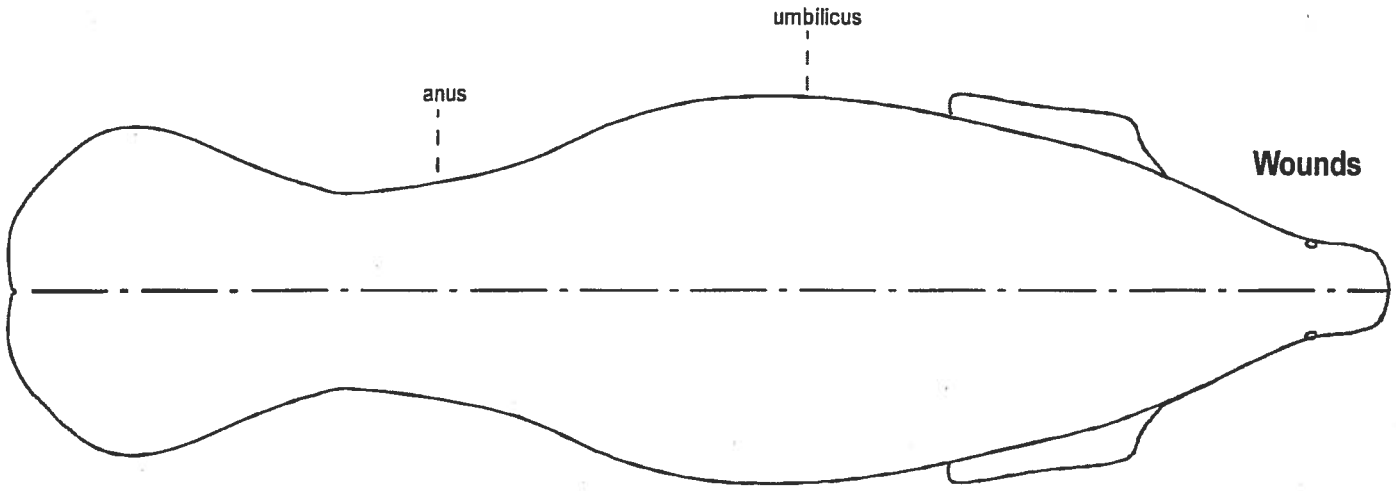
NECROPSY CONDUCTED BY

Amber R. Howell
Blake M. Faucett

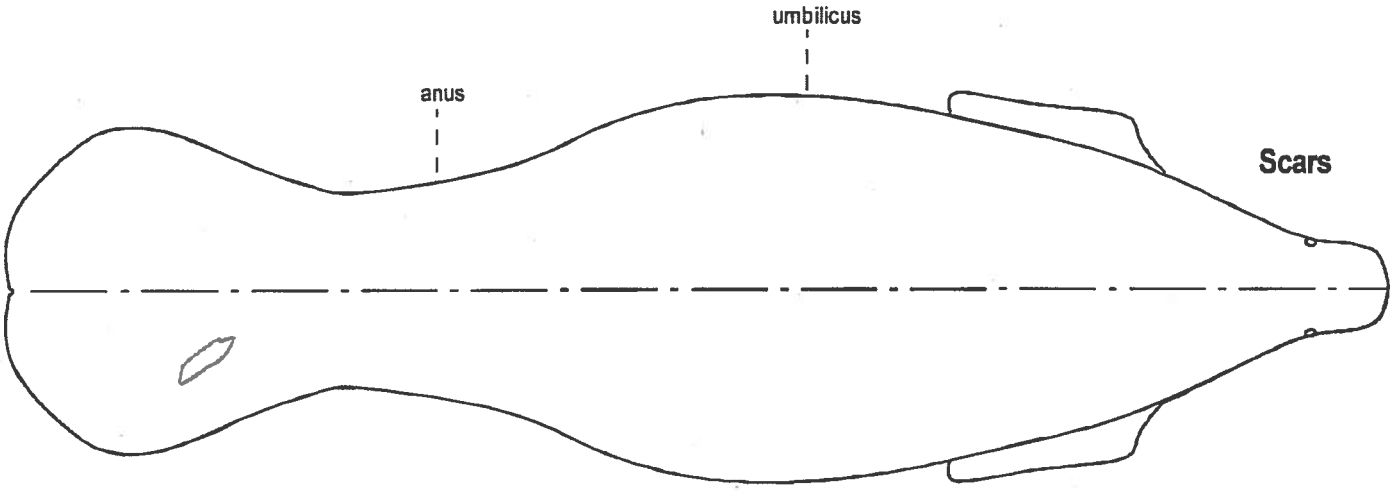
REPORT FILED BY Faucett

Date 12 MAR 2020 Field I.D. MSE200415

c:\ Manuals \ scar2dat \ 26 July 02



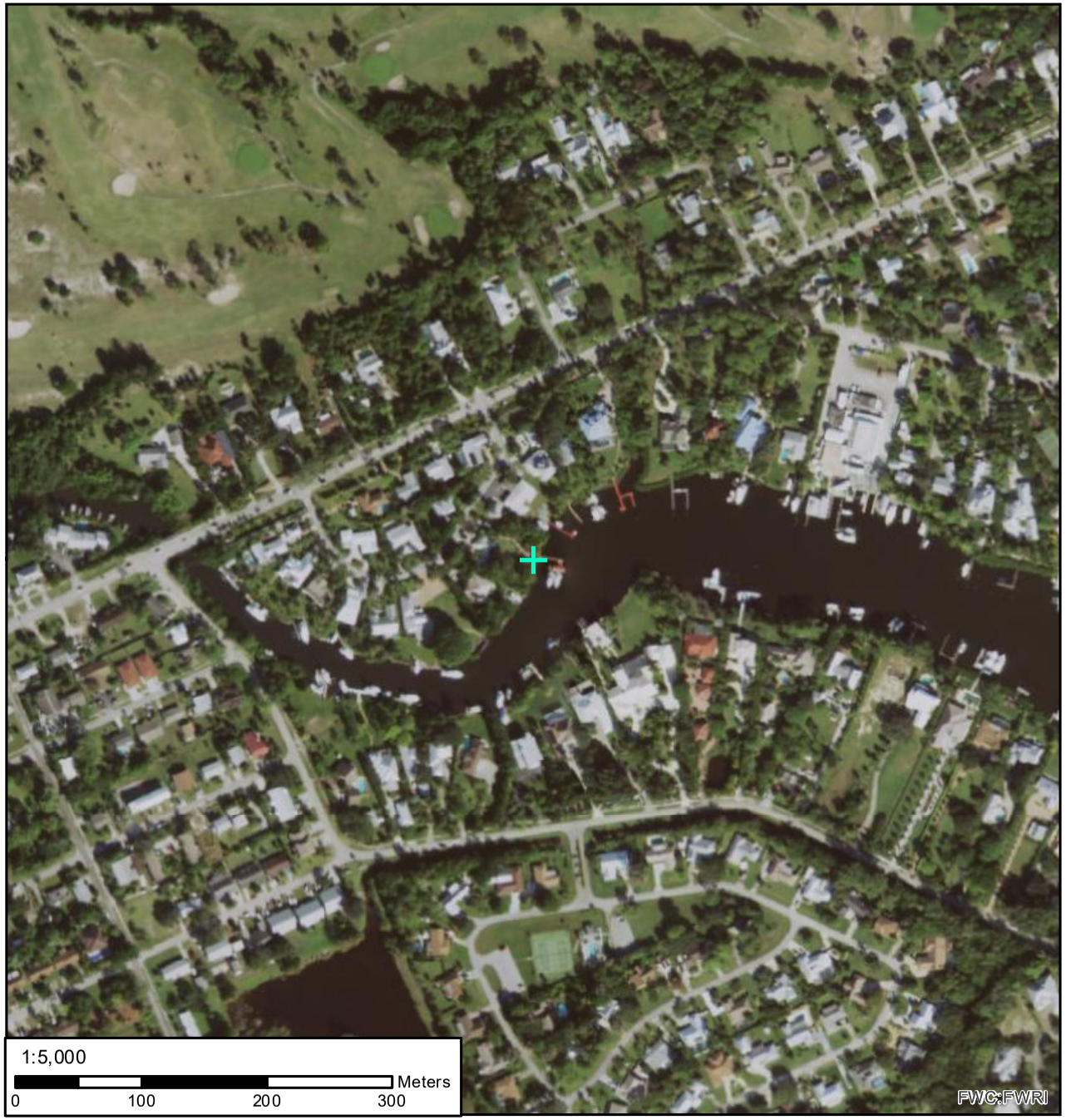
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

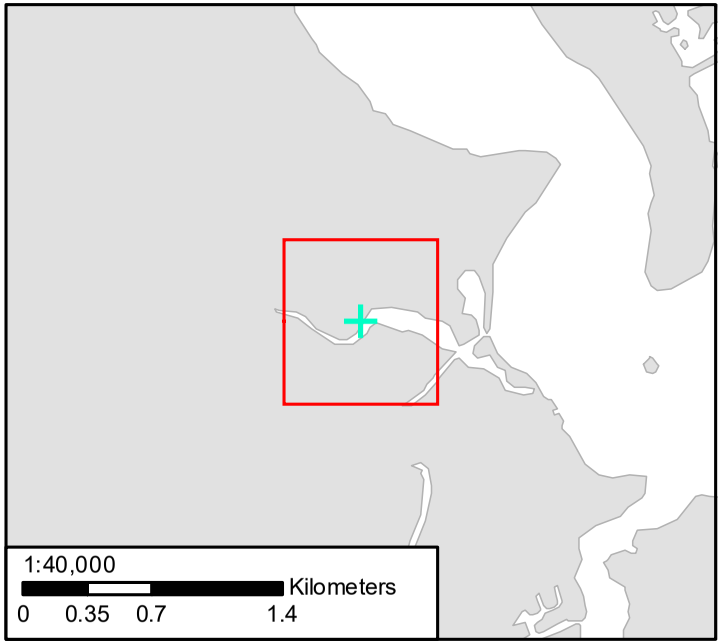


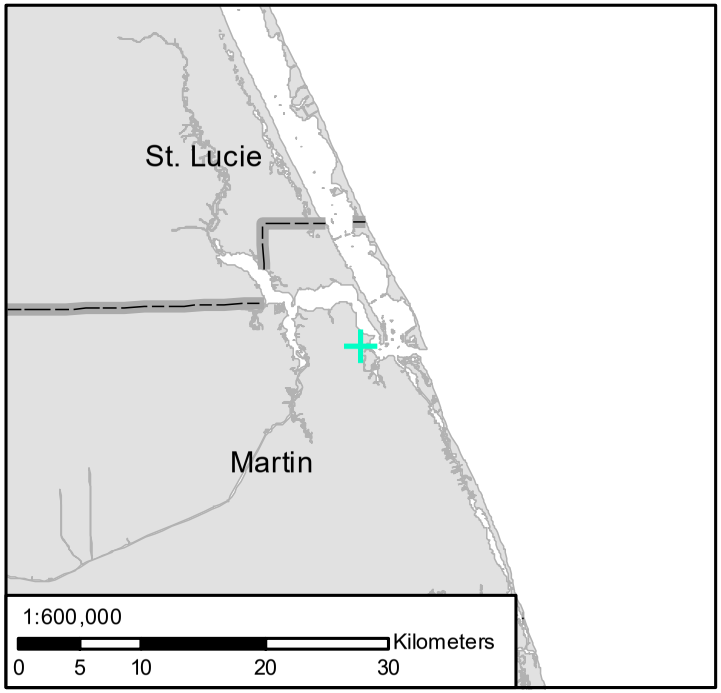
ARH

Verified Location of Manatee Carcass MSE20045

Report Date: 3/10/2020 **Received Date**: 3/12/2020 **Received By**: FWC-ARH







Location: Stuart, Martin County

Latitude: 27.17233°N **Longitude**: -80.20723°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20045
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 2568 **FWC District**: South A
Sex: Female **Length (cm)**: 190 **Estimated** _____ **Weight (kg)** N/T
Date reported: 10 March 2020 **By**: Citizen to FWC Dispatch
Date collected: 12 March 2020 **By**: FWC-ARH
Date necropsied: 12 March 2020 **By**: FWC-ARH, BMF

LOCATION INFORMATION: **State** FL **County**: Martin **Waterway**: Willoughby Creek
Latitude: N 27.172334 **Longitude**: W -80.207231
Locality description: Directly 3382 SE Inlet Harbor Trail,Stuart, FL 34996

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☑ Too Decomposed ☐ Other ☐ Not Recovered
Explain: liner and circular cold stress lesions, empty upper GI, dry hard feces, bloody fluid in lung airways, congested lung airways

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☑ Other cold stress lesions

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT**: No **UTERINE SCAR**: No
UTERINE HORNS: Small Diameter

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20051**
Date of Report: 2020-Apr-14
Filed By: FWC SE Field Station

FWC Case # 3673 **FWC Region:** SO-A

Sex: Unknown **Length:** 250 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-14 **By:** Citizen to FWC SO-A Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.19174 **N**
County: Okeechobee **Longitude:** -80.76299 **W**
Waterway: Lake Okeechobee
Location description: Okeechobee, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Found just south of the S-191 water control structure. Verified through complainant photographs. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

Structure operation log.

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20051

MORPHOMETRICS:

Total length:	250 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20051 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 250 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 14 April 2020, at 0815 hrs, FWC biologist-Amber Howell (ARH) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee near the S-191 water control structure in the C-59 canal, Okeechobee County. FWC case number 3673 was assigned. The complainant, Lee Coleman (720-287-9270), stated that there was a decomposed manatee up against the shoreline. ARH requested photos but Lee did not have any available and was no longer in the area. ARH requested FWC LE assistance to verify the carcass. At 0845 hrs, FWC biologist-Hada Herring (HMH) informed ARH that she had received a call at 0730 hrs from South Florida Water Management District-Bruce Chesser regarding the carcass. HMH received photo verification and coordinates which were passed to ARH at 0851 hrs. ARH contacted LE to cancel the officer request. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL From photographs - All of the dorsal epidermis was missing. The carcass was dorsoventrally flattened. The dorsal dermis and fluke margin were eroded due to decomposition.

COMMENTS Water control structure logs indicate that all flood gates at this location were in the fully closed position from 01 April through 13 April, at which point Gate 3 opened to .275 feet. The stage of decomposition indicates that the manatee likely died days before this partial gate opening. The carcass was found on the downstream side of the structure.

SIGNIFICANT FINDINGS

- Verified through complainant photographs
- Found just south of the S-191 water control structure

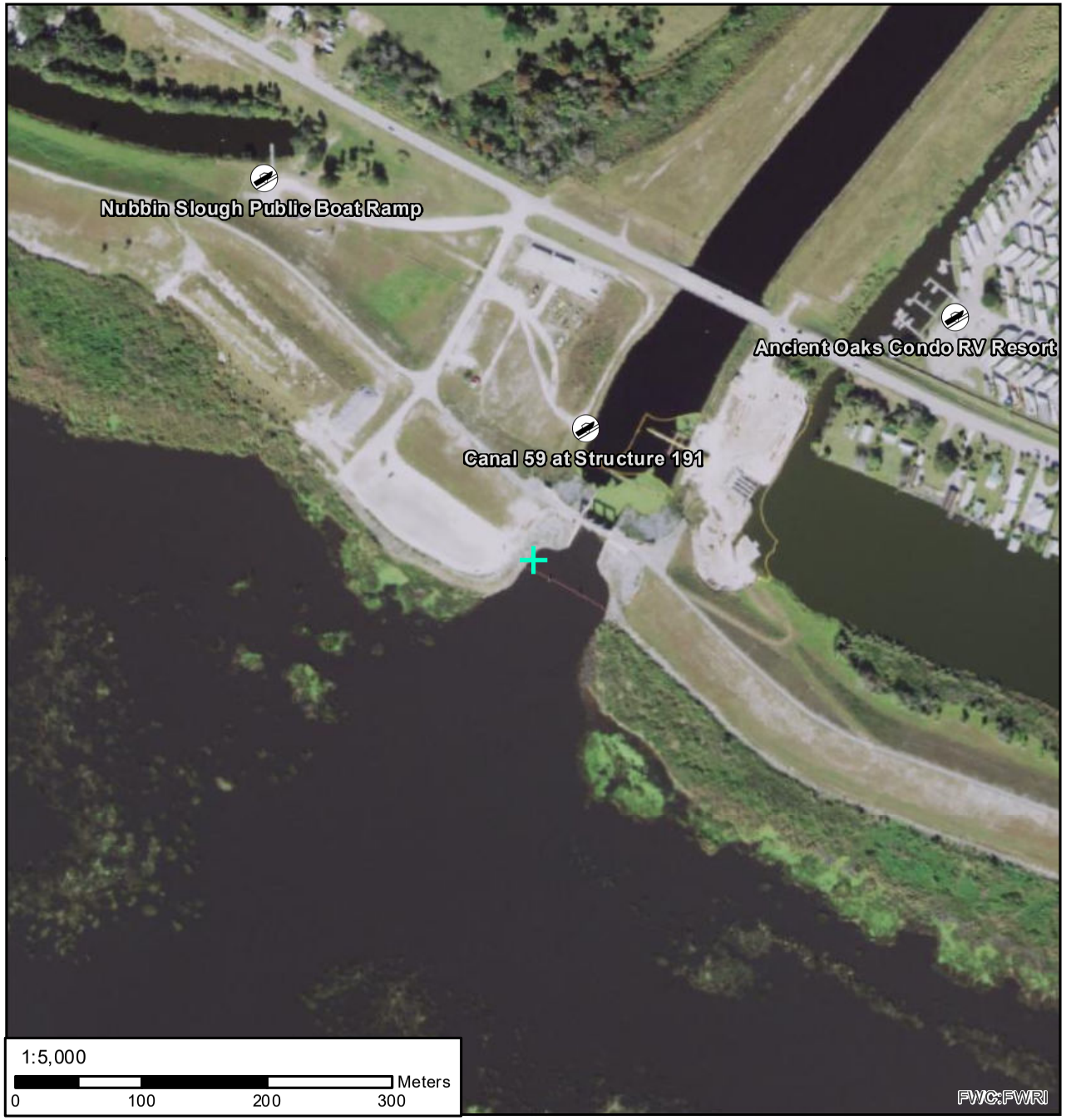
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

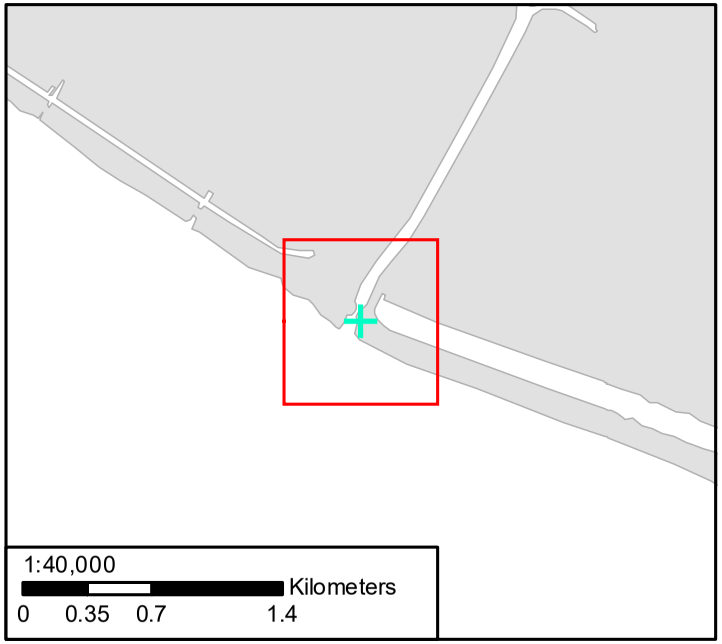
NECROPSY CONDUCTED BY N/A

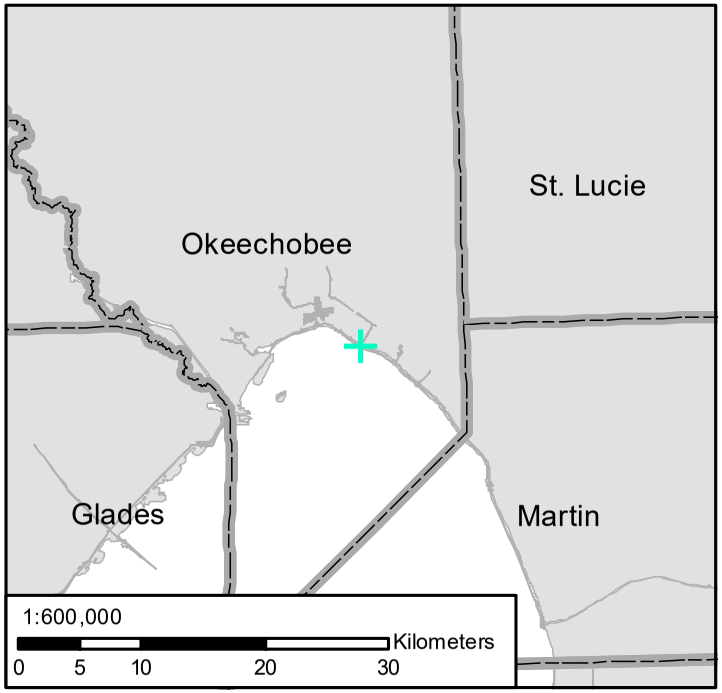
REPORT FILED BY Howell

Verified Location of Manatee Carcass MSE20051

Report Date: 4/14/2020 **Received Date:** **Received By:**







Location: Okeechobee, Okeechobee County

Latitude: 27.19174°N **Longitude:** -80.76299°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID** # MSE20051
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3673 **FWC District**: South A
Sex: Undetermined **Length (cm)**: _____ **Estimated** 244 **Weight (kg)** N/T
Date reported: 14 April 2020 **By**: Citizen to FWC Dispatch
Date collected: N/A **By**: _____
Date necropsied: N/A **By**: _____

LOCATION INFORMATION: **State** FL **County**: Okeechobee **Waterway**: C-59 Canal
Latitude: N 27.191744 **Longitude**: W -80.762997
Locality description: Approximately 60 m SW of the S-191 structure, Okeechobee, FL 34974

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☑ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20057**
Date of Report: 2020-Apr-30
Filed By: FWC SE Field Station

FWC Case # 4253 **FWC Region:** SO-A

Sex: Male **Length:** 280 **cm** (estimated-1) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Apr-30 **By:** Citizen to FWC SO-A Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.25365 **N**
County: Martin **Longitude:** -80.21004 **W**
Waterway: Indian River
Location description: Jensen Beach, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: A partial external work-up was performed. Due to a stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Dorsal, Ventral.

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. Shark scavenging. Actual length of the remains was 245 cm.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20057

MORPHOMETRICS:

Total length:	280 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20057 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Male **TL** 280 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 30 April 2020, at 1344 hrs, FWC biologist-Austin Peek (AP) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Jensen Beach, Martin County. FWC case number 4253 was assigned. The complainant, Dori (772-284-2961), reported a partially scavenged white carcass behind 3920 NE Breakwater Drive, Jensen Beach, Martin County. Photo verification was received by 1351 hrs. AP requested FWC LE assistance. By 1439 hrs, FWC Officer-Lonnie Brevik responded by land, but due to location of the carcass, he was unable to reach it in order to move it away from the complainant's house. FWC biologist-Amber Howell (ARH) responded by 1535 hrs and secured the carcass in a remote location. Due to the stay-at-home order during the COVID-19 pandemic, the carcass was not recovered or necropsied.

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition and scavenging. Portions of the face, neck, caudal ventrum, fluke, peduncle, and shoulder regions were missing due to severe shark scavenging. Intestines were exposed through some of the rents. No watercraft-related wounds were observed on the remaining dorsum. A minimum of three well-healed watercraft-related scar patterns was observed. Actual length of the remains was 245 cm. PIT tag scan was not performed.

COMMENTS

SIGNIFICANT FINDINGS

- Partial external work-up performed
- Shark scavenging

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

NECROPSY CONDUCTED BY N/A

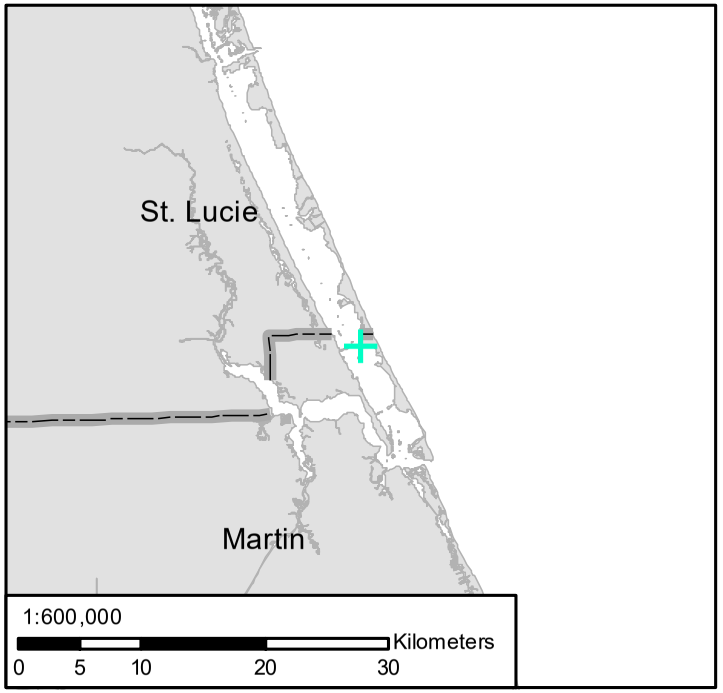
REPORT FILED BY Peek

Verified Location of Manatee Carcass MSE20057

Report Date: 4/30/2020 **Received Date**: **Received By**:







Location: Jensen Beach, Martin County

Latitude: 27.25365°N **Longitude**: -80.21004°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20057
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4253 **FWC District:** South A
Sex: Male **Length (cm):** 245 **Estimated** 280 **Weight (kg)** N/T
Date reported: 30 April 2020 **By:** Citizen to FWC Dispatch
Date collected: N/A **By:**
Date necropsied: N/A **By:**

LOCATION INFORMATION: **State** FL **County:** Martin **Waterway:** Indian River
Latitude: N 27.253652 **Longitude:** W -80.210042
Locality description: 20 m NW of 3920 Breakwater Dr, Jensen Beach, FL 34957

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other
Genetics Box #

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other

PIT TAG Scan: Not Performed
Left side: Right side:

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20061**
Date of Report: 2020-May-16
Filed By: FWC SE Field Station

FWC Case # 5301 **FWC Region:** SO-A

Sex: Unknown **Length:** 215 **cm** (estimated-4) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-May-16 **By:** Citizen to FWC SO Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 27.34142 **N**
County: St. Lucie **Longitude:** -80.26875 **W**
Waterway: Indian River
Location description: Fort Pierce, floating

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Skin lesions; Verified through complainant photographs. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, the carcass was not recovered or necropsied.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20061

MORPHOMETRICS:

Total length:	215 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20061 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 215 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 16 May 2020, at 1911 hrs, FWC on-call biologist-Amber Howell (ARH) received a text alert from FWC SO Dispatch-Palm Beach regarding a dead manatee in Fort Pierce, St. Lucie County. FWC case number 5301 was assigned. The complainant, Jeremy (772-370-4983), reported a dead manatee floating on its side in the Indian River. Verification photographs were received by 1929 hrs. The complainant stated they got right on top of the manatee and watched it for a long time without observing any movements or breaths. ARH requested FWC LE assistance. FWC Officer-Lonnie Brevik responded by 2045 hrs but he was not able to locate the carcass due to lack of daylight. Officer Brevik put in a request with Dispatch for a morning unit to search the area and informed ARH that Lt. David Bingham would be responding. **17 May**, at 1200 hrs, FWC biologist-Austin Peek (AP) contacted Dispatch and was advised that the case had been closed due to insufficient location information. At 1217 hrs, ARH contacted Lt. Bingham and provided GPS coordinates of where the carcass had been reported. Later that day, Lt. Bingham advised that he had looked around the area and had not located the carcass but could not get very close to the shallow shoreline. The carcass was not reported again. Due to carcass response and necropsy restrictions during the COVID-19 pandemic, no further attempts to locate the carcass were made.

EXTERNAL From photographs - All of the epidermis was present on the visible portions of the carcass. There was one white lesion on the lateral aspect.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

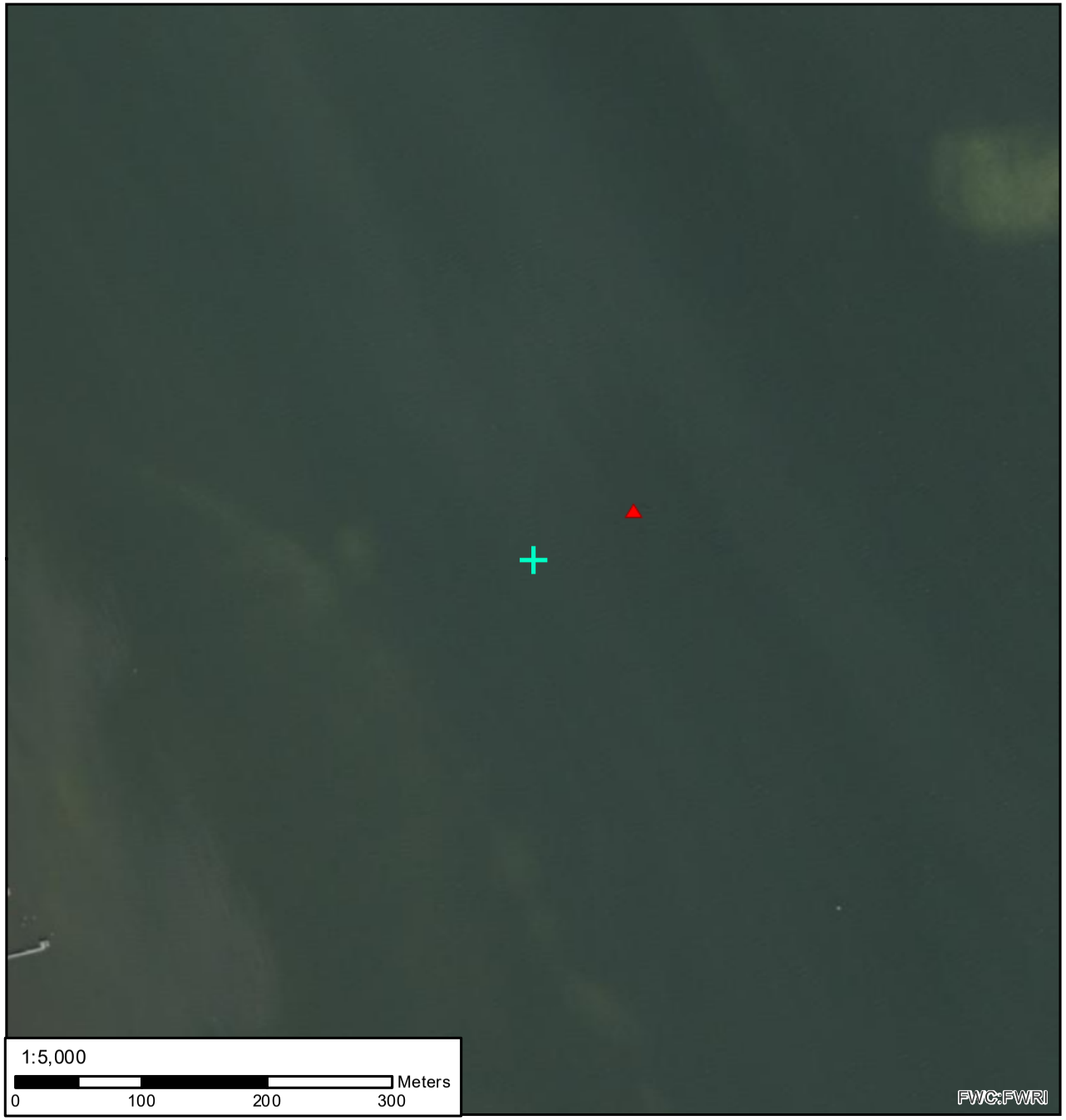
PROBABLE CAUSE OF DEATH Verified; Not Necropsied

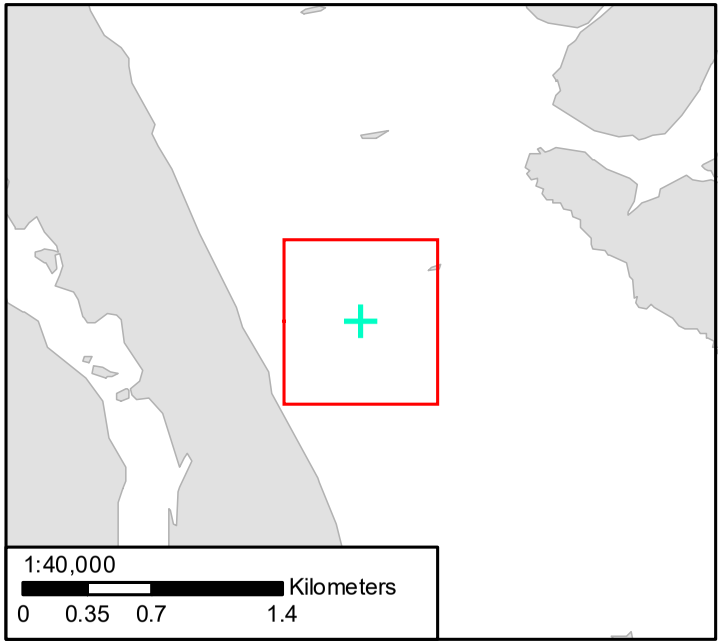
NECROPSY CONDUCTED BY N/A

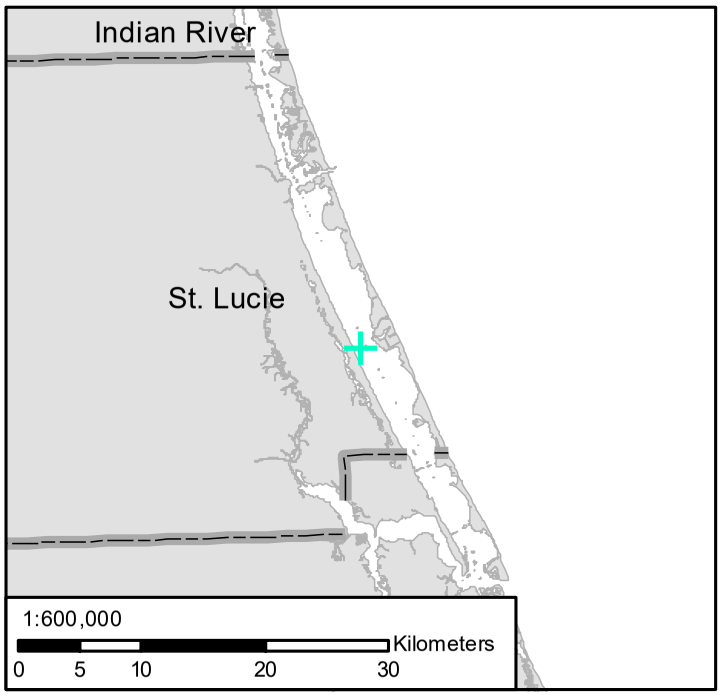
REPORT FILED BY Peek

Verified Location of Manatee Carcass MSE20061

Report Date: 5/16/2020 **Received Date:** **Received By:**







Location: Fort Pierce, St. Lucie County

Latitude: 27.34142°N **Longitude:** -80.26875°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20061
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5301 **FWC District:** South A
Sex: Undetermined **Length (cm):** _____ **Estimated** 213 **Weight (kg)** N/T
Date reported: 16 May 2020 **By:** Citizen to FWC Dispatch
Date collected: N/A **By:** _____
Date necropsied: N/A **By:** _____

LOCATION INFORMATION: State FL **County:** St. Lucie **Waterway:** Indian River
Latitude: N 27.341426 **Longitude:** W -80.268751
Locality description: 630 m ENE of 8300 S Indian River Dr, Fort Pierce, FL 34982

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT:** - **UTERINE SCAR:** -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20067**
Date of Report: 2020-Jun-11
Filed By: FWC SE Field Station

FWC Case #
FWC Region: SO-A

Sex: Unknown **Length:** 215 **cm** (estimated-3) **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Jun-11 **By:** Citizen to FWC LE to FWC-ARH
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION:
State: FL
County: St. Lucie
Waterway: South Indian River
Location description: Ft. Pierce, floating

Latitude: 27.5052 **N**
Longitude: -80.32626 **W**

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified through complainant photograph.

PHOTOGRAPHS TAKEN: Verification Photo(s)

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20067

MORPHOMETRICS:

Total length:	215 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20067 **SPECIES** *T. manatus latirostris*
RECOVERY DATE N/A **NECROPSY DATE** N/A
GENDER Undetermined **TL** 215 **cm** (est) **WT** N/T **kg** **CONDITION** Confirmed; Not Necropsied

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HISTORY 11 June 2020, at 1230 hrs, FWC biologist-Amber Howell (ARH) received a call from FWC Officer-Randy Irwin regarding a dead manatee in Fort Pierce, St. Lucie County. Officer Irwin stated that he had fourth party information that a citizen had found a carcass. At 1435 hrs, ARH received photo verification and GPS coordinates from FWC Officer-Melissa Miano who also stated the manatee was in shallow water in the Old Inlet and she would not be able to get to it by boat to assist. The GPS coordinates given by the complainant did not plot in the correct county, so ARH contacted Officer Miano who stated that she would try to update on the correct location the next day. ARH requested assistance from Harbor Branch Oceanographic Institute (HBOI) staff to search the area the next day. **12 June**, at 0927 hrs, HBOI staff informed ARH that they had not found the dead manatee but couldn't search the whole area due to shallow water. ARH attempted to reach Officer Miano for updated coordinates but there was no reply. ARH and BMF decided to attempt to locate the carcass. While on the way to launch kayaks, ARH contacted Officer Irwin who advised that FWC Lieutenant-David Bingham had originally received the carcass information. ARH contacted Lieutenant Bingham who gave the original coordinates and advised that he had received the call at 0810 hrs on 11 June. At 1300 hrs, ARH and BMF launched kayaks near the reported location and searched the area. After speaking with the original complainant, Karen (772-359-8308), and searching until 1530 hrs, BMF and ARH were unable to locate the carcass.

EXTERNAL From photographs - Almost all of the ventral epidermis was present but sloughing. The carcass was distended with gas. Internal organs protruded from a rent on the mid ventrum.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Necropsied

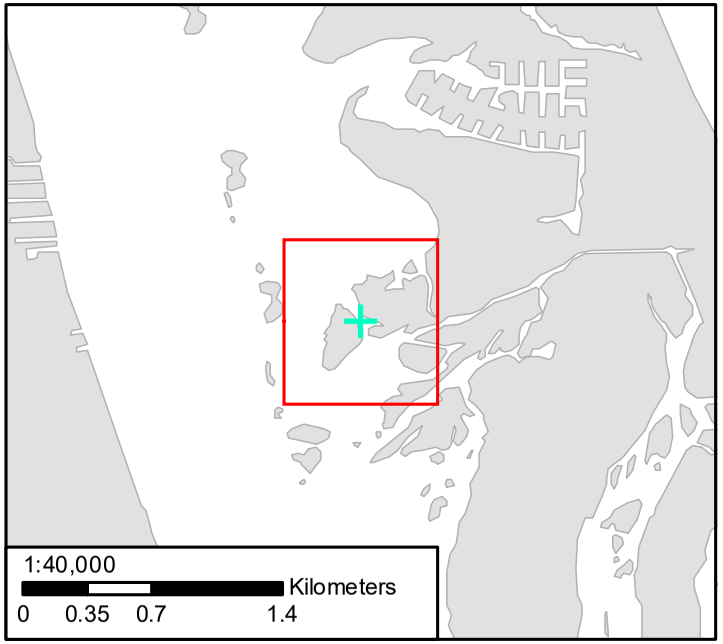
NECROPSY CONDUCTED BY N/A

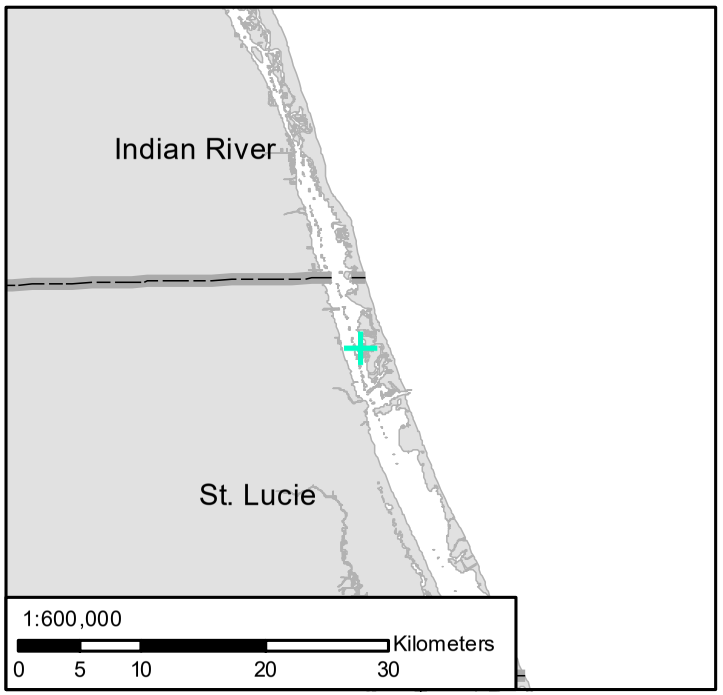
REPORT FILED BY Faucett

Verified Location of Manatee Carcass MSE20067

Report Date: 6/11/2020 **Received Date:** **Received By:**







Location: Ft. Pierce, St. Lucie County

Latitude: 27.5052°N **Longitude:** -80.32626°W

Map Created: 3/29/2021

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20067
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: South A
Sex: Undetermined **Length (cm)**: _____ **Estimated** 215 **Weight (kg)** N/T
Date reported: 11 June 2020 **By**: Citizen to FWC LE to FWC-ARH
Date collected: N/A **By**: _____
Date necropsied: N/A **By**: _____

LOCATION INFORMATION: **State** FL **County**: St. Lucie **Waterway**: Old Inlet
Latitude: N 27.505205 **Longitude**: W -80.326263
Locality description: Approximately 1.5 km ENE of 3772 Outrigger Dr, Ft. Pierce FL 34946

Carcass Orientation: Floating

CONDITION: Confirmed; Not Recovered

PROBABLE CAUSE OF DEATH:
Human related: ☐ Watercraft Collision: - ☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable) ☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☑ Verification photograph ☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☐ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Not Performed
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSE20076**
Date of Report: 2020-Aug-06
Filed By: FWC SE Field Station

FWC Case # 11982 **FWC Region:** SO-A

Sex: Female **Length:** 318 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2020-Aug-06 **By:** Citizen to FWC SO Dispatch

DATE COLLECTED: 2020-Aug-06 **By:** FWC-AP

DATE NECROPSIED: 2020-Aug-07 **By:** FWC-ARH,BMF

LOCATION: **State:** FL **Latitude:** 27.17972 **N**

County: Martin **Longitude:** -80.18223 **W**

Waterway: Indian River

Location description: Stuart, grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Luxated rib(s); Vertebral separation(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Hemothorax; Hemoabdomen; Torn hemidiaphragm(s); Torn lung(s); Torn parietal pleura; Wet lung(s); Organ pallor; Shaved ribs, vertebrae; Bloody nares; Mucus, bloody fluid, blood clots in airways; Blood clots lung cut surfaces; Congested mesenteries, parietal pleura, lung serosa, lung airway-, colon-, urinary bladder mucosa; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed. Chronic eye mutilation. Post-mortem propeller scrapes. Remodeled skull. Known as MIPS ID RB457, first sighted on 14 Jan 1987 at the Riviera Beach Power Plant.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSE20076

MORPHOMETRICS:

Total length:	318 cm	**Fluke base:**	cm	**Girth at axillae:**	**cm**
Snout to anus:	cm	**Fluke width:**	cm		
Snout to U/G:	cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	cm	**Girth at anus:**	cm		
Flipper width:	cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:**

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right	5.8	7
Right		
Left	6.8	8.8
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSE20076 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 06 August 2020 **NECROPSY DATE** 07 August 2020
GENDER Female **TL** 318 **cm WT** N/T **kg** **CONDITION** Moderately Decomposed

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HISTORY 06 August 2020, at 0914 hrs, FWC biologist-Blake Faucett received a text alert from FWC SO Dispatch-Palm Beach regarding a dead manatee in Stuart, Martin County. FWC case number 11982 was assigned. The complainant, Scott (772-214-2421), stated that there was a possible dead manatee on the Stuart sandbar, but he was unsure if it was back-up or belly-up. No photos were available. BMF requested FWC LE assistance, but no officers were in the area. FWC biologist-Amber Howell (ARH) requested assistance from the Martin County Sheriff's Office (MCSO). At 1125 hrs, ARH received photo verification and location of the carcass from Sergeant Travis Dykes, who requested help with recovery from a biologist because of the shallow water. FWC biologist-Austin Peek (AP) met Sgt. Dykes at 1230 hrs, had the carcass in tow by 1310 hrs, and loaded it into the carcass trailer by 1440 hrs. AP transported the carcass to the SE Field Station by 1510 hrs where it was stored overnight pending necropsy. **07 August**, a field necropsy was completed by 1120 hrs. The remains were disposed of at the Martin County Landfill.

EXTERNAL Almost all of the epidermis was present but sloughing. A small amount of bloody fluid and one live nematode exuded from the nares. There were three fresh, slightly penetrating, parallel watercraft-related wounds (wounds #1 - 3) on the mid left dorsum. There were six fresh, superficial, triangle-shaped watercraft-related wounds on the left cranial lateral aspect. The carcass was distended with gas. There was a thin brown algal mat on the dorsum. Numerous small barnacle scars were observed on the dorsal and ventral aspects. A minimum of twenty well-healed watercraft-related scar patterns was observed. One scar pattern extended over the right eye, which covered the right eye with scar tissue and no eyeball was visible. The fluke margin had four small well-healed mutilations at the 3, 5, 7, and 8 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, omental, and mesenteric fat. The mesenteries were moderately congested. There were 50 mL of loose, well-formed blood clots and 3.5 L of frank blood in the abdominal cavity.

STOMACH The stomach contained 10 L of moist, fibrous, well-chewed, green and tan ingesta. The ingesta were coated in a thin layer of tan mucus. The mucosa was tan and blue. There were multiple regions of raised glandular tissue in the wall that were associated with congestion (see photo). There was a small infection of live nematodes.

DUODENUM The duodenum contained 8 L of wet, fibrous, well-chewed, green and tan ingesta. The mucosa was discolored light brown with one distinct dark brown band, and one blue to yellow discolored region (see photo). There was a small infection of live nematodes.

JEJUNUM & ILEUM There were focal areas of dark pink, red and blue discoloration on the small intestine serosa (see photo). The small intestine contained wet, fibrous, well-chewed, green and tan ingesta. The mucosa was unremarkable. There was a scant infection of live nematodes.

CECUM The cecum contained 5.5 L of moist, fibrous, well-digested, green digesta. The mucosa was sloughing, and there were two regions of purple and pink discoloration (see photo). A mild infection of live trematodes was observed.

COLON There were large areas of dark blue to black discoloration on the proximal colon serosa (see photo). The proximal colon contained wet, fibrous, well-digested, poorly formed, green feces. The mucosa was

sloughing with intermittent regions of red congestion (see photo). There was a mild infection of live trematodes. The mid colon had a 162 cm long contracted section that was empty of contents. The mucosa in this region was rugose with a severe infection of trematodes observed (see photos). The distal colon contained moist, fibrous, well-digested, well-formed, dark green feces. The mucosa was unremarkable. No parasites were observed.

PANCREAS The pancreas was soft. Serosal and cut surfaces were tan.

SPLEEN The spleen was soft. Serosal surfaces were mottled gray and light pink, and cut surfaces were pink.

LIVER The margins of the liver were mostly rounded. The liver was soft. Serosal surfaces were blue to purple and cut surfaces were brown.

GALLBLADDER The gallbladder contained 30 mL of flocculent, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The uterus was contracted. The right uterine horn contained an old, mostly resolved scar (7.0 cm wide x 5.8 cm circumference). The left uterine horn contained a healing scar (8.8 cm wide x 6.8 cm circumference). The left ovary contained >20 follicles, numerous corpora albicantia, and a couple corpora hemorrhagica. The right ovary contained >20 follicles and several corpora albicantia.

KIDNEYS There was abundant perirenal fat. The kidneys were pale pink on serosal surfaces. On cut surfaces, the cortices were light pink to tan, and the medullae were light red (pallor). The corticomedullary boundaries were distinct.

URINARY BLADDER There were focal areas of black staining on the bladder serosa (see photo). The bladder contained 30 mL of clear, light yellow urine. The mucosa was moderately congested.

HEART There was abundant epicardial fat. The heart was pale pink. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM There were two tears (11.2 x 2.5 cm, 17.4 x 3.9 cm) in the cranial aspect of the left hemidiaphragm due to luxated left ribs 8 and 9 (see photo). The right hemidiaphragm was intact. The left pleural cavity contained 2 L of loose, well-formed blood clots and 2.5 L of frank blood (see photo). The left parietal pleura was mildly congested. The left lung had two tears in the dorsal aspect (5.0 x 2.0 cm, 10.0 x 3.5 cm) due to luxated left ribs 7 and 9, and one full perforation (7.0 x 2.0 cm) due to luxated left rib 8 (see photo). The left lung was pale pink to pale purple on serosal surfaces, and dark red and wet on cut surfaces. There were loosely adhered blood clots on cut surfaces of the left lung (see photo). There was a small amount of bloody fluid in the left lung airways. The mucosa was dark red. The right lung was pink to purple and moderately congested on serosal surfaces, and dark red and wet on cut surfaces. There was a small amount of viscous, red mucus in the right lung airways (see photo). The mucosa was tan and moderately congested. No parasites were observed in either lung airways.

HEAD & NECK REGIONS There was a thatch of partially chewed *Syringodium* in the mouth (see photo). The trachea contained a moderate amount of blood clots and thick, viscous, red mucus (see photo). The mucosa was light red. No parasites were observed. The right jugal bone was remodeled.

SKELETON Left ribs 6 - 9 were luxated and shaved on the dorsal aspect of the proximal one-third. Left ribs 7 - 9 perforated the parietal pleura. Right ribs 6 and 7 were luxated. The dorsal right caudal aspect of T6 was shaved. There was a partial vertebral separation between T6 and T7 due to wound #3. There were loose well-

formed blood clots and shredded, hemorrhagic tissue surrounding the rib and vertebral trauma, which was deep to wounds #1-3.

OTHER There were loose, well-formed blood clots and shredded, hemorrhagic tissue deep to wounds #1-3. There was no trauma deep to the wound series on the cranial left lateral aspect.

COMMENTS Both AP and Sgt. Dykes stated they witnessed the propeller hit the left side of the manatee during recovery due to the rope being too short when starting the tow.

SIGNIFICANT FINDINGS

- Fresh watercraft-related wounds
- Bloody nares
- Luxated ribs
- Shaved ribs, vertebrae
- Partial vertebral separation
- Shredded, hemorrhagic tissue
- Blood clots
- Hemoabdomen
- Hemothorax
- Torn hemidiaphragm, left lung, parietal pleura
- Wet lungs
- Mucus, bloody fluid, blood clots in airways
- Heart, kidney, lung pallor
- Congested mesenteries, parietal pleura, lung serosa, lung airway-, colon-, urinary bladder mucosa, stomach wall
- Seagrass in mouth
- Uterine scars
- Remodeled skull
- Chronic eye mutilation
- Postmortem propeller scrapes

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

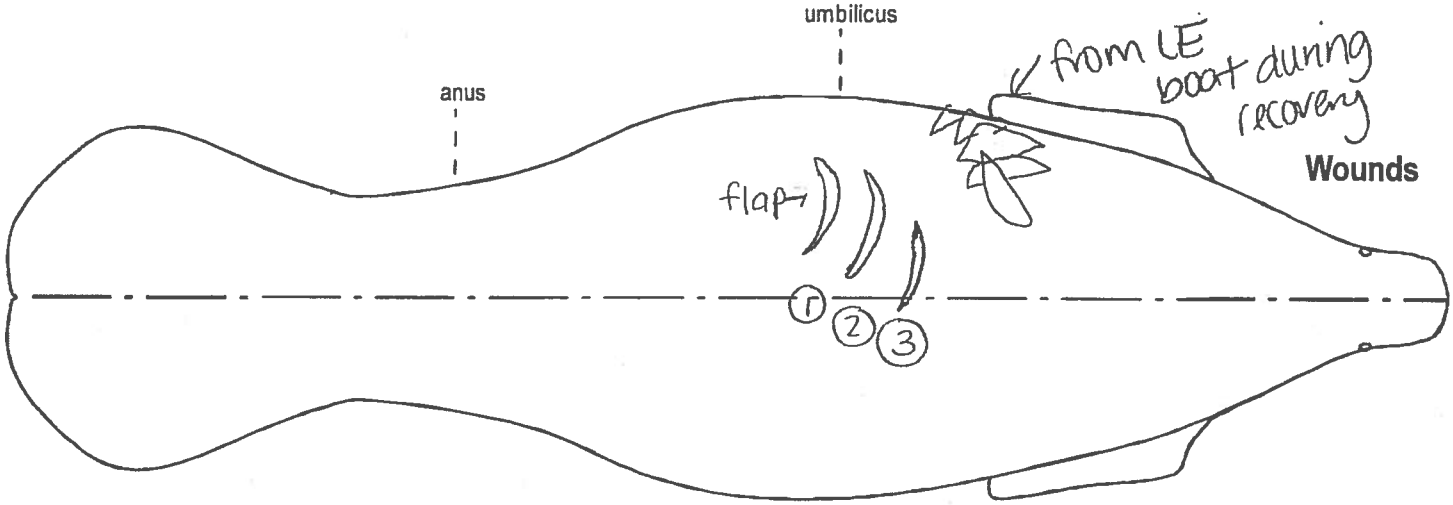
NECROPSY CONDUCTED BY

Amber R. Howell
Blake M. Faucett

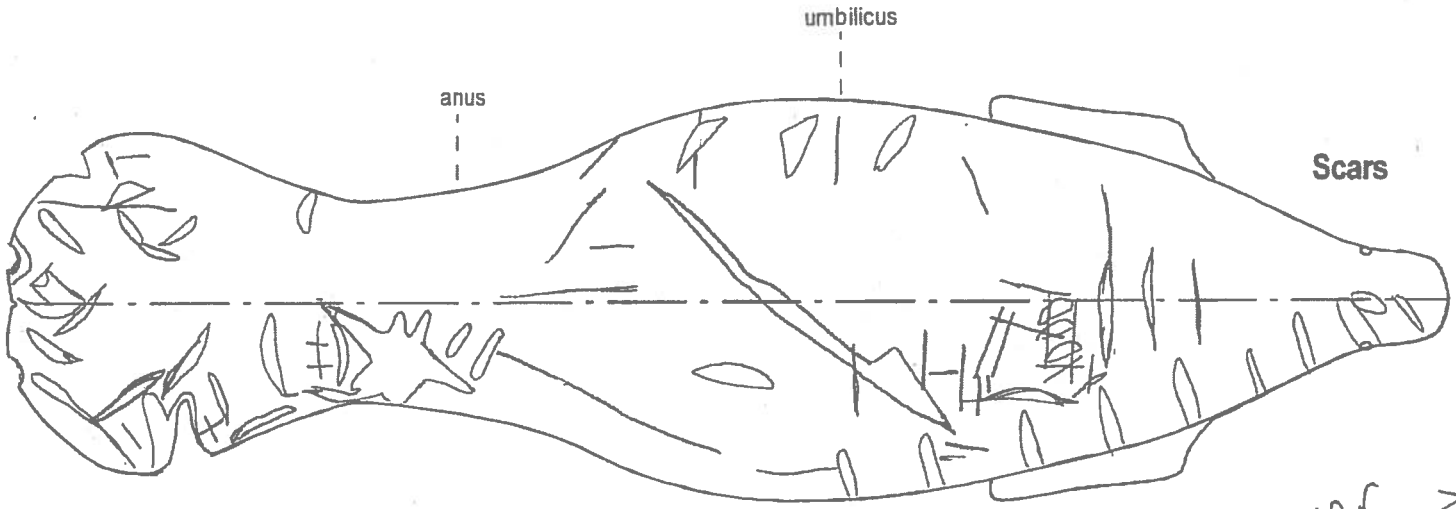
REPORT FILED BY Howell / Faucett

Date 07 AUG 2020 Field I.D. MSE200716

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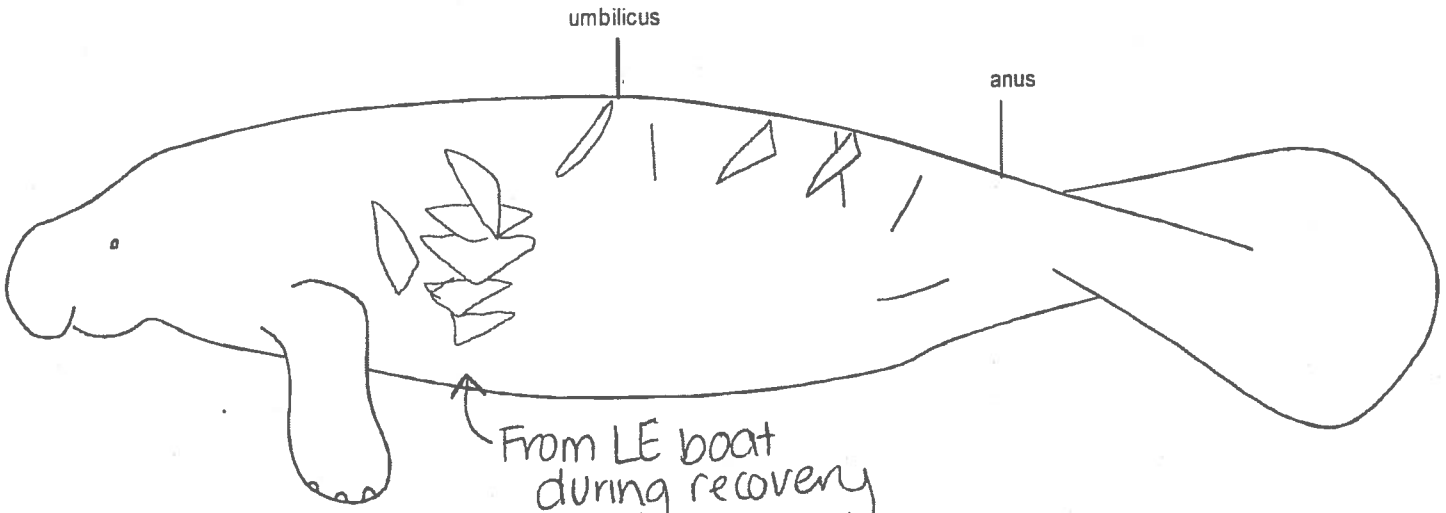
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Length	14.5	16.3	10.2																	
Width	2.9	3.2	1.5																	
Depth	3.7	2.9	1.1																	
Distance	10.4	7.1																		

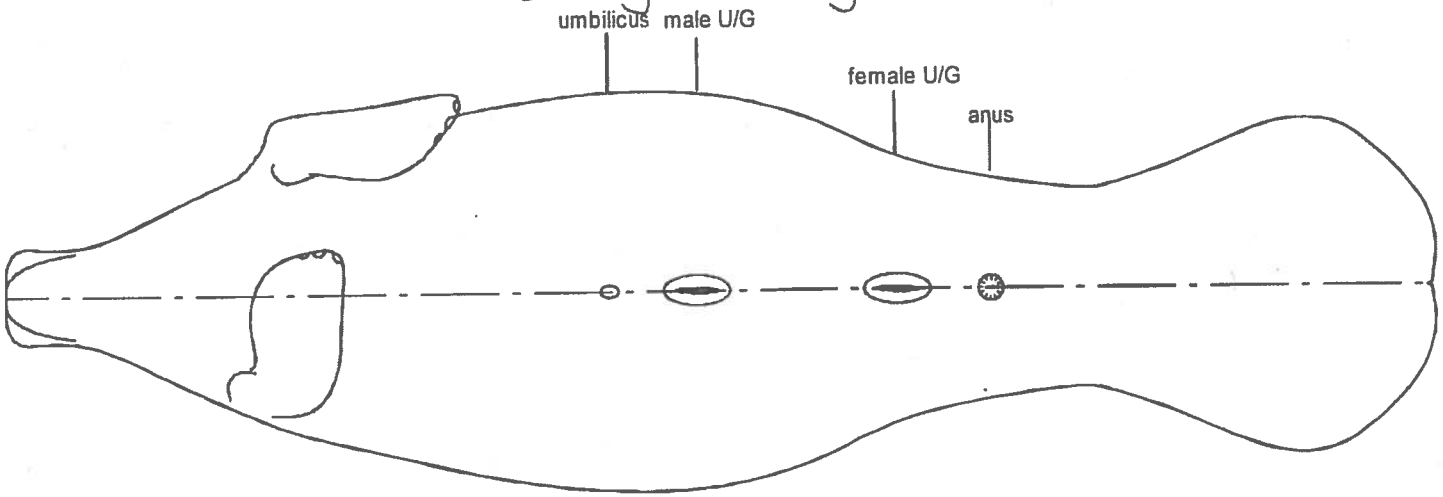


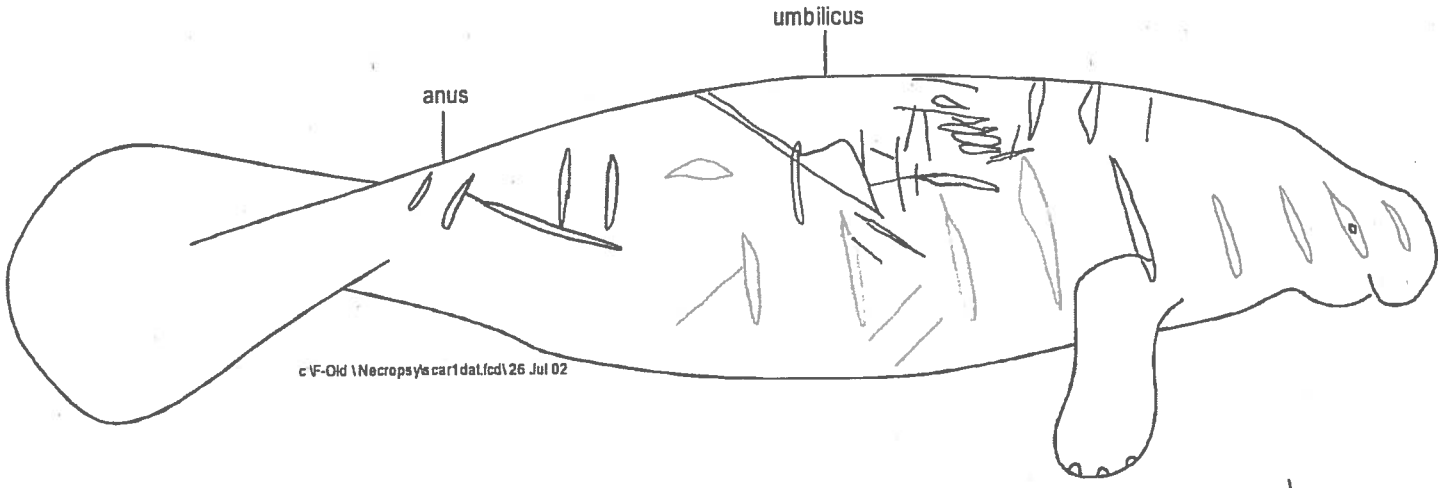
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ARH

FIELD I.D. MSF20076





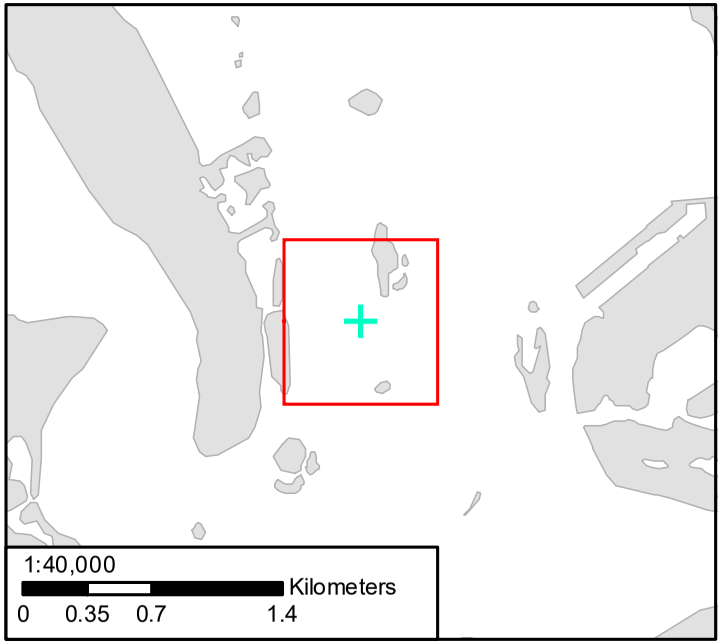


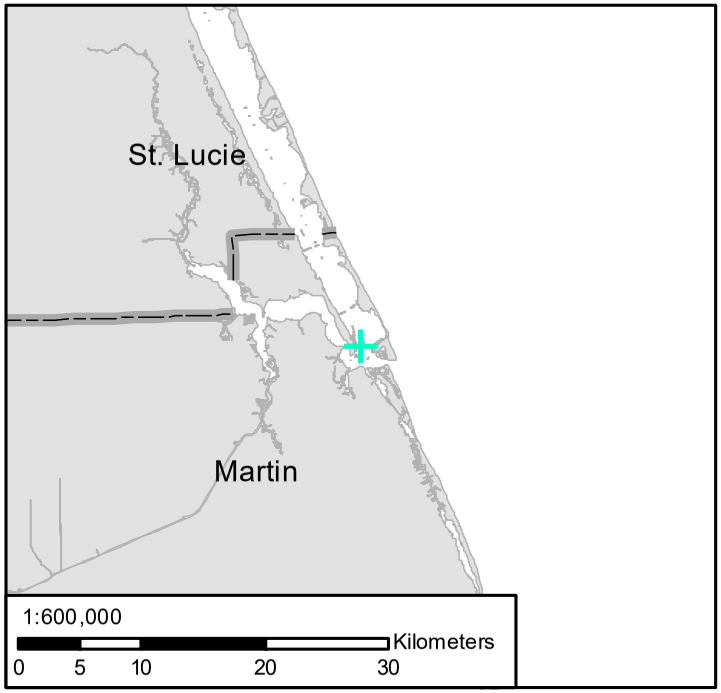
ARH

Verified Location of Manatee Carcass MSE20076

Report Date: 8/6/2020 **Received Date**: 8/6/2020 **Received By**: FWC-AP







Location: Stuart, Martin County

Latitude: 27.17972°N **Longitude**: -80.18223°W

Map Created: 3/29/2021

Bassett, Brandon

From: Rood, Kari
Sent: Tuesday, September 8, 2020 3:27 PM
To: Howell, Amber; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Boyd, Denise; Burns, Allison; Davidson, Emily; Deutsch, Chip; deWit, Martine; Edwards, Holly; Faucett, Blake; Fontaine, Christine; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Martz, Meg; Metcalf, Carley; Nader, Ana; Panike, Anna; Peek, Austin; Schubert, Molly; sheri@mote.org; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MSE20076=RB457

MSE20076=RB457

Carcass location: Indian River, Stuart
Female

First sighted 1/14/87 at Riviera Beach Power Plant
Last sighted 1/22/19 at Riviera Beach Power Plant
USGS should be able to provide a complete sighting history if needed.

Verifiers: HONAKER 9/4/20 & KAH 9/8/20

Sighting records are not to be used without permission from FWC, MML, and/or USGS, as appropriate.

Kari A. Rood
Manatee Photo-identification
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, FL 33701

Direct line: (727) 502-4737
Main line: (727) 896-8626
Kari.Rood@MyFWC.com
http://MyFWC.com
http://MyFWC.com/research/

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE20076
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11982 **FWC District**: South A
Sex: Female **Length (cm)**: 318 **Estimated** _____ **Weight (kg)** N/T
Date reported: 06 August 2020 **By**: Citizen to FWC-Dispatch
Date collected: 06 August 2020 **By**: FWC-AP
Date necropsied: 07 August 2020 **By**: FWC-ARH, BMF

LOCATION INFORMATION: **State** FL **County**: Martin **Waterway**: Indian River
Latitude: N 27.179721 **Longitude**: W -80.182232
Locality description: 410 m WSW of 1 Island Rd, Stuart, FL 34996

Carcass Orientation: Grounded

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Impact; Acute
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ **Natural** ☐ **Undetermined** ☐ **Not Recovered**
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: fresh, slightly penetrating watercraft wounds, luxated ribs, partial vertebral separation,shaved ribs, vertebrae, hemothorax, hemoabdomen, shredded tissue, torn hemidiaphragm, torn lung, heart, kidney, and lung pallor, seagrass in mouth, bloody fluid lung airway, blood clots trachea

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☐ Site
☑ Verification photograph ☑ Other Wounds, seagrass in mouth

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: No **PREGNANT:** No **UTERINE SCAR**: Yes
UTERINE HORNS: Contracted

ADDITIONAL DATA:
☑ External measurements ☑ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS:

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSTm2007**
Date of Report: 2020-Feb-17
Filed By: MSQ

FWC Case # 1682 **FWC Region:** SO-A

Sex: Female **Length:** 183 **cm** **Weight:** 90.0 **kg**

DATE REPORTED: 2020-Feb-17 **By:** MSQ-Maya Rodriguez to FWC-ARH

DATE COLLECTED: 2020-Feb-16 **By:** MSQ

DATE NECROPSIED: 2020-Feb-16 **By:** MSQ

LOCATION: **State:** FL **Latitude:** 27.53376 **N**

County: St. Lucie **Longitude:** -80.31767 **W**

Waterway: Indian River

Location description: St. Lucie,

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cold stress lesions; Bleached epidermis; Serous fat(s); Congested lungs.

PHOTOGRAPHS TAKEN: Dorsal, Lateral, Fluke, Cranial.

MATERIALS COLLECTED:

Genetics. MSQ histology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Rescue report.

REMARKS:

PIT tag scan negative. Died on 16 Feb 2020. Died at 1630 hrs. Died in facility. See rescue report RSE2009, rescued on 16 February 2020 for cold stress.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSTm2007

MORPHOMETRICS:

Total length:	183 cm	**Fluke base:**	55 cm	**Girth at axillae:**	110 **cm**
Snout to anus:	128 cm	**Fluke width:**	49 cm		
Snout to U/G:	107 cm	**Girth at fluke base:**	73 cm		
Snout to umbilicus:	72 cm	**Girth at anus:**	88 cm		
Flipper width:	12.5 cm	**Girth at umbilicus:**	129 cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	0.1 cm	0.1 cm		
Outer Blubber Thickness:	0.8 cm	0.5 cm	**Abdominal Fat Thickness:**	0.6 cm
Inner Blubber Thickness:	1 cm	0.7 cm	**Epidermis Thickness:**	0.2 cm

---

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSTm2007 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 16 February 2020 **NECROPSY DATE** 16 February 2020
GENDER Female **TL** 183 **cm WT** 90 **kg** **CONDITION** Fresh

---

HISTORY See rescue report RSE2009. 17 February 2020, at 0805 hrs, FWC biologist-Amber Howell (ARH) received a text from Miami Seaquarium-Maya Rodriguez stating that the rescue from the previous day had died shortly after being admitted. MSQ had necropsied the manatee that afternoon.

SEE ADDENDUM FOR NECROPSY REPORT BY Miami Seaquarium

SIGNIFICANT FINDINGS

- Cold stress lesions
- Bleached epidermis
- Serous fat
- Congested lungs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

Dr. Maya Rodriguez

REPORT FILED BY Howell

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. RSE2009 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 02-16-20 **NECROPSY DATE** 02-16-20
GENDER Female **TL** 183 **cm WT** 90 **kg est.** **CONDITION** Fresh

---

HISTORY Observed by a citizen in Ft Pierce for 2 days. Unresponsive to being touched with resp rate of 30-45 seconds with white muzzle and flippers. On entry, her breathing was abnormal with a very slow expiration and very delayed inspiration and had to have her held up to breathe and passed away shortly after entry.

EXTERNAL In fair to thin body condition with diffuse algal growth. White blanched muzzle on towards the cervical area and the flippers. Several linear non-healing lesions and a few circular 2cm ulcerated holes on flippers and cervical area.

ABDOMINAL Minimal mesenteric fat present some edema present on the serosal surfaces and small amount (25cc) clear fluid present in the abdomen.

STOMACH Empty and grossly normal.

DUODENUM Small amount of mucous present grossly normal.

JEJUNUM & ILEUM Small amount of thick fluid present grossly normal.

CECUM Small amount of firm dark material present grossly normal.

COLON Dry firm fecal material present in small fecal balls farther distally.

PANCREAS Slightly pale grossly normal.

SPLEEN Grossly normal.

LIVER Rounded on cut edge grossly normal.

GALLBLADDER Moderate amount of bile present grossly normal.

REPRODUCTIVE Immature female grossly normal tract.

KIDNEYS Grossly normal.

URINARY BLADDER No urine present grossly normal.

HEART Serous atrophy of fat.

RESPIRATORY SYSTEM Small amount of thickened off white fluid present in the nares, trachea and bronchi. Lungs diffusely slightly reddened and congested.

HEAD & NECK REGIONS Edema present in the underneath dermis at the cervical area.

SKELETON Grossly normal.

OTHER Neurologic Brain moist with small amount of pooling liquid. Edema surrounding the brachial plexus.

PHOTOGRAPHS

COMMENTS

SIGNIFICANT FINDINGS -Epidermal white blanching of muzzle and flippers
-Edema present brachial plexus, abdominal serosal surfaces
-Liquid 25 cc present in the abdomen
-Small amount pooling of thickened liquid present nares, trachea and lungs

PROBABLE CAUSE OF DEATH Acute Cold Stress

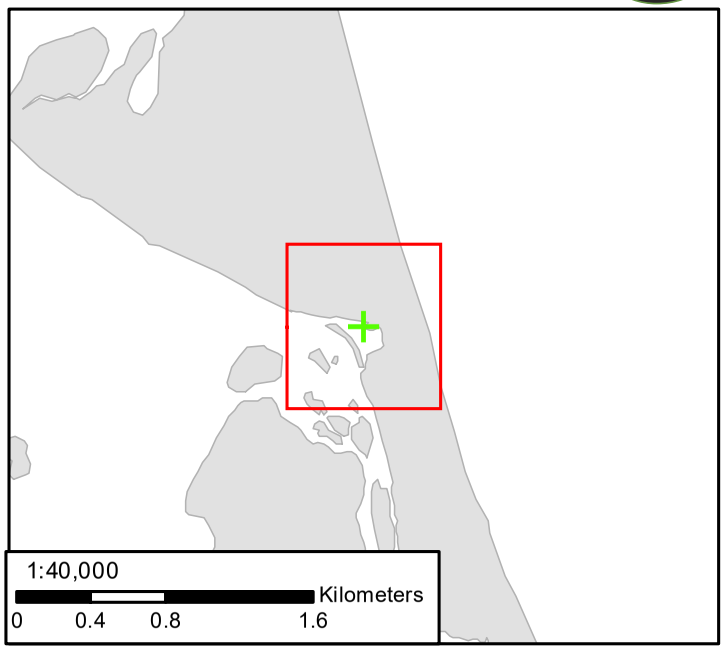
NECROPSY CONDUCTED BY Magdalena Rodriguez
Leah Brewer

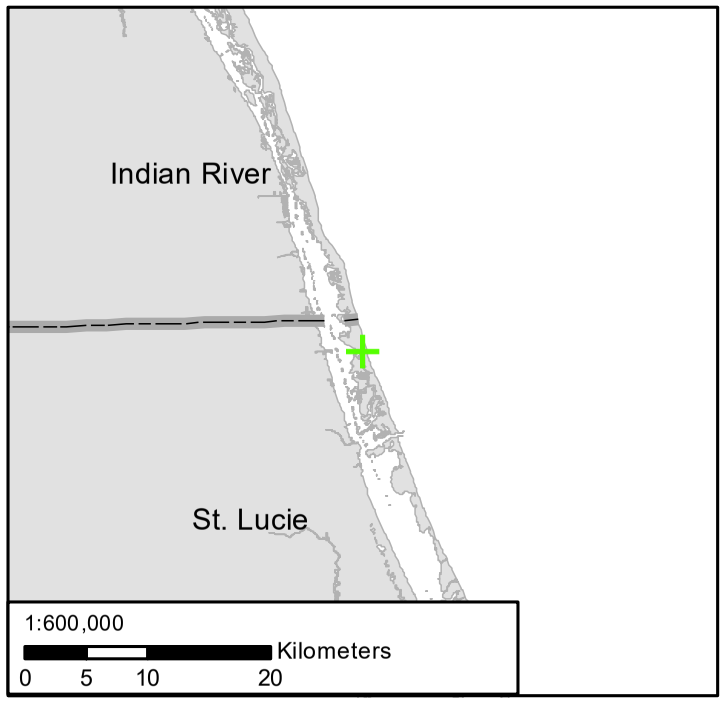
REPORT FILED BY Magdalena Rodriguez DVM

Verified Location of Manatee MSTm2007

Rescue ID: RSE2009 **Report Date:** 2/17/2020 **Received Date:** 2/16/2020 **Received By:** MSQ







Location: St. Lucie, St. Lucie County

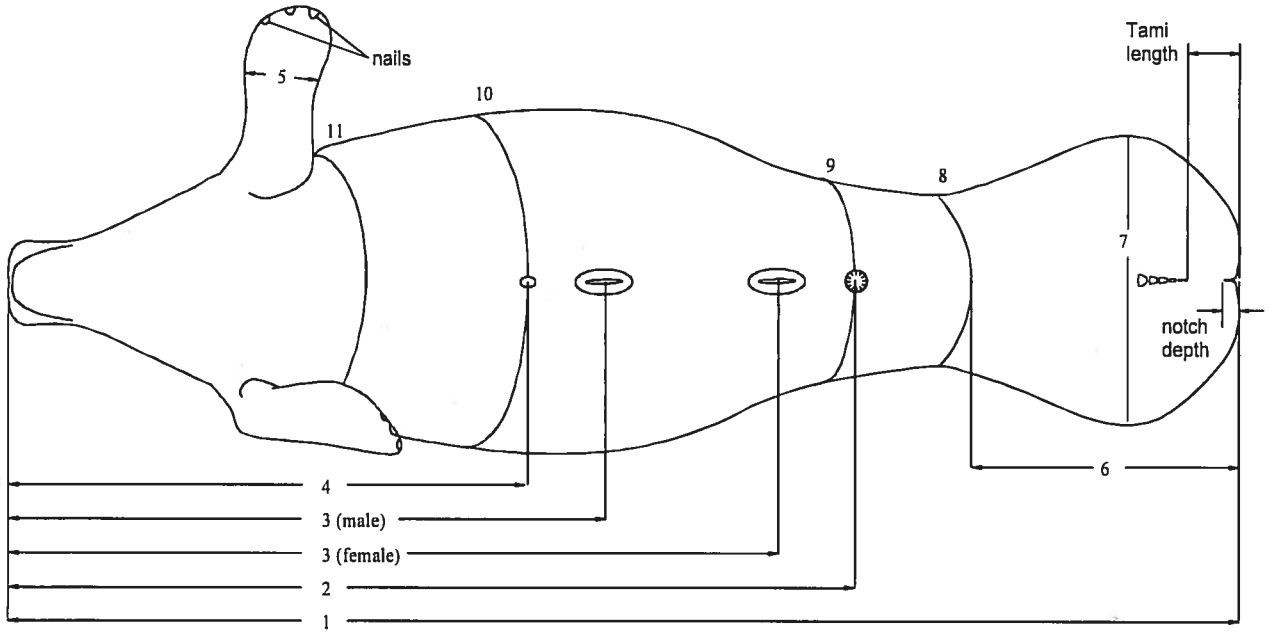
Latitude: 27.53376°N **Longitude:** -80.31767°W

Map Created: 3/22/2021

Field ID # MSTm2007

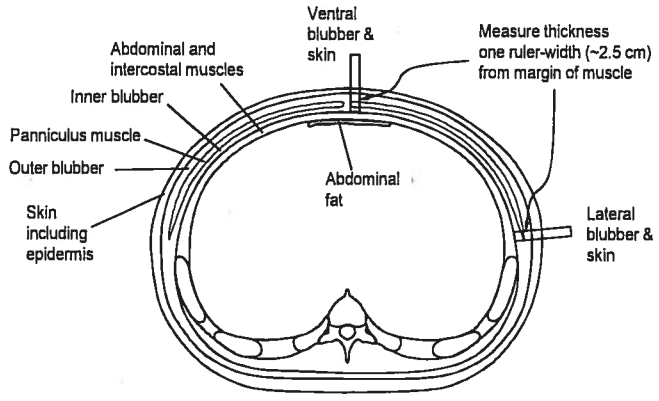
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length 183 cm
2. Snout to anus -C 128 cm
3. Snout to U/G -C 107 cm
4. Snout to umbilicus -C 72 cm
5. Flipper width 12.5 cm
6. Fluke base 55 cm
7. Fluke width 49 cm
8. *Girth at fluke base 73 cm
9. * Girth at anus 88 cm
10. *Girth at umbilicus 129 cm
11. *Girth at axillae 110 cm
(Depth of notch 1 cm)
(Tami ln 9 cm)
(Nail count: R 4 L 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.1 cm	0.1 cm	(Epidermis 0.2 cm)
Outer blubber	0.8 cm	0.5 cm	(Abdominal fat 0.6 cm)
Inner blubber	1.0 cm	0.7 cm	



Mammary dimensions R: 1 x 1.6 x 2 cm L: 1 x 1.8 x 1.8 cm
Lactating: R: ☐ Y / ☑ N L: ☐ Y / ☑ N
Placental Scaring: ☐ R / ☐ L: ___ x ___ x ___ cm
Pregnant: ☐ Y / ☑ N – Fetus length ___ cm Fetus gender ☐ M / ☑ F Fetus weight ___ kg
Gonads: R: ___ x ___ x ___ cm; ___ kg; L: ___ x ___ x ___ cm; ___ kg
Sperm: in testes ☐ Y / ☐ N; in epididymes ☐ Y / ☐ N Method: ☐ visual / ☐ microscope slide
Fluid in seminal vesicles ☐ Y / ☐ N; if yes, then vesicle dimensions R: ___ x ___ x ___ cm L: ___ x ___ x ___ cm

Northwest ZooPath

654 W. Main St. • Monroe, WA 98272 • Phone (360) 794-0630 • Fax (360) 794-4312 • E-mail: mikeg@zoopath.com

Case No.: G20-2678

Obtained: NA, rec'd 07/31/20
Reported: 08/05/20

Dr. Maya Rodriguez
Miami Seaquarium
4400 Rickenbacker Causeway
Miami, FL 33149-1095

Patient ID: Manatee #MJTm2007
Account #: FL 223G, ATT
Telephone: (305) 361-5705x527
FAX #: 365-2537
E-mail: mayadvm@msn.com
vetdept@msq.cc

HISTORY: This approximately 2-year-old, male manatee presented with lethargy and was eventually comatose and nonresponsive with abnormal respirations. Edema and white discoloration of the muzzle and flippers with nonhealing superficial ulcerations were noted.

CLINICAL DIAGNOSIS: Cold stress.

GROSS: Received in formalin are 36 tissues to 12 cm. in greatest dimension that are processed in 12 blocks.

MICROSCOPIC: **Brain**: Mild multifocal perivascular hemorrhage is noted in the meninges and brain at all levels. **Liver**: Some of the portal tracts have a mild infiltrate of lymphocytes. **Lung**: A mild infiltrate of neutrophils is in the interstitium, and the parenchyma is edematous. **Kidney**: Fibrin thrombi and interstitial fibrin flooding are noted in the medullary region of the kidney with associated mild tubular necrosis and mineralization. **Trachea**: The trachea has marked proliferative change in the mucosal epithelium associated with a moderate infiltrate of lymphocytes and plasma cells in the lamina propria. Blood vessels are congested. **Alimentary tract**: The stomach, small intestine, and colon have moderate to marked proliferative change in the mucosa associated with moderate to severe, lymphoplasmacytic/eosinophilic inflammation in the lamina propria. Trematodes are embedded in the mucosa of several sections, and some of these parasites are gravid. Some of the submucosal blood vessels contain fibrin thrombi or are congested. A few microgranulomas are noted within the submucosa of some of the sections. **Skeletal muscle**: Two sections of skeletal muscle have acute moderate rhabdomyolysis. **Adipose**: Adipose stores are markedly atrophic. The following tissues are histologically within normal limits: two lymph nodes, heart, great vessels, and large nerve.

HISTOPATHOLOGIC DIAGNOSIS:

1. Severe proliferative gastroenterocolitis with intralesional trematodes.
2. Marked proliferative tracheitis.
3. Acute interstitial pneumonia.
4. Acute thrombosis, renal tubular necrosis, and interstitial fibrin deposition, kidney.
5. Mild portal lymphocytic hepatitis.
6. Marked atrophy of fat.
7. Mild perivascular hemorrhage, brain and meninges.
8. Moderate rhabdomyolysis, two sections of skeletal muscle.

COMMENT: Histologic findings are consistent with inanition. Severe proliferative lesions were present throughout the alimentary tract and associated with trematodiasis. Other parasites may also have contributed but were not identified in the sections. This animal was emaciated, and it is likely that the emaciation is due to the enteric parasitism. There is also a proliferative inflammatory process

occurring in the trachea of undetermined cause but likely also due to parasitism. No parasites were seen in the tracheal section. Lesions in the lung and kidney are attributed to sepsis likely originating from the intestinal tract. The rhabdomyolysis is attributed to exertion or stress. The mild hemorrhage in the brain is attributed to shock.

Michael M. Garner, DVM, Dipl. ACVP
MMG/hc
E-mail: mikeg@zoopath.com
NZP Code: M, 9f; proliferative gastroenterocolitis with intralesional trematodes, inanition, proliferative tracheitis.

MMPL, FWRI. Florida Fish and Wildlife Conservation Commission **Field ID #** MSTm2007
3700 54" Ave. South, St. Petersburg. Fl. 33711; (727) 893-2904

FWC Case # RSE2009 FWC Dispatch Region: _____
Sex: M /(F)/ undetermined Length: 183 cm (estimated _____) Weight estim 90 kg
Date reported: 2/16/2020 By: _____
Date collected: 2/16/2020 By: _____
Date necropsied: 2/16/2020 By: Dr. Magdalena Rodriguez

LOCATION: State:(FL)/other___ County: St.Lucie Waterway: Blue Hole Creek
Latitude: 27.533760 N Longitude: -80.317665 W _____
Locality description: city - Fort Pierce

CONDITION: (Fresh)- Moderate - Bad - Dried carcass/loose bones - Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress)- (6) Other natural (includes Red Tide)
Undetermined: (7) Verified: Not recovered - (8) Too decomposed - (9) Other
Explain: _____

PHOTOGRAPHS:(Dorsal)- Ventral -(R. Lateral)-(L. Lateral)- Scars -(Fluke)- Internal - Site – Other
MTLS COLLECTED: **Genetics - Earbone** - Stomach contents - Blubber - Liver – Kidney – Urine – Histology - Skull - Partial Skeleton - Complete skeleton -Muscle - Heart - Brain - Eyes - Blood – Endoparasites - Ectoparasites - Reproductive tract - Fetus - Other Paddle cookie
Archive Tox: Stomach – Liver – Kidney – Blubber – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other _____
Disposition of Materials _____

ADDITIONAL DATA: Complete/partial measurements - Wound measurements - Perinatal evaluation - Organ weights – Rescue Report/Map - Other _____

PIT TAG SCAN: (Negative) Positive (Left ____-____-____)(Right ____-____-____): N/T

REMARKS: _____

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSTm2007
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 1682 **FWC District**: South A
Sex: Female **Length (cm)**: 183 **Estimated** _____ **Weight (kg)** _____
Date reported: 17 February 2020 **By**: MSQ-Maya Rodriguez to FWC-ARH
Date collected: 17 February 2020 **By**: MSQ
Date necropsied: 17 Feb 2020 **By**: MSQ

LOCATION INFORMATION: **State** FL **County**: St Lucie **Waterway**: Blue Hole Creek
Latitude: N 27.533760 **Longitude**: W -80.317665
Locality description:

Carcass Orientation: Floating

CONDITION: - Fresh

PROBABLE CAUSE OF DEATH:

Human related: ☐ Watercraft Collision: -
☐ Flood Gate/Canal Lock: Structure ID/Name (if applicable)
☐ Other
Perinatal (≤150 cm): ☐ Natural ☐ Undetermined
Natural: ☒ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain:

PHOTOGRAPHS:
☐ Dorsal ☐ Ventral ☐ R. Lateral ☐ L. Lateral ☐ Scars ☐ Fluke ☐ Cranial ☐ Internal ☐ Site
☐ Other _____

MTLS COLLECTED:
☐ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☐ Histology ☐ Other _____

Archive Tox: ☐ Stomach ☐ Liver ☐ Kidney ☐ Blubber ☐ Lower Jaw ☐ Other _____
ELISA Tox: ☐ Stomach ☐ Liver ☐ Lung ☐ Urine ☐ Kidney (if no urine) ☐ Other _____
Genetics Box # _____

LACTATING: - **PREGNANT**: - **UTERINE SCAR**: -
UTERINE HORNS: -

ADDITIONAL DATA:
☑ External measurements ☐ Wound measurements ☐ Perinatal evaluation ☐ Organ weights
☐ Rescue Report/Map ☐ Other _____

PIT TAG Scan: Negative
Left side: _____ Right side: _____

REMARKS: RSE 2009 died 2-16-2020 at 4:30 pm

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **MSTm2015**
Date of Report: 2020-Jun-10
Filed By: FWC SE Field Station

FWC Case # 7355 **FWC Region:** SO-A

Sex: Male **Length:** 269 **cm** **Weight:** 335.0 **kg**

DATE REPORTED: 2020-Jun-10 **By:** MSQ-Maya Rodriguez to FWC-ARH

DATE COLLECTED: 2020-Jun-10 **By:** MSQ-Maya Rodriguez

DATE NECROPSIED: 2020-Jun-11 **By:** MSQ-Maya Rodriguez

LOCATION: **State:** FL **Latitude:** 27.26028 **N**
County: St. Lucie **Longitude:** -80.33121 **W**
Waterway: C-24 Canal
Location description: Port St. Lucie, floating

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Healing watercraft wound(s); Emaciated; Fractured rib(s); Vertebral separation(s); Pyothorax; Collapsed lung(s); Fractured kidney(s); Relatively empty GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics. MSQ histology samples.

DISPOSITION OF MATERIAL: MSQ pending distribution.

ADDITIONAL DATA:

Rescue report. MSQ histology, necropsy report.

REMARKS:

PIT tag scan negative. Died on 10 Jun 2020. Died at 1730 hrs. Died in facility. See rescue report RSE2020 rescued on 10 June 2020 due to watercraft-related injuries.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: MSTm2015

MORPHOMETRICS:

Total length:	269 cm	**Fluke base:**	80 cm	**Girth at axillae:**	120 **cm**
Snout to anus:	173 cm	**Fluke width:**	66 cm		
Snout to U/G:	113 cm	**Girth at fluke base:**	79 cm		
Snout to umbilicus:	99 cm	**Girth at anus:**	116 cm		
Flipper width:	17 cm	**Girth at umbilicus:**	170 cm	**Nail count: R:** 4	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.1 cm	cm		
Outer Blubber Thickness:	1 cm	cm	**Abdominal Fat Thickness:**	2 cm
Inner Blubber Thickness:	2 cm	cm	**Epidermis Thickness:**	0.1 cm

---

Perinatal:

Ductus Arteriosis Diameter:	cm
Left Pulmonary Artery Diameter:	cm
Right Pulmonary Artery Diameter:	cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. MSTm2015 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 10 June 2020 **NECROPSY DATE** 11 June 2020
GENDER Male **TL** 269 **cm WT** 335 **kg** **CONDITION** Fresh

---

HISTORY See Rescue Report RSE2020. 10 June 2020, at 1820 hrs, FWC biologist-Amber Howell (ARH) received a text from Miami Seaquarium-Dr. Maya Rodriguez that MSTm2015 died after they put it in the pool. A necropsy would be performed the following morning. **11 June**, a necropsy was completed at Miami Seaquarium.

See ADDENDUM for Miami Seaquarium necropsy report

COMMENTS

SIGNIFICANT FINDINGS

- Healing watercraft wounds
- Emaciated
- Fractured ribs
- Vertebral separation
- Pyothorax
- Collapsed lung
- Fractured kidney
- Relatively empty GI tract

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

NECROPSY CONDUCTED BY

Dr. Maya Rodriguez (Miami Seaquarium)
Leah Brewer (Miami Seaquarium)

REPORT FILED BY Peek

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. RSE2020 MSTM2015 **SPECIES** *T. manatus latirostris*
RECOVERY DATE 6-10-20 **NECROPSY DATE** 6-11-20
GENDER M **TL**. 269 **cm WT** 335 **kg** est **CONDITION** Fresh

---

HISTORY This manatee was found in one foot of water, lethargic, slightly listing, poor body condition (emaciated with a peanut head), and with elevated respirations. It had an old healed wound on the low side. It had very abnormal repirations. Very elongated expiration with a pause followed by a weak in inhalation. The manatee expired soon after entry.

EXTERNAL Emaciated body condition with peantut head and ribs showing on the left side. He had a D shape with the right side not expanded/collapsed and the left expanded normally. A large 16 inch length skeg mark from mid body caudal thoracic thin line expanding to right side with a width of 4 inches at its widest point.

ABDOMINAL Retroperitoneal hemorrhage observed in the kidney area with the right side being more prominent.

STOMACH A handful of natural fibrous twig vegetation present in the stomach. Stomach lining grossly normal.

DUODENUM Small amount of fibrous ingesta present

JEJUNUM & ILEUM Scant amount of fibrous ingesta present.

CECUM Small amount of compact fibrous ingesta present.

COLON Sporadic yellow tan fibrous fecal semisoft material present

PANCREAS Grossly normal.

SPLEEN Slightly enlarged and rounded on cut surface.

LIVER Grossly normal.

GALLBLADDER Grossly normal and full of normal bile

REPRODUCTIVE Immature male grossly normal.

KIDNEYS Retroperitoneal hemorrhage present on the serosal surface with the majority on the right kidney. The right kidney had two fractures in it with adjacent large hematomas. The left kidney was grossly normal.

URINARY BLADDER Grossly normal no urine present.

HEART Grossly normal

RESPIRATORY SYSTEM Distended left diaphragm. Close to 6 liters of thin purulent material present in the left thoracic cavity. Adhesions on the wall underlying the external skeg wound along the thoaric wall and incorporating the collapsed left lung. Thicker white yellow material along the linear internal skeg wound on the thoracic wall overlying five fractured ribs. The right lung was normal. Hemorrhage was evident along four right thoracic rib fractures. A vertebral subluxation was present with adjacent hemorrhage at T8.

HEAD & NECK REGIONS Grossly normal.

SKELETON Five fractured ribs T8-12 on the left side surrounded by thick purulent adhesions, four fractured T8-11 ribs on the right side with adjacent hemorhage. Vertebral subluxation T8 with adjacent hemorrhage.

OTHER

PHOTOGRAPHS Body, Kidneys, Thorax, vertebrae, ribs.

COMMENTS

SIGNIFICANT FINDINGS

- External impact wound
- Pyothorax left side
- Collapsed left lung
- Fractured ribs bilateral
- Vertebral subluxation T8
- Fractured right kidney

PROBABLE CAUSE OF DEATH Vessel strike chronic Impact wound

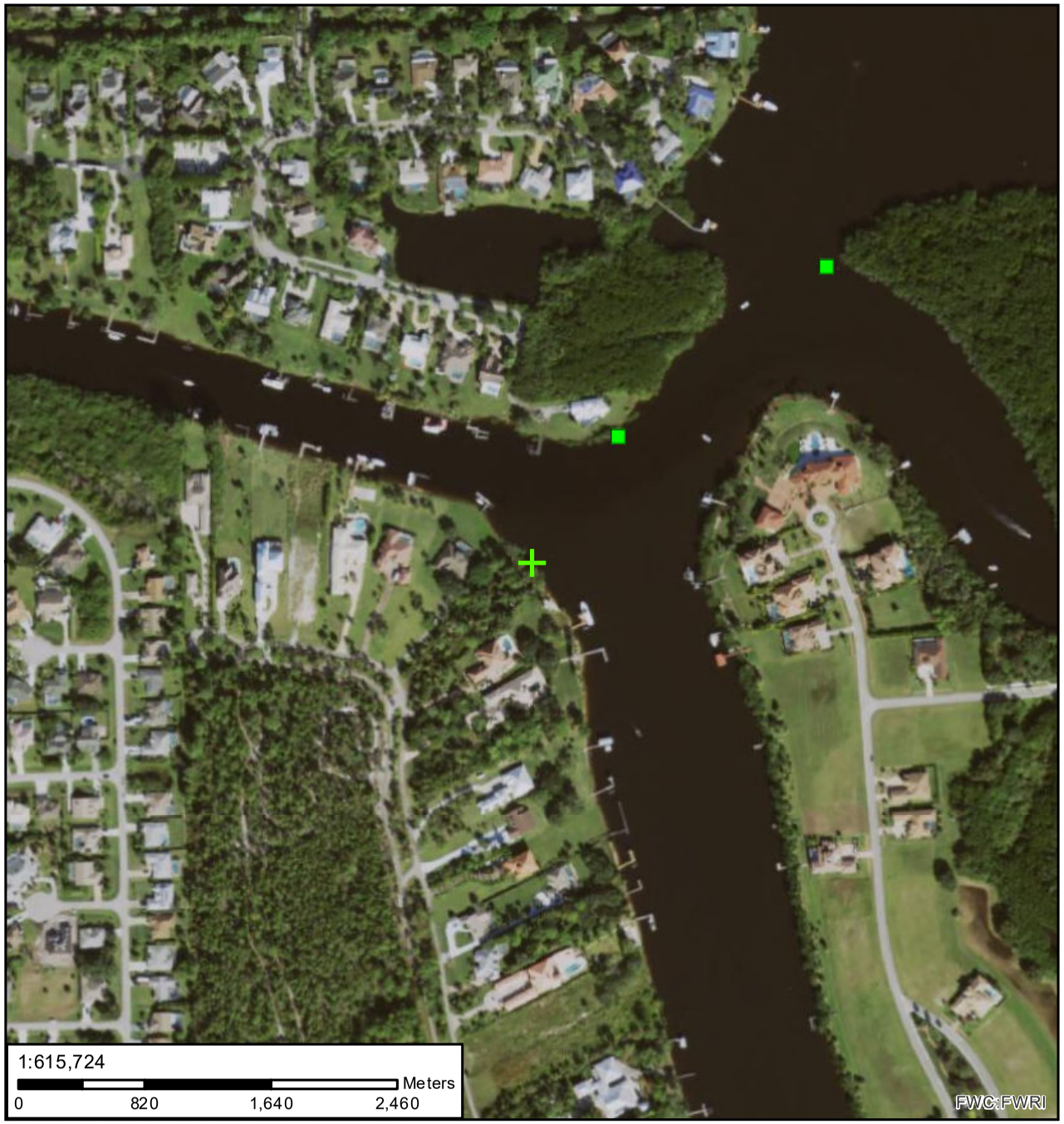
NECROPSY CONDUCTED BY

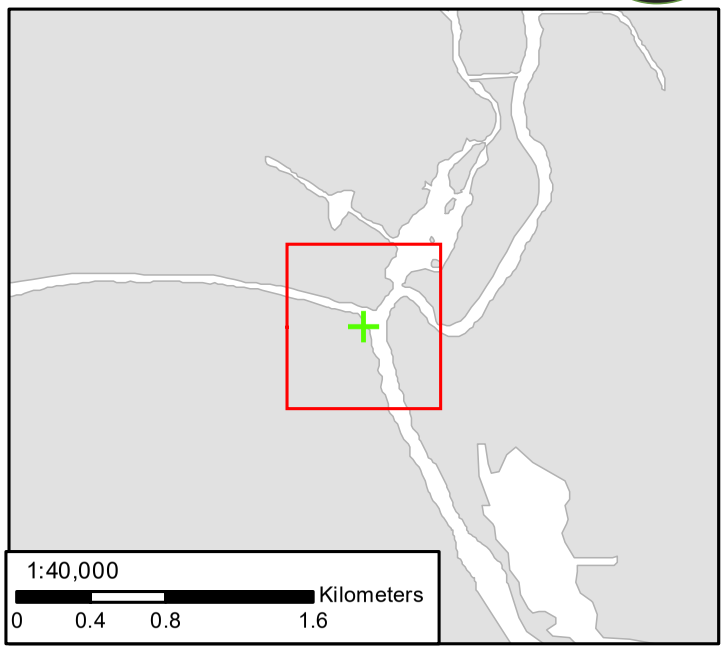
Magdalena Rodriguez
Leah Brewer

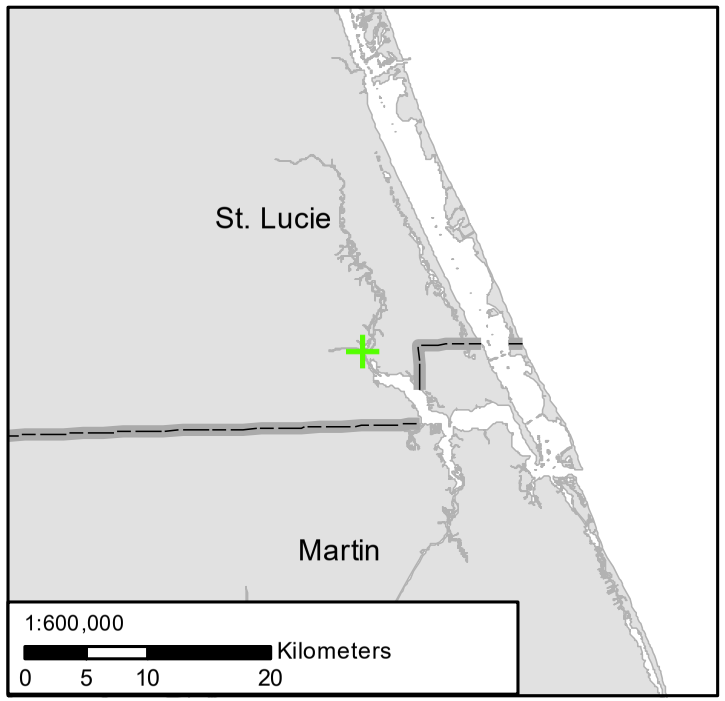
REPORT FILED BY Magdalena Rodriguez

Verified Location of Manatee MSTm2015

Rescue ID: RSE2020 **Report Date:** 6/10/2020 **Received Date:** 6/10/2020 **Received By:** MSQ-Maya Rodriguez







Location: Port St. Lucie, St. Lucie County

Latitude: 27.26028°N **Longitude:** -80.33121°W

Map Created: 3/22/2021

Northwest ZooPath

654 W. Main St. • Monroe, WA 98272 • Phone (360) 794-0630 • Fax (360) 794-4312 • E-mail: mikeg@zoopath.com

Case No.: G20-2679

Obtained: NA, rec'd 07/31/20
Reported: 08/25/20

Dr. Maya Rodriguez
Miami Seaquarium
4400 Rickenbacker Causeway
Miami, FL 33149-1095

Patient ID: Manatee #MS TM 2015
Account #: FL 223G, ATT
Telephone: (305) 361-5705x527
FAX #: 365-2537
E-mail: mayadvm@msn.com
vetdept@msq.cc

HISTORY: This wild caught, subadult, male manatee was rescued very emaciated with an old boat strike/hull injury to its lumbar area that had healed externally. The manatee had a large volume of thin purulent material in the thoracic cavity.

CLINICAL DIAGNOSIS: Boat strike/impact hull strike.

GROSS: Received in formalin are 45 tissues to 3 cm. in greatest dimension that are processed in 13 blocks.

MICROSCOPIC: **Liver**: Mild multifocal hemosiderin accumulation is present in multifocal Kupffer cells. Hepatocytes also have slight diffuse cytoplasmic hemosiderin accumulation. **Connective tissue**: One elongated tissue section is examined that consists of bundles of dense collagenous connective tissue covered on one side by a single layer of mesothelial cells and, on the other side, by fibroplasia and abundant hemorrhage. **Kidney**: In two sections of kidney, the renal capsule has marked fibroplasia covered by abundant hemorrhage. In one section, the subjacent renal parenchyma has moderate superficial cortical interstitial infiltrates of granulocytes, lymphocytes, and plasma cells, tubular accumulations of granulocytes and/or proteinaceous material, and interstitial fibrosis. In the other section of kidney with perirenal hemorrhage, the subjacent parenchyma is unremarkable. A third section of kidney consists of medullary tissue only and has mild multifocal incidental interstitial mineralization. **Fibroplasia and inflammation**: Two tissue sections consist of vascular fibroplasia with orderly maturation and numerous granulocyte infiltrates partially surrounding a central pool of degenerate granulocytes. Infectious agents are not identified. No intact tissue is present, and the sites of the fibroplasia and inflammation are undetermined. **Lung**: In one section of lung, the pleura have marked thickening with vascular fibroplasia with superficial necrosis and heavy granulocyte infiltrates. The pleura are covered by numerous degenerate granulocytes and abundant hemorrhage. Frequent microcolonies of thin small bacterial rods are present within the hemorrhage and granulocytes. Subjacent pulmonary parenchyma has numerous foamy macrophages and proteinaceous edema in most alveoli. Two other sections of lung are unremarkable. The following tissues are histologically within normal limits: heart, cardiac gland, stomach, brain, ductus, urinary bladder, lymph node, salivary gland, skeletal muscle, spinal cord, intestinal tract, tonsil, stratified squamous keratinizing epithelium from an undetermined site, and spleen.

HISTOPATHOLOGIC DIAGNOSIS:

1. Marked perirenal hemorrhage with renal capsular fibrosis, mild focal chronic granulocytic tubulointerstitial nephritis, and tubular protein accumulation.
2. Severe chronic septic pleuritis with intralesional small bacterial rods and chronic pulmonary edema.
3. Chronic active hemorrhage, site undetermined.

Diagnoses, continued:

4. Chronic severe granulocytic inflammation, sites undetermined.
5. Mild hepatic hemosiderosis.

COMMENT: Perirenal hemorrhage is likely related to previous boat strike injury to the lumbar region. Renal capsular fibrosis was present, but otherwise, the hemorrhage appeared relatively acute suggesting possible chronic spinal fracture or other unhealed injury at the site resulting in continued bleeding. One renal section examined had evidence of mild inflammation, but two others were relatively unremarkable, and I do not believe that the injury had resulted in significant renal damage. Septic pleuritis is confirmed and is the likely cause of death. Chronic inflammation was also found in two other sections from undetermined sites that could be pleura. Sections of lung were relatively unremarkable except for chronic edema in one section suggesting pleuritis could be related to previous boat strike injury and not an extension of underlying pneumonia. There are no other findings other than mild hepatic hemosiderosis, which is likely related to chronic illness.

Nancy L. Stedman, DVM, PhD, Dipl. ACVP
NLS/hc
E-mail: nlstedman@hotmail.com
Phone: (978) 430-9510, (M-F, 8 to 5/EST)
NZP Code: M, 9a, 11; boat strike injury with perirenal hemorrhage and septic pleuritis.

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSTm 2015
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # RSE2020 FWC Dispatch Region: _____
Sex: (M) / F / undetermined Length: 269 cm (estimated _____) Weight 335 est. kg.
Date reported: 6-10-2020 By: Dr. Maya Rodriguez
Date collected: _____ By: _____
Date necropsied: 6-11-2020 By: Dr. Maya Rodriguez, Leah Brewer

LOCATION: State: (FL) /other____ County: St. Lucie Waterway: _____
Latitude: _____ N Longitude: _____ W_____
Locality description: city - Port St. Lucie
_____

CONDITION: (Fresh) - Moderate - Bad - Dried carcass/loose bones - Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: (Impact) – Propeller – Both (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Verified: Not recovered - (8) Too decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: (Dorsal) (Ventral) - R. Lateral - L. Lateral - (Scars) (Fluke) (Internal) - Site – Other
MTLS COLLECTED: **Genetics** - **Earbone** - Stomach contents - Blubber - Liver – Kidney – Urine – Histology - Skull - Partial Skeleton - Complete skeleton -Muscle - Heart - Brain - Eyes - Blood – Endoparasites - Ectoparasites - Reproductive tract - Fetus - Other_____
Archive Tox: Stomach – Liver – Kidney – Blubber – Lower Jaw – Other_____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other _____
Disposition of Materials_____

ADDITIONAL DATA: Complete/partial measurements - Wound measurements - Perinatal evaluation - Organ weights – Rescue Report/Map - Other _____

PIT TAG SCAN: (Negative) Positive (Left _____-_____-_____)(Right _____-_____-_____); N/T

REMARKS: _____

_____

_____

_____

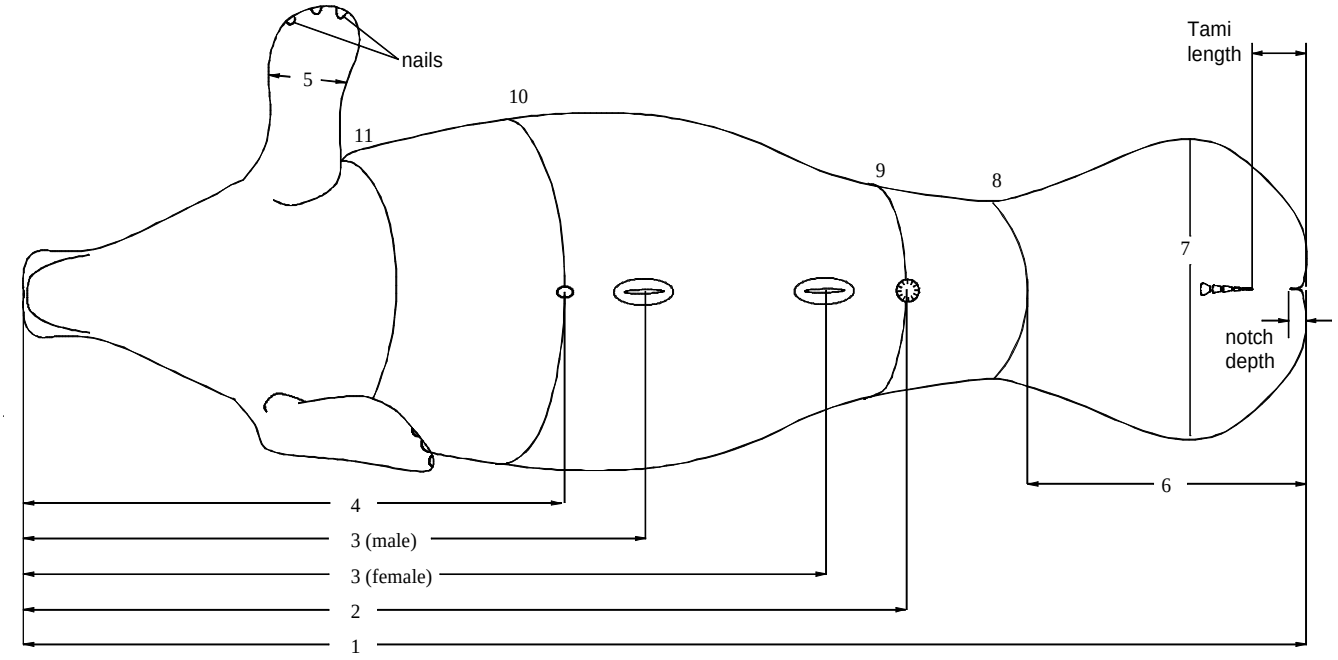
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Field ID #_MSTm2015_____

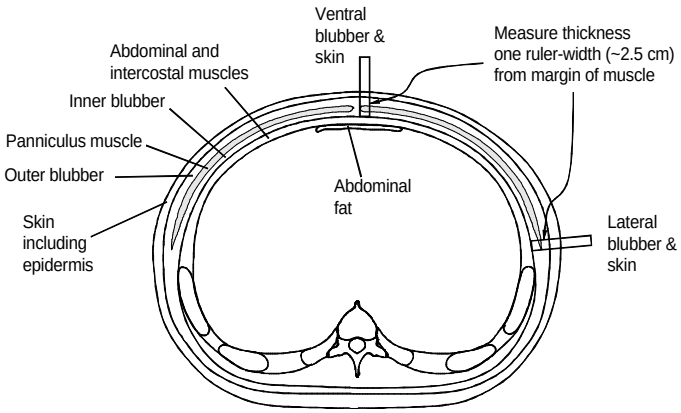
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length 269 cm
2. Snout to anus -C 173 cm
3. Snout to U/G -C 113 cm
4. Snout to umbilicus -C 99 cm
5. Flipper width 17 cm
6. Fluke base 80 cm
7. Fluke width 66 cm
8.*Girth at fluke base 79 cm
9. * Girth at anus 116 cm
10. *Girth at umbilicus 170 cm
11. *Girth at axillae 120 cm
(Depth of notch 1 cm)
(Tami ln 13 cm)
(Nail count: R 3 L 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.1 cm	_____ cm	(Epidermis 0.1 cm)
Outer blubber	1.0 cm	_____ cm	(Abdominal fat 2.0 cm)
Inner blubber	2.0 cm	_____ cm	



Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: ☐Y/☐N L: ☐Y/☐N
Placental Scaring: ☐R / ☐L:____x ____ x _____ cm
Pregnant: ☐Y/☐N – Fetus length _____cm Fetus gender ☐M / ☐F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes ☐Y / ☐N; in epididymes ☐Y / ☐N Method: ☐visual / ☐microscope slide
Fluid in seminal vesicles ☐Y / ☐N; if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **SWFTm2024b**
Date of Report: 2020-Jul-17
Filed By: SeaWorld

FWC Case # 12367 **FWC Region:** NE

Sex: Female **Length:** 299 **cm** **Weight:** 454.0 **kg**

DATE REPORTED: 2020-Jul-17 **By:** SeaWorld to FWC-AJG
DATE COLLECTED: 2020-Jul-17 **By:** SeaWorld
DATE NECROPSIED: 2020-Jul-18 **By:** SeaWorld

LOCATION: **State:** FL **Latitude:** 28.19355 **N**
County: Brevard **Longitude:** -80.62032 **W**
Waterway: Banana River
Location description: Satellite Beach,

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Healing watercraft wound(s); Fractured rib(s); Pneumothorax; Blood clots; Torn lung(s); Torn parietal pleura; Collapsed lung(s); Hemorrhagic lung parenchyma; Lung abscess; Mucus in airways.

PHOTOGRAPHS TAKEN: Cranial, Internal, Other (Wound).

MATERIALS COLLECTED:

Genetics. SeaWorld histology.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Rescue report. SeaWorld necropsy/histology report, stillborn calf necropsy report.

REMARKS:

PIT tag scan negative. Died on 17 Jul 2020. Died at 1130 hrs. Euthanized. Died in facility. See rescue report REC2017, rescued on 03 July 2020 for watercraft wounds. A 76 cm long stillborn calf (SWFTm2025cb) was passed on 10 July. Known as MIPS ID EC034.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: SWFTm2024b

MORPHOMETRICS:

Total length:	299 cm	**Fluke base:**	89.5 cm	**Girth at axillae:**	**cm**
Snout to anus:	207 cm	**Fluke width:**	72 cm		
Snout to U/G:	186 cm	**Girth at fluke base:**	115 cm		
Snout to umbilicus:	114 cm	**Girth at anus:**	cm		
Flipper width:	17 cm	**Girth at umbilicus:**	cm	**Nail count: R:**	**L:** 33

	Ventral	**Lateral**		
Skin Thickness:	cm	cm		
Outer Blubber Thickness:	cm	cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	cm	cm	**Epidermis Thickness:**	cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. SWFTm2024b
SPECIES *T. manatus latirostris*
RECOVERY DATE 17 July 2020
NECROPSY DATE 18 July 2020
GENDER Female **TL** 299 **cm WT** 454 **kg**
CONDITION Fresh

HISTORY 17 July 2020, at 1158 hrs, FWC biologist-Andrew Garrett received a call from SeaWorld-Bob Wagoner stating that manatee SWFTm2024b had pus coming out of the nares and the vets had decided to euthanize the animal. **18 July**, a necropsy was performed at SeaWorld.

See Addendums for SeaWorld necropsy report

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wound
- Fractured ribs
- Pneumothorax
- Blood clots
- Torn parietal pleura, lung
- Hemorrhagic lung parenchyma
- Collapsed lung
- Lung abscess
- Mucus in airways
- Aborted 76 cm long female calf on 10 July

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

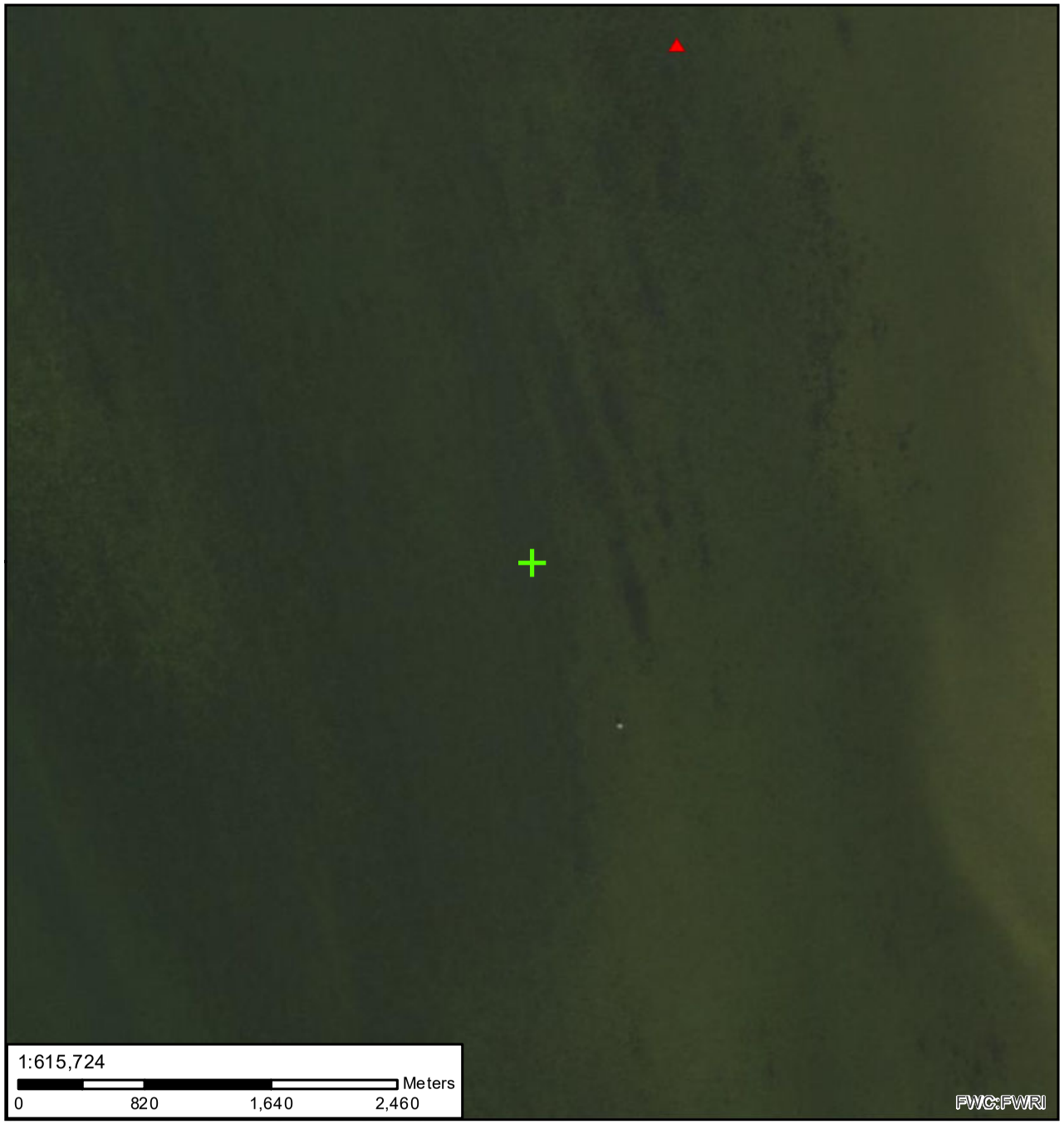
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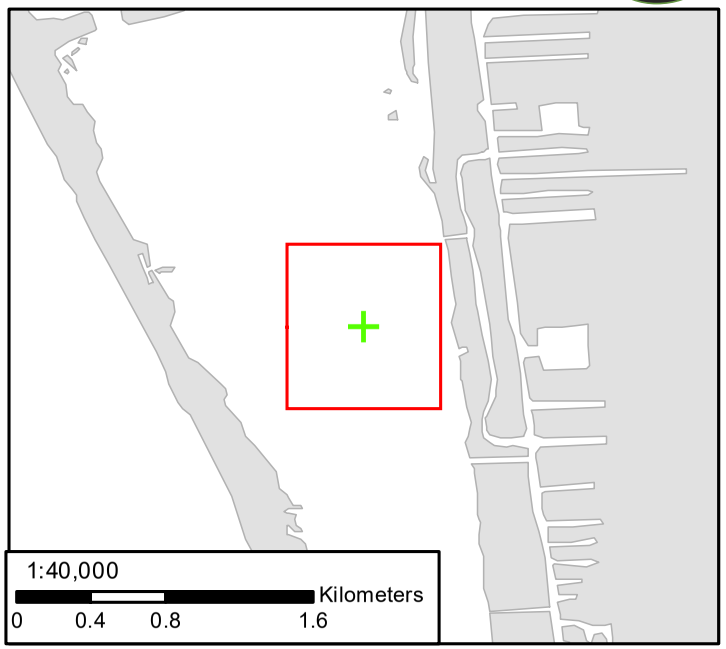
Nancy Stedman (Busch Gardens)

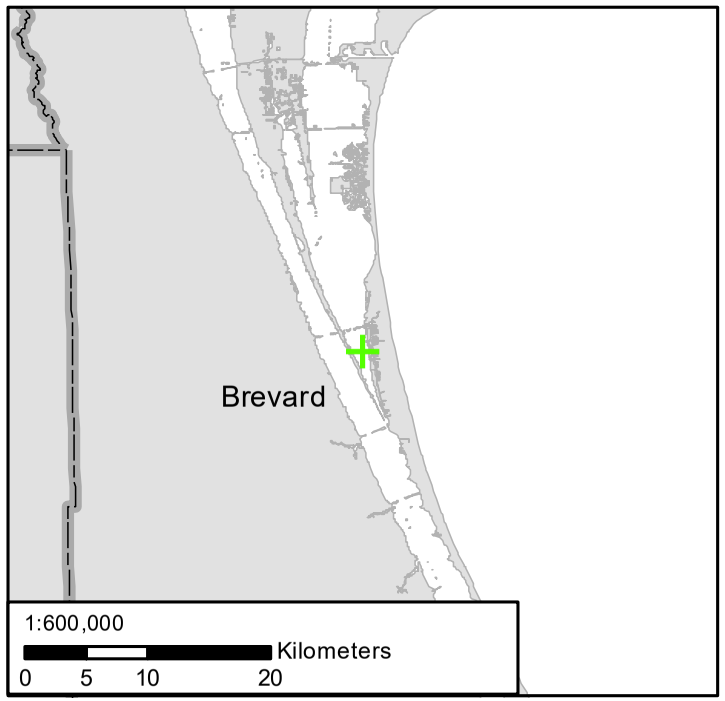
REPORT FILED BY Bassett

Verified Location of Manatee SWFTm2024b

Rescue ID: REC2017 **Report Date:** 7/17/2020 **Received Date:** 7/17/2020 **Received By:** SeaWorld







Location: Satellite Beach, Brevard County

Latitude: 28.19355°N **Longitude:** -80.62032°W

Map Created: 3/22/2021

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
Animal	109080	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

Gross Pathology

Death Date	7/17/2020	Sex	Unknown
Death Type	Euthanasia	Age At Death	
Submitted	Brant Gabriel	Institution	SeaWorld Florida
Carcass	Fresh	Enclosure	Manatee Holding 1 SWF

Environment Notes

History Notes

This unknown age mature female West Indian manatee was euthanized on 17 Jul 2020. The manatee was initially rescued near Satellite Beach with positive bouyancy and admitted on 03 Jul 2020. The manatee had boat strike wounds on the dorsum with a body wall swelling deep to the wounds that was fluctuant and moved with respirations. A flail chest was also present. Radiographs confirmed two rib fractures and the animal was also confirmed to be gravid. The subcutaneous swelling was also confirmed to contain air suggestive of a body wall rent. The manatee delivered as stillborn calf in the evening on 10 Jul 2020 (SWF Tm2025CB). Despite medical management, the manatee stopped eating in the morning on 17 Jul 2020 and had purulent discharge from the nostrils. Culture of the discharge recovered 4+ growth each of Serratia marcescens, Stenotrophomonas maltophila, and Brevundimonas diminuta, and 3+ growth each of Pseudomonas aeruginosa, Morganella morganii ssp sibonii, and Streptococcus dysgalactiae ssp equisimilis. 1+ growth each of Fusarium and Paecilomyces were also recovered. Humane euthanasia was elected. Necropsy was conducted on 18 Jul 2020 beginning at 11:00 AM.

Gross Findings

General: The terminal body weight was 1000 lbs. Measurements were (all straight lengths): total length 299 cm; snout to anus length 207 cm; snout to urogenital opening length 186 cm; snout to umbilicus length 114 cm; flipper width 17 cm; fluke base 89.5 cm; fluke width 72 cm; girth at fluke base 115 cm; Other girth measurements were not obtained. The manatee was thin. Multiple lacerations and scars were present on the dorsum (see Figure 2 for measurements). The largest laceration was 48 cm long and was perpendicular to the spine.
Cutaneous/Subcutaneous: Three nails were present on each front flipper. Lateral blubber thickness is shown in Figure 4.

Nervous system: Brain 329.84 g, Cerebellum 39.94 g.
Organs of Special Sense: NSF
Cavities: A small amount of unclotted blood was present in the peritoneal cavity.
Upper Respiratory System: Tan cloudy fluid with flecks of yellow exudate was pouring from the right naris.
Lower Respiratory System: A single orange trematode was present in the proximal trachea. The trachea and both mainstem bronchi were partially filled with cloudy tan fluid with flecks of yellow exudate identical to that coming from the right naris. The left lung was poorly inflated but still floated in fixative. A 7.5 cm pleural hematoma was present on the dorsal aspect corresponding to the fracture at left rib 13. A 30 mm diameter puncture was present in the dorsal aspect corresponding to the fracture at left rib 12. A 12 mm diameter firm nodule was present in the parenchyma lateral to the laceration. Small numbers of 1 to 2 mm diameter accumulations of yellow exudate were present in the parenchyma around the mainstem bronchus. The right lung was diffusely consolidated. The parenchyma was firm and red with numerous coalescing foci of yellow exudate up to 25 mm in diameter around the mainstem bronchus. A culture of the right lung was submitted.
Cardiovascular System: Cardiac morphometrics were: right ventricular free wall 6 mm; interventricular septum 31 mm; left ventricular free wall 12 mm; right atrioventricular valve circumference 23.0 cm; pulmonary valve circumference 13.5 cm; left atrioventricular valve circumference 19 cm; aortic valve circumference 11 cm. Heart 1524 g.

Digestive System: The first maxillary and mandibular cheek teeth had marked wear and were loose. Scant ingesta was present in the stomach. Scant fecal matter was present in the colon and cecum. Parasites were not noted grossly.
Liver, Pancreas, Gallbladder: Liver 11.941 kg.
Hemolymphatic: Spleen 16.69 g.
Reproductive System: The animal had been gravid in the left horn. The placentation site was approximately 14 cm wide and appeared to be involuting uneventfully.
Urinary System: The urinary bladder was empty. Kidneys 3100 g.
Endocrine system: Thyroid gland 65.79 g. Adrenal glands 42.22 g. Pituitary gland 1.59 g.
Skeletal System: A transverse simple fracture of the left rib 12 was present 21 cm from the costovertebral junction. No significant fracture callus was present grossly. Intact parietal pleura was present at this fracture site. A small blood clot was present on the pleura, and another small blood clot was also present deep to the pleura. A simple oblique fracture of left rib 13 was present 8 cm from the costovertebral junction. No significant fracture callus was present grossly. Parietal pleura was torn over the fracture site, and several blood clots were present on the pleura at this site. A 23 X 18 cm focus of severe diffuse myonecrosis and gas accumulation was present in the skeletal muscle of the dorsal left thoracic body wall overlying the rib fractures. When incised, gas leaked from this site.

Miscellaneous and Diagnosis

Ancillary Test Summary: Aerobic culture of the right lung recovered 3+ growth each of Morganella morganii ssp. morganii, Pseudomonas aeruginosa, and Porphyromonas gingivalis.

The Morganella morganii ssp. morganii isolate was sensitive to gentamicin, amikacin, and ciprofloxacin. It had intermediate sensitivity to marbofloxacin and imipenem, and was resistant to amoxicillin with clavulanic acid, ampicillin, cefalexin, ceftazidime, ceftiofur, enrofloxacin, doxycycline, chloramphenicol, nitrofurantoin, and trimethoprim/sulfamethoxazole.

The Pseudomonas aeruginosa isolate was sensitive to ceftazidime, gentamicin, amikacin, ciprofloxacin, marbofloxacin, and imipenem. It had intermediate sensitivity to enrofloxacin, and was resistant to amoxicillin with clavulanic acid, cefpodoxime, cefovecin, ceftiofur, doxycycline, chloramphenicol, and trimethoprim/sulfamethoxazole.

Measurement

109080:20-07-18 12:00 AM

Description	Measurement	Comments
Weight (dead)	1000 lb	
Total Length	299 cm	
Brain weight	329.84 g	
Cerebellum weight	39.94 g	
Heart weight	1524 g	
Right ventricular free wall thickness	6 mm	
Interventricular septum thickness	31 mm	
Left ventricular free wall thickness	12 mm	
Right atrioventricular valve circumference	23 cm	
Pulmonic valve circumference	13.5 cm	
Left atrioventricular valve circumference	19 cm	
Aortic valve circumference	11 cm	
Liver weight	11.941 kg	
Spleen weight	16.69 g	

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
Animal	109080	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

Kidney weight	3100 g
Thyroid gland weight	65.79 g
Adrenal or interrenal gland weight	42.22 g
Pituitary gland weight	1.59 g

Histopathology Report

Lab: Busch Gardens Tampa Bay
Pathologist: Nancy Stedman
Lab ID: H20-300

Histopathology Findings

Busch Gardens Tampa Histopathology Number H20-300:
General: Sections of pancreas, salivary gland, thyroid gland, oral mucosa with salivary and tonsillar tissue, heart, heart valves, esophagus, stomach, intestinal tract, tongue, axillary nerve, cardiac gland, adipose, skin, urinary bladder, ovaries, pituitary gland, cervix, vagina, involuting uterus, brain, and leptomeninges are histologically unremarkable.
Cutaneous/Subcutaneous: NSF.
Nervous system: NSF.
Organs of Special Sense: Eyes: Both corneas have mild multifocal superficial stromal vascularization. Both lenses have mild multifocal to coalescing peripheral lens fiber degeneration, sometimes accompanied by slight multifocal lens epithelial proliferation.
Cavities: NSF.
Upper Respiratory System: NE.
Lower Respiratory System: Trachea: Mild to moderate diffuse submucosal infiltrates of neutrophils and fewer lymphocytes are present. Epithelium is absent interpreted as related to autolysis. Left lung: The area with pleural hemorrhage is confirmed to have marked, focally extensive pleural fibroplasia covered by fibrin and hemorrhage. Fibroplasia is vascular and exhibits orderly maturation with occasional siderophage infiltrates. At the site of lung puncture, the yellow mass noted grossly is confirmed to be an abscess composed of abundant degenerate neutrophils and bacteria with central mineralization. The abscess is surrounded by a variable thickness wall of fibroplasia with moderate multifocal infiltrates of lymphocytes and fewer siderophages. At the site of lung puncture, the concave lesion extending from the pleural into the parenchyma is filled with chronic degenerate hemorrhage covered by necrotic and focally ruptured pleura. The chronic hemorrhage is separated from the surrounding parenchyma by fibroplasia with numerous infiltrates of siderophages and fewer hematoidin laden macrophages. The lesion is compressing the surrounding parenchyma, and multifocal surrounding alveoli and small airways contain retained mucus and mildly increased foamy macrophages. In one section from the hilar region, five adjacent small caliber bronchi contain abundant luminal mucus, aggregates of numerous degenerate neutrophils, and small numbers of foamy macrophages. Other sections of left lung do not show overt pneumonia other than the focal abscess. Right lung: In all sections, alveoli and small caliber airways are filled with proteinaceous edema, numerous neutrophils, and fewer foamy macrophages. Multifocal abscessation is present associated with necrosis of septa. Dense aggregates of degenerate neutrophils in areas of abscessation entrap frequent bacterial microcolonies.
Cardiovascular System: NSF.
Digestive System: NSF.
Liver, Pancreas, Gallbladder: Liver: Moderate hemosiderin accumulation is present in hepatocytes and Kupffer's cells. One section has marked acute congestion and frequent midzonal necrosis and fibrin accumulation accompanied by siderophage infiltrates. Lipid is also frequent in midzonal hepatocytes and is occasionally present in centrilobular and periportal hepatocytes.
Hemolymphatic: Spleen: Hematopoietic precursors are numerous throughout the parenchyma. Germinal centers also appear mildly increased in number throughout the parenchyma. Lymph nodes: Multiple nodes have mild to moderate lymphofollicular and parafollicular hyperplasia.
Reproductive System: NSF.
Urinary System: Kidneys: Medullary tubules have moderate atrophy.
Endocrine system: Adrenal glands: Zona glomerulosa cells have mild to moderate diffuse cytoplasmic lipofuscin

accumulation.
Skeletal System: Skeletal muscle: Skeletal muscle from the large necrotizing and cavity lesion is confirmed to have massive necrosis separated from adjacent viable muscle and adipose by cellular fibroplasia. The fibroplasia entraps atrophied, necrotic, and regenerating myofibers. In one section, abundant chronic hemorrhage is present adjacent to the muscle. Skeletal muscle from other sites including diaphragm is unremarkable.



Figure 1

Head; SWF Tm2024B. Purulent discharge is present coming from the right nostril.

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
Animal	109080	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

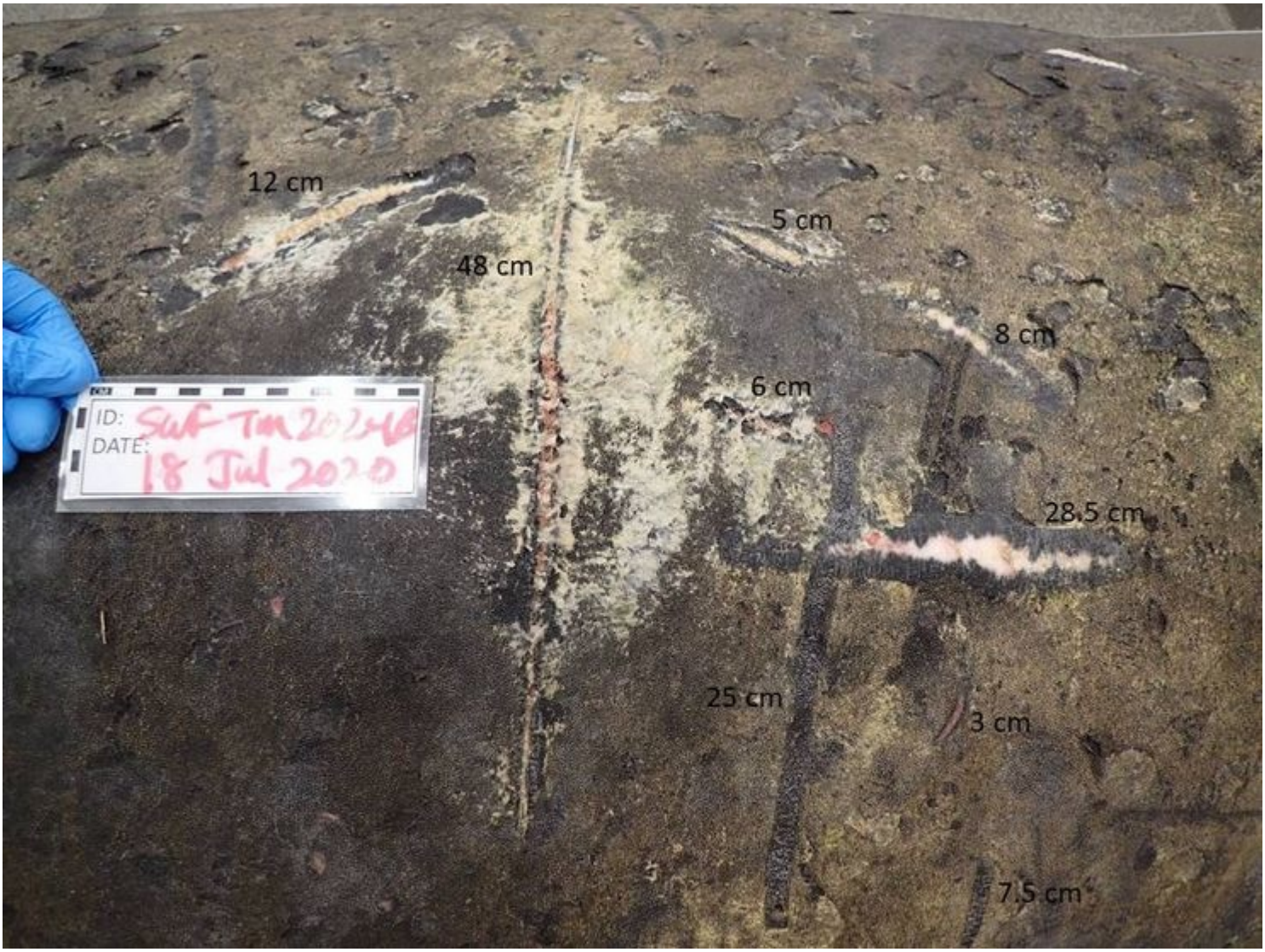


Figure 2

Dorsum; SWF Tm2024B. Multiple linear lesions and scars are present. Measurements are also shown.

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
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Figure 3

Dorsal skeletal muscle; SWF Tm2024F. Subjacent to the skin lesions shown in Figure 2, a 23 cm long cavitary lesion surrounded by necrotic muscle is present.

Necropsy Extended Report

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Animal	109080	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

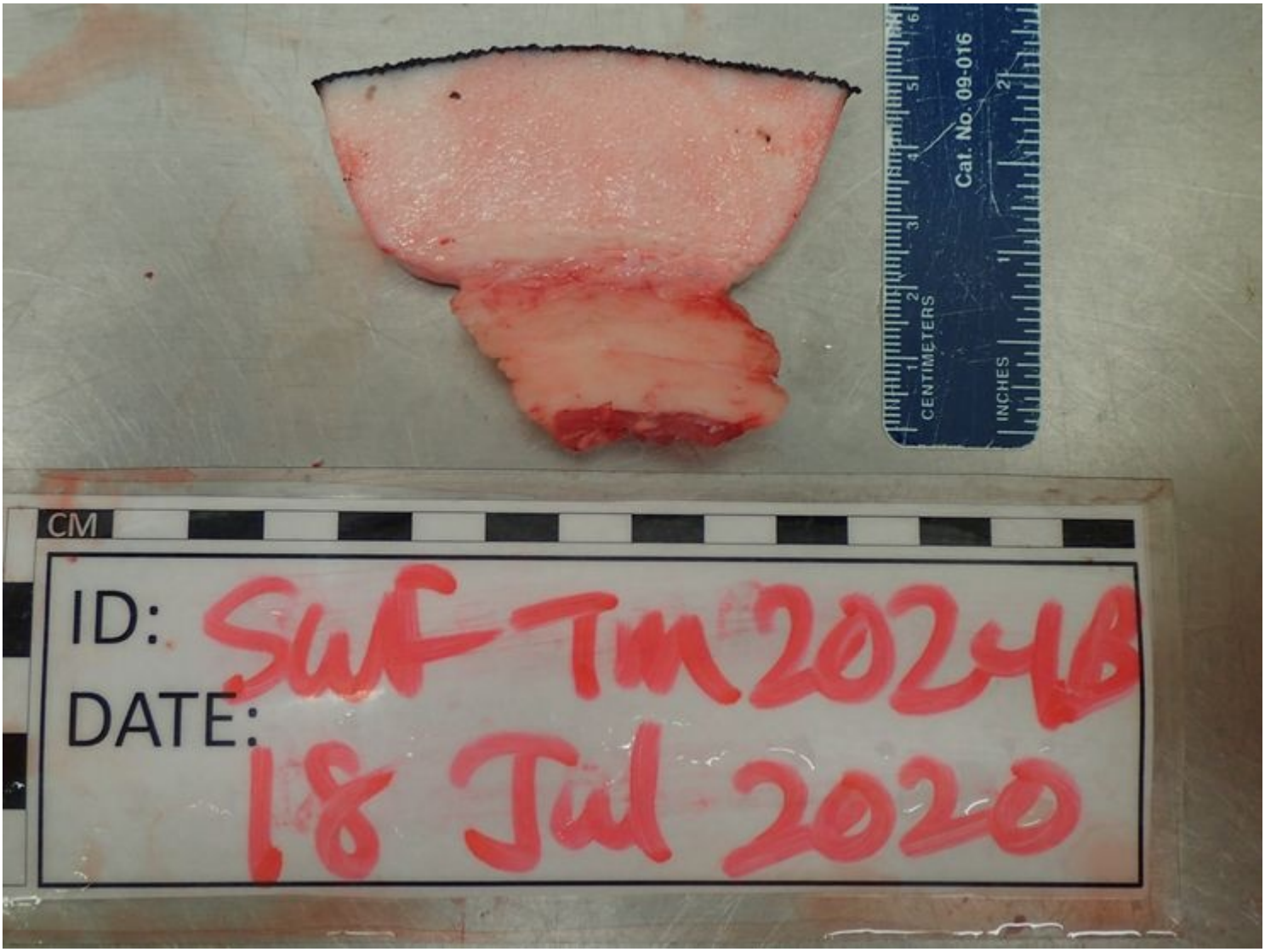


Figure 4

Lateral skin; SWF Tm2024B. Blubber thickness is shown.

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
Animal	109080	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

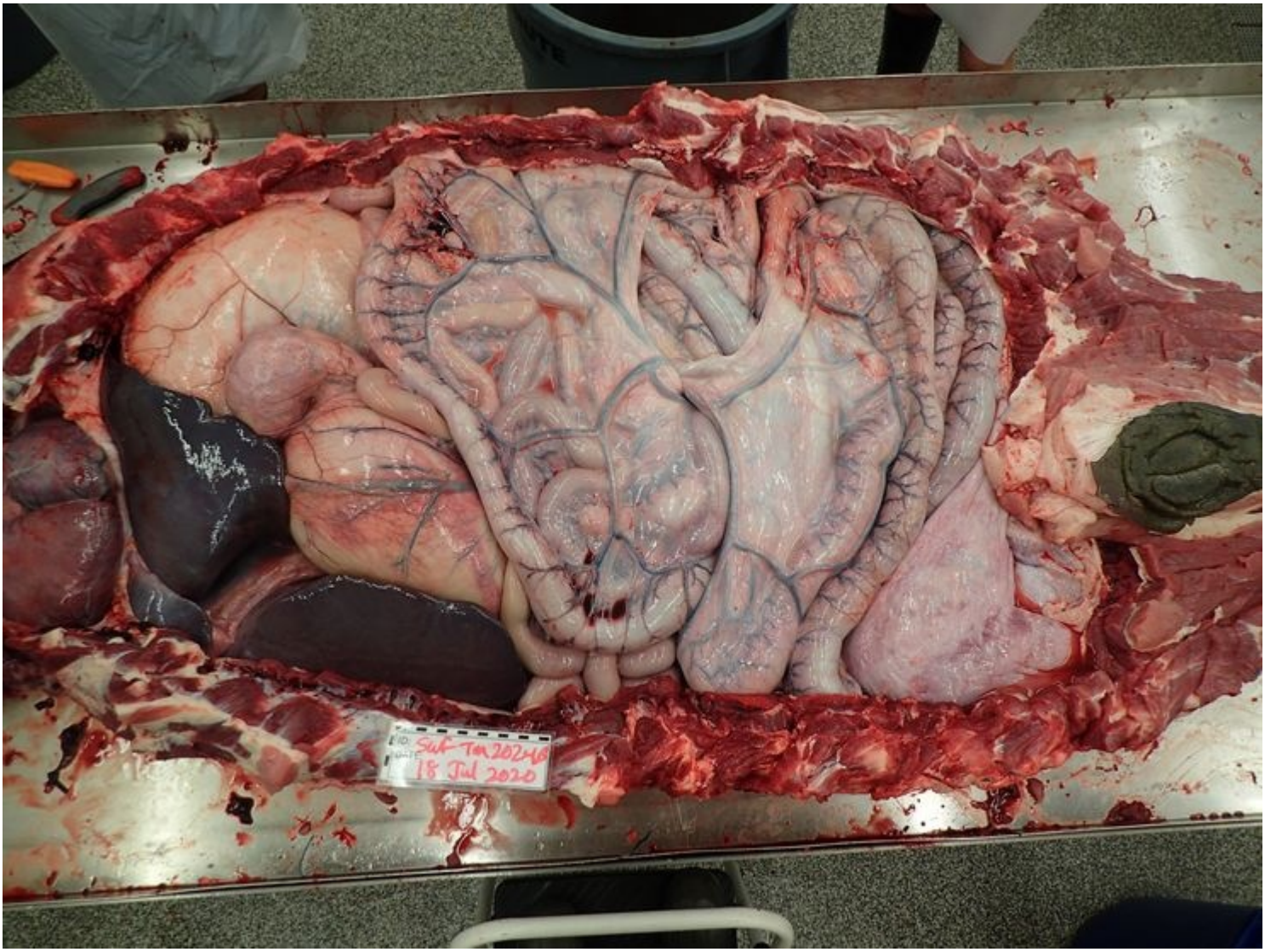


Figure 5

Viscera in situ; SWF Tm2024B. The uterus is enlarged consistent with recent pregnancy and parturition. The manatee is thin but no other gross lesions are apparent.

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
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Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

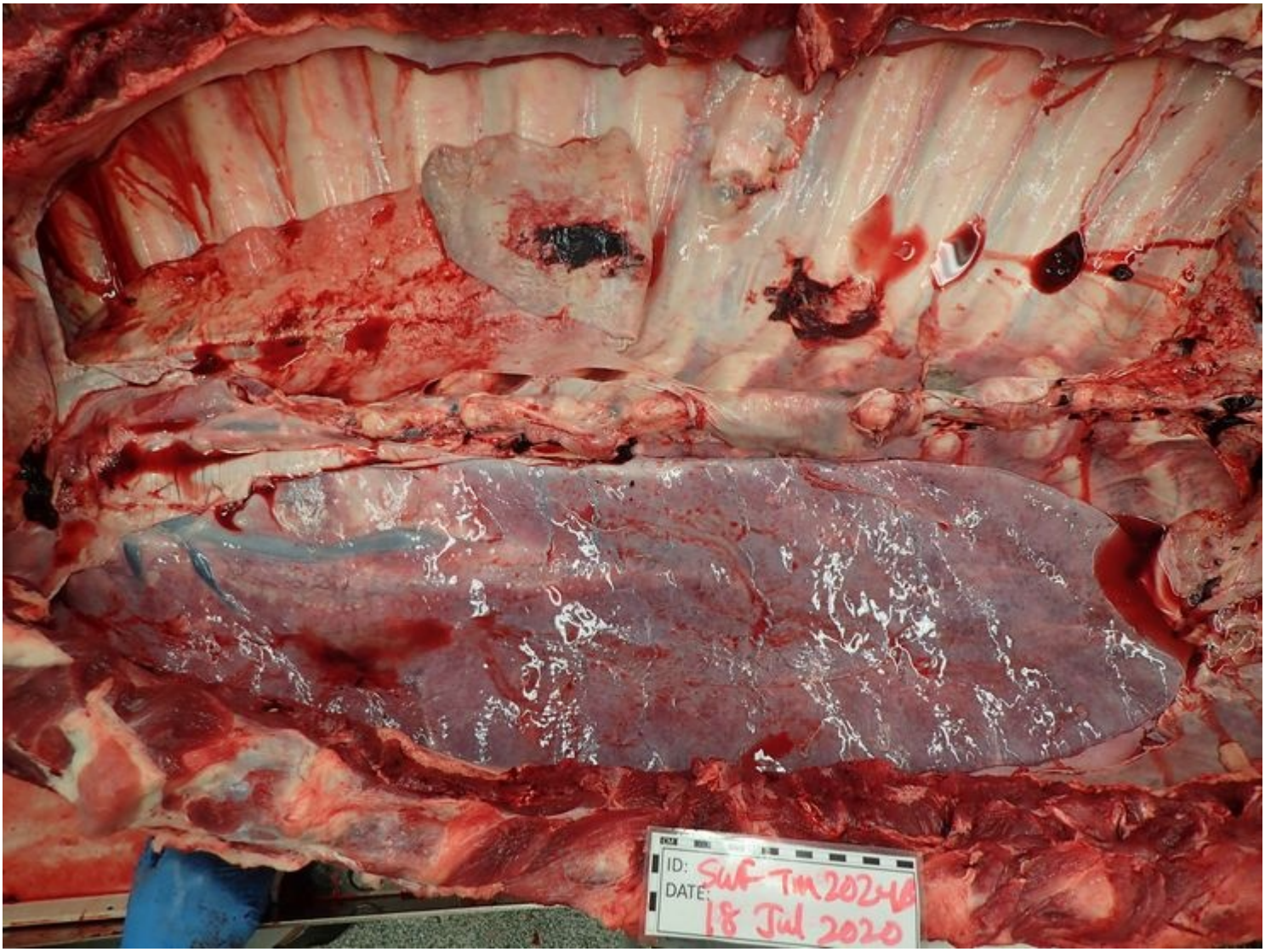


Figure 6

Lungs in situ; SWF Tm2024B. Left ribs 12 and 13 are fractured. A pleural hematoma is present on the dorsal aspect of the left lung corresponding to the rib 13 fracture. The right lung is diffusely enlarged and hyperemic.

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
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Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman



Figure 7

Lungs ex situ, dorsal view; SWF Tm2024B. A pleural hematoma is present on the dorsal left lung corresponding to the rib 13 fracture. A puncture wound is present on the dorsal left lung corresponding to the rib 12 fracture. The right lung is diffusely enlarged and hyperemic.

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
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Figure 8

Lung cross sections; SWF Tm2024B. Consolidation of the right lung is present in all sections with multifocal areas of possible abscessation along large caliber airways. A 12 mm nodule is present in the left lung adjacent to the site of puncture.

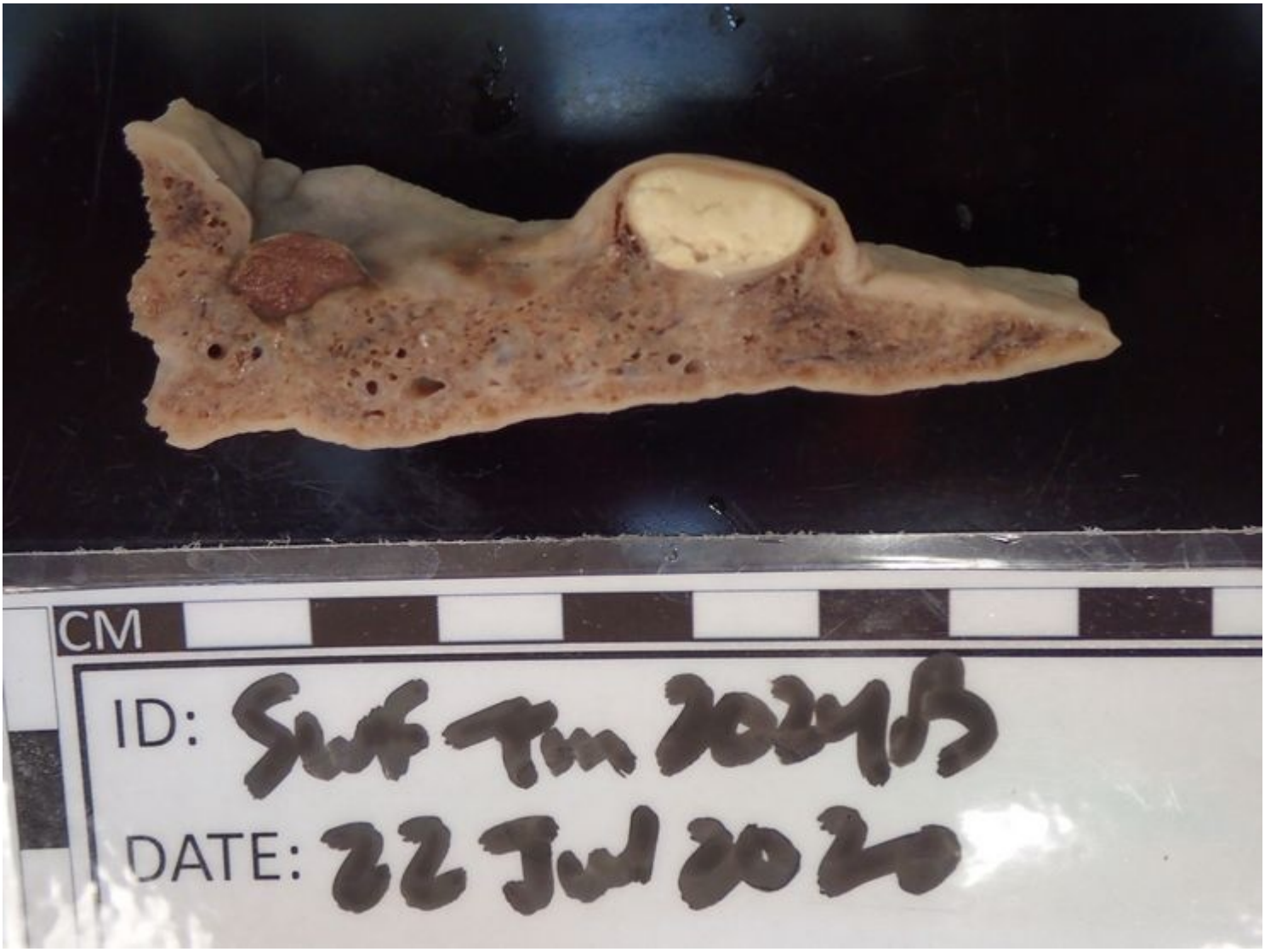


Figure 9

Left lung; SWF Tm2024B. A cross section of fixed tissue at the site of puncture is shown. There is a 12 mm abscess lateral to the puncture site. The puncture site is covered by hemorrhage.

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
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Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman



Figure 10

Uterus; SWF Tm2024B. The site of placental attachment appears to be involuting uneventfully.

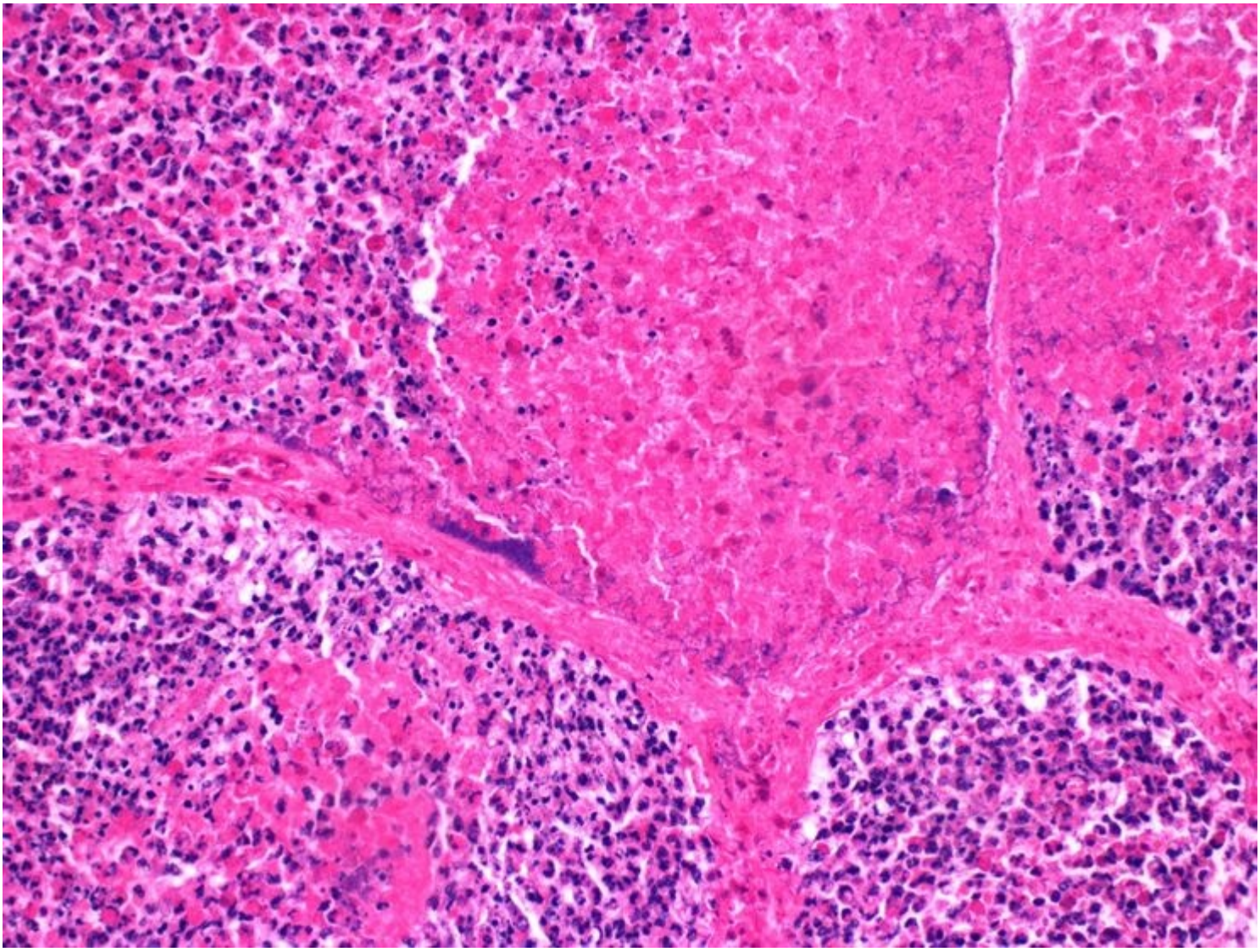


Figure 11

Right lung; SWF Tm2024B. Abscessation with bacterial microcolonies is confirmed. HE. 20X.

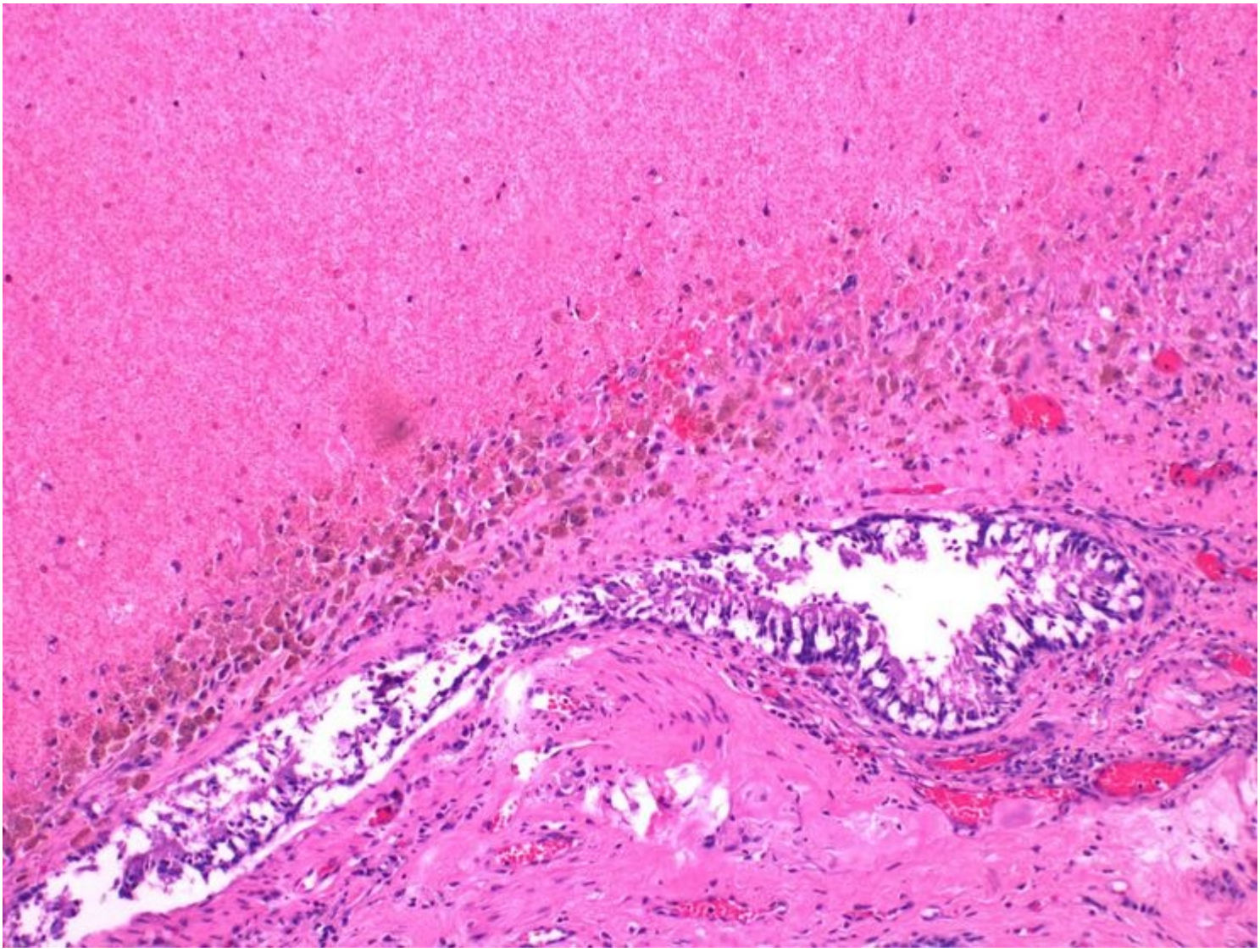


Figure 12

Left lung; SWF Tm2024B. At the puncture site, chronic hemorrhage with siderophages and compression of the surrounding parenchyma is present. HE. 10X.

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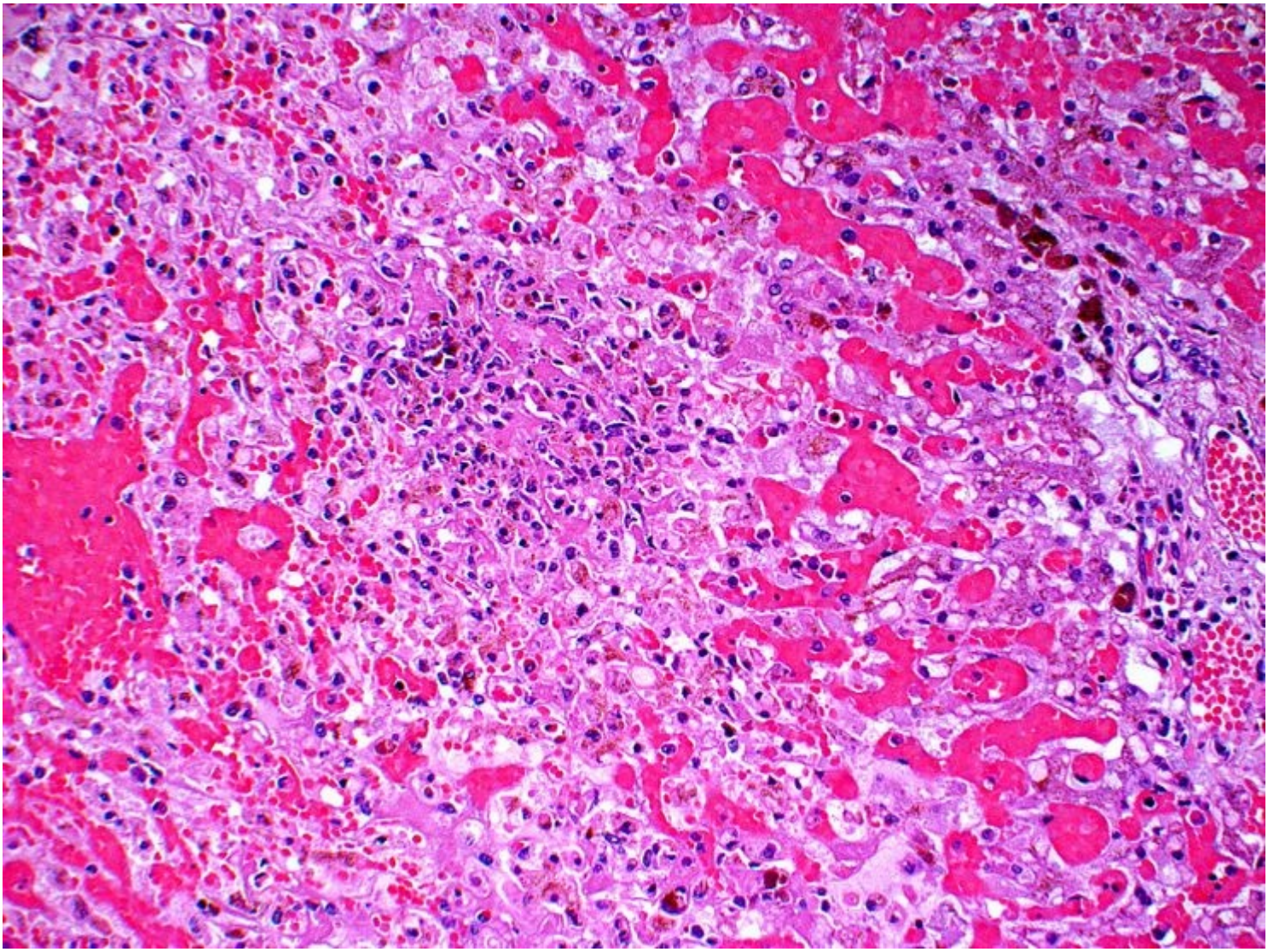


Figure 13

Liver; SWF Tm2024B. Acute midzonal necrosis is present. HE. 20X.

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Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

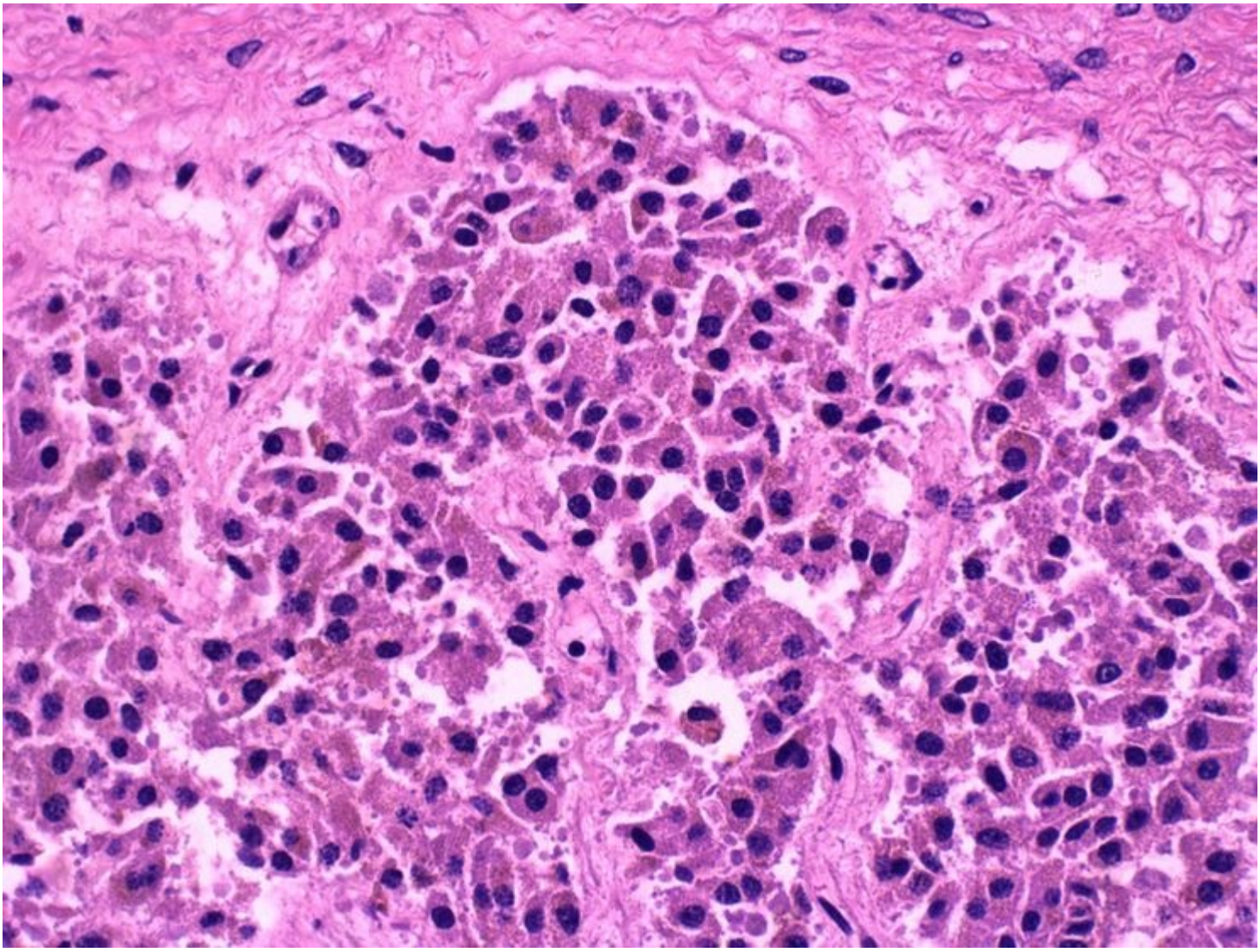


Figure 14

Adrenal gland; SWF Tm2024B. Zona glomerulosa lipofuscin is present. HE. 40X.

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
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Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

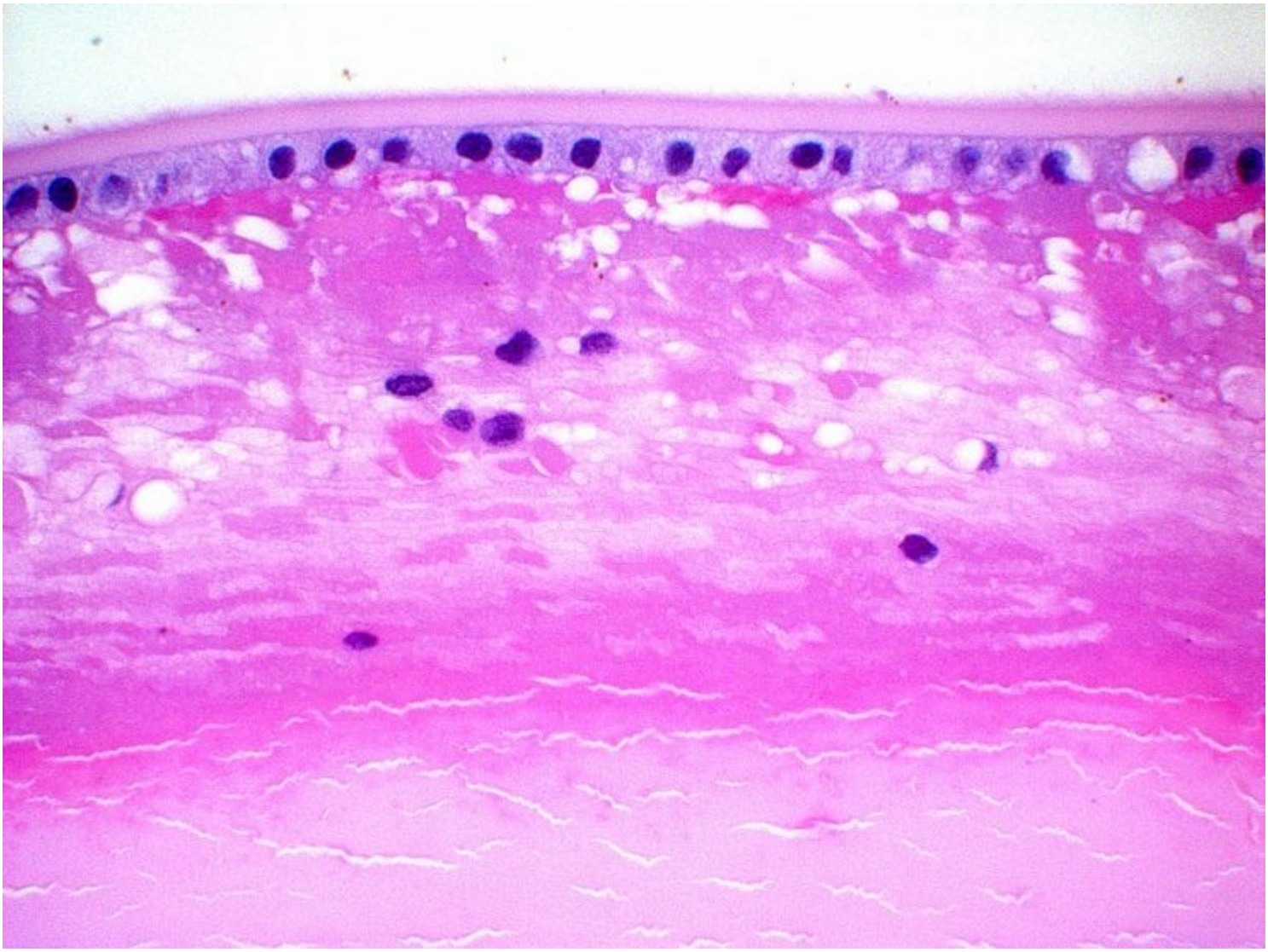


Figure 15

Lens; SWF Tm2024B. Peripheral lens fiber degeneration with slight proliferation of lens epithelium is present. HE. 63X.

Lab Tests

Lab Test:
Culture, Aerobic w/Sensi and Anaerobic ID:(Approved 20-07-27 7:07 PM)
Lab Name:
Data Innovations

Detail Name	Value 1	Value 2
Morganella morganii ssp morganii	3+	
Porphyromonas gingivalis	3+	
Pseudomonas aeruginosa	3+	

Necropsy Extended Report

Necropsy Number	406-2020	**Necropsy Date**	7/18/2020
Animal	109080	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2024B	Performed By	Nancy Stedman

Text Results:
! Caution - contains Lab defined breakpoints and interpretations.

Final Diagnosis

1. Presumed watercraft trauma with dorsal laceration, simple transverse or oblique nonunion fractures of left ribs 12 and 13, focal pleural hematoma and puncture of left lung, pneumothorax, and left dorsal skeletal muscle emphysema and necrosis
2. Severe diffuse purulent right bronchopneumonia with numerous intralesional bacteria (etiologies: Morganella morganii ssp. morganii, Pseudomonas aeruginosa, and Porphyromonas gingivalis)
3. Focal chronic left pulmonary abscess and acute mild left bronchopneumonia
4. Lymphoid hyperplasia, spleen and multiple lymph nodes
5. Hepatic congestion and mild multifocal acute midzonal necrosis, one hepatic lobe
6. OU mild corneal stromal superficial vascularization and cataract formation
7. Involuting uterus
8. Lipofuscinosis, adrenal gland zona glomerulosa
9. Focal tracheal luminal trematode

Coded Final Diagnosis

Comments

The proximate cause for the clinical signs necessitating euthanasia is bacterial pneumonia of the right lung. Multiple organisms are involved including an anaerobe, suggesting pneumonia could be secondary to aspiration or oral cavity contents. Trauma related rib fractures with left lung puncture are confirmed and are the cause for positive bouyancy and subcutaneous emphysema. Lymphoid hyperplasia is a response to pneumonia, and hepatic necrosis likely reflects tissue hypoxia. Adrenal lipofuscinosis and atrophy of renal medullary tubules suggest this was an older animal. Cataract formation may also be indicative of advancing age. The cause for the mild corneal vascularization is uncertain. This animal may have had a previous episode of bilateral keratitis that resolved, leaving residual vascularization. The uterus appeared to be involuting uneventfully.

Nancy L. Stedman DVM, PhD, Diplomate ACVP (Anatomic Pathology)

Key to abbreviations: NSF = no significant findings; NE = not examined; HE = hematoxylin and eosin.

Necropsy Extended Report

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
Animal	109145	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman

Gross Pathology

Death Date	7/10/2020	Sex	Female
Death Type	Spontaneous	Age At Death	Same Day
Submitted	Aaron Bucciantini	Institution	Busch Gardens Tampa Bay
Carcass	Fresh	Enclosure	

Environment Notes

History Notes

This female West Indian manatee calf was stillborn to rescued dam SWF Tm2024B in the evening on 10 Jul 2020. The dam has blunt trauma from watercraft injury with flail chest on her left side and accumulation of subcutaneous gas. Necropsy of the calf was conducted on 12 Jul 2020 beginning at 2:00 PM.

Gross Findings

General: The terminal body weight was 76 lbs. A 10.5 cm umbilical cord was attached at the navel. The calf appeared term. Measurements for the calf were (all straight lengths): total length 131 cm; snout to anus length 84.2 cm; snout to urogenital opening length 76.7 cm; snout to umbilicus length 51.5 cm; flipper width 8.2 cm; fluke base 36 cm; fluke width 31.5 cm; girth at fluke base 50.5 cm; girth at anus 64 cm; girth at umbilicus 76.5 cm; girth at axilla 75 cm; notch depth 1 cm. A placenta with multiple tears was submitted separately and weighed 1877 g with a circumference of 94 cm.
Cutaneous/Subcutaneous: Four nails were present on each front flipper. Blubber thicknesses are shown in Figure 3.
Nervous system: Severe dorsal meningeal congestion was present. Severe congestion extended into the meninges around the medulla and cranial cervical spinal cord. Brain 148.41 g. Cerebellum 24.59 g.
Organs of Special Sense: NSF
Cavities: A small amount of unclotted blood was present in the peritoneal cavity.
Upper Respiratory System: NE.
Lower Respiratory System: The lungs were not inflated. Most sections sank in fixative. Two sections from the hilar regions of each lung floated in fixative.
Cardiovascular System: The umbilical vein was separated from the liver when the peritoneal cavity was opened. However it was uncertain if this separation occurred antemortem or postmortem. Marked multifocal congestion was present in the adventitia around the ascending aorta. A patent foramen ovale and ductus arteriosus were present. The pulmonary artery branches from the pulmonary trunk were very narrow. The circumference of the ductus arteriosus was 1.9 cm. Cardiac morphometrics were: right ventricular free wall 6 mm; interventricular septum 20 mm; left ventricular free wall 5 mm; right atrioventricular valve circumference 9.0 cm; pulmonary valve circumference 6.2 cm; left atrioventricular valve circumference 7.5 cm; aortic valve circumference 4.7 cm. Heart 122.43 g.
Digestive System: All teeth were erupted. The stomach and descending duodenum contained abundant gold gelatinous amniotic fluid. A culture of this fluid was submitted. Abundant meconium was present in the cecum and throughout the large intestine.
Liver, Pancreas, Gallbladder: Liver 696 g.
Hemolymphatic: Well developed thymic tissue was present. Thymus 60.60 g. Spleen 4.05 g.
Reproductive System: An immature female reproductive tract was present.
Urinary System: The urachus was patent. The urinary bladder was empty. Kidneys 218.67 g.
Endocrine system: Severe congestion was present in the region of the thyroid glands, and thyroid tissue was difficult to identify grossly. Therefore, a thyroid gland weight was not obtained. Adrenal glands 2.41 g. Pituitary gland 0.26 g.
Skeletal System: Marked congestion was present in skeletal muscle around the larynx and neck regions. Congestion was also present in both axillary regions.

Necropsy Extended Report

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
Animal	109145	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman

Miscellaneous and Diagnosis

Ancillary Test Summary: Aerobic culture of amniotic fluid from the stomach recovered 1+ growth of Aeromonas sobria. Anaerobic culture recovered no growth.

Measurement

109145:20-07-12 12:00 AM

Description	Measurement	Comments
Total Length	129 cm	
Pituitary gland weight	0.26 g	
Adrenal or interrenal gland weight	2.41 g	
Kidney weight	218.67 g	
Thymus weight	60.6 g	
Spleen weight	4.05 g	
Liver weight	696 g	
Aortic valve circumference	4.7 cm	
Left atrioventricular valve circumference	7.5 cm	
Pulmonic valve circumference	6.2 cm	
Right atrioventricular valve circumference	9 cm	
Left ventricular free wall thickness	5 mm	
Interventricular septum thickness	20 mm	
Right ventricular free wall thickness	6 mm	
Heart weight	122.43 g	
Cerebellum weight	24.59 g	
Brain weight	148.41 g	
Weight (dead)	76 lb	

Histopathology Report

Lab: Busch Gardens Tampa Bay
Pathologist: Nancy Stedman
Lab ID: H20-284

Histopathology Findings

Busch Gardens Tampa Histopathology Number H20-284:
General: Tissues have moderate autolytic changes and frequent acute congestion. Otherwise, sections of liver, kidneys, intestinal tract, gut-associated lymphoid tissue, immature ovaries, thymus, stomach, cardiac gland, esophagus, oral mucosa, heart, adipose, ductus arteriosus, tongue with salivary tissue, pituitary gland, skeletal muscle, aorta, spinal cord, spinal meninges, immature uterus, umbilical vein, umbilical arteries, urachus, urinary bladder, lymph nodes, adrenal glands, diaphragm, thyroid gland, skin and blubber, brain, choroid plexus, umbilical cord and navel with umbilical vessels, trachea, eyes, and distal humerus with bone marrow and growth plate are histologically unremarkable.
Placenta: In all sections, most villi within the material aspect of the placenta have fibrin thrombi in superficial vessels. In one section, there are frequent small concretions of mineral among chorionic villi (incidental).
Cutaneous/Subcutaneous: NSF.
Nervous system: NSF.

Necropsy Extended Report

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
Animal	109145	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman

Organs of Special Sense: NSF.
Cavities: Fibrin like material from peritoneal cavity: Material is composed entirely of fibrillar densely eosinophilic acellular matrix interpreted as fibrin.
Upper Respiratory System: NSF.
Lower Respiratory System: Lungs: Alveoli are not inflated and contain proteinaceous fluid (consistent with stillbirth). Lungs and bronchi are unremarkable.
Cardiovascular System: NSF.
Digestive System: NSF.
Liver, Pancreas, Gallbladder: NSF.
Hemolymphatic: Spleen: Small numbers of hematopoietic precursors are present diffusely throughout the parenchyma (normal for age).
Reproductive System: NSF.
Urinary System: NSF.
Endocrine system: NSF.
Skeletal System: NSF.

Necropsy Extended Report

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
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Figure 1

Whole body, dorsal view; SWF Tm2025CB.

Necropsy Extended Report

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
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Figure 2

Whole body, ventral view; SWF Tm2025CB.

Necropsy Extended Report

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Figure 3

Ventral and lateral skin showing blubber thicknesses; SWF Tm2025CB.

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
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Figure 4

Stomach; SWF Tm2025CB. Unremarkable amniotic fluid is present.

Necropsy Extended Report

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Figure 5

Pluck; SWF Tm2025CB. The lungs are not inflated.

Necropsy Extended Report

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
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Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman



Figure 6

Heart; SWF Tm2025CB. The aorta and pulmonary artery have been opened to show the large ductus arteriosus.

Necropsy Extended Report

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Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman



Figure 7

Reproductive tract; SWF Tm2025CB. An immature female tract is confirmed.

Necropsy Extended Report

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Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman



Figure 8

Oral cavity; SWF Tm2025CB. Teeth are erupted.

Necropsy Extended Report

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Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman



Figure 9

Placenta; SWF Tm2025CB. Some tearing is present but the placenta is otherwise unremarkable.

Final Diagnosis

Stillbirth of term female calf with cranial congestion, acute rupture of the intraabdominal umbilical vein, hemoabdomen, and mild multifocal placental microthrombus formation

Coded Final Diagnosis

Necropsy Extended Report

Necropsy Number	380-2020	**Necropsy Date**	7/12/2020
Animal	109145	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF Tm2025CB	Performed By	Nancy Stedman

Comments

This calf appeared healthy and term. Microthrombus formation in the placenta in this case suggests that the most likely cause for stillbirth is premature separation of the placenta secondary to illness in the dam. I suspect the calf was alive at the start of parturition based upon cranial congestion and hemoabdomen from suspected rupture of the intraabdominal segment of the umbilical vein during parturition. Aeromonads are ubiquitous in the environment including aquatic environments, and the recovery of Aeromonas sobria from amniotic fluid within the stomach of this calf likely reflects contamination from the water. Aeromonas sobria also was not recovered from the dam, and there is no microscopic evidence of placentitis or metritis in the dam, further supporting Aeromonas contamination and not infection causing stillbirth.

Nancy L. Stedman DVM, PhD, Diplomate ACVP (Anatomic Pathology)

Key to abbreviations: NSF = no significant findings; NE = not examined.

Bassett, Brandon

From: Garrett, Andy
Sent: Friday, July 17, 2020 12:53 PM
To: Bassett, Brandon; deWit, Martine
Cc: Greer, Bill
Subject: RE: stillborn SWFTm2025

I received a call from Bob Wagoner at 11:58 am that vets had decided to euthanize SWFTm2024 after pus was found coming out of the manatee's nostrils this morning. Bob asked if we could collect the carcass to necropsy, but I informed him that we were not doing lab necropsies at this time.

From: Braso, Lorri <Lorri.Braso@SeaWorld.com>
Sent: Sunday, July 12, 2020 11:43 AM
To: Garrett, Andy <Andy.Garrett@MyFWC.com>; Teresa Calleson <teresa_calleson@fws.gov>
Cc: deWit, Martine <Martine.deWit@MyFWC.com>
Subject: stillborn SWFTm2025

[EXTERNAL SENDER] Use Caution opening links or attachments

Fyi
Friday night SWFTm2024 had a stillborn calf. Tm2025 was a female 76#/129cm.
Thanks,

Lorri Braso
Supervisor Animal Rescue Operations
SeaWorld Parks & Entertainment
7007 sea world dr
Orlando ,Fl. 32821
407-595-3720
lorri.braso@seaworld.com

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** SWFTm2020B
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12273, 12362, 12367 FWC District: NE
Sex: M /(F) Undetermined Length: 308 cm (estimated _____) Weight 558 kg.
Date reported: 17 July 2020 By: _____
Date collected: 17 July 2020 By: _____
Date necropsied: _____ By: _____

LOCATION: State: (FL)(___) County: Brevard Waterway: Banana River
Latitude: _____ N Longitude: _____ W
Locality description: Satellite Beach, ~ 540 m W of 722 Loggerhead Island Drive.

CONDITION: ~~Fresh~~ - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) ~~Watercraft Collision~~/Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: Dorsal - Ventral - R. Lateral - L. Lateral - Scars - Fluke - Cranial - Internal - Site - Other
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other_____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other_____
Genetics Box #_____
Female reproductive findings or **N/A**
LACTATING Yes – No – UNK **PREGNANT** Yes – No – UNK **UTERINE SCAR** – Yes – No - UNK
UTERINE HORNS: Small diameter – Contracted/Distended – UNK
ADDITIONAL DATA: External measurements – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other_____

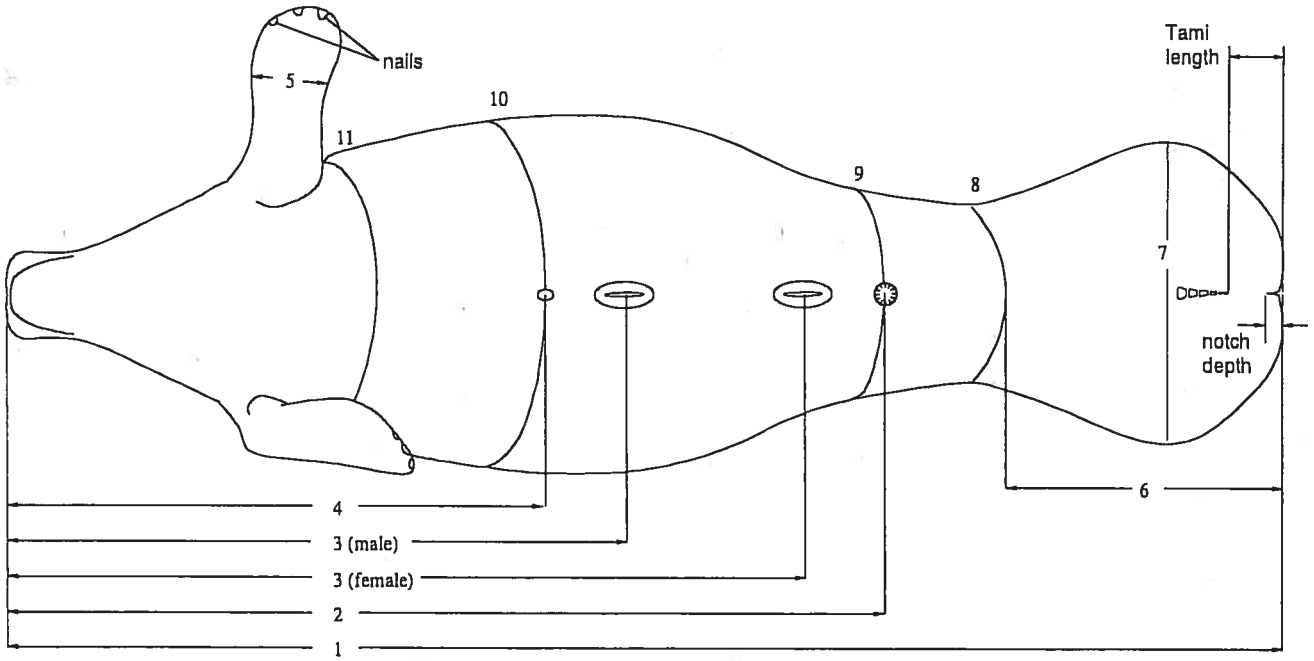
PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

REMARKS: REC 2017 - 03 July 2020
Stillborn calf 10 July
TOD ~
EC034?

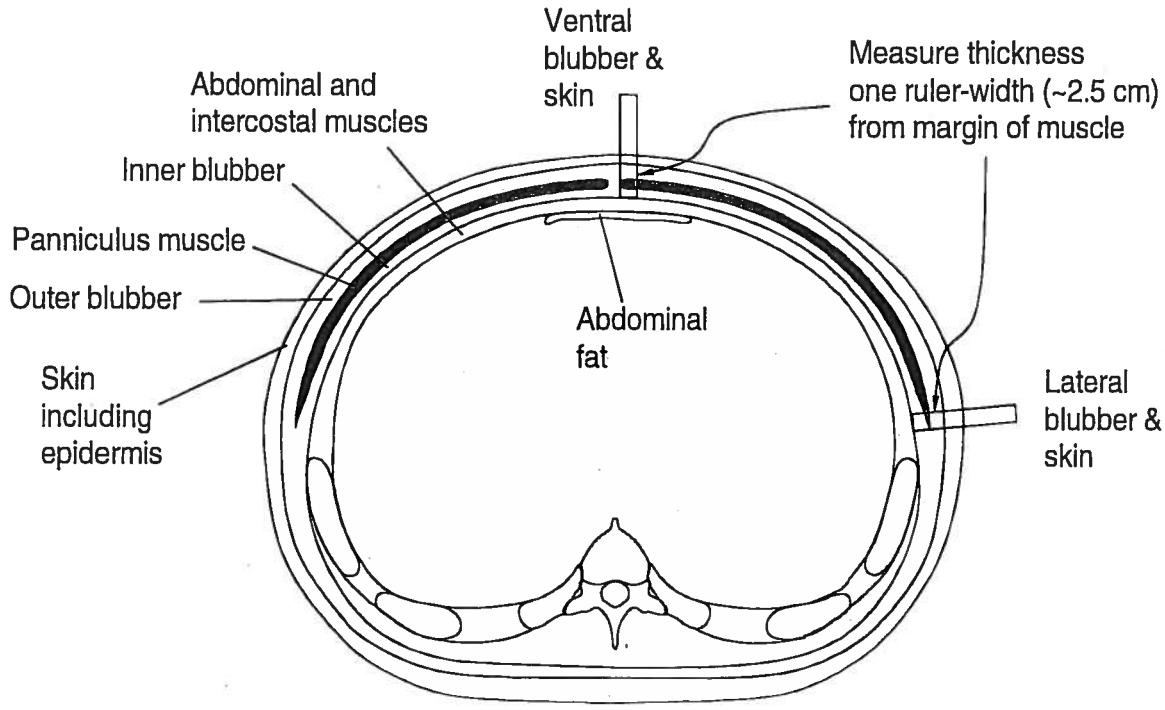
Field ID #_____

Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C ____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8.*Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm
(Nail count: L___R___)



Skin and Blubber (cm).	Ventral	Lateral	
Skin.....	_____ cm	_____ cm	(Epidermis _____ cm)
Outer fat.....	_____ cm	_____ cm	(Abdominal fat _____ cm)
Inner fat.....	_____ cm	_____ cm	



Report of a Dead Manatee

Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Marine Mammal Pathobiology Laboratory
3700 54th Avenue South St. Petersburg, FL 33711 (727) 893-2904

Field ID #: **SWFTm2028b**

Date of Report: 2020-Aug-06

Filed By: FWC EC Field Station

FWC Case # 14551 **FWC Region:** NE

Sex: Female **Length:** 341 **cm** **Weight:** 776.0 **kg**

DATE REPORTED: 2020-Aug-06 **By:** FWC-WDG,SMW,CMM

DATE COLLECTED: 2020-Aug-06 **By:** SeaWorld Orlando

DATE NECROPSIED: 2020-Aug-07 **By:** FWC-WDG,SMW SeaWorld Orlando-Nancy Stedman

LOCATION: **State:** FL **Latitude:** 28.4694 **N**

County: Brevard **Longitude:** -80.75877 **W**

Waterway: Indian River

Location description: Cocoa,

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Undetermined: Other

EXPLAIN: Bloody lung(s); Bloody nares; Fluid, froth in airways; Congested brain, abdominal fat, mesenteries, colon serosa; Watery fluid in abdominal, pleural cavities.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Scar, Fluke, Cranial, Internal.

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

Rescue report.

REMARKS:

PIT tag scan negative. Lactating. Uterine Scar. Died on 06 Aug 2020. Died at 1405 hrs. See rescue report REC2019. The manatee was rescued on 06 Aug 2020 but died on the capture boat. Possible mother of MEC20134 or MEC20140, genetic analysis pending. Macroalgae in GI tract. Sand in duodenum.

Page 1&2	
Necropsy Report	
Lat/Long	

Field ID #: SWFTm2028b

MORPHOMETRICS:

Total length:	341 cm	**Fluke base:**	94 cm	**Girth at axillae:**	**cm**
Snout to anus:	229 cm	**Fluke width:**	86 cm		
Snout to U/G:	209 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	117 cm	**Girth at anus:**	cm		
Flipper width:	18 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	1.2 cm	2 cm		
Outer Blubber Thickness:	0.7 cm	0.4 cm	**Abdominal Fat Thickness:**	cm
Inner Blubber Thickness:	0.4 cm	0.3 cm	**Epidermis Thickness:**	0.1 cm

Perinatal:

Ductus Arteriosis Diameter: cm

Left Pulmonary Artery Diameter: cm

Right Pulmonary Artery Diameter: cm

Uterine Scarring Measurements:

Side	Circumference (cm)	Width (cm)
Right		
Right		
Left		
Left		

Male Reproductive:

Fetus 1: Sex: Report?:

Length:
Weight:
Samples Taken:

Fetus 2: Sex: Report?:

Length:
Weight:
Samples Taken:

Brevetoxin Results:

Tissue	Concentration	Units
Liver		ng/g
Stomach Contents		ng/g
Kidney		ng/g
Lung		ng/g
Urine		ng/mL

Other Brevetoxin Results:

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. SWFTm2028b
SPECIES *T. manatus latirostris*
RECOVERY DATE 06 August 2020
NECROPSY DATE 07 August 2020
GENDER Female **TL** 341 **cm WT** 776 **kg**
CONDITION Fresh

HISTORY See Rescue Report REC2019. 06 August 2020, at 1405 hrs, the manatee died while on the rescue boat. After searching for a calf that was with the manatee during the rescue, the carcass was loaded by stretcher into the SeaWorld Orlando transport truck at 1645 hrs and transported to SeaWorld Orlando where it was stored in the cold room overnight. **07 August**, at 1105 hrs, FWC biologists-William D. Greer and Sara M. Wappes arrived at SeaWorld Orlando to assist with the necropsy. The necropsy was completed at 1645 hrs. The remains were disposed of by SeaWorld Orlando.

EXTERNAL All of the epidermis was present. Viscous, bloody fluid exuded from the nares. There was a thin brown algal mat on the lateral aspects. Copepods were present on the caudal ventrum. A minimum of fifteen well-healed watercraft-related scar patterns was observed on the dorsal aspect of the body and fluke. A well-healed triangular mutilation was observed at the 2 o'clock position of the fluke margin. The teats were lactating. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, omental, and mesenteric fat. The abdominal fat was slightly congested (see photo). A minimum of 1 L of watery, clear fluid was present in the abdominal cavity.

STOMACH The stomach contained 20 L of moist, well-chewed, stringy, red to brown ingesta mixed with red and green macroalgae and black and white banded vegetation (see photo). The ingesta were coated with a thin layer of white to pink mucus. The mucosa was slightly stained pink in some areas. No parasites were observed.

DUODENUM The duodenum contained 12 L of wet, well-chewed, stringy, green to brown ingesta mixed with green macroalgae, black and white banded vegetation, and sand (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM Th mesentery was moderately congested. The proximal small intestine contained viscous, orange fluid mixed with tubular green macroalgae. The mid small intestine contained watery, gray fluid mixed with tubular green macroalgae. The distal small intestine contained viscous, gray fluid. The mucosa was unremarkable. No parasites were grossly observed throughout.

CECUM The cecum contained 5.1 L of wet, moderately digested, stringy, leafy, green to brown digesta mixed with green macroalgae (see photo). The mucosa was sloughing. No parasites were observed.

COLON The mesentery was severely congested. The colon serosa was moderately congested. The proximal colon contained moist, poorly formed, well-digested, homogeneous, dark green feces. The mid colon contained moist, poorly formed, poorly digested, fibrous, very stringy, yellow to green feces. The mid colon had three contracted areas (diameter 2.5 – 5 cm) with fibrous fecal boluses on both ends of each contraction (see photo). The colon wall was rugose in the contracted areas. The distal colon contained very moist, poorly formed, well-digested, homogeneous, dark green feces. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was light pink on serosal and cut surfaces.

SPLEEN The spleen was mottled gray and black on serosal surfaces. Cut surfaces were not examined.

LIVER The margins of the liver were sharp. The liver was firm. Serosal surfaces were gray to dark purple and

cut surfaces were brown.

GALLBLADDER The quantity of bile was not measured or examined. The mucosa was stained yellow to orange.

REPRODUCTIVE The uterine horns were contracted. Each uterine horn contained a scar. The uterus and uterine horns contained an abundant amount of viscous, tan fluid. The left ovary contained numerous fluid-filled follicles. The right ovary was not examined. The mammary glands were dark red with an abundant amount of watery, white milk on cut surfaces.

KIDNEYS The kidneys were pink to brown on serosal surfaces. On cut surfaces, the cortices were brown, and the medullae were pink to brown. The corticomedullary boundaries were slightly distinct.

URINARY BLADDER The urinary bladder was not examined.

HEART There was moderate epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. Approximately 200-300 mL of watery, dark red fluid was present in the pleural cavities (see photo). The lungs were pink on serosal surfaces and dark red and bloody on cut surfaces. The primary airways contained an abundant amount of viscous, clear to white fluid and froth (see photo). No parasites were observed.

HEAD & NECK REGIONS There was a mild infection of dead trematodes in the trachea. The brain was severely congested.

SKELETON NVL.

COMMENTS The manatee died during capture. It is possible that ‘dry drowning’ occurred, but there were also chronic heart lesions that could have predisposed the animal to cardiac arrest. Since there was a combination of human-related factors and predisposing natural disease involved, the cause of death is inconclusive and recorded as Undetermined; Other. Possible mother of MEC20134 or MEC20140, genetic analysis pending.

SIGNIFICANT FINDINGS

- Bloody lungs, nares
- Fluid, froth in primary airways
- Congested brain, abdominal fat, mesenteries, colon serosa
- Fluid in abdominal and pleural cavities
- Macroalgae in GI tract
- Sand in duodenum
- Lactating
- Uterine scars

PROBABLE CAUSE OF DEATH Undetermined; Other

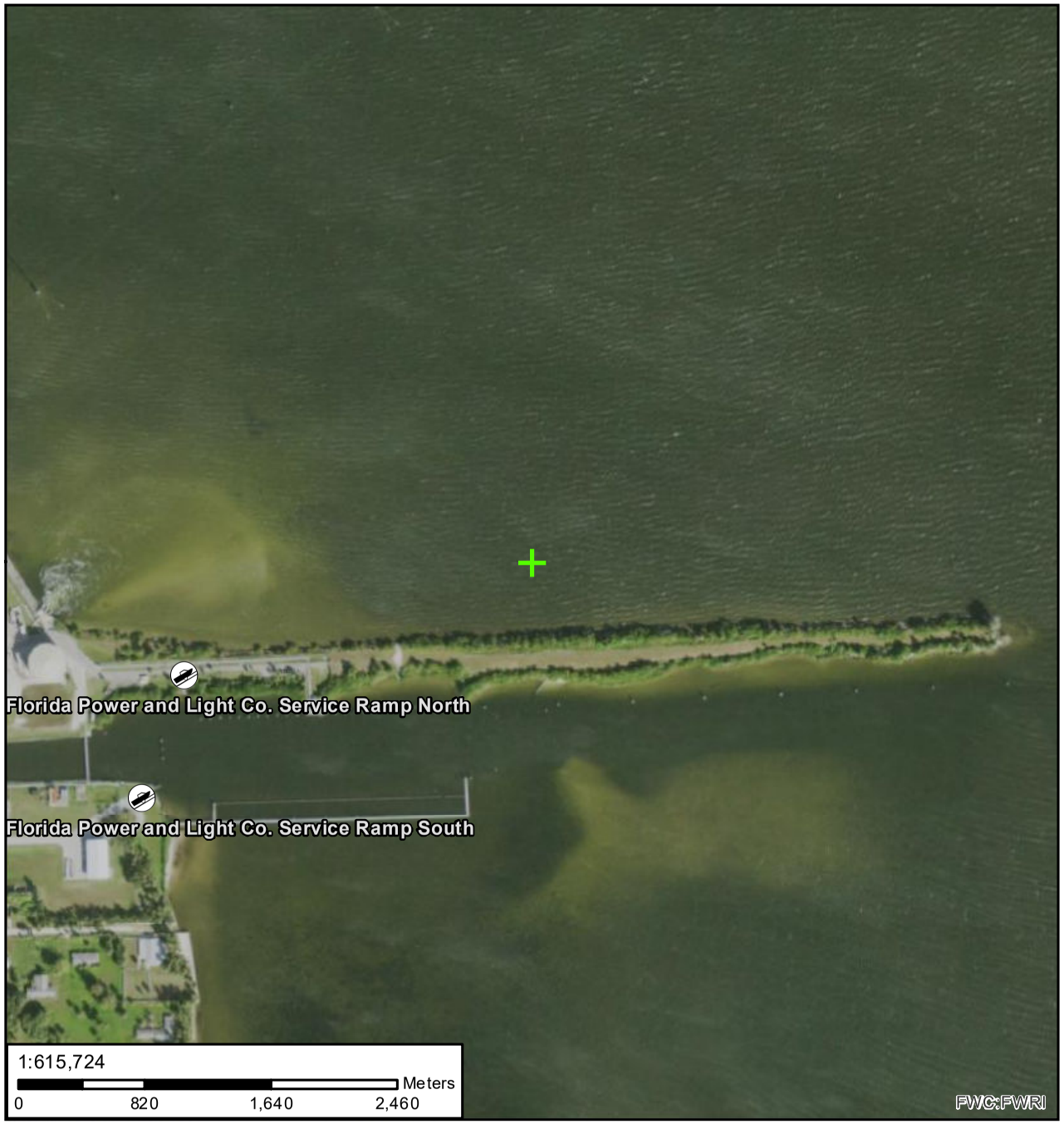
NECROPSY CONDUCTED BY

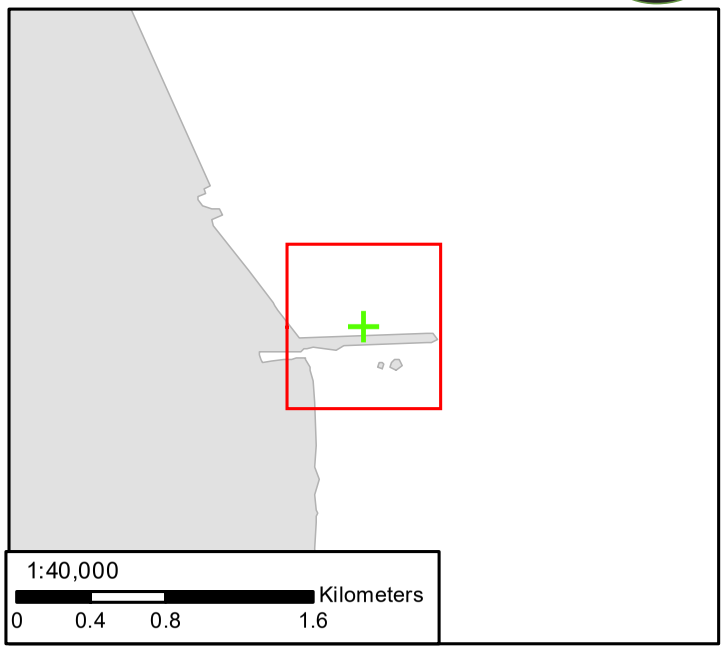
Nancy Stedman, DVM, PhD, Dipl. ACVP (SeaWorld Orlando)
William D. Greer
Sara M. Wappes

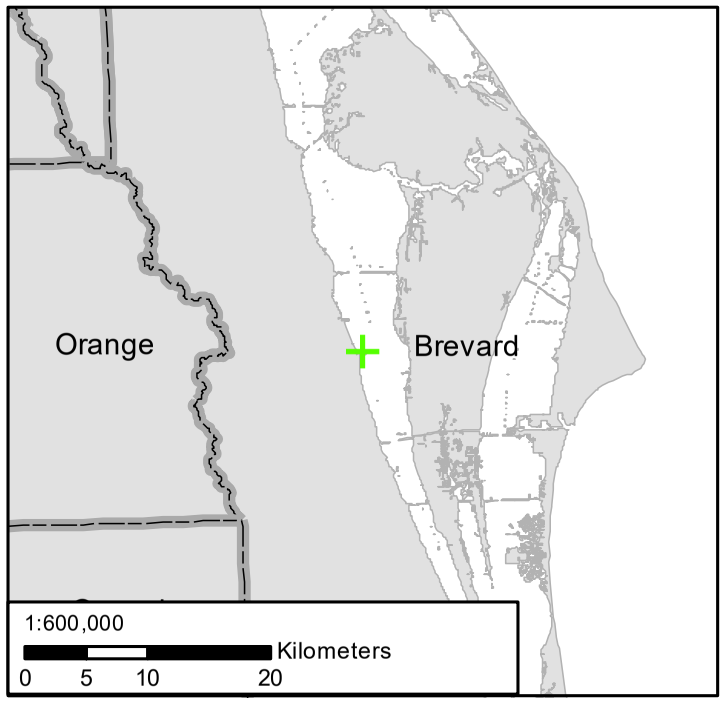
REPORT FILED BY Wappes / Greer

Verified Location of Manatee SWFTm2028b

Rescue ID: REC2019 **Report Date:** 8/6/2020 **Received Date:** 8/6/2020 **Received By:** SeaWorld Orlando







Location: Cocoa, Brevard County

Latitude: 28.4694°N **Longitude:** -80.75877°W

Map Created: 3/22/2021

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF TM2028	Performed By	Nancy Stedman

Gross Pathology

Death Date	8/6/2020	Sex	Female
Death Type	Spontaneous	Age At Death	
Submitted	Lisa Winkler	Institution	SeaWorld Florida
Carcass		Enclosure	SeaWorld Florida (SWF)

Environment Notes

History Notes

This mature female West Indian manatee had been seen with positive buoyancy for approximately one week. The animal died spontaneous during attempted rescue on 06 Aug 2020. The animal appeared to get entangled within the net during rescue and was brought onto the boat. The animal abruptly stopped breathing and arrested while on the boat. Necropsy was conducted on 07 Aug 2020 beginning at 11:45 AM at SeaWorld Orlando with assistance from two Florida FWC staff.

Gross Findings

General: The terminal body weight was 1710 lbs. Total straight length was 341 cm. Snout to anus length was 229 cm. Snout to urogenital opening length was 209 cm. Snout to umbilicus was 117 cm. Flipper width was 18 cm. Fluke base was 94 cm. Fluke width was 86 cm. Notch depth was 3 cm. Measurements were taken by FWC staff. Three nails were present on each pectoral flipper.
Cutaneous/Subcutaneous: Ventral skin and blubber thicknesses were: skin 1. 2 cm; outer blubber 0.7 cm; inner blubber 0.4 cm. Lateral skin and blubber thicknesses were: skin 2.0 cm; outer blubber 0.4 cm; inner blubber 0.3 cm. Epidermal thickness was 0.1 cm. Measurements were taken by FWC staff. Numbers scars were present on the dorsal torso and paddle (marked and photographed by FWC staff). The manatee was lactating.
Nervous system: Brain 363.76 g. Cerebellum 44.22 g.
Organs of Special Sense: NSF.
Cavities: NSF.
Upper and Lower Respiratory System: Small numbers of orange trematodes were present in the nasopharynx, pharynx, larynx, and trachea. Both mainstem bronchi were partially filled with mucus and colorless froth. Lungs were otherwise grossly unremarkable.
Cardiovascular System: Cardiac morphometrics were as follows: right ventricular free wall 10 mm; interventricular septum 40 mm; left ventricular free wall 19 mm; right atrioventricular valve 29 cm; pulmonic valve 15 cm; left atrioventricular valve 20 cm; aortic valve 13 cm. Heart 2202 g.
Digestive System: Abundant ingesta was present in the stomach and proximal duodenum. Parasites were not noted grossly. The intestinal tract contained abundant digesta. Occasional areas of mural thickening were noted in the small intestine, but were not associated with any mucosa lesions. Fecal material was unremarkable.
Liver, Pancreas, Gallbladder: Liver 11.873 kg.
Hemolymphatic: Spleen 52.25 g.
Reproductive System: The site of previous placental attachment was identified in the left uterine horn. This horn contained a small amount of slightly cloudy, green-gray fluid. A culture of the fluid was obtained. .
Urinary System: The urinary bladder was filled with clear, colorless urine. Right kidney 2033 g. Left kidney 2111 g. Total kidneys 4144 g.
Endocrine system: Both halves of the thyroid gland were subjectively enlarged related to mild cystic dilation of many follicles. Thyroid glands 225.47 g. Adrenal glands 29.20 g. Pituitary gland 2.23 g.
Skeletal System: NSF.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF TM2028	Performed By	Nancy Stedman

Miscellaneous and Diagnosis

Ancillary Test Summary: Aerobic and anaerobic culture of the uterus recovered no growth after 5 days.

Measurement

109355:20-08-07 12:00 AM

Description	Measurement	Comments
Weight (dead)	1710 lb	
Total Length	341 cm	
Brain weight	363.76 g	
Cerebellum weight	44.22 g	
Heart weight	2202 g	
Right ventricular free wall thickness	10 mm	
Interventricular septum thickness	40 mm	
Left ventricular free wall thickness	19 mm	
Right atrioventricular valve circumference	29 cm	
Pulmonic valve circumference	15 cm	
Left atrioventricular valve circumference	20 cm	
Aortic valve circumference	13 cm	
Liver weight	11.873 kg	
Spleen weight	52.25 g	
Kidney weight	4144 g	
Thyroid gland weight	225.47 g	
Adrenal or interrenal gland weight	29.2 g	
Pituitary gland weight	2.23 g	

Histopathology Report

Lab: Busch Gardens Tampa Bay
Pathologist: Nancy Stedman
Lab ID: H20-323

Histopathology Findings

Busch Gardens Tampa Histopathology Number H20-323:
General: Tissues have mild to moderate autolytic changes. Otherwise, sections of spleen, multiple lymph nodes, adrenal glands, adrenal ganglia, aorta, tongue and oral mucosa with salivary tissue, skin, active mammary gland with secretory product in acini, skeletal muscle, diaphragm, salivary gland, intestinal tract, urinary bladder, gallbladder, cervix, ovary, pituitary gland, eyes, conjunctiva, and trachea are histologically unremarkable.
Cutaneous/Subcutaneous: NSF.
Nervous system: Brain and spinal cord: Many neurons throughout the brain and spinal cord have cytoplasmic lipofuscin accumulation. In the brain, very small numbers of pigment laden macrophages are present around vessels within the cerebral hemispheres. Very rare corpora malacia are present in the neuropil. Choroid plexus is unremarkable.
Organs of Special Sense: NSF.
Cavities: NSF.
Upper Respiratory System: NE.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF TM2028	Performed By	Nancy Stedman

Lower Respiratory System: Lungs: Many bronchi contain small amounts of luminal mucus, and most alveoli contain lightly proteinaceous fluid. Epithelial cells appear cuboidal relate to autolysis. Sloughed intact ciliated cells are present in the lumen of some airways. Submucosa is mildly congested. Rare anthracosis is present in the alveolar interstitium. Focal interstitial fibrosis is present in one section and entraps three small irregular fragments of degenerate cartilage and rare smooth muscle bundles, interpreted as remnants of an airway. Inflammatory cell infiltrates are not identified. .
Cardiovascular System: Heart: In all sections of ventricle, there is moderate to marked edema between myofibers. Myofibers have moderate anisocytosis and anisokaryosis, and many fibers have perinuclear lipofuscin. Slight to mild multifocal interstitial fibrosis is present in ventricular myocardium near the heart base and within left ventricular papillary muscles. Heart valves are unremarkable.
Digestive System: Stomach: A single trematode ovum is present in the lumen at the cardia. Stomach is otherwise unremarkable.
Liver, Pancreas, Gallbladder: Liver: Hepatocytes have moderate cytoplasmic hemosiderin accumulation. Clusters of siderophages are frequent throughout the parenchyma are and most numerous around centrilobular veins. Some veins also have peripherally increased collagenous connective tissue. Pancreas: Tissue has marked autolysis but no other findings.
Hemolymphatic: NSF.
Reproductive System: Uterus: Two sections of involuting uterus have several endometrial vessels with marked necrosis and mineralization accompanied by mild hemorrhage and multifocal infiltrates of numerous granulocytes and fewer foamy macrophages, siderophages, and hematoidin-laden macrophages. Infectious agents are not identified and findings may be within normal limits for uterine involution. Other sections of uterus are unremarkable.
Urinary System: Kidneys: Tissue has moderate autolysis. Many tubules have abundant brown granular pigment within epithelial cells. One renal artery is identified with marked focally extensive subintimal mineralization and mild multifocal medial mineralization. Medullary tubules have mild atrophy.
Endocrine system: Thyroid gland: Many follicles have mild to moderate ectasia. .
Skeletal System: NSF.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF TM2028	Performed By	Nancy Stedman



Figure 1

Dorsal paddle; SWF Tm2028B. Scars have been marked.

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
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Figure 2

Dorsum (without head of paddle); SWF Tm2028B. Scars have been marked.

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF TM2028	Performed By	Nancy Stedman



Figure 3

Abdominal cavity; SWF Tm2028B. The intestinal tract is filled with abundant digesta.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
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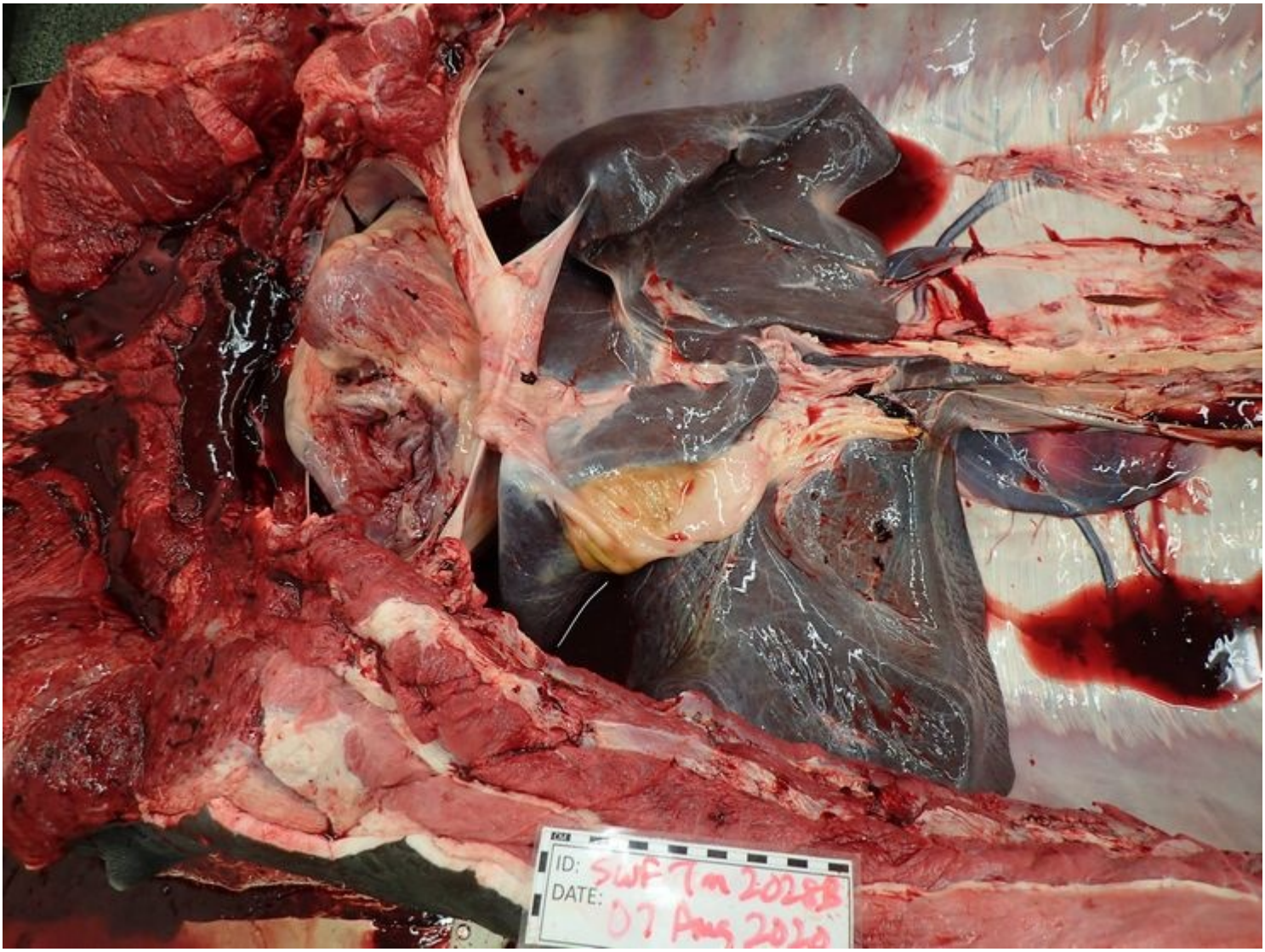


Figure 4

Liver and heart in situ; SWF Tm2028B. The gastrointestinal tract has been removed. The liver is dark but otherwise no gross lesions are apparent.

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
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Figure 5

Pluck; SWF Tm2028B. No gross lesions are apparent.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
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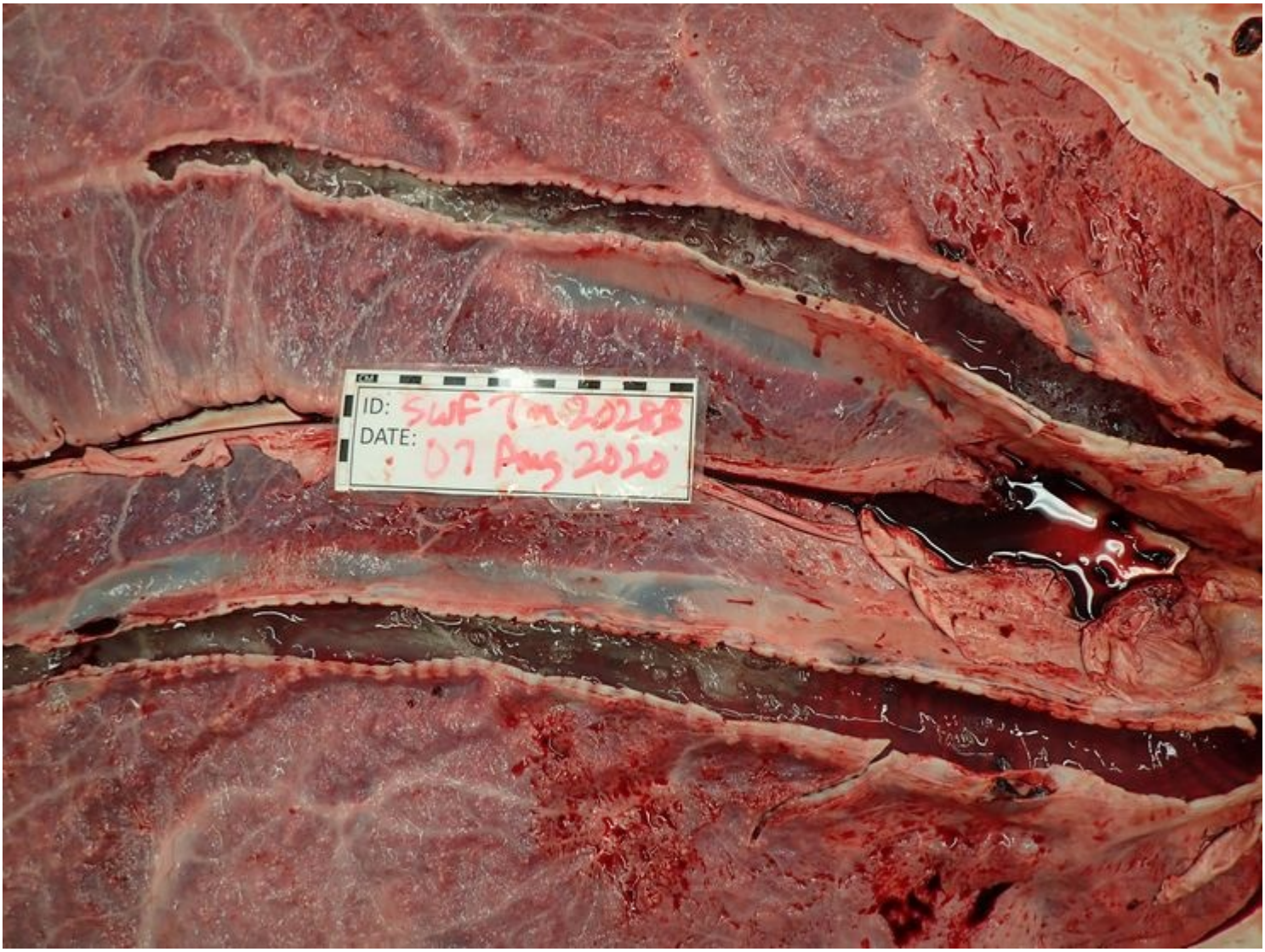


Figure 6

Lungs; SWF Tm2028B. Bronchi have been opened to show increased luminal mucus. No other lesions are apparent.



Figure 7

Thyroid gland; SWF Tm2028B. Two cross sections show ectasia of most follicles.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF TM2028	Performed By	Nancy Stedman



Figure 8

Uterus; SWF Tm2028B. The site of previous placental attachment is shown and appears to be undergoing involution. Some luminal fluid is present.

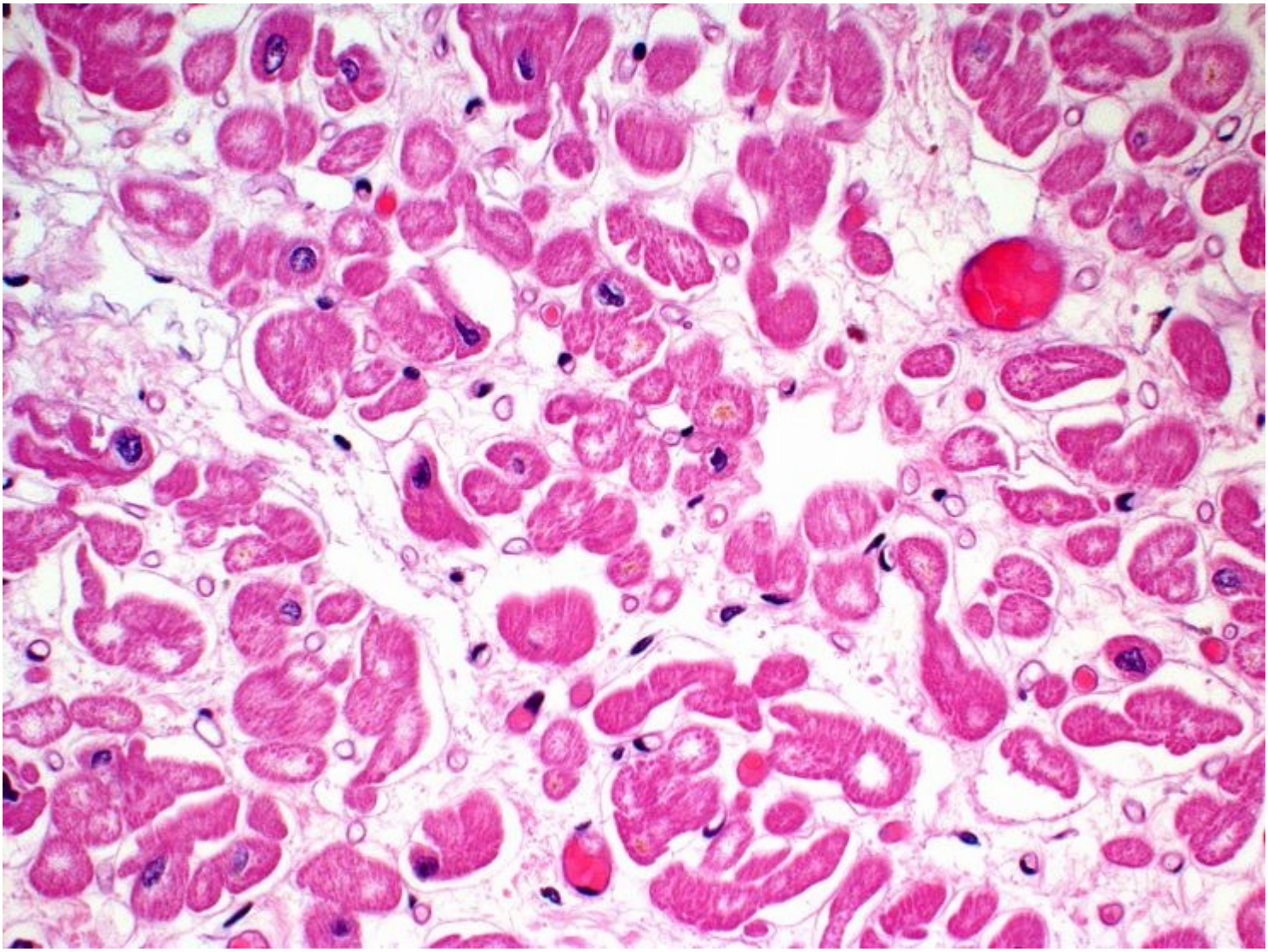


Figure 9

Ventricular myocardium; SWF Tm2028B. Edema is present between myofibers. There is marked variation in fiber size and in nuclear size. Lipofuscin is present in many myocytes. HE. 40X.

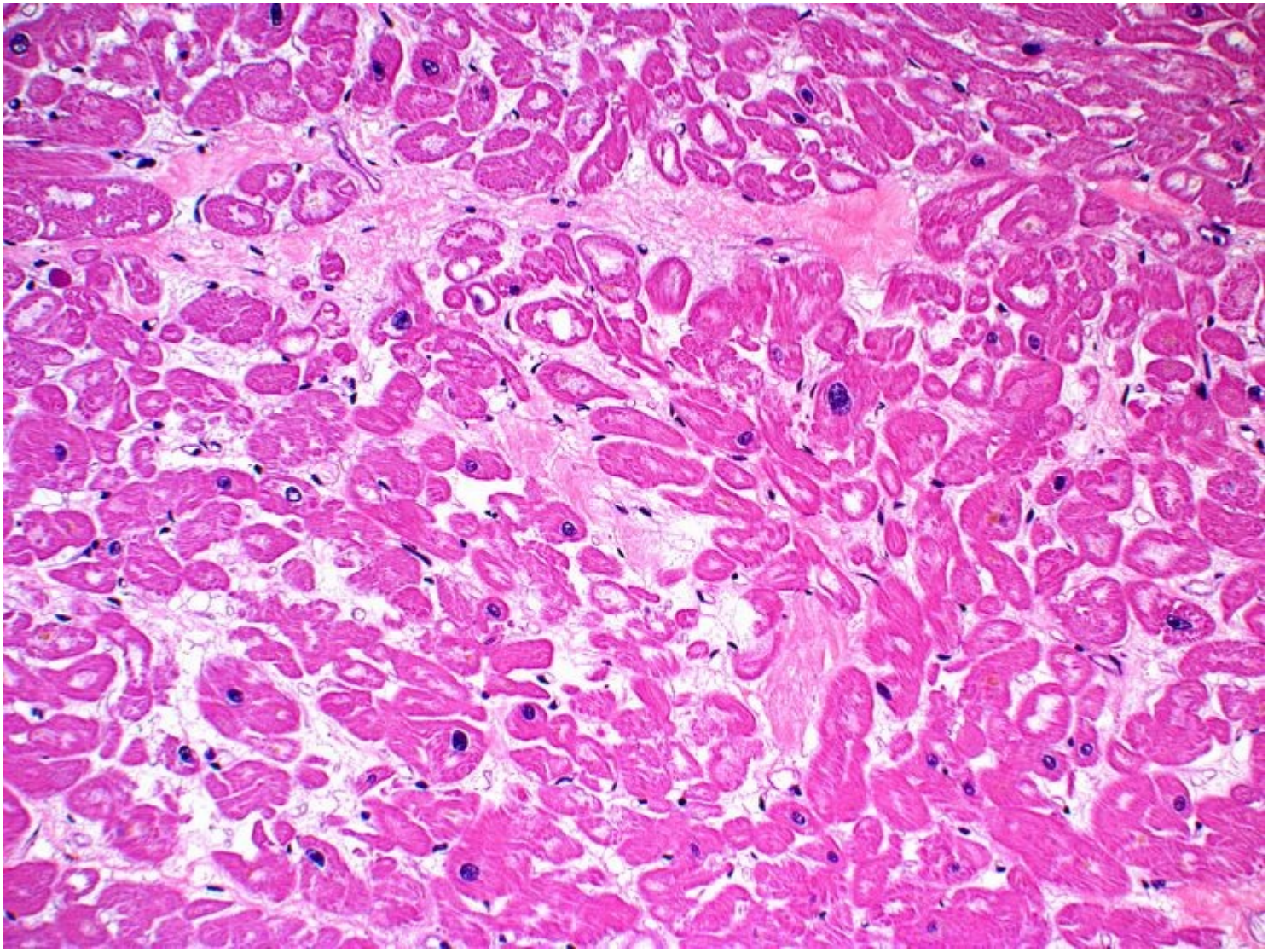


Figure 10

Ventricular myocardium at heart base; SWF Tm2028B. In addition to anisocytosis, anisokaryosis, and edema, fibrosis is also present. HE. 20X.

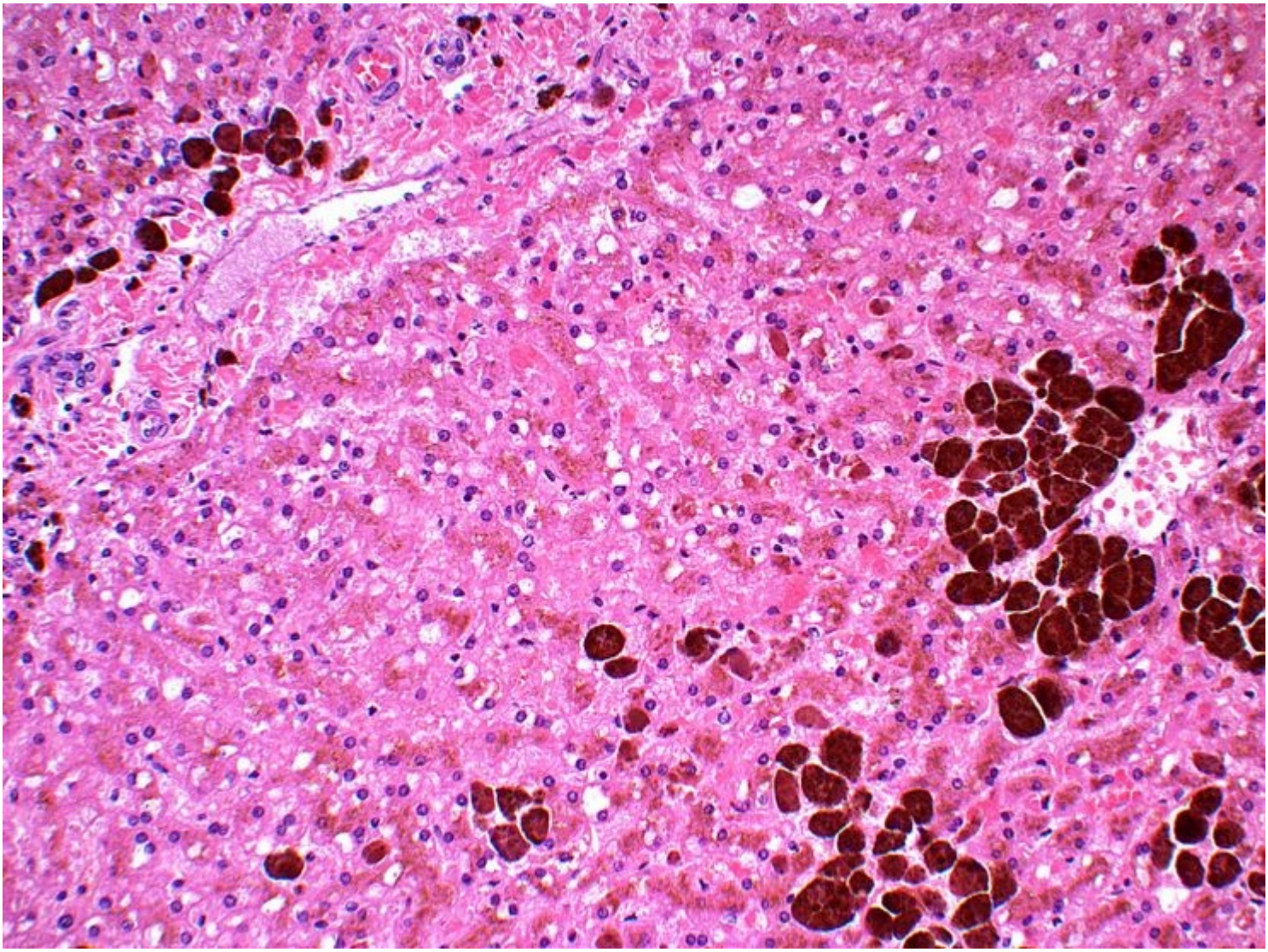


Figure 11

LIver; SWF Tm2028B. Hemosiderin is present in hepatocytes and macrophages, and is most abundant around a centrilobular vein. HE. 20X.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
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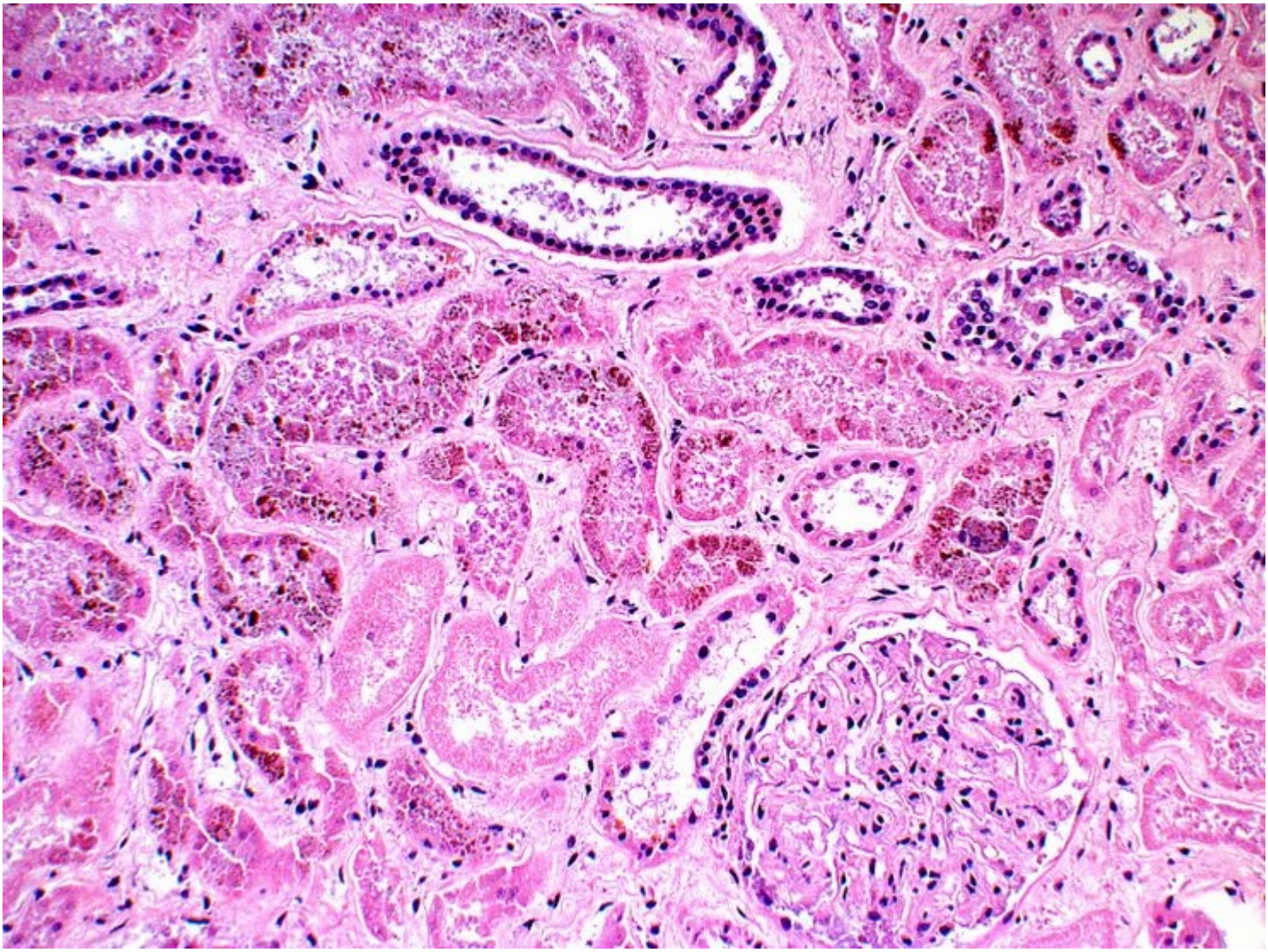


Figure 12

KIdney; SWF Tm2028B. Tissue is autolyzed. Pigment accumulation is present in proximal tubular epithelial cells. HE. 20X.

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
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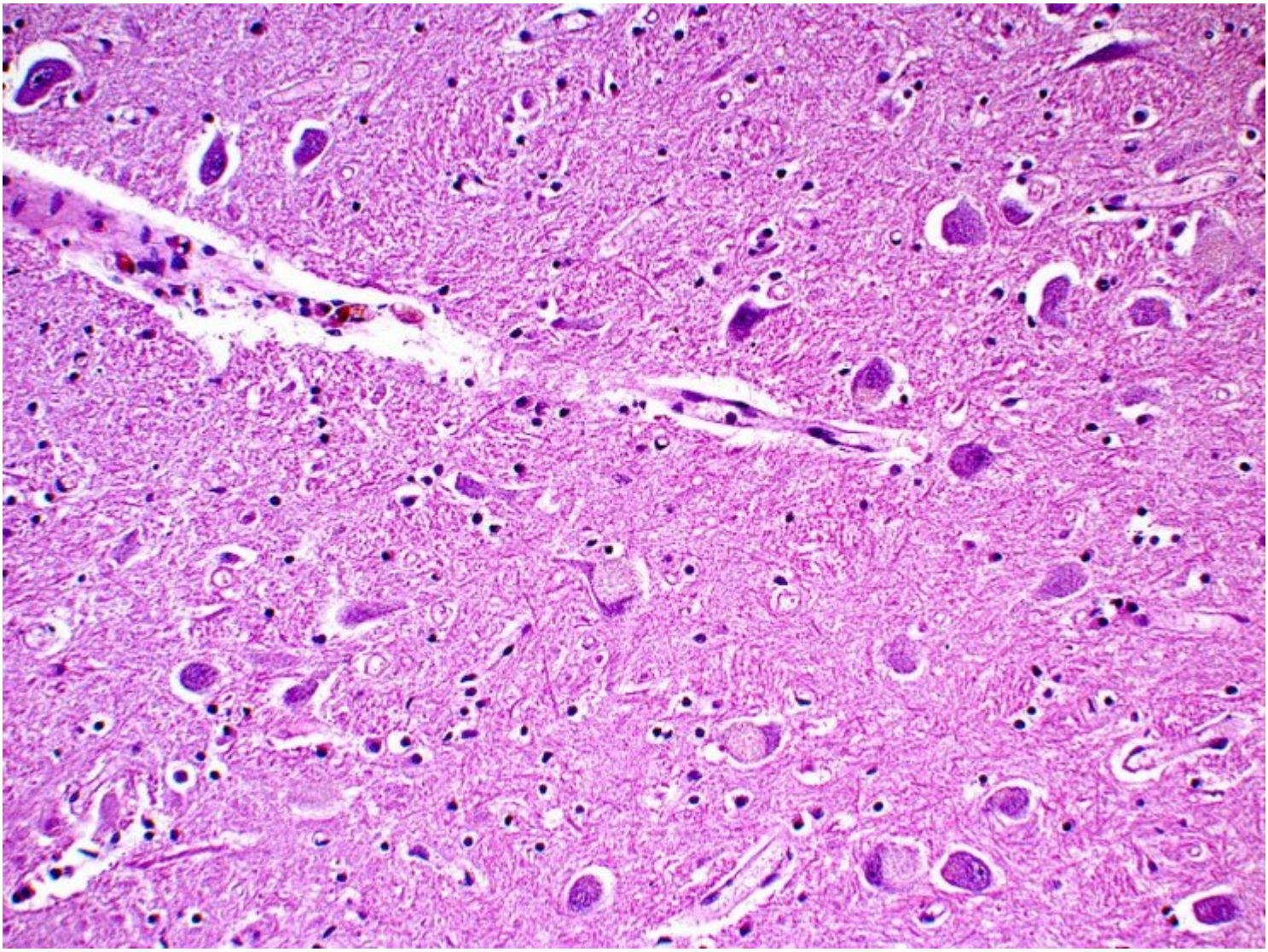


Figure 13

Brain; SWF Tm2028B. Many neurons contain lipofuscin. Small numbers of pigment laden macropahges are present around a vessel. HE. 20X.

Lab Tests

Lab Test:
Culture, Aerobic & Anaerobic ID Only:(Approved 20-08-13 12:20 PM)

Lab Name:
Data Innovations

Detail Name	Value 1	Value 2
No growth in 5 days.		

Necropsy Extended Report

Necropsy Number	428-2020	**Necropsy Date**	8/7/2020
Animal	109355	Species	West Indian manatee / Trichechus manatus
Primary Identifier	SWF TM2028	Performed By	Nancy Stedman

Text Results:

Final Diagnosis

1. Myocardial anisocytosis, anisokaryosis, and lipofuscin accumulation with mild multifocal ventricular interstitial fibrosis, moderate to marked ventricular interstitial edema, and suspected sudden cardiac death
2. Moderate hepatic hemosiderosis with chronic passive centrilobular congestion
3. Acute increased bronchial luminal mucus and mild pulmonary edema
4. Neuronal lipofuscinosis, brain and spinal cord
5. Mild to moderate diffuse thyroid follicular ectasia
6. Moderate renal tubular pigment accumulation
7. Focal mild pulmonary fibrosis
8. Involuting uterus

Coded Final Diagnosis

Comments

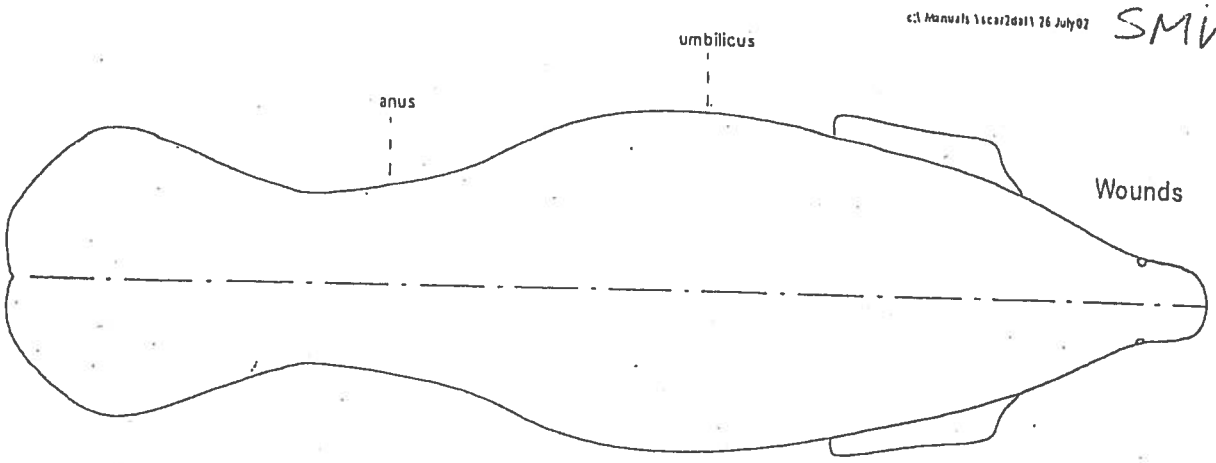
Microscopic findings in the heart, pigment accumulation in the liver and kidneys, and neuronal lipofuscin in the brain and spinal cord indicate this was an older manatee and likely geriatric. Sudden cardiac death is suspected to have occurred. The microscopic abnormalities in the heart would have increased the risk of sudden cardiac death from a conduction abnormality. Pigment accumulation in the liver suggests this animal was already in some degree of early cardiac insufficiency and at greater risk for sudden cardiac death. Pulmonary edema and increased bronchial mucus are also present and could also suggest cardiac insufficiency. It is also possible this manatee may have inhaled water when she became trapped within the net resulting in increased bronchial mucus secretion, but the volume of fluid in the lungs and airways does not support inhalation of water as a contributing factor to death. A focal scar was found microscopically in one section of lung but is of doubtful clinical significance. The uterus appeared to be Involuting uneventfully with no microscopic or laboratory evidence of infection. Many thyroid follicles were ectatic; this finding also likely reflects advancing age. Anthracosis in the lungs is incidental. No specific cause for positive buoyancy noted antemortem was found.

Nancy L. Stedman DVM, PhD, Diplomate ACVP (Anatomic Pathology)

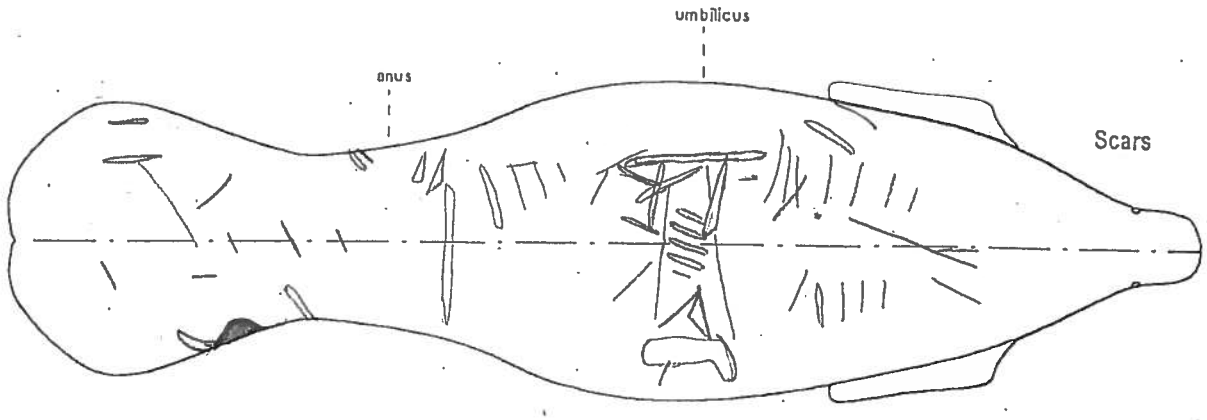
Key to abbreviations: NSF = no significant findings; NE = not examined; HE = hematoxylin and eosin.

Date 07 AUG 2020 Field I.D. SWFTm 20286

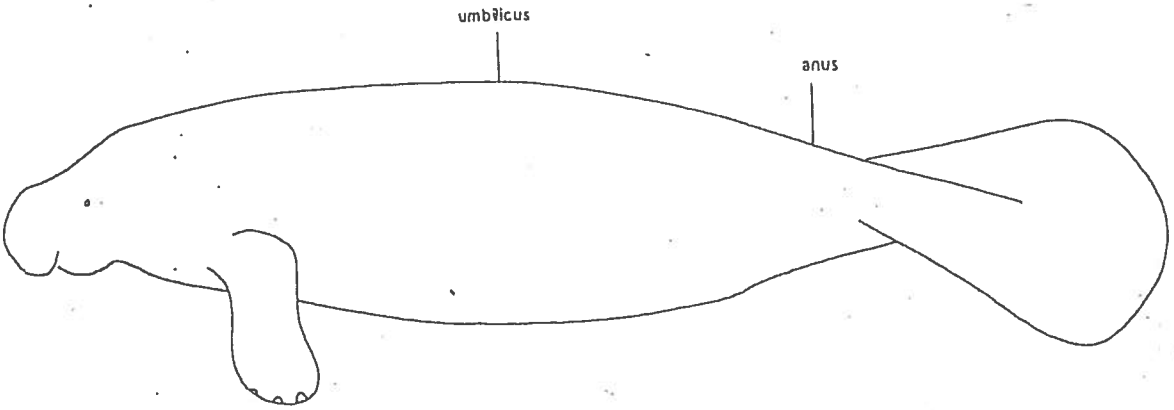
c:\ Manuals \ scar2dat1 26 July02 SMW

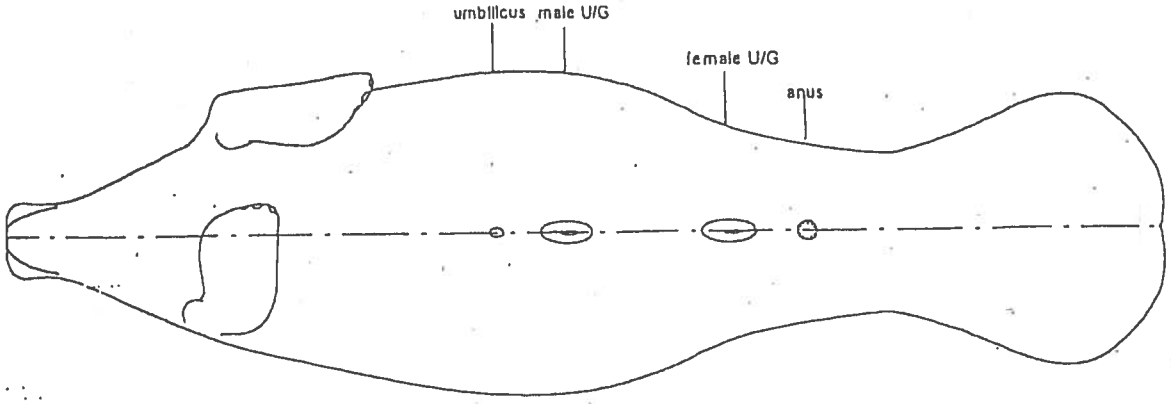


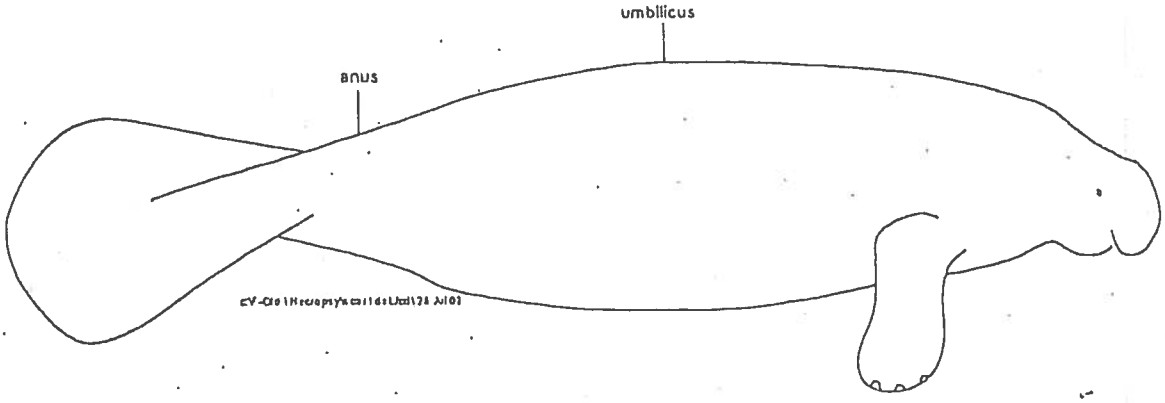
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. SWFTm20286



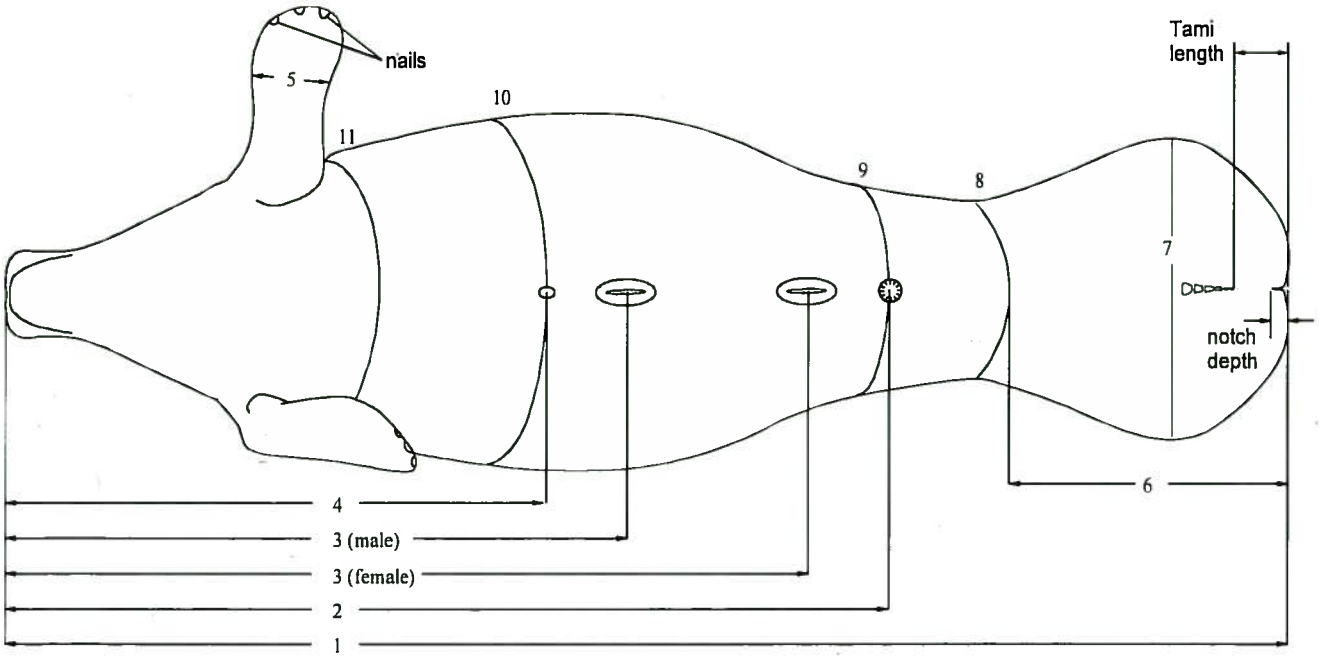




Field ID #_SWFTm2028b__

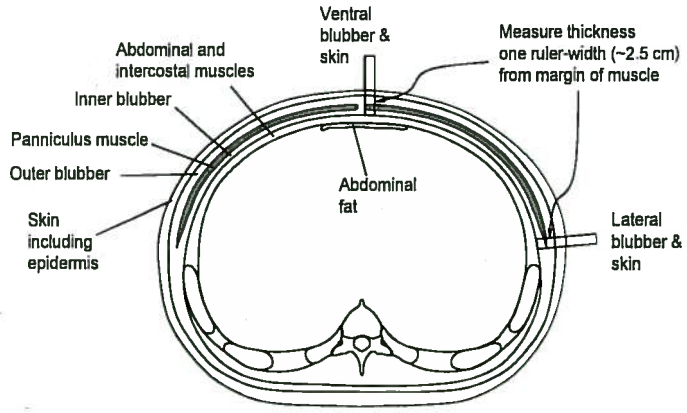
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

1. Total length _341_ cm
2. Snout to anus -C _229_ cm
3. Snout to U/G -C _209_ cm
4. Snout to umbilicus -C _117_ cm
5. Flipper width_18_____ cm
6. Fluke base _94__ cm
7. Fluke width _86_____ cm
8.*Girth at fluke base _N/T_ cm
9. * Girth at anus _N/T__ cm
10. *Girth at umbilicus _N/T__ cm
11. *Girth at axillae _N/T_ cm
(Depth of notch __3____ cm)
(Tami ln_____ cm)
(Nail count: R_3__L_3__)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin.....	___1.2_____ cm	___2.0_____ cm	(Epidermis __0.1_____ cm)
Outer blubber.....	___0.7_____ cm	___0.4_____ cm	(Abdominal fat _N/T_____ cm)
Inner blubber.....	___0.4_____ cm	___0.3_____ cm	



Mammary dimensions R: ____x ____ x _____cm L:____x ____ x _____cm
Lactating: R: Y/N L: Y/N
Placental Scaring: R / L:____x ____ x _____ cm
Pregnant: Y/N – Fetus length _____cm Fetus gender M / F Fetus weight _____ kg
Gonads: R:____x ____ x _____cm; _____kg; L:____x ____ x _____cm; _____kg
Sperm: in testes Y / N; in epididymes Y / N Method: visual / microscope slide
Fluid in seminal vesicles Y / N; if yes, then vesicle dimensions R: ___x ___ x ___cm L:___x ____x ___cm

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** SWFTm2028B
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14551 FWC District: NE
Sex: M / (F) / Undetermined Length: 341 cm (estimated _____) Weight 776 kg.
Date reported: 06 Aug 2020 By: _____
Date collected: 06 Aug 2020 By: _____
Date necropsied: 07 Aug 2020 By: FWC-WDG, SMW

LOCATION: State: (FL) (___) County: Brevard Waterway: Indian River
Latitude: _____ N Longitude: _____ W
Locality description: Cocoa,

CONDITION: (Fresh) - Moderate - Bad - Dried carcass/loose bones – Confirmed; not recovered

PROBABLE CAUSE OF DEATH:
Human related: (1) Watercraft Collision: Impact – Propeller – Both - Sharp (Acute – Chronic)
(2) Flood Gate/Canal Lock: Structure ID/Name _____
(3) Other human
(4) Perinatal (≤150 cm): Natural - Undetermined
Natural: (5) Cold Stress - (6) Other natural (includes Red Tide)
Undetermined: (7) Not Recovered – (8) Too Decomposed - (9) Other
Explain: _____

PHOTOGRAPHS: (Dorsal) - (Ventral) - R. Lateral - L. Lateral - (Scars) - (Fluke) - (Cranial) - (Internal) - Site - Other
MTLS COLLECTED: (Genetics) - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other_____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other_____
Genetics Box #_____
Female reproductive findings or **N/A**
LACTATING (Yes) - No – UNK **PREGNANT** Yes – (No) – UNK **UTERINE SCAR** – (Yes) – No - UNK
UTERINE HORNS: Small diameter – (Contracted)/Distended – UNK
ADDITIONAL DATA: (External measurements) – Wound measurements - Perinatal evaluation
Organ weights – Rescue Report/Map - Other_____

PIT TAG Scan: (Negative); Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

REMARKS: _____