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 #: **JZGTm1902**
Date of Report: 2019-Jun-28
Filed By: FWC NE Field Station

FWC Case # 10708 **FWC Region:** NE

Sex: Female **Length:** 266 **cm** **Weight:** 303.0 **kg**

DATE REPORTED: 2019-Jun-28 **By:** Jacksonville Zoo to FWC-NJG

DATE COLLECTED: 2019-Jun-28 **By:** Jacksonville Zoo

DATE NECROPSIED: 2019-Jun-28 **By:** Jacksonville Zoo FWC-NJG

LOCATION: **State:** FL **Latitude:** 29.02763 **N**
County: Volusia **Longitude:** -80.91946 **W**
Waterway: Indian River North
Locality description: New Smyrna Beach, approximately 50 m NE of 107 N Riverside Drive.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Propeller; Chronic; Watercraft wound(s); Severed nares; Purulent material in airways; Relatively empty colon.

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

MATERIALS COLLECTED:

Genetics, Partial skeleton (Skull for JZG.). Jacksonville Zoo histology.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Rescue report. Wound measurements.

REMARKS:

PIT tag scan negative. Died on 28 Jun 2019. Died at 1106 hrs. Euthanized. Died in facility. See rescue report RNE1902, reported with fresh wounds on 23 June 2019, rescued on 25 June. Also FWC case number 10623. Tunicates in GI tract.

Page 1&2	Ole NOV 2020
Necropsy Report	Ole NOV 2020
Lat/Long	Ole NOV 2020

Field ID #: JZGTm1902

MORPHOMETRICS:

Total length:	266 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. JZGTm1902
RECOVERY DATE 28 June 2019
GENDER Female **TL** 266 **cm WT** 303 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 28 June 2019
CONDITION Fresh

HISTORY See rescue report RNE1902. 28 June 2019, due to extensive watercraft injuries, the manatee was euthanized by Jacksonville Zoo and Gardens veterinary staff. Time of death was 1106 hrs. A necropsy was performed at Jacksonville Zoo and Gardens and concluded at 1600 hrs.

EXTERNAL All of the epidermis was remaining. The ventrum was flat. There was a series of six propeller wounds to the dorsal head and neck region. Wound #1 cut through the nasal cavity. Wound #2 cut between the eyes and through the nasal cavity. Wounds #3 and 4 penetrated to the skull and shaved pieces of the skull were visible in the wounds. Wounds #5 and 6 were superficial. There were three well-healed watercraft-related scar patterns on the dorsum. A small healing wound was observed on the midline of the ventral fluke, a small healing wound was present on the left ventral caudal axillae. There were two barnacle scars on the ventral fluke. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained 2 L of wet, well-chewed, leafy, green ingesta with 50% of the content comprised of tunicates. There was one live nematode. The mucosa was unremarkable.

DUODENUM The duodenum contained 1.4 L of wet, fibrous, well-chewed, green ingesta mixed with tunicates. There were no parasites. The mucosa was unremarkable.

JEJUNUM & ILEUM The proximal small intestine contained wet, slightly fibrous, green ingesta. The proximal small intestine contained yellow and green fluid with yellow and green pieces of ingesta. There were no parasites. The mucosa was stained yellow.

CECUM The cecum contained 600 mL of moist, fibrous, green and yellow digesta mixed with tunicates. No parasites were observed. The mucosa was stained yellow.

COLON The colon was relatively empty except for a scant amount of wet, loose, green feces mixed with tunicates. No parasites were observed. The mucosa appeared congested in areas.

PANCREAS The pancreas was tan on serosal and cut surfaces.

SPLEEN The spleen was firm. Serosal surfaces were dark purple and cut surfaces were slightly bloody and dark red.

LIVER The liver was firm with rounded margins. Serosal and cut surfaces were red-brown. Cut surfaces were slightly bloody.

GALLBLADDER The gallbladder contained a scant amount of green to yellow bile. The mucosa was stained yellow.

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

KIDNEYS There was moderate perirenal fat. Serosal surfaces were red-purple. On cut surfaces, the cortices

and medullae were tan. Cut surfaces were slightly bloody.

URINARY BLADDER The urinary bladder contained approximately 100 mL of clear urine. The mucosa had areas of congestion.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were pink and red on serosal surfaces. Cut surfaces were red. The primary airways contained purulent, frothy, yellowish discharge through the entire bronchus and bronchi.

HEAD & NECK REGIONS See external description.

SKELETON NVL

OTHER

PHOTOGRAPHS 2019-06-28_FWC026_3815 through 3818, 3820 through 3822, 3824 through 3826, 3828 through 3830, 3832, 3833, 3835 through 3844, 3849, 3850, 3853 through 3861, 3864, 3865, 3867, 3868, 3870, 3872 through 3874, 3876 through 3878, 3880 through 3886, 3888 through 3893, 3895 through 3899, 3905, 3907 through 3910, 3913, 3915 through 3923, 3925.

COMMENTS

SIGNIFICANT FINDINGS

- Penetrating watercraft wounds
- Severed nares
- Purulent material in airways
- Relatively empty colon
- Tunicates in GI tract

PROBABLE CAUSE OF DEATH Watercraft; Propeller (Chronic)

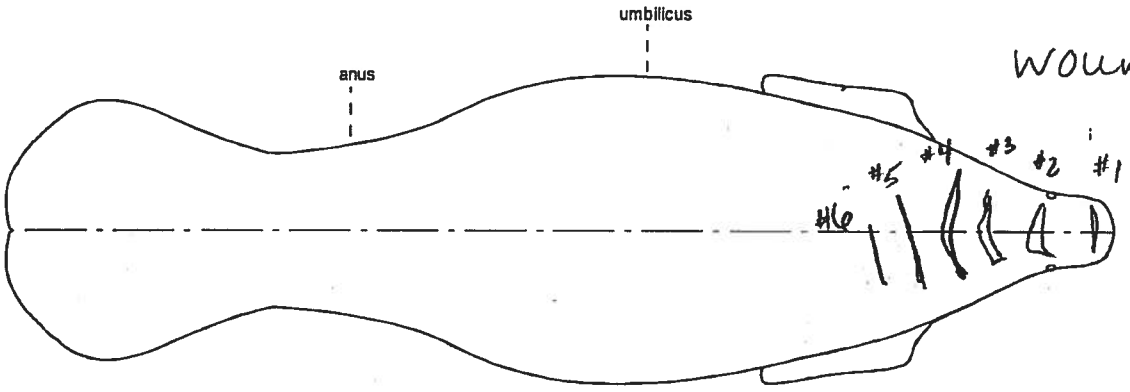
NECROPSY CONDUCTED BY

Dr. Meredith Persky (Jacksonville Zoo and Gardens)
Nadia Gordon (FWC NEFL)
Matt Van der Maelen (FWC volunteer)

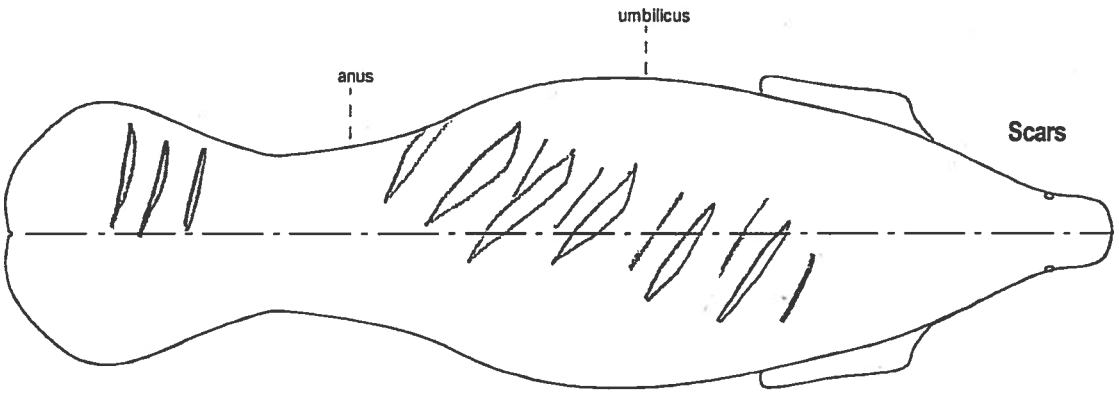
REPORT FILED BY Persky / Gordon

Date 28 June 2019 Field I.D. JZGTm1902

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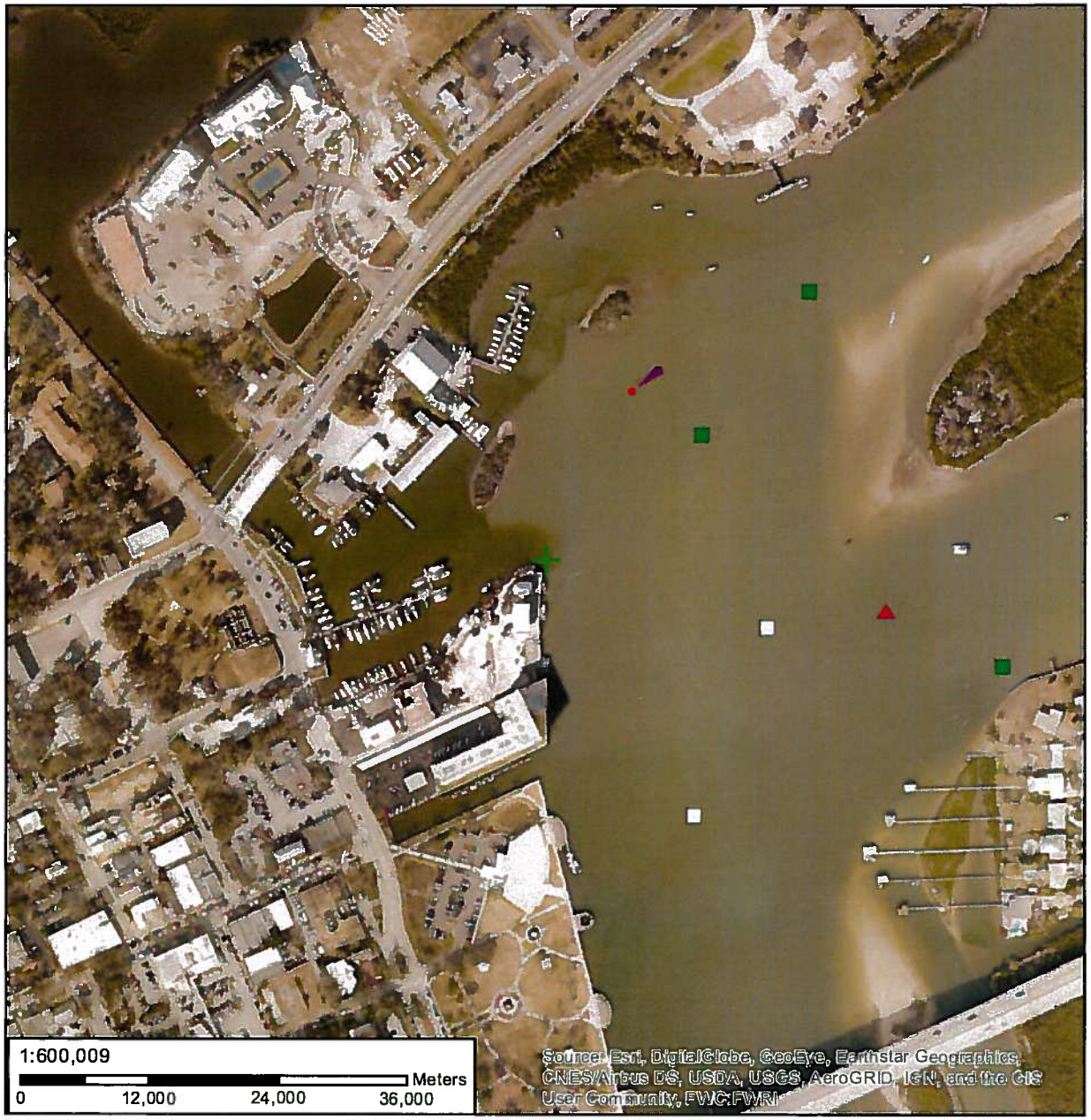


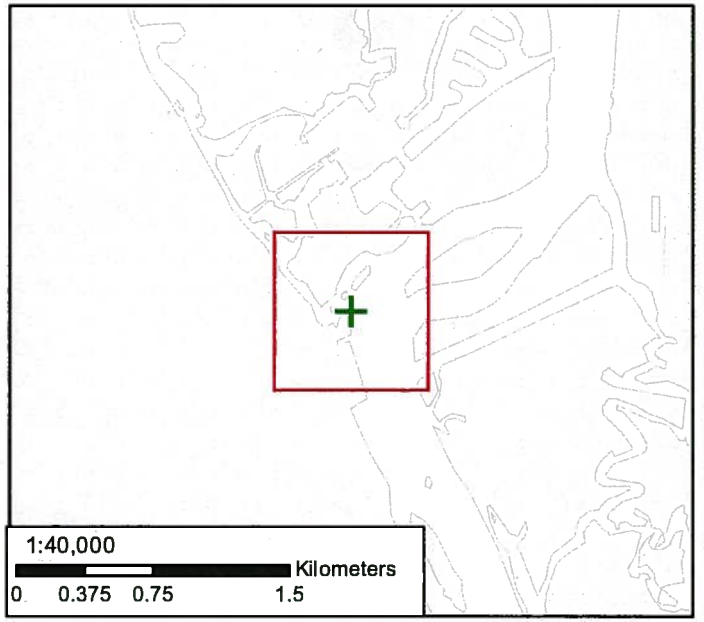
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Length	12	12	12.25	15	13.75	7.5														
Width	6.5	3	2	1.75	0.2	0.3														
Depth	5	6	4	4.5	0.5	0.3														
Distance	7	8	7.3	6.1	8.25															

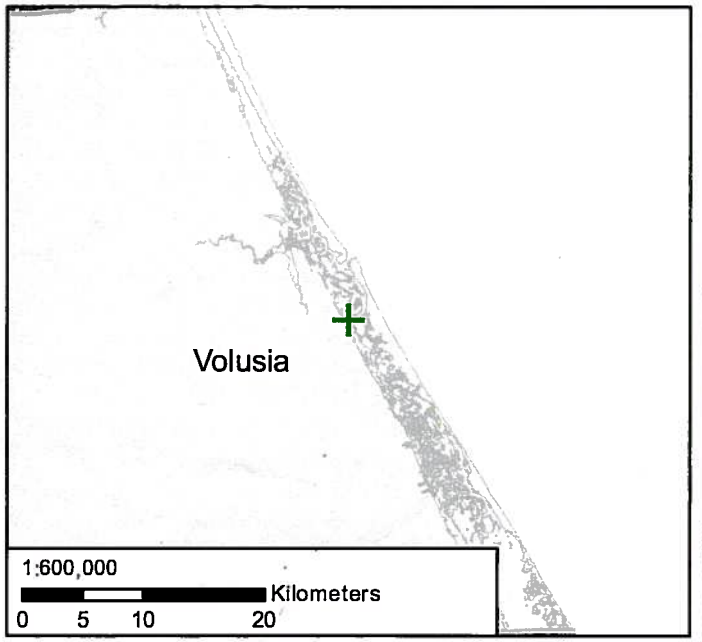


Verified Location of Manatee JZGTm1902

Rescue ID: RNE1902 **Report Date:** 6/28/2019 **Received Date:** 6/28/2019 **Received By:** Jacksonville Zoo







Locality Description:
New Smyrna Beach, Volusia
, approximately 50 m NE of 107 N Riverside Drive.

Latitude: 29.02763°N **Longitude:** -80.91946°W

Map Created: 11/2/2020

Rescue Report RNE1902

General

Date of Rescue: 25 June 2019 Date of Initial Call: 23 June 2019 Filed by: N. Gordon

Rescue ID: RNE1902 Facility ID: JZGTm1902 Other ID:

FWC Case Number: 10623, 10708 FWC Region: NE

Sex: Female Length: 254 cm Estimated: No Weight: 303 kg Estimated: No

PIT Tag Present: No PIT Tag Applied: Choose an item. R: L:

State: FL County: Volusia City: New Smyrna Beach Waterway: Indian River North

Latitude (Decimal Degrees): 29.027641° N Longitude (Decimal Degrees): -80.919460° W

Locality Description: 50 m NE of 107 N. Riverside Drive

Method of Capture or Assistance: Boat Based: Net Set (Other: _____)

Reason for Rescue

Check one of the following:

☒ Watercraft ☐ Entanglement ☐ Entrapment (Human)

☐ Cold Stress ☐ Red Tide ☐ Tidally Stranded

☐ Calf by itself ☐ Other: (Specify): _____

Watercraft

Check all that apply:

☒ Penetrating Cuts ☐ Impact ☐ Other

Describe: The manatee had six propeller wounds on the dorsal neck and head. Wounds #1 and #2 penetrated the muscle and nasal cavity. Wounds #3 and #4 penetrated into the muscle and impacted the skull.

Visual Record

	Photo - Digital	Video
Rescue Location	☐	☐
Animal Before Rescue	☒	☒
Actual Rescue	☐	☒
Animal After Rescue	☒	☐
Wounds	☒	☐
Scars	☒	☐
Gear Alone (if entangled)	☐	☐
Photographs file name	2019-06-25_FWC026_3795 through 3814	

HISTORY

Date	Narrative
23 June 2019	At 1821 hrs, FWC biologist-Amber R. Howell (ARH) received a text alert from FWC NE Dispatch-Orlando regarding a manatee with possible propeller wounds in Indian River North, New Smyrna Beach, Volusia County. FWC case number 10623 was assigned. The complainant, Elska Palmer (407-353-0645), reported the wounds were open across the nose and flesh was hanging off, and when the manatee took a breath, "it sounded bad". No photos were available as they were standing 50 yards away. It also appeared that other manatees were trying to mate with the injured manatee. ARH passed the information to ECFL staff.
24 June	At 1840 hrs, ARH received a text alert from Dispatch regarding an injured manatee with the same description as the manatee reported the previous day, approximately 7 miles north of the original reported location in Indian River North, New Smyrna Beach. FWC case number 10708 was assigned. The complainant, Candace (407-687-8923), reported the manatee was located at 101 N. Riverside Drive and described wounds to the head and neck. The face was almost unrecognizable, and the breathing didn't sound right. ARH passed the information to ECFL and NEFL staff. FWC biologist-Nadia J. Gordon (NJG) informed Volusia County Stranding Team Coordinator-Debbie Wingfield.
25 June	At 0930 hrs, Volusia County Stranding Team Member-Ashley Ambert agreed to search for the injured manatee despite no new reports. At 1140 hrs, Ashley found the manatee at the same location as the prior evening, along with two additional manatees. Photos and videos were provided to NJG and shared with FWC rescue coordinator-Andy Garrett. Once rescue team members were recruited, the boat ramp at 162 N. Causeway was planned as the meeting location. At 1530 hrs, the rescue team launched from the boat ramp and picked up the remaining Volusia County team members from a dock near the manatee's location. Two manatees were closely associated with the injured manatee in the canal. When a large amount of net was trailed behind the capture boat, one manatee was inadvertently caught in the net (INE1901). It took several minutes to free the manatee and all three manatees then left the canal. The injured manatee was located outside of the canal and was swimming along the seawall. Once it moved away from the wall, the net was set at 1626 hrs and it was captured in the first set and on board at 1629 hrs. The manatee was transported to the boat ramp and loaded into the rescue truck at approximately 1700 hrs. FWC biologist-Allison C. Perna and Jacksonville Zoo and Gardens-Ashley Nelson transported the manatee to the Jacksonville Zoo and Gardens, arriving at 1850 hrs. *(Note: On 28 June 2019, the manatee was euthanized due to the severity of watercraft injuries.)*

PARTICIPANTS

FWC NEFL: N. Gordon, A. Perna
Jacksonville Zoo and Gardens: Ashley Nelson
Volusia County Marine Mammal Stranding Team: Ashley Ambert, Trey Hannah, Danielle Ramsey, Jaymie Reneker, Nicole Weiss
Marine Discovery Center: Logan Rohrbach

Edited by:
NJG
DJS
AJG

(Rev: 06/11/2019)

PHOTOS





MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** JZGTm1902
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 10623, 10708 **FWC District:** Northeast
Sex: Female **Length (cm):** 266 **Estimated** _____ **Weight (kg)** 303
Date reported: 28 June 2019 **By:** _____
Date collected: 28 June 2019 **By:** _____
Date necropsied: 28 June 2019 **By:** Dr. Meredith Persky, N. Gordon, Matt Van der Maelen

LOCATION INFORMATION: State: **County:** Volusia **Waterway:** Indian River North
Latitude: N 29.027641 **Longitude:** W -80.919460
Locality description: New Smyrna Beach; 50 m NE of 107 N. Riverside Drive

Carcass Orientation: -

CONDITION: Fresh

PROBABLE CAUSE OF DEATH:

Human related: ☑ Watercraft Collision: Propeller; 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: 6 propeller wounds to the head, wounds #1- #4 penetrating; nares cut and when manatee was breathing air was expelled through wounds #1 and #2

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 full histo JZG
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: RNE1902 (called in evening of 23 June in ECFL region and evening of 24 June NEFL) rescued 25 June and euthanized at Jacksonville Zoo and Gardens on 28 June

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 #: **JZGTm1904**
Date of Report: 2019-Oct-21
Filed By: FWC NE Field Station

FWC Case # 18467 **FWC Region:** NE

Sex: Male **Length:** 266 **cm** **Weight:** 300.0 **kg**

DATE REPORTED: 2019-Oct-21 **By:** Jacksonville Zoo and Gardens to FWC-NJG

DATE COLLECTED: 2019-Oct-21 **By:** FWC-NJG,ACP Jacksonville Zoo and Gardens staff

DATE NECROPSIED: 2019-Oct-22 **By:** FWC-NJG,ACP,KAT Jacksonville Zoo and Gardens staff

LOCATION: **State:** FL **Latitude:** 28.97725 **N**
County: Volusia **Longitude:** -80.8903 **W**
Waterway: Indian River North
Locality description: Edgewater, approximately 380 m E of 106 Carlseon Cove.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Pneumothorax; Hemoabdomen; Blood clots; Fractured kidney(s); Wet lung(s); Bloody lung(s); Froth, fluid, mucus in airways; Bloody liver; Congested mesenteries, GI mucosa.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC NE Field Station pending distribution.

ADDITIONAL DATA:

Rescue report. Jacksonville Zoo necropsy report.

REMARKS:

PIT tag scan negative. Died on 21 Oct 2019. Died at 1824 hrs. Died in facility. See rescue report REC1909, rescued on 21 Oct 2019. Also FWC case numbers 18434, 18445, 18452, 18457, and 18462. Tunicates in GI tract. Fluid in pleural cavity.

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Necropsy Report	5 JAN 2021
Lat/Long	5 JAN 2021

Field ID #: JZGTm1904

MORPHOMETRICS:

Total length:	266 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. JZGTm1904
RECOVERY DATE 21 October 2019
GENDER Male **TL** 266 **cm WT** 300 **kg** (est)

SPECIES *T. manatus latirostris*
NECROPSY DATE 22 October 2019
CONDITION Fresh

HISTORY See Rescue Report REC1909. 21 October 2019, at 1824 hrs, the manatee expired during entry workup at the Jacksonville Zoo and Gardens Critical Care Center. At 1845 hrs, the carcass was loaded into the FWC Ezy-Lift truck via the Zoo's telehandler (forklift) and stored overnight. **22 October**, at 1007 hrs, the carcass was transported to the Zoo's necropsy room where a necropsy was completed at approximately 1230 hrs. The remains were disposed of at Buck Island in Jacksonville.

SEE ADDENDUM FOR NECROPSY REPORT BY JACKSONVILLE ZOO

PHOTOGRAPHS JZGTm1904_2019-10-22_FWC026_4842 through 4844, 4846, 4848 through 4856, 4860, 4862, 4864, 4865, 4867 through 4870, 4877, 4880 through 4882, 4884, 4885, 4887 through 4890, 4892 through 4899, 4902 through 4907, 4909, 4911, 4913 through 4916, 4918 through 4931

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wound
- Pneumothorax
- Hemoabdomen
- Blood clots
- Torn kidney
- Froth, fluid, mucus in airways
- Wet, bloody lung
- Bloody liver
- Congested mesenteries, GI mucosa
- Fluid in pleural cavity
- Tunicates in GI tract

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

DVM Yousuf Jafarey-JZG
DVM Allison Peterson-JZG
Nadia Gordon-FWC
Allison Perna-FWC
Kyanna Tamborini-FWC
Hollie Moore-JZG
Allison Liu-JZG

REPORT FILED BY Gordon / Jafarey

MARINE MAMMAL NECROPSY REPORT FORM

FIELD I.D. JZGTm1904
RECOVERY DATE 21 October 2019
GENDER Male **TL** 266 **cm WT** 300 (est) **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 22 October 2019
CONDITION Fresh

HISTORY See Rescue Report REC1909. 21 October 2019, at 1824 hrs, the manatee expired during entry workup at the Jacksonville Zoo and Gardens Critical Care Center. At 1845 hrs, the carcass was loaded into the FWC Ezy-lift truck via the Zoo's telehandler (forklift) and stored overnight. **22 October**, at 1007 hrs, the carcass was transported to the Zoo's necropsy room where a necropsy was completed at approximately 1230 hrs. The remains were disposed of at Buck Island in Jacksonville.

EXTERNAL All of the epidermis was remaining. There was a thin, green algal mat on the dorsum and a thin, brown algal mat on the dorsum of the tail paddle. There was a liner wound 45 cm x 1.3 cm (wound #1) on the caudal dorsum. There was a series of 3 small, linear, superficial wounds (#2 - #4) cranial to wound #1 diagonal from the midline to the right lateral. There was a watercraft scar series. (See wound/scar sketch.) There were droplets of blood in the nares. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a moderate amount of abdominal, mesenteric and omental fats. Areas of the small intestine mesenteries were congested. There was approximately 2.3 L of blood and clots in the abdominal cavity.

STOMACH The stomach contained 6 L of moist, well-chewed, fibrous, ingesta with tan pieces and 1 tunicate. There was a mild infection of live nematodes. The mucosa had regions of gray.

DUODENUM The duodenum contained 300 mL of wet, grainy, mucousy, dark green to black ingesta. There was a mild infection of live nematodes. The mucosa had areas of gray.

JEJUNUM & ILEUM The proximal small intestines contained black liquid. There was a mild infection of live nematodes. The mucosa was unremarkable. The mid small intestine contained wet, pasty, yellow to green ingesta. No parasites were observed. The mucosa was stained yellow. The distal intestines contained black liquid. No parasites were observed. The mucosa was unremarkable.

CECUM The cecum contained 2.4 L of moist, well-digested, fibrous, dark green to black digesta and 1 tunicate. There was a mild infection of live nematodes and trematodes. Areas of the mucosa were slightly congested, with a focal ecchymotic hemorrhage.

COLON The proximal colon contained moist, well-formed, fibrous, green feces with pieces of yellow to brown fibrous vegetation and over 26 tunicates. There was a mild infection of dead trematodes. The mucosa was slightly congested and sloughing. The distal colon contained dry, well-formed, fibrous, dark green feces. There was a mild infection of dead trematodes. The mucosa was congested and sloughing.

PANCREAS The pancreas was pink to off-white on serosal and cut surfaces.

SPLEEN The spleen was light purple on serosal surfaces and collected whole in formalin.

LIVER The liver was semi-firm. The margins were slightly rounded. The liver was purple on serosal surfaces. The capsule of the liver was unremarkable. Cut surfaces were dark brown and congested.

GALLBLADDER The gallbladder contained approximately 5 mL of yellow bile. The mucosa was stained yellow.

REPRODUCTIVE The right ductus deferens had a 1.5 cm diameter ulceration on the parietal surface. (See photo 4904.) The testes were medium in size.

KIDNEYS There was an adhered hemorrhage in the renal fossa coming from the vena cava. Right kidney pallor and cut surfaces revealed hydronephrosis. The cortices were tan and medullae were pale pink. The left kidney was dark red to purple on serosal surfaces and had two tears. On cut surfaces cortices were pale pink and medullae were dark red. The corticomedullary boundaries of the left kidney were distinct.

URINARY BLADDER The urinary bladder contained 900 mL of hemorrhagic urine. The mucosa had petechiae.

HEART There was a moderate amount of epicardial fat. The heart had clotted blood in the right and left oracle and right ventricle. The valves and muscle were unremarkable.

RESPIRATORY SYSTEM The hemidiaphragms were intact and the right was distended with air. The left hemithorax contained 700 mL of yellow fluid. The left lung was dark red on serosal surfaces. The primary airway had pulmonary congestion with a large amount of yellow fluid and froth. Cut surfaces were wet and hemorrhagic. The right lung was pale. The primary airway contained thick, mucoid secretions. Cut surfaces were pink to red.

HEAD & NECK REGIONS NVL. There were trematodes in the distal nasal passage.

SKELETON NVL

OTHER

PHOTOGRAPHS JZGTm1904_2019-10-22_FWC026_4842 through 4844, 4846, 4848 through 4856, 4860, 4862, 4864, 4865, 4867 through 4870, 4877, 4880 through 4882, 4884, 4885, 4887 through 4890, 4892 through 4899, 4902 through 4907, 4909, 4911, 4913 through 4916, 4918 through 4931

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wound
- Tension pneumothorax
- Blood and clots in abdomen
- Torn kidney
- Hemorrhagic urine
- Left hemithorax contained yellow fluid
- Primary airways with froth, fluid and mucus
- Wet, bloody lung
- Bloody liver
- Ulceration on reproductive
- Parasites
- Tunicates in GI

PROBABLE CAUSE OF DEATH Watercraft Collison: Impact; acute

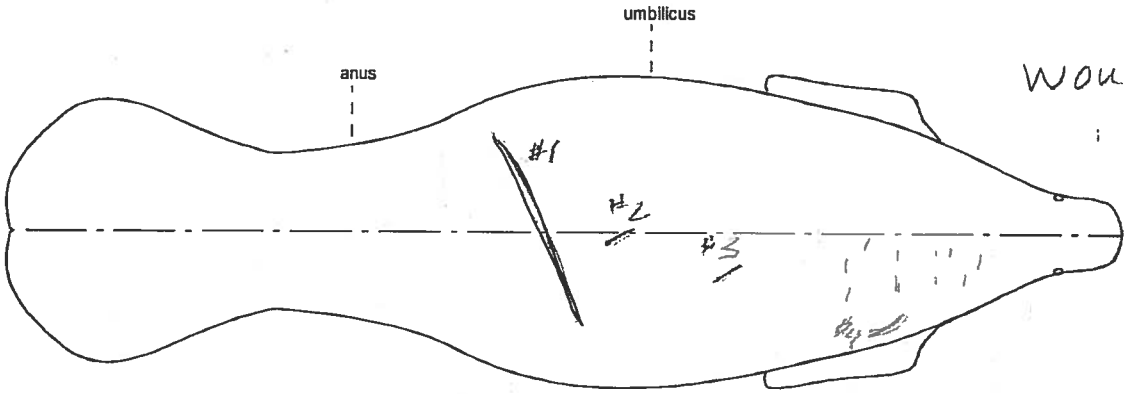
NECROPSY CONDUCTED BY

DVM Yousuf Jafarey-JZG
DVM Allison Peterson-JZG
Nadia Gordon-FWC
Allison Perna-FWC
Kyanna Tamborini-FWC
Hollie Moore-JZG
Allison Liu-JZG

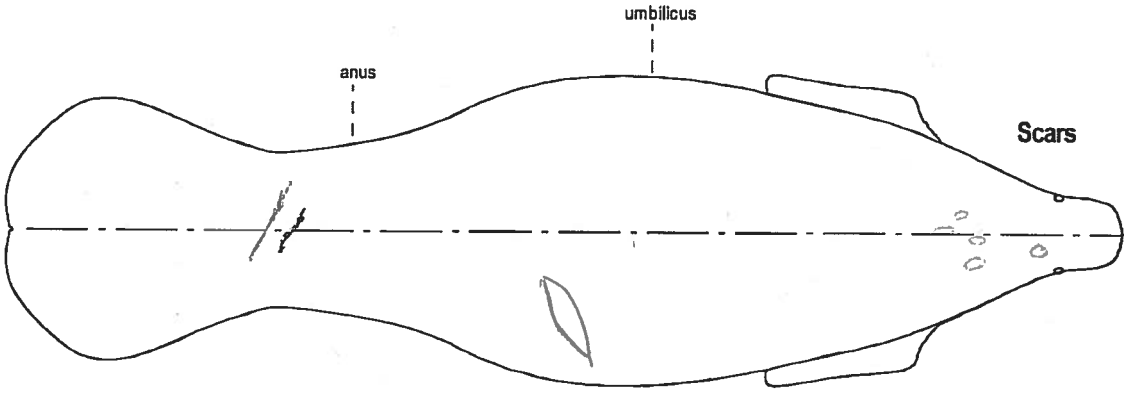
REPORT FILED BY Gordon / Jafarey

Date 22 Oct 2019 Field I.D. J2GTm1904

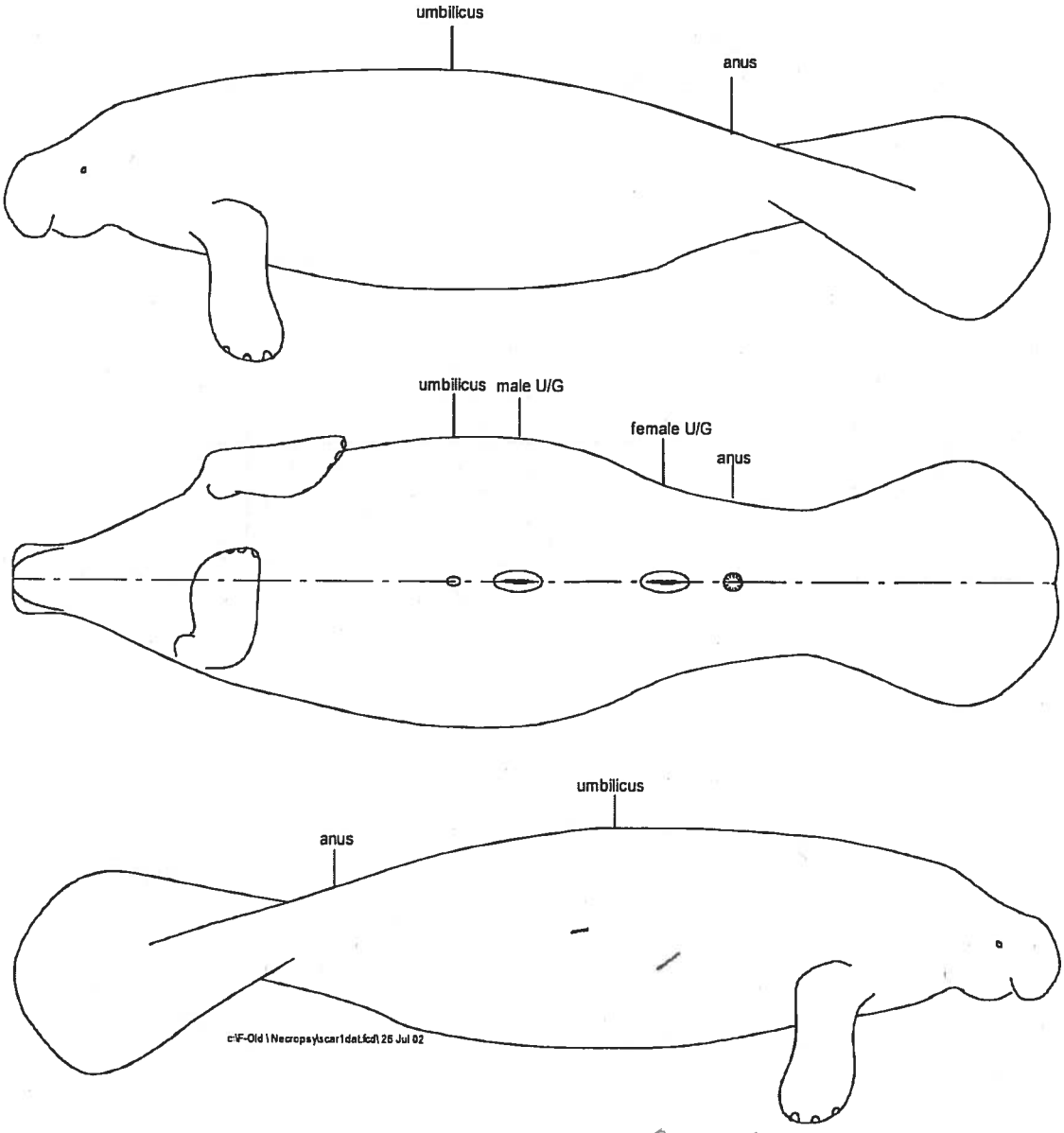
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FIELD I.D. JZGTM1904 (REC1909)

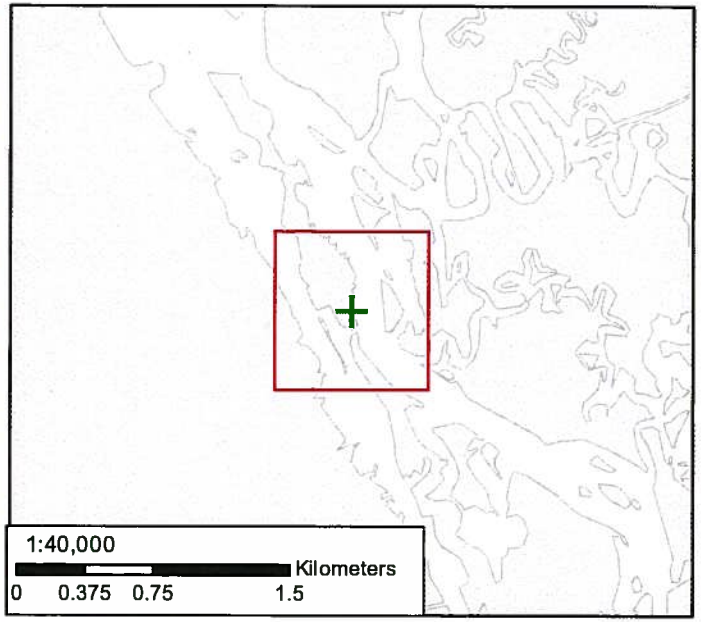


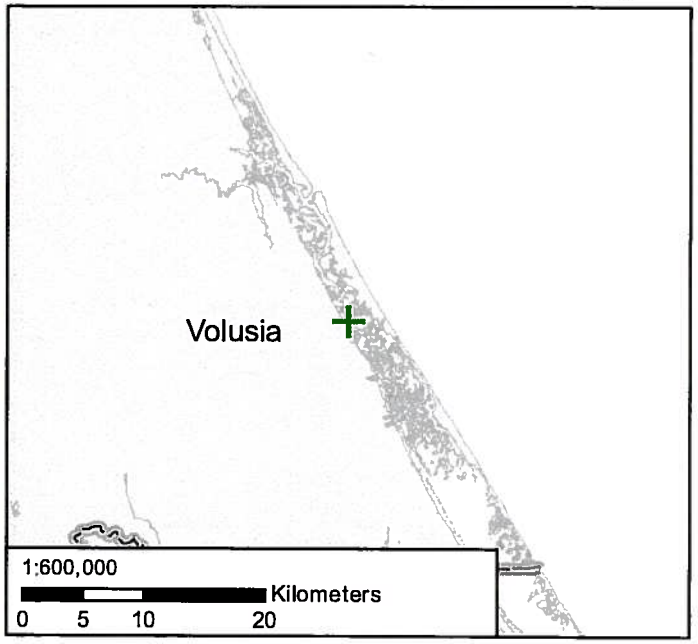
Superficial wounds

Verified Location of Manatee JZGTm1904

Rescue ID: REC1909 **Report Date:** 10/21/2019 **Received Date:** 10/21/2019 **Received By:** FWC-NJG,ACP Jacksonville Zo







Locality Description:
Edgewater, Volusia
, approximately 380 m E of 106 Carlseon Cove.

Latitude: 28.97725°N **Longitude:** -80.8903°W

Map Created: 12/28/2020

Rescue Report REC1909

-General

Date of Rescue: 21 October 2019 Date of Initial Call: 20 October 2019 Filed by: A. Burns, N. Gordon

Rescue ID: REC1909 Facility ID: JZGTm1904 Other ID:

FWC Case Number: 18434, 18445, 18452, 18457, 18462, 18467 FWC Region: NE

Sex: Male Length: 266 cm Estimated: No Weight: 300 kg Estimated: Yes

PIT Tag Present: No PIT Tag Applied: No R: L:

State: FL County: Volusia City: Edgewater Waterway: Indian River North

Latitude (Decimal Degrees): 28.977253° N Longitude (Decimal Degrees): -80.890306° W

Locality Description: 380 m E of 106 Carlson Cove

Method of Capture or Assistance: Boat Based: Net Set (Other: _____)

Reason for Rescue

Check one of the following:

☒ Watercraft ☐ Entanglement ☐ Entrapment (Human)

☐ Cold Stress ☐ Red Tide ☐ Tidally Stranded

☐ Calf by itself ☐ Other: (Specify): _____

Watercraft

Check all that apply:

☐ Penetrating Cuts ☒ Impact ☐ Other

Describe: The manatee had a superficial, linear, fresh wound across the lower dorsum and was floating right side high.

Visual Record

	Photo - Digital	Video
Rescue Location	☐	☒
Animal Before Rescue	☒	☒
Actual Rescue	☐	☒
Animal After Rescue	☒	☐
Wounds	☒	☐
Scars	☒	☐
Gear Alone (if entangled)	☐	☐
Photographs file name	2019-10-20_PUBLIC_file1-62, 2-1, 3-26, 118; 2019-10-21_NEFL_NJG_file-111; 2019-10-21_FWC_VOL_file1-40, 2-40; 2019-10-21_FWC040_GH010051, G4026051	

HISTORY

Date	Narrative
20 October 2019	At 1008 hrs, FWC biologist-Allison C. Burns (ACB) received a text alert from FWC NE Dispatch-Orlando regarding a manatee that could not submerge in Indian River North, New Smyrna Beach, Volusia County. FWC case number 18434 was assigned. The complainant, Sherman Clark (407-222-8988), reported that he had originally seen the manatee the day before, 19 October, near 101 North Riverside Drive and was now observing it in an inlet on the west side of the river between markers 20 and 21 with its back out of the water, breathing every five minutes, swimming slowly, but avoiding boats. At 1135 hrs, Sherman sent photos verifying a positively buoyant manatee with a white linear wound on its lower dorsum. ACB contacted Volusia County Marine Mammal Stranding Team (VCMMST) member-Debbie Wright (DW) and Ponce Inlet Water Sports tour boat operator-Danielle Weigel, who was available and said she would search the area for the manatee. At 1202 hrs, Sherman contacted ACB to inform her he had lost sight of the manatee, but it was last seen heading south towards the Flagler Ave drawbridge. At 1310 hrs, ACB received another text alert from Dispatch regarding the same manatee in Indian River North near channel marker 34. FWC case number 18445 was assigned. The complainant, Cassie Robertson (407-341-2026), said the manatee had a fresh white mark on its back and was floating, mostly using its flippers to move. He did not have photos but ACB sent him a photo from the earlier complainant and he verified that it looked like the same mark. At 1323 hrs, ACB updated DW with the manatee's location so she could let Danielle know. At 1437 hrs, ACB received another text alert from Dispatch regarding the same manatee in Indian River North, near 111 North Riverside Drive. FWC case number 18452 was assigned. The complainant, Mike (321-508-2116), said the manatee was unable to submerge but its head came up every couple of minutes to take a breath. At 1443 hrs, Danielle called ACB saying she had found the manatee in a canal at 101 North Riverside Drive. She described it as right side high with a foot and a half-long mark on its lower mid-section and taking eight breaths in five minutes. At 1444 hrs, Mike sent short video clips and photos of the manatee on its side and stated there was a boater doing observations near it (Danielle). Danielle sent close up photos and a video to ACB at 1454 hrs and said there were people on a sailboat near the canal that agreed to keep their eyes on it as long as it was in the area and notify her if it left the canal. At 1500 hrs, NJG received a text from a citizen, Sharon Dockery (407-247-7835), showing a manatee sideways in the water. NJG asked for her location and stated several reports had been received and a rescue was being organized for the following day. At 1503 hrs, ACB received a call from Dispatch, Sharon who was again reporting the injured manatee. FWC case number 18457 was assigned. At 1600 hrs, Danielle called ACB to notify her that the sail boaters had called to let her know the manatee was moving east towards Chicken Island. At 1607 hrs, ACB received another text alert from Dispatch regarding the same manatee in Indian

	River North near channel marker 39. FWC case numbers 18462 was assigned. The complainant, Daniel (407-712-3934), sent photos and video of the manatee and ACB let him know that a rescue was planned for the next day. At 1658 hrs, ACB received another text alert regarding the same manatee in Indian River North. FWC case number 18467 was assigned. The complainant, Bob Gatchel (407-797-9851), said the manatee couldn't submerge and had a white line on its back. ACB contacted DW and verified she would go out first thing the next day to search by boat for the manatee.
21 October	At 0912 hrs, DW notified ACB that she was on water and searching with VCMMST member-Trey Hannah (TH). NJG contacted FWC biologist-Bill Greer (WDG) for staff rescue assistance. At 1051 hrs, the manatee was found in the canal at 101 North Riverside Drive but was heading south. DW stayed with it as it crossed over into Edgewater. The rescue teams met at the boat ramp at 1335 hrs, launched the NEFL rescue boat at 1353 hrs, and met DW and TH who were with the manatee. The net was set at 1420 hrs and the manatee was on board at 1425 hrs. It was transported to the boat ramp, loaded into the rescue truck, and transported to the Jacksonville Zoo and Gardens, arriving at 1725 hrs. The manatee expired at 1824 hrs.

PARTICIPANTS

FWC NEFL: Nadia Gordon, Allison Burns
FWC ECFL: Bill Greer, Sara Wappes
FWC Volunteer: Debbie LaForce, Jenny Saxby
Volusia County Marine Mammal Stranding Team: Debbie Wright, Trey Hannah
Jacksonville Zoo and Gardens: Rodney Young

Edited by:
NJG
DJS
AJG

(Rev: 06/11/2019)

PHOTOS









MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** JZGTm1904
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 18434, 18445 **FWC District**: Northeast
Sex: Male **Length (cm)**: 266 **Estimated** _____ **Weight (kg)** 300 (est.)
Date reported: 21 Oct. 2019 **By**: Died at JZG rehab center shortly after arrival
Date collected: 21 Oct. 2019 **By**: N. Gordon, A. Perna, C. Miller, JZG vet staff
Date necropsied: 22 Oct. 2019 **By**: DVM Y. Jafarey, DVM A. Peterson, Gordon, Burns, Tamborini

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Indian River North
Latitude: N 28.977253 **Longitude**: W -80.890306
Locality description: Edgewater; 380 m E of 106 Carlson Cove

Carcass Orientation: -

CONDITION: Fresh

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: pneumothorax and torn kidney, blood and blood clots in bladder

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

MTLS COLLECTED:
☑ Genetics ☐ Earbone ☐ Skull ☐ Partial Skeleton ☐ Complete Skeleton ☑ Histology ☐ Other Histo by JZG

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: Rescue REC1909, which died during entry workup at rehab facility

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 #: **MEC19027**
Date of Report: 2019-Mar-06
Filed By: FWC MMPL

FWC Case # 3450 **FWC Region:** NE

Sex: Male **Length:** 331 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-06 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-08 **By:** FWC-SMW,LRB,WDG

DATE NECROPSIED: 2019-Mar-12 **By:** MMPL-MdW,BLB,ALP,GLL,SMT,BDB

LOCATION: **State:** FL **Latitude:** 28.55375 **N**
County: Brevard **Longitude:** -80.79454 **W**
Waterway: Indian River
Locality description: Titusville, grounded approximately 150 m N of 4951 S Washington Avenue.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Chronic; Emaciated; Depleted fat(s); Serous fat(s); Torn lung(s); Torn hemidiaphragm(s); Torn kidney capsule (s); Torn parietal pleura; Fractured kidney(s); Wet lung(s); Dark line kidney(s); Torn muscle; Hemorrhagic muscle; Necrotic tissue; Necrotic watercraft wounds leaking brown fluid; Chronically fractured ribs, vertebrae; Collapsed, wrinkled lung coated with necrotic and mud material; Mud and blood clots in right pleural cavity; Bloody fluid in left pleural cavity; Lung scar; Mucus, fluid in airways; Enlarged heart, liver; Relatively empty, gas distended, fluid-filled GI tract; Sand in duodenum; Dark brown ascites; Congested mesenteries, peritoneum, abdominal fat, GI-, urinary bladder-, airway mucosa, lung serosa; Petechiae small intestine mesentery; Thickened, hemorrhagic periosteum; Specks parietal pleura.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Healing wound, Sunken head, Distension).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Sighting history.

REMARKS:

PIT tag scan negative. Bleached epidermis; Cobblestone-like epidermis; Macroalgae in GI tract. Known as MIPS ID RB440, "Keyhole II", sighted on 31 Jan 1986 at the Riviera Beach Power Plant.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19027

MORPHOMETRICS:

Total length:	331 cm	**Fluke base:**	107 cm	**Girth at axillae:**	**cm**
Snout to anus:	207 cm	**Fluke width:**	85 cm		
Snout to U/G:	133 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	115 cm	**Girth at anus:**	cm		
Flipper width:	21 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:

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. MEC19027
RECOVERY DATE 08 March 2019
GENDER Male **TL** 331 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 12 March 2019
CONDITION Moderately Decomposed

HISTORY 06 March 2019, at 1618 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a manatee or dolphin possibly in distress near 4747 S Washington Avenue, in the Indian River, Titusville, Brevard County. FWC case number 3450 was assigned. The complainant, Ron Rousey (321-412-6173), stated that the manatee was swimming at the top of the water, was large, and was breathing every 10 minutes. The complainant was too far away to see if the manatee had wounds or scars and never saw the manatee attempt to submerge. Due to the complainant description, SMW determined the manatee was surface resting. **07 March**, at 1411 hours, SMW received a call from Kennedy Point Marina staff regarding a dead manatee near Kennedy Point Park in the Indian River, Titusville. Bruce (321-383-0280) stated that the manatee was large, appeared to be dorsum-up, and that a friend of his had reported the same manatee the day before. SMW received photo confirmation at 1415 hrs. Due to high winds, FWC LE assistance was unavailable. The complainant stated that he would check back in the morning to make sure it was still there and attempt to get better photos. **08 March**, at 0900 hrs, Bruce informed SMW that the manatee was still in the area. SMW and FWC biologists-William D. Greer and Lucy R. Bukowski arrived at Kennedy Point Park at 1020 hrs, loaded the carcass via trailer by 1045 hrs, and transported it to the MMPL arriving at 1400 hrs.

EXTERNAL All of the epidermis was present. Bloody fluid exuded from the nares. The carcass had a peanut-shaped head and the outline of the skull was visible. The carcass was dorsoventrally flattened due to emaciation. The caudal right ventrum was concave and the cranial ventral aspect was slightly swollen. There was a healing watercraft wound series on the caudal right dorsum. The series consisted of four parallel cuts (wounds #1-4) that were at a roughly 110-degree angle to a linear wound (#5). Wounds #3 and 5 penetrated into the dermis, and wounds #1, 2, and 4 were superficial. There were two large wide linear wounds (#6 and 7) caudal and at an approximately 45-degree angle to wound #5. Necrotic tissue was associated with wounds #5-7. Brown fluid exuded from wound #6. There were two smaller necrotic oval-shaped wounds on the caudal right lateral aspect ventral to wound #5. There was one smaller irregular-shaped wound on the cranial right peduncle caudal to wound #7. The caudal right dorsum was sunken associated with the wounds. The epidermis was slightly bleached on the face. The epidermis was cobblestone-like and coated with a moderate green algal mat on the dorsal and lateral aspects. There was a moderate infestation of large barnacles. There was a minimum of eight well-healed watercraft-related scar patterns on the dorsal aspect. The fluke margin had a large distinct well-healed mutilation at the 4 o'clock position, well-healed mutilations at the 5 and 8 o'clock positions, and several small well-healed mutilations between the 6 and 8 o'clock positions. The caudal fluke had a hole with well-healed margins near the 6 o'clock position. The cranial ventral right fluke had a deep well-healed linear cut. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, mesenteric and omental fat. The peritoneum and abdominal fat had patches of moderate congestion. The abdominal fat also had numerous dark grey specks. The abdomen contained 1.5 L of watery, cloudy, dark brown fluid.

STOMACH The stomach was severely distended with gas and contained 250 mL of flocculent tan fluid. The wall was coated with a scant amount of tan mucus. The mucosa was autolyzed. The wall had regions of purple leopard spots. No parasites were observed.

DUODENUM The duodenum was severely distended with gas and contained 2 L of flocculent tan fluid. The mucosa was autolyzed. A large region of the wall was severely congested and dark purple. The wall was otherwise tan and coated with white sand. No parasites were observed.

JEJUNUM & ILEUM The mesentery had patches of moderate congestion and petechiae. The small intestine contained an abundant amount of watery, dark orange, dark green, and light yellow fluid mixed with a small amount of orange mangrove pieces and poorly chewed green leaves. The mucosa had patches of severe congestion. No parasites were grossly observed.

CECUM The cecum contained 1 L of watery, cloudy, dark orange fluid mixed with a few pieces of poorly digested, orange macroalgae and dark green leaves. The mucosa was sloughing. No parasites were observed.

COLON The mesentery had patches of moderate congestion. Portions of the colon were distended with gas. The distal colon contained a moderate amount of moist, slightly fibrous, well-formed, well-digested, dark green feces. An ELISA toxicology sample was collected. The mid colon contained a moderate amount of moist, fibrous, leafy, poorly formed, moderately digested, dark green feces. The proximal colon contained a scant amount of poorly digested pieces of orange macroalgae and dark green leaves. The proximal-most one meter was severely distended with gas and contained a moderate amount of dark orange fluid. The mucosa was sloughing throughout. There was a scant infection of dead trematodes in the proximal colon.

PANCREAS The pancreas was firm, surrounded by serous light red tissue, and was tan on serosal and cut surfaces.

SPLEEN The spleen was firm. The serosal surfaces were mottled white and black and the cut surfaces were dark red.

LIVER The liver was firm, enlarged, and heavy. The margins were rounded. The serosal surfaces were dark blue to purple and the cut surfaces were brown to dark brown and had a nutmeg-like appearance. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 150 mL of viscous, opaque, golden yellow bile. The mucosa was bile-stained.

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

KIDNEYS There was a small amount of serous perirenal fat. The caudal tip of the right kidney capsule was torn (9.0 x 3.5 cm). The tear had rounded margins. There was an old fracture on the caudal ventral aspect of the right kidney which had irregular, rounded margins. The kidneys were brown, grey, and dark pink on serosal surfaces. On cut surfaces, the cortices were pink and the medullae were dark pink to purple. There was a dark purple line at most of the corticomedullary boundaries which were mostly distinct.

URINARY BLADDER The bladder contained 3 mL of cloudy, light yellow urine. The mucosa was slightly congested. An ELISA toxicology sample was collected.

HEART There was a small amount of serous epicardial fat. The heart was enlarged. The right ventricle was distended, and the left ventricle appeared slightly distended. The ventricular wall thickness was normal. Valves were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was intact. The right hemidiaphragm was torn at the

transition with the right kidney capsule. The left pleural cavity contained 125 mL of watery dark red fluid. The parietal pleura had gelatinous black and pink specks. The left lung was light pink to tan on serosal surfaces, and light red and wet on cut surfaces. The airways contained a moderate amount of gelatinous dark red mucus. The mucosa was tan. No parasites were observed. The right pleural cavity contained 250 mL of watery, brown mud-like material. The parietal pleura and the serosal surfaces of the right lung were coated with brown mud-like material and necrotic yellow to brown material. There were old well-formed blood clots in the caudal aspect of the pleural cavity and adhered to the parietal pleura associated with chronically fractured ribs. The right lung was collapsed and wrinkled. The lung pleura was thickened, necrotic, tan, and contracted the lung. The medial aspect of the distal one-third of the right lung had an indented curved scar with curled margins. The dorsal caudal tip had a few strongly adhered well-formed blood clots associated with a resolving tear. The serosal surfaces were severely congested and mottled red, dark red, and dark pink, and the cut surfaces were red to dark red and slightly wet. The airways contained a moderate amount of watery dark red fluid. The mucosa was severely congested and dark red. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a scant amount of white froth in the trachea.

SKELETON Right rib 14 had a closed comminuted transverse fracture at mid-shaft. The periosteum surrounding the fracture was thickened and hemorrhagic. Right rib 15 had a comminuted oblique fracture at mid-shaft that perforated the parietal pleura and was associated with wound #6 leaking brown fluid. Right ribs 16 and 17 had oblique comminuted fractures at the proximal one-third that perforated the parietal pleura. The fracture of right rib 16 also perforated the right hemidiaphragm, kidney capsule, and kidney. The right transverse processes of L1 and L2 were fractured at the body. Torn, hemorrhagic, and necrotic muscle surrounded all fractures. The fracture margins were rounded. There was a large pocket of necrotic tissue dorsal to the fractured ribs which extended caudally over L1-L3 and Ca1 and connected to open wound #6. There was also a drainage canal to wound #5.

OTHER The caudal right muscle and peduncle muscle had patches of slightly dry, light pink to tan discolored muscle deep to the chronic wounds.

PHOTOGRAPHS 2019-03-09_FWC022_5985 through 6002, 6004 through 6007, 6023, 6024; 2019-03-12_FWC022_6074 through 6079, 6106 through 6116, 6118, 6119, 6121 through 6135, 6137 through 6139, 6141.

COMMENTS

SIGNIFICANT FINDINGS

- Necrotic watercraft wounds leaking brown fluid
- Emaciated
- Depleted, serous fat
- Chronically fractured ribs, vertebrae
- Torn, hemorrhagic, necrotic tissue
- Thickened, hemorrhagic periosteum
- Collapsed, wrinkled lung coated with necrotic and mud material
- Mud and blood clots in right pleural cavity
- Bloody fluid in left pleural cavity
- Torn lung, hemidiaphragm, kidney capsule, kidney, parietal pleura
- Lung scar
- Wet lungs
- Mucus, fluid in airways
- Enlarged heart, liver

- Relatively empty, gas distended, fluid-filled GI tract
- Dark brown ascites
- Congested mesenteries, peritoneum, abdominal fat, GI-, bladder-, airway mucosa, lung serosa
- Petechiae small intestine mesentery
- Dark line kidneys
- Macroalgae in GI tract
- Sand in duodenum
- Bleached, cobblestone-like epidermis
- Specks parietal pleura

PROBABLE CAUSE OF DEATH Watercraft (Chronic)

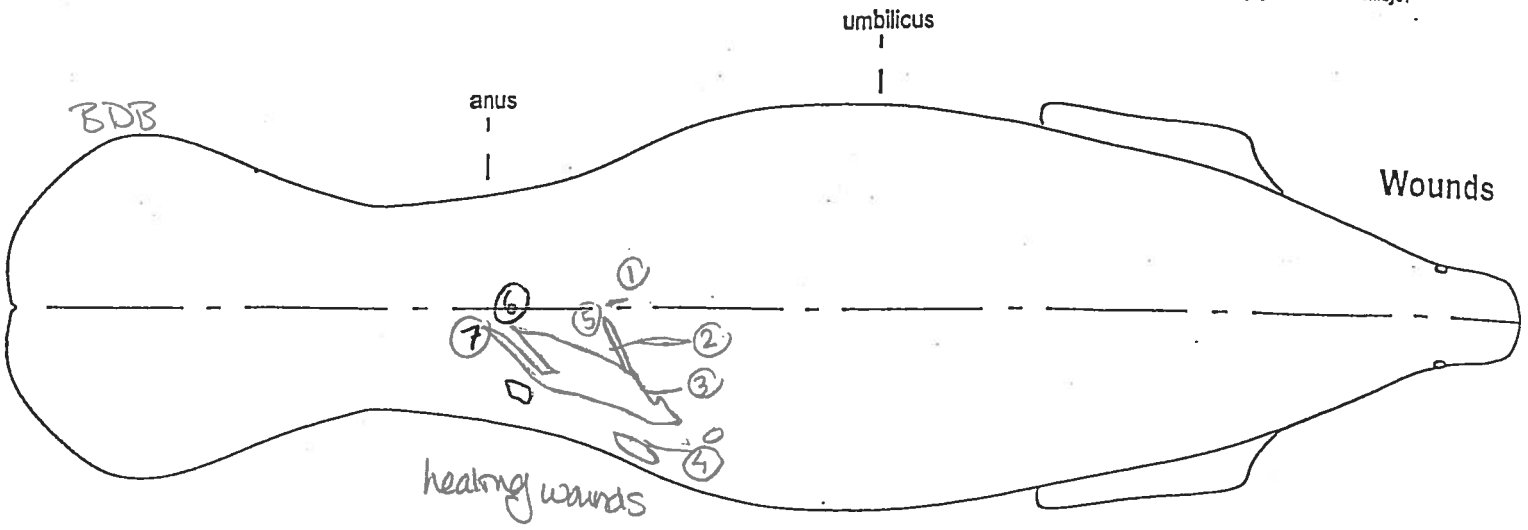
NECROPSY CONDUCTED BY

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

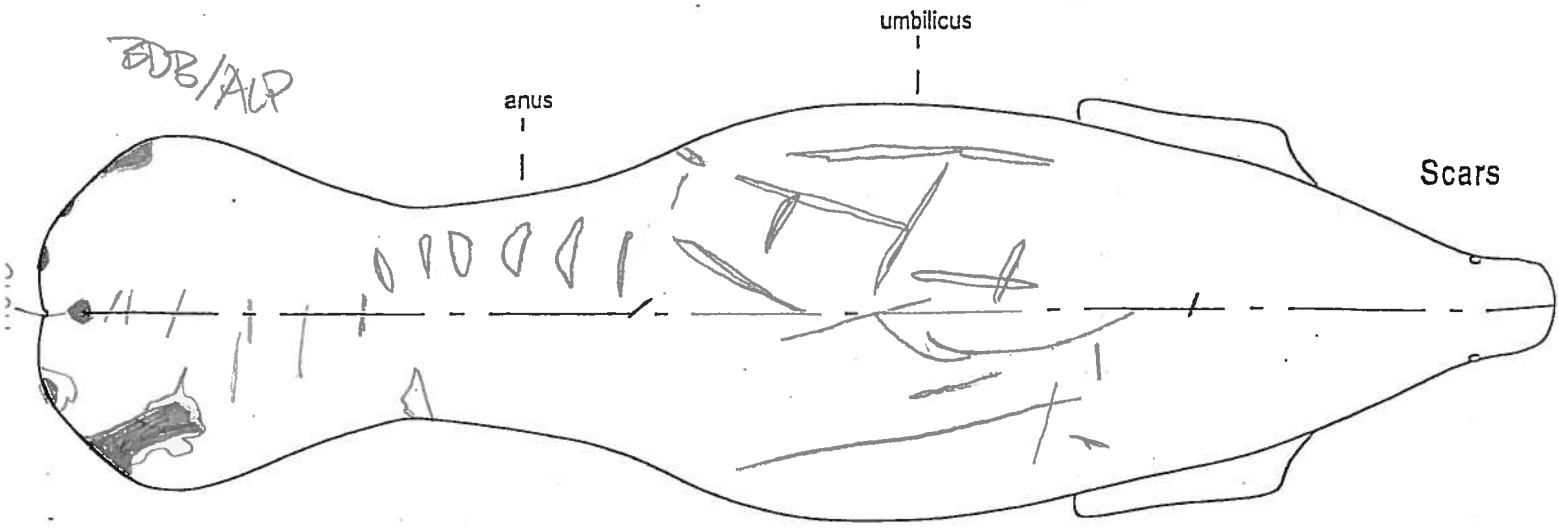
REPORT FILED BY de Wit

Date 09 MAR 2019 Field I.D. MEC19027

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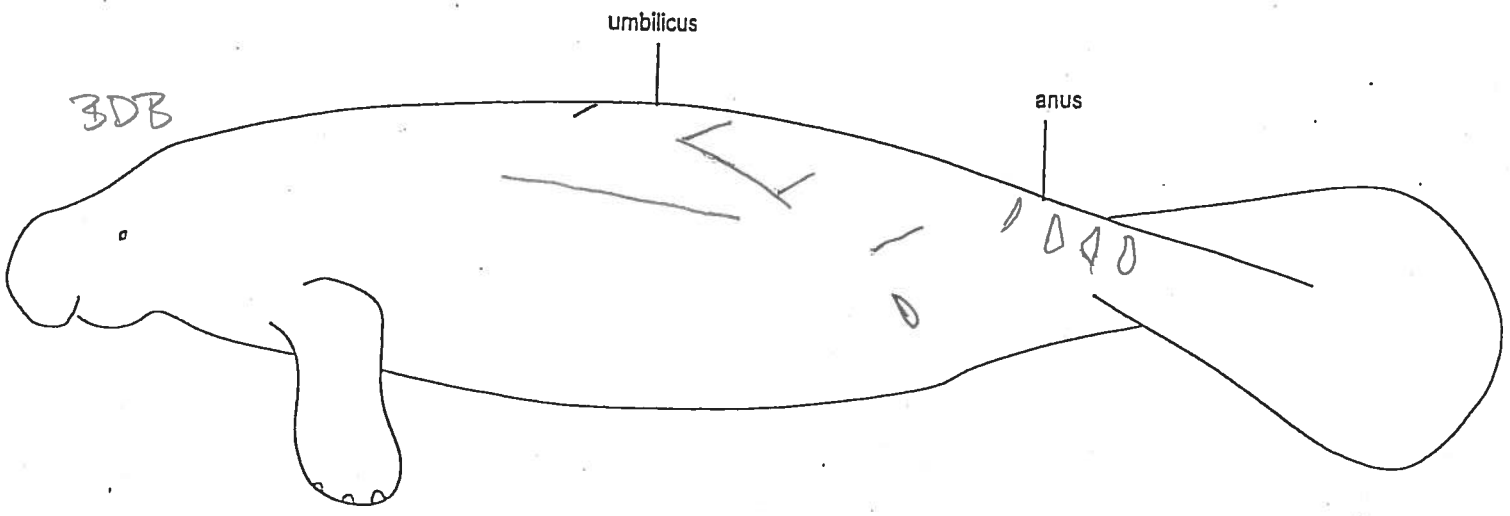


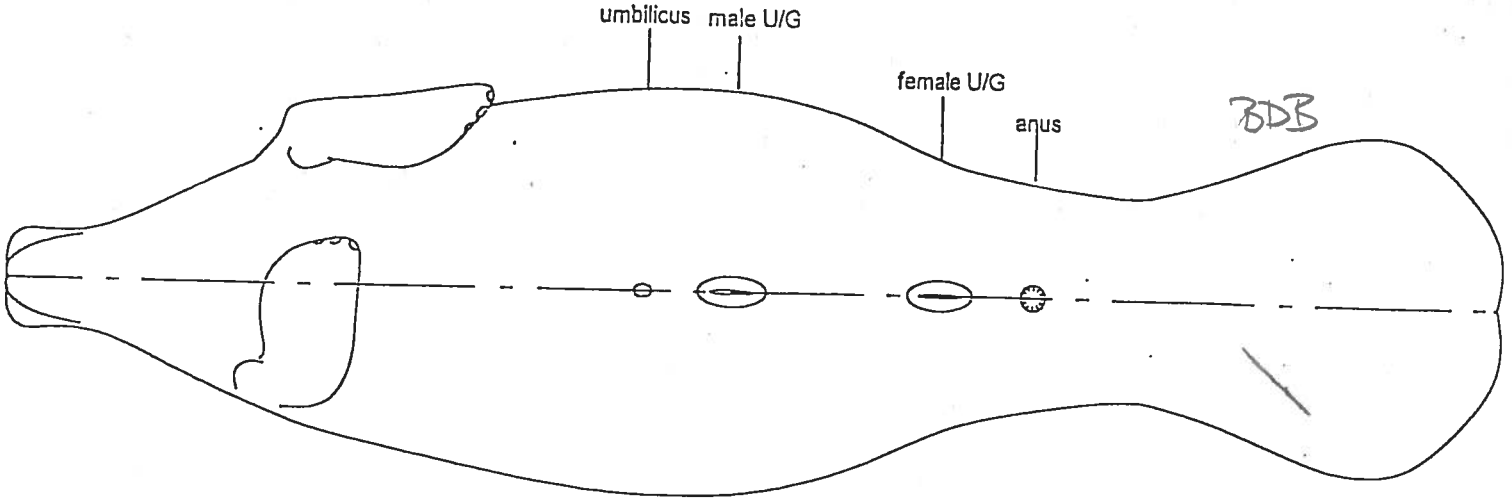
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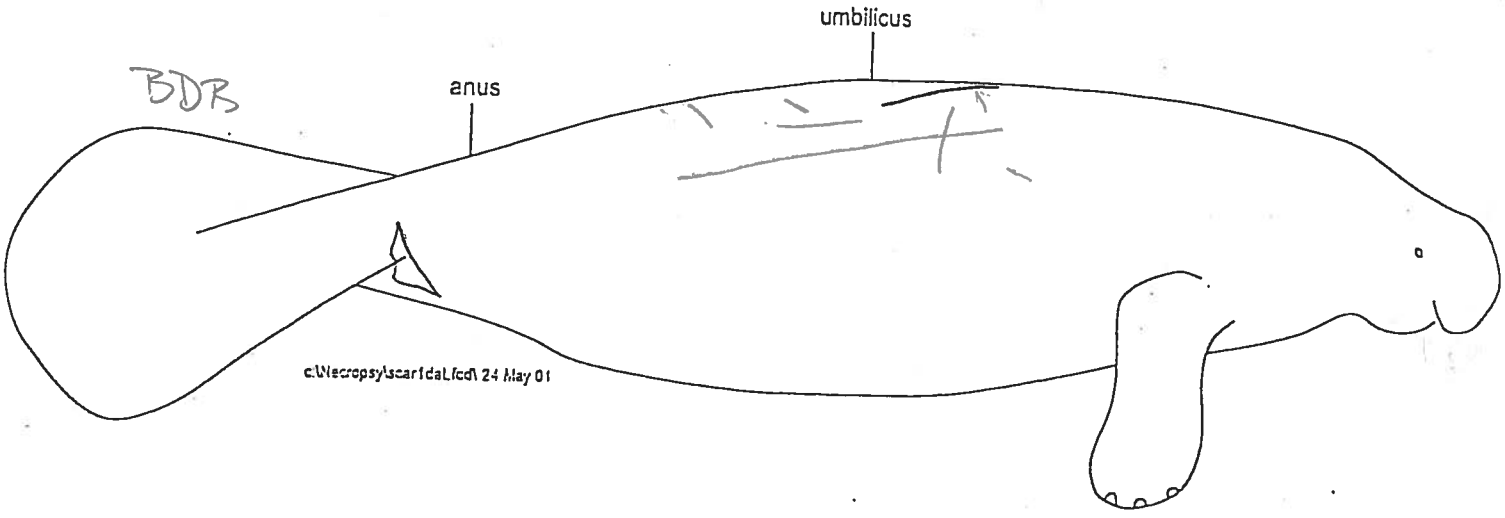


OVER →

FIELD I.D. MEC19027



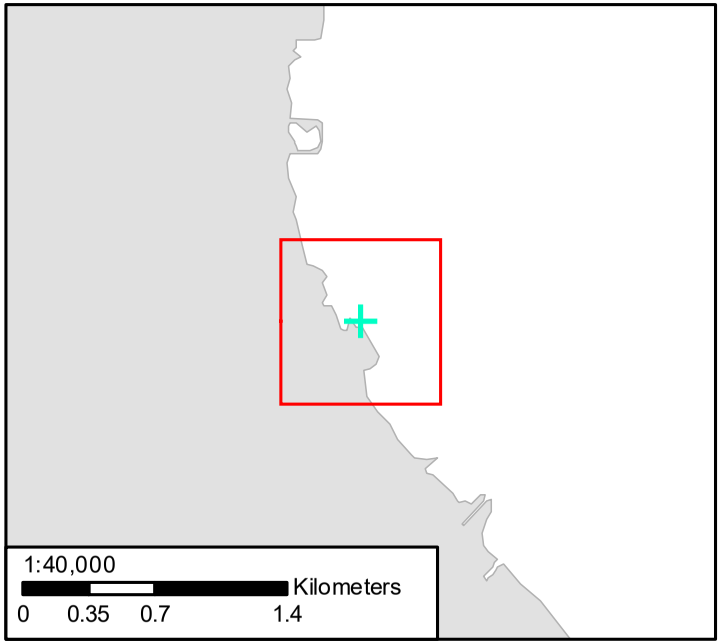


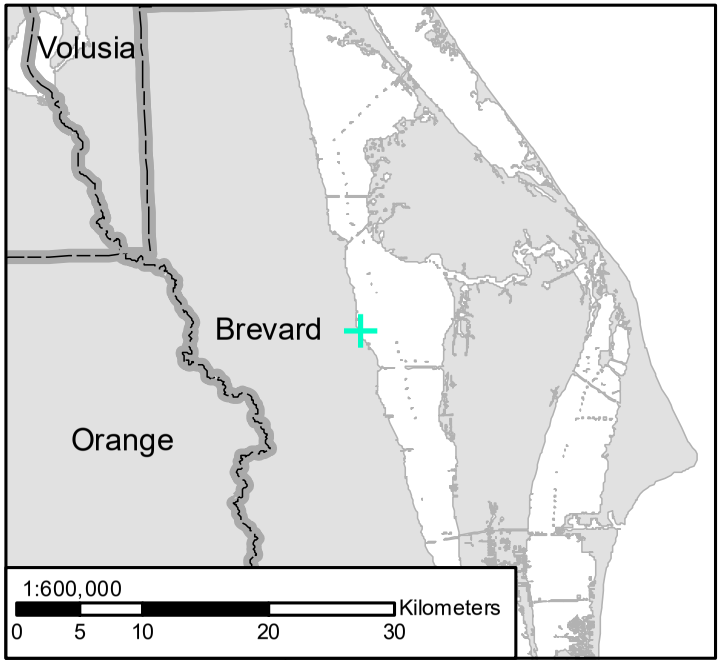


Verified Recovery Location of Manatee Carcass MEC19027

Report Date: 3/6/2019 **Received Date:** 3/8/2019 **Received By:** FWC-SMW,LRB,WDC Map Created: 10/13/2020







Locality Description:
Titusville, Brevard
Grounded, approximately 150 m N of 4951 S Washington Avenue.

Latitude: 28.55375°N **Longitude:** -80.79454°W

Bassett, Brandon

From: Rood, Kari
Sent: Monday, March 18, 2019 1:59 PM
To: Howell, Amber; Lonati, Gina; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Beard, Shelby; Boyd, Denise; Bukowski, Lucy; Coulter, Briana; Deutsch, Chip; deWit, Martine; Edwards, Holly; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Levine, Daniel; Martz, Meg; Panike, Anna; Perna, Allison; Schubert, Molly; sheri@mote.org; Szemer, Donna; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC19027=RB440!

MEC19027=RB440. This animal is also known as Keyhole II

Carcass location: Indian River, Titusville
Carcass gender: Male

Only one sighting (and one image!) by USGS. 1/31/1986 at the Riviera Beach Power Plant.

Verifiers: KAH, HONAKER, & ALT – 3/18/19

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 #** MEC19027
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3450 FWC District: NE
Sex: M / F / Undetermined Length: 331 cm (estimated _____) Weight N|T kg.
Date reported: 06 Mar 2019 By: Citizen to FWC Dispatch-Orlando
Date collected: 08 Mar 2019 By: FWC-WDG, SMW, 1 RB
Date necropsied: 12 Mar 19 By: MMPL MdW BLB ALP GLL JMT BDB

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

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 healing wound, sunken head, distention
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 (dist colon)
Genetics Box # 91
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

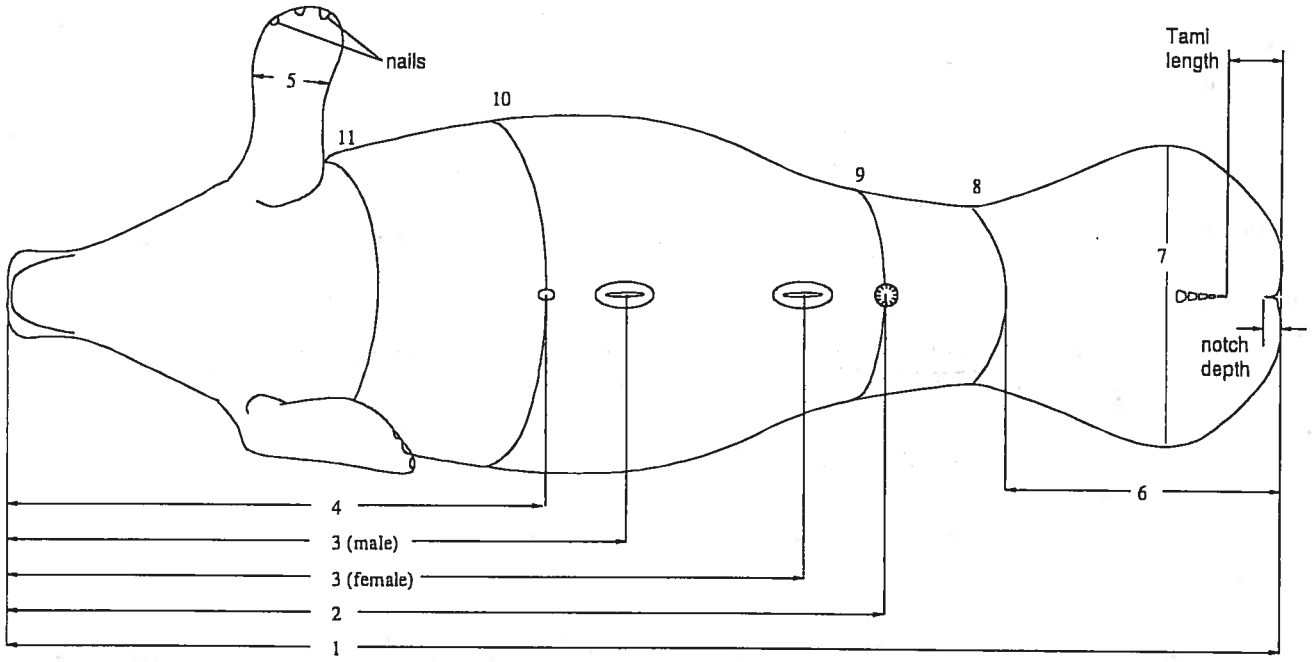
REMARKS: Bloody fluid + foam existing from nares

Field ID # MEC 19027

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.

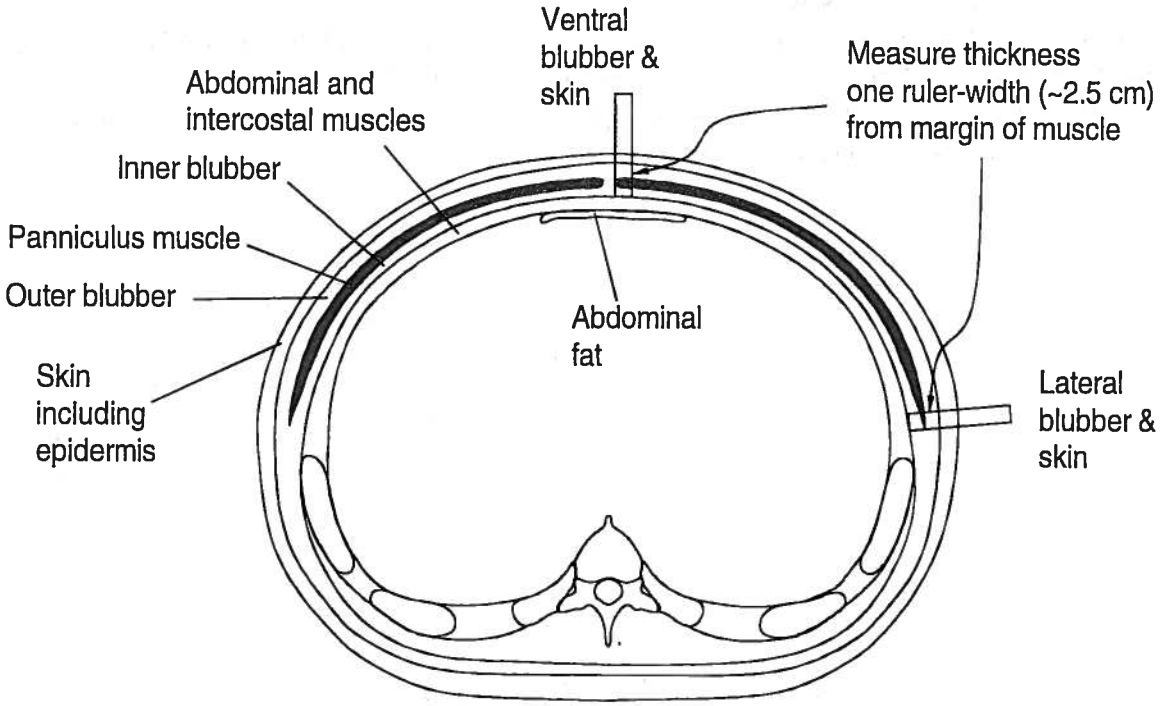
1. Total length 331 cm
2. Snout to anus -C 207 cm
3. Snout to U/G -C 133 cm
4. Snout to umbilicus -C 115 cm
5. Flipper width 21 cm
6. Fluke base 107 cm
7. Fluke width 85 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm

(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 #** MEC19027
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3450 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 06 March 2019 **By**: FWC NE Dispatch-Orlando to FWC-SMW
Date collected: 08 March 2019 **By**: FWC-SMW, LRB, WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, 150 m N of 4951 S Washington 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 #: **MEC19028**
Date of Report: 2019-Mar-08
Filed By: FWC EC Field Station

FWC Case # 3511 **FWC Region:** NE

Sex: Male **Length:** 314 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-08 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-08 **By:** FWC-LRB,WDG

DATE NECROPSIED: 2019-Mar-08 **By:** FWC-LRB,WDG

LOCATION: **State:** FL **Latitude:** 28.75508 **N**
County: Brevard **Longitude:** -80.84076 **W**
Waterway: Indian River
Locality description: Scottsmoor, grounded approximately 1.87 km SSE of Scottsmoor Landing.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Other

EXPLAIN: Bleached epidermis; Bloody lung(s); Wet lung(s); Congested abdominal fat, peritoneum, colon serosa, mesenteries, urinary bladder mucosa; Small amount of macroalgae in stomach; Bloody liver; Foam, fluid, mucus in airways. Necropsy findings did not point to a specific cause of death.

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. Known as MIPS ID BS275, first sighted on 23 Nov 2000 at Blue Spring State Park. Right kidney larger than left.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19028

MORPHOMETRICS:

Total length:	314 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. MEC19028
RECOVERY DATE 08 March 2019
GENDER Male **TL** 314 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 08 March 2019
CONDITION Moderately Decomposed

HISTORY 08 March 2019, at 1005 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near Scottsmoor Landing in the Indian River, Mims, Brevard County. FWC case number 3511 was assigned. The complainant, Doug Futch (321-704-0244), stated the manatee was belly-up and floating directly in front of the entrance to Flounder Creek. No photos were available at the time. At 1140 hrs, FWC biologists-William D. Greer (WDG) and Lucy R. Bukowski (LRB) arrived at the reported location. LRB launched a kayak at 1142 hrs and located the carcass by 1155 hrs. Due to the size and location of the carcass, a field necropsy was completed by 1420 hrs. The remains were left on site.

EXTERNAL All of the epidermis was present. A moderate brown algal mat was present on the lateral aspects. Bleached spots were observed in the dorsal epidermis. A minimum of eight well-healed watercraft-related scar patterns was observed on the dorsal aspect. There were three well-healed mutilations between the 4 and 7 o'clock positions of the fluke and one well-healed mutilation at the 1 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, omental, and mesenteric fat. The peritoneum and abdominal fat were mildly congested. The mesenteries were moderately congested.

STOMACH The stomach contained 14.25 L of moist, moderately chewed, fibrous, dark green to brown ingesta mixed with a small amount of red macroalgae (see photo). The contents were coated in a thick layer of viscous white mucus. There was a moderate infection of live nematodes. The mucosa was pink to tan (see photo).

DUODENUM The duodenum contained 4.5 L of wet, moderately chewed, fibrous, dark green to brown ingesta (see photo). There was a mild infection of live nematodes. The mucosa was unremarkable.

JEJUNUM & ILEUM The small intestine contained wet, fibrous, moderately chewed, dark green to brown ingesta. No parasites were grossly observed. The mucosa was unremarkable.

CECUM The cecum contained 3.25 L of wet, fibrous, poorly digested, green to brown digesta (see photo). No parasites were observed. The mucosa was sloughing.

COLON The colon serosa had patches of moderate congestion. The proximal colon contained wet, fibrous, poorly formed, green to brown feces. There was a moderate infection of dead trematodes. The mid- and distal colon contained moist, fibrous, well-formed, well-digested, green to brown feces. No parasites were observed in the mid colon. There was a mild infection of dead trematodes in the distal colon. The mucosa was sloughing.

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

SPLEEN The spleen was 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 to purple and cut surfaces were dark red and bloody (see photo).

GALLBLADDER The gallbladder contained a scant amount of golden yellow bile. The mucosa was bile-stained

REPRODUCTIVE The reproductive organs were not examined.

KIDNEYS There was scant perirenal fat. The left kidney was approximately twice the size of the right kidney (see photo). The kidneys were tan to pink on serosal surfaces. On cut surfaces, the cortices were light pink and the medullae were dark red. The corticomedullary boundaries were distinct.

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

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were gassy. Serosal surfaces were light gray and cut surfaces were red, bloody, and wet (see photo). The primary airways contained a moderate amount of foamy, white to tan fluid and an abundant amount of bloody mucus (see photo).

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-03-09_FWC025_7902 through 7943.

COMMENTS Necropsy findings did not point to a specific cause of death.
Due to the size and location of the carcass, the necropsy was performed in open water, and the body cavity filled with water almost immediately. The reproductive organs could not be accessed safely.

SIGNIFICANT FINDINGS

- Bleached epidermis
- Wet, bloody lungs
- Mucus, fluid, foam in airways
- Bloody liver
- Congested mesenteries, colon serosa, peritoneum, abdominal fat, urinary bladder mucosa
- Small amount of macroalgae in stomach
- Right kidney larger than left

PROBABLE CAUSE OF DEATH Undetermined; Other

NECROPSY CONDUCTED BY

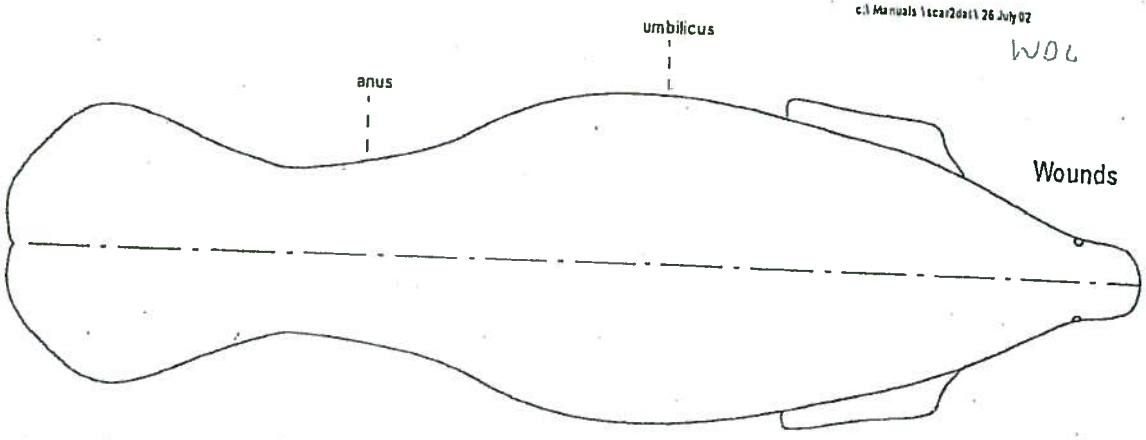
William D. Greer
Lucy R. Bukowski

REPORT FILED BY Bukowski / Greer

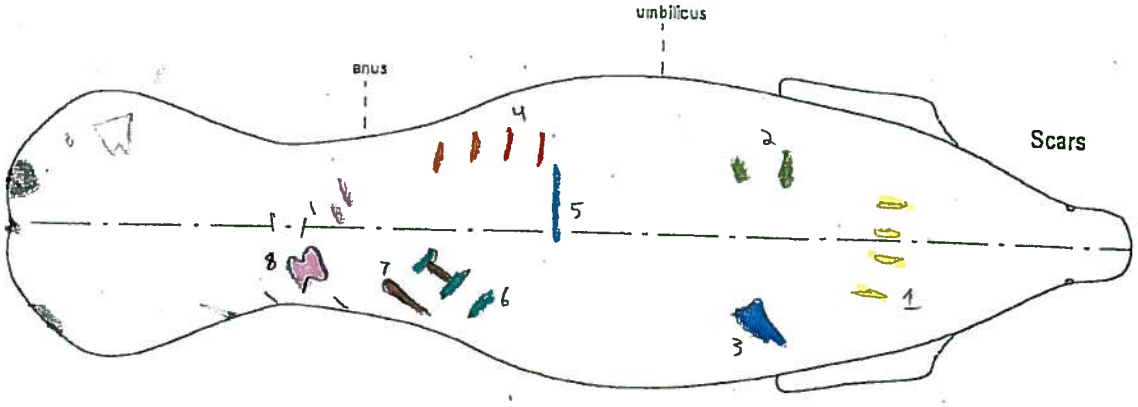
Date 08 MAR 2019 Field I.D. MKC 19029.

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WOL



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Width																				
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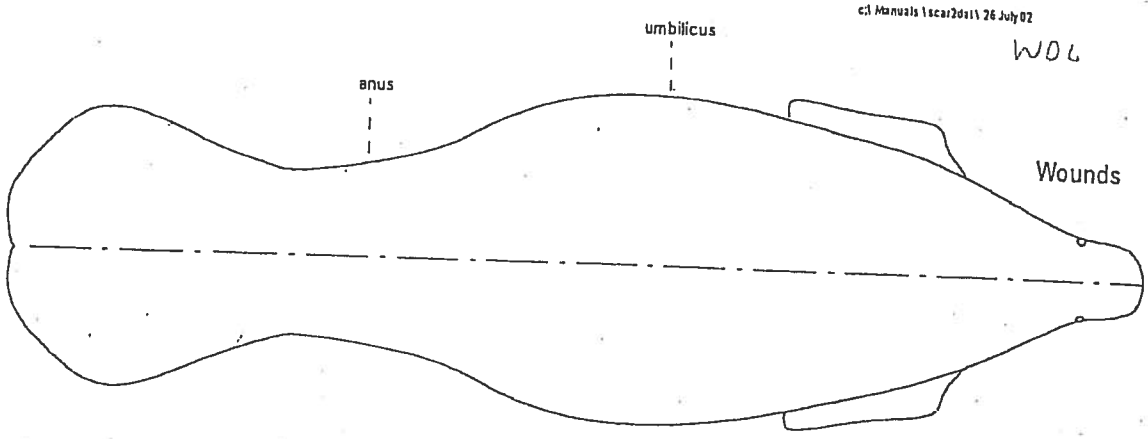


Scar Dat sht Sep 2002

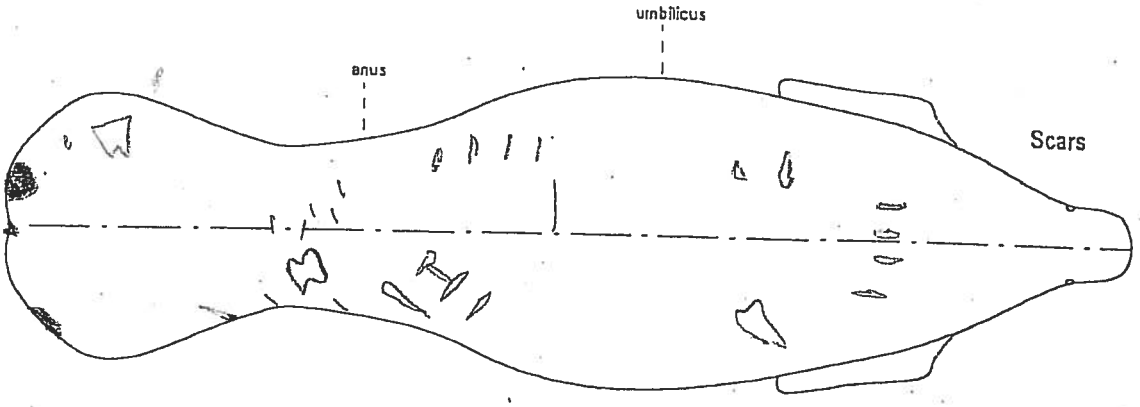
Date 08 MAR 2019 Field I.D. MKC19028.

c:\ Manuals \ scar2dat \ 26 July 02

WOL



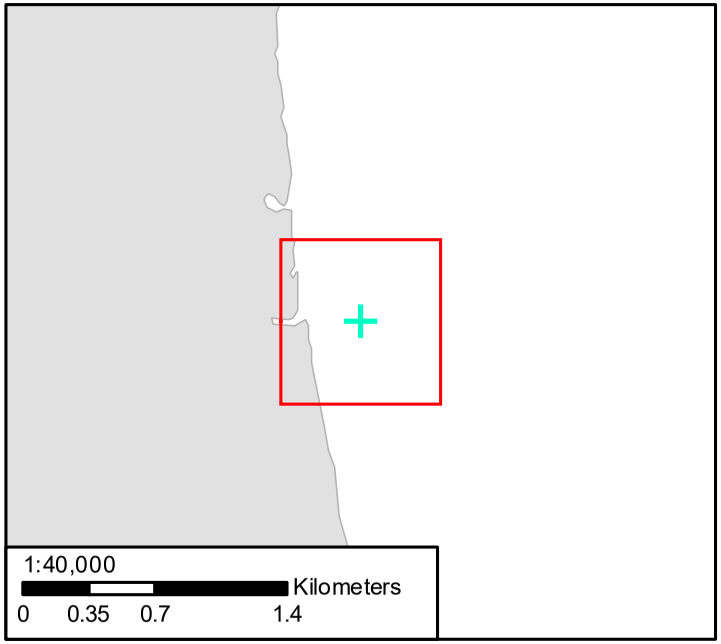
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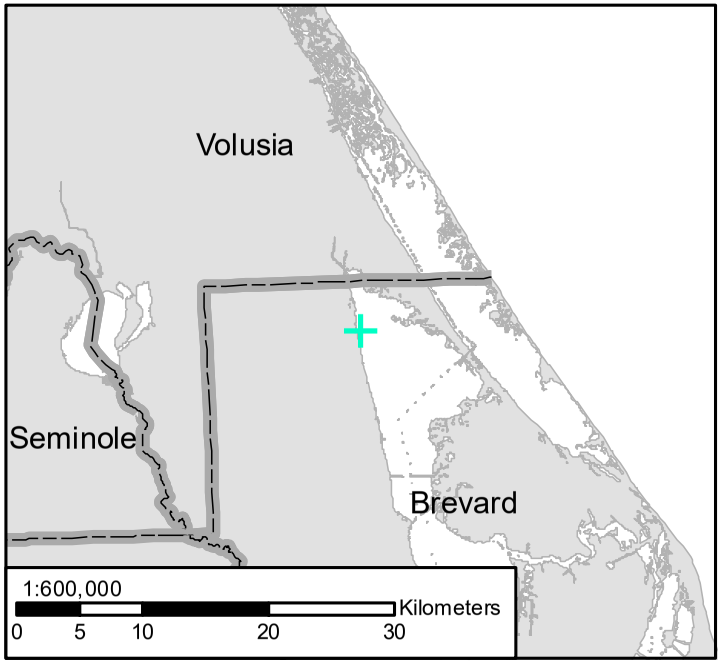


Verified Recovery Location of Manatee Carcass MEC19028

Report Date: 3/8/2019 **Received Date:** 3/8/2019 **Received By:** FWC-LRB,WDG Map Created: 10/13/2020







Locality Description:
Scottsmoor, Brevard
Grounded, approximately 1.87 km SSE of Scottsmoor Landing.

Latitude: 28.75508°N **Longitude:** -80.84076°W

Bassett, Brandon

From: Rood, Kari
Sent: Monday, March 18, 2019 9:51 AM
To: Howell, Amber; Lonati, Gina; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Beard, Shelby; Boyd, Denise; Bukowski, Lucy; Coulter, Briana; Deutsch, Chip; deWit, Martine; Edwards, Holly; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Levine, Daniel; Martz, Meg; Panike, Anna; Perna, Allison; Schubert, Molly; sheri@mote.org; Szemer, Donna; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC19028=BS275

MEC19028=BS275

Carcass location: Indian River, Scottsmoor
Carcass gender: Male

First sighted by USGS 11/23/00 at Blue Spring State Park
Last sighted by USGS 12/3/16 at Blue Spring State Park

Additional sightings were at Blue Spring State Park, with one exception, 12/7/05 at Reliant Power Plant (Indian River) USGS may have more recent sightings and should be able to provide a complete sighting history if needed.

Verifiers: HONKAER 3/15/19 & KAH 3/18/19

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 #** MEC19028
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3511 **FWC District**: Northeast
Sex: Male **Length (cm)**: 314 **Estimated** _____ **Weight (kg)** N/T
Date reported: 08 March 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 08 March 2019 **By**: FWC- LRB, WDG
Date necropsied: 08 March 2019 **By**: FWC- LRB, WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Scottsmoor, approximately 1.87 km SE of Scottsmoor Landing.

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: Small amount of macroalgae present in GI, abundant fats, liver very bloody on cut surfaces, primary airways contained abundant amount of blood and foamy white liquid. Cut surfaces of lungs were bloody and wet when 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 _____

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: Due to location/logistics, reproductive organs were not examined.

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 #: **MEC19029**
Date of Report: 2019-Mar-10
Filed By: FWC MMPL

FWC Case # 3613 **FWC Region:** NE

Sex: Male **Length:** 249 **cm** **Weight:** 280.0 **kg**

DATE REPORTED: 2019-Mar-10 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-10 **By:** FWC-SMW FWC intern-L. Clance

DATE NECROPSIED: 2019-Mar-21 **By:** MMPL-TDW,MdW,AJG,ALP,GLL

LOCATION: **State:** FL **Latitude:** 28.38237 **N**
County: Brevard **Longitude:** -80.68884 **W**
Waterway: Sykes Creek
Locality description: Merritt Island, grounded approximately 155 m E of 1490 Sykes Creek Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Depleted fat(s); Serous fat(s); Parasitic enteritis; Dark line kidney(s); Wet lung(s); Frothy lungs; Bloody eyes, nares; Nodules duodenum; Sand in duodenum; Purulent material in airways, lung parenchyma; Ecchymoses lung serosa; Congested mesenteries, hemidiaphragms, urinary bladder mucosa; Bloody fluid in pleural cavities, abdomen; Specks parietal pleura; Vegetation in mouth.

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

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. Line in stomach. Bleached epidermis; Healing skin lesions; Healing watercraft wound (s); Abscess(es); Kept in ice-water bath between recovery and necropsy to be filmed for manatee necropsy instructional video.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19029

MORPHOMETRICS:

Total length:	249 cm	**Fluke base:**	77 cm	**Girth at axillae:**	**cm**
Snout to anus:	165 cm	**Fluke width:**	64 cm		
Snout to U/G:	100 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	88 cm	**Girth at anus:**	cm		
Flipper width:	18 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	1.1 cm	2.5 cm		
Outer Blubber Thickness:	0.7 cm	0.1 cm	**Abdominal Fat Thickness:**	0.9 cm
Inner Blubber Thickness:	0.1 cm	0.4 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:

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. MEC19029
RECOVERY DATE 10 March 2019
GENDER Male **TL** 249 **cm WT** 280 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 21 March 2019
CONDITION Badly Decomposed

HISTORY 10 March 2019, at 1051 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek in Merritt Island, Brevard County. FWC case number 3613 was assigned. The complainant stated that the carcass was grey in color and floating back-up. At 1109 hrs, SMW requested FWC LE assistance to tow the carcass. FWC-Officer Bob Wehner verified the carcass at 1346 hrs and secured it at the Kiwanis Island boat ramp at 1425 hrs. SMW and FWC intern-Lauren R. Clance (LRC) arrived at the boat ramp at 1407 hrs, loaded the carcass into the truck via Ezy-lift by 1443 hrs, and transported it to the EC Field Station at 1600 hrs. The carcass was covered with ice overnight. **11 March**, LRC transported the carcass to the MMPL arriving at 1032 hrs. The carcass was chosen for filming an instructional video and was left in an ice-water bath until filming on 20 and 21 March.

EXTERNAL All of the epidermis was present. A small amount of bloody, frothy fluid exuded from the nares. The eyes were bloody. The epidermis had numerous small, bleached spots on all aspects. The epidermis of the muzzle, axillae, ventral neck, fluke margin, and ventral body folds was bleached. There was one triangular-shaped wound with rounded margins and granulation tissue in the center that penetrated into the dermis on the mid left dorsum. There were several resolving lesions and linear scrapes on the head, dorsum, left lateral aspect, and dorsal fluke. There was a thin brown and green algal mat on the head, dorsal fluke and both lateral aspects. There was a minimum of two watercraft-related scar patterns observed on the dorsum. Copepods were present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal fat, and a small amount of serous mesenteric and omental fat. The abdomen contained 0.5 L of bloody fluid.

STOMACH The stomach contained 7.5 L of moist, well-chewed, fibrous, stringy, green to tan ingesta. The ingesta were coated with a thin layer of tan mucus. The mucosa was pink to tan. There was a mild infection of dead nematodes. There was a 71 cm long breakable tan line in the contents. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 250 mL of wet, well-chewed, fibrous, green ingesta mixed with a scant amount of gritty grey sand. The mucosa was grey with raised tan nodules. No parasites were observed.

JEJUNUM & ILEUM The mesentery had regions of moderate congestion. The proximal- and mid small intestine contained a moderate amount of thick, cloudy, green to brown fluid. The wall of the proximal small intestine had raised longitudinal rugae, tan nodules, and raised circular tan plaques. The wall of the mid small intestine had raised tan nodules and enlarged, thickened Peyer's patches. The wall between the lesions was green. The distal small intestine contained a moderate amount of watery, brown fluid. The wall was brown and had raised tan nodules. The mucosa was autolyzed throughout. There was a severe infection of pinpoint trematodes throughout. *Moniligerum blairi* and unidentified parasites were observed on microscopic examination of a mid-small intestine wall scrape sedimentation sample.

CECUM The cecum contained 700 mL of moist, moderately digested, sticky, pasty, fibrous, leafy, dark green digesta. The mucosa had black specks and was sloughing. No parasites were observed.

COLON The proximal colon contained a moderate amount of moist, poorly formed, well-digested, soft, dark green feces. The mid colon contained a moderate amount of moist, well-formed, well-digested, fibrous, brown feces. The distal colon contained a moderate amount of moist, poorly formed, well-digested, fibrous, soft, green

feces. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was pink on serosal and cut surfaces.

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

LIVER The liver was soft. The margins were rounded. The serosal surfaces were light to dark purple, and the cut surfaces were brown. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 20 mL of viscous brown to yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of reproductive fat. The testes and seminal vesicles were small. The seminal vesicles contained a small amount of tan fluid. There was no fluid on cut surfaces of the epididymides.

KIDNEYS There was scant perirenal fat. The kidneys were dark pink on serosal surfaces. On cut surfaces, the cortices were pink and the medullae were light pink to red. The corticomedullary boundaries were distinct and some had a dark red line.

URINARY BLADDER The bladder contained 160 mL of clear dark yellow urine. The mucosa was mildly 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 had patches of moderate congestion. The right pleural cavity contained 250 mL and the left pleural cavity contained 300 mL of bloody fluid. The lungs were pink, green, and purple on serosal surfaces, and red, wet, and frothy on cut surfaces. The left lung had numerous ecchymoses at the ventral mid lateral aspect, and the right lung had several ecchymoses at the ventral lateral aspect of the caudal one-third. The right lung had diffuse regions that contained small amounts of purulent tan material on cut surfaces. The left airways contained a small amount of bloody fluid. The mucosa was dark pink. The right airways contained a small amount of purulent tan mucus. The mucosa was tan to pink. No parasites were observed in either lung airways. The parietal pleura had black specks. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS A few small dead trematodes were observed in the trachea. The mouth contained a few small pieces of green macroalgae.

SKELETON NVL.

OTHER There was an abscess (1.5 cm diameter) in the outer fat layer of the caudal ventral midline. There was no damage deep to the wound on the dorsum.

PHOTOGRAPHS 2019-03-11_FWC022_6055 through 6068, 6070, 6071; 2019-03-20_FWC022_6418 through 6420, 6422, 6423, 6425, 6426, 6430, 6432; 2019-03-21_FWC022_6433 through 6479.

COMMENTS

SIGNIFICANT FINDINGS

- Bloody eyes, nares
- Depleted, serous fat

- Parasitic enteritis
- Nodules duodenum
- Sand in duodenum
- Wet, frothy lungs
- Purulent material in airways, lung parenchyma
- Congested mesenteries, hemidiaphragms, urinary bladder mucosa
- Ecchymoses lung serosa
- Dark line kidneys
- Bloody fluid in pleural cavities, abdomen
- Vegetation in mouth
- Bleached epidermis
- Healing skin lesions
- Healing watercraft-related wound
- Small abscess in fat
- Line in stomach contents
- Specks parietal pleura

PROBABLE CAUSE OF DEATH Natural; Other

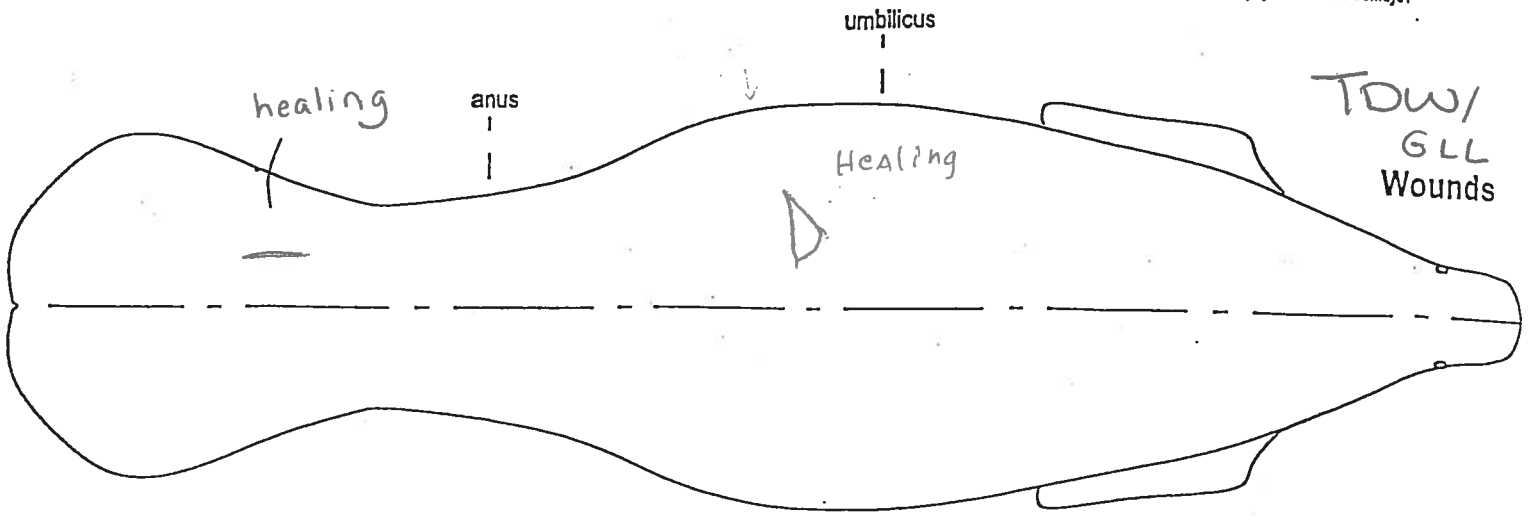
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Andrew J. Garrett
Anna L. Panike
Gina L. Lonati
Tara D. Whitcomb

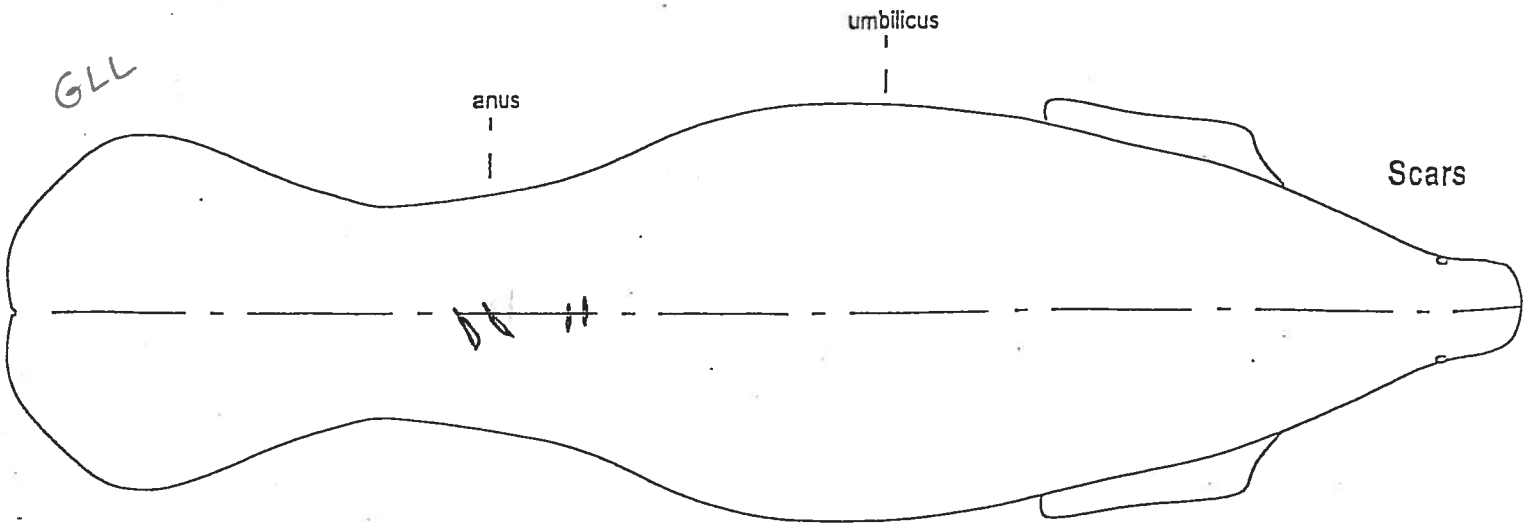
REPORT FILED BY Lonati / de Wit

Date 11 March 2019 Field I.D. MEC19029

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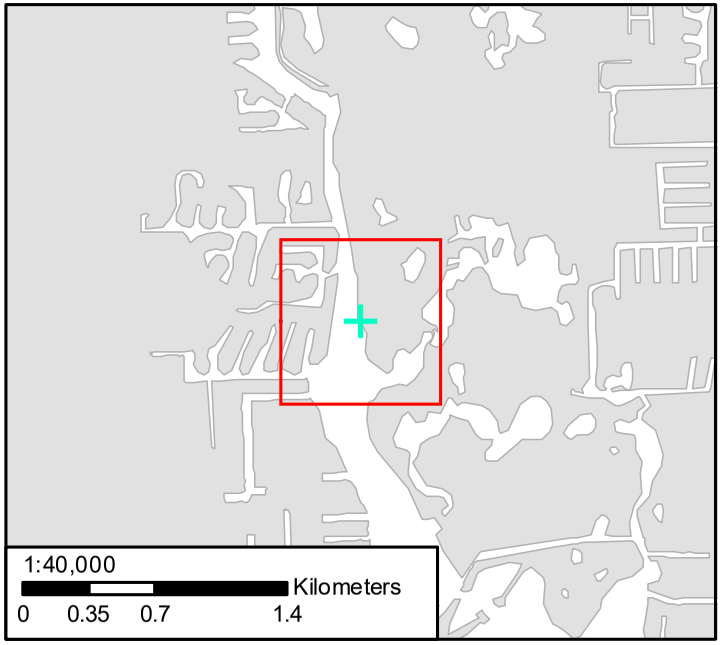
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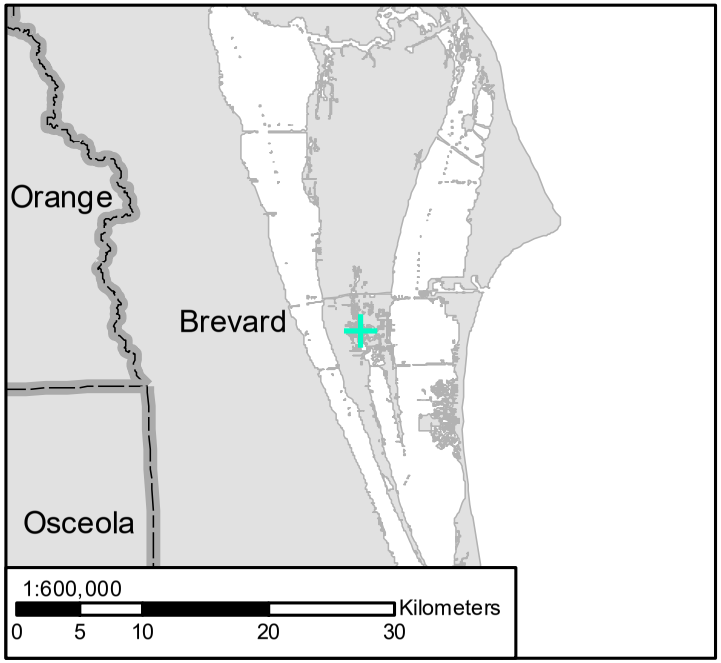


Verified Recovery Location of Manatee Carcass MEC19029

Report Date: 3/10/2019 **Received Date:** 3/10/2019 **Received By:** FWC-SMW FWC intern, Clarice **Map Created:** 10/13/2020







Locality Description:
Merritt Island, Brevard
Grounded, approximately 155 m E of 1490 Sykes Creek Drive.

Latitude: 28.38237°N **Longitude:** -80.68884°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19029
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3613 FWC District: NE Dispatch - Orlando
Sex: M / F / Undetermined Length: 249 cm (estimated _____) Weight 280 kg.
Date reported: 10 March 2019 By: Citizen
Date collected: 10 March 2019 By: SMW, L. Clance
Date necropsied: 21 March 19 By: MMPL - TDW MDW AJG ALP GLC

LOCATION: State: FL (___) County: Brevard Waterway: Sykes Creek
Latitude: 28 22.9380 N Longitude: 80 41.3280 W
Locality description: Sykes Crk @ Diana Shores, S of CM19

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 SI sedimentation sample
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach - Liver - Lung - Urine - Kidney (if no urine) – Other ~~vegetation mat~~
Genetics Box # 91
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

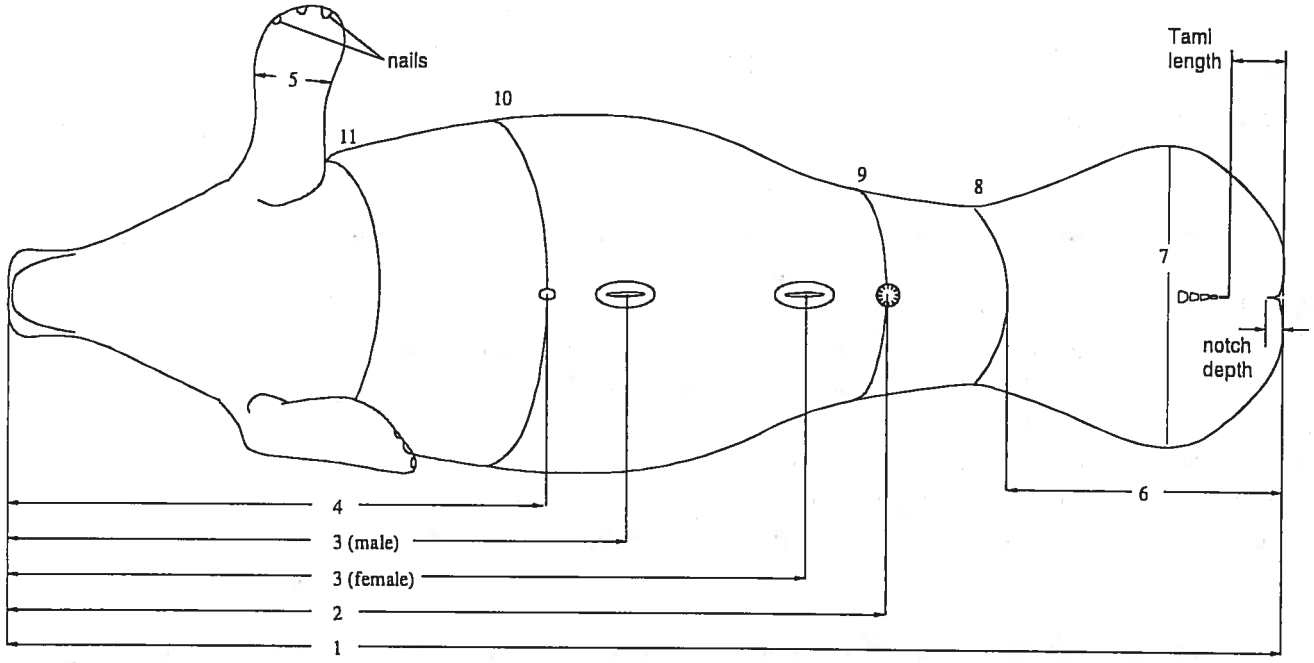
REMARKS: Found grounded, back up

Field ID # MEC190229

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.

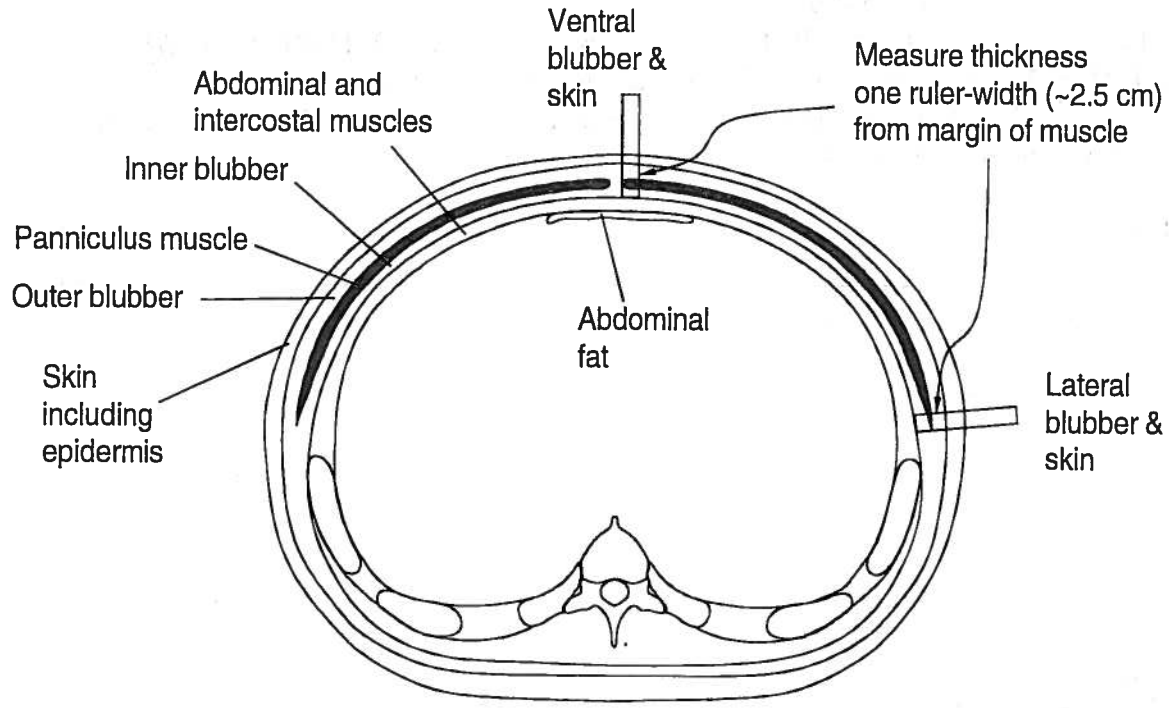
1. Total length 249 cm
2. Snout to anus -C 165 cm
3. Snout to U/G -C 100 cm
4. Snout to umbilicus -C 88 cm
5. Flipper width 18 cm
6. Fluke base 77 cm
7. Fluke width 64 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus ____ cm
10. *Girth at umbilicus ____ cm
11. *Girth at axillae ____ cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	1.1 cm	2.5 cm	(Epidermis 0.1 cm)
Outer fat	0.7 cm	0.1 cm	(Abdominal fat 0.9 cm)
Inner fat	0.1 cm	0.4 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19029
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3613 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 10 March 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 March 2019 **By**: FWC-SMW, FWC intern-L. Clance
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Sykes Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 155 m E of 1490 Sykes Creek Dr.

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 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 #: **MEC19030**
Date of Report: 2019-Mar-12
Filed By: FWC EC Field Station

FWC Case # 3740 **FWC Region:** NE

Sex: Male **Length:** 259 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-12 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-12 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Mar-12 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 27.6942 **N**
County: Indian River **Longitude:** -80.38451 **W**
Waterway: Indian River
Locality description: Vero Beach, floating approximately 60 m W of 165 Sago Palm Road.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Fractured vertebra(e); Vertebral separation(s); Hemorrhagic muscle; Blood-stained ingesta, stomach wall.

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. Scavenging.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19030

MORPHOMETRICS:

Total length:	259 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. MEC19030
RECOVERY DATE 12 March 2019
GENDER Male **TL** 259 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 12 March 2019
CONDITION Badly Decomposed

HISTORY 12 March 2019, at 0854 hrs, FWC intern-Lauren R. Clance (LRC) 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 3740 was assigned. The complainant, Thad Davis (772-633-4039), stated that the manatee was approximately 5 feet long, white in color, and had vultures surrounding it. The complainant was unable to provide photos. At 1012 hrs, LRC and FWC biologists-William D. Greer and Lucy R. Bukowski arrived at Wabasso Park boat ramp and launched the Key West boat. They located the carcass by 1112 hrs and towed it to a spoil island where a field necropsy was completed by 1234 hrs. The remains were left onsite.

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. An eroded watercraft-related wound was observed on the left caudal dorsum, and there was a large eroded region on the mid right dorsum perpendicular to the wound on the left dorsum. Rents were present at the axillae, urogenital opening, and anus which exposed the body cavity due to decomposition. The dermis of the head, cranial ventral aspect and fluke margin was eroded due to decomposition. A minimum of two watercraft-related scar patterns was grossly observed on the dorsum. There were bird droppings on the ventrum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered. Internal organs were missing unless mentioned below. The body cavity contained loose pieces of moist, homogeneous, slightly fibrous, well-formed, green to brown feces.

STOMACH The stomach was torn due to decomposition and/or scavenging and contained 25 mL of wet, well-chewed, fibrous, blood-stained vegetation mixed with a small amount of leafy pieces (see photos). The mucosa was blood-stained surrounding the ingesta and otherwise autolyzed. No parasites were observed.

LIVER The liver was soft, friable, and autolyzed.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. Only the cranial one-third of the left lung remained which was soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON The right ribs were luxated and/or subluxated due to decomposition. Left ribs 8 and 9 had oblique fractures at the mid one-third (see photos). Left ribs 10 - 15 had transverse fractures at the proximal one-third (see photos). The neural arches of T8 - T15 were fractured and separated from the vertebral bodies (see photos). There was a full vertebral separation between T13 and T14 (see photo). All fractures were associated with the eroded watercraft wound on the left dorsum.

OTHER The tissue deep to the wound and dorsal to the rib fractures was hemorrhagic.

PHOTOGRAPHS 2019-03-12_FWC025_7944 through 7962.

COMMENTS

SIGNIFICANT FINDINGS

- Superficial watercraft wound
- Fractured ribs, vertebrae
- Vertebral separation
- Hemorrhagic tissue
- Blood-stained ingesta, stomach wall
- Missing, autolyzed internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

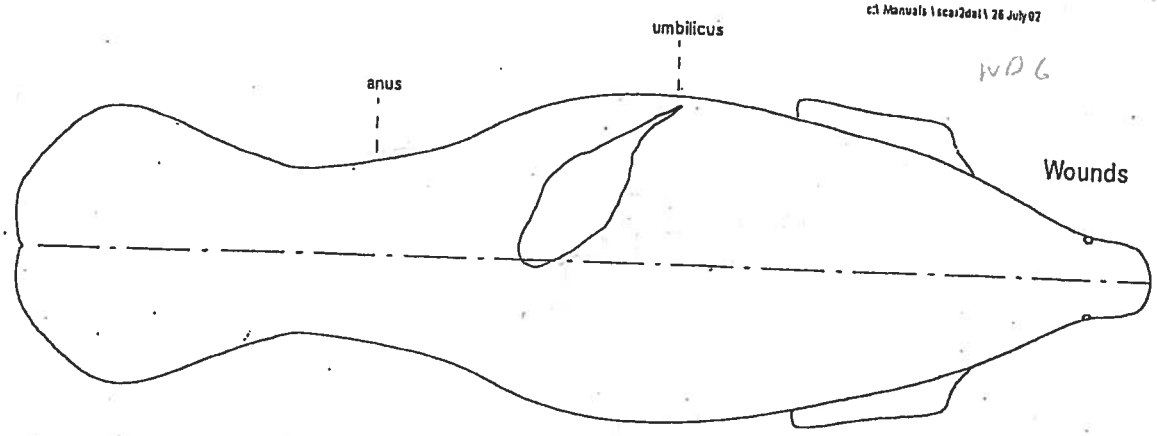
William D. Greer
Lucy R. Bukowski
Lauren R. Clance (FWC intern)

REPORT FILED BY Bukowski / Greer

Date 12 MARCH 2019

Field I.D. MEC19030

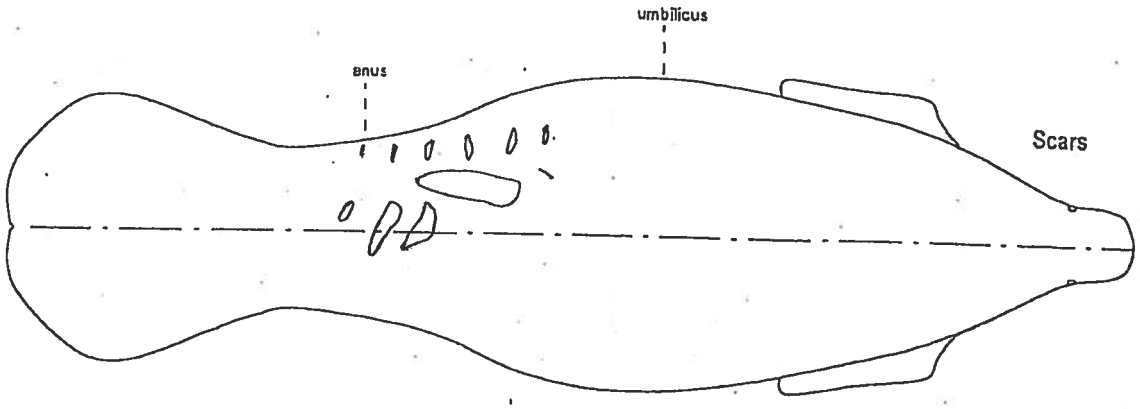
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WD 6

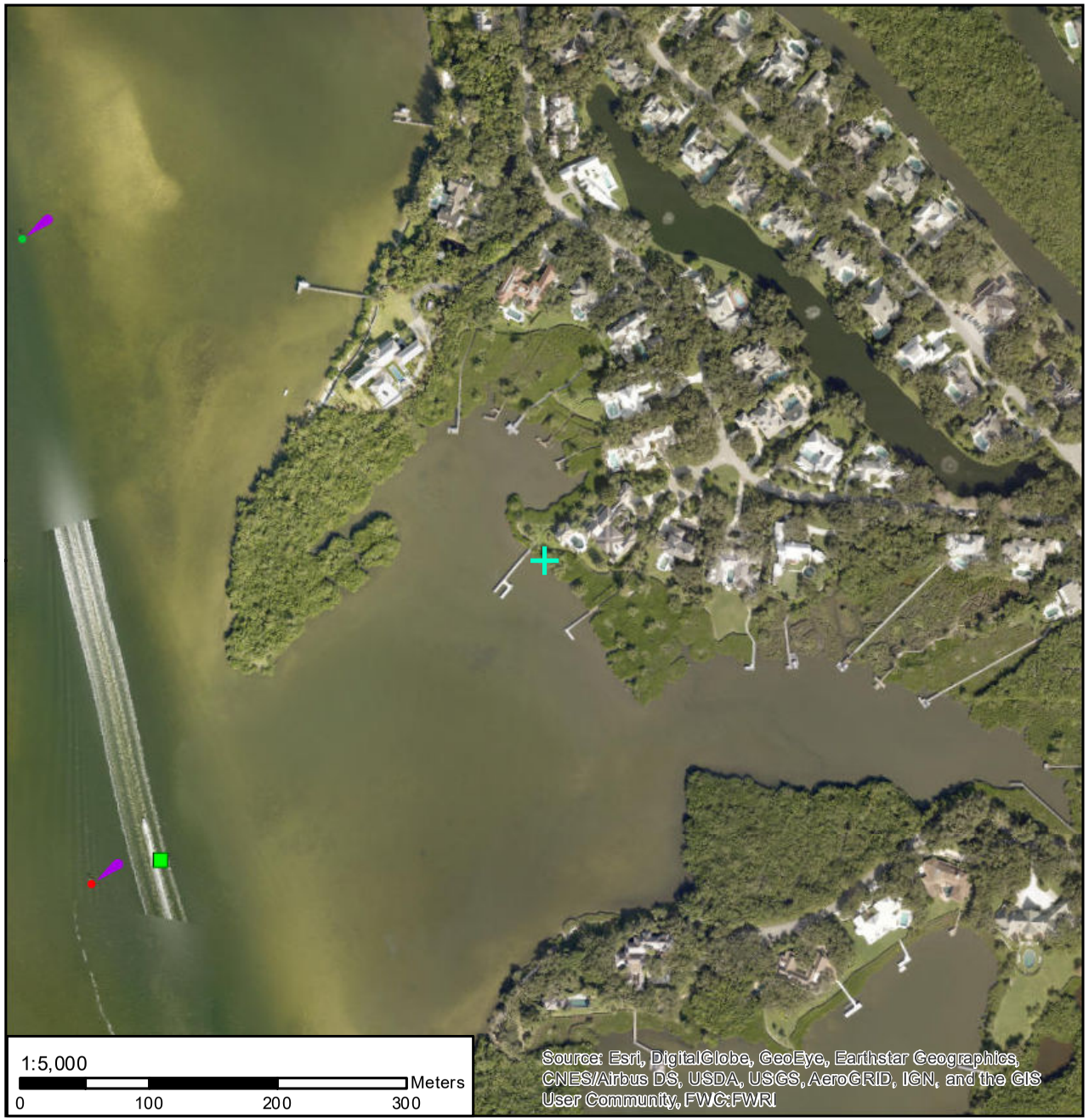
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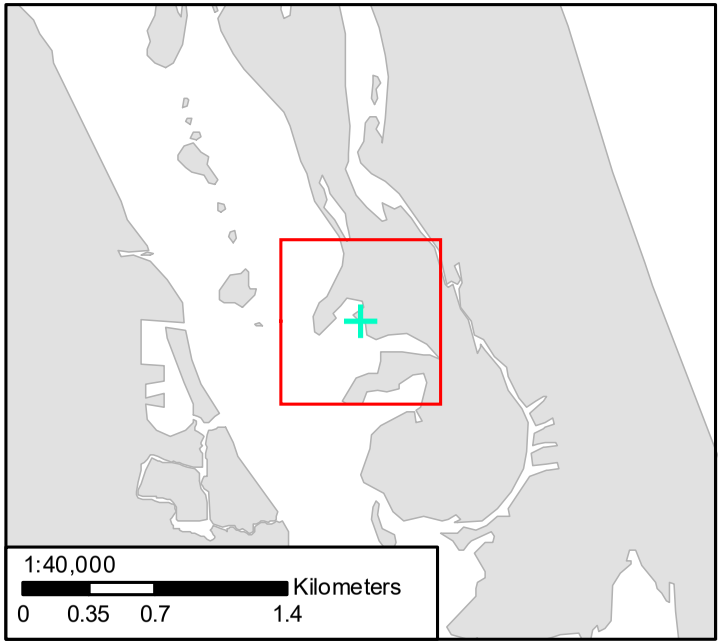
WOUND WAS VERY SHALLOW SO NOT MEASURED

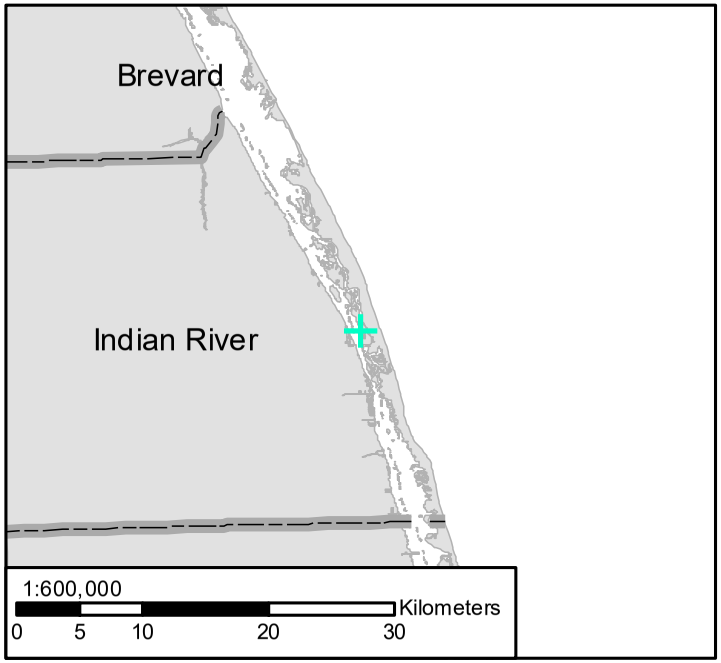


Verified Recovery Location of Manatee Carcass MEC19030

Report Date: 3/12/2019 **Received Date:** 3/12/2019 **Received By:** FWC-WDG,LRB Map Created: 10/13/2020







Locality Description:
Vero Beach, Indian River
Floating, approximately 60 m W of 165 Sago Palm Road.

Latitude: 27.6942°N **Longitude:** -80.38451°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19030
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3740 **FWC District**: Northeast
Sex: Male **Length (cm)**: 259 **Estimated** _____ **Weight (kg)** N/T
Date reported: 12 March 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 12 March 2019 **By**: FWC-WDG, LRB; FWC Intern-LRC
Date necropsied: 12 March 2019 **By**: FWC-WDG, LRB; FWC Intern-LRC

LOCATION INFORMATION: State FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 60 m W of 165 Sago Palm Rd.

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: Eroded/healing wound on dorsum, left ribs #8-15 fractured deep to healing wound,vertebral fracture, hemorraghic tissue deep to healing 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 _____

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 #: **MEC19031**
Date of Report: 2019-Mar-06
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Unknown **Length:** 200 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-06 **By:** FWC volunteer-J. Smith to FWC-WDG

DATE COLLECTED: 2019-Mar-06 **By:** FWC-LRB,SMW

DATE NECROPSIED: 2019-Mar-07 **By:** FWC-LRB

LOCATION: **State:** FL **Latitude:** 27.95447 **N**

County: Brevard **Longitude:** -80.50925 **W**

Waterway: Indian River

Locality description: Melbourne Beach, approximately 200 m W of the westernmost building at 6196 Treetop Drive.

CONDITION: Dried Carcass / Loose Bones

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 all soft tissue and many bones.

PHOTOGRAPHS TAKEN: Other (Skeletal remains).

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed. A field necropsy was performed. Carcass was originally found by the complainant 8-10 years previously.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19031

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. MEC19031
RECOVERY DATE 06 March 2019
GENDER Undetermined **TL** 200 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 07 March 2019
CONDITION Dried Carcass / Loose Bones

HISTORY 06 March 2019, at 1150 hrs, FWC volunteer-Jamie Smith informed FWC biologist-William D. Greer (WDG) about a Melbourne Beach resident that had manatee bones in her possession and no longer wanted to keep them. The complainant, Shagg Carti (321-749-1880), stated that her husband had collected the bones roughly 8 to 10 years ago and that now from doing some sea turtle volunteer work, she realized that legally she should not have the bones in her possession. She stated the carcass had washed up behind their home and the bones were collected after it had decomposed. The complainant agreed to meet later in the day. At 1600 hrs, FWC biologists-Sara M. Wappes and Lucy R. Bukowski (LRB) arrived at the residence and collected the bones. **07 March**, at 1540 hrs, LRB organized the bones and photographed them. No field necropsies or unrecovered carcasses had been reported in that area within the timeframe that this carcass was originally found.

EXTERNAL Only the skeleton remained. PIT tag scan was not performed.

SKELETON Twelve thoracic vertebrae and four lumbar vertebrae were present. Twenty-two ribs were present. The humerus of one flipper remained and both fused ulnae/radii were present.

OTHER

PHOTOGRAPHS 2019-03-07_FWC023_5154.

COMMENTS

SIGNIFICANT FINDINGS

- All soft tissue and many bones missing

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

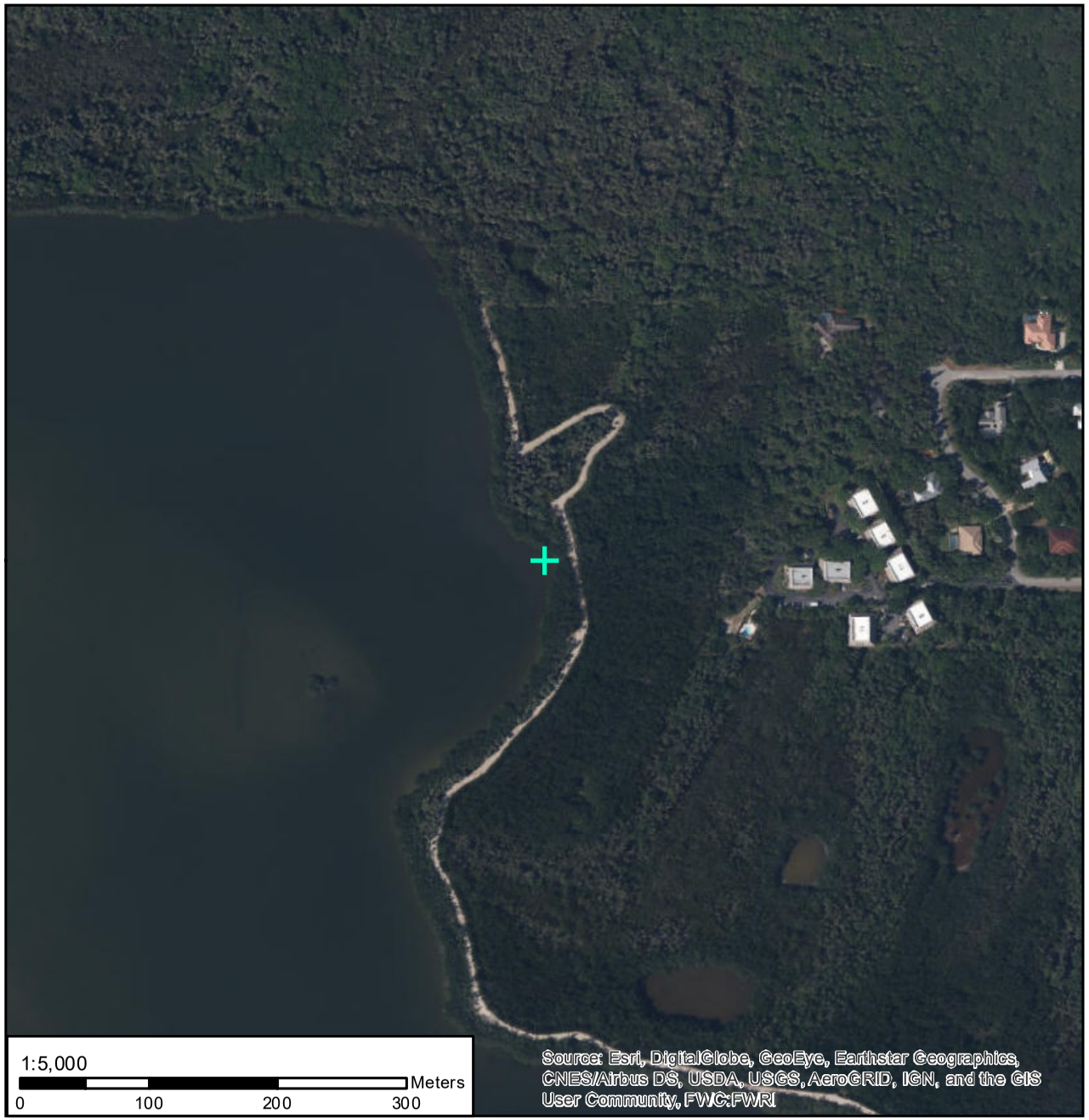
NECROPSY CONDUCTED BY

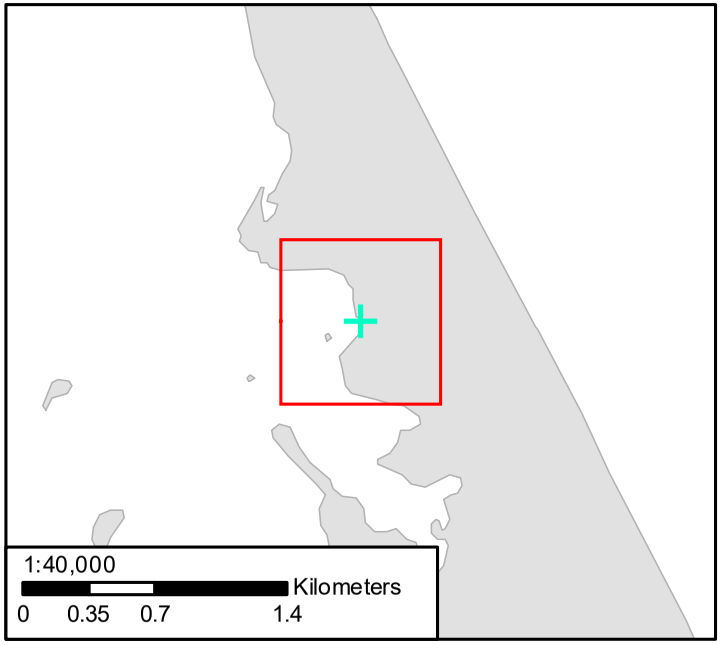
Lucy R. Bukowski

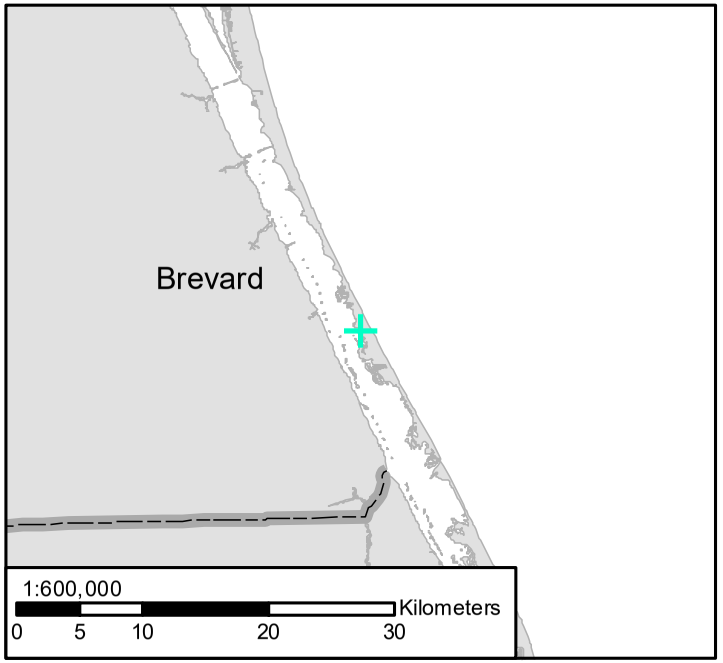
REPORT FILED BY Greer

Verified Recovery Location of Manatee Carcass MEC19031

Report Date: 3/6/2019 **Received Date:** 3/6/2019 **Received By:** FWC-LRB,SMW Map Created: 10/13/2020







Locality Description:
Melbourne Beach, Brevard
, approximately 200 m W of the westernmost building at 6196 Treetop Drive.

Latitude: 27.95447°N **Longitude:** -80.50925°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19031
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: 148 **Estimated** 200 **Weight (kg)** N/T
Date reported: 06 Mar 2019 **By**: FWC volunteer- Jamie Smith to FWC- WDG
Date collected: 06 Mar 2019 **By**: FWC- LRB, SMW
Date necropsied: 07 Mar 2019 **By**: FWC- LRB

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne Beach, approximately 200 m W of the westernmost building at 6196 Treetop Drive
Carcass Orientation: Unknown

CONDITION: Dried Carcass / Loose Bones

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: Only skeletal remains

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

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 #: **MEC19032**
Date of Report: 2019-Mar-14
Filed By: FWC EC Field Station

FWC Case # 3860 **FWC Region:** NE

Sex: Female **Length:** 293 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-14 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-14 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Mar-14 **By:** FWC-LRB,WDG

LOCATION: **State:** FL **Latitude:** 28.20858 **N**
County: Brevard **Longitude:** -80.60872 **W**
Waterway: Banana River
Locality description: Satellite Beach, floating approximately 20 m N of 427 Sandpiper Drive.

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. Abscess(es).

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. Uterine Scar. A field necropsy was performed. Macroalgae in stomach.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19032

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	8.5	6
Right		
Left	8.5	12
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. MEC19032
RECOVERY DATE 14 March 2019
GENDER Female **TL** 293 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 14 March 2019
CONDITION Badly Decomposed

HISTORY 14 March 2019, at 1024 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River, Satellite Beach, Brevard County. FWC case number 3860 was assigned. The complainant, Vince Pinto (321-773-6257), stated that the manatee was belly-up and floating near his dock. At 1051 hrs, WDG received photo confirmation. At 1120 hrs, WDG and FWC-Lucy R. Bukowski (LRB) arrived at the Patrick Air Force Base Marina and launched the Key West boat. The carcass was located at 1135 hrs. A field necropsy was completed by 1405 hrs. The remains were left onsite.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the nares. A thin patch of brown algal was present on the remaining epidermis. The dermis surrounding the urogenital opening was eroded. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal and right lateral aspects. The fluke was slightly eroded due to decomposition. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach contained 5.1 L of moist, well-chewed, stringy, fibrous, yellow to green ingesta mixed with a small amount of red macroalgae (see photos). The mucosa was stained pink (see photos). No parasites were observed.

DUODENUM The duodenum contained 800 mL of moist, well-chewed, stringy, fibrous, yellow to green ingesta (see photos). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, dark gray liquid mixed with moist, stringy, fibrous, yellow to green ingesta. The distal small intestine contained viscous, dark gray liquid. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 5.5 L of moist, well-digested, stringy, fibrous, yellow to green digesta (see photos). The mucosa was gray and sloughing. No parasites were observed.

COLON The proximal and mid colon contained moist, moderately formed, moderately digested, fibrous, green to brown feces. The distal colon contained moist, well-formed, moderately digested, fibrous, green to brown feces. The mucosa was autolyzed. No parasites were observed.

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

SPLEEN The spleen was black on serosal surfaces and purple on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a scant amount of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of partially rendered reproductive fat. The uterus was contracted. Each uterine horn contained a scar (left: 12.0 cm wide x 8.5 cm circumference; right: 6.0 cm wide x

8.5 cm circumference). The ovaries contained numerous fluid-filled follicles (maximum diameter 1.2 cm).

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

URINARY BLADDER The urinary bladder contained 200 mL of red-tinged fluid. The mucosa was unremarkable.

HEART The was scant partially rendered epicardial fat. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were light pink to gray on serosal surfaces and dark red on cut surfaces. The primary airway of the right lung contained a small amount of red-tinged fluid (see photos).

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER There was an approximately 10 cm diameter abscess in the ventral muscle cranial to the urinary bladder (see photo).

PHOTOGRAPHS 2019-03-14_FWC025_7963 through 7993.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Abscess
- Macroalgae in stomach
- Uterine scars

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

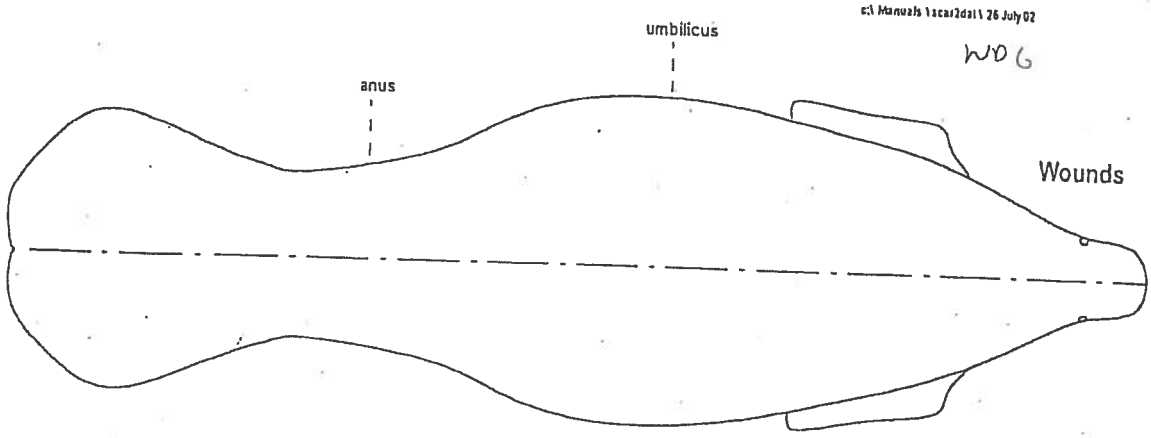
William D. Greer
Lucy R. Bukowski

REPORT FILED BY Bukowski

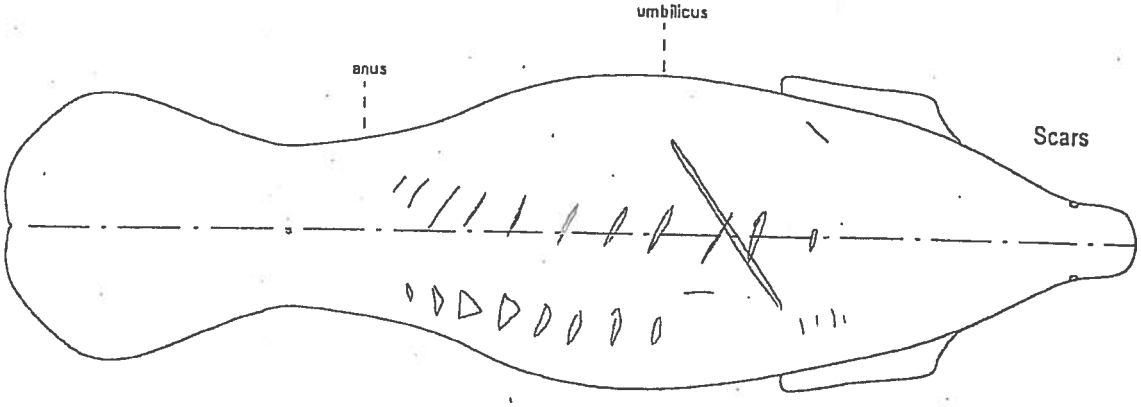
Date 14 MAR 2019 Field I.D. MEC19032.

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WDG



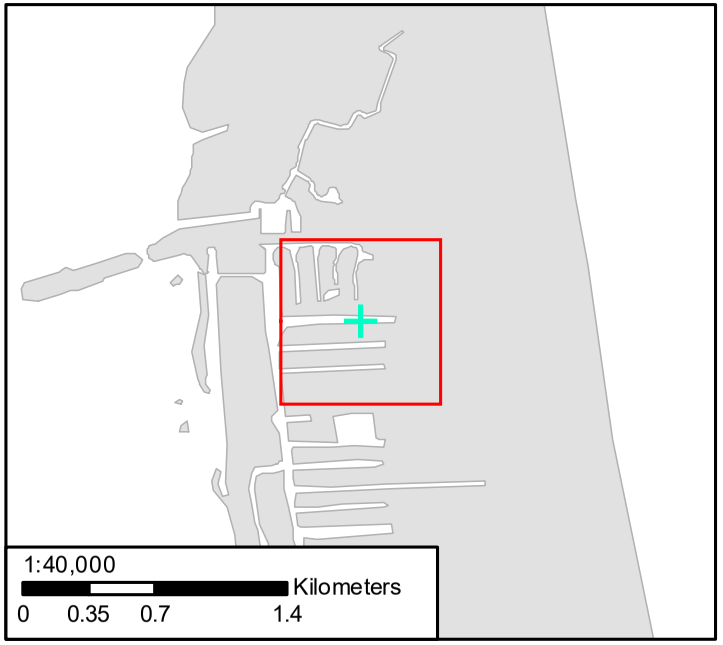
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Number																				
Length																				
Width																				
Depth																				
Distance																				



Verified Recovery Location of Manatee Carcass MEC19032

Report Date: 3/14/2019 **Received Date:** 3/14/2019 **Received By:** FWC-WDG,LRB Map Created: 10/13/2020







Locality Description:
Satellite Beach, Brevard
Floating, approximately 20 m N of 427 Sandpiper Drive.

Latitude: 28.20858°N **Longitude:** -80.60872°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19032
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 3860 **FWC District**: Northeast
Sex: Female **Length (cm)**: 293 **Estimated** _____ **Weight (kg)** N/T
Date reported: 14 March 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 14 March 2019 **By**: FWC-WDG, LRB
Date necropsied: 14 March 2019 **By**: FWC-LRB, WDG

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 20 m N of 427 Sandpiper Dr.

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 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: No **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 #: **MEC19034**
Date of Report: 2019-Mar-18
Filed By: FWC EC Field Station

FWC Case # 4128 **FWC Region:** NE

Sex: Male **Length:** 308 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-18 **By:** MINWR-Jim to FWC-WDG

DATE COLLECTED: 2019-Mar-18 **By:** FWC-WDG

DATE NECROPSIED: 2019-Mar-18 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.67473 **N**
County: Brevard **Longitude:** -80.68903 **W**
Waterway: Mosquito Lagoon
Locality description: Merritt Island, grounded approximately 4.63 km SSE of the Biolab Road boat ramp and approximately 1.99 km NNE of the intersection of Coquina Pit Road and F Avenue NW.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Luxated rib(s); Hemorrhagic muscle; Blood clots; Fractured kidney(s); Torn lung(s); Torn parietal pleura; Organ pallor; Hemothorax; Torn kidney capsule(s);Torn colon; Loose feces in abdomen; Hemorrhagic lung parenchyma; Congested mesentery; Seagrass in mouth.

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; Remodeled ribs, scapula. Entanglement scars both flippers. Sand in duodenum. Also FWC case number 4391.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19034

MORPHOMETRICS:

Total length:	308 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. MEC19034
RECOVERY DATE 18 March 2019
GENDER Male **TL** 308 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 18 March 2019
CONDITION Moderately Decomposed

HISTORY 18 March 2019, at 1045 hrs, FWC biologist-William D. Greer (WDG) received a call from Merritt Island National Wildlife Refuge biologist-Jim (321-733-5240) regarding a dead manatee in Mosquito Lagoon, Merritt Island, Brevard County. The complainant stated that the manatee was a 9-foot-long adult on the shore. At 1126 hrs, WDG received photo confirmation. At 1345 hrs, WDG and FWC intern-L. Clance arrived at the reported location and located the carcass. A field necropsy was completed by 1655 hrs. The remains were left on site. At 1734 hrs, FWC on-call biologist-Nadia J. Gordon received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near Biolab Road. FWC case number 4128 was assigned. The complainant, Kim Guevarra (407-718-2490), stated that the manatee was 10 feet long. Based on the description and location, the carcass was determined to be MEC19034. **23 March**, at 1122 hrs, FWC biologist-Lucy R. Bukowski received a text from Dispatch regarding a dead manatee near Biolab Road in the Mosquito Lagoon in Merritt Island, Brevard County. FWC case number 4391 was assigned. The complainant, Sharon, stated that the carcass was cut open and badly decomposed. Based on the description and location, the carcass was determined to be MEC19034.

EXTERNAL Almost all of the epidermis was present but slightly sloughing. The carcass was distended with gas. There was a superficial linear watercraft-related wound on the caudal right lateral aspect. The epidermis was bleached on the face and fluke margin. There was a moderate brown algal mat on the lateral aspects and a thick dark green algal mat on the dorsal aspect of the fluke. A mild infestation of barnacles was present on the dorsal and lateral aspects. Barnacle scars and bleached spots were observed on the lateral aspects. A minimum of ten well-healed watercraft-related scar patterns was observed on the dorsal aspect. One small well-healed triangular mutilation was present at the 4 o'clock position of the fluke margin. Each flipper had a well-healed entanglement scar which encompassed the proximal one-third. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, mesenteric, and omental fat. There were loose feces in the abdominal cavity (see photo).

STOMACH The stomach contained 15.3 L of moist, fibrous, well-chewed, yellow to green ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 4.2 L of moist, fibrous, well-chewed, yellow to green vegetation. There was a large, tightly packed area of fine gray sand mixed in the middle of the duodenum contents (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a moderate amount of watery, fibrous, poorly chewed, brown and yellow ingesta. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 2 L of moist, poorly digested, fibrous, stringy, yellow-green digesta. The mucosa was unremarkable. No parasites were observed.

COLON The mesentery was mildly congested (see photo). The proximal and mid colon contained wet, poorly formed, orange-brown feces mixed with yellow-orange vegetation. The distal colon contained moist, well-formed, fibrous, homogeneous, green-brown feces. The mucosa was unremarkable throughout. There was a small (approximately 4 cm) tear in the mid colon associated with luxated right rib 14. There was a scant

infestation of dead trematodes in the proximal colon.

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

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

LIVER The margins of the liver were rounded. The liver was soft. Serosal surfaces were purple and cut surfaces were brown.

GALLBLADDER The gallbladder contained a scant amount of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were not examined.

KIDNEYS There was moderate perirenal fat. The right kidney capsule was torn at the dorsal aspect. The right kidney was fractured at the caudal tip due to luxated right rib 14, which was associated with hemorrhagic kidney parenchyma and small well-formed blood clots. The kidneys were tan on serosal surfaces (pallor). On cut surfaces, the cortices were dark red and the medullae were tan. The corticomedullary boundaries were indistinct.

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

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right hemidiaphragm was distended due to gas in the pleural cavity. There were loose, well-formed blood clots in the right pleural cavity. The right lung had a complete puncture at the medial aspect of the caudal one-third due to luxated right rib 14. The tear was associated with loose, well-formed blood clots and hemorrhagic parenchyma (see photo). The lungs were pink to red on serosal surfaces and dark red on cut surfaces. The airways contained a small amount of watery, red fluid (see photo).

HEAD & NECK REGIONS There was a small thatch of poorly chewed seagrass in the mouth (see photo).

SKELETON The left scapula was remodeled. Left ribs 8 - 10 were remodeled at mid-shaft. Right rib 14 was luxated which tore the parietal pleura, lung, kidney capsule, kidney, and colon and was surrounded by hemorrhagic tissue and loose blood clots (see photo).

OTHER The trauma was deep to the superficial watercraft wound. There was hemorrhagic tissue deep to the wound (see photo).

PHOTOGRAPHS 2019-03-18_FWC025_7998 through 8077.

COMMENTS Due to the size and location of the carcass, it was not possible to move the carcass away from crashing waves. The body cavity filled with water as soon as it was opened, and therefore the reproductive organs and presence of any fluid in the abdominal or pleural cavities could not be assessed.

SIGNIFICANT FINDINGS

- Superficial watercraft wound
- Luxated rib
- Hemorrhagic tissue
- Loose feces in abdominal cavity

- Blood clots
- Hemothorax
- Torn lung, parietal pleura, kidney capsule, kidney, colon
- Hemorrhagic lung parenchyma
- Kidney pallor
- Congested mesentery
- Seagrass in mouth
- Entanglement scars
- Bleached epidermis
- Remolded ribs, left scapula
- Sand in duodenum

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

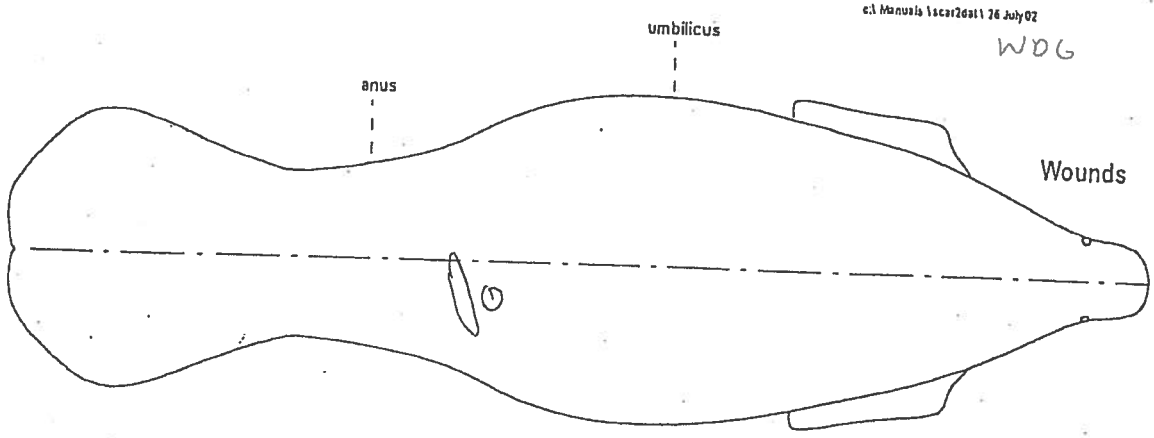
William D. Greer
Lauren R. Clance (FWC intern)

REPORT FILED BY Clance / Greer

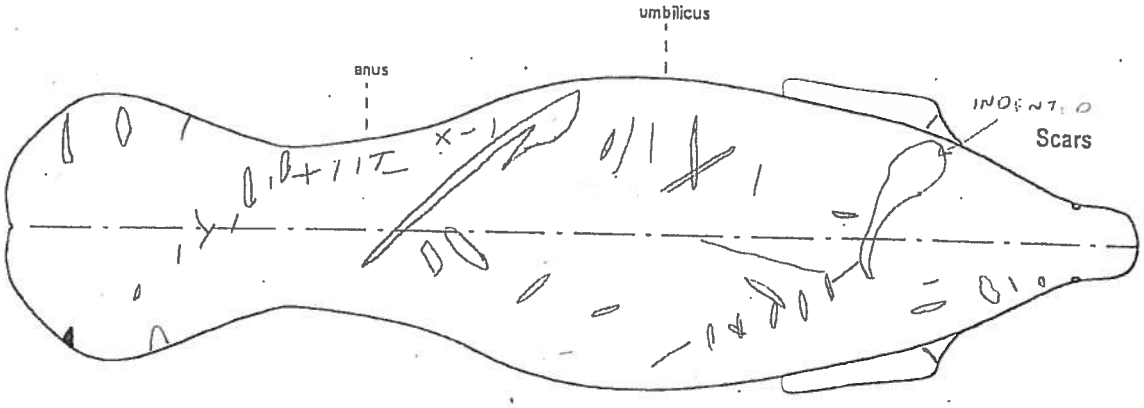
Date 19 MAR 2019 Field I.D. MEC19034

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WDG



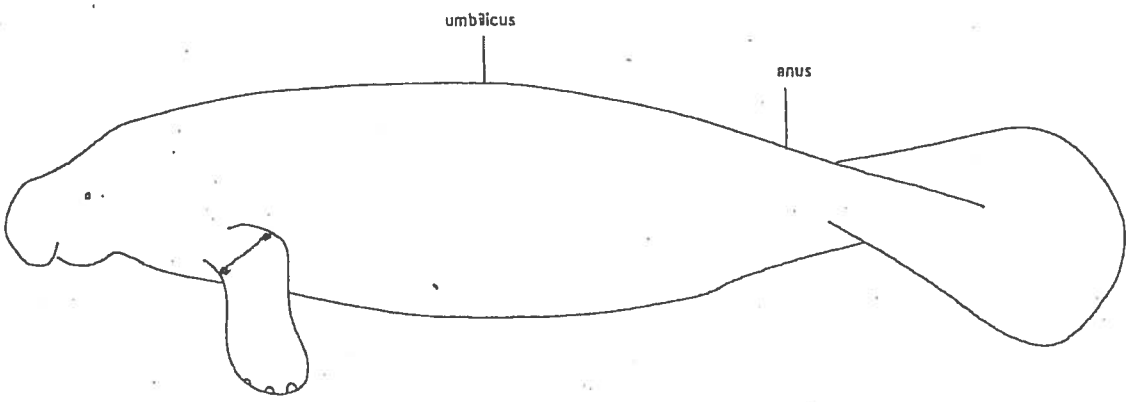
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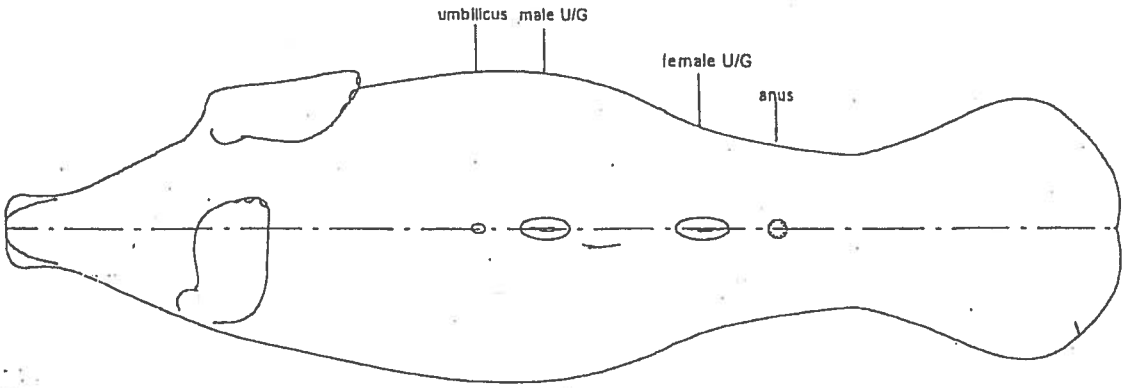


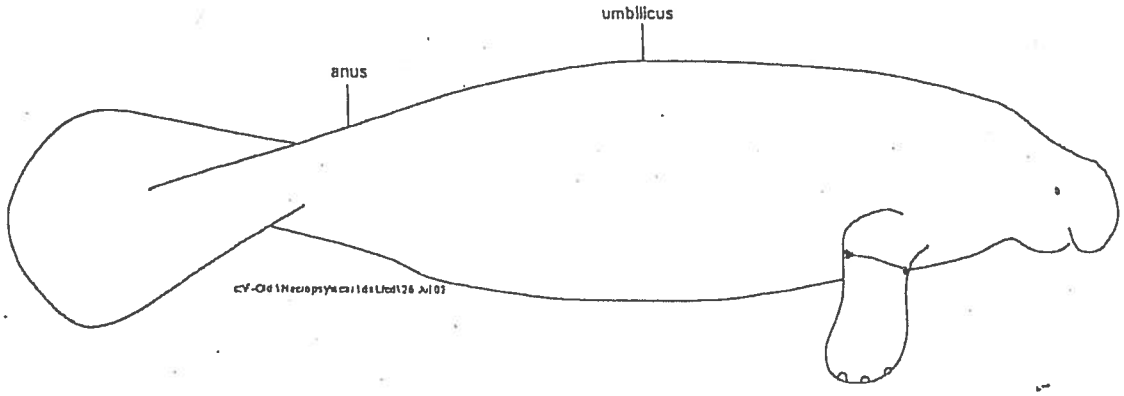
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FIELD I.D. MEC19034

WOG



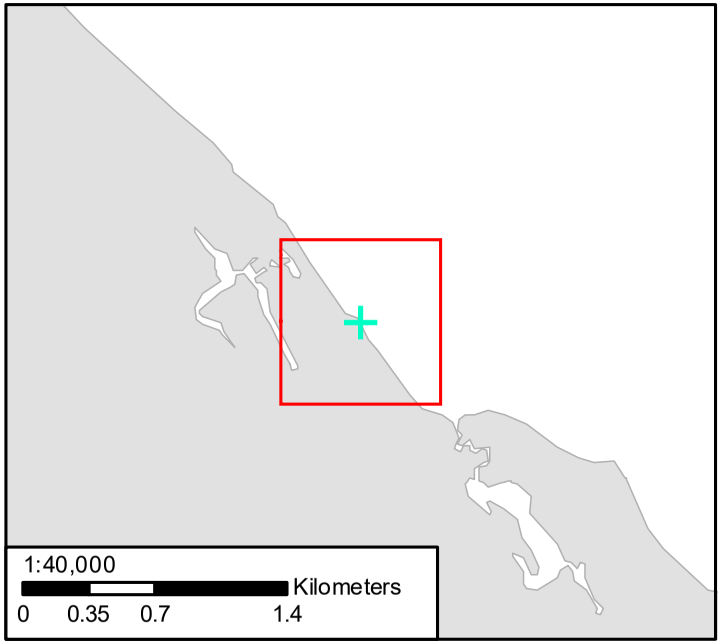


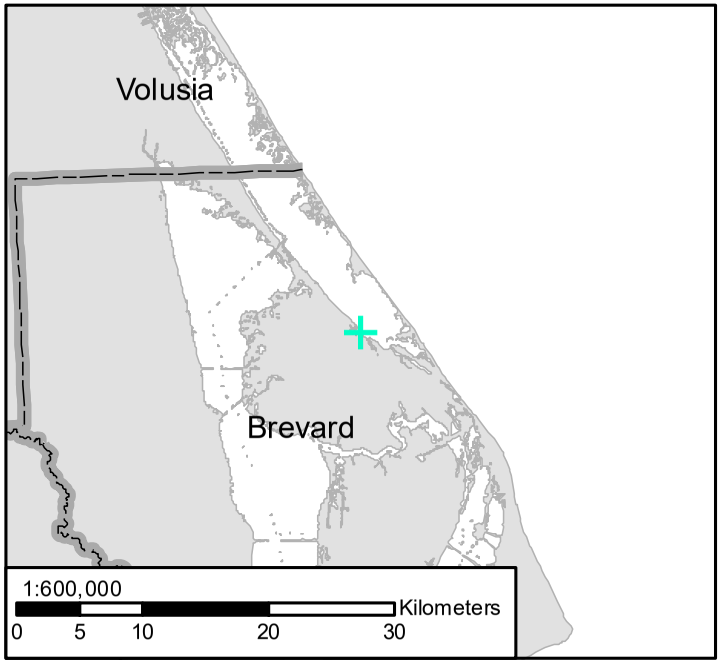


Verified Recovery Location of Manatee Carcass MEC19034

Report Date: 3/18/2019 **Received Date:** 3/18/2019 **Received By:** FWC-WDG Map Created: 10/13/2020







Locality Description:
Merritt Island, Brevard
Grounded, approximately 4.63 km SSE of the Biolab Road boat ramp and approximately 1.99 km NNE of the intersection of Coquina Pit Road and F Avenue NW.

Latitude: 28.67473°N **Longitude:** -80.68903°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19034
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A, 4128 **FWC District**: Northeast
Sex: Male **Length (cm)**: 308 **Estimated** _____ **Weight (kg)** N/T
Date reported: 18 Mar 2019 **By**: MINWR- Jim to FWC-WDG
Date collected: 18 Mar 2019 **By**: FWC- WDG, FWC Intern- L. Clance
Date necropsied: 18 Mar 2019 **By**: FWC- WDG, FWC Intern- L. Clance

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 4.63 kM SSE of the Biolab Rd Boat Ramp and approximately 1.99 NNE of the intersection of Coquina Pit Rd and F Ave NW
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: Luxated rib associated with wound, hemorrhagic tissue, punctured lung, fractured kidney, loose well-formed blood clots, punctured 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: 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: The was a superficial wound present on the right lateral aspect but the margins were not easily distinguished so no measurement was 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 #: **MEC19035**
Date of Report: 2019-Mar-23
Filed By: FWC EC Field Station

FWC Case # 4405 **FWC Region:** NE

Sex: Female **Length:** 281 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-23 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-24 **By:** FWC-SMW

DATE NECROPSIED: 2019-Mar-24 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.4888 **N**
County: Brevard **Longitude:** -80.72371 **W**
Waterway: Indian River
Locality description: Merritt Island, floating approximately 650 m SW of 1900 Pine Island Road.

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; Sediment, fluid in trachea.

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. Uterine Scar. A field necropsy was performed. Monofilament in stomach. Macroalgae in stomach.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19035

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. MEC19035
RECOVERY DATE 24 March 2019
GENDER Female **TL** 281 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 24 March 2019
CONDITION Badly Decomposed

HISTORY 23 March 2019, at 1336 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at the Pine Island Conservation Area in the Indian River in Merritt Island, Brevard County. FWC case number 4405 was assigned. The complainant, Holly Ann (321-698-0528), stated that she had received a secondhand report of a white carcass with buzzards on it near the Sams Creek kayak launch. Since LRB was recovering and necropsying MEC19033, she requested FWC LE assistance to verify the carcass. At 1538 hrs, FWC-Officer Luce informed LRB that he had located the carcass. **24 March**, FWC biologist-Sara M. Wappes and FWC volunteer-Gisele Nieman arrived at the Sams Creek kayak launch at 1010 hrs, launched kayaks at 1016 hrs, and completed a field necropsy by 1150 hrs. The remains were left onsite.

EXTERNAL All of the epidermis was missing. There were bird droppings on the dorsum. The dermis of the axillae had red discoloration. There was a rent at the umbilicus due to decomposition through which the duodenum protruded. Dermis surrounding the urogenital opening and anus was torn due to scavenging. There was a hole in the mid fluke due to scavenging. The muzzle and flippers were eroded due to decomposition. A minimum of three well-healed watercraft-related scar patterns was observed. 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 contained 6 L of moist, fibrous, stringy, well-chewed, dark orange to brown ingesta mixed with a large amount of well-chewed, green macroalgae and a small amount of well-chewed, red macroalgae. There was a 38 cm long piece of <20 lb test diameter clear monofilament line in the contents (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 500 mL of moist, leafy, fibrous, moderately chewed, dark orange to brown ingesta. The mucosa was autolyzed. No parasites were observed.

COLON Only the distal-most 25 cm of colon remained which contained moist, slightly stringy, well-formed, well-digested, brown feces. The mucosa was autolyzed. No parasites were observed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a scant amount of watery, dark green to black bile. The mucosa was stained dark orange to black.

REPRODUCTIVE The reproductive organs were soft and friable. The uterus was contracted. Each uterine horn contained a scar.

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, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition.

HEAD & NECK REGIONS There was dark brown sediment and a moderate amount of watery, red-tinged fluid in the trachea (see photo).

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-03-24_FWC025_8492 through 8518.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Scavenging
- Sediment, fluid in trachea
- Macroalgae in stomach
- Monofilament in stomach

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

Sara M. Wappes
Gisele Nieman (FWC volunteer)

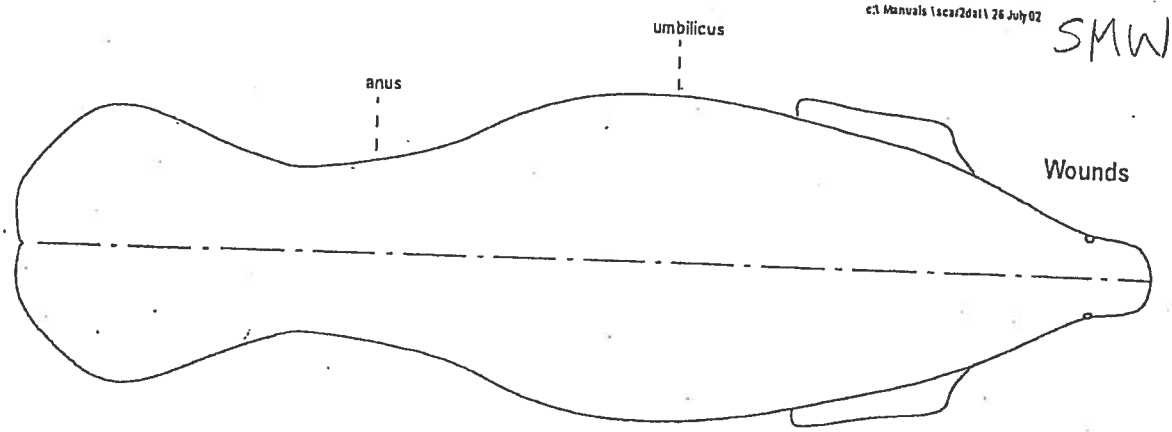
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Date 24 Mar 2019

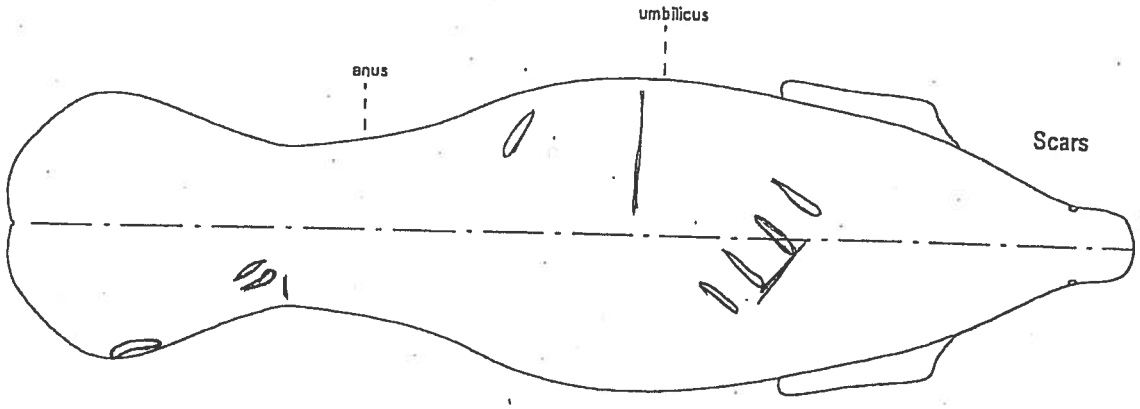
Field I.D. MEC19035

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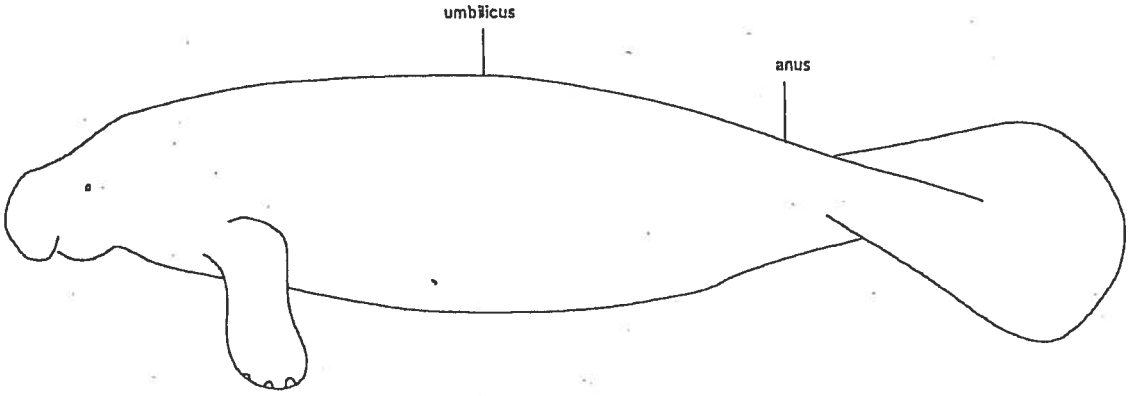
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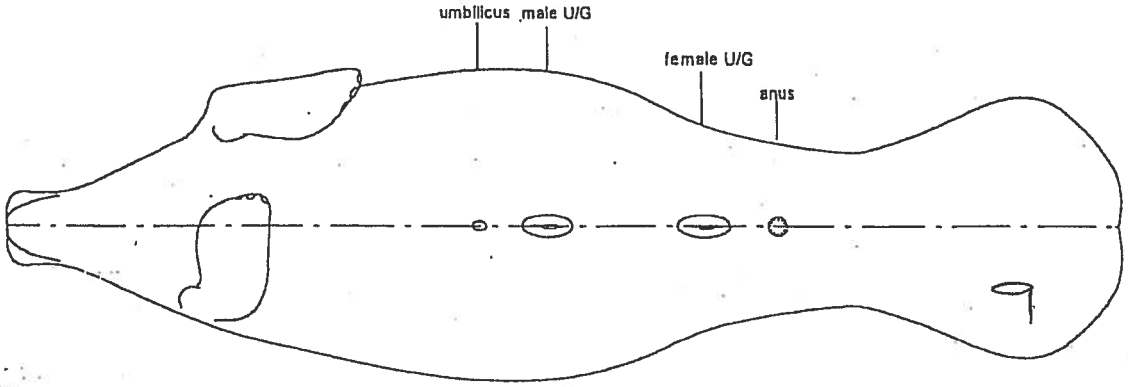


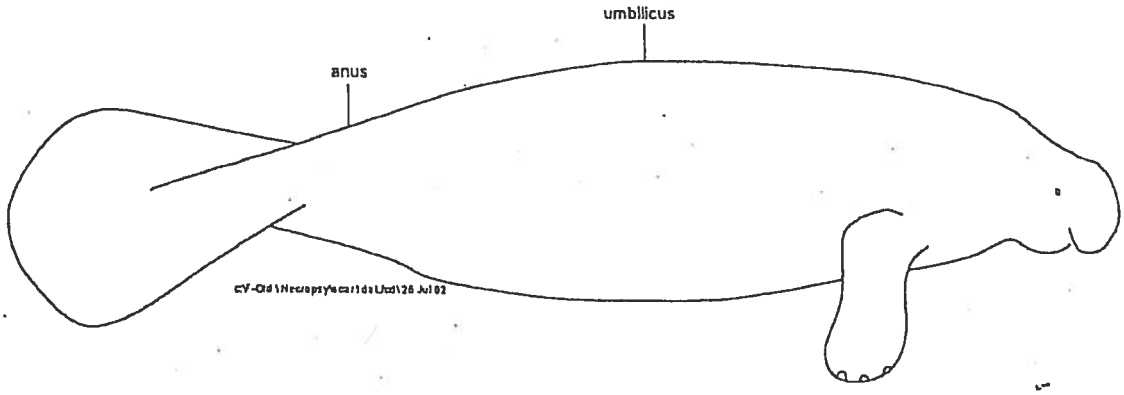
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FIELD I.D. MEC19035



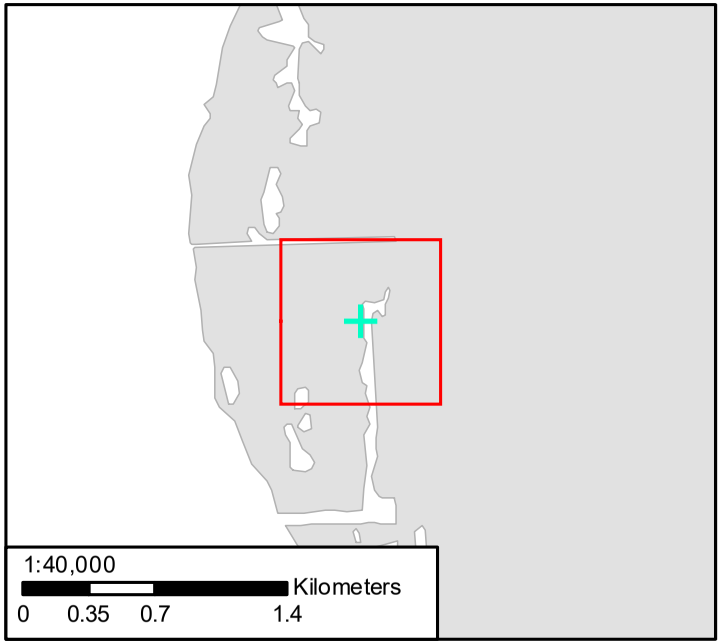


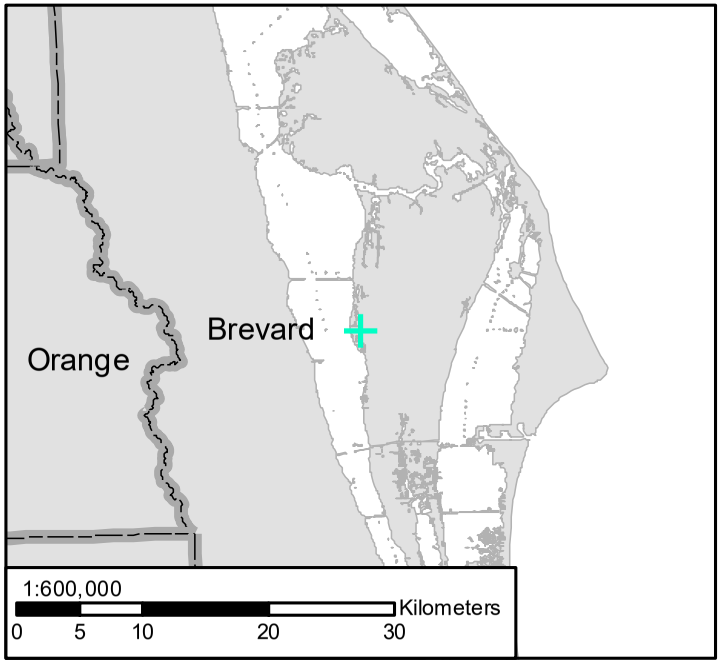


Verified Recovery Location of Manatee Carcass MEC19035

Report Date: 3/23/2019 **Received Date:** 3/24/2019 **Received By:** FWC-SMW Map Created: 10/13/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 650 m SW of 1900 Pine Island Road.

Latitude: 28.4888°N **Longitude:** -80.72371°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19035
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4405 **FWC District**: Northeast
Sex: Female **Length (cm)**: 281 **Estimated** _____ **Weight (kg)** _____
Date reported: 23 March 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 24 March 2019 **By**: FWC-SMW, FWC vol-G. Nieman
Date necropsied: 24 March 2019 **By**: FWC-SMW, FWC vol-G. Nieman

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 650 m SW of 1900 Pine Island Rd.

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: Internal organs autolyzed or missing, macroalgae in remaining 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**: 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 #: **MEC19036**
Date of Report: 2019-Mar-27
Filed By: FWC EC Field Station

FWC Case # 4640 **FWC Region:** NE

Sex: Female **Length:** 114 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-27 **By:** FWC-WDG

DATE NECROPSIED: 2019-Mar-27 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.44029 **N**
County: Brevard **Longitude:** -80.72054 **W**
Waterway: Indian River
Locality description: Merritt Island, grounded approximately 40 m NE of 505 Apache Trail.

CONDITION: Badly Decomposed

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

EXPLAIN: Natural: Stillborn; Fetal folds; Consolidated lungs; Meconium.

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. Scavenging.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19036

MORPHOMETRICS:

Total length:	114 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. Left umbilical artery probe patent and filled with blood clots lateral to bladder. Umbilicus scavenged.

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. MEC19036
RECOVERY DATE 27 March 2019
GENDER Female **TL** 114 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 27 March 2019
CONDITION Badly Decomposed

HISTORY 27 March 2019, at 0843 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at 505 Apache Trail in the Indian River in Merritt Island, Brevard County. FWC case number 4640 was assigned. The complainant, Ren Frame (407-463-6529), stated that the manatee was 2 to 3 feet long, gray in color, and slightly bloated. At 0848 hrs, WDG received photo confirmation. At 1010 hrs, WDG and FWC intern-L. Clance (LRC) arrived at the site and located the carcass. The carcass was loaded by 1016 hrs and transported it to the EC Field Station. A field necropsy was completed by 1304 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 30% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. There was a rent due to scavenging at the umbilicus. There were transverse folds on the ventrum. The fluke was scalloped. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered (see photo). Internal organs were missing unless mentioned below.

STOMACH The stomach was torn and empty of contents. The mucosa was autolyzed. No parasites were observed.

COLON Only approximately 25 cm of the distal colon remained which contained moist, homogeneous, tacky, dark brown meconium (see photo). No parasites were observed. The mucosa was autolyzed.

REPRODUCTIVE 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 gassy. The urachus was closed at the bladder tip.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were consolidated (see photos). Serosal surfaces were pink to dark red and slightly gassy and cut surfaces were dark red. The primary airways were clear. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON The ribs were subluxated due to decomposition. Otherwise, NVL.

OTHER The umbilical arteries were torn due to scavenging at the umbilicus. The left umbilical artery was probe patent and filled with blood clots lateral and cranial to the urinary bladder.

PHOTOGRAPHS 2019-03-27_FWC023_5170, 5172, 5175, 5177, 5178, 5181, 5183 through 5185, 5187, 5188, 5191.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Consolidated lungs
- Meconium
- Missing, autolyzed internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Perinatal; Natural (Stillborn)

NECROPSY CONDUCTED BY

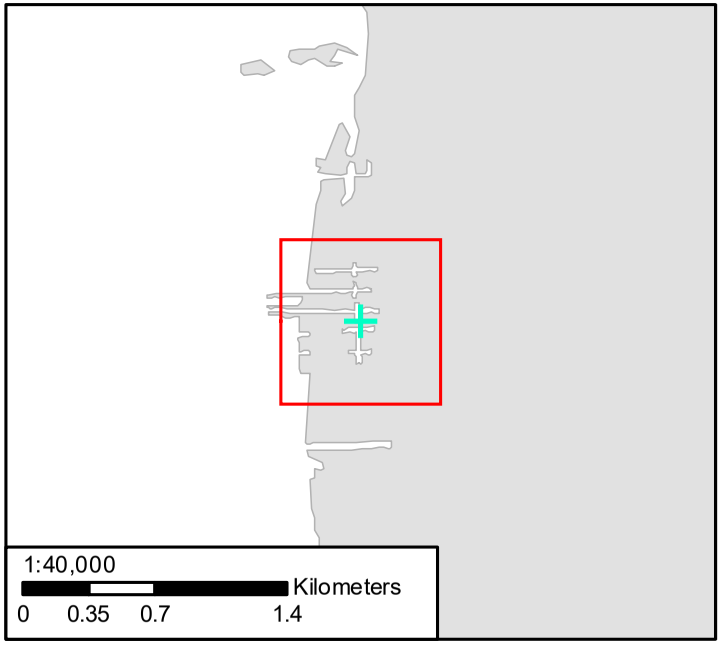
William D. Greer
Sara M. Wappes
Lauren R. Clance (FWC intern)

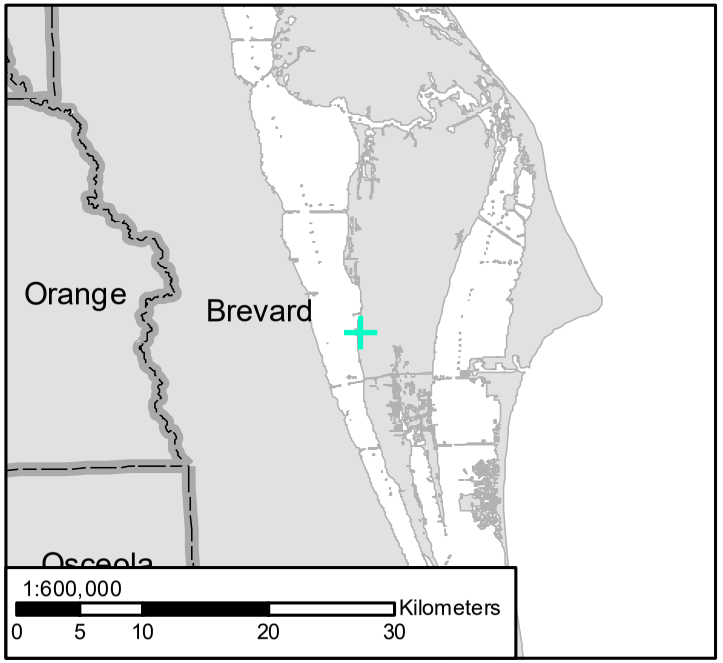
REPORT FILED BY Clance / Greer

Verified Recovery Location of Manatee Carcass MEC19036

Report Date: 3/27/2019 **Received Date:** 3/27/2019 **Received By:** FWC-WDG Map Created: 10/13/2020







Locality Description:
Merritt Island, Brevard
Grounded, approximately 40 m NE of 505 Apache Trail.

Latitude: 28.44029°N **Longitude:** -80.72054°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19036
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4640 **FWC District:** Northeast
Sex: Female **Length (cm):** 114 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 March 2019 **By:** Citizen to FWC NE Dispatch- Orlando
Date collected: 27 March 2019 **By:** FWC- WDG; FWC Intern- L. Clance
Date necropsied: 27 March 2019 **By:** FWC- WDG, SMW; FWC Intern- L. Clance

LOCATION INFORMATION: **State** FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Merritt Island, approximately 40 m NE of 505 Apache Trail

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: Still born, consolidated lungs, mecronium in colon, scalloped tail, fetal folds, urachus closed

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: Most of perinatal evaluation completed but heart was SFA

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 #: **MEC19037**
Date of Report: 2019-Mar-27
Filed By: FWC EC Field Station

FWC Case # 4653 **FWC Region:** NE

Sex: Female **Length:** 223 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-28 **By:** FWC-SMW,LRB

DATE NECROPSIED: 2019-Mar-28 **By:** FWC-SMW,LRB

LOCATION: **State:** FL **Latitude:** 28.32282 **N**
County: Brevard **Longitude:** -80.65855 **W**
Waterway: Banana River
Locality description: Merritt Island, grounded approximately 20 m SE of 1960 Harbor Point Drive.

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); Sub-luxated rib(s); Thin peduncle; Specks lung serosa.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case number 4787.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19037

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. MEC19037
RECOVERY DATE 28 March 2019
GENDER Female **TL** 223 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 28 March 2019
CONDITION Badly Decomposed

HISTORY 27 March 2019, at 1505 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 4653 was assigned. The complainant, Dave (414-322-3764), stated that there was a 5-foot-long dead manatee belly-up near his home. SMW received photo confirmation at 1508 hrs and arrived at the reported location at 1607 hrs. Due to an Ezy-Lift failure, SMW secured the carcass to a nearby dock at a vacant lot at 1700 hrs, where it was left overnight. **28 March**, at 0925 hrs, SMW and FWC biologist-Lucy R. Bukowski (LRB) arrived at the carcass, launched two kayaks, and towed the carcass to a nearby secluded shoreline. A field necropsy was completed at 1100 hrs. The remains were left on site. **29 March**, at 1807 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from Dispatch regarding a dead manatee in the Banana River, Merritt Island, Brevard County. FWC case number 4787 was assigned. The complainant, John Wallace (386-717-9676), stated that the manatee was badly decomposed, on the shoreline, and appeared to be cut open. ARH advised the complainant it was likely a previous field necropsy and forwarded the information and photos to EC Field Station staff at 1812 hrs. At 1813 hrs, FWC biologist-William D. Greer (WDG) confirmed that it was MEC19037. **30 March**, at 1605 hrs, ARH received a text from John Wallace requesting that FWC move the carcass because it smelled bad. **31 March**, SMW and FWC intern-L. Clance relocated the carcass to an isolated location in the Thousand Islands area of Cocoa Beach, Brevard County. **04 May**, at 2326 hrs, WDG received an email from FWC-Chip Deutsch regarding a dead manatee in the Banana River in Cocoa Beach reported by a third party. The complainant, Traci Castellon, stated that the carcass was badly decomposed and mostly a skeleton. Based on the description and GPS coordinates from the complainant, the carcass was determined to be the remains of MEC19037.

EXTERNAL Almost all of the epidermis was missing. The carcass was distended with gas. An eroded watercraft-related wound series was observed on the left dorsum which consisted of one wide linear wound (#1) and six parallel wounds (#2 - 7) that were perpendicular and caudal to wound #1. Most of the wounds penetrated into the dermis. The peduncle appeared thin. No watercraft-related scars were observed. There were rents at the urogenital opening and axillae due to decomposition. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach contained 375 mL of watery, fibrous, moderately chewed, green ingesta mixed with a moderate amount of viscous, gray fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 50 mL of moist, fibrous, poorly chewed, green to brown ingesta (see photo). The mucosa was unremarkable. There was a mild infection of dead nematodes.

JEJUNUM & ILEUM The small intestine contained a moderate amount of moist, fibrous, moderately chewed, green to brown ingesta. The mucosa was sloughing. No parasites were grossly observed.

CECUM The cecum contained 350 mL of moist, fibrous, moderately digested, green digesta (see photo). The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained wet, fibrous, moderately digested, poorly formed, green feces. The mid- and distal colon contained moist, moderately fibrous, well-digested, well-formed, green feces. The

mucosa was sloughing. No parasites were observed.

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

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

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a scant amount of black to dark green bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of partially rendered reproductive fat. The diameter of the uterus was small. Both uterine horns were filled with watery, red-tinged fluid. No scars were present. The ovaries 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 gassy.

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

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were pink to red on serosal surfaces and dark red on cut surfaces. There were black specks on the left lung serosa (see photo). The primary airways contained a small amount of red-tinged fluid.

HEAD & NECK REGIONS NVL.

SKELETON Left rib 7 was sub-luxated.

OTHER

PHOTOGRAPHS 2019-03-28_FWC025_8519 through 8535.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Eroded watercraft wounds
- Thin peduncle
- Sub-luxated rib
- Specks lung serosa

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

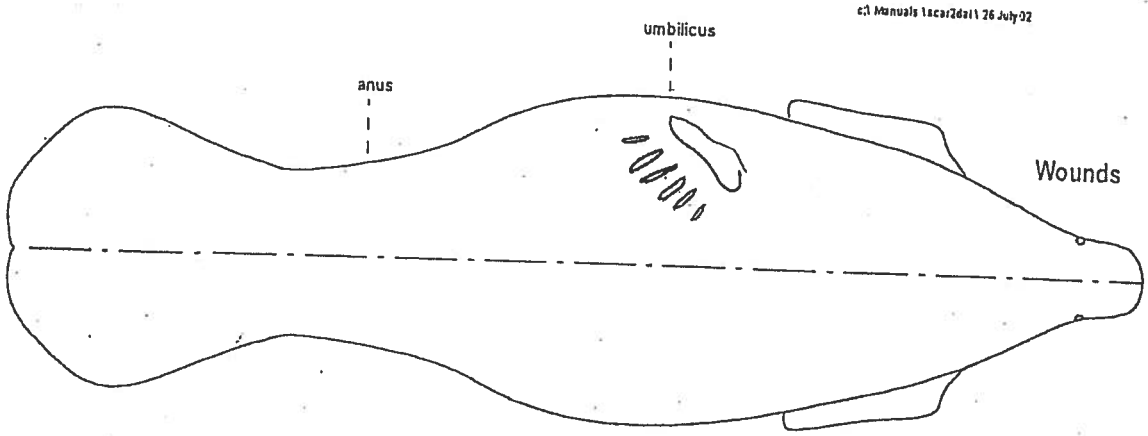
NECROPSY CONDUCTED BY

Sara M. Wappes
Lucy R. Bukowski

REPORT FILED BY Bukowski

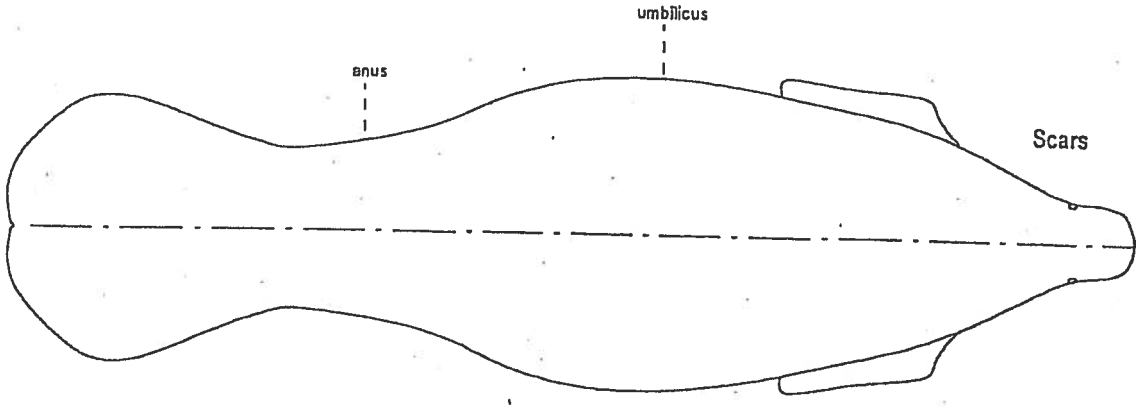
Date 28 MAR 2019 LVLB Field I.D. MEG19037

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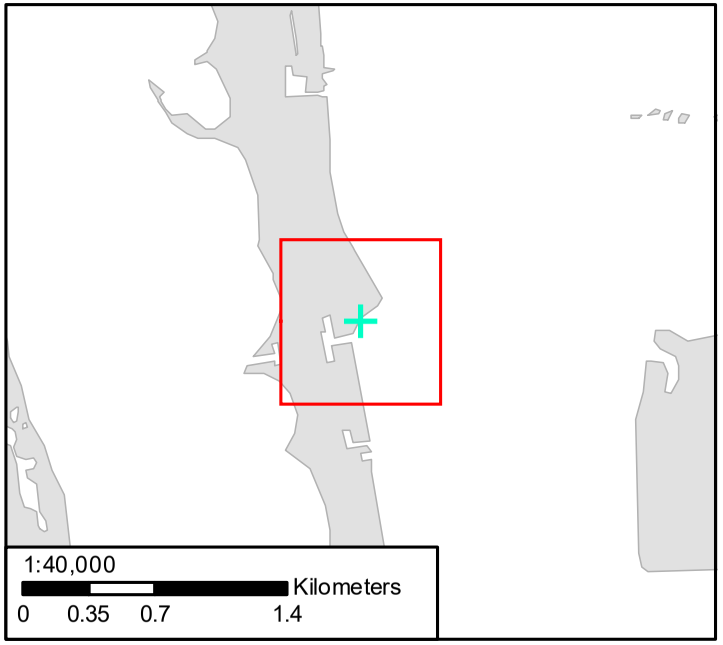
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Length	30	2.5	6	7.2	7.0	2.8	2.6													
Width	11	0.6	2.7	1.1	3.2	1.0	0.6													
Depth	/	/	/	/	/	/	/													
Distance		5.5	3.5	5.5	5.2	/														

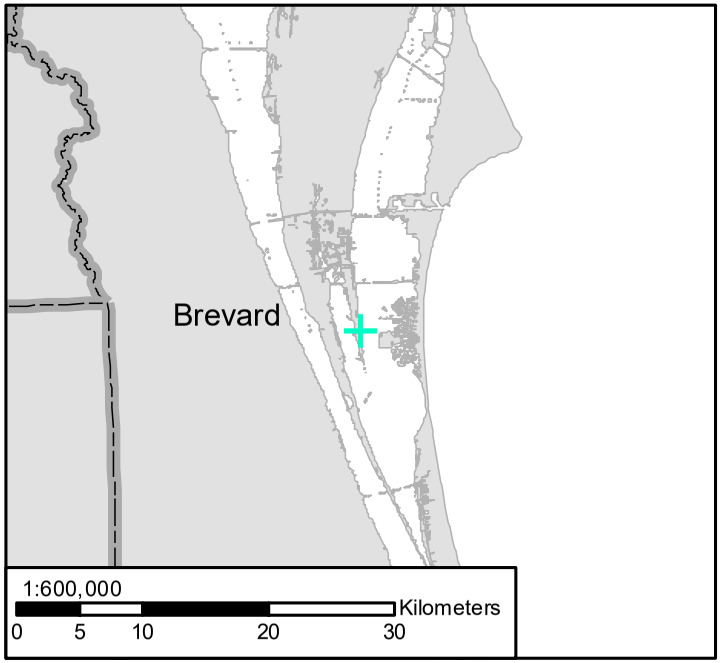


Verified Recovery Location of Manatee Carcass MEC19037

Report Date: 3/27/2019 **Received Date**: 3/28/2019 **Received By**: FWC-SMW,LRB Map Created: 10/13/2020







Locality Description:
Merritt Island, Brevard
Grounded, approximately 20 m SE of 1960 Harbor Point Drive.

Latitude: 28.32282°N **Longitude**: -80.65855°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19037
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4653 **FWC District:** Northeast
Sex: Female **Length (cm):** 223 **Estimated** _____ **Weight (kg)** _____
Date reported: 27 March 2019 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 28 March 2019 **By:** FWC-SMW, LRB
Date necropsied: 28 March 2019 **By:** FWC-SMW, LRB

LOCATION INFORMATION: **State** FL **County:** Brevard **Waterway:** Banana River
Latitude: N _____ **Longitude:** W _____
Locality description: Merritt Island, approximately 20 m SE of 1960 Harbor Point Dr

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, superficial wound series on dorsum,

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 #: **MEC19038**
Date of Report: 2019-Mar-30
Filed By: FWC EC Field Station

FWC Case # 4845 **FWC Region:** NE

Sex: Male **Length:** 194 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Mar-30 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Mar-31 **By:** FWC-SMW

DATE NECROPSIED: 2019-Mar-31 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.38203 **N**
County: Brevard **Longitude:** -80.68861 **W**
Waterway: Sykes Creek
Locality description: Merritt Island, floating approximately 160 m SE of 1490 Sykes Creek Drive.

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, 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.

Page 1&2	25 SEP 2020
Necropsy Report	25 SEP 2020
Lat/Long	25 SEP 2020

Field ID #: MEC19038

MORPHOMETRICS:

Total length:	194 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. MEC19038
RECOVERY DATE 31 March 2019
GENDER Male **TL** 194 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 31 March 2019
CONDITION Badly Decomposed

HISTORY 30 March 2019, at 1641 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek in Merritt Island, Brevard County. FWC case number 4845 was assigned. The complainant, Jim O'Malley (321-459-9352), stated that the manatee was approximately 6 feet long, brown to gray, and floating in the mangroves 150 feet south of mile marker 19 on the east side of Sykes Creek. At 1650 hrs, LRB received photo confirmation. **31 March**, FWC biologist-Sara M. Wappes and FWC intern-Lauren R. Clance arrived at Kiwanis Island boat ramp at 0935 hrs, launched the Key West boat at 0946 hrs, and completed a field necropsy by 1119 hrs. The remains were left on site.

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. The right eye was missing due to scavenging and red-tinged fluid exuded from the eye socket. There were rents at the urogenital opening and anus due to decomposition and/or scavenging. There were bird droppings on the ventrum. No watercraft-related wounds or scars were observed. The fluke margin was eroded at the 3 o'clock position and had small well-healed mutilations at the 9 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered (see photo). Internal organs were missing unless mentioned below. There were loose GI contents in the abdominal cavity.

STOMACH The stomach was torn and contained at least 300 mL of moist, fibrous, stringy, moderately chewed, light green to brown ingesta. There was a mild infection of dead nematodes. The mucosa was autolyzed.

DUODENUM The duodenum contained 100 mL of moist, fibrous, stringy, moderately chewed, light green to brown ingesta. There was a mild infection of dead nematodes. The mucosa was autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained dark yellow to black.

REPRODUCTIVE The reproductive system was soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained a scant amount of watery, pink-tinged urine. 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, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON Left ribs 4 - 8 were luxated likely due to decomposition (see photo).

OTHER

PHOTOGRAPHS 2019-03-31_FWC023_5193, 5195, 5197, 5201 through 5203, 5205 through 5215.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

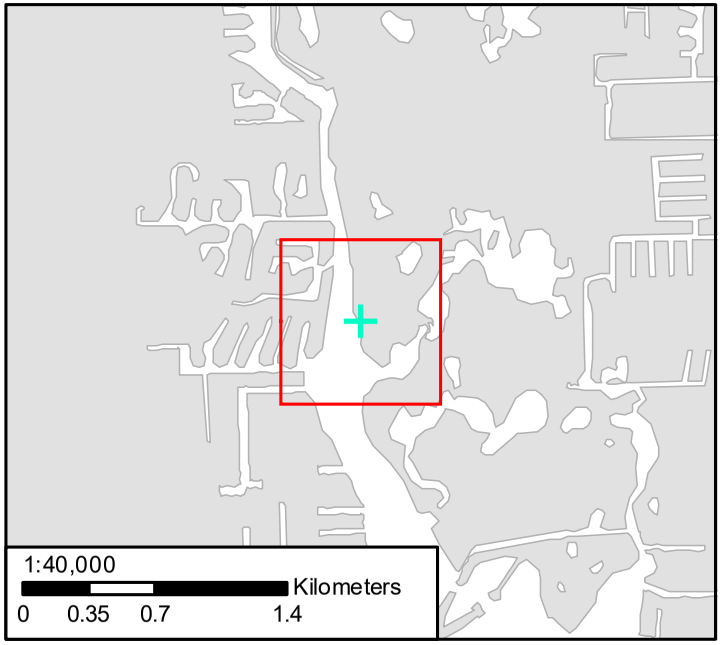
Sara M. Wappes
Lauren R. Clance (FWC intern)

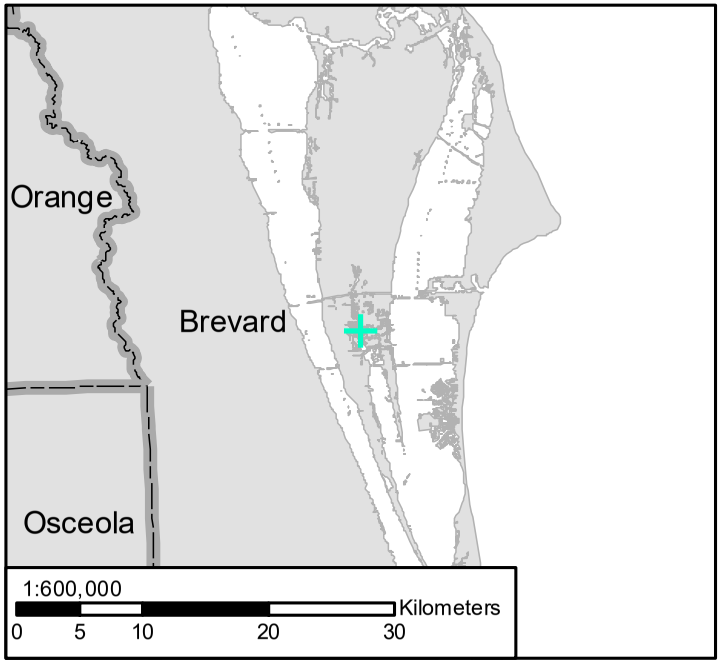
REPORT FILED BY Clance / Wappes

Verified Recovery Location of Manatee Carcass MEC19038

Report Date: 3/30/2019 **Received Date**: 3/31/2019 **Received By**: FWC-SMW Map Created: 10/13/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 160 m SE of 1490 Sykes Creek Drive.

Latitude: 28.38203°N **Longitude**: -80.68861°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19038
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4845 **FWC District:** Northeast
Sex: Male **Length (cm):** 194 **Estimated** _____ **Weight (kg)** N/T
Date reported: 30 March 2019 **By:** Citizen to FWC NE Dispatch- Orlando
Date collected: 31 March 2019 **By:** FWC- SMW, FWC Intern- L. Clance
Date necropsied: 31 March 2019 **By:** FWC- SMW, FWC Intern- L. Clance

LOCATION INFORMATION: State FL **County:** Brevard **Waterway:** Sykes Creek
Latitude: N _____ **Longitude:** W _____
Locality description: Merritt Island, approximately 160 m SE of 1490 Sykes Creek 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: Most internal organs missing or autolyzed. Most epidermis missing. Luxated ribs.

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 #: **MEC19039**
Date of Report: 2019-Apr-01
Filed By: FWC EC Field Station

FWC Case # 4967 **FWC Region:** NE

Sex: Male **Length:** 244 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-01 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Apr-02 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.07412 **N**
County: Brevard **Longitude:** -80.60848 **W**
Waterway: Crane Creek
Locality description: Melbourne, floating approximately 60 m NE of the northeastern most building at 2300 Grant Street.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Cold stress lesions; Serous fat(s); Depleted fat(s); Crumbly feces; Dry feces; Congested airway mucosa; Sand, shells in trachea; Relatively empty, fluid-filled upper GI tract; Severe barnacles infestation.

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	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19039

MORPHOMETRICS:

Total length:	244 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. MEC19039
RECOVERY DATE 01 April 2019
GENDER Male **TL** 244 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 02 April 2019
CONDITION Badly Decomposed

HISTORY 01 April 2019, at 1425 hrs, FWC biologist-William D. Greer received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Crane Creek, Melbourne, Brevard County. FWC case number 4967 was assigned. The complainant, Karen McLaughlin (321-848-8416), stated that the manatee was floating back-up, was covered in barnacles, and missing skin on its face. At 1503 hrs, WDG, FWC biologist-Sara M. Wappes (SMW), and FWC intern-Lauren R. Clance (LRC) arrived at the Front Street boat ramp and launched the Key West boat. The carcass was secured at 1525 hrs and loaded via Ezy-Lift by 1613 hrs. The carcass was transported to the EC Field Station where it was stored overnight. **02 April**, at 0920 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. Bloody fluid exuded from the nares. There was a severe infestation of barnacles and barnacle scars on all aspects. Numerous small pitted lesions were observed on the dorsal fluke and peduncle. Bleached spots were observed in the epidermis on all aspects. A thin brown algal mat was observed on the lateral aspects. Healing linear lesions were present on the lateral aspects. There was bleached epidermis on the flippers and fluke margin. No watercraft-related scars or wounds were present. The fluke margin was eroded at the 3 o'clock position. 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 550 mL of wet, red macroalgae mixed with a small amount of fibrous, stringy, yellow vegetation (see photo). The mucosa was slightly stained pink (see photo). No parasites were observed.

DUODENUM The duodenum contained 250 mL of watery, gray fluid mixed with a moderate amount of red macroalgae and a small amount of fibrous, stringy, yellow vegetation (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a small amount of wet, well-chewed, yellow to red macroalgae. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 750 mL of dry, red macroalgae and a small amount of fibrous, stringy, yellow vegetation (see photo). The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained wet, stringy, fibrous, poorly formed, green to brown feces. The mid colon contained dry, crumbly, stringy, fibrous, green to brown feces (see photo). The mucosa was unremarkable. The distal colon contained dry, fibrous, well-formed, green to brown feces (see photo). The mucosa was sloughing. No parasites were observed.

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

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

LIVER The margins of the liver were rounded. The liver was soft and friable. Serosal surfaces were dark purple and cut surfaces were dark red.

GALLBLADDER The gallbladder contained a scant amount of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant, serous reproductive fat. The reproductive organs were soft, friable, and autolyzed.

KIDNEYS There was no perirenal fat. The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 10 mL of red-tinged urine. The mucosa was gassy.

HEART There was a small amount of 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 red to black and cut surfaces were dark red. The primary airways contained a scant amount of watery, red-tinged fluid. The mucosa was moderately congested (see photo). There was a mild infection of dead trematodes.

HEAD & NECK REGIONS There was a small amount of sand and shells in the trachea.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-04-02_FWC025_8536 through 8559.

COMMENTS

SIGNIFICANT FINDINGS

- Bleached epidermis
- Cold stress lesions
- Severe barnacle infestation
- Depleted serous fat
- Dry, crumbly feces
- Relatively empty, fluid-filled upper GI tract
- Congested airway mucosa
- Sand, shells in trachea
- Macroalgae through GI tract

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

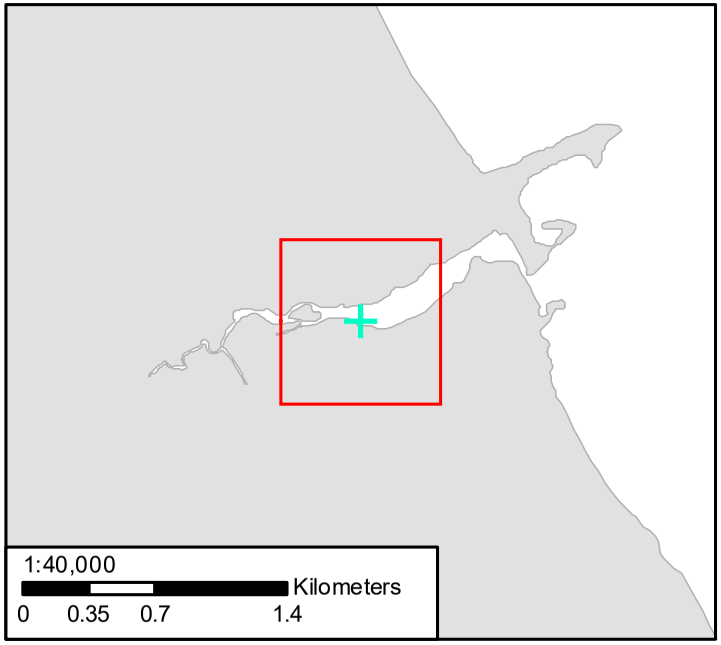
William D. Greer
Lucy R. Bukowski
Lauren R. Clance (FWC intern)

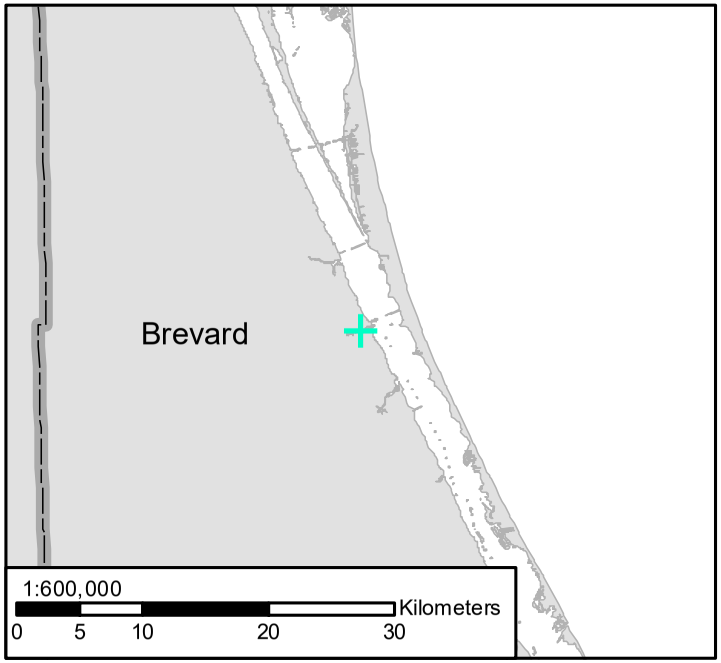
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19039

Report Date: 4/1/2019 **Received Date**: 4/1/2019 **Received By**: FWC-WDG,SMW Map Created: 10/14/2020







Locality Description:
Melbourne, Brevard
Floating, approximately 60 m NE of the northeastern most building at 2300 Grant Street.

Latitude: 28.07412°N **Longitude**: -80.60848°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19039
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 4967 **FWC District:** Northeast
Sex: Male **Length (cm):** 244 **Estimated** _____ **Weight (kg)** N/T
Date reported: 01 April 2019 **By:** Citizen to FWC NE Dispatch- Orlando
Date collected: 01 April 2019 **By:** FWC- WDG, SMW; FWC Intern- L. Clance
Date necropsied: 02 April 2019 **By:** FWC- WDG, LRB; FWC Intern- L. Clance

LOCATION INFORMATION: State FL **County:** Brevard **Waterway:** Crane Creek
Latitude: N _____ **Longitude:** W _____
Locality description: Melbourne, approximately 60 m NE of the northeastern most building at 2300 Grant Street
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: Serous fats, linear lesions on epidermis, dry and hard feces, bleaching of skin on flippers and fluke, watery fluid in trachea and primary airways of lungs, sand and shells in 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 _____

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: 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 #: **MEC19040**
Date of Report: 2019-Apr-03
Filed By: FWC EC Field Station

FWC Case # 5072 **FWC Region:** NE

Sex: Male **Length:** 109 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-03 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Apr-04 **By:** FWC-LRB,SMW

LOCATION: **State:** FL **Latitude:** 28.4328 **N**
County: Brevard **Longitude:** -80.72143 **W**
Waterway: Indian River
Locality description: Merritt Island, floating approximately 65 m SW of 985 Meadow Lark Lane.

CONDITION: Badly Decomposed

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

EXPLAIN: Natural: Other; Fetal folds; Sediment in airways, lung parenchyma; Relatively empty, fluid-filled 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.

Page 1&2	25 SEP 2020
Necropsy Report	25 SEP 2020
Lat/Long	25 SEP 2020

Field ID #: MEC19040

MORPHOMETRICS:

Total length:	109 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 filled with blood clots lateral and cranial to the urinary bladder.

Ductus Arteriosis Diameter: 1.1 cm

Left Pulmonary Artery Diameter: 1 cm

Right Pulmonary Artery Diameter: 0.9 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. MEC19040
RECOVERY DATE 03 April 2019
GENDER Male **TL** 109 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 04 April 2019
CONDITION Badly Decomposed

HISTORY 03 April 2019, at 1347 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Merritt Island, Brevard County. FWC case number 5072 was assigned. The complainant, Stacy (321-987-8053), stated that the manatee was very small and pink and white in color. At 1545 hrs, LRB and FWC biologist-William D. Greer (WDG) arrived at the reported location, towed the carcass via kayak by 1550 hrs, loaded it into the truck bed at 1615 hrs, and transported it to the EC Field Station. **04 April**, at 0940 hrs, a field necropsy was completed.

EXTERNAL Almost all of the epidermis was missing. The carcass was distended with gas. Faint transverse folds were present on the ventrum. The eyes were bulging due to decomposition. The fluke margin was eroded due to decomposition. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There were no abdominal, mesenteric, or omental fat.

STOMACH The stomach contained 20 mL of viscous, light pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum was torn due to decomposition and empty of contents (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a moderate amount of viscous, tan fluid. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 10 mL of viscous, light brown fluid (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon contained viscous, flocculent, green fluid (see photo).

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

SPLEEN The spleen was dark purple on serosal and cut surfaces

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LIVER The margins of the liver were rounded. The liver was soft. Serosal and cut surfaces were light pink to light purple.

GALLBLADDER The gallbladder contained 5 mL of watery, yellow to orange bile. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were small.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained a scant amount of flocculent, pink-tinged urine. The mucosa was unremarkable.

HEART There was no epicardial fat. The flat diameter of the ductus arteriosus measured 1.1 cm. The flat diameter of the right pulmonary artery measured 0.9 cm and that of the left pulmonary artery measured 1.0 cm. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were soft and gassy. Serosal surfaces were light pink and cut surfaces were white to pink. There was sediment in the lung parenchyma. The left lung primary airway contained a small amount of sediment (see photo). The right lung primary airway was clear.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER The umbilical arteries were probe patent and filled with blood clots lateral and cranial to the urinary bladder.

PHOTOGRAPHS 2019-04-04_FWC025_8560 through 8572.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Sediment in airways, lung parenchyma
- Relatively empty, fluid-filled GI tract
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Perinatal; Natural

NECROPSY CONDUCTED BY

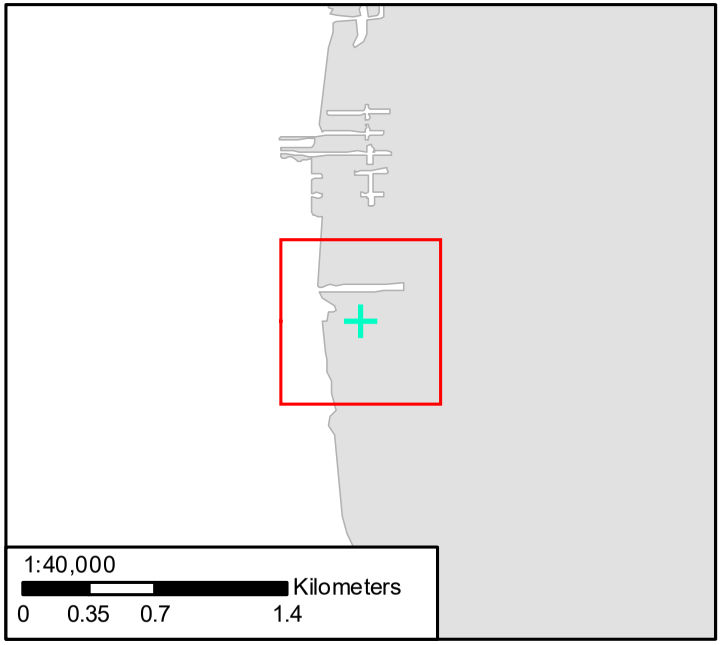
Sara M. Wappes
Lucy R. Bukowski

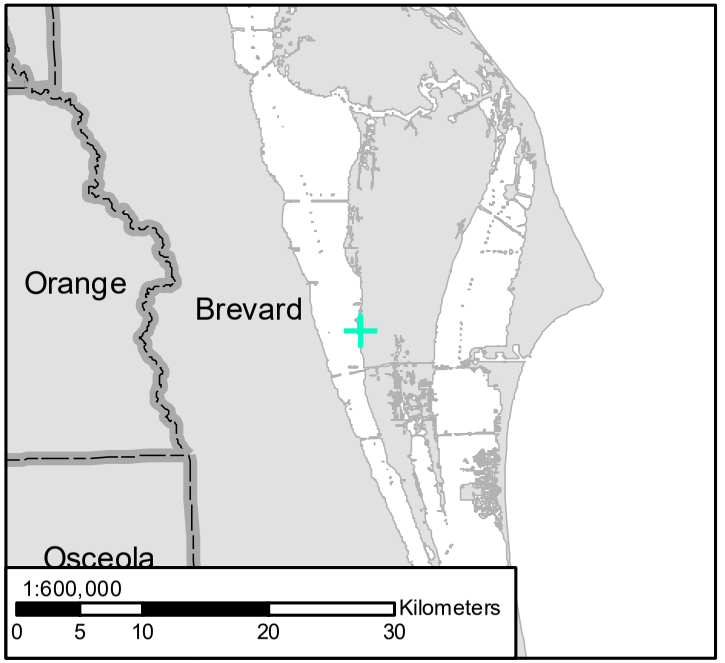
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19040

Report Date: 4/3/2019 **Received Date:** 4/3/2019 **Received By:** FWC-WDG,LRB Map Created: 10/14/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 65 m SW of 985 Meadow Lark Lane.

Latitude: 28.4328°N **Longitude:** -80.72143°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19040
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5072 **FWC District**: Northeast
Sex: Male **Length (cm)**: 109 **Estimated** _____ **Weight (kg)** N/T
Date reported: 3 April 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 3 April 2019 **By**: FWC-WDG, LRB
Date necropsied: 4 April 2019 **By**: FWC-LRB, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 65 m SW of 985 Meadow Lark 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: Meconium in colon, urachus probe patent and filled with blood clots, umbilical arteries probe patent and filled with blood clots, lungs contained sediment, autolyzed 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 #: **MEC19041**
Date of Report: 2019-Apr-05
Filed By: FWC EC Field Station

FWC Case # 5152 **FWC Region:** NE

Sex: Male **Length:** 219 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-05 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-05 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Apr-05 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 27.56374 **N**
County: Indian River **Longitude:** -80.36671 **W**
Waterway: Indian River
Locality description: Vero Beach, floating approximately 30 m SW of 413 21st Street SE.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Lung abscesses; Fluid-filled duodenum.

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. Bleached epidermis; Macroalgae in stomach.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19041

MORPHOMETRICS:

Total length:	219 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. MEC19041
RECOVERY DATE 05 April 2019
GENDER Male **TL** 219 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 05 April 2019
CONDITION Badly Decomposed

HISTORY 05 April 2019, at 1005 hrs, FWC biologist-Lucy R. Bukowski (LRB) 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 5152 was assigned. The complainant, John Reeves (704-622-8693), stated that the manatee was stuck under his neighbor's dock. LRB received a verification photo at 1015 hrs. At 1130 hrs, LRB and FWC biologist-William D. Greer (WDG) arrived at Round Island Park boat ramp, launched the Key West boat, and arrived at the carcass at 1145 hrs. The carcass was bloated and wedged under a dock. After conferring with FWC biologist-Andrew J. Garrett, WDG and LRB made several cuts into the body cavity to relieve built up gas pressure. This allowed the carcass to be pulled out from underneath the dock at 1255 hrs. LRB and WDG towed the carcass to a nearby spoil island where a field necropsy was completed at 1345 hrs. The remains were left on site.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was distended with gas. Portions of the GI tract protruded through the cut on the ventrum which was made to deflate the carcass. The epidermis that remained on the fluke margin was slightly bleached. No watercraft-related scars or wounds were present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach contained 750 mL of moist, moderately chewed, stringy, green to brown ingesta mixed with a small amount of red macroalgae (see photo). The mucosa was autolyzed. There was a mild infection of dead nematodes.

DUODENUM The duodenum contained approximately 100 mL of watery, stringy, green to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a moderate amount of viscous, gray fluid mixed with small amounts of wet, stringy, green to brown ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 250 mL of wet, stringy, brown digesta (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The colon contained moist, well-formed, slightly fibrous, brown feces. The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was liquified.

GALLBLADDER The gallbladder was missing due to decomposition.

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 gassy.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and gassy. Serosal surfaces were mottled red and gray, and cut surfaces were dark red. The primary airways contained a mild infection of dead trematodes (see photo). The caudal one-third of the right lung was swollen and had numerous small abscesses on cut surfaces (see photo).

HEAD & NECK REGIONS There was a mild infection of dead trematodes in the trachea. Otherwise NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-04-05_FWC025_8573 through 8591.

COMMENTS

SIGNIFICANT FINDINGS

- Lung abscesses
- Fluid-filled duodenum
- Bleached epidermis
- Macroalgae in stomach
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

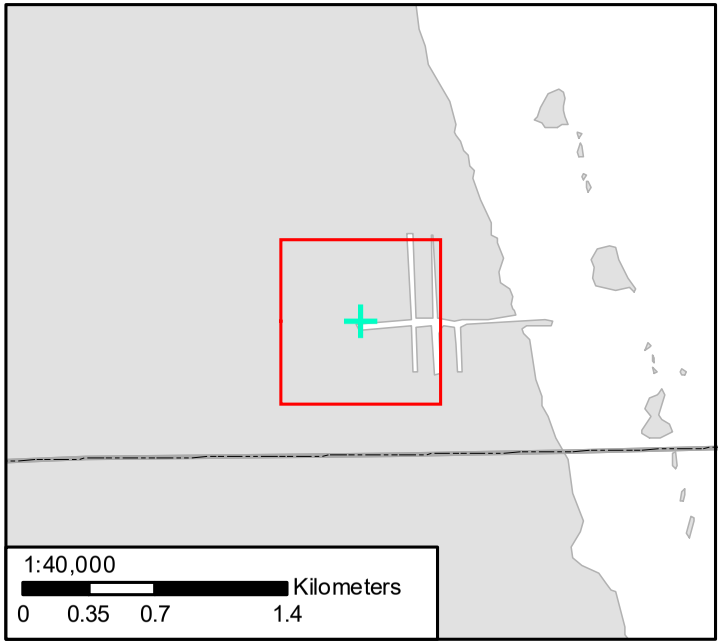
William D. Greer
Lucy R. Bukowski

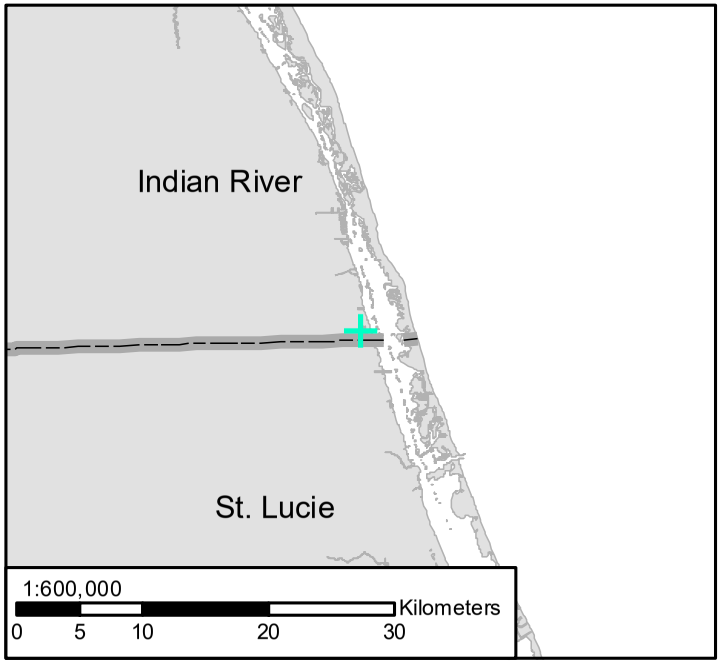
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19041

Report Date: 4/5/2019 **Received Date:** 4/5/2019 **Received By:** FWC-WDG,LRB Map Created: 10/14/2020







Locality Description:
Vero Beach, Indian River
Floating, approximately 30 m SW of 413 21st Street SE.

Latitude: 27.56374°N **Longitude:** -80.36671°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19041
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5152 **FWC District**: Northeast
Sex: Male **Length (cm)**: 219 **Estimated** _____ **Weight (kg)** N/T
Date reported: 05 April 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 05 April 2019 **By**: FWC-WDG, LRB
Date necropsied: 05 April 2019 **By**: FWC-WDG, LRB

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 30 m SW of 413 21st St 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: Missing or autolyzed 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 #: **MEC19042**
Date of Report: 2019-Apr-12
Filed By: FWC EC Field Station

FWC Case # 5589 **FWC Region:** NE

Sex: Female **Length:** 115 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-12 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2019-Apr-12 **By:** FWC-LRB,SMW
DATE NECROPSIED: 2019-Apr-12 **By:** FWC-LRB,SMW

LOCATION: **State:** FL **Latitude:** 28.01788 **N**
County: Brevard **Longitude:** -80.59036 **W**
Waterway: Turkey Creek
Locality description: Palm Bay, floating approximately 25 m E of 887 Vance Circle NE.

CONDITION: Badly Decomposed
PROBABLE CAUSE OF DEATH: Perinatal (<= 150 cm)
EXPLAIN: Natural: Stillborn; Fetal folds; Consolidated lungs.

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. Actual length of the remains was 111 cm. Scavenging.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19042

MORPHOMETRICS:

Total length:	115 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. MEC19042
RECOVERY DATE 12 April 2019
GENDER Female **TL** 115 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 12 April 2019
CONDITION Badly Decomposed

HISTORY, 12 April 2019, at 0912 hrs, FWC biologist-Lucy R. Bukowski received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Turkey Creek, Palm Bay, Brevard County. FWC case number 5589 was assigned. The complainant, Susan Halleron (321-768-1200), stated that the small manatee was brown and had flies on it. LRB received a confirmation photo at 0924 hrs. LRB and FWC biologist-Sara M. Wappes (SMW) arrived at the carcass at 1005 hrs and loaded it into the truck bed by 1014 hrs. The carcass was transported to the EC Field Station where a field necropsy was completed at 1125 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Almost all of the epidermis was missing. The ventral dermis was eroded due to decomposition. There were rents at the umbilicus and face due to decomposition and/or scavenging. The skull was missing. A few transverse folds were observed on the ventrum. There was a rent in the fluke at the caudal aspect due to decomposition. Actual length of the remains was 111 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL No fat was observed. Internal organs were missing unless mentioned below.

STOMACH The stomach was empty of contents (see photo). The mucosa was autolyzed. No parasites were observed.

LIVER The liver was soft, friable, and autolyzed.

KIDNEYS There was no perirenal fat. 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, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were soft, friable, and gassy but appeared consolidated. Serosal surfaces were gray to purple (see photo). The primary airways were clear.

HEAD & NECK REGIONS The skull was missing.

SKELETON All ribs were luxated and/or sub-luxated due to decomposition.

PHOTOGRAPHS 2019-04-12_FWC025_8629 through 8637.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Consolidated lungs
- Scavenging
- Autolyzed/missing internal organs
- Missing skull

PROBABLE CAUSE OF DEATH Perinatal; Natural (Stillborn)

NECROPSY CONDUCTED BY

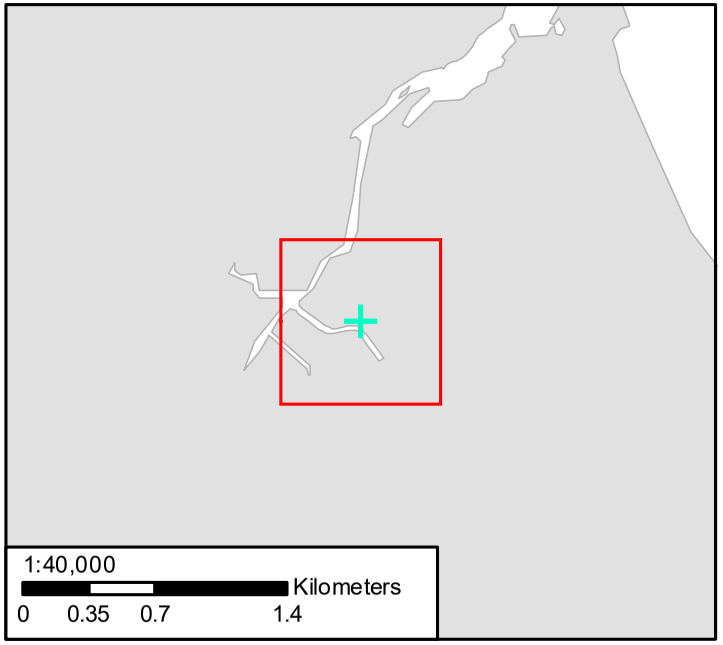
Sara M. Wappes
Lucy R. Bukowski

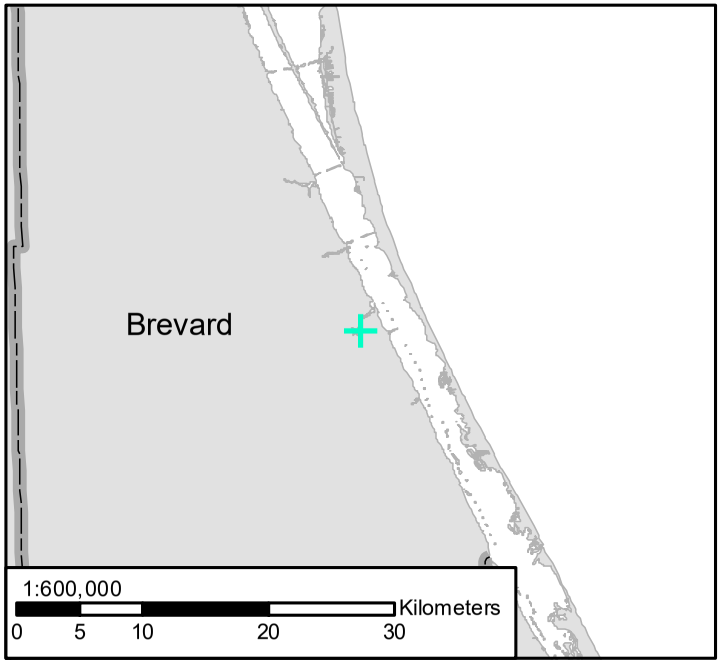
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19042

Report Date: 4/12/2019 **Received Date:** 4/12/2019 **Received By:** FWC-LRB,SMW Map Created: 10/14/2020







Locality Description:
Palm Bay, Brevard
Floating, approximately 25 m E of 887 Vance Circle NE.

Latitude: 28.01788°N **Longitude:** -80.59036°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19042
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5589 **FWC District**: Northeast
Sex: Female **Length (cm)**: 111 **Estimated** 115 **Weight (kg)** N/T
Date reported: 12 April 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 12 April 2019 **By**: FWC-LRB, SMW
Date necropsied: 12 April 2019 **By**: FWC-LRB, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Turkey Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 25 m E of 887 Vance Circle NE.

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: Too decomposed. Missing or autolyzed internal organs, skull 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**: - **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 #: **MEC19043**
Date of Report: 2019-Apr-15
Filed By: FWC EC Field Station

FWC Case # 5796 **FWC Region:** NE

Sex: Male **Length:** 281 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-16 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Apr-16 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.91273 **N**
County: Volusia **Longitude:** -80.81988 **W**
Waterway: Mosquito Lagoon
Locality description: New Smyrna Beach, grounded approximately 295 m NW of the intersection of River Trace Lane and Eldora Road, and approximately 800 m SW of the intersection of A1A and Eldora Road.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Shredded muscle; Hemorrhagic muscle; Hemothorax; Torn lung(s); Blood clots; Hemorrhagic lung parenchyma; Congested abdominal wall, mesenteries; Seagrass in mouth.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in stomach. Depleted fat(s); Scavenging.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19043

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. MEC19043
RECOVERY DATE 16 April 2019
GENDER Male **TL** 281 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 16 April 2019
CONDITION Badly Decomposed

HISTORY 15 April 2019, at 1423 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon, New Smyrna Beach, Volusia County. FWC case number 5796 was assigned. The complainant, Kristen Kneisl (321-403-5680), stated that a visitor to Canaveral National Seashore had told her there was a dead manatee near Parking Lot #7. At 1442 hrs, SMW received photo confirmation. A response was planned for the following day. **16 April**, at 1030 hrs, FWC biologists-William D. Greer (WDG) and Lucy R. Bukowski (LRB) arrived at the reported location and launched two kayaks. The carcass was located at 1035 hrs, and a field necropsy was completed by 1158 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 an eroded linear wound series on the caudal left dorso-lateral aspect (see photo) which consisted of a wide linear wound (#1) and three superficial parallel propeller wounds (#2 – 4) caudal and roughly perpendicular to wound #1. A thick brown algal mat was present on the dorsal and lateral aspects. A mild infestation of barnacles was observed on the ventral fluke and peduncle. There was a rent at the umbilicus due to scavenging through which intestines protruded. The tissue of the ventral head and neck was torn due to scavenging. There were bird droppings on the ventrum. A minimum of two well-healed watercraft-related scar patterns was observed on the dorsal aspect of the fluke and peduncle. There was one well-healed mutilation between the 7 and 8 o'clock positions of the fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant abdominal, mesenteric, and omental fat. There were small patches of moderate congestion in the abdominal wall and mesenteries (see photos).

STOMACH The stomach contained 14.1 L of moist, well-chewed, fibrous, yellow and green ingesta (see photo). There was a 135 cm long piece of 15 lb test diameter clear monofilament line in the stomach (see photo). No parasites were observed. The mucosa was autolyzed.

DUODENUM The duodenum contained 4.1 L of moist, well-chewed, fibrous, yellow to green ingesta (see photo). No parasites were observed. The mucosa was autolyzed.

JEJUNUM & ILEUM The small intestine contained moist, moderately chewed, fibrous, yellow to green ingesta. No parasites were grossly observed. The mucosa was autolyzed.

CECUM The cecum contained 2.1 L of moist, moderately digested, fibrous, green to brown digesta (see photo). There was a mild infection of dead trematodes. The mucosa was autolyzed.

COLON The proximal colon contained wet, poorly formed, moderately digested, fibrous, green to brown feces. There was a mild infection of dead trematodes. The mid- and distal colon contained moist, moderately formed, moderately digested, fibrous, green feces mixed with a moderate amount of mangrove propagules. No parasites were observed. The mucosa was autolyzed throughout.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was missing due to decomposition.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a scant amount of golden yellow 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 gassy.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The left pleural cavity contained a small amount of loose, well-formed blood clots (see photo). The lungs were pink to gray on serosal surfaces and dark red on cut surfaces. The left lung had two full perforations through the mid-medial aspect due to fractured left ribs 10 and 11 which were associated with hemorrhagic lung parenchyma. The primary airways contained a scant amount of red tinged-fluid (see photo). There was a mild infection of dead trematodes.

HEAD & NECK REGIONS There was a small thatch of dark green seagrass in the mouth (see photo). Otherwise, NVL.

SKELETON Left ribs 9 - 12 had oblique fractures at mid-shaft (see photos) which were deep to wound #1.

OTHER There was shredded, hemorrhagic tissue deep to wound #1 (see photo).

PHOTOGRAPHS 2019-04-16_FWC025_8638 through 8675.

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wounds
- Fractured ribs
- Shredded, hemorrhagic tissue
- Hemothorax
- Blood clots
- Torn lung
- Hemorrhagic lung parenchyma
- Congested abdominal wall, mesenteries
- Depleted fat
- Seagrass in mouth
- Monofilament in stomach
- Scavenging
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

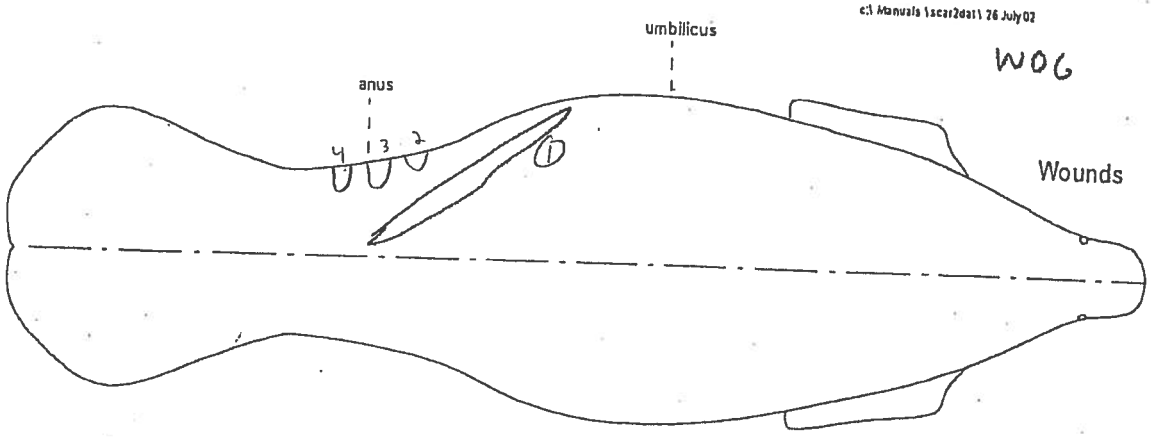
William D. Greer
Lucy R. Bukowski

REPORT FILED BY Bukowski / Greer

Date 16 APR 2019 Field I.D. MEC19043

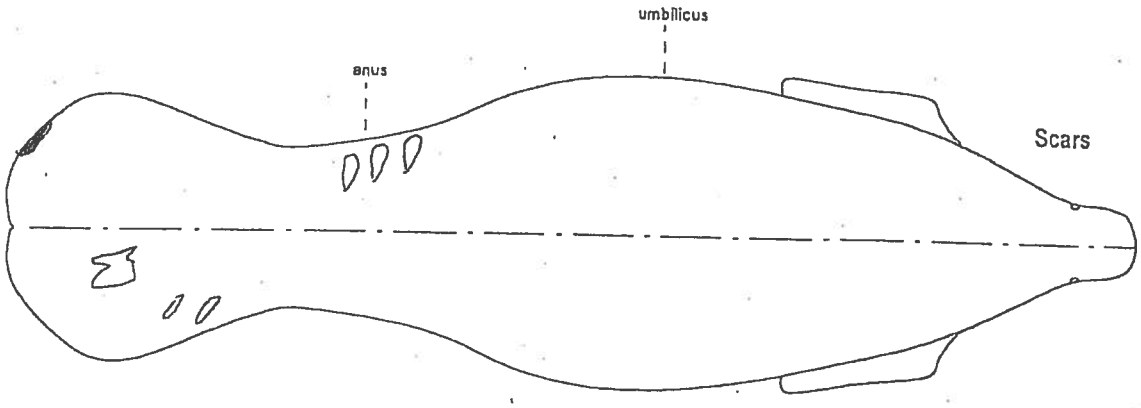
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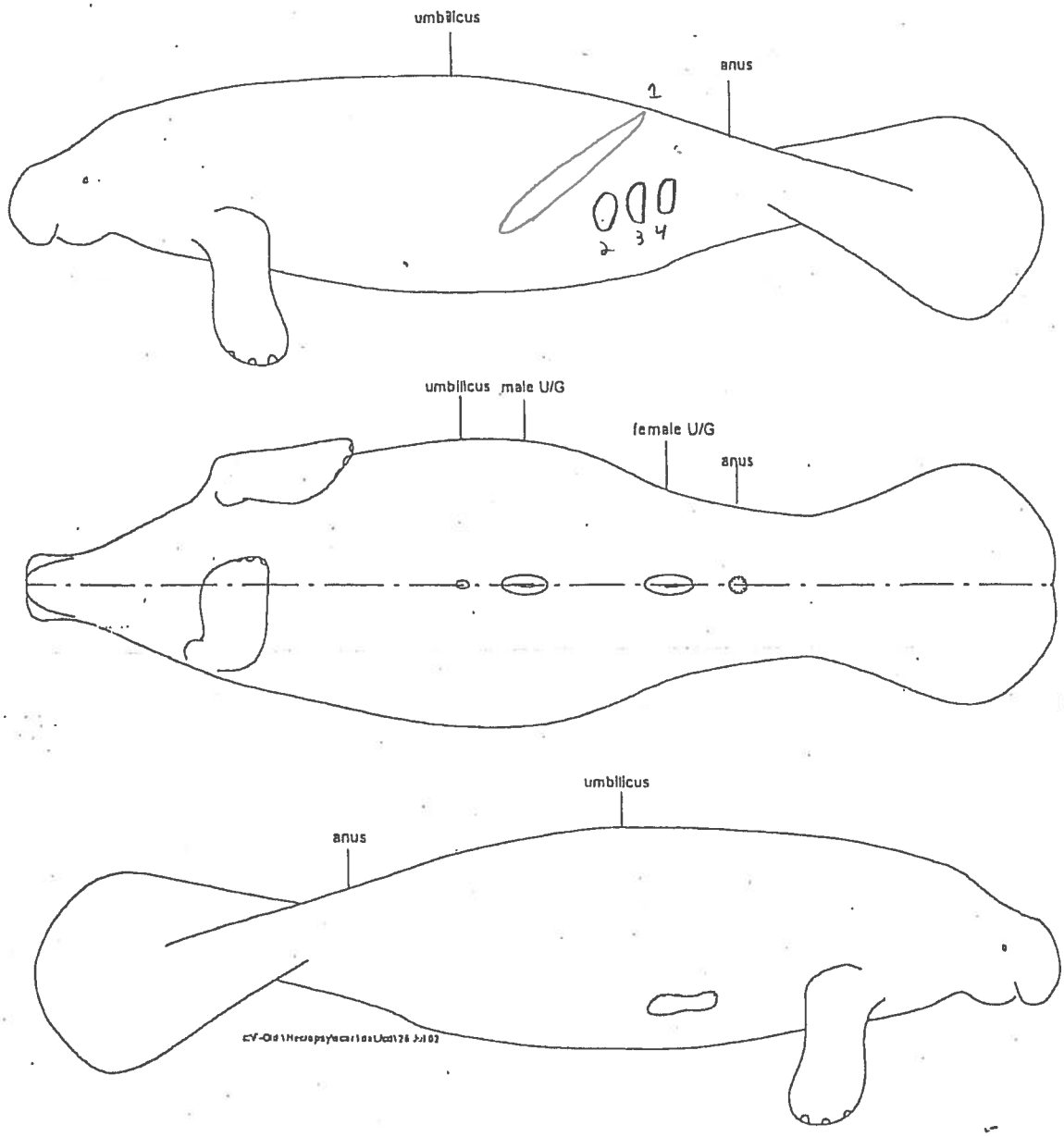


Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	75																			
Width	6.5																			
Depth	0.0																			
Distance																				

over



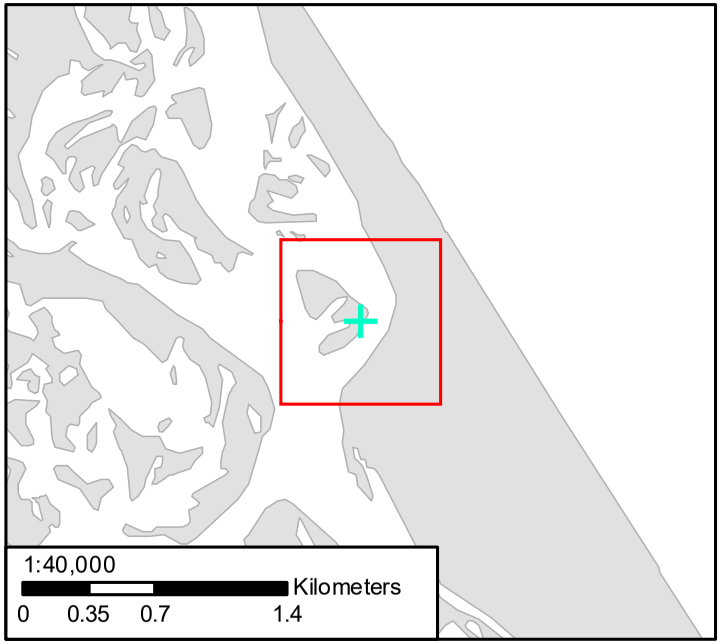
FIELD I.D. MEC19049

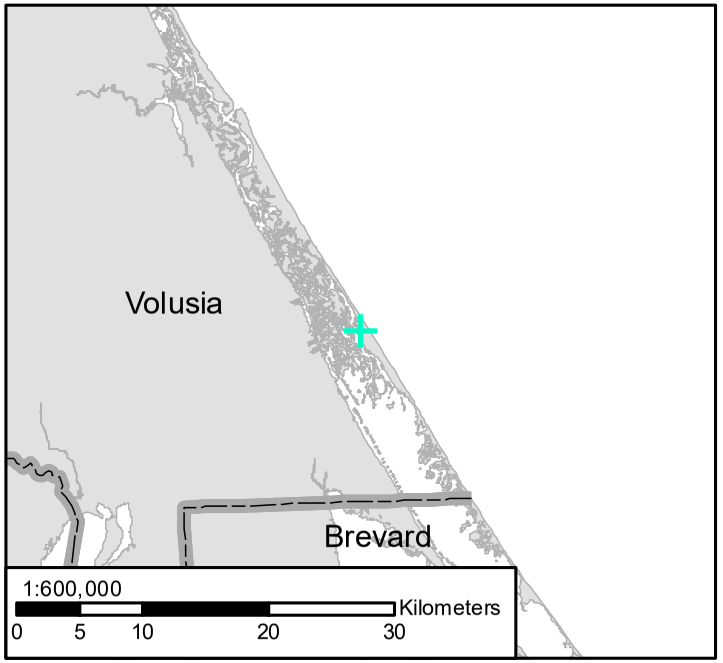


Verified Recovery Location of Manatee Carcass MEC19043

Report Date: 4/15/2019 **Received Date:** 4/16/2019 **Received By:** FWC-WDG,LRB Map Created: 10/14/2020







Locality Description:
New Smyrna Beach, Volusia
Grounded, approximately 280 m N of 8248 S Atlantic Ave.

Latitude: 28.91273°N **Longitude:** -80.81988°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19043
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5796 **FWC District**: Northeast
Sex: Male **Length (cm)**: 281 **Estimated** _____ **Weight (kg)** N/T
Date reported: 15 April 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 16 April 2019 **By**: FWC-WDG, LRB
Date necropsied: 16 April 2019 **By**: FWC-WDG, LRB

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: New Smyrna Beach, approx 295m NW of the intersection of River Trace Ln and Eldora Rd and approx 800m SW of the intersection of A1A and Eldora Rd
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
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Eroded/healing wound on lateral aspect, blood clots in the lung cavity, two punctures in left lung, 4 fractured ribs, hemorrhagic/shredded tissue deep to broken ribs.

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 #: **MEC19044**
Date of Report: 2019-Apr-17
Filed By: FWC MMPL

FWC Case # 5899 **FWC Region:** NE

Sex: Female **Length:** 335 **cm** **Weight:** 596.0 **kg**

DATE REPORTED: 2019-Apr-17 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-17 **By:** FWC-WDG

DATE NECROPSIED: 2019-Apr-19 **By:** MMPL-BLB,GLL,SMT,BDB

LOCATION: **State:** FL **Latitude:** 29.02151 **N**
County: Volusia **Longitude:** -80.91809 **W**
Waterway: Indian River North
Locality description: New Smyrna Beach, floating approximately 130 m E of 512 S Riverside Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Entangled in net (body). Wet lung(s); Net impressions epidermis; Bloody eyes, nares; Bloody scrapes on head, ventral fluke; Torn, hemorrhagic tissue and blood clots deep to head scrapes; Frothy, heavy, swollen lungs; Mucus in airways; Congested mesenteries, colon serosa, urinary bladder-, airway mucosa, parietal pleura; Fluid in abdominal cavity; Mangrove leaf in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Gear, Impressions on epidermis, Flipper entanglements).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Partial skeleton (both flippers to analyze entanglements.).

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Net and gear measurements. Facebook photos.

REMARKS:

PIT tag scan negative. Lactating. Uterine Scar. Entangled in monofilament (left flipper, right flipper). Braided line entangled around left flipper, right flipper. Entanglements associated with flipper swelling. Cobblestone-like epidermis; Depleted fat(s); Remodeled ribs. Adhered omentum, hemidiaphragm. Adhered lung, hemidiaphragm. Abscesses in muscle. Watery proximal colon contents. Known as MIPS ID BC475, first sighted on 12 Dec 1995 at the Indian River FPL power plant.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19044

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	7.5	12.5
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. MEC19044
RECOVERY DATE 17 April 2019
GENDER Female **TL** 335 **cm WT** 596 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 19 April 2019
CONDITION Badly Decomposed

HISTORY 17 April 2019, at 1010 hrs, FWC biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River North, New Smyrna Beach, Volusia County. FWC case number 5899 was assigned. The complainant, Libby Lyrette (386-631-8389), stated that she had received a report from another party about a dead manatee in a net, floating south of the SR 44 causeway. NJG contacted the second party, Kim Cramer (859-314-2636), who stated that she had received a report of the dead manatee from three men who were trimming trees nearby. Kim stated that she had searched the area for two hours but was unable to locate the carcass. No photos or contact information for the original complainants were available. NJG determined that the carcass was in FWC East Central Field Station region and passed the information to FWC biologists-William D. Greer (WDG) and Lucy R. Bukowski (LRB). At 1133 hrs, LRB received a second text alert from Dispatch regarding the same dead manatee. The complainant, Alex Carmichael of the United States Coast Guard (USCG) Ponce Inlet Station stated that the USCG Auxiliary crew had found the carcass still in the net and were towing it to a nearby boat ramp. He supplied LRB with a phone number to the Auxiliary crew members, but LRB could not reach them. At 1145 hrs, WDG requested FWC LE assistance. At 1245 hrs, Officer Jessica Pelzel responded and found the manatee secured at the Bouchelle Island boat ramp. At 1303 hrs, WDG received photo confirmation of the carcass from Officer Pelzel. WDG arrived at the boat ramp at 1515 hrs, loaded the carcass via carcass trailer at 1605 hrs, and transported it to the EC Field Station where it was stored ventrum-up overnight pending transport. **18 April**, WDG transported the carcass to the MMPL arriving at 0845 hrs. The carcass was stored dorsum-up in the MMPL cold room.

EXTERNAL All of the epidermis was present and slightly sloughing. The eyes were bloody. Bloody fluid and mucus exuded from the nares. The carcass was distended with gas. The manatee was presented head first in a shrimp net, which consisted of an approximately 94 cm long section of bright green net of braided nylon material at the cod end (cranial end) spliced with a larger dark green net of braided nylon material. The line of the bright green net was thicker than that of the dark green net. The cod end was cinched closed with a length of black cord and metal clamp. There was a 135 cm long cut in the dorsal aspect of the net that was spliced together with approximately 10 lb test diameter clear monofilament line. The caudal opening to the net was attached to a 123 cm long piece of 3.1 cm diameter PVC pipe, which was in turn attached to a 12 lb lead weight by a length of rope that passed through the pipe. The open end had a length of approximately 120 lb test diameter white monofilament line running through a portion of the net circumference. See addendum for all net measurements and net sketch. The carcass' position in the net was dorsum-up, with the pipe and lead weight presumed to be on the bottom side. There was a region of scraped and bloody epidermis on the right dorsal aspect of the head, which corresponded with an oval-shaped approximately 6.5 x 4.5 cm tear in the net. Some of the net line associated with the tear was partially frayed, but the torn line portions had straight margins and appeared relatively sharply cut. Dark discolored cross-hatched lesions and impressions (1.3 cm square) were present on the outer layer of epidermis on the dorsal head. A cross-hatched pattern of impressions, with deeper circular impressions at the crosses, was visible on the inner layer of epidermis of the head and left dorso-lateral aspect of the body. A few bloody scrapes were visible on the ventral fluke. There was a moderate brown algal mat on the dorsal and lateral aspects. Small patches of cobblestone-like epidermis were present on the lateral and ventral aspects. A minimum of eight well-healed watercraft-related scar patterns was observed. Small well-healed v-shaped mutilations were present at the 5, 6, and 7 o'clock positions of the fluke. The remainder of the fluke margin was irregular but well-healed. There was a moderate infestation of barnacles on the dorsal and ventral fluke, axillae, and flippers, and a few large barnacles were observed on the dorsum. Both flippers had chronic, active, severe entanglements at the proximal one-third which were associated with large regions of scar tissue, monofilament line, and braided line. The left flipper was severely swollen distal to the

entanglements, and the right flipper was moderately swollen distal to the entanglements. A small amount of milk exuded from the right teat. The left teat was surrounded by scar tissue, severely reduced in size, and did not lactate. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal, mesenteric, and omental fat. There was 4 L of watery, dark red fluid in the abdominal cavity. There was a long, stringy, strong adhesion of the omentum to the cranial one-third of the lateral ventral aspect of the right hemidiaphragm (see photo).

STOMACH The stomach contained 17 L of moist, moderately chewed, fibrous, dark green ingesta mixed with 1 L of poorly chewed, light green to yellow mangrove propagules. The contents were coated with a thick layer of tan mucus. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 6 L of wet, moderately chewed, fibrous, dark green ingesta. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested. The small intestine contained copious wet, fibrous, slightly stringy, well-chewed, dark green ingesta. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained approximately 3.5 L of wet, fibrous, well-digested, dark green digesta. The mucosa was sloughing. A few dead trematodes were observed.

COLON The mesentery and colon serosa had patches of moderate congestion. The distal colon contained moist, slightly fibrous, well-formed, well-digested, dark green feces. The colon wall had patches of severe congestion (see photo). The mid colon contained moist, fibrous, poorly formed, well-digested, green to dark green feces. The proximal colon contained watery, green fluid mixed with a moderate amount of fibrous, well-digested, slightly stringy, green feces. The mucosa was sloughing throughout. There was a moderate infection of dead trematodes in the proximal colon.

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

SPLEEN The spleen was pink with black specks 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 25 mL of flocculent, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The uterine horns were contracted. The left horn had a mostly resolved scar (12.5 cm wide x 7.5 cm circumference). Both ovaries had numerous small corpora albicantia and several small corpora hemorrhagica. The left mammary gland exuded copious milk on cut surfaces (see photo). No milk was grossly observed on cut surfaces of the right mammary gland.

KIDNEYS There was moderate perirenal fat. The kidneys were firm. Serosal surfaces were brown, pink, and purple. On cut surfaces, the cortices were dark pink and the medullae were purple to dark purple. The corticomedullary boundaries were distinct.

URINARY BLADDER The bladder contained 100 mL of cloudy, pink urine. The mucosa was severely 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 left parietal pleura had bands of severe congestion between the ribs. Both lungs were swollen and heavy. The left lung was brown, pink, and purple on serosal surfaces, and red to dark red, frothy, and wet on cut surfaces. The airways contained a large amount of thick, flocculent, viscous, tan mucus (see photo). The mucosa was tan to red and severely congested. The right lung was strongly adhered to the right hemidiaphragm over the entire length of the ventral aspect. The dorsal cranial tip and dorsal caudal one-third were strongly adhered to the parietal pleura (see photos). Serosal surfaces were tan, brown, and purple, and cut surfaces were red to dark red, frothy, and wet. The airways contained a moderate amount of viscous, dark red mucus. The mucosa was tan to pink. No parasites were observed in either lung airways. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a large region of dark red hemorrhagic tissue, loose well-formed blood clots, and a pocket (10.8 x 3.7 cm) of torn, hemorrhagic muscle deep to the superficial scrapes on the left aspect of the head. There was a moderate amount of dark red mucus in the nares. One poorly chewed mangrove leaf was in the mouth.

SKELETON Right ribs 13 – 15 were remodeled at the proximal one-third. There was an approximately 9 x 3 cm abscess dorsal and between right ribs 12 and 13. There was a small, almost resolved abscess dorsal to right rib 14. There were numerous small abscesses dorsal to T14 – T16, which was deep to a large well-healed watercraft-related scar pattern on the dorsum.

OTHER

PHOTOGRAPHS 2019-04-18_FWC022_7051 through 7061, 7063 through 7067; 2019-04-19_FWC022_7130 through 7136, 7146 through 7151, 7155, 7157 through 7164, 7166 through 7214, 7216; 2019-04-22_FWC022_7337 through 7342; 2019-04-23_FWC022_7418 through 7422.

COMMENTS Necropsy findings indicate the manatee drowned and suffered head trauma. The carcass was found in a net, and a tear in the net corresponding with the head trauma suggested that the head injury occurred after the manatee had entered the net. The fact that the thick net was torn over the head trauma, suggested that the object responsible for the head trauma was somewhat sharp and not fully blunt. The manatee's fat condition corresponded with that of a female towards the end of lactation. The abscesses in the dorsal tissue were walled off and did not appear to cause problems.

SIGNIFICANT FINDINGS

- Found within shrimp net
- Net impressions epidermis
- Bloody eyes, nares
- Bloody scrapes on head, ventral fluke
- Torn, hemorrhagic tissue and blood clots deep to head scrapes
- Wet, frothy, heavy, swollen lungs
- Mucus in airways
- Fluid in abdominal cavity
- Congested mesenteries, colon serosa, urinary bladder-, airway mucosa, parietal pleura
- Mangrove leaf in mouth
- Cobblestone-like epidermis
- Chronic flipper entanglements with braided- and monofilament line associated with swelling
- Depleted fat
- Watery proximal colon contents

- Adhered omentum, hemidiaphragm
- Adhered lung, hemidiaphragm
- Remodeled ribs
- Abscesses in muscle
- Uterine scar
- Lactating from one teat
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Human; Other (Net Entanglement)

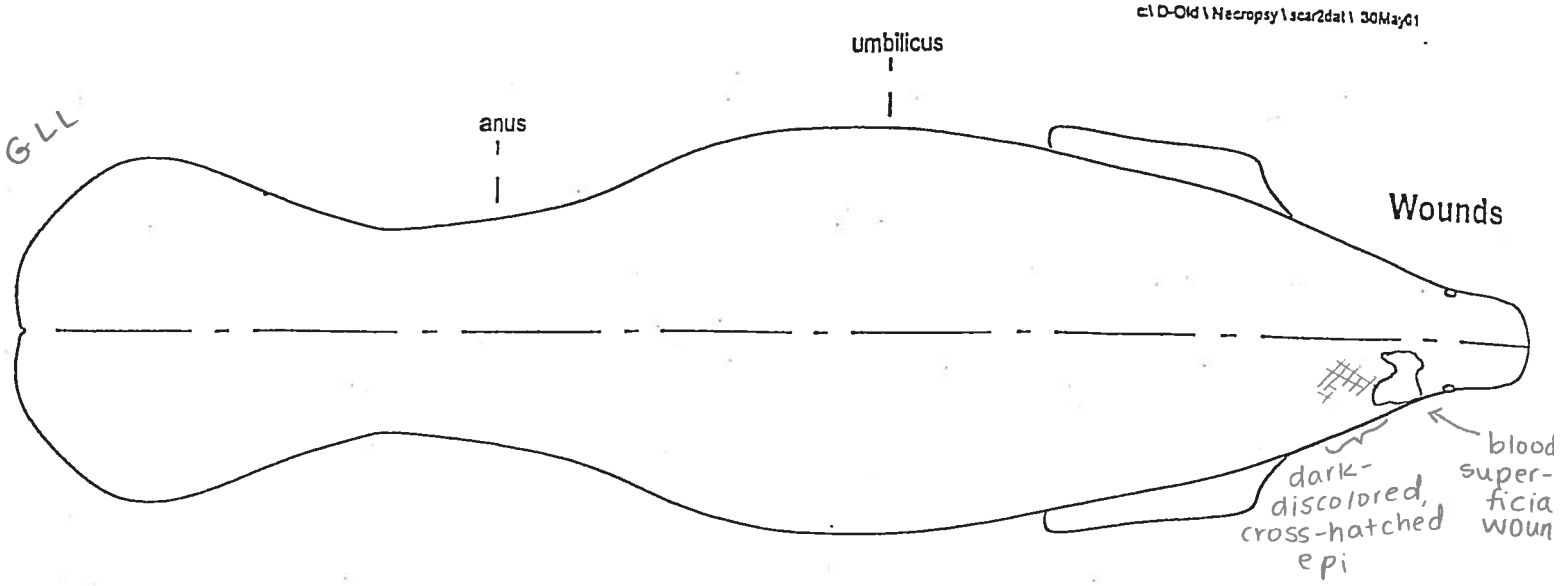
NECROPSY CONDUCTED BY

Brandon L. Bassett
Gina L. Lonati
Brittany D. Barbeau
Sean M. Tennant

REPORT FILED BY Bassett / de Wit

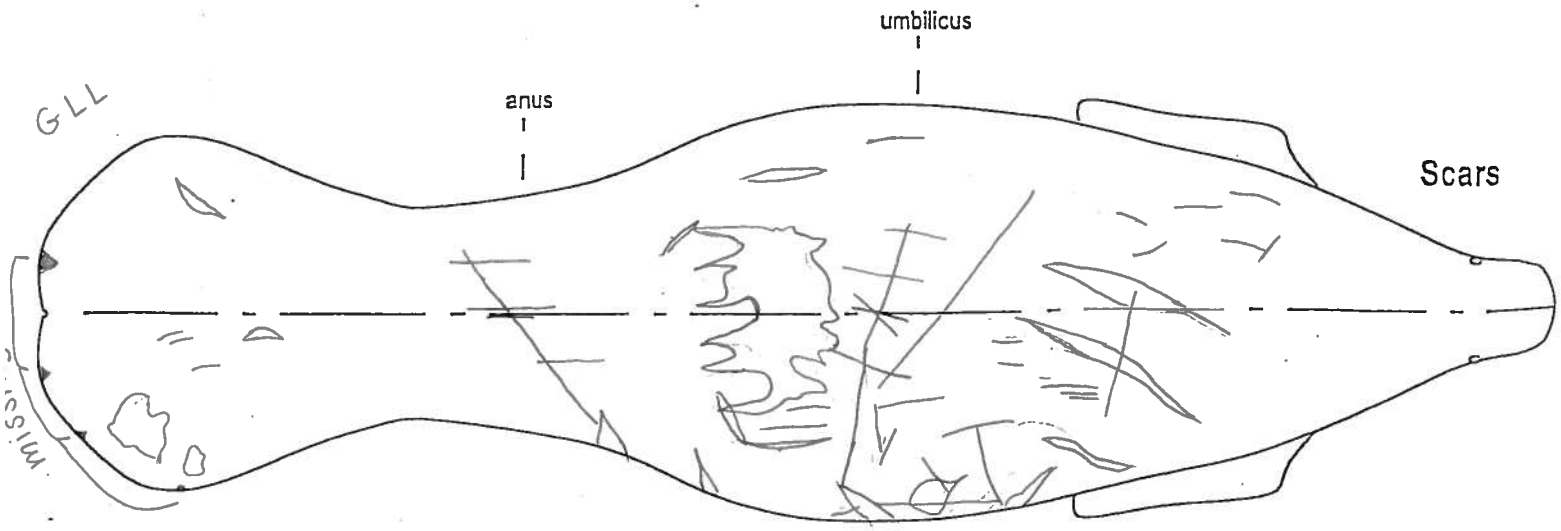
Date 19 APR 2019 Field I.D. MEC19044

c:\D-Old\Necropsy\scar2dat\ 30May01

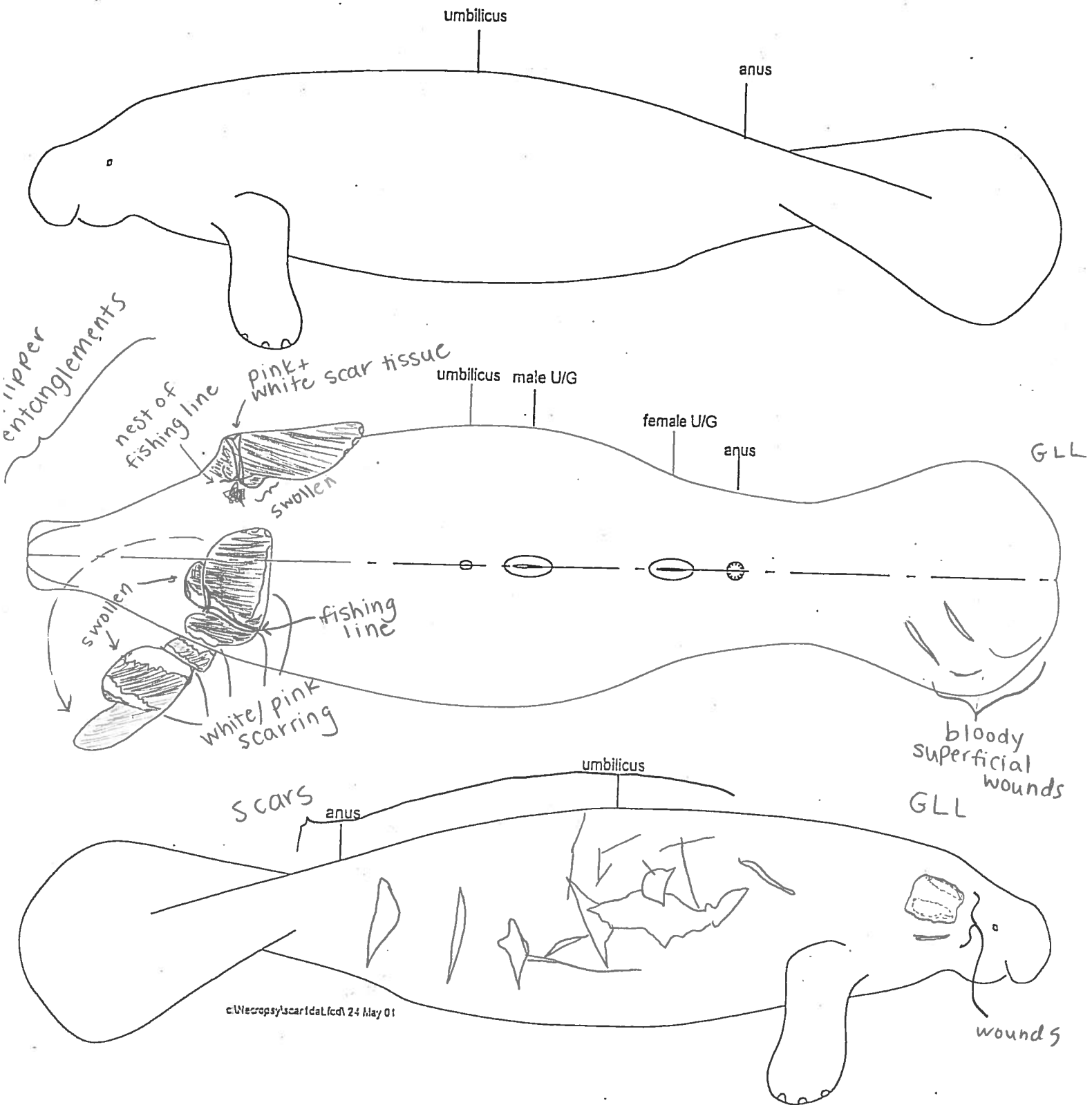


Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

over →



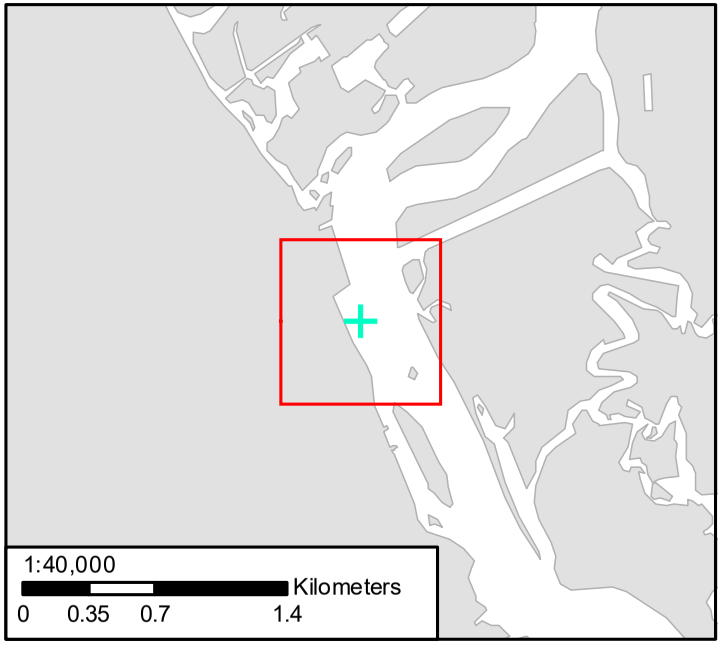
FIELD I.D. MEC19044

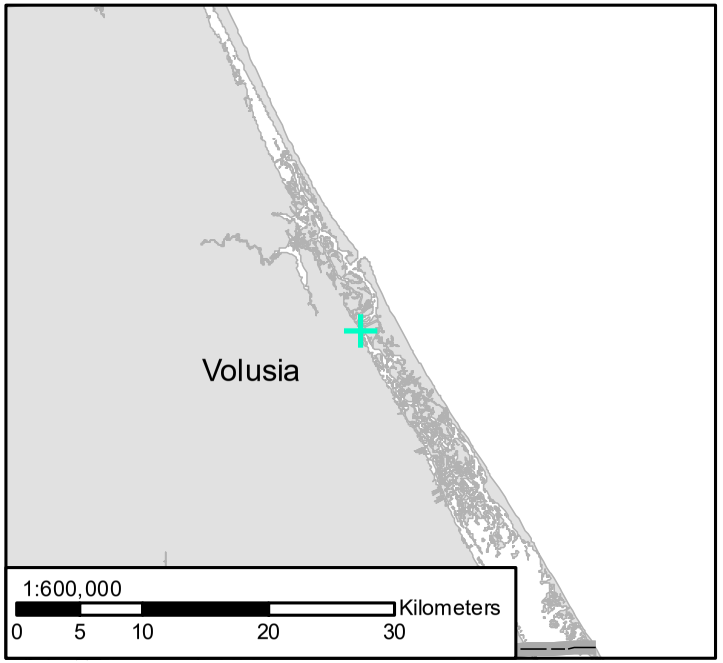


Verified Recovery Location of Manatee Carcass MEC19044

Report Date: 4/17/2019 **Received Date**: 4/17/2019 **Received By**: FWC-WDG Map Created: 10/14/2020



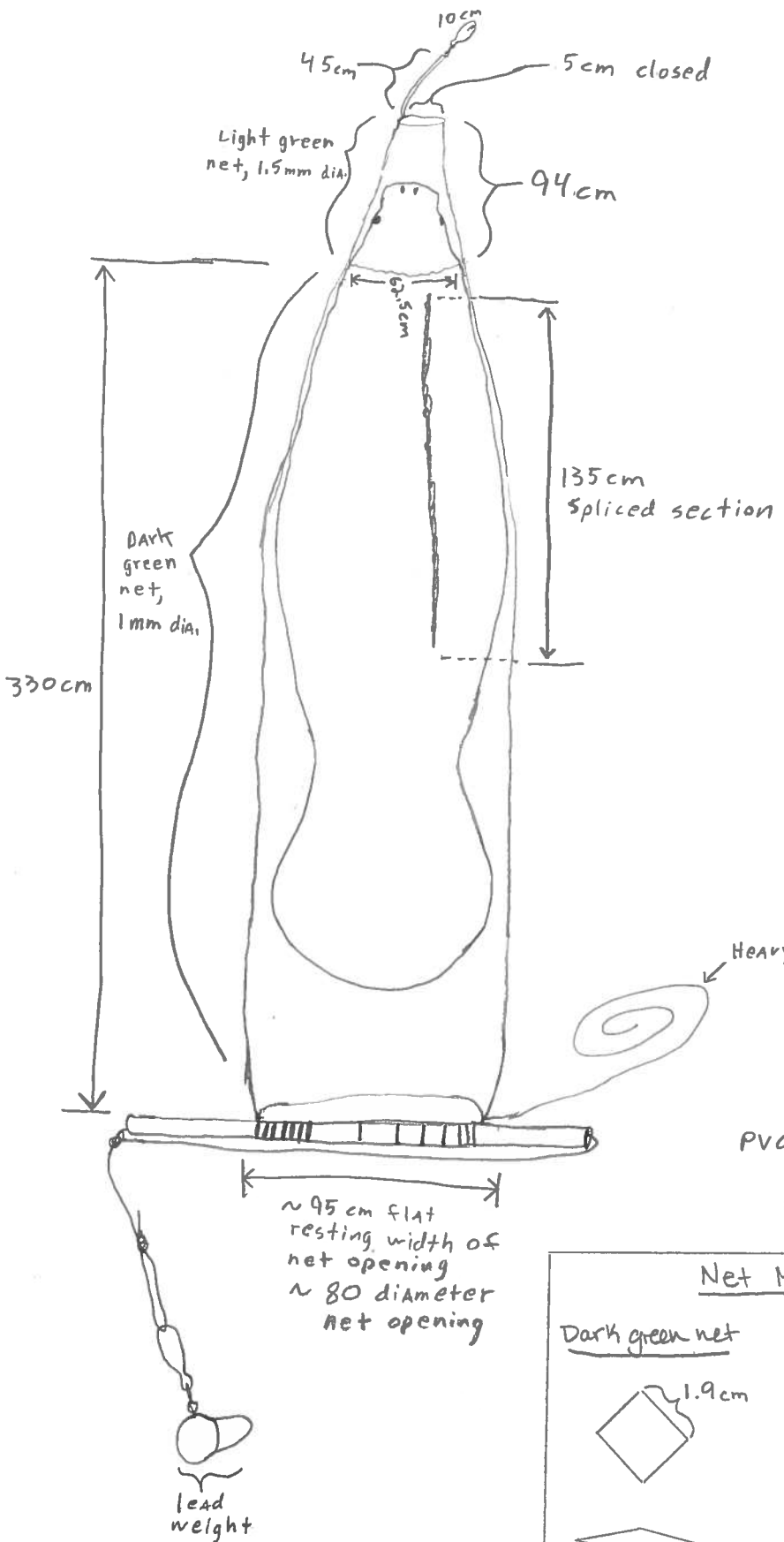




Locality Description:
New Smyma Beach, Volusia
Floating, approximately 130 m E of 512 S Riverside Drive.

Latitude: 29.02151°N **Longitude**: -80.91809°W

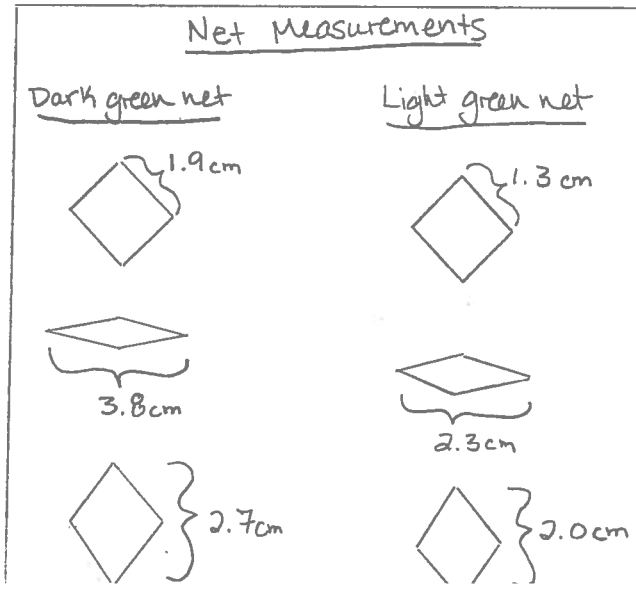
MEC19044



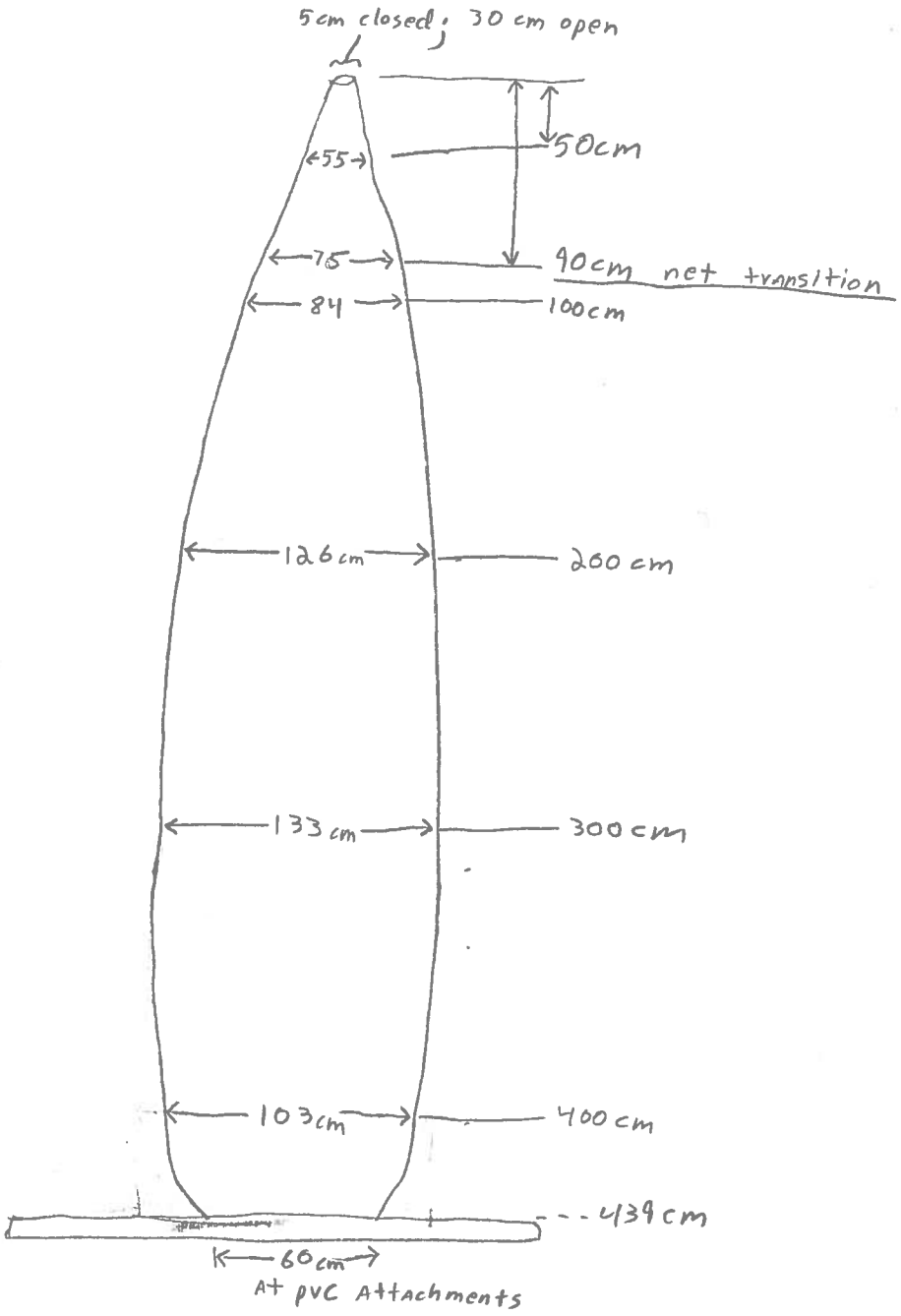
88.1cm - carcass max width

PVC = 123 cm long
3.1cm (1¼ inch) diameter

Net Measurements



MEC19044



Flat measurements

Bassett, Brandon

From: Rood, Kari
Sent: Friday, April 26, 2019 11:27 AM
To: Howell, Amber; Lonati, Gina; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Beard, Shelby; Boyd, Denise; Bukowski, Lucy; Deutsch, Chip; deWit, Martine; Edwards, Holly; Garrett, Andy; Gordon, Nadia; Greer, Bill; Herring, Hada; Honaker, Allison; Jennifer H. Johnson; Johnson, Jennifer; Levine, Daniel; Martz, Meg; Nader, Ana; Panike, Anna; Perna, Allison; Schubert, Molly; sheri@mote.org; Szemer, Donna; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC19044=BC475

MEC19044=BC475

Carcass location: Indian River North, New Smyrna Beach
Carcass gender: Female

First sighted 12/12/95 at Indian River FPL Power Plant
Last sighted 3/5/13 at Indian River FPL Power Plant
USGS should be able to provide a complete sighting history if needed.

Verifiers: HONAKER & KAH 4/26/19

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 #** MEC19044
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5899 FWC District: FWC NE
Sex: M / F / Undetermined Length: 335 cm (estimated _____) Weight 591.8 kg.
Date reported: 17 APR 2019 By: CITIZEN TO FWC NR DISPATCH - ORLANDO
Date collected: 17 APR 2019 By: FWC - WDG
Date necropsied: 19 APR 2019 By: MMPL - BLB, GLL, SMT, BDB FWC-WDG

LOCATION: State FL ( ) County: VOLUSIA Waterway: INDIAN RIVER NORTH
Latitude: _____ N Longitude: _____ W
Locality description: NEW SMYRNA BEACH, APPROX 130 m E OF 512 S RIVERSIDE 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 gear impressions on epi, flipper entanglement
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 MILK
Genetics Box #. 91
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 Net & gear measurements; Facebook post

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

REMARKS: R teat only lactating
Net + Gear measurements

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19044
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 5899 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 17 April 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 17 April 2019 **By**: FWC-WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: New Smyrna Beach, approximately 130 m E of 512 S Riverside Dr.

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 #: **MEC19045**
Date of Report: 2019-Apr-19
Filed By: FWC EC Field Station

FWC Case # 6012 **FWC Region:** NE

Sex: Male **Length:** 294 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-19 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-19 **By:** FWC-WDG

DATE NECROPSIED: 2019-Apr-19 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.47398 **N**
County: Brevard **Longitude:** -80.76665 **W**
Waterway: Indian River
Locality description: Cocoa, beached approximately 30 m NE of 6540 North Highway 1.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Peanut-shaped head; Depleted fat(s); Hemothorax; Relatively empty GI tract; Chronic rib fractures; Fibrin in pleural cavity; Firm lung region with caseous material; Sand in 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 6007. Scavenging.

Page 1&2	25 SEP 2020
Necropsy Report	25 SEP 2020
Lat/Long	25 SEP 2020

Field ID #: MEC19045

MORPHOMETRICS:

Total length:	294 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. MEC19045
RECOVERY DATE 19 April 2019
GENDER Male **TL** 294 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 19 April 2019
CONDITION Badly Decomposed

HISTORY 19 April 2019, at 0747 hrs, FWC on-call biologist-Brandon L. Bassett (BLB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee just south of the Port St. John boat ramp in Indian River, Cocoa, Brevard County. FWC case number 6007 was assigned. The complainant, Carl Pettek (321-403-2214), stated that the carcass was behind someone's home but that he was unable to get a photo. At 0804 hrs, BLB passed the information to FWC biologist-William D. Greer (WDG). At 0934 hrs, WDG received a text alert from Dispatch regarding the same dead manatee. FWC case number 6012 was assigned. The complainant, Jim Sanford (321-544-6076), stated that the carcass was behind his home, 8 to 9 feet long, and the skin was starting to peel. At 0940 hrs, WDG received a photo of the carcass. At 1005 hrs, WDG arrived at the Port St. John boat ramp, secured the carcass at 1015 hrs, walked it to the boat ramp, and loaded it via Ezy-Lift at 1045 hrs. WDG transported the carcass to the Brevard County Landfill where a field necropsy was completed by 1220 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas but had a peanut-shaped head. The tissue was torn at the ventral base of the left flipper and along the fluke margin due to scavenging. Bloody fluid exuded from the left flipper rent. There was a moderate brown algal mat on the lateral and caudal dorsal aspects. A minimum of four well-healed watercraft-related scar patterns was observed on the dorsal and left lateral aspects. There was a well-healed triangular mutation at the 9 o'clock position of the fluke. The fluke margin was eroded at the 7 o'clock position. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained 600 mL of wet, well-chewed, homogeneous, dark green ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 350 mL of watery, green fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a small amount of dark green fluid. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 40 mL of watery, green fluid (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained wet, poorly formed, well-digested, homogeneous, dark green feces mixed with a small amount of sand (see photo). The mid and distal colon contained dry, well-formed, moderately digested, fibrous, stringy, black feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was soft. Serosal surfaces were mottled dark purple and black and cut surfaces were purple.

LIVER The liver was liquified.

GALLBLADDER The gallbladder was torn due to decomposition and empty of contents. 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 20 mL of red-tinged fluid. The mucosa was gassy.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The left pleural cavity contained 10 L of well-formed blood clots and fibrin (see photos). The left parietal pleura was thickened and discolored yellow. The lungs were soft, friable, and autolyzed. The caudal half of the left lung was firm, coated in yellow material, and contained caseous material on cut surfaces.

HEAD & NECK REGIONS NVL.

SKELETON Left ribs 12 and 13 had oblique fractures at mid-shaft. The fracture margins were rounded. The vertebrae were curved to the right aspect (see photo).

OTHER

PHOTOGRAPHS 2019-04-19_FWC025_8676 through 8682, 8684 through 8717.

COMMENTS The fractured ribs were not removed or photographed due to the landfill closing due to incoming inclement weather.

SIGNIFICANT FINDINGS

- Peanut-shaped head
- Depleted fat
- Chronic rib fractures
- Hemothorax with fibrin
- Firm lung region with caseous material
- Relatively empty GI tract
- Sand in colon
- Autolyzed internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

NECROPSY CONDUCTED BY

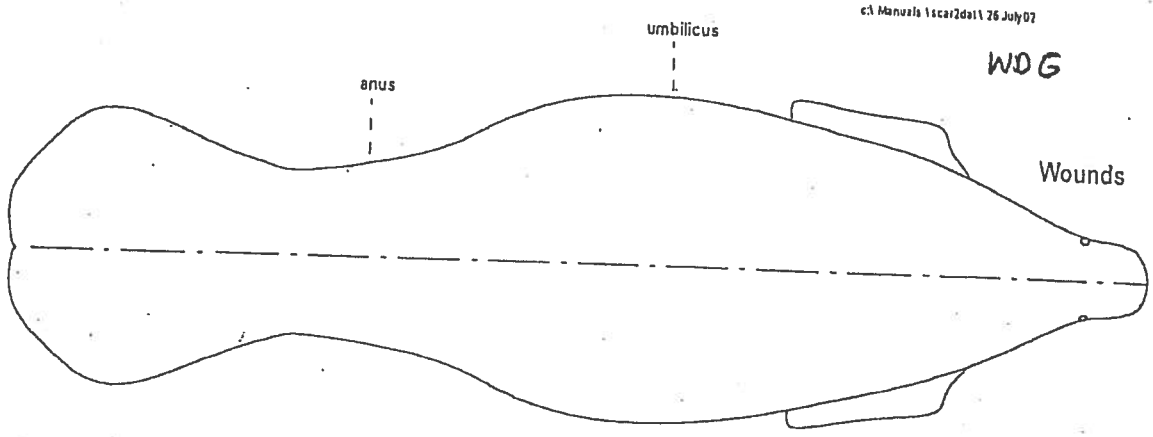
William D. Greer
April Geer (FWC volunteer)

REPORT FILED BY Greer

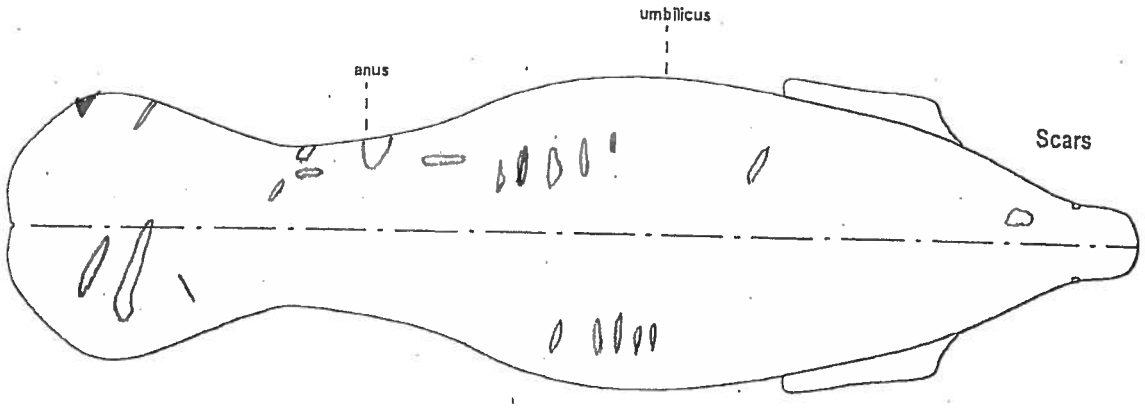
Date 19 APR 2019 Field I.D. MEC19045

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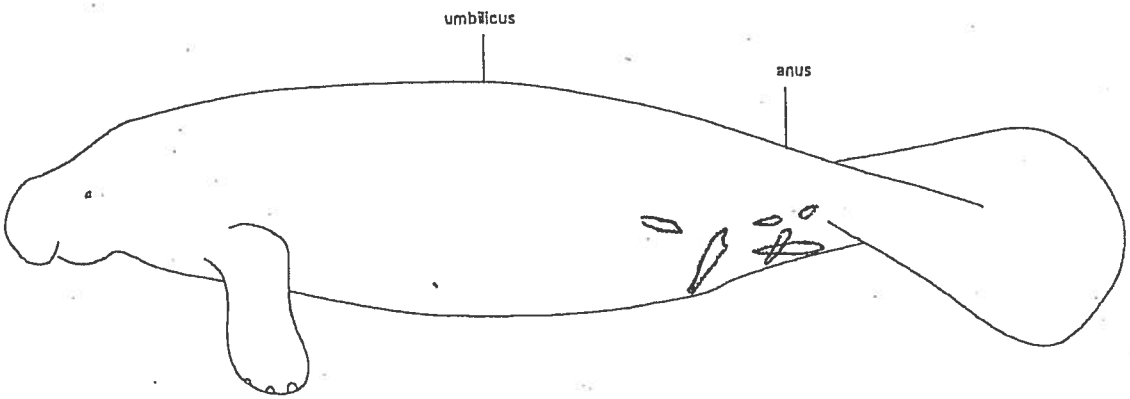
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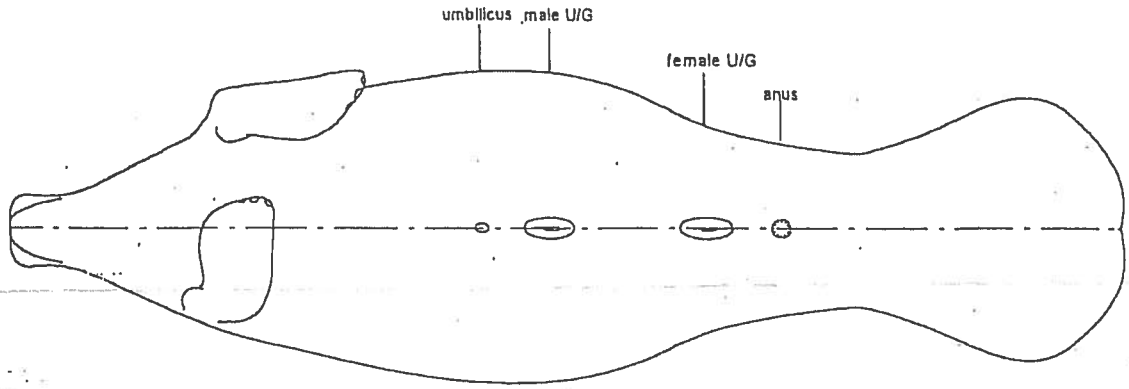


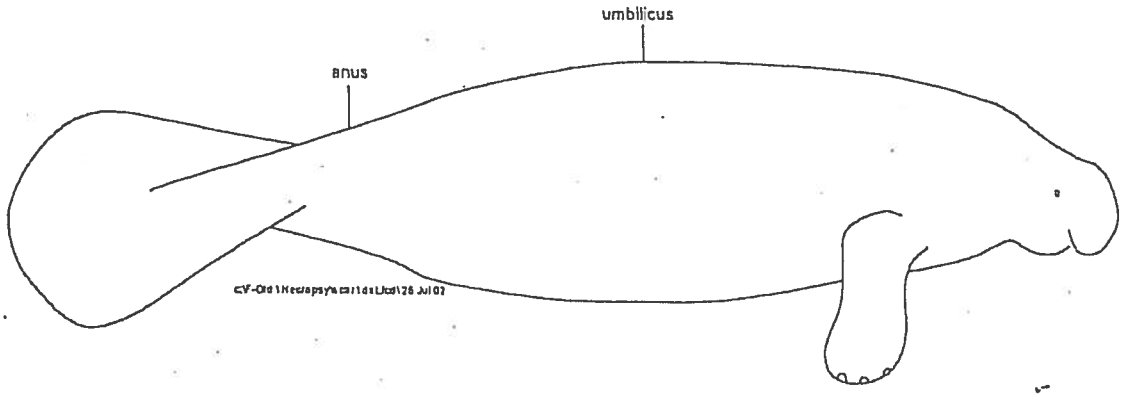
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FIELD I.D. MEC19045



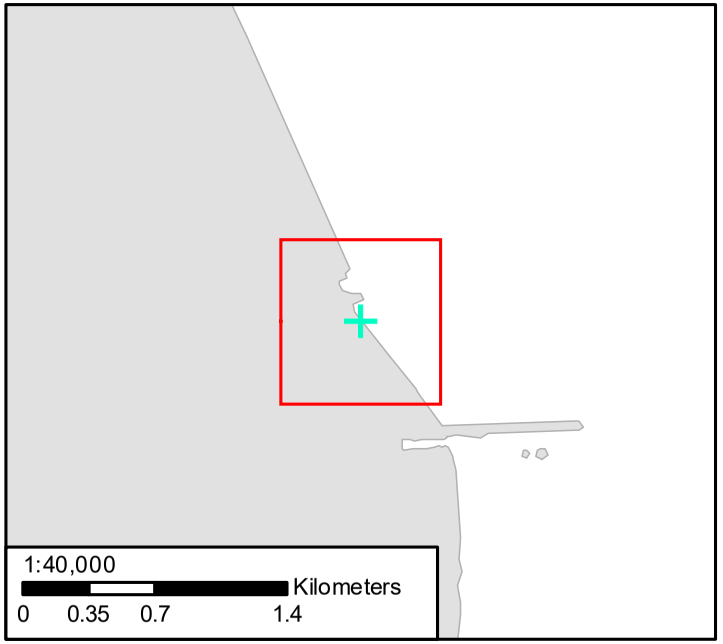


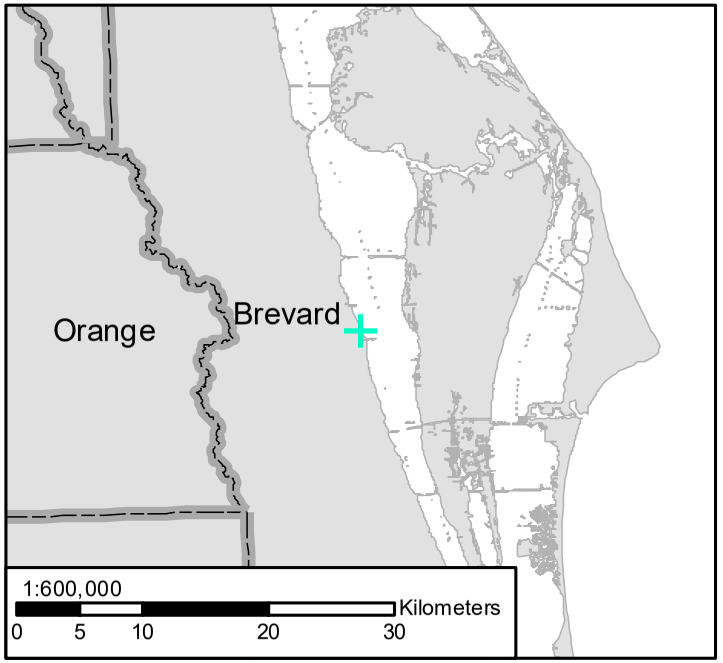


Verified Recovery Location of Manatee Carcass MEC19045

Report Date: 4/19/2019 **Received Date**: 4/19/2019 **Received By**: FWC-WDG Map Created: 10/14/2020







Locality Description:
Port St. John, Brevard
Beached, approximately 30 m NE of 6540 North Highway 1.

Latitude: 28.47398°N **Longitude**: -80.76665°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19045
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6007, 6012 **FWC District**: Northeast
Sex: Male **Length (cm)**: 294 **Estimated** _____ **Weight (kg)** N/T
Date reported: 19 Apr 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 19 Apr 2019 **By**: FWC- WDG
Date necropsied: 19 Apr 2019 **By**: FWC- WDG, FWC vol- A. Geer

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 30 m NE of 6540 North Highway 1

Carcass Orientation: Beached

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: 10 L loose blot clots and fibrin, 2 broken ribs with slight remodeling associated with healed scars, empty upper GI tract, dry hard feces in distal 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 #: **MEC19046**
Date of Report: 2019-Apr-22
Filed By: FWC EC Field Station

FWC Case # 6241 **FWC Region:** NE

Sex: Male **Length:** 294 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-22 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-23 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Apr-23 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.11867 **N**
County: Brevard **Longitude:** -80.62875 **W**
Waterway: Eau Gallie River
Locality description: Melbourne, grounded approximately 60 m WSW of 742 Whitemire Drive.

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); Bloody lung(s); Crumbly feces; Dry feces; Relatively empty upper GI tract, cecum; Mud in trachea.

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

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19046

MORPHOMETRICS:

Total length:	294 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. MEC19046
RECOVERY DATE 23 April 2019
GENDER Male **TL** 294 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 23 April 2019
CONDITION Badly Decomposed

HISTORY 22 April 2019, at 1514 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Eau Gallie River in Melbourne, Brevard County. FWC case number 6241 was assigned. The complainant, Marissa (321-215-5036), stated that the carcass was back-up and gray. At 1518 hrs, WDG received a photo from the complainant but it could not be confirmed the manatee was dead. FWC LE assistance was requested. At 1540 hrs, FWC-Officer Morgan Maslo confirmed from land that the manatee was dead but was unable to tow it. **23 April**, at 0835 hrs, WDG and FWC biologist-Lucy R. Bukowski (LRB) arrived at the location. WDG launched a kayak and towed the carcass to a private boat ramp where it was loaded by Ezy-Lift at 0925 hrs. Due to a prescheduled meeting, WDG and LRB did not arrive to the Brevard County Landfill until 1205 hrs. A field necropsy was completed at 1338 hrs.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the nares and mouth. There was a healing watercraft-related wound series between the 1 and 3 o'clock positions of the fluke. The series consisted of at least five linear wounds, some of which were at roughly 90-degree angles to each other. There was a thin green algal mat on the dorsal aspect. A severe infestation of copepods was observed on the lateral aspect and peduncle. One well-healed scar was observed on the dorsal aspect of the fluke. There was a small well-healed circular mutation at the 4 o'clock position of the fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal and omental fat and moderate mesenteric fat.

STOMACH The stomach contained 275 mL of wet, viscous, homogeneous, yellow to green fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 100 mL of wet, viscous, homogeneous, yellow to green fluid (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal and mid small intestine contained viscous, gray fluid. The Peyer's patches were distinct. The distal small intestine contained viscous, yellow to orange fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 20 mL of wet, viscous, homogeneous, yellow to brown digesta (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained wet, viscous, poorly formed, well-digested, homogeneous, yellow to brown feces. The mid and distal colon contained dry, crumbly, moderately digested, fibrous, black feces (see photo). The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was missing due to decomposition.

SPLEEN The spleen was missing due to decomposition.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained 10 mL of golden yellow 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 gassy.

HEART There was abundant, gassy epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were gray to pink on serosal surfaces and dark red and bloody on cut surfaces. No parasites were observed.

HEAD & NECK REGIONS The trachea contained a moderate amount of mud (see photo).

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-04-23_FWC025_8718 through 8741.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Healing watercraft wounds
- Bloody nares, mouth
- Relatively empty upper GI tract, cecum
- Dry, crumbly feces
- Bloody lung
- Mud in trachea

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

William D. Greer
Lucy R. Bukowski

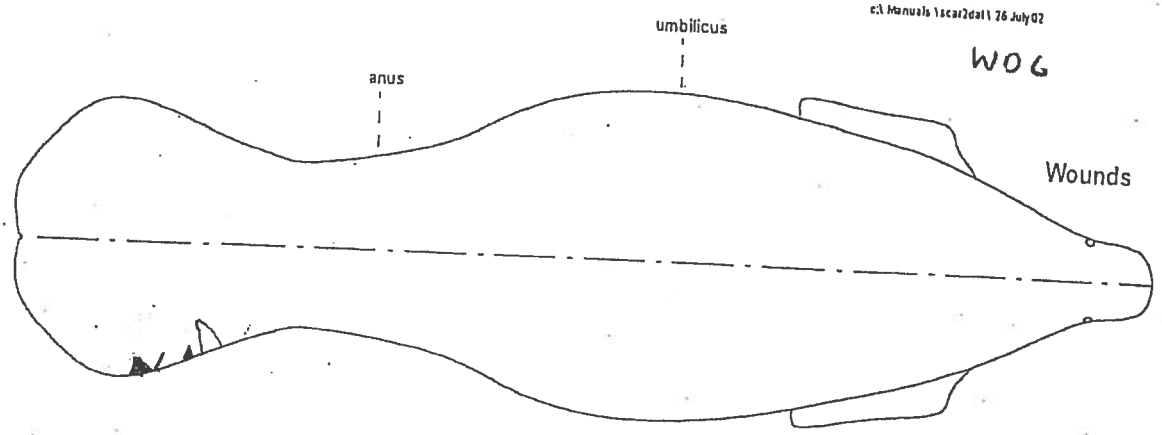
REPORT FILED BY Greer

Date 23 APR 2019

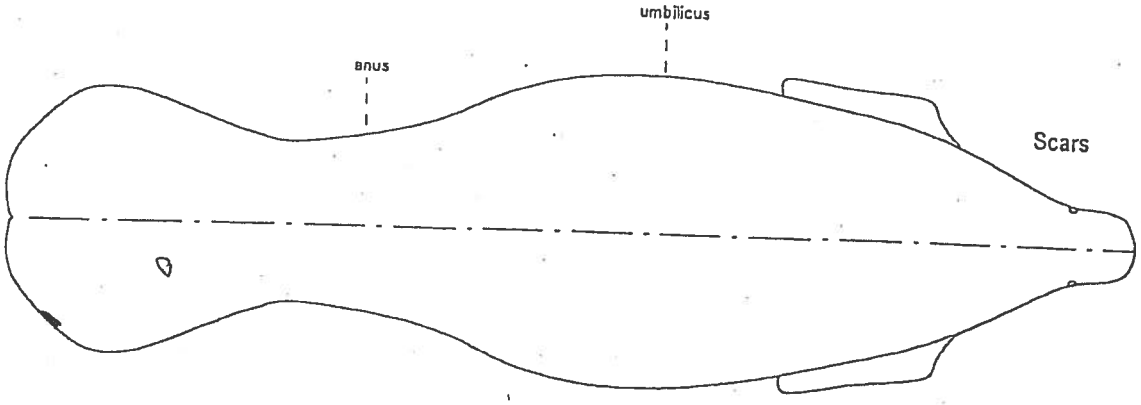
Field I.D. MEC19046

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WOG



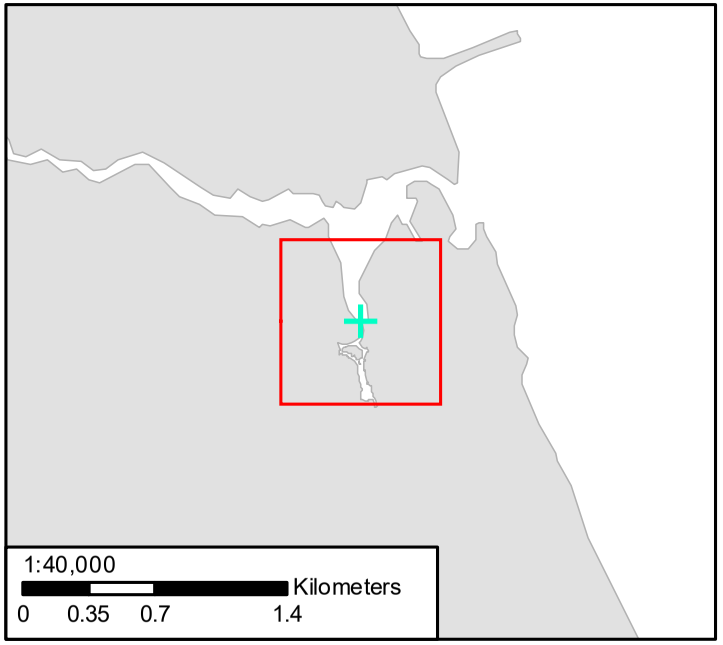
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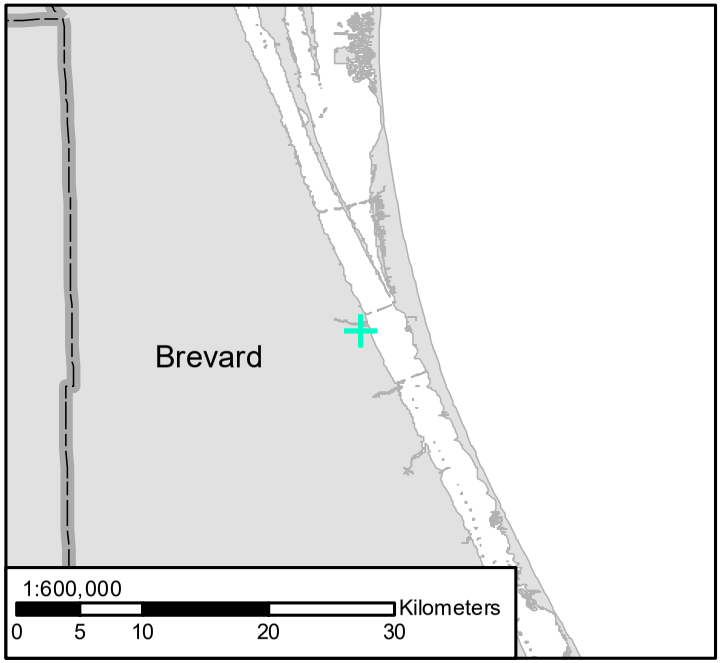


Verified Recovery Location of Manatee Carcass MEC19046

Report Date: 4/22/2019 **Received Date**: 4/23/2019 **Received By**: FWC-WDG,LRB Map Created: 10/14/2020







Locality Description:
Melbourne, Brevard
Grounded, approximately 60 m WSW of 742 Whitmire Drive.

Latitude: 28.11867°N **Longitude**: -80.62875°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19046
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6241 **FWC District**: Northeast
Sex: Male **Length (cm)**: 294 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 Apr 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 23 Apr 2019 **By**: FWC- WDG, LRB
Date necropsied: 23 Apr 2019 **By**: FWC- WDG, LRB

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Eau Gallie River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 60 m WSW of 742 Whitemire 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: Most internal organs soft, friable and 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 _____

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 #: **MEC19047**
Date of Report: 2019-Apr-25
Filed By: FWC EC Field Station

FWC Case # 6413 **FWC Region:** NE

Sex: Female **Length:** 262 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-25 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-25 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Apr-25 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.44715 **N**
County: Brevard **Longitude:** -80.72145 **W**
Waterway: Indian River
Locality description: Merritt Island, floating approximately 80 m SW of 500 Treasure Lagoon Lane.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Skin lesions; Abscess(es); Serous fat(s); Thick algal mat; Caseous material in epicardial chamber; Fluid, fibrin-like material, gelatinous clots in abdominal cavity; Empty duodenum, cecum, proximal and mid colon; Enlarged liver; Congested mesenteries, colon serosa.

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 6395.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19047

MORPHOMETRICS:

Total length:	262 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. MEC19047
RECOVERY DATE 25 April 2019
GENDER Female **TL** 262 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 25 April 2019
CONDITION Badly Decomposed

HISTORY 25 April 2019, at 0807 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Merritt Island, Brevard County. FWC case number 6395 was assigned. The complainant, Rick Wurman (321-525-3893), stated there was a dead manatee near Manatee Cove. At 0842 hrs, WDG received photo confirmation. At 1003 hrs, WDG and FWC biologist-Lucy R. Bukowski (LRB) arrived at the Florida Power and Light Cape Canaveral Energy Center boat ramp and launched the Key West. At 1022 hrs, LRB received a text alert from Dispatch regarding the same dead manatee. FWC case number 6413 was assigned. LRB advised the complainant, Austin (321-298-7937), that biologists were en route to collect the carcass. At 1035 hrs, the carcass was secured and towed to a nearby cove. A field necropsy was completed at 1225 hrs. The remains were left onsite. At 1514 hrs, LRB received a call from Austin who stated that he had received a second-hand report about another dead manatee near Manatee Cove. At 1520 hrs, LRB received coordinates from the complainant and determined it was the field necropsy remains from earlier that day.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. The carcass was distended with gas. There was a thick dark brown algal mat on the dorsal and lateral aspects. There were erupted abscesses on the ventral and dorsal aspects of the head and neck (see photos). A circular lump was present on the right dorsal aspect, cranial to the flipper (see photo). A minimum of two well-healed watercraft-related scar patterns was observed on the dorsum and fluke. There was one well-healed mutilation between the 4 and 5 o'clock positions of the fluke margin. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, serous abdominal and omental fat, and moderate, gassy mesenteric fat. The abdominal cavity contained approximately 24.5 L of stringy, fibrin-like material, gelatinous fat-like clots and dark red fluid (see photos).

STOMACH The stomach contained 4 L of moist, fibrous, moderately chewed, dark brown ingesta mixed with well-chewed mangrove propagules (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 10 mL of wet, homogeneous, gritty, black ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal and mid small intestine contained watery, brown fluid. The distal small intestine was empty of contents. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 20 mL of wet, homogeneous, gritty, black digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The mesentery and colon serosa were moderately congested (see photos). The proximal and mid colon contained small amounts of wet, poorly formed, moderately digested, homogeneous, black feces. The distal colon contained very moist, poorly formed, moderately digested, slightly fibrous, black feces. The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was not observed.

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

LIVER The liver was enlarged (see photo) but was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained 10 mL of golden yellow 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 gassy.

HEART There was moderate, gassy epicardial fat. There was 2.5 L of caseous, yellow material in the epicardial cavity (see photo). The heart was coated in caseous material, but otherwise valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were gray to pink on serosal surfaces and dark red on cut surfaces. There was a moderate infection of dead trematodes in the primary airways (see photo).

HEAD & NECK REGIONS There was a large amount of caseous, yellow material associated with the lesions and lump on the head and neck (see photo). The smaller lesions around the head and neck were examined and two of them had dark linear lines going from the lesion to the body cavity but when examined the tissue was only discolored, there was no difference in texture or any foreign bodies present (see photos).

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-04-25_FWC025_8742 through 8788.

COMMENTS

SIGNIFICANT FINDINGS

- Thick algal mat
- Skin lesions
- Abscesses
- Serous fat
- Caseous material in epicardial chamber
- Fluid, fibrin-like material, gelatinous clots in abdominal cavity
- Empty duodenum, cecum, proximal and mid colon
- Enlarged liver
- Congested mesentery, colon serosa

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

William D. Greer
Lucy R. Bukowski

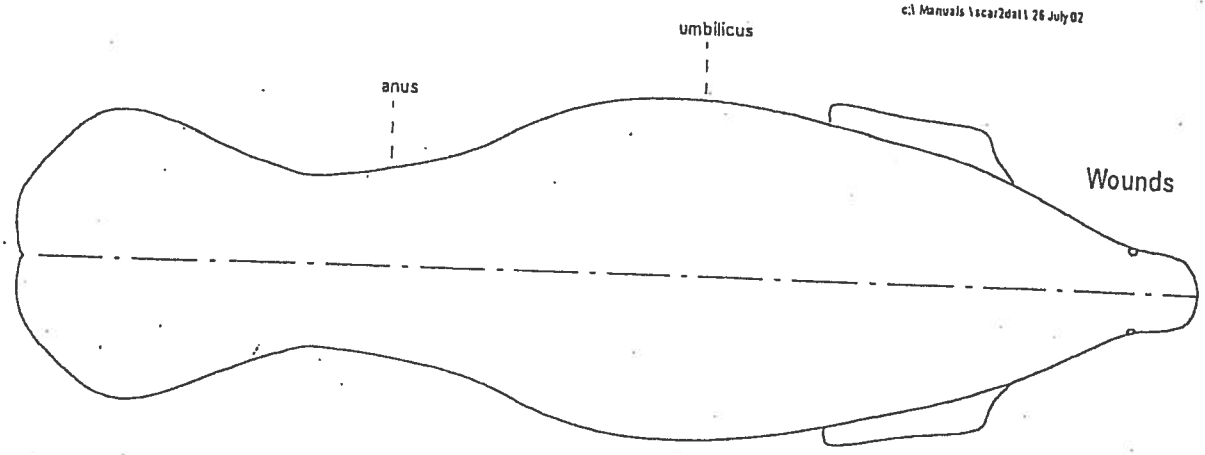
REPORT FILED BY Bukowski / Greer

Date 4/25/2019

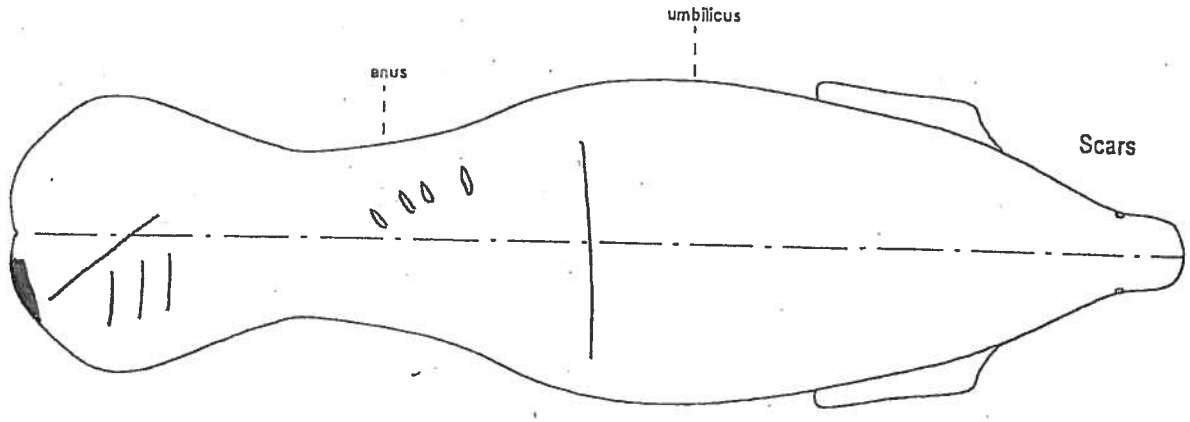
LRB

Field I.D. MEC19047.

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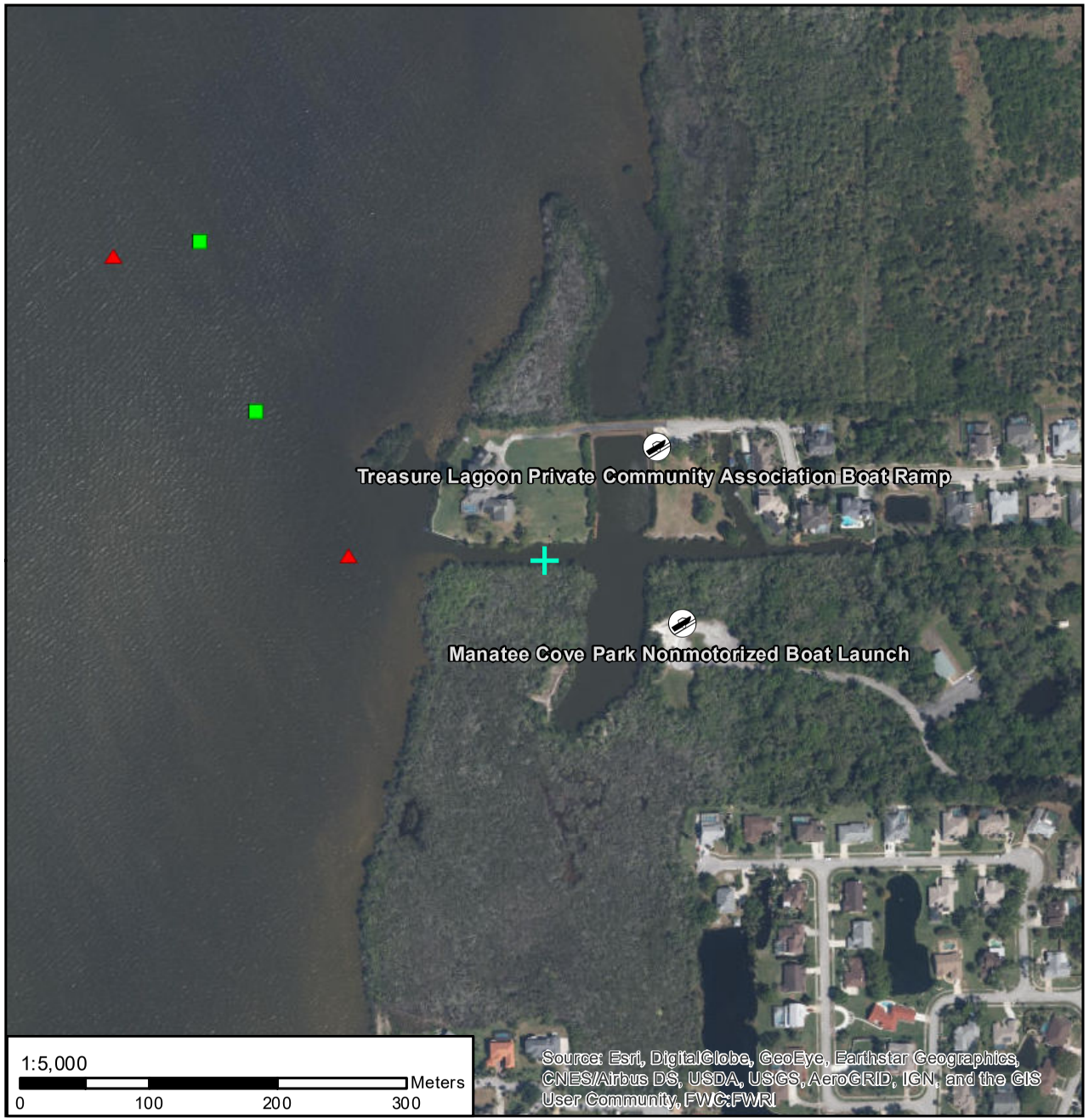


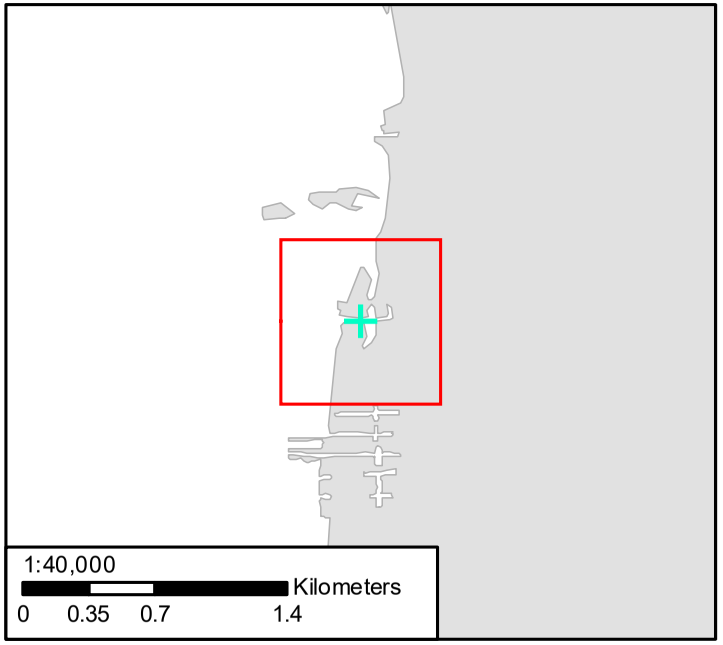
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Width																				
Depth																				
Distance																				

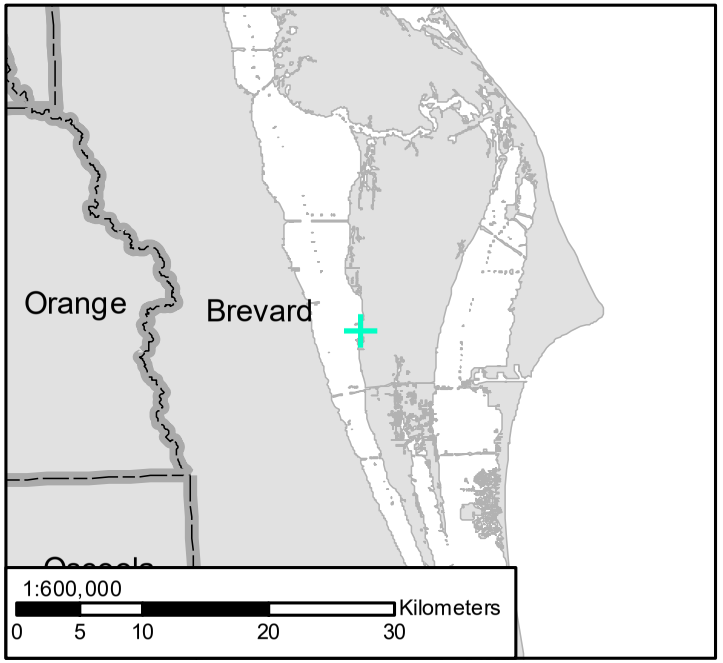


Verified Recovery Location of Manatee Carcass MEC19047

Report Date: 4/25/2019 **Received Date:** 4/25/2019 **Received By:** FWC-WDG,LRB Map Created: 10/14/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 80 m SE of 500 Treasure Lagoon Lane.

Latitude: 28.44715°N **Longitude:** -80.72145°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19047
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6395, 6413 **FWC District**: Northeast
Sex: Female **Length (cm)**: 262 **Estimated** _____ **Weight (kg)** N/T
Date reported: 25 April 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 25 April 2019 **By**: FWC-WDG, LRB
Date necropsied: 25 April 2019 **By**: FWC-WDG, LRB

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 80 m SW of 500 Treasure Lagoon Ln

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: Lesions on head and neck, copious amounts of pus in head and neck region deep to lesions, 2.5 L of pus in epicardial sac.

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**: 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 #: **MEC19049**
Date of Report: 2019-Apr-28
Filed By: FWC MMPL

FWC Case # 6609 **FWC Region:** NE

Sex: Female **Length:** 300 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-28 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-28 **By:** FWC-SMW,WDG

DATE NECROPSIED: 2019-May-01 **By:** MMPL-MdW,GLL,BLB,SMT,BDB,ALP

LOCATION: **State:** FL **Latitude:** 28.75077 **N**
County: Brevard **Longitude:** -80.75654 **W**
Waterway: Mosquito Lagoon
Locality description: Allenhurst, grounded approximately 1.1 km SE of the Beacon 42 boat ramp.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Luxated rib(s); Fractured vertebra(e); Shredded muscle; Hemorrhagic muscle; Hemothorax; Hemoabdomen; Fractured kidney(s); Torn lung(s); Torn hemidiaphragm (s); Torn parietal pleura; Bloody lung(s); Blood clots; Bloody eyes, nares; Bone fragments in lung, abdomen; Hemorrhagic lung-, kidney parenchyma; Torn transverse septum.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Uterine Scar. Healing skin lesions; Bleached epidermis; Also FWC case number 6604. Kidney cyst. Fluid in right pleural cavity.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19049

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	6.5	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. MEC19049
RECOVERY DATE 28 April 2019
GENDER Female **TL** 300 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 01 May 2019
CONDITION Badly Decomposed

HISTORY 28 April 2019, at 0917 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding an injured or dead manatee in the Mosquito Lagoon in Allenhurst, Brevard County. FWC case number 6604 was assigned. The complainant, Mary Reeves (719-660-1158), stated that she was unsure if the manatee was alive or dead, that it was back-up, and in very shallow water. At 0947 hrs, SMW requested FWC LE assistance. At 0950 hrs, FWC-Officer Brandon Kearney was dispatched. At 0954 hrs, SMW received a text alert from Dispatch regarding a dead manatee in the Mosquito Lagoon. FWC case number 6609 was assigned. The complainant, Mary Banks (321-229-0880), stated that the manatee was all gray and face down. It was in the same location as the previous call. SMW received a photo of the carcass from the second complainant at 1001 hrs and a photo from the first complainant at 1012 hrs. SMW arrived at the Bairs Cove boat ramp at 1400 hrs. Officer Kearney arrived with the carcass at 1440 hrs. SMW loaded the carcass into the carcass trailer by 1509 hrs and transported it to the EC Field Station at 1650 hrs. **29 April**, after recovering MEC19051, FWC biologist-William D. Greer transported both carcasses to the MMPL arriving at 1520 hrs.

EXTERNAL All of the epidermis was present but slightly sloughing. The carcass was distended with gas. Bloody decompositional fluid exuded from the nares. The eyes were bloody. There was a fresh watercraft-related wound series that consisted of nine parallel propeller wounds (#1-9). There were scrapes perpendicular to the ventral margins of wounds #1-3. The wounds extended from the right shoulder region, over the right dorsum, over the dorsal peduncle, to the cranial left dorsal fluke. Wounds #1, 2, 4, and 6 – 9 were superficial. Wound #3 penetrated slightly into the dermis. Wound #5 penetrated into the muscle and a rib was palpated deep in this wound. There were superficial healing lesions in the epidermis of the mid dorsum and the 3 o'clock position of the dorsal fluke. There were several small healing lesions on the ventral fluke. Copious viscous tan mucus exuded from the urogenital opening. There was a thin green algal mat on the lateral aspects. A moderate infestation of barnacles was present on the dorsal and ventral aspects. The epidermis had bleached spots. The fluke margin had three small well-healed mutilations between the 4 and 6 o'clock positions, and one well-healed mutilation between the 7 and 8 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, mesenteric, and omental fat. There were a few loose, well-formed blood clots in the abdomen. There were a few loose bone fragments in the cranial right abdomen deep to tears in the right hemidiaphragm.

STOMACH The stomach contained 6 L of moist, moderately chewed, fibrous, stringy, yellow to green ingesta. The mucosa was autolyzed. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 2 L of wet, well-chewed, slightly fibrous, dark green ingesta. The mucosa was autolyzed. A few dead nematodes were observed.

JEJUNUM & ILEUM The distal small intestine contained a moderate amount of wet, well-chewed, slightly stringy, dark green vegetation mixed with light green fluid. The proximal small intestine contained a small amount of watery light green fluid mixed with a scant amount of stringy, well-chewed, dark green vegetation. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 1.5 L of moist, moderately digested, slightly fibrous, dark green digesta. The mucosa was sloughing. No parasites were observed.

COLON The distal colon contained a large amount of moist, well-digested, homogeneous, well-formed, green feces. The mid colon contained a large amount of moist, well-digested, homogeneous, moderately formed, yellow to green feces. The proximal colon contained a moderate amount of moist, moderately digested, stringy, leafy, poorly formed, yellow to green feces. 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. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained a small amount of viscous, flocculent, dark yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The uterus was contracted. The left horn contained a scar (5.0 cm wide x 6.5 cm circumference). The ovaries contained a few moderate sized fluid-filled follicles. The left ovary also contained several corpora hemorrhagica.

KIDNEYS There was abundant perirenal fat. The right kidney was surrounded by large, loose, well-formed blood clots and had numerous tears on all aspects which were associated with hemorrhagic parenchyma. The serosal surfaces were pink, purple, and dark red. On cut surfaces, the cortices were pale pink to tan and the medullae were dark pink to light red. The left kidney had several fractures on the dorsal aspect which were associated with loose well-formed blood clots and hemorrhagic parenchyma. The serosal surfaces were light pink, light purple, and red. On cut surfaces, the cortices were pink and the medullae were dark pink to light red. There was one cyst (0.5 cm diameter) at the cranial dorsal tip. The corticomedullary boundaries were distinct in both kidneys. The kidney trauma was deep to fractured right ribs 14-16. An ELISA toxicology sample was collected.

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

HEART The transverse septum was shredded due to trauma and/or decomposition. There was abundant epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms had several small tears at the cranial-most aspect due to decomposition and/or trauma. The right pleural cavity contained 500 mL of loose, well-formed blood clots and 100 mL of bloody fluid. The left pleural cavity contained 400 mL of watery, cloudy dark red fluid. The right lung had one full perforation through the medial aspect of the caudal one-third due to fractured right rib 12. There were also three tears on the dorsal aspect of the mid one-third due to fractured right ribs 8 and 10. There were loose bone fragments in the cranial-most lung tear. The tears and perforation were surrounded by loose, well-formed blood clots and hemorrhagic lung parenchyma. The right lung was mottled pink, dark purple, and dark red on serosal surfaces and dark pink to dark red and bloody on cut surfaces. The left lung was mottled light pink and light to dark purple on serosal surfaces and dark red on cut surfaces. The airways of both lungs contained a scant amount of viscous dark red fluid. No parasites were observed. The mucosa was dark pink to dark red. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON Right ribs 2-5 were luxated but the heads did not perforate the parietal pleura. Right rib 8 had a comminuted oblique fracture at the proximal one-third that tore the parietal pleura and right lung. Right ribs 9 and 10 had two oblique comminuted fractures at the proximal one-third that tore the parietal pleura. The fracture of right rib 10 also tore the lung. Right rib 11 had one comminuted oblique fracture at the head and one at mid-shaft. Right rib 12 had a comminuted oblique fracture at the proximal one-third that tore the parietal pleura and right lung. Right rib 13 had two closed comminuted oblique fractures at the proximal one-third. Right ribs 14 and 16 had closed oblique comminuted fractures at the heads. Right rib 15 had a comminuted oblique fracture at the head that tore the parietal pleura. Right rib 15 was palpated deep in wound #5. Right rib 17 had an oblique fracture at the head. The rib fractures were deep to wounds #2-5. The right transverse processes of L1 and L2 were fractured which were deep to wound #6. The spinous processes of T8, T15, L2 and Ca1 were fractured. All fractures were surrounded by shredded, hemorrhagic muscle and loose, well-formed blood clots.

OTHER There was dark red to black discolored tissue medial to the dorsal aspect of the right scapula deep to wound #1. The intercostal muscle between right ribs 5-8 was hemorrhagic deep to wounds #1 and 2. There was serous dark red tissue dorsal to the cecum (see photos).

PHOTOGRAPHS 2019-04-30_FWC022_7721 through 7738, 7744, 7746, 7747, 7751 through 7753; 2019-05-01_FWC022_7754 through 7764.

COMMENTS The trauma type was impact from propeller.

SIGNIFICANT FINDINGS

- Fresh watercraft wounds
- Bloody eyes, nares
- Fractured, luxated ribs
- Fractured vertebrae
- Blood clots
- Shredded, hemorrhagic tissue
- Bone fragments in lung, abdomen
- Hemoabdomen, -thorax
- Torn kidneys, lung, parietal pleura, hemidiaphragms, transverse septum
- Hemorrhagic lung-, kidney parenchyma
- Bloody lung
- Fluid in right pleural cavity
- Bleached epidermis
- Healing skin lesions
- Kidney cyst
- Uterine scar
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

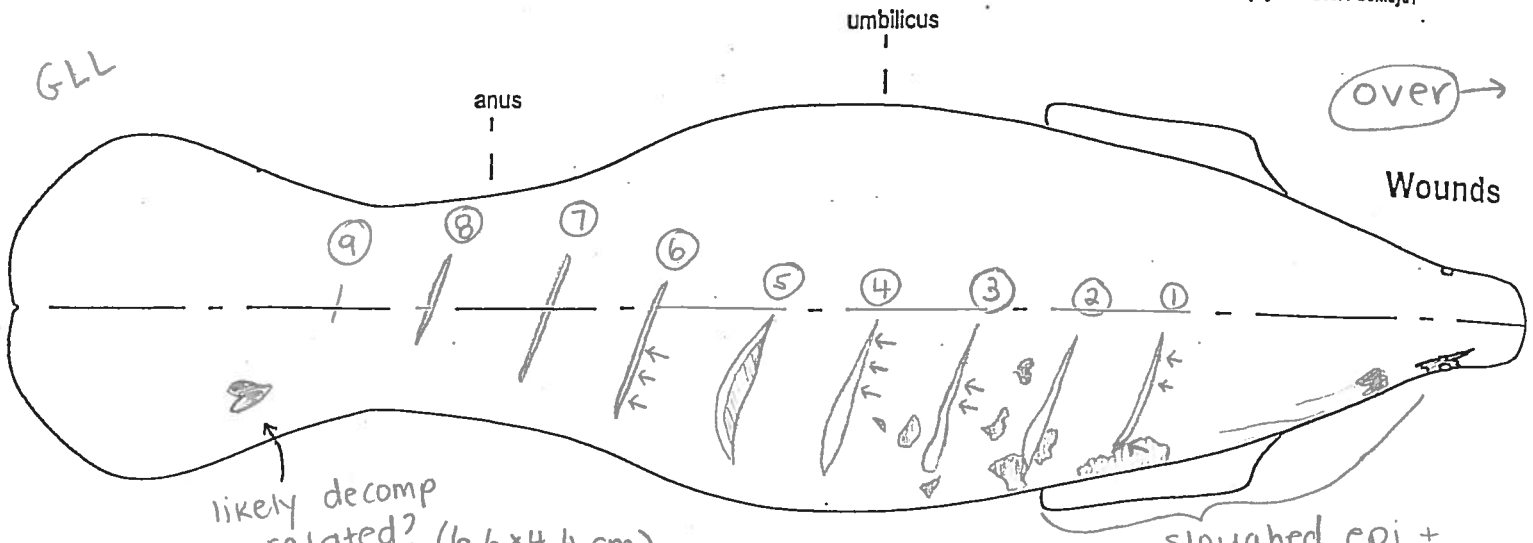
Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Gina L. Lonati
Brittany D. Barbeau
Sean M. Tennant

Tim Bonsper (MMPL volunteer)

REPORT FILED BY de Wit

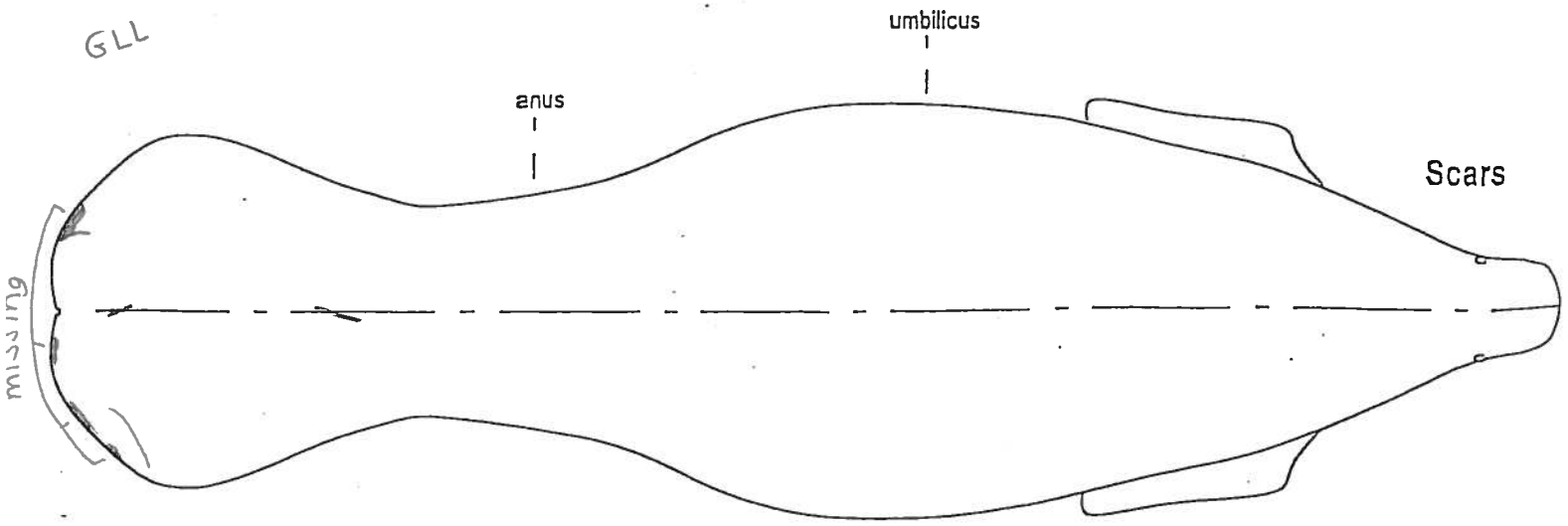
Date 30 APR 2019 Field I.D. MEC19049

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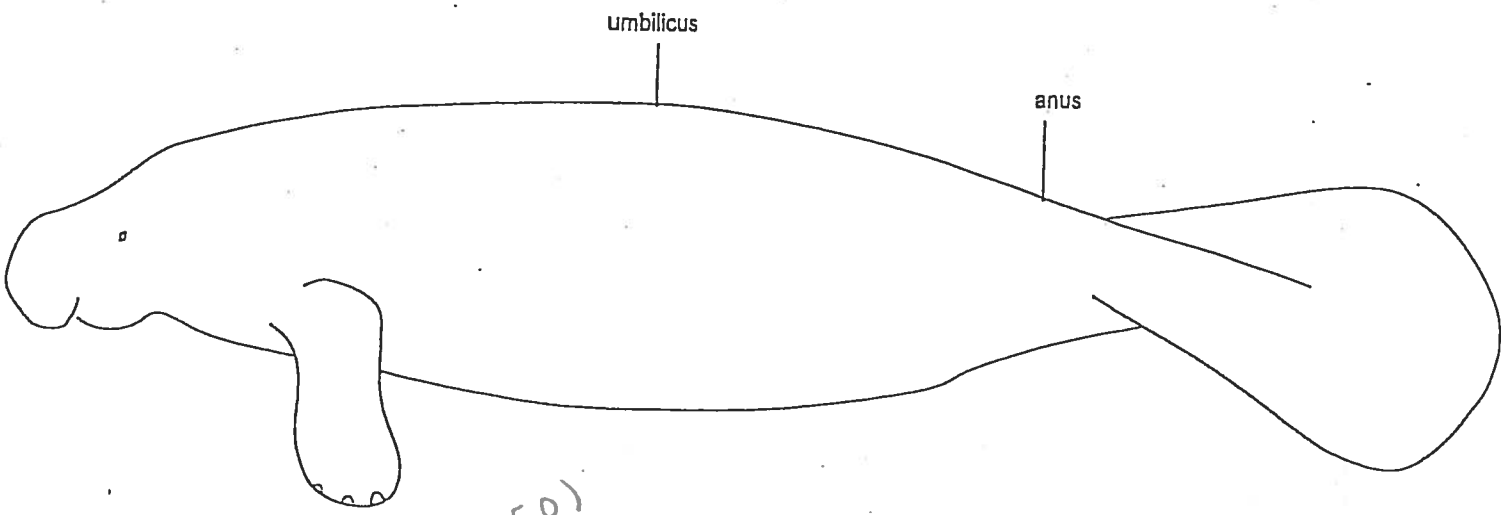


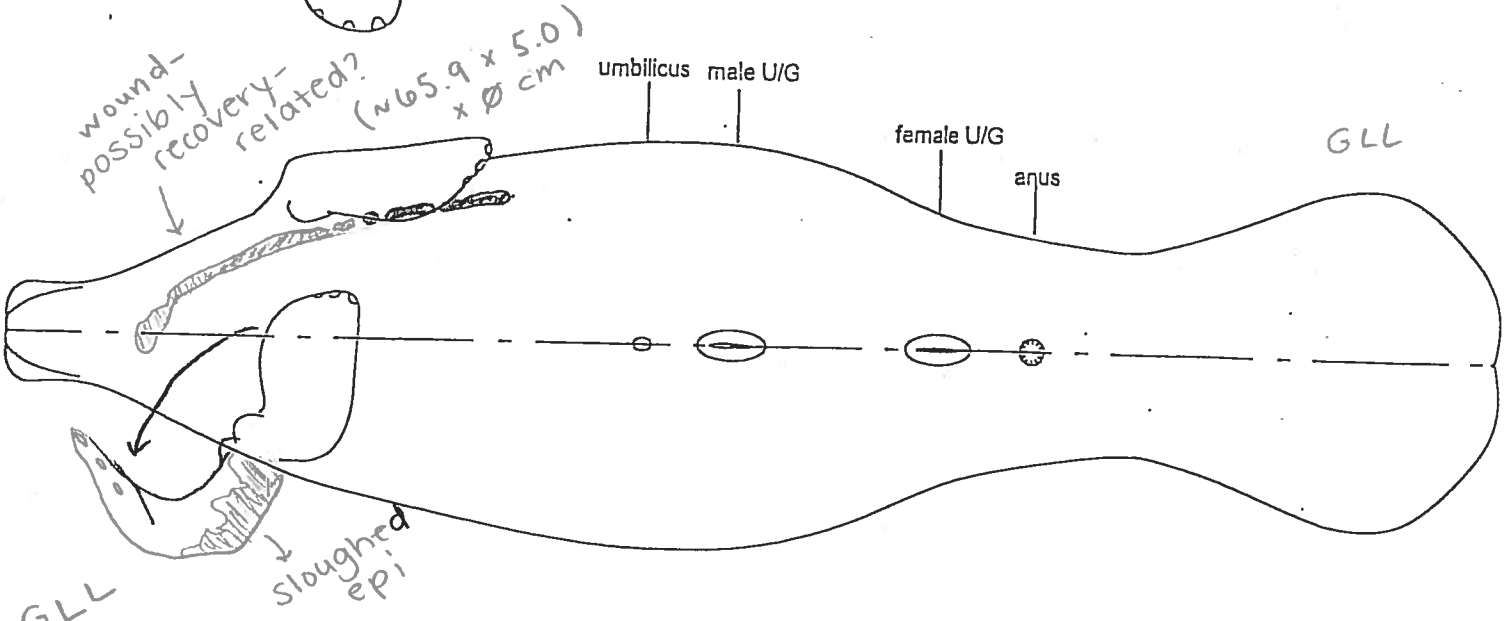
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Length	29.0	32.4	34.7	36.5	38.1	37.0	33.9	20.2	8.0											
Width	1.3	3.0	2.4	4.1	6.6	1.0	1.1	0.8	0.2											
Depth	Ø	Ø	0.4	Ø	8.2	Ø	Ø	Ø	Ø											
Distance	20.1	21.8	21.3	20.8	22.4	23.3	23.2	21.3												

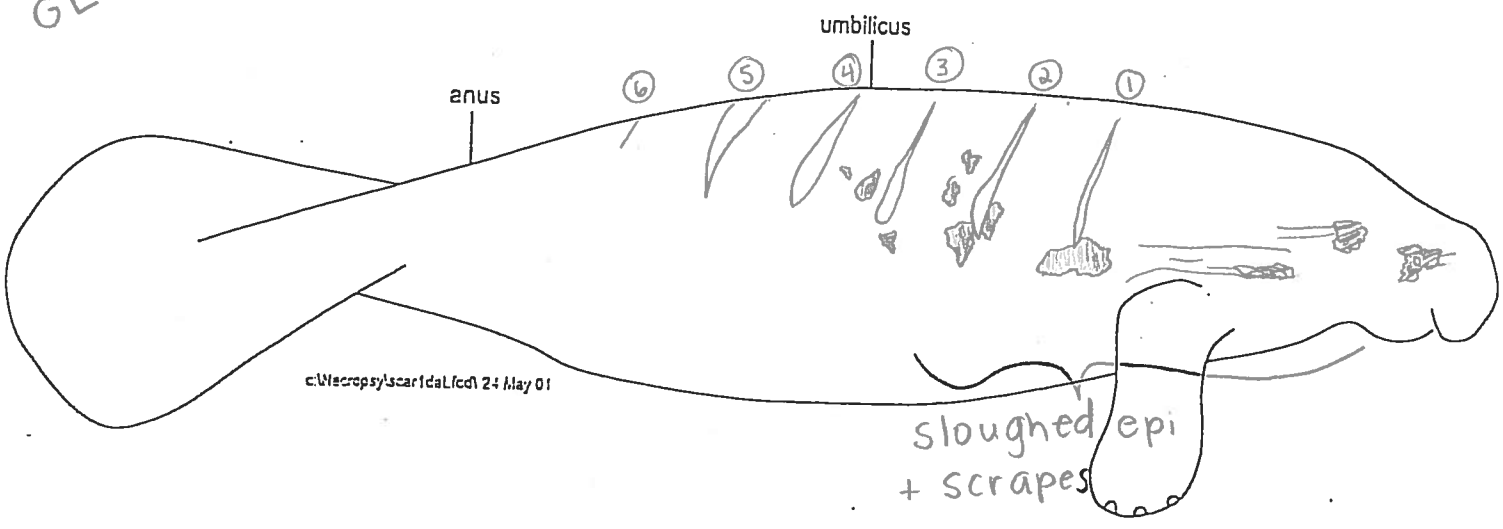
*palpate rib through wound #5



FIELD I.D. MEC19049

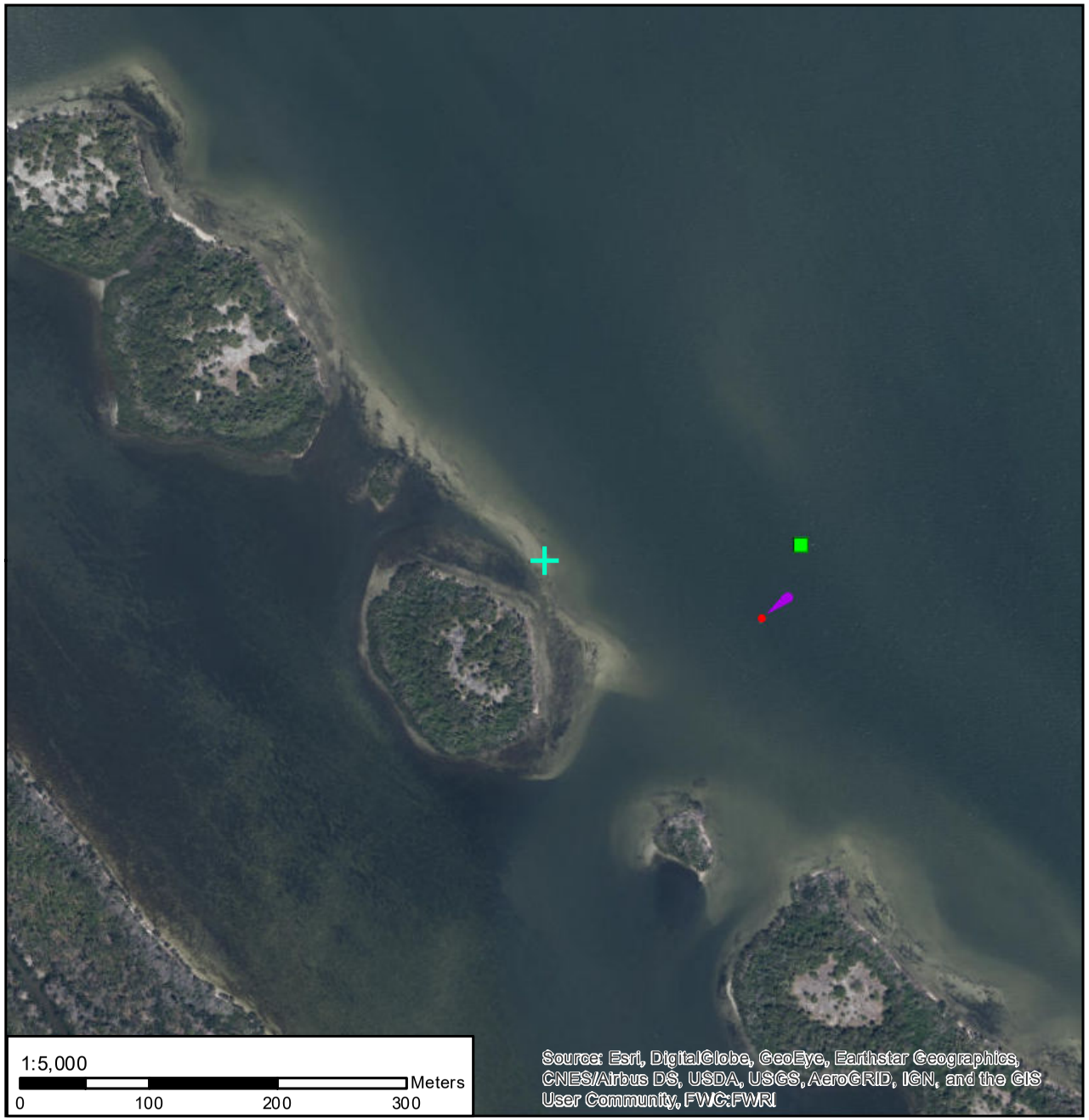


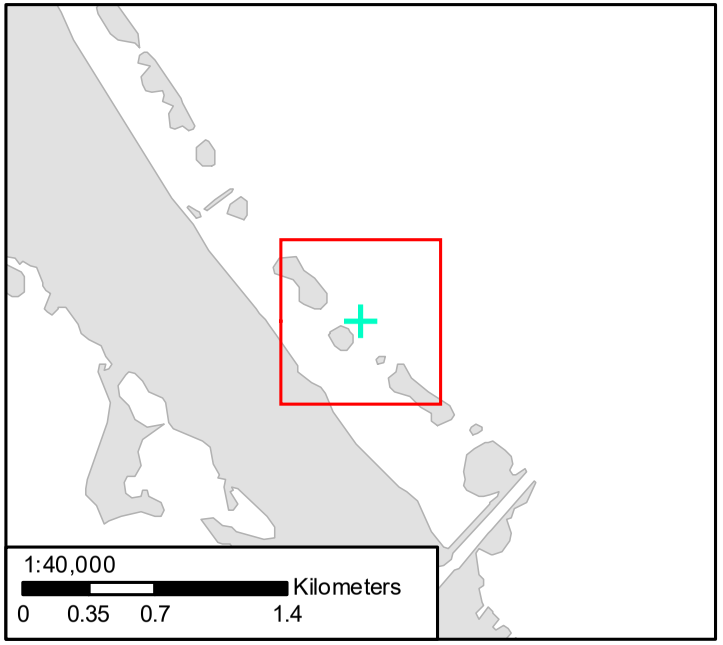


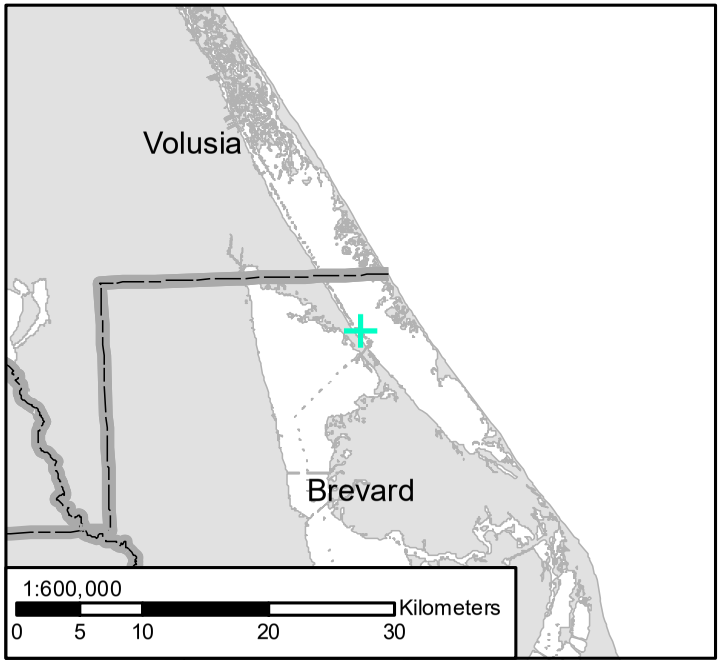


Verified Recovery Location of Manatee Carcass MEC19049

Report Date: 4/28/2019 **Received Date:** 4/28/2019 **Received By:** FWC-SMW,WDG Map Created: 10/14/2020







Locality Description:
Allenhurst, Brevard
Grounded, approximately 1.1 km SE of the Beacon 42 boat ramp.

Latitude: 28.75077°N **Longitude:** -80.75654°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19049
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6604, 6609 FWC District: FWC NE
Sex: M (F) Undetermined Length: 300 cm (estimated _____) Weight N/T kg.
Date reported: 28 APR 2019 By: CITIZEN TO FWC NR DISPATCH - ORLANDO
Date collected: 28 APR 2019 By: FWC - SMW
Date necropsied: 1 May 19 By: MMPL - GLL, MDW BUB SMT BDB ALP

LOCATION: State: FL (___) County: BREVARD Waterway: MOSQUITO LAGOON
Latitude: _____ N Longitude: _____ W
Locality description: ALLENHURST NEAR CHANNEL MARKER #41

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 wounds, scrap
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 # 92
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: _____

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19049
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6604, 6609 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 28 April 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 28 April 2019 **By**: FWC-SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 1.1 km SE of Beacon 42 boat ramp.

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 #: **MEC19050**
Date of Report: 2019-Apr-28
Filed By: FWC EC Field Station

FWC Case # 6884 **FWC Region:** NE

Sex: Female **Length:** 260 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Apr-28 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-03 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-May-03 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.05347 **N**
County: Brevard **Longitude:** -80.58851 **W**
Waterway: Indian River
Locality description: Palm Bay, floating approximately 110 m E of 3520 US-1 S.

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); Fractured vertebra(e); Fractured rib(s).

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Scar, Fluke, Internal, Other (Verification).

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 numbers 6635, 6636, and 6645. Actual length of the remains was 235 cm.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19050

MORPHOMETRICS:

Total length:	260 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. MEC19050
RECOVERY DATE 03 May 2019
GENDER Female **TL** 260 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 03 May 2019
CONDITION Badly Decomposed

HISTORY 28 April 2019, at 1419 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 6635 was assigned. The complainant, Lee Theophelius (321-394-6009), stated that he was unsure if the manatee was alive or dead but believed it was stuck on a sandbar near the channel. At 1427 hrs, SMW received a photo from the complainant to verify the carcass. Due to SMW already responding to an injured manatee report, FWC LE assistance was requested. At 1433 hrs, SMW received a text alert from Dispatch regarding a dead manatee in Indian River in Palm Bay. FWC case number 6636 was assigned. The complainant, Jeff Williams (407-780-8799), stated the manatee was floating on its side near the channel but he had no photos. At 1619 hrs, SMW received a text alert from Dispatch regarding a dead manatee in Indian River in Palm Bay. FWC case number 6645 was assigned. The complainant, Laurie Kanuch (330-715-6655), stated the carcass was floating on its side in the middle of the channel. At 1632 hrs, SMW received a photograph of the carcass. At 1651 hrs, FWC-Officer Ray Cybula began searching for the carcass but was unable to locate it by 1758 hrs. **02 May**, at 1703 hrs, FWC on-call biologist-Nadia J. Gordon (NJG) received a text alert from Dispatch regarding a dead manatee in the Indian River in Palm Bay. FWC case number 6884 was assigned. The complainant, Richard Kidd (904-625-3739), stated that the carcass was partially submerged on the shoreline. NJG received photo confirmation at 1710 hrs and forwarded the information to EC Field Station staff at 1728 hrs. Due to the location of the carcass, FWC biologist-William D. Greer (WDG) determined it was the same one previously reported. **03 May**, at 0835 hrs, WDG and FWC biologist-Lucy R. Bukowski arrived at the manatee. A field necropsy was completed at 0910 hrs. The remains were left on site.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There was an eroded watercraft-related wound series on the dorsum which consisted of one wide linear wound (#1) across the mid-dorsum and at least two triangular wounds (#2 and 3) roughly parallel to each other and caudal to wound #1. An additional eroded wound (#4) was present on the left caudal dorsum. The body cavity was exposed through all wounds. The dorsal dermis was eroded due to decomposition. There were rents on the ventrum, at the head and neck, umbilicus, urogenital opening, anus, and fluke due to decomposition. Bones protruded from the rents, and the skull was completely exposed. The fluke margin was eroded due to decomposition. No watercraft-related scars were grossly observed. Actual length of the remains was 235 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered. Internal organs were missing unless mentioned below.

RESPIRATORY SYSTEM Only the left lung was present and was soft, friable, and autolyzed.

SKELETON All ribs and most vertebrae were loose in the body cavity, preventing accurate rib and vertebral counts. Six thoracic vertebrae were fractured and/or separated at the sutures. Two ribs had oblique fractures at the proximal one-third. One rib had an oblique fracture at the head.

OTHER

PHOTOGRAPHS 2019-05-03_FWC025_8832 through 8846.

COMMENTS

SIGNIFICANT FINDINGS

- Missing, autolyzed internal organs
- Eroded watercraft wounds
- Fractured ribs, vertebrae

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

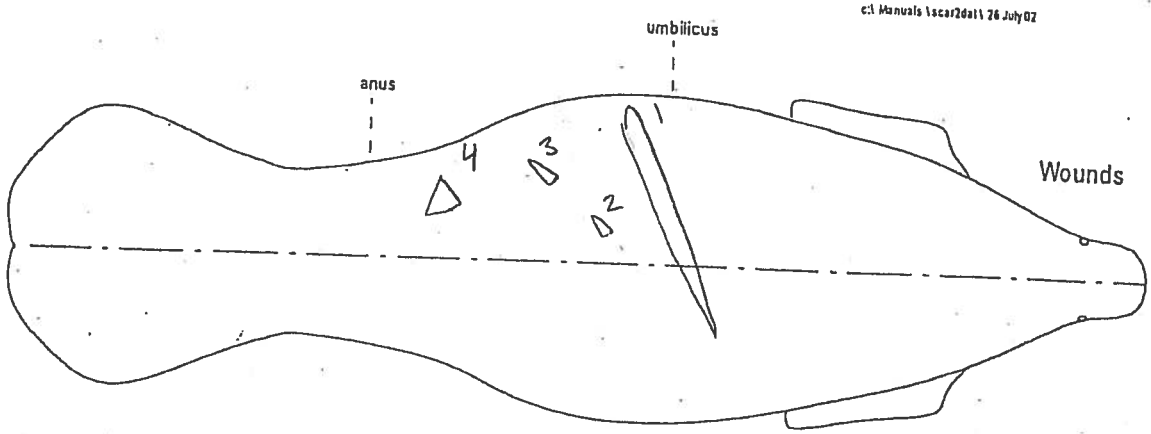
William D. Greer
Lucy R. Bukowski

REPORT FILED BY Bukowski

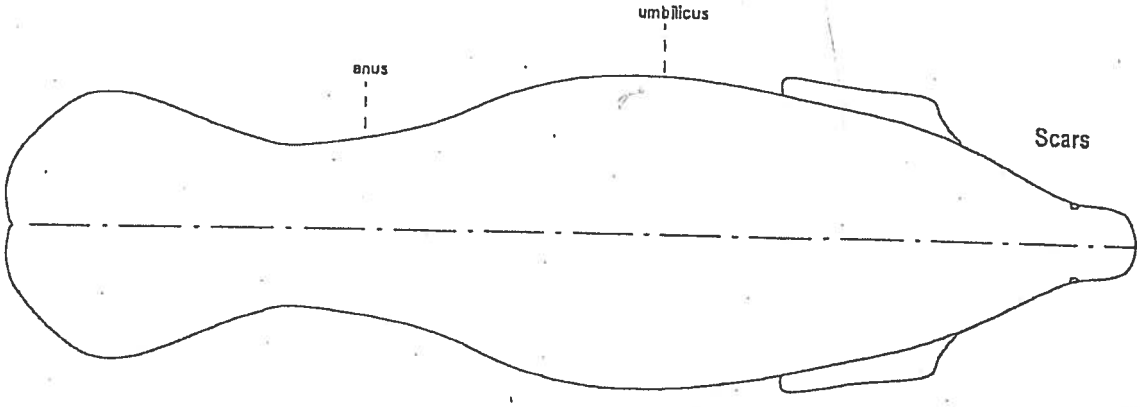
Date 05/031 2019
LRB

Field I.D. MEC19050

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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																				

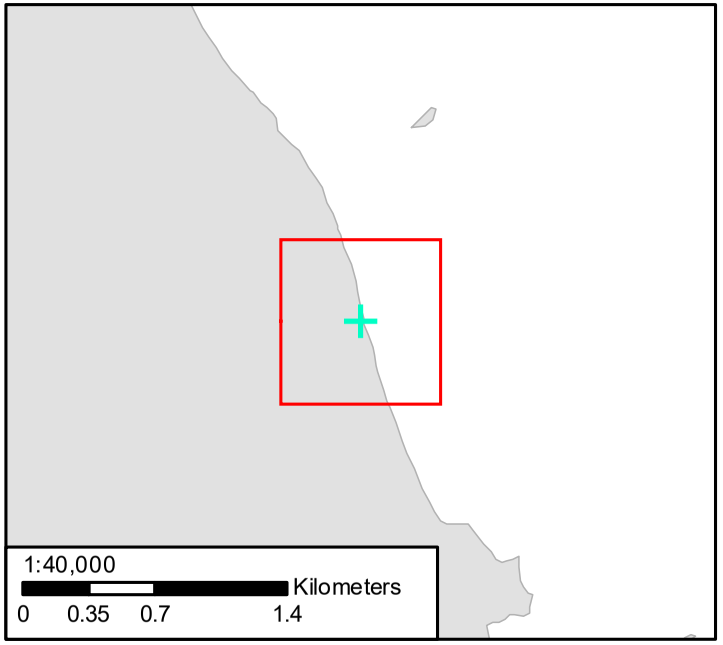


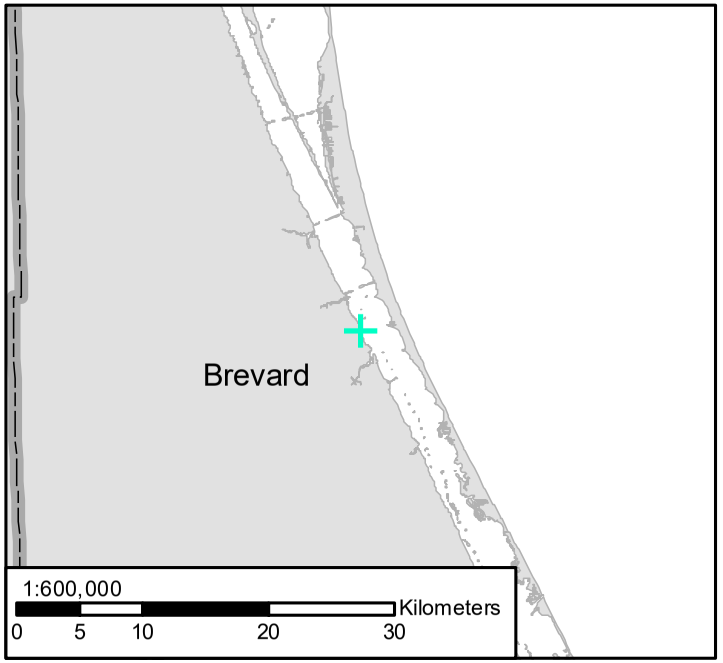
Scar Dat sht Sep 2002

Verified Recovery Location of Manatee Carcass MEC19050

Report Date: 4/28/2019 **Received Date:** 5/3/2019 **Received By:** FWC-WDG,LRB Map Created: 10/14/2020







Locality Description:
Palm Bay, Brevard
Floating, approximately 770 m E of 2132 Northview St NE.

Latitude: 28.05347°N **Longitude:** -80.58851°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19050
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6635, 6636, 6€ **FWC District:** Northeast
Sex: Female **Length (cm):** 235 **Estimated** 260 **Weight (kg)** N/T
Date reported: 28 April 2019 **By:** Citizen to FWC NE Dispatch-Orlando
Date collected: 03 May 2019 **By:** FWC-WDG, LRB
Date necropsied: 03 May 2019 **By:** FWC-WDG, LRB

LOCATION INFORMATION: **State** FL **County:** Brevard **Waterway:** Indian River
Latitude: N _____ **Longitude:** W _____
Locality description: Palm Bay, approximately 110 m E of 3520 US-1 S.

Carcass Orientation: Floating

CONDITION: ~~Dried Carcass / Loose Bones~~ 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: Wound series on dorsum, three fractured ribs, six fractured vertebrae, all organs missing.

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

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: Wound measurements not taken due to state of decomposition.

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 #: **MEC19051**
Date of Report: 2019-Apr-28
Filed By: FWC MMPL

FWC Case # 6637 **FWC Region:** NE

Sex: Female **Length:** 244 **cm** **Weight:** 252.0 **kg**

DATE REPORTED: 2019-Apr-28 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Apr-29 **By:** FWC-WDG Volusia County Stranding Team-D. Wingfield,A. Ambert

DATE NECROPSIED: 2019-May-01 **By:** MMPL-MdW,GLL,BLB,ALP,BDB,SMT

LOCATION: **State:** FL **Latitude:** 28.89249 **N**
County: Volusia **Longitude:** -80.84021 **W**
Waterway: Mosquito Lagoon
Locality description: Oak Hill, grounded approximately 820 m ENE of 623 Riverside Landing Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Blood clots; Shredded muscle; Hemorrhagic muscle; Hemothorax; Torn hemidiaphragm(s); Fractured kidney(s); Torn parietal pleura; Torn kidney capsule(s); Wet lung(s); Bloody eyes, nares; Hemoabdomen with loose feces and one tunicate; Torn colon; Fluid in right pleural cavity, abdominal cavity; Vegetation in mouth; Specks parietal pleura.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Healing watercraft wound(s); Tunicates in colon.

Page 1&2	25 Sep 2020
Necropsy Report	25 Sep 2020
Lat/Long	25 Sep 2020

Field ID #: MEC19051

MORPHOMETRICS:

Total length:	244 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. MEC19051
SPECIES *T. manatus latirostris*
RECOVERY DATE 29 April 2019
NECROPSY DATE 01 May 2019
GENDER Female **TL** 244 **cm WT** 252 **kg**
CONDITION Badly Decomposed

HISTORY 28 April 2019, at 1501 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead juvenile manatee in the Mosquito Lagoon in Oak Hill, Volusia County. FWC case number 6637 was assigned. The complainant, Pat (407-705-4212), stated that the carcass was fresh, back-up, and around 7 feet long. At 1520 hrs, SMW received a photo of the carcass. SMW called FWC-Officer Brandon Kearney, who had just secured MEC19049, to request assistance. However, Officer Kearney was unable to tow the carcass that day. SMW called the Volusia County Marine Mammal Stranding Team (VCMMST) to request assistance to tow the carcass, and they were available to help the next morning. **29 April**, VCMMST launched their boat from the Riverbreeze boat ramp at 0932 hrs and located the carcass at 1126 hrs. FWC biologist-William D. Greer (WDG) arrived at the boat ramp at 1035 hrs and loaded the carcasses into a carcass trailer at 1215 hrs. WDG transported the carcass and MEC19049 to the MMPL arriving at 1520 hrs.

EXTERNAL All of the epidermis was present and sloughing. Bloody fluid exuded from the eyes and nares. There was a superficial linear wound (#1) across the caudal dorsum, which was associated with a smaller linear wound (#2) on the caudal left dorsum. There were four parallel propeller wounds with slightly rounded margins on the right lateral and caudal dorsum caudal to wound #1. There were healing superficial scrapes on the cranial left dorsum and dorsal fluke. There was a moderate green and brown algal mat on the dorsal and lateral aspects. There was one barnacle on the ventral fluke. A minimum of one well-healed watercraft-related scar pattern was observed. 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 abdomen contained 1 L of watery dark red fluid. There were 800 mL of loose well-formed blood clots, loose feces, and one tunicate in the caudal right abdomen.

STOMACH The stomach contained 5.5 L of moist, fibrous, stringy, well-chewed, green ingesta. The mucosa was autolyzed. A few dead nematodes were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 1.5 L of moist, fibrous, slightly stringy, well-chewed, light green to green ingesta. The mucosa was tan. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a moderate amount of watery, fibrous, well-chewed, slightly stringy, light green to green ingesta. The proximal small intestine also contained a small amount of grey mucus. The mucosa was tan. The Peyer's patches were prominent throughout. No parasites were grossly observed. The serosa of the proximal small intestine had two dark purple regions.

CECUM The cecum contained 1 L of moist, well-digested, slightly fibrous, green digesta. The mucosa was sloughing. No parasites were observed.

COLON Approximately 560 cm caudal to the cecum, the mid colon had a 4.6 x 2.5 cm tear which was associated with fractured left rib 15. The tear margins were rounded and surrounded by hemorrhagic tissue. The feces were blood-stained deep to the tear. The proximal colon contained a small amount of moist, well-digested, slightly fibrous, poorly formed, dark green feces. The distal colon contained a moderate amount of moist, well-digested, slightly fibrous, well-formed, green feces and 500 mL of tunicates. An ELISA toxicology sample was collected from the tunicates. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

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

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

GALLBLADDER The gallbladder contained a small amount of viscous, cloudy, yellow 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. The ovaries had a few small fluid-filled follicles.

KIDNEYS There was a small amount of perirenal fat. The left kidney had multiple fractures and the dorsal right kidney was torn at the medial caudal aspect. The fractures were surrounded by loose well-formed blood clots and were deep to wound #1. Both kidneys were pale pink, pale purple, and dark red on serosal surfaces. On cut surfaces, the cortices were pink to pale pink and the medullae were pink to dark pink. The corticomedullary boundaries were mostly indistinct. An ELISA toxicology sample was collected.

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

HEART There was moderate epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM The right hemidiaphragm was intact. The left hemidiaphragm was torn at the lateral aspect of the caudal one-third (7.5 x 4.5 cm) which was associated with fractured left rib 15. The right pleural cavity contained 200 mL of watery, cloudy, dark red fluid. The left pleural cavity contained 1.5 L of watery, cloudy, dark red fluid, and 0.5 L of loose, well-formed blood clots, which were in the caudal aspect and associated with the kidney trauma. The parietal pleura had black specks. The lungs were light pink, and light to dark purple on serosal surfaces, and pink to dark pink on cut surfaces. The left lung was slightly wet on cut surfaces. The airways contained a small amount of watery dark red fluid. No parasites were observed. The mucosa was pink to dark pink. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a small thatch of poorly chewed *Halodule* in the mouth. An ELISA toxicology sample was collected.

SKELETON Left ribs 15 and 16 had comminuted fractures at mid-shaft. Left rib 17 had two oblique fractures at the proximal one-third. All fractures tore the parietal pleura and were surrounded by loose, well-formed blood clots and hemorrhagic tissue. The fracture of left rib 15 also tore the lung, hemidiaphragm, and colon. The fractures of left ribs 16 and 17 also tore the dorsal aspect of the left kidney capsule and left kidney. The rib trauma was deep to wound #1.

OTHER There was shredded muscle on the caudal dorsum deep to wound #1.

PHOTOGRAPHS 2019-04-30_FWC022_7702 through 7720; 2019-05-01_FWC022_7765 through 7773.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wounds
- Bloody eyes, nares
- Fractured ribs

- Blood clots
- Shredded, hemorrhagic tissue
- Hemoabdomen with loose feces and one tunicate
- Hemothorax
- Torn colon, hemidiaphragm, parietal pleura, kidneys, kidney capsule
- Wet lung
- Fluid in right pleural cavity, abdominal cavity
- Vegetation in mouth
- Specks parietal pleura
- Healing watercraft wounds
- Tunicates in colon

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

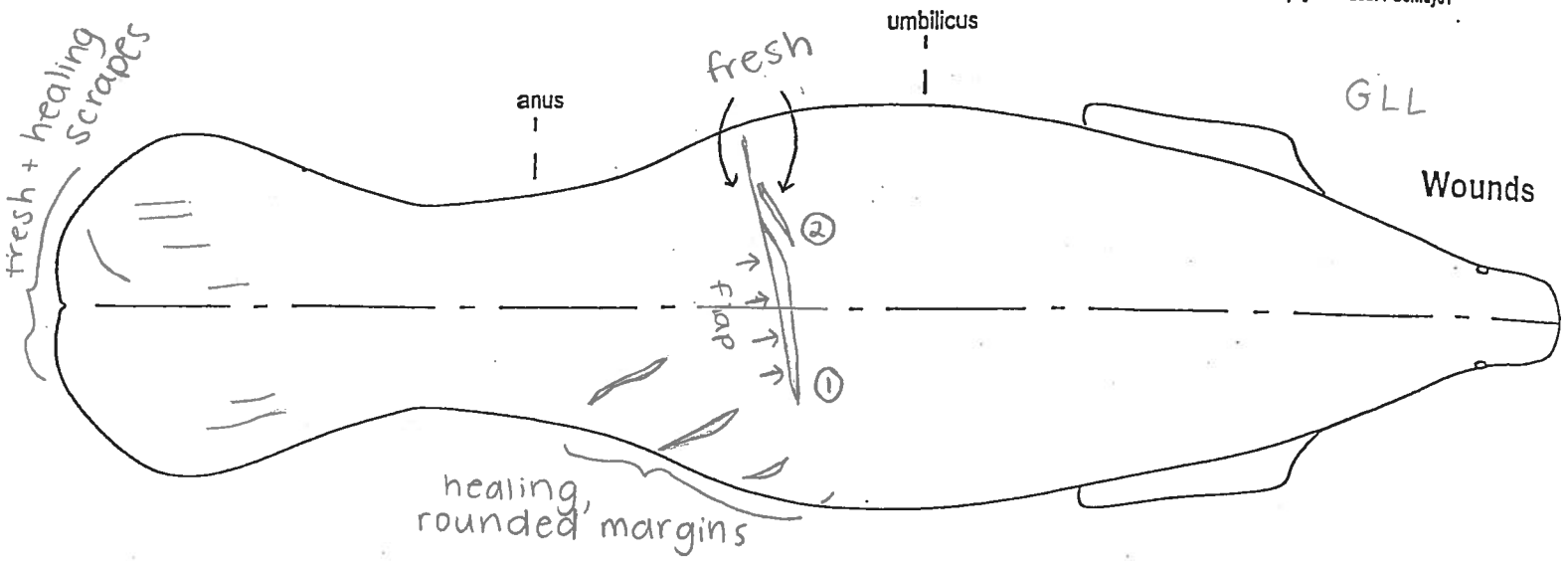
NECROPSY CONDUCTED BY

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

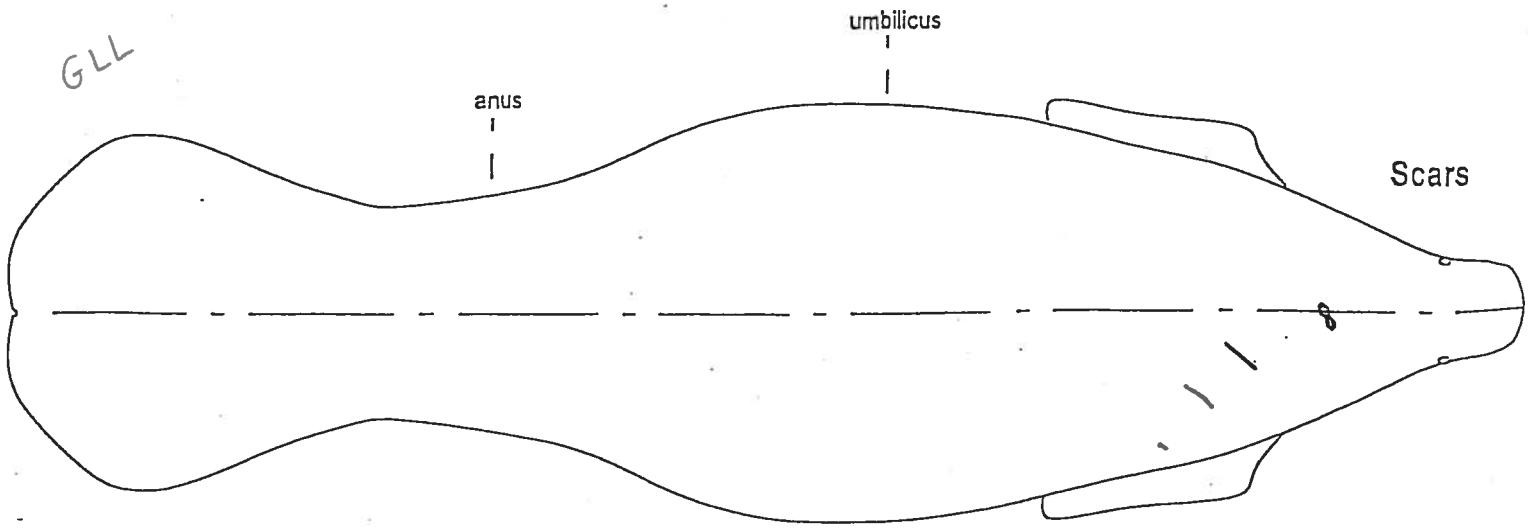
REPORT FILED BY de Wit

Date 30 APR 2019 Field I.D. MEC19051

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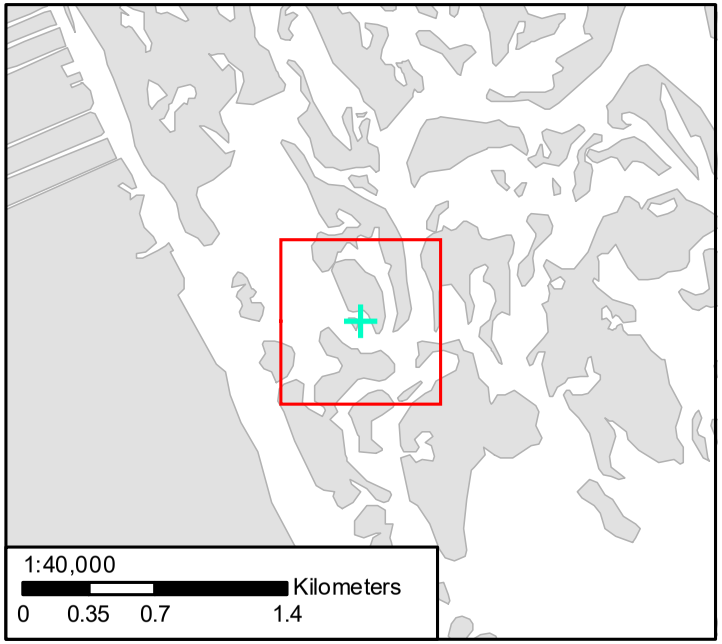
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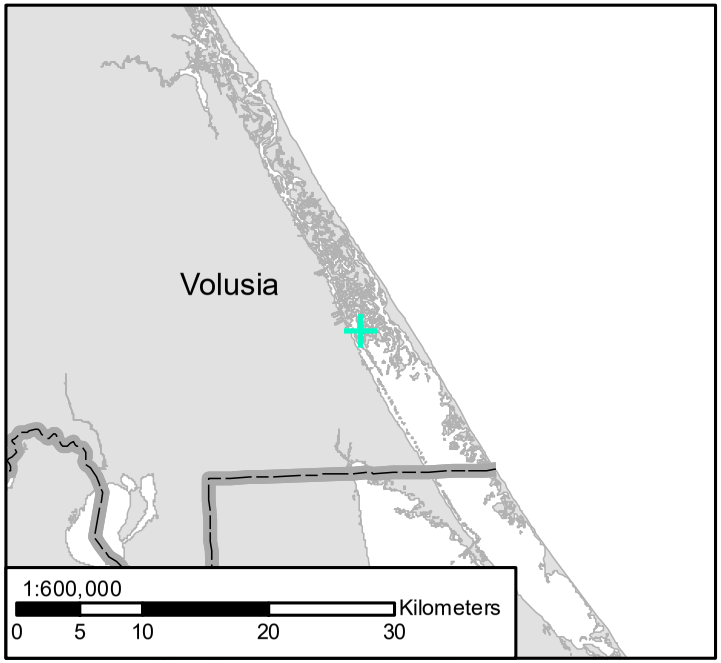


Verified Recovery Location of Manatee Carcass MEC19051

Report Date: 4/28/2019 **Received Date:** 4/29/2019 **Received By:** FWC-WDG Volusia County Stranding Team **Map Created:** 10/14/2020 **D. Wingfield, A. A**







Locality Description:
Oak Hill, Volusia
Grounded, approximately 820 m ENE of 623 Riverside Landing Drive.

Latitude: 28.89249°N **Longitude:** -80.84021°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19051
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6637 FWC District: FWC-NE
Sex: M (F) Undetermined Length: 244 cm (estimated _____) Weight 252 kg.
Date reported: 28 APR 2019 By: CITIZEN TO FWC NE DISPATCH - ORLANDO
Date collected: 29 APR 2019 By: FWC-WOL
Date necropsied: 1 May 19 By: MMPL-GLL, MdW BUB ALP BDB SMT

LOCATION: State: (FL) (___) County: VOLUSIA Waterway: INDIAN RIVER NORTH
Latitude: _____ N Longitude: _____ W
Locality description: OAK HILL, NEAR GOODRICH & RAFORD RESTAURANT

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) wounds
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) tunicates colon vegetation mouth
Genetics Box # 92
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: _____

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19051
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 6637 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 28 Apr 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 29 Apr 2019 **By**: FWC- WDG, Volusia County Stranding- D. Wingfield, A. Ambe
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N 28.892480 **Longitude**: W -080.840229
Locality description: Oak Hill, approximately 820 m ENE of 623 Riverside Landing 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 #: **MEC19053**
Date of Report: 2019-May-10
Filed By: FWC EC Field Station

FWC Case # 7369 **FWC Region:** NE

Sex: Male **Length:** 229 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-10 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-10 **By:** FWC-LRB

DATE NECROPSIED: 2019-May-10 **By:** FWC-LRB

LOCATION: **State:** FL **Latitude:** 28.24858 **N**
County: Brevard **Longitude:** -80.67899 **W**
Waterway: Indian River
Locality description: Rockledge, floating approximately 30 m SE of 6225 Anchor Lane.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Discolored small intestine mucosa with raised nodules; Thickened small intestine wall; Fluid-filled stomach; Empty duodenum.

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.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19053

MORPHOMETRICS:

Total length:	229 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. MEC19053
RECOVERY DATE 10 May 2019
GENDER Male **TL** 229 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 10 May 2019
CONDITION Badly Decomposed

HISTORY 10 May 2019, at 1054 hrs, FWC intern-Lauren R. Clance (L. Clance) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Rockledge, Brevard County. FWC case number 7369 was assigned. The complainant, Claudia Flores (763-528-8720), stated that there was a small dead manatee under her dock. At 1059 hrs, L. Clance received a photo of the carcass. At 1120 hrs, L. Clance and FWC biologist-Lucy R. Bukowski arrived at the US 1/Pineda Causeway boat ramp and launched the Key West boat. The carcass was located at 1208 hrs and towed to a nearby vacant lot. A field necropsy was completed by 1335 hrs. The remains were left on site.

EXTERNAL Approximately 50% of the epidermis was present but sloughing. The carcass was distended with gas. A portion of the intestine protruded through a rent at the umbilicus due to decomposition. Red-tinged fluid exuded from the nares. There was a mild infestation of barnacles on the ventral aspect. The eyes were bulging due to decomposition. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach contained 250 mL of watery, dark brown fluid mixed with a small amount of moderately chewed pieces of brown vegetation and a moderate amount of well-chewed mangrove propagules (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum was empty of contents (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a scant amount of watery gray fluid. The mucosa was mottled dark gray and black and contained tan, slightly raised nodules (see photo). The small intestine wall appeared thickened. There was a moderate infection of pinpoint trematodes.

CECUM The cecum contained 200 mL of moist, fibrous, moderately digested, dark brown digesta mixed with a moderate amount of mangrove propagules (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon contained moist, fibrous, poorly formed, moderately digested, orange to brown feces. The mucosa was unremarkable. 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 black on serosal surfaces and dark red on cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a scant amount of viscous, golden yellow 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 contained 20 mL of pink-tinged urine. 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, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-05-10_FWC025_8864 through 8869, 8871 through 8876, 8878 through 8882.

COMMENTS

SIGNIFICANT FINDINGS

- Discolored small intestine mucosa with raised nodules
- Thickened small intestine wall
- Fluid-filled stomach
- Empty duodenum
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

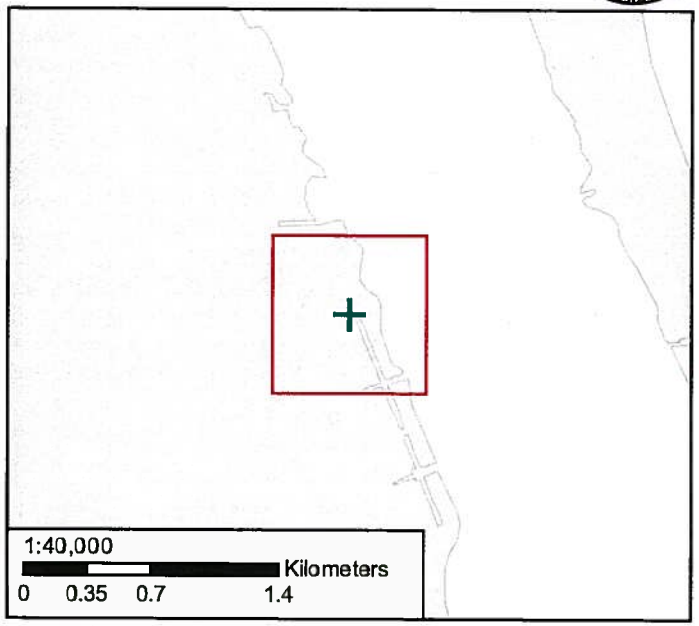
Lucy R. Bukowski
Lauren R. Clance (FWC intern)

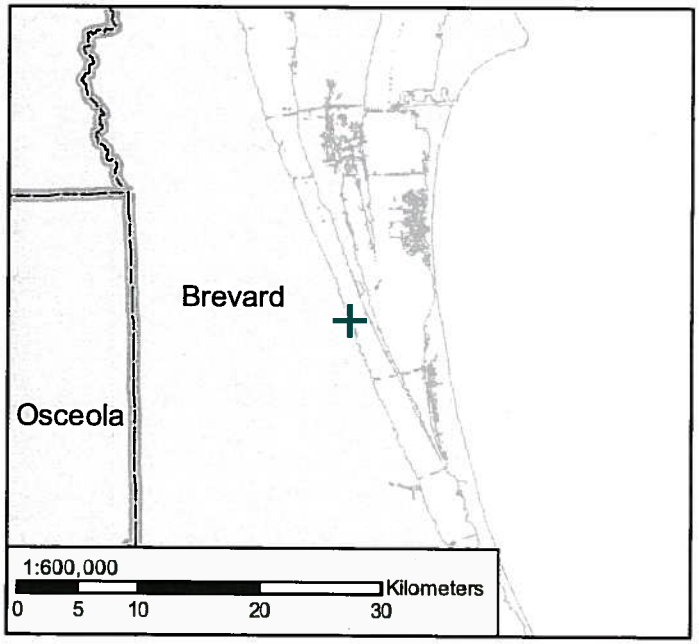
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19053

Report Date: 5/10/2019 **Received Date**: 5/10/2019 **Received By**: FWC-LRB Map Created: 10/27/2020







Locality Description:
Rockledge, Brevard
Floating, approximately 30 m SE of 6225 Anchor Lane.

Latitude: 28.24858°N **Longitude**: -80.67899°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19053
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7369 **FWC District**: Northeast
Sex: Male **Length (cm)**: 229 **Estimated** _____ **Weight (kg)** N/T
Date reported: 10 May 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 May 2019 **By**: FWC-LRB, FWC Intern-L.Clance
Date necropsied: 10 May 2019 **By**: FWC-LRB, FWC Intern-L.Clance

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Rockledge, approximately 30m SE of 6225 Anchor 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: 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: - **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 #: **MEC19054**
Date of Report: 2019-May-10
Filed By: FWC MMPL

FWC Case # 7365 **FWC Region:** NE

Sex: Male **Length:** 320 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-10 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-10 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-May-13 **By:** MMPL-BLB,SMT,MdW,BDB,ALP,GLL,TDW

LOCATION: **State:** FL **Latitude:** 28.87762 **N**
County: Volusia **Longitude:** -80.83439 **W**
Waterway: Mosquito Lagoon
Locality description: Oak Hill, grounded approximately 700 m E of 321 River Road.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; ; Luxated rib(s); Fractured rib(s); Hemorrhagic muscle; Eroded watercraft wounds.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Large amount of tunicates in body cavity. Scavenging.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19054

MORPHOMETRICS:

Total length:	320 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. MEC19054
RECOVERY DATE 10 May 2019
GENDER Male **TL** 320 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 13 May 2019
CONDITION Badly Decomposed

HISTORY 10 May 2019, at 1017 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River North, Oak Hill, Volusia County. FWC case number 7365 was assigned. The complainant, Andrew Wolf (386-314-6631), stated that he had seen the manatee the previous day. The complainant was unable to get photos. At 1024 hrs, Dispatch informed LRB that there were no LE boats available for towing. LRB was already responding to MEC19053 and contacted Volusia County-Debbie Wingfield (DW) for assistance. At 1115 hrs, LRB received photo confirmation of the carcass from DW. At 1410 hrs, DW secured the carcass at the Riverbreeze boat ramp. FWC biologist-William D. Greer (WDG) arrived at the boat ramp at 1704 and loaded the carcass via carcass trailer at 1719 hrs. After recovering MEC19055 at 1821 hrs, WDG transported both carcasses to the EC Field Station at 2002 hrs where they were stored overnight. **11 May**, LRB transported both carcasses to the MMPL arriving at 1130 hrs.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. The muzzle, eyes, patches of the dermis, and fluke margin were eroded due to decomposition. There was a severely eroded region in the dermis of the mid left dorsum and lateral aspect. There were numerous tears due to decomposition and/or scavenging on the mid and caudal ventrum and peduncle. Fractured ribs were visible in the mid ventrum tears. A minimum of six well-healed watercraft-related scar patterns was grossly observed on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered. The body cavity contained loose moist, fibrous, well-chewed and/or - digested, light to dark green vegetation; loose green mangrove leaves; and numerous intact tunicates. ELISA toxicology samples were collected from tunicates and from ingesta in the region of the stomach. Internal organs were missing unless mentioned below.

STOMACH A small portion of the cranial stomach wall remained which was soft, friable, and autolyzed.

HEART There was abundant epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM A small portion of the cranial left lung remained which was soft, friable, and autolyzed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON Left ribs 8, 9, 15 and right ribs 2-12 were luxated due to decomposition and/or trauma. Left rib 10 had a comminuted fracture at the proximal one-third. Left ribs 11-14 had oblique fractures at the proximal one-third. The fracture of left rib 14 was surrounded by hemorrhagic tissue. There was hemorrhagic muscle around the tip of right rib 12. The rib fractures were deep to the eroded region on the left dorsum.

OTHER

PHOTOGRAPHS 2019-05-11_FWC047_0025 through 0029, 0031 through 0041, 0044 through 0051; 2019-05-13_FWC047_0052 through 0067, 0071 through 0073, 0083, 0084.

COMMENTS

SIGNIFICANT FINDINGS

- Eroded region on dorsum
- Fractured ribs deep to eroded region
- Luxated ribs
- Hemorrhagic muscle
- Large amount of tunicates in body cavity
- Autolyzed, missing internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Watercraft; Impact

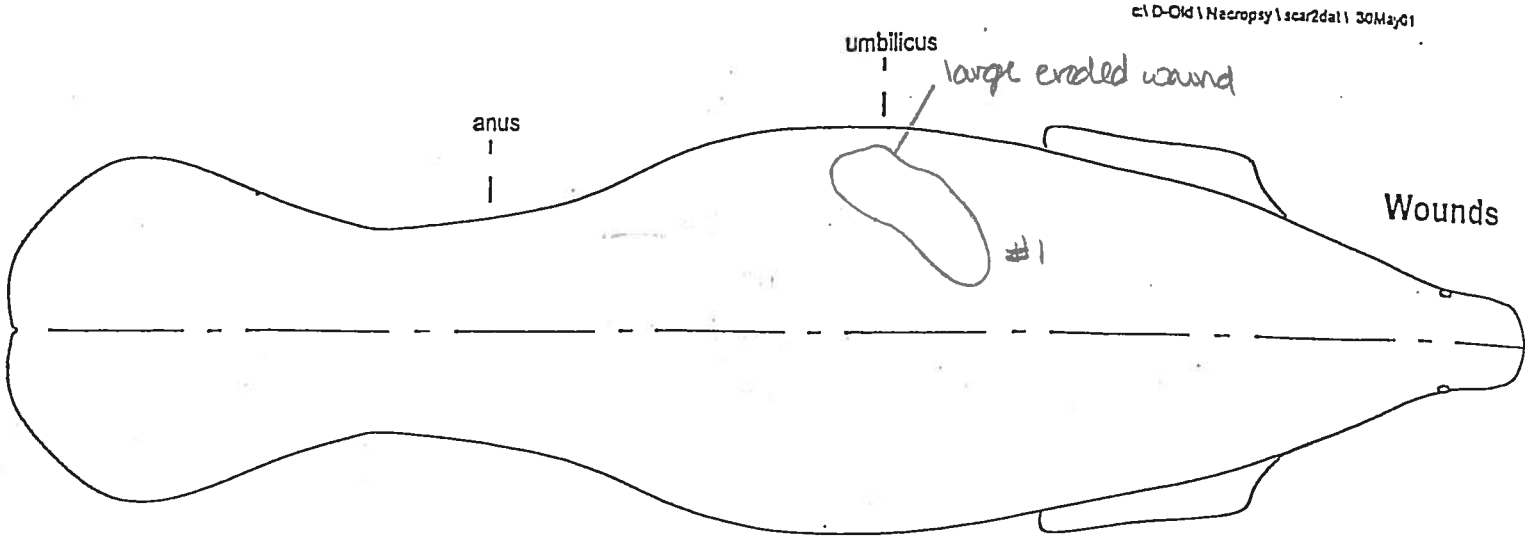
NECROPSY CONDUCTED BY

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

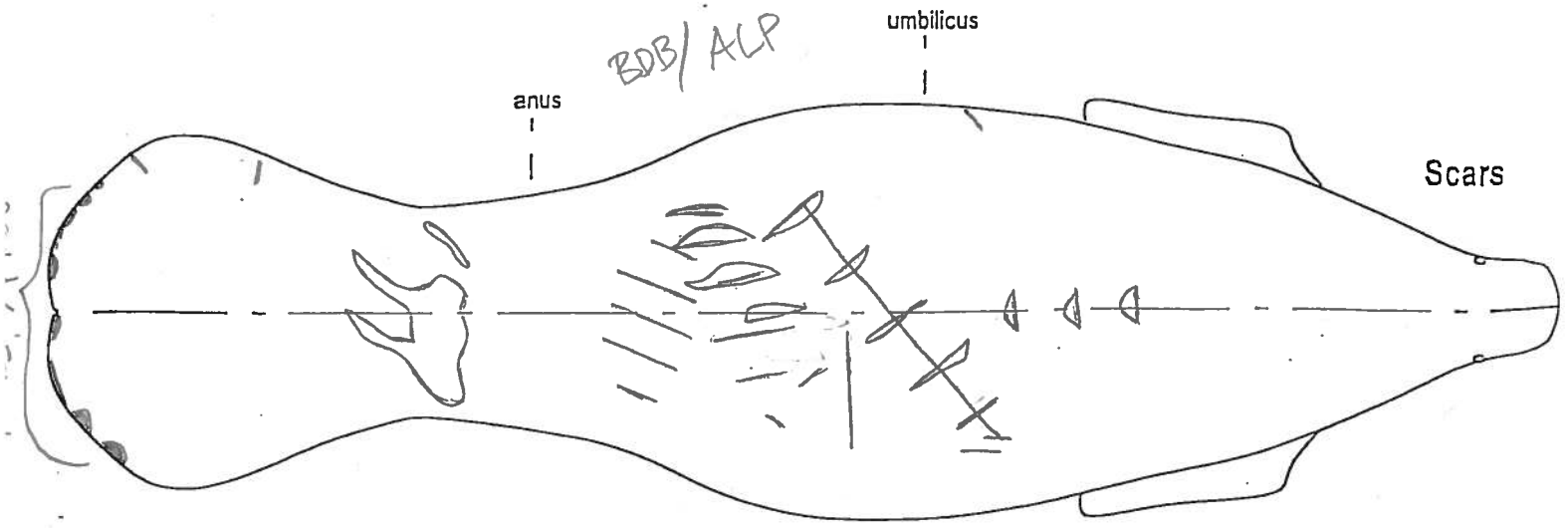
REPORT FILED BY de Wit

Date 11MAY2019 Field I.D. MFC19054

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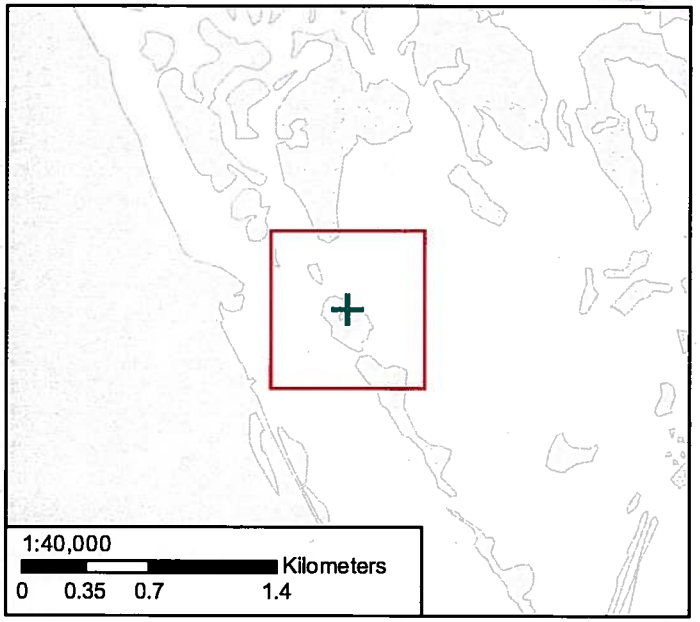
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Length																				
Width																				
Depth																				
Distance																				

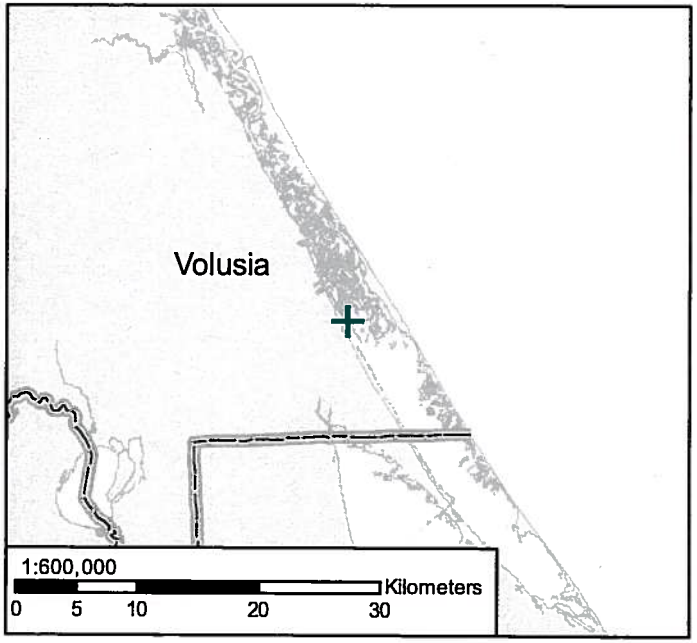


Verified Recovery Location of Manatee Carcass MEC19054

Report Date: 5/10/2019 **Received Date**: 5/10/2019 **Received By**: FWC-WDG,LRB Map Created: 10/27/2020







Locality Description:
Oak Hill, Volusia
Grounded, approximately 700 m E of 321 River Road.

Latitude: 28.87762°N **Longitude**: -80.83439°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19054
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7365 FWC District: NE
Sex: M / F / Undetermined Length: 320 cm (estimated _____) Weight _____ kg.
Date reported: 10 May 2019 By: Citizen to FWC NE Dispatch Orlando
Date collected: 10 MAY 2019 By: FWC-WDG
Date necropsied: 13 May 19 By: MMPL-BUB, SMT, KOW, BDB, ALP, GLL, TDW

LOCATION: State: FL (___) County: Volusia Waterway: Indian River North
Latitude: _____ N Longitude: _____ W
Locality description: Oak Hill approximately 500 m E of Goodrich Seafood

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 Wounds
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 GI contents tunicates
Genetics Box # 92
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: _____

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19054
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7365 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** N/T
Date reported: 10 May 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 May 2019 **By**: FWC-WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 720m E of 253 River Rd.
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 #: **MEC19055**
Date of Report: 2019-May-10
Filed By: FWC MMPL

FWC Case # 7399 **FWC Region:** NE

Sex: Male **Length:** 235 **cm** **Weight:** 246.0 **kg**

DATE REPORTED: 2019-May-10 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-10 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-May-13 **By:** MMPL-BDB,MdW,ALP,GLL,TDW

LOCATION: **State:** FL **Latitude:** 28.90067 **N**
County: Volusia **Longitude:** -80.85307 **W**
Waterway: Indian River North
Locality description: Oak Hill, grounded approximately 30 m E of 243 Gary Avenue.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Luxated rib(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Torn hemidiaphragm(s); Torn parietal pleura; Hemothorax; Hemoabdomen; Torn colon; Hemorrhagic colon wall; Folded lung; Mucus, froth in airways; Loose colon contents in abdominal-, pleural cavity; Congested mesenteries, peritoneum, urinary bladder mucosa; Vegetation in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds, Bloody scrapes, Lesions, Seagrass in mouth).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples. Sedimentation sample of small intestine for parasitology.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Bleached epidermis; Tunicates in colon. Plaque in small intestine mucosa.

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Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19055

MORPHOMETRICS:

Total length:	235 cm	**Fluke base:**	71 cm	**Girth at axillae:**	**cm**
Snout to anus:	157 cm	**Fluke width:**	62 cm		
Snout to U/G:	101 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	85 cm	**Girth at anus:**	cm		
Flipper width:	14 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	0.8 cm	2 cm		
Outer Blubber Thickness:	0.4 cm	0.2 cm	**Abdominal Fat Thickness:**	0.6 cm
Inner Blubber Thickness:	0.1 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		
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. MEC19055
RECOVERY DATE 10 May 2019
GENDER Male **TL** 235 **cm WT** 246 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 13 May 2019
CONDITION Moderately Decomposed

HISTORY 10 May 2019, at 1717 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, Oak Hill, Volusia County. FWC case number 7399 was assigned. The complainant, Rene Tatum (863-660-4893), stated that the manatee was near channel marker 73, floating belly-up with its flippers in the air. No photos were available. ARH requested FWC LE assistance but was told there were no guarantees anyone would be available. At 1722 hrs, ARH forwarded the information to EC Field Station staff. FWC biologist-William D. Greer (WDG) was already in the area responding to MEC19054 and was able to locate the carcass at 1757 hrs. With the aid of a citizen, WDG towed the carcass to Indian Mound Fish Camp boat ramp at 1813 hrs where it was loaded into the carcass trailer with MEC19054 at 1821 hrs. Both carcasses were transported to the field station at 2002 hrs where they were stored overnight. **11 May**, FWC biologist-Lucy R. Bukowski transported the carcasses to the MMPL arriving at 1130 hrs.

EXTERNAL All of the epidermis was present and sloughing. A small amount of bloody fluid exuded from the nares. There was a fresh superficial linear wound on the caudal right dorsum (#1). The dorsum surrounding the wound palpated soft. The left cranial dorsal and lateral aspect had numerous vertical linear scrapes in the epidermis. There was a thin green and brown algal mat on the dorsal aspect. The ventral chin had bleached epidermis. There were barnacle scars on the ventral aspect. There was a minimum of one well-healed watercraft-related scar pattern on the dorsal fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, mesenteric, and omental fat. There were loose colon contents in the abdomen. The abdomen contained 1.7 L of watery, dark red fluid and 50 mL of loose, well-formed blood clots. The peritoneum was moderately congested.

STOMACH The stomach contained 6.5 L of moist, well-chewed, fibrous, green and light green ingesta. The ingesta were coated with a thin layer of tan mucus. There was a mild infection of dead nematodes. The mucosa was tan. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 2.5 L of moist, well-chewed, fibrous, green and light green ingesta. There was a mild infection of dead nematodes. The mucosa was grey, tan, and pink.

JEJUNUM & ILEUM The mesentery was moderately congested. The proximal small intestine contained a scant amount of viscous, flocculent, light brown fluid. There was a mild infection of pinpoint trematodes in the lumen and associated with the Peyer's patches. The mid- and distal small intestine contained a small amount of viscous, cloudy, tan fluid mixed with a scant amount of wet, well-chewed, green ingesta. The distal-most one meter contained a large amount of watery, cloudy, light green fluid mixed with a scant amount of wet, well-chewed, green ingesta. There was a moderate infection of pinpoint trematodes in the mid small intestine in the lumen and associated with the Peyer's patches, and a mild infection of pinpoint trematodes in the distal small intestine in the lumen and associated with the Peyer's patches. *Nudacotyle undicola* was identified on microscopic examination of a mid small intestine sedimentation sample. The mucosa was unremarkable throughout. The wall had one 0.3 cm golden yellow plaque associated with one Peyer's patch in the proximal small intestine.

CECUM The cecum contained 475 mL of wet, well-digested, leafy, fibrous, green to dark green digesta. There was a scant infection of dead trematodes. The mucosa was sloughing.

COLON The mesentery was moderately congested. The distal colon had two tears (3 x 1 cm and 2 x 1 cm) approximately 600 cm proximal to the rectum which were associated with fractured right ribs. The tear margins were slightly rounded and were surrounded by small, loose, well-formed blood clots and hemorrhagic colon wall. The proximal colon contained a moderate amount of moist, poorly formed, well-digested, fibrous, green feces. There as a mild infection of dead trematodes. The mid colon contained a moderate amount of moist, moderately formed, well-digested, fibrous, partially stringy, green feces. Two tunicates were observed. An ELISA toxicology sample was collected from the tunicates. No parasites were observed. The distal colon contained an abundant amount of moist, moderately formed, well-digested, fibrous, green feces. The distal-most one meter contained moist, well-formed, well-digested, fibrous, green feces. No parasites were observed. The mucosa was sloughing throughout.

PANCREAS The pancreas was soft. The serosal and cut surfaces were tan.

SPLEEN The spleen was soft. The serosal surfaces were mottled black and grey, and the cut surfaces were black to dark red.

LIVER The margins were rounded. The serosal surfaces were purple to light red and the cut surfaces were brown to red. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 75 mL of viscous, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The testes were small. There was no fluid on cut surfaces of the epididymides of deferent ducts. The seminal vesicles were small and contained a small amount of viscous white fluid.

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

URINARY BLADDER The bladder contained 2 mL of slightly viscous grey urine. The mucosa was moderately congested. An ELISA toxicology sample was collected.

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

RESPIRATORY SYSTEM The caudal one-third of the right hemidiaphragm had two tears (cranial-most 10.7 x 4.0 cm and caudal-most 7.5 x 3.0 cm, see photos) associated with fractured right ribs 13 and 14. The left hemidiaphragm was intact. The right pleural cavity contained 2.5 L of watery dark red fluid, 600 mL of loose, well-formed blood clots and a small amount of loose GI contents. The caudal one-quarter of the right lung was folded cranially. Both lungs were light pink, pink, and light purple on serosal surfaces, and red to dark red on cut surfaces. The airways contained a moderate amount of thick, viscous, green mucus. There was a moderate infection of dead trematodes. The mucosa was severely congested. The parietal pleura was moderately congested and had gelatinous grey specks. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The trachea contained a small amount of viscous pink mucus, white froth, and a large amount of dead trematodes. The mucosa was light pink to pink. There was a large thatch of moderately chewed *Halodule* in the mouth. An ELISA toxicology sample was collected. There was a moderate infection of dead trematodes in the nares.

SKELETON Right rib 12 had closed oblique fractures at the head and at the distal one-third. Right rib 13 had a closed oblique fracture at the head and an oblique fracture at the distal one-third that tore the parietal pleura,

hemidiaphragm, and colon. Right rib 14 had a comminuted oblique fracture at mid-shaft that tore the parietal pleura, hemidiaphragm, and colon. Right rib 15 was luxated and the head tore the parietal pleura. The fractures and luxation were surrounded by shredded, hemorrhagic muscle and loose, well-formed blood clots and were deep to the wound on the caudal right aspect.

OTHER There was hemorrhagic muscle deep to wound #1.

PHOTOGRAPHS 2019-05-11_FWC047_0001 through 0007, 0009 through 0024; 2019-05-13_FWC047_0068 through 0070, 0074 through 0080, 0082, 0085.

COMMENTS The hemothorax and -abdomen were from rib trauma that tore the parietal pleura.

SIGNIFICANT FINDINGS

- Fresh watercraft wound and scrapes
- Fractured ribs
- Luxated rib
- Shredded, hemorrhagic muscle
- Blood clots
- Torn colon, hemidiaphragm, parietal pleura
- Hemorrhagic colon wall
- Folded lung
- Mucus, froth in airways
- Hemothorax, -abdomen with loose colon contents
- Congested mesenteries, peritoneum, urinary bladder mucosa
- Vegetation in mouth
- Bleached epidermis
- Tunicates in colon
- Plaque in small intestine mucosa

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

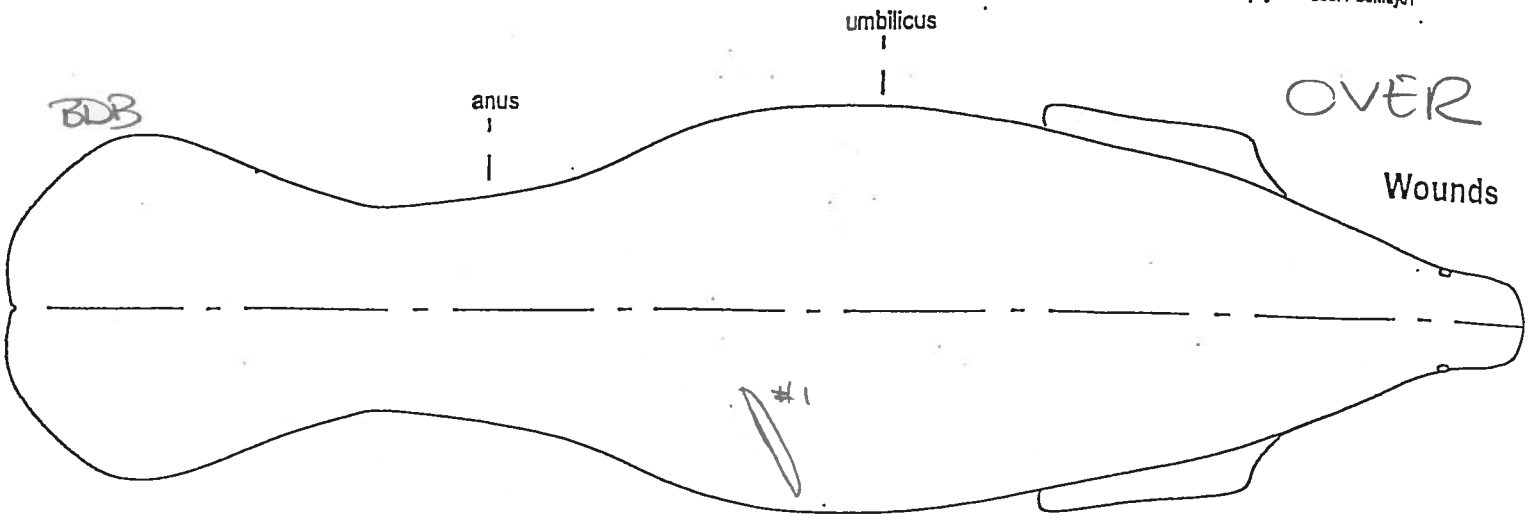
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Anna L. Panike
Gina L. Lonati
Brittany D. Barbeau
Tara D. Whitcomb
Tim Bonsper (MMPL volunteer)

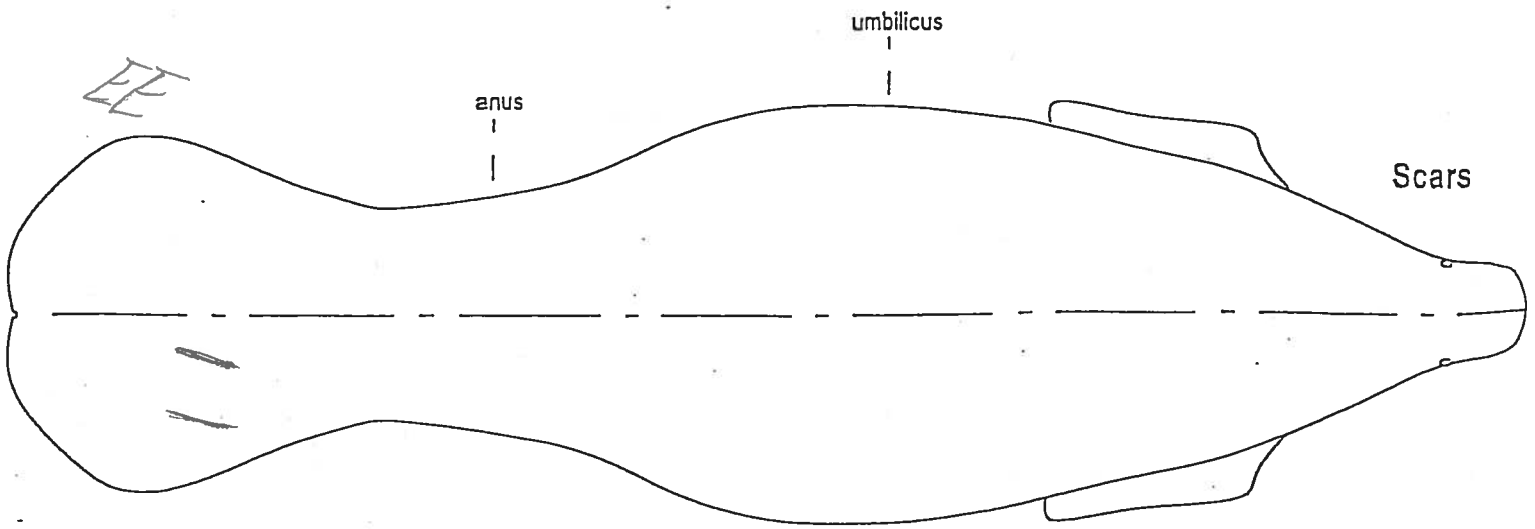
REPORT FILED BY de Wit

Date 11 MAY 2019 Field I.D. MEC19055

c:\D-Old\Necropsy\scar2dat\ 30May01



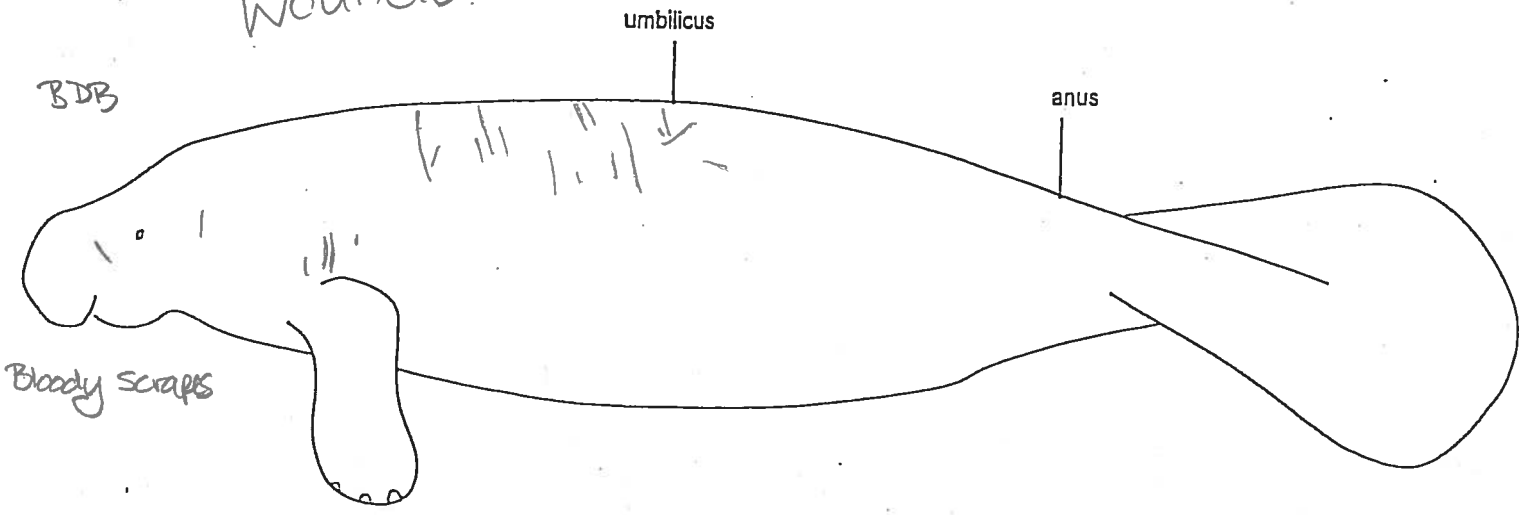
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	21.5																			
Width	1.6																			
Depth	0																			
Distance																				

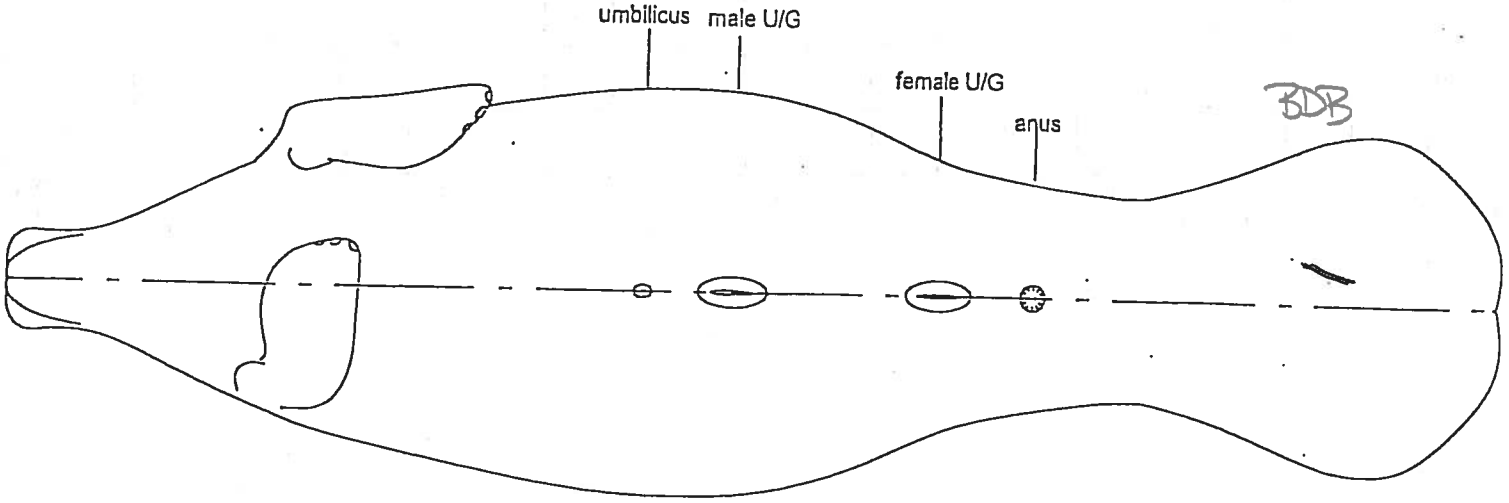


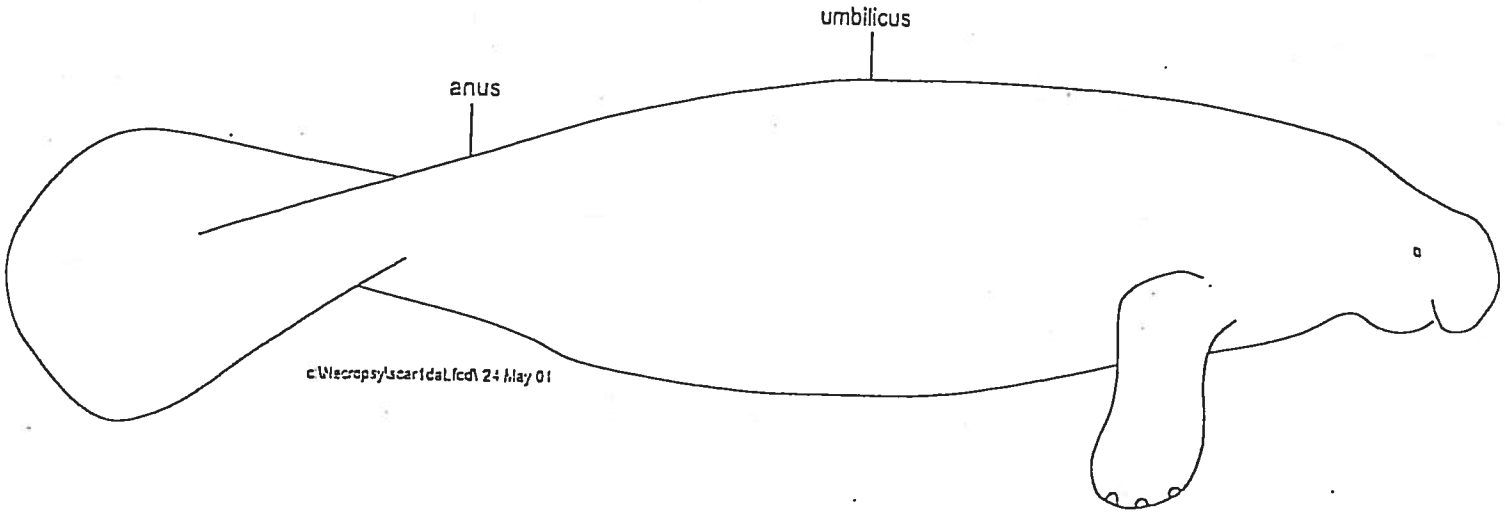
over →

FIELD I.D. MEC19055

Wounds.

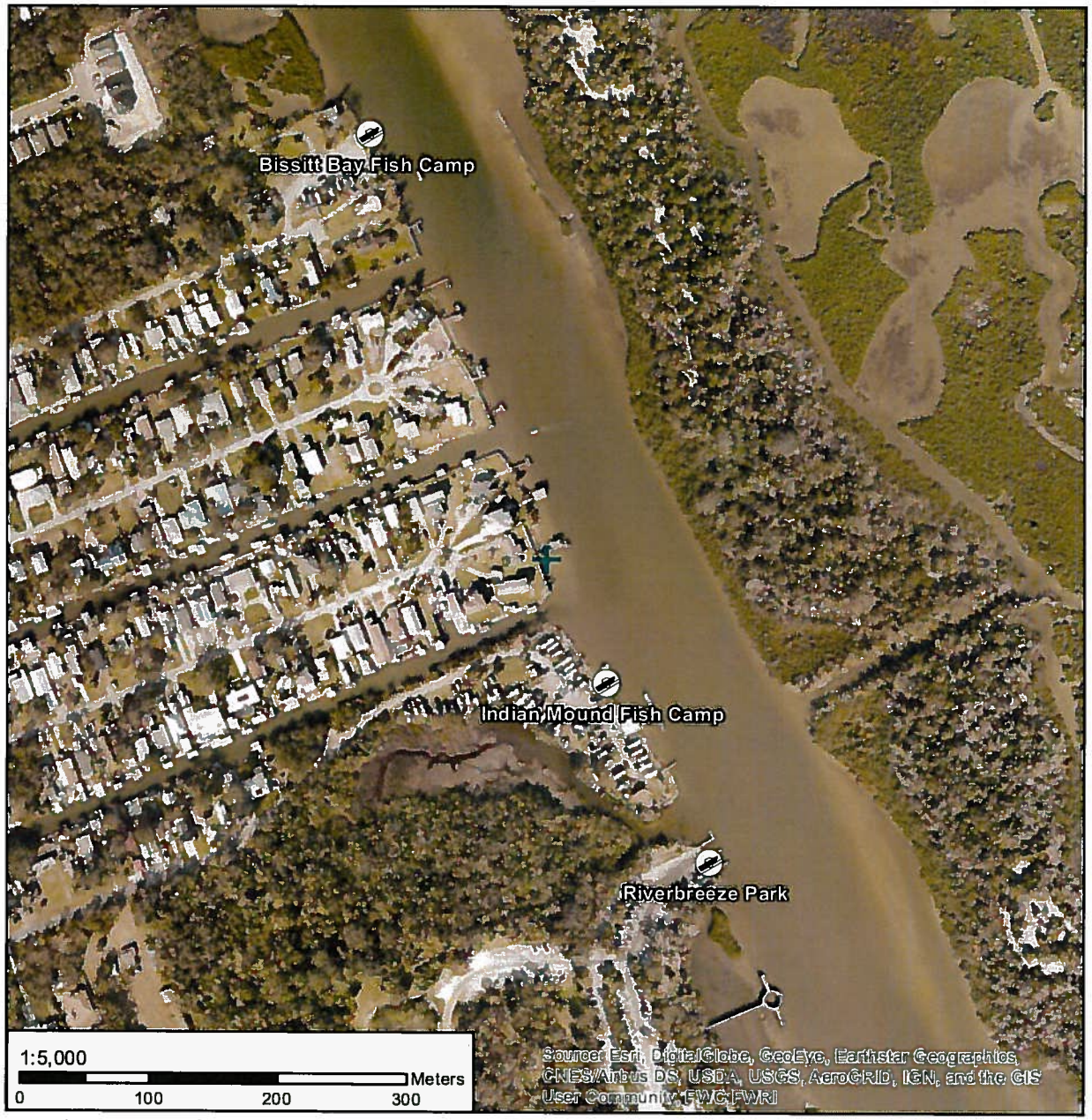


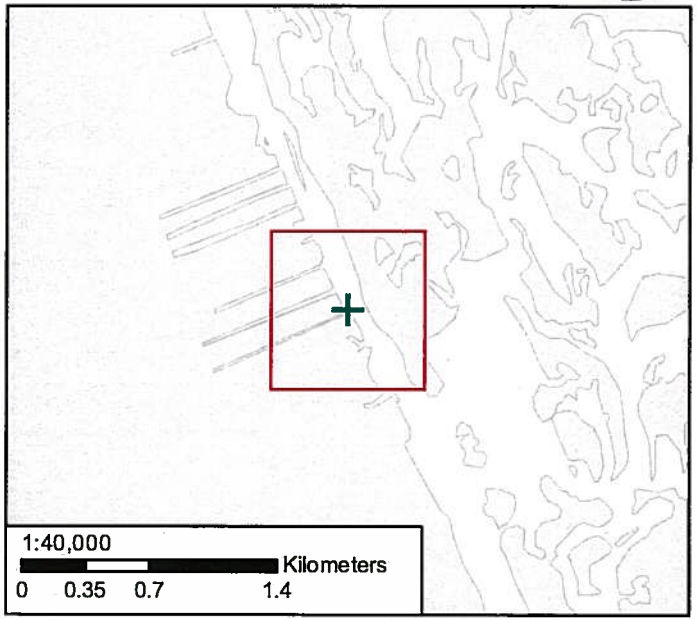


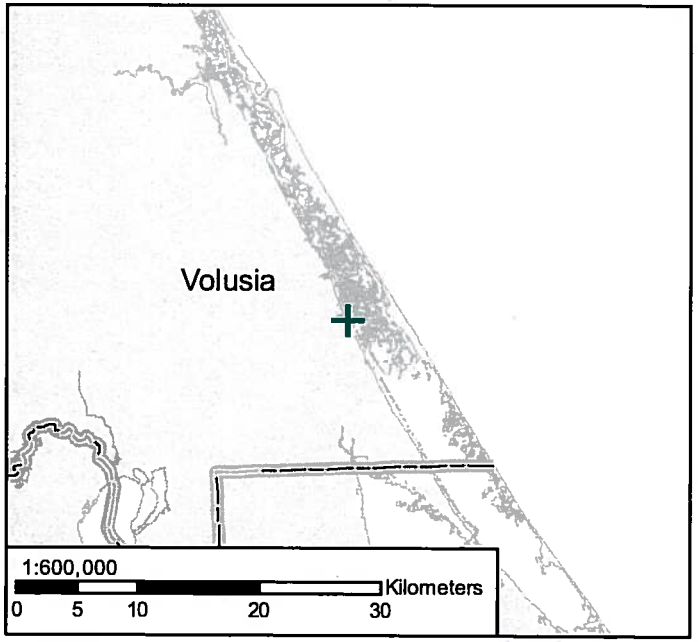


Verified Recovery Location of Manatee Carcass MEC19055

Report Date: 5/10/2019 **Received Date:** 5/10/2019 **Received By:** FWC-WDG,LRB Map Created: 10/27/2020







Locality Description:
Oak Hill, Volusia
Grounded, approximately 30 m E of 243 Gary Avenue.

Latitude: 28.90067°N **Longitude:** -80.85307°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19055
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7399 FWC District: NE
Sex: M / F / Undetermined Length: 235 cm (estimated _____) Weight 246 kg.
Date reported: 10 May 2019 By: Citizen to FWC Dispatch - Orlando
Date collected: 10 May 2019 By: FWC-WDG
Date necropsied: 13 May 19 By: BDB MMPL - MdW ALP GLC TDW

LOCATION: State: FL (___) County: Volusia Waterway: Indian River North
Latitude: _____ N Longitude: _____ W
Locality description: Oak Hill, approximately 50 m W of IRM 73

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 (seagrass in mouth, bloody scrape, lesions, wound)
MTLS COLLECTED: **Genetics** - **Earbone** – Partial Skeleton – Complete Skeleton –
Histology - Other SI scrapes
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach - Liver - Lung - Urine - Kidney (if no urine) - Other tunicate
Genetics Box # 92
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

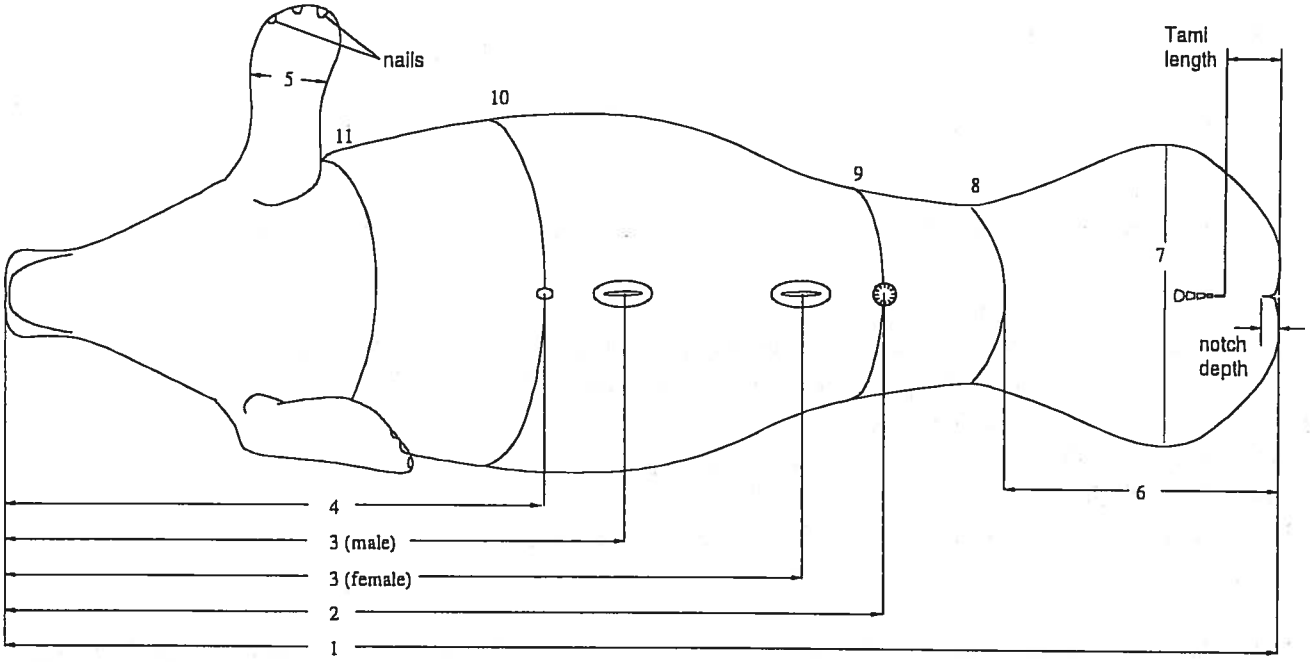
REMARKS: _____

Field ID # MEC19055

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.

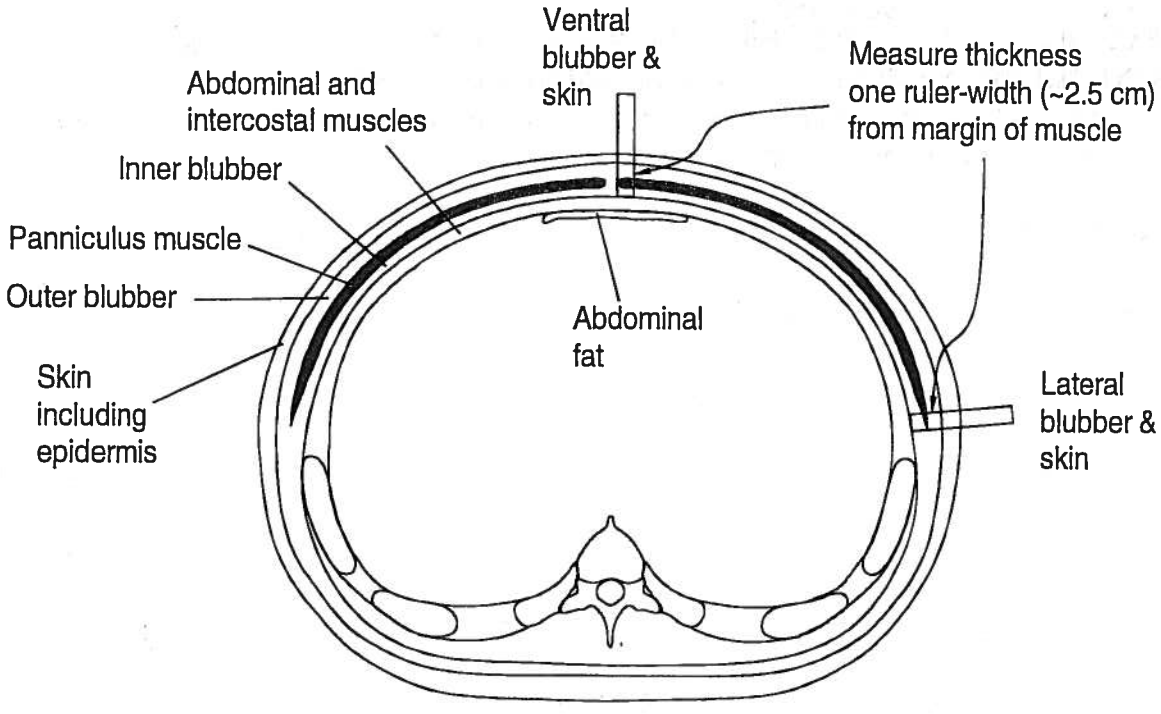
1. Total length 235 cm
2. Snout to anus -C 157 cm
3. Snout to U/G -C 101 cm
4. Snout to umbilicus -C 85 cm
5. Flipper width 14 cm
6. Fluke base 71 cm
7. Fluke width 102 cm
8. *Girth at fluke base NT cm
9. * Girth at anus NT cm
10. *Girth at umbilicus NT cm
11. *Girth at axillae NT cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.8 cm	2.0 cm	(Epidermis 0.1 cm)
Outer fat	0.4 cm	0.2 cm	(Abdominal fat 0.6 cm)
Inner fat	0.1 cm	0.7 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19055
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7399 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 10 May 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 May 2019 **By**: FWC-WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 30m E of 243 Gary 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 #: **MEC19056**
Date of Report: 2019-May-17
Filed By: FWC EC Field Station

FWC Case # 7856 **FWC Region:** NE

Sex: Unknown **Length:** 100 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-17 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: **By:**

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.30275 **N**
County: Brevard **Longitude:** -80.61485 **W**
Waterway: Banana River
Locality description: Cocoa Beach, floating approximately 305 m W of 25 Harbor Circle.

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Placenta; 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	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19056

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. MEC19056
RECOVERY DATE N/A
GENDER Undetermined **TL** 100 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE N/A
CONDITION Confirmed; Not Recovered

HISTORY 17 May 2019, at 0835 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Banana River in Cocoa Beach, Brevard County. FWC case number 7856 was assigned. The complainant, John Cielukowski (321-794-0912), stated that the 3-foot-long carcass was floating and had an attached placenta. At 0839 hrs, WDG received a photo of the carcass and requested FWC LE assistance to tow or secure it. At 1346 hrs, FWC-Officer Morgan Maslo informed WDG that no officers would be available that day. **18 May**, FWC biologist-Sara M. Wappes and FWC volunteer-Jenna Schepers arrived at Ramp Road boat ramp at 0900 hrs and searched the area by kayak for one hour, but they were unable to locate the carcass.

EXTERNAL From photographs - All of the ventral epidermis was present. The placenta was attached at the umbilicus.

PHOTOGRAPHS 2019-05-17_PUBLIC_01.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph
- Placenta

PROBABLE CAUSE OF DEATH Verified; Not Recovered

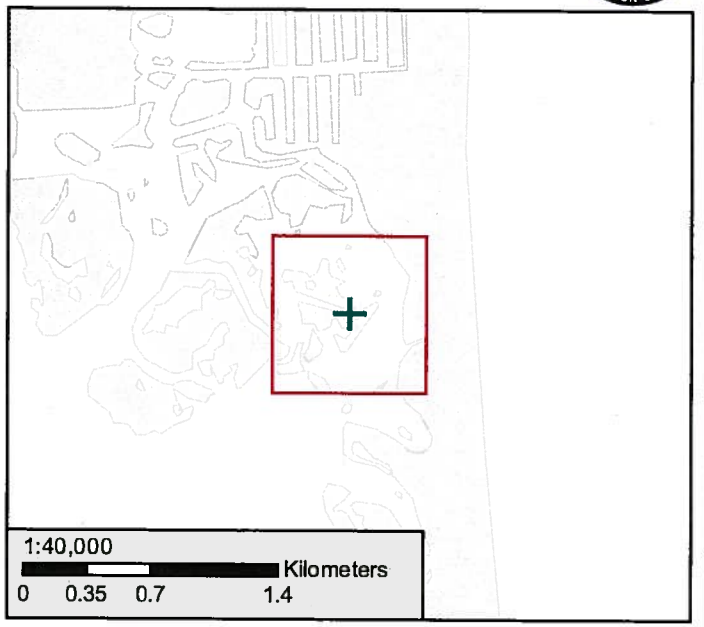
NECROPSY CONDUCTED BY N/A

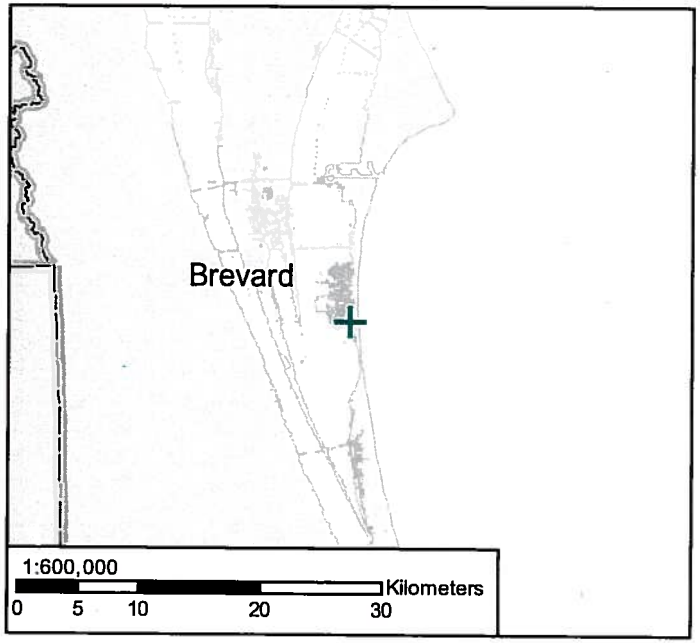
REPORT FILED BY Wappes

Verified Recovery Location of Manatee Carcass MEC19056

Report Date: 5/17/2019 **Received Date:** **Received By:** Map Created: 10/27/2020







Locality Description:
Cocoa Beach, Brevard
Floating, approximately 305 m W of 25 Harbor Circle.

Latitude: 28.30275°N **Longitude:** -80.61485°W



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19056
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7856 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 100 **Weight (kg)** _____
Date reported: 17 May 2019 **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: Cocoa Beach, approximately 305 m W of 25 Harbor Circle.

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 Verification

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 #: **MEC19057**
Date of Report: 2019-May-20
Filed By: FWC EC Field Station

FWC Case # 8075 **FWC Region:** NE

Sex: Male **Length:** 235 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-20 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-20 **By:** FWC-SMW

DATE NECROPSIED: 2019-May-20 **By:** FWC-SMW,WDG

LOCATION: **State:** FL **Latitude:** 28.90003 **N**
County: Volusia **Longitude:** -80.85282 **W**
Waterway: Indian River North
Locality description: Oak Hill, grounded approximately 70 m SSE of 241 Gary Avenue.

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. Skin lesions; Scavenging.

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. Actual length of the remains was 207 cm.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19057

MORPHOMETRICS:

Total length:	235 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. MEC19057
RECOVERY DATE 20 May 2019
GENDER Male **TL** 235 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 20 May 2019
CONDITION Badly Decomposed

HISTORY 20 May 2019, at 1104 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 8075 was assigned. The complainant, Kelly Bonds (386-314-6815), stated that the manatee had vultures on it and was grounded near a boat ramp. At 1128 hrs, SMW received a photo of the carcass from the complainant. SMW arrived at the Indian Mound Fish Camp boat ramp at 1306 hrs, loaded the carcass via Ezy-Lift at 1332 hrs, and transported it to the Brevard County Landfill where a field necropsy was completed at 1508 hrs.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. There was a large rent along the mid ventral aspect due to decomposition and scavenging. There were bird droppings on the ventrum. Most of the head tissue was missing, and the skull was loose and no longer attached to the body. There was one well-healed linear scar on the caudal right ventrum. There was one well-healed circular mutilation at the 3 o'clock position of the fluke. There was an eroded lesion on the dorsal head (wound #1) and a healing linear lesion on the left cranial dorsum (wound #2). Actual length of the remains was 207 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered. All internal organs were missing.

HEAD & NECK REGIONS Many of the sutures of the skull were loose and separated. There was no trauma deep to the eroded lesion on the head (see photo).

SKELETON All ribs were luxated or subluxated due to decomposition. Otherwise, NVL.

OTHER

PHOTOGRAPHS 2019-05-20_FWC025_8883 through 8901.

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs
- Scavenging
- Skin lesions

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

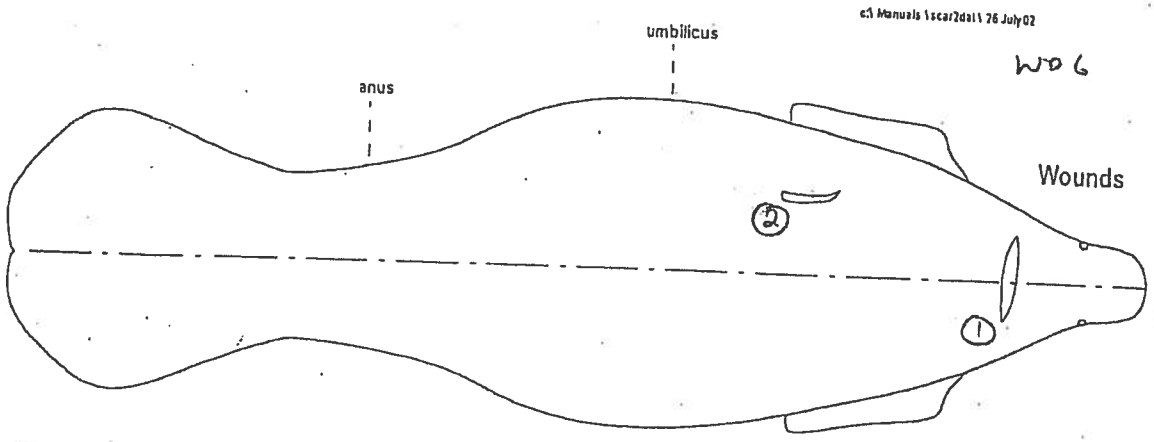
William D. Greer
Sara M. Wappes

REPORT FILED BY Greer

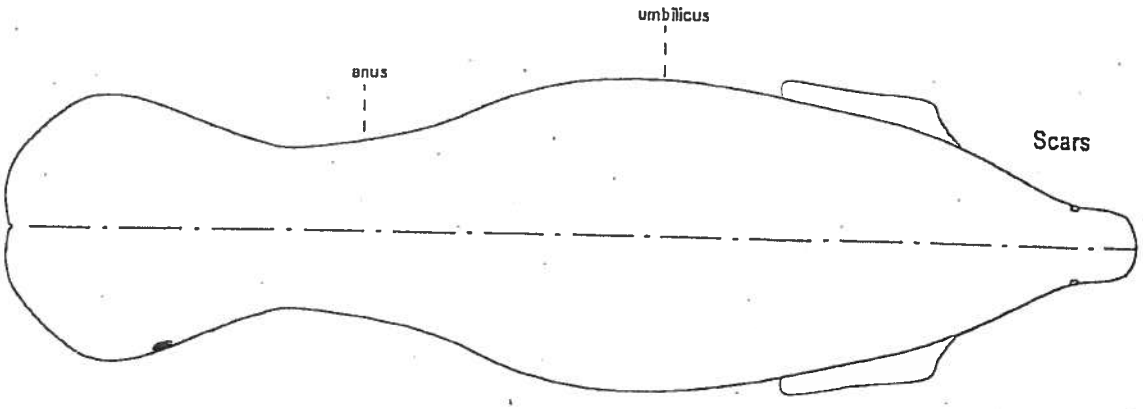
Date 20 MAY 2019 Field I.D. MÉ C19057

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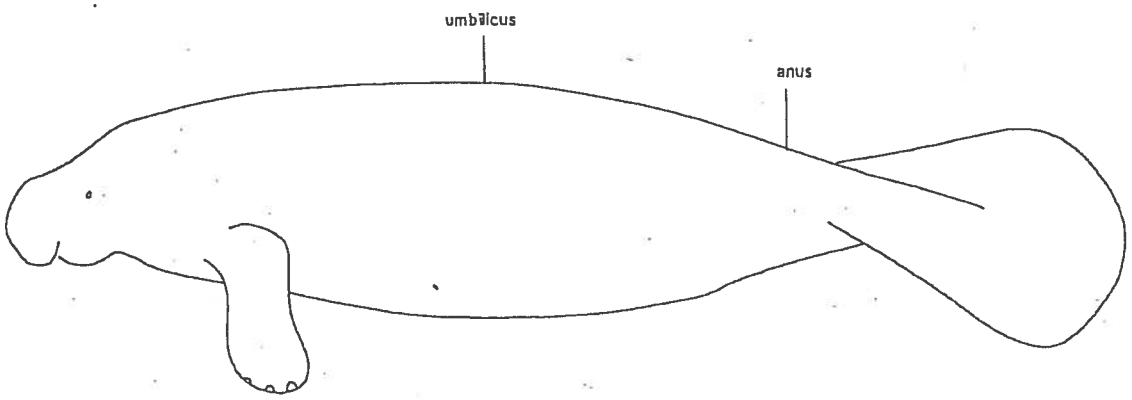


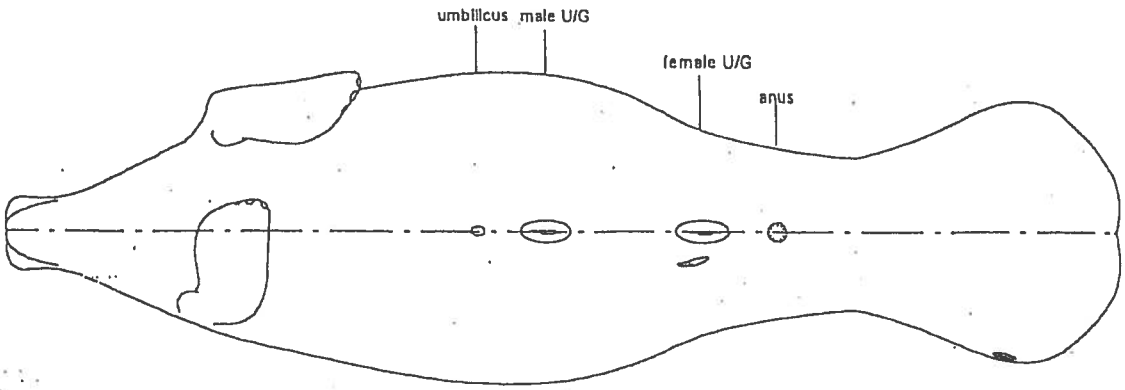
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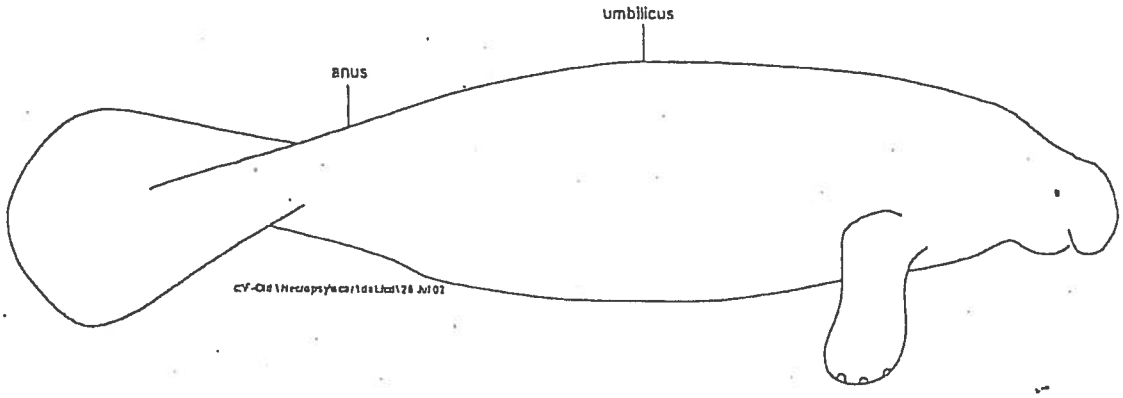


Scar Dat sht Sep 2002

FIELD I.D. MEC19057
WOG

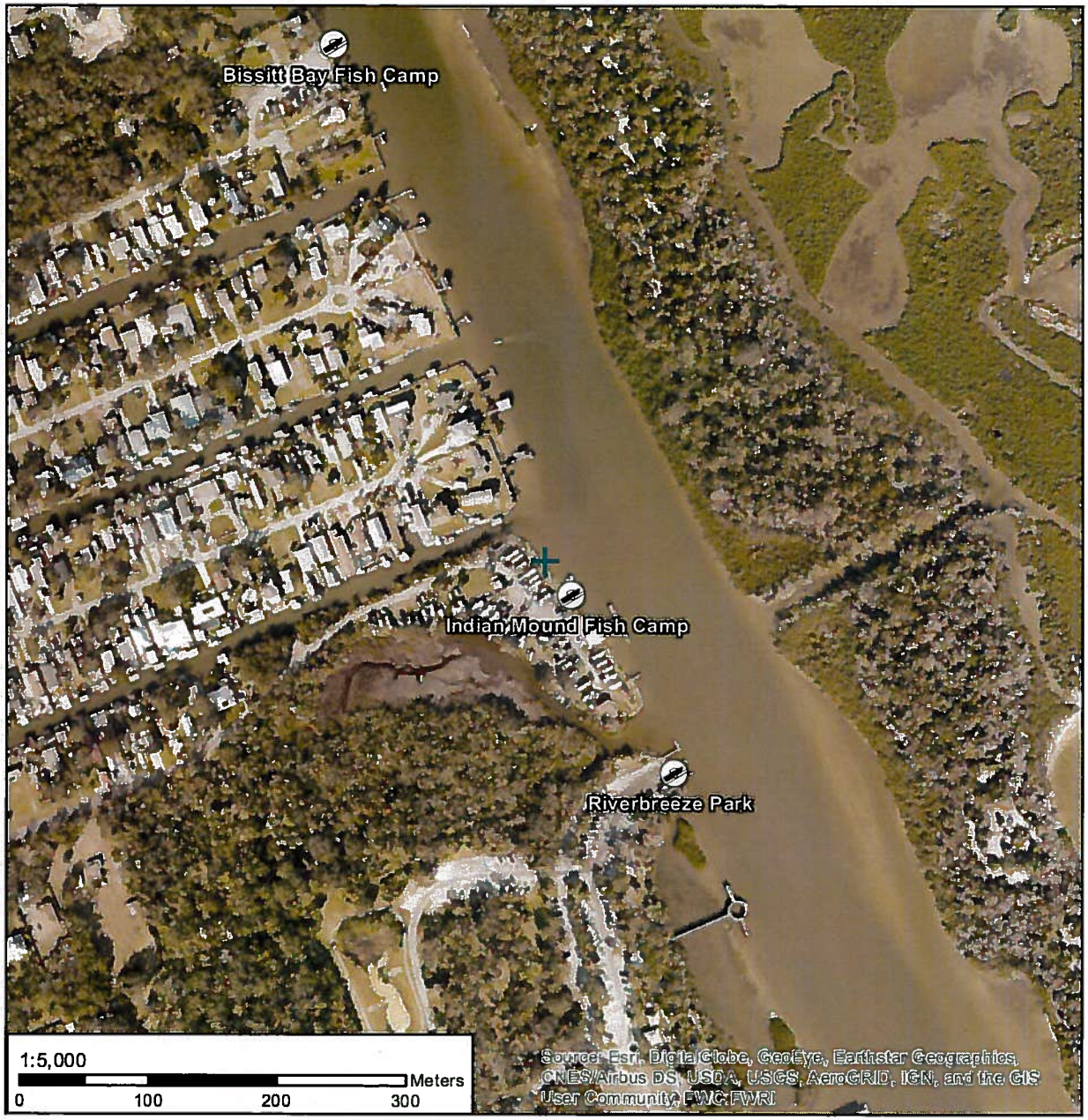


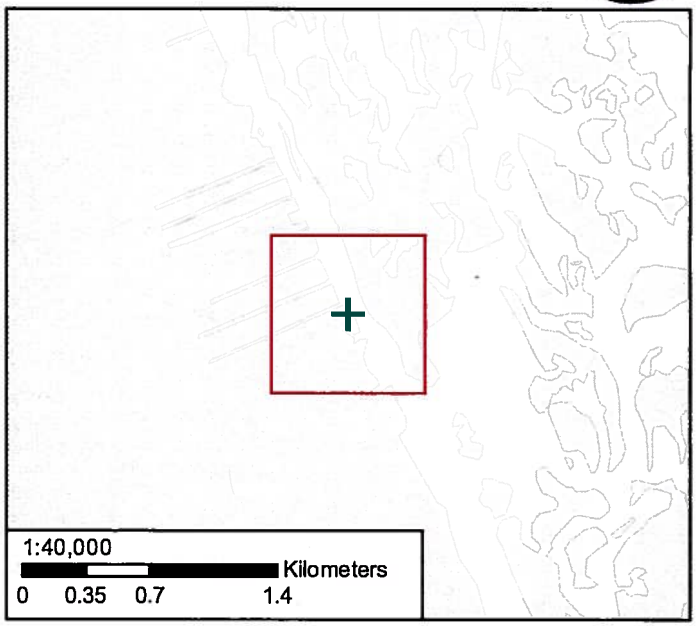


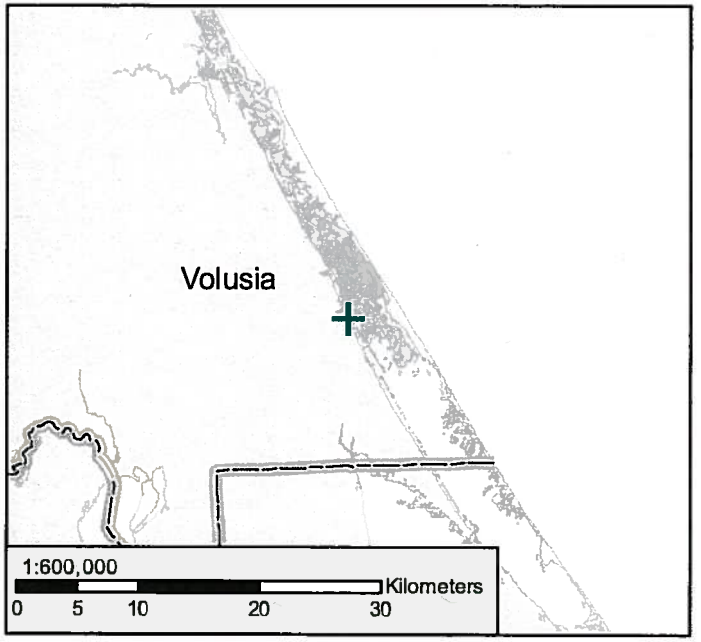


Verified Recovery Location of Manatee Carcass MEC19057

Report Date: 5/20/2019 **Received Date:** 5/20/2019 **Received By:** FWC-SMW Map Created: 10/27/2020







Locality Description:
Oak Hill, Volusia
Grounded, approximately 70 m SSE of 241 Gary Avenue.

Latitude: 28.90003°N **Longitude:** -80.85282°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19057
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8075 **FWC District**: Northeast
Sex: Male **Length (cm)**: 207 **Estimated** 235 **Weight (kg)** N/T
Date reported: 20 May 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 20 May 2019 **By**: FWC- SMW
Date necropsied: 20 May 2019 **By**: FWC- SMW, WDG

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Indian River North
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approimately 70 m SSE of 241 Gary 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: All internal organs 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: - **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 #: **MEC19058**
Date of Report: 2019-May-22
Filed By: FWC MMPL

FWC Case # 8253 **FWC Region:** NE

Sex: Male **Length:** 199 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-22 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-23 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-May-24 **By:** MMPL-MdW,GLL,SMT

LOCATION: **State:** FL **Latitude:** 28.20085 **N**
County: Brevard **Longitude:** -80.60503 **W**
Waterway: Grand Canal
Locality description: Satellite Beach, grounded approximately 20 m N of 365 Berkeley Street.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Bleached epidermis; Emaciated; Serous fat(s); Depleted fat(s); Parasitic enteritis; Dark line kidney(s); Bloody nares; Kidney stones; Lung abscesses; Sediment in airways; Brown ascites; Specks parietal pleura.

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

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	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19058

MORPHOMETRICS:

Total length:	199 cm	**Fluke base:**	62 cm	**Girth at axillae:**	**cm**
Snout to anus:	131 cm	**Fluke width:**	49 cm		
Snout to U/G:	87 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	74 cm	**Girth at anus:**	cm		
Flipper width:	11 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. MEC19058
RECOVERY DATE 23 May 2019
GENDER Male **TL** 199 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 24 May 2019
CONDITION Badly Decomposed

HISTORY 22 May 2019, at 1812 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 8253 was assigned. The complainant, Courtney Brady (361-230-3690), stated that the carcass was behind their home. WDG and FWC biologist-Lucy R. Bukowski (LRB) were passing by the area on their way back to the EC Field Station and located the carcass at 1825 hrs. The carcass was secured to the complainant's dock for recovery the next morning. **23 May**, at 0830 hrs, WDG and LRB arrived at a private boat ramp on Berkeley Canal. WDG launched a kayak and towed the carcass to the boat ramp. At 0858 hrs, the carcass was loaded via Ezy-Lift into the back of a truck. LRB transported the carcass to the MMPL arriving at 1140 hrs.

EXTERNAL All of the epidermis was present. Bloody fluid exuded from the nares. The carcass had a peanut-shaped head and the outline of the vertebral column was visible. The ventrum was flat. The eyes were sunken. There was a mostly healed watercraft-related wound pattern on the dorsal fluke which consisted of three parallel linear wounds. Copepods were present. There were a moderate green algal mat and patches of brown algae on the dorsal aspect. The epidermis of the dorsal fluke and caudal ventral aspect had bleached spots. There was a minimum of one well-healed watercraft-related scar pattern on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant serous abdominal, mesenteric, and omental fat. The abdomen contained 0.75 L of watery dark brown fluid.

STOMACH The stomach contained 150 mL of wet, well-chewed, fibrous, soft, grey to green ingesta. The mucosa was unremarkable. Three dead nematodes were observed.

DUODENUM The duodenum contained 50 mL of wet, well-chewed, fibrous, soft, grey to green ingesta. The mucosa was unremarkable. A few dead nematodes were observed.

JEJUNUM & ILEUM The proximal small intestine contained a small amount of green to brown fluid. The mucosa was severely rugose and had raised tan nodules. The tips of the rugae were tan and the mucosa between was grey. There was a severe infection of pinpoint trematodes. The mid small intestine contained a small amount of moist, well-chewed, fibrous, poorly formed, dark green ingesta. The mucosa had a few raised flat tan nodules and was otherwise unremarkable. There was a moderate infection of pinpoint trematodes. The distal small intestine contained a moderate amount of moist, well-chewed, fibrous, moderately formed, green to grey ingesta. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 125 mL of moist, well-digested, fibrous, green digesta. The mucosa was sloughing. A few small dead trematodes were observed.

COLON The proximal colon contained a small amount of moist, well-formed, well-digested, fibrous, dark green feces. The mid- and distal colon contained a moderate amount of moist, well-formed, well-digested, slightly stringy, fibrous, olive green feces. The mucosa was sloughing throughout. A few dead trematodes were observed in the mid- and proximal colon.

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 contained 5 mL of slightly viscous, golden yellow to brown bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant serous reproductive fat. The reproductive organs were small. There was no fluid on cut surfaces of the epididymides or seminal vesicles.

KIDNEYS There was scant serous perirenal fat. The kidneys were brown to grey on serosal surfaces. On cut surfaces, the cortices were brown and the medullae were dark pink to dark red. The corticomedullary boundaries were distinct with a dark grey line in some. There was gritty tan sediment in the centers of some of the medullae.

URINARY BLADDER The bladder contained 150 mL of pink urine. The mucosa had a few grey specks and was otherwise unremarkable. An ELISA toxicology sample was collected.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were pink to purple on serosal surfaces, and dark pink to red on cut surfaces. There were several diffuse small abscesses (maximum diameter 0.5 cm) on the dorsal aspect of the serosa of both lungs. The abscesses had a black capsule. The airways contained a small amount of slightly viscous cloudy dark red fluid and a scant amount of brown sediment. The mucosa was unremarkable. No parasites were observed. There were grey specks on the parietal pleura. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The trachea contained a small amount of brown sediment. The mucosa was unremarkable.

SKELETON NVL.

OTHER All tissue was serous.

PHOTOGRAPHS 2019-05-24_FWC047_0298 through 0311, 0313 through 0315, 0317, 0318, 0320 through 0324, 0326 through 0331, 0333 through 0338, 0362, 0363.

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Bleached epidermis
- Bloody nares
- Depleted, serous fat
- Serous tissue
- Parasitic enteritis
- Kidney stones
- Lung abscesses
- Sediment in airways
- Brown ascites

- Dark line kidneys
- Specks parietal pleura
- Healing watercraft wounds

PROBABLE CAUSE OF DEATH Natural; Other

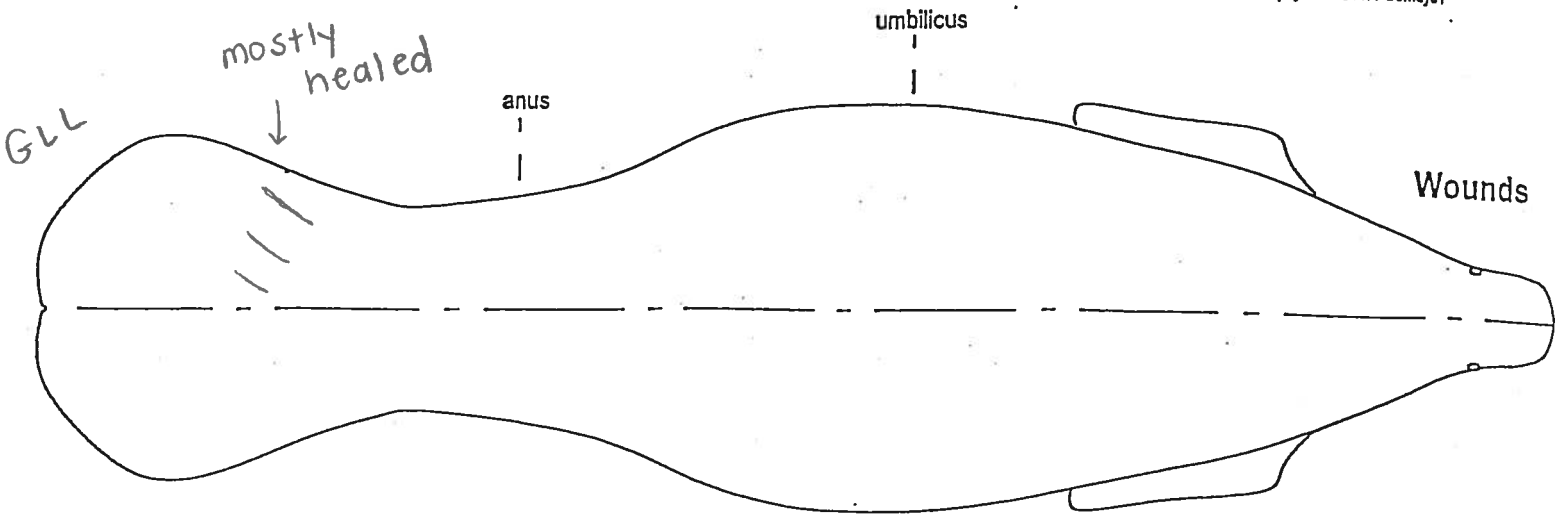
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Gina L. Lonati
Sean M. Tennant

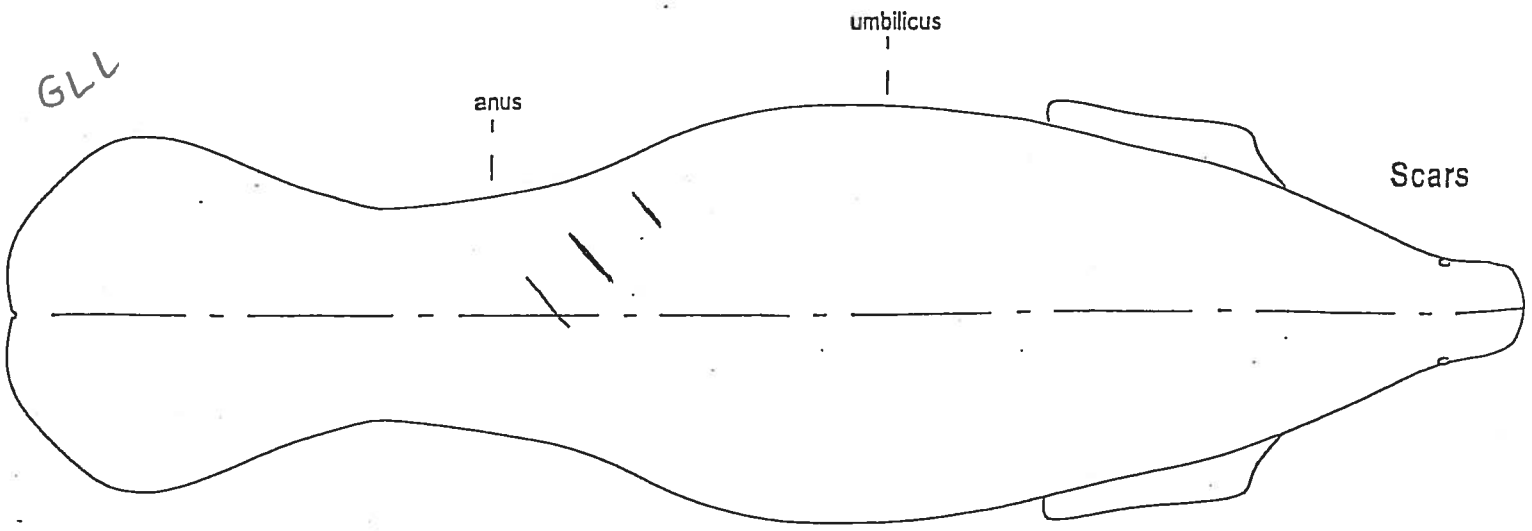
REPORT FILED BY de Wit

Date 24 MAY 2019 Field I.D. MEC19058

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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
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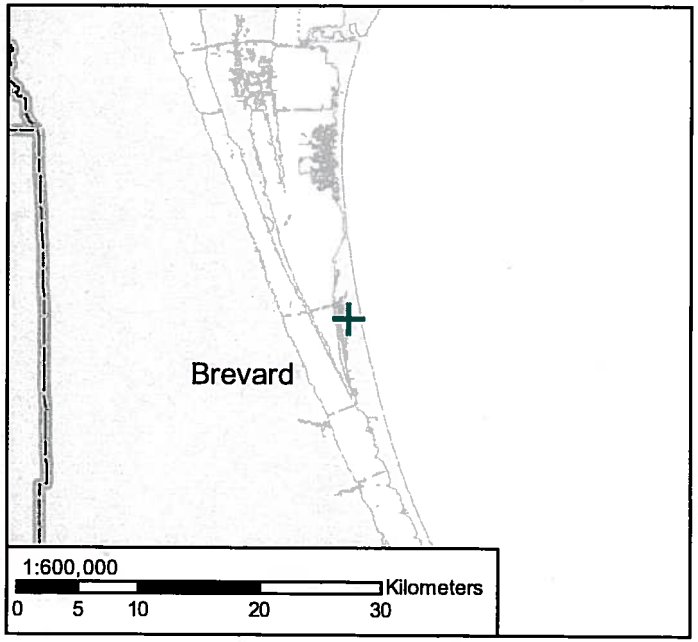


Verified Recovery Location of Manatee Carcass MEC19058

Report Date: 5/22/2019 **Received Date:** 5/23/2019 **Received By:** FWC-WDG,LRB Map Created: 10/27/2020







Locality Description:
Satellite Beach, Brevard
Grounded, approximately 20 m N of 365 Berkeley Street.

Latitude: 28.20085°N **Longitude:** -80.60503°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19058
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8253 FWC District: NE
Sex: (M) / F / Undetermined Length: 199 cm (estimated _____) Weight _____ kg.
Date reported: 5/22/2019 By: Citizen to FWC NE - Dispatch - Orlando
Date collected: 5/23/2019 By: FWC - LR2B, WDC4
Date necropsied: 5/24/19 By: MMPL MdW GLL SMT

LOCATION: State: (FL) (___) County: Brevard Waterway: Berkeley Canal
Latitude: _____ N Longitude: _____ W
Locality description: Satellite Beach, approximately 30 m N of 365 Berkeley St

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 healing wound
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 prox colon feces
Genetics Box # 92
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

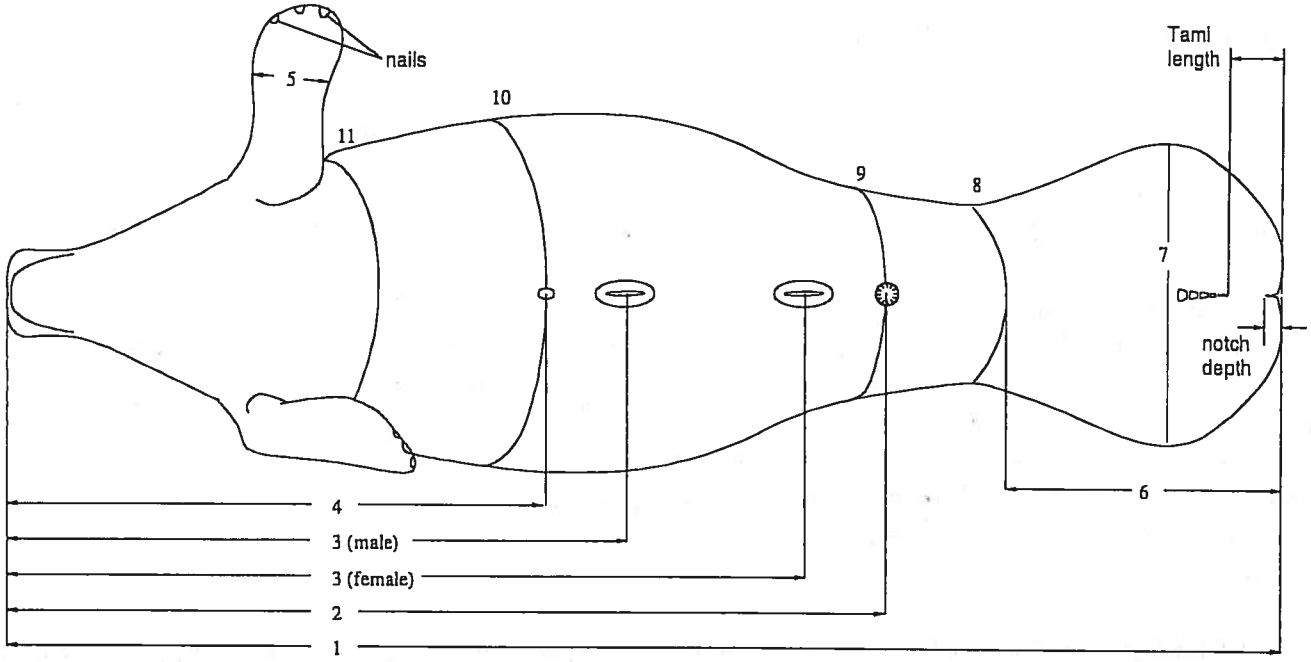
REMARKS: 61 photos are all from distal → proximal

Field ID # MEC19058

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.

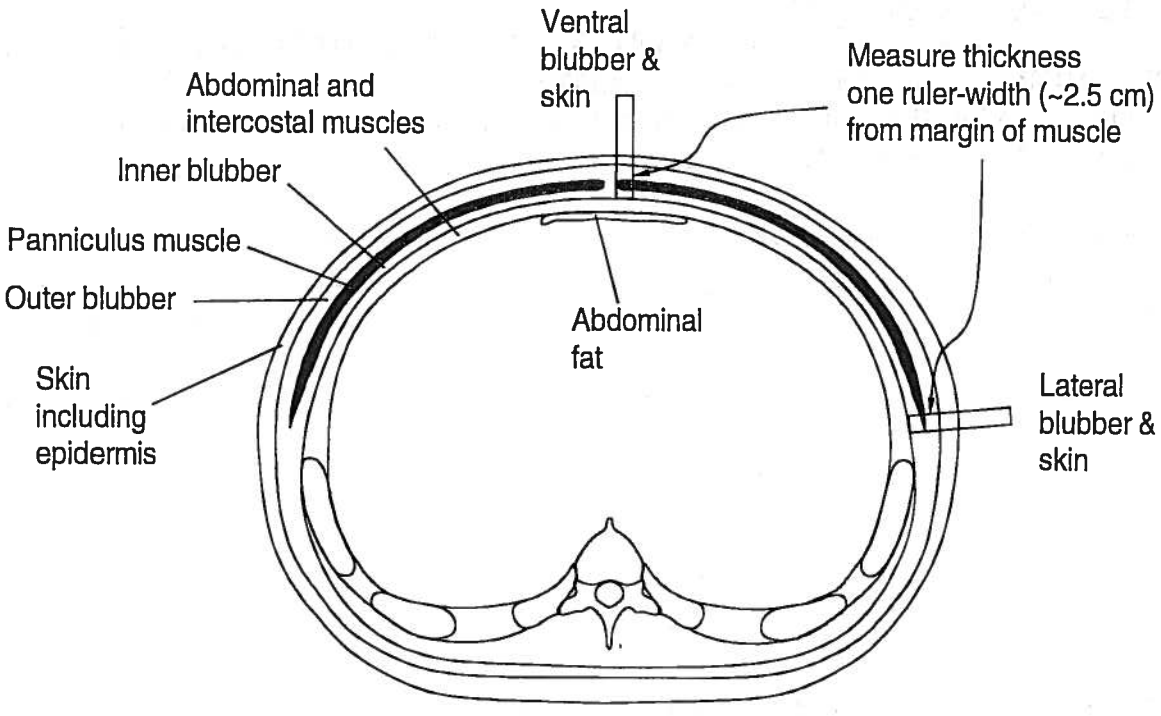
1. Total length 199 cm
2. Snout to anus -C 131 cm
3. Snout to U/G -C 87 cm
4. Snout to umbilicus -C 74 cm
5. Flipper width 11 cm
6. Fluke base 62 cm
7. Fluke width 49 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ cm

(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 #** MEC19058
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8253 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 22 May 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 23 May 2019 **By**: FWC- WDG, LRB
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Berkeley Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 20 m N of 365 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:

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 #: **MEC19059**
Date of Report: 2019-May-23
Filed By: FWC EC Field Station

FWC Case # 8279 **FWC Region:** NE

Sex: Female **Length:** 304 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-23 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-23 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-May-23 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.17149 **N**
County: Brevard **Longitude:** -80.61885 **W**
Waterway: Banana River
Locality description: Merritt Island, grounded approximately 75 m NE of 10400 South Tropical Trail.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Acute; Watercraft wound(s); Fractured rib(s); Blood clots; Hemoabdomen; Hemothorax; Bloody tissue; Torn colon; Hemorrhagic colon wall; Congested mesentery, mesenteric fat.

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. Uterine Scar. A field necropsy was performed. Also FWC case numbers 8276 and 8881.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19059

MORPHOMETRICS:

Total length:	304 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. MEC19059
RECOVERY DATE 23 May 2019
GENDER Female **TL** 304 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 23 May 2019
CONDITION Badly Decomposed

HISTORY 23 May 2019, at 0752 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 8276 was assigned. The complainant, Noah Farley (321-698-7553), stated that the carcass was bloated and white. At 0800 hrs, WDG received a photo of the carcass. At 0820 hrs, WDG received a text alert from Dispatch regarding the same dead manatee. FWC case number 8279 was assigned. The complainant, Mark Thompson (321-223-4358), stated that the carcass was under the dock in the mangroves four houses south of his. WDG, FWC biologist-Sara M. Wappes, and FWC intern-Lauren Clance arrived at the Patrick Air Force boat ramp at 1055 hrs, launched the Key West boat, and towed the carcass to nearby Samson's Island. A field necropsy was completed by 1309 hrs. The remains were left onsite. **30 May**, at 2018 hrs, WDG received a text alert from Dispatch regarding multiple dead manatees on Samson's Island in the Banana River. FWC case number 8881 was assigned. Based on the complainant's description and location, the carcasses were the remains of field necropsies MEC19059 and MEC19061.

EXTERNAL Approximately 20% of the epidermis was present but sloughing. The carcass was distended with gas. There was an eroded watercraft-related wound series on the mid left dorso-lateral aspect. The series consisted of five parallel wounds (#1 – 5) cranial to three parallel wounds (#6 – 8). A portion of the left lung protruded out of wound #2. Bloody fluid exuded from the teats. A minimum of three well-healed watercraft-related scar patterns was observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, mesenteric, and omental fat. The abdominal cavity contained 1.6 L of loose, well-formed blood clots (see photo).

STOMACH The stomach contained 17.2 L of moist, moderately chewed, fibrous, stringy, leafy, red to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 1.1 L of moist, moderately chewed, fibrous, stringy, leafy, red to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained a moderate amount of watery, gray to brown fluid. The distal small intestine contained very moist, poorly formed, moderately chewed, fibrous, stringy, brown ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 4.1 L of moist, poorly digested, fibrous, stringy, leafy, red to brown digesta (see photo). The mucosa was black and sloughing. No parasites were observed.

COLON The mesentery and mesenteric fat were severely congested (see photo). The proximal colon contained moist, moderately formed, moderately digested, stringy, leafy, orange to brown feces. The mucosa was unremarkable. The mid colon contained moist, well-formed, moderately digested, leafy, fibrous, orange to brown feces. There was a tear in the mid colon wall with hemorrhagic margins and associated with loose, well-formed blood clots (see photo). The distal colon contained very moist, poorly formed, well-digested, homogeneous, dark green to brown feces. The mucosa was black and sloughing in the mid and distal colon.

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 missing.

REPRODUCTIVE There was moderate, gassy reproductive fat. The uterus was contracted. The left uterine horn contained a scar. The ovaries were soft, friable, and autolyzed.

KIDNEYS The left kidney was missing. The right kidney was soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained a scant amount of watery, pink-tinged urine. The mucosa was gassy.

HEART There was abundant, gassy epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. There were loose, well-formed blood clots in the left pleural cavity (see photo). The lungs were pink to gray on serosal surfaces and dark red on cut surfaces. There was a small amount of watery, red-tinged fluid in the primary airways. The caudal half of the left lung was missing.

HEAD & NECK REGIONS NVL.

SKELETON Left ribs 5 and 6 had oblique fractures at the proximal one-quarter which were associated with wounds #1 - 5.

OTHER There was bloody tissue deep to wounds #1 - 5 (see photo).

PHOTOGRAPHS 2019-05-23_FWC025_8916 through 8928, 8931 through 8941, 8943 through 8949, 8951 through 8954.

COMMENTS

SIGNIFICANT FINDINGS

- Eroded watercraft wounds
- Fractured ribs
- Bloody tissue
- Blood clots
- Hemoabdomen
- Hemothorax
- Torn colon
- Hemorrhagic colon wall
- Congested mesentery, mesenteric fat
- Uterine scar
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Acute

NECROPSY CONDUCTED BY

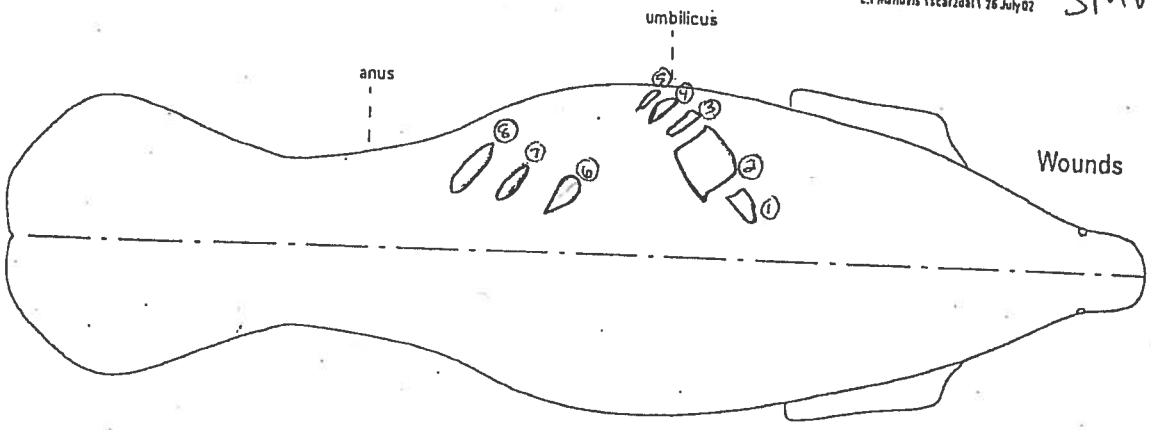
William D. Greer

Sara M. Wappes
Lauren R. Clance (FWC intern)

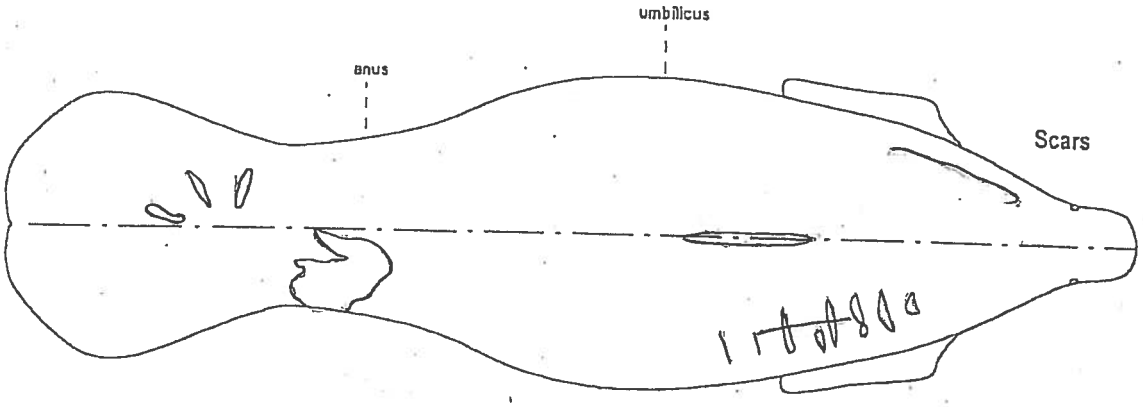
REPORT FILED BY Wappes

Date 23 May 2019 Field I.D. MEC19059

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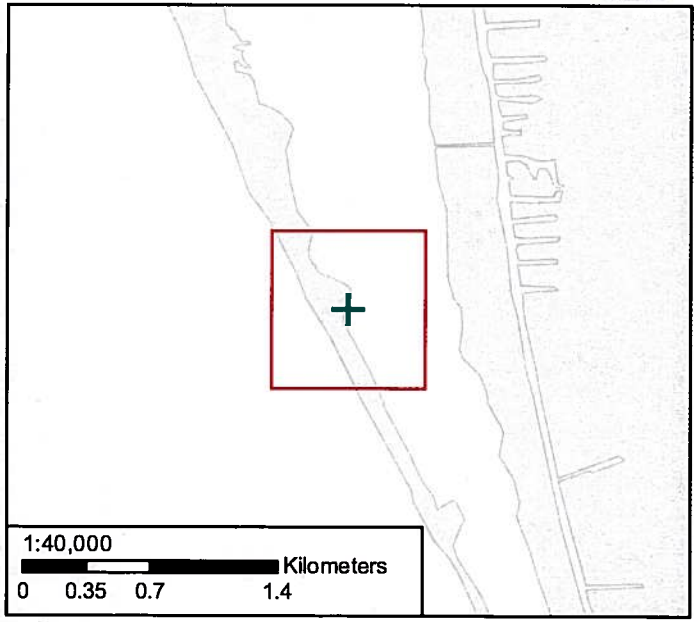
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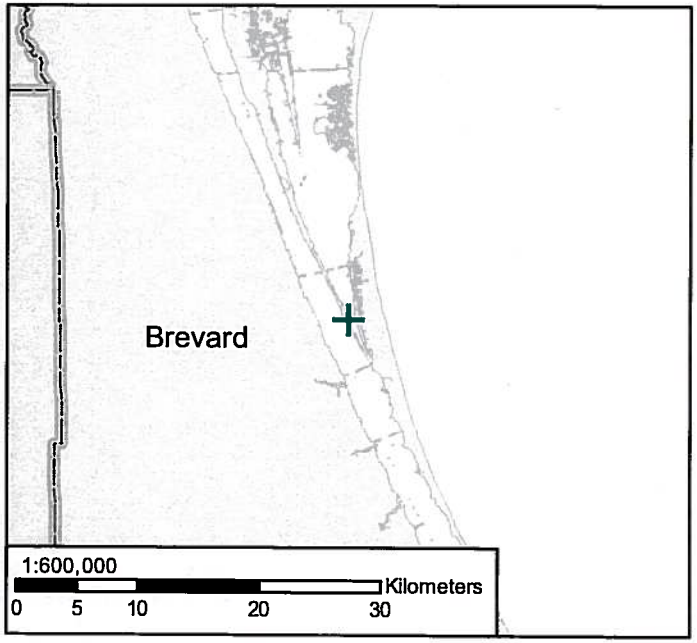


Verified Recovery Location of Manatee Carcass MEC19059

Report Date: 5/23/2019 **Received Date:** 5/23/2019 **Received By:** FWC-WDG,SMW Map Created: 10/27/2020







Locality Description:
Merritt Island, Brevard
Grounded, approximately 75 m NE of 10400 South Tropical Trail.

Latitude: 28.17149°N **Longitude:** -80.61885°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19059
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8276, 8279 **FWC District**: Northeast
Sex: Female **Length (cm)**: 304 **Estimated** _____ **Weight (kg)** N/T
Date reported: 23 May 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 23 May 2019 **By**: FWC- WDG, SMW; FWC intern- L. Clance
Date necropsied: 23 May 2019 **By**: FWC- WDG, SMW; FWC intern- L. Clance

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 75 m NE of 10400 South Tropical Trail

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

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: Eroded wounds on dorsum deep to pleural cavity, left lung protruding from wound and partially missing, 1.6 L well formed blood clots in abdominal cavity, 2 fractured ribs associated with wounds on dorsum, GI tract full of contents

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**: 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: Wounds were not measured due to stage of decomposition

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 #: **MEC19060**
Date of Report: 2019-May-25
Filed By: FWC MMPL

FWC Case # 8477 **FWC Region:** NE

Sex: Female **Length:** 273 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-25 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-26 **By:** FWC-SMW

DATE NECROPSIED: 2019-May-28 **By:** MMPL-TDW,MdW,BLB,GLL,SMT,ALP

LOCATION: **State:** FL **Latitude:** 28.16371 **N**
County: Brevard **Longitude:** -80.61384 **W**
Waterway: Banana River
Locality description: Merritt Island, floating approximately 150 m NE of 10820 S Tropical Trail.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Blood clots; Hemothorax; Hemoabdomen; Torn hemidiaphragm(s); Torn kidney capsule(s); Torn lung(s); Torn parietal pleura; Diaphragmatic hernia; Fractured kidney(s); Shredded muscle; Hemorrhagic muscle; Bloody eyes, nares; Bone fragment in lung tear; Hemorrhagic lung-, kidney parenchyma; Folded lung; Herniated colon; Vegetation in mouth.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Monofilament in stomach. Healing skin lesions; Macroalgae in GI tract.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19060

MORPHOMETRICS:

Total length:	273 cm	**Fluke base:**	71 cm	**Girth at axillae:**	**cm**
Snout to anus:	182 cm	**Fluke width:**	63 cm		
Snout to U/G:	170 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	93 cm	**Girth at anus:**	cm		
Flipper width:	15 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.6 cm	1.9 cm		
Outer Blubber Thickness:	0.7 cm	0.5 cm	**Abdominal Fat Thickness:**	1 cm
Inner Blubber Thickness:	0.2 cm	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:

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. MEC19060
RECOVERY DATE 26 May 2019
GENDER Female **TL** 273 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 28 May 2019
CONDITION Badly Decomposed

HISTORY 25 May 2019, at 1742 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Banana River, Merritt Island, Brevard County. FWC case number 8477 was assigned. The complainant, Ed Varnes (321-759-7200), stated that the manatee was belly-up and about 8 feet long. At 1752 hrs, WDG received photo confirmation and requested FWC LE assistance. Officer Morgan Maslo arrived at the carcass at 1810 hrs and towed it to Patrick Air Force Base at 1900 hrs where it was secured overnight. **26 May**, FWC biologist-Sara M. Wappes (SMW) arrived at the carcass at 0900 hrs, loaded the carcass by 0915 hrs, and transported it to the MMPL arriving at 1230 hrs.

EXTERNAL All of the epidermis was present. Bloody fluid, mucus and dead trematodes exuded from the nares. The eyes were bloody. There were two fresh superficial watercraft wound series on the carcass. Wounds #1-3 were parallel and on the left shoulder region. Linear wound #7 was transverse on the caudal left dorsum. Wound #4 was cranial and perpendicular to wound #7, and wounds #5 and 6 were parallel to each other and caudal and perpendicular to wound #7. There was a thin green and brown algal mat on the dorsal and lateral aspects. The dorsal fluke had almost healed curved scraped lesions. The fluke margin had healing lesions associated with thickened, bleached epidermis at the 2 and 4 o'clock positions. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal and mesenteric fat, and abundant omental fat. The abdomen contained 2 L of watery, dark red fluid mixed with a few small loose, well-formed blood clots.

STOMACH The stomach contained 10 L of moist, well-chewed, soft, stringy, dark brown to dark green macroalgae. The ingesta were coated with a thin layer of tan to pink mucus. There was a 32 cm long piece of 8 lb test diameter tan monofilament line in the contents. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 2.25 L of wet, well-chewed, soft, fibrous, dark green to dark brown macroalgae. The mucosa was tan and grey. No parasites were observed.

JEJUNUM & ILEUM The mid- and proximal small intestine contained a moderate amount of viscous, flocculent, dark grey fluid mixed with a small amount of wet, well-chewed, soft, fibrous, dark green and dark brown macroalgae. The distal small intestine contained a small amount of watery, cloudy, dark green fluid mixed with a small amount of wet, well-chewed, soft, fibrous, dark green and dark brown macroalgae. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 3 L of wet, moderately digested, fibrous, slightly leafy, dark green digesta including macroalgae. The mucosa was sloughing. No parasites were observed.

COLON Approximately 115 cm distal to the cecum, a 50 cm long section of the proximal colon was herniated into the left pleural cavity through a hemidiaphragm tear. The proximal colon contained a moderate amount of wet, moderately digested, poorly formed. slightly fibrous, leafy, dark green feces including macroalgae. The distal colon contained an abundant amount of moist, well-digested, slightly fibrous, moderately formed, dark green feces including macroalgae. The mucosa was sloughing throughout. A few dead nematodes were 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. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 25 mL of slightly viscous, cloudy, dark green 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 and large fluid-filled follicles (maximum diameter 0.9 cm).

KIDNEYS There was moderate perirenal fat. The kidneys were mottled black, blue, and pink and had a nutmeg-like appearance on serosal surfaces. On cut surfaces, the cortices had black, tan, and pale pink striations towards the medullae. The medullae were pink to dark pink. The corticomedullary boundaries were mostly distinct. The left kidney capsule was torn at the cranial aspect (4.5 x 2.6 cm) due to fractured left rib 14. The left kidney had multiple tears on the dorsal aspect of the cranial half, which were surrounded by loose, well-formed blood clots and slightly hemorrhagic kidney parenchyma. An ELISA toxicology sample was collected.

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

HEART There was abundant gassy epicardial fat. The heart was soft. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM The right hemidiaphragm was intact. The left hemidiaphragm had a tear (6.5 x 5.8 cm) at the caudal one-third, through which a portion of the colon herniated. The right pleural cavity contained 250 mL of clear red-tinged fluid. The right lung was light pink, light purple, and red on serosal surfaces, and dark red on cut surfaces. The left pleural cavity contained 2 L of loose, well-formed blood clots and 1 L of frank blood. The left lung was partially transected at the caudal one-third due to fractured left rib 13 and was folded cranially. There were two perforations through the medial aspect of the caudal one-third due to fractured left ribs 14 and 15. There was a bone fragment in the tear caused by fractured left rib 14. There was a large tear on the ventral aspect of the folded caudal one-third. All tears were surrounded by loose, well-formed blood clots and hemorrhagic lung parenchyma. The left lung was dark pink to red on serosal surfaces and light pink on cut surfaces. The airways of both lungs contained a small amount of viscous, red-tinged mucus. A few dead trematodes were observed. The mucosa was tan, pink, and purple. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a small thatch of poorly chewed, soft, brown to purple macroalgae in the mouth. An ELISA toxicology sample was collected. The nares contained a mild infection of dead trematodes. The trachea contained a small amount of viscous, red fluid.

SKELETON The tip of left rib 12 perforated the muscle which was surrounded by shredded, hemorrhagic tissue, and well-formed blood clots. Left rib 13 had an oblique fracture at mid-shaft that penetrated the parietal pleura and tore the hemidiaphragm and lung. Left ribs 14 and 15 had oblique fractures at the proximal one-third that tore the parietal pleura and lung. Left rib 14 also tore the kidney. Left rib 16 had a closed oblique fracture at the proximal one-third. The rib trauma was associated with shredded, hemorrhagic, muscle and loose, well-formed blood clots and was deep to wounds #5-7.

OTHER There was hemorrhagic muscle on the dorsum deep to wound #7.

PHOTOGRAPHS 2019-05-26_FWC047_0424, 0425, 0428 through 0437, 0439, 0440, 0442 through 0446; 2019-05-28_FWC047_0509 through 0514, 0517 through 0523.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wounds
- Bloody eyes, nares
- Fractured ribs
- Shredded, hemorrhagic muscle
- Blood clots
- Hemothorax, -abdomen
- Torn hemidiaphragm, kidney, kidney capsule, lung, parietal pleura
- Diaphragmatic hernia of colon
- Bone fragment in lung tear
- Hemorrhagic lung-, kidney parenchyma
- Folded lung
- Vegetation in mouth
- Healing skin lesions
- Macroalgae in GI tract
- Monofilament line in stomach contents
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

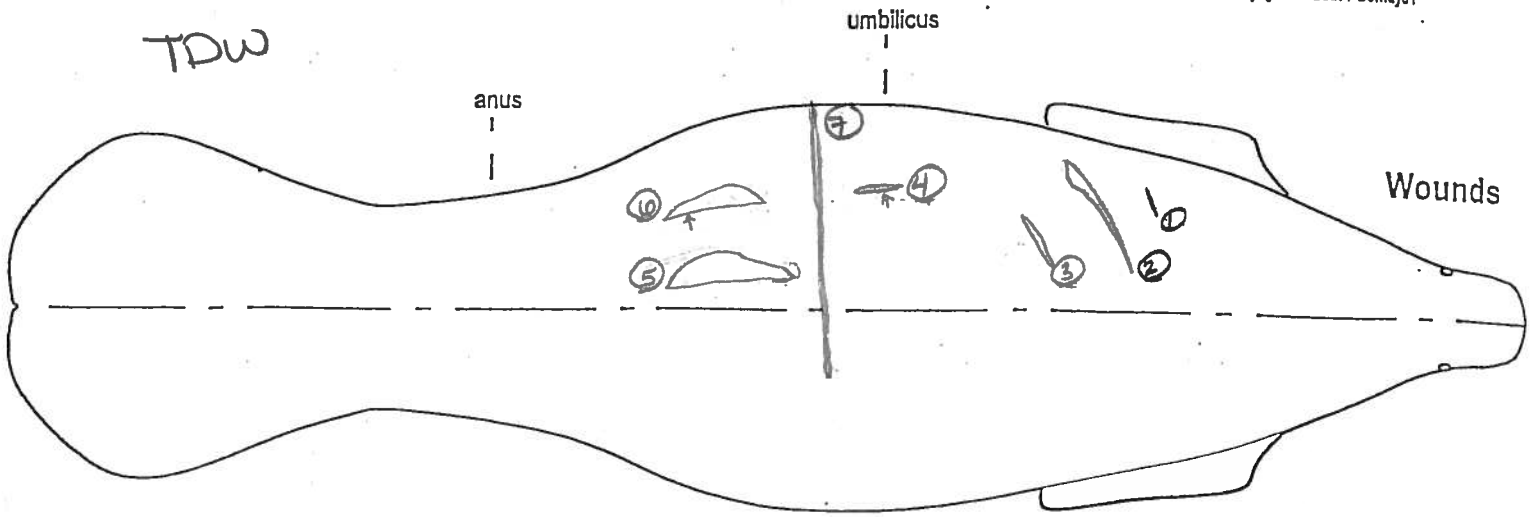
Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Gina L. Lonati
Tara D. Whitcomb
Sean M. Tennant

REPORT FILED BY de Wit

Date 26 May 2019 Field I.D. MEC19060

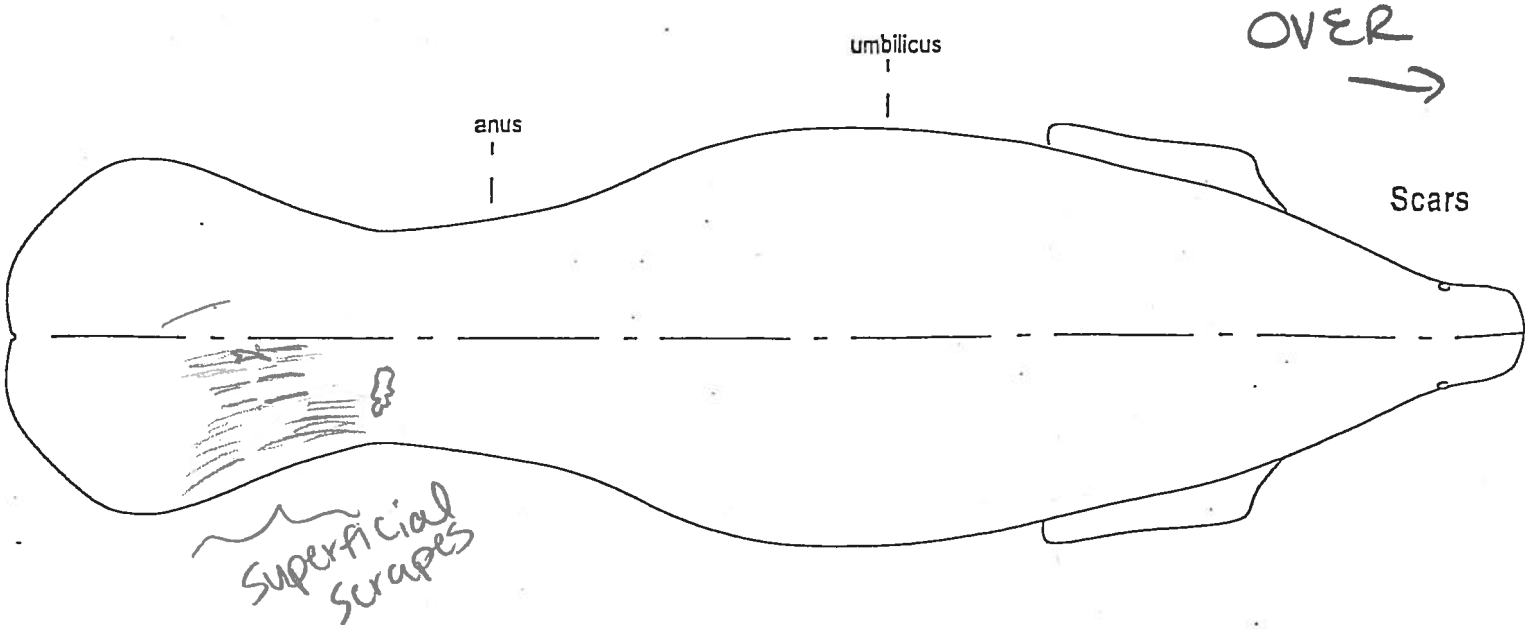
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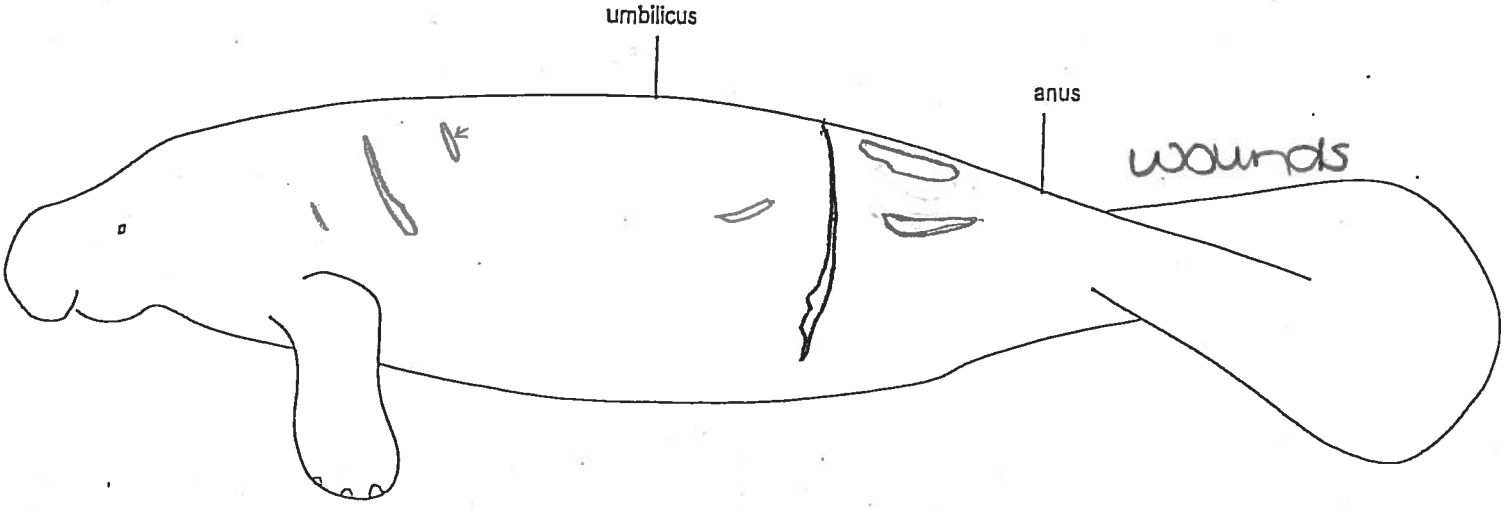


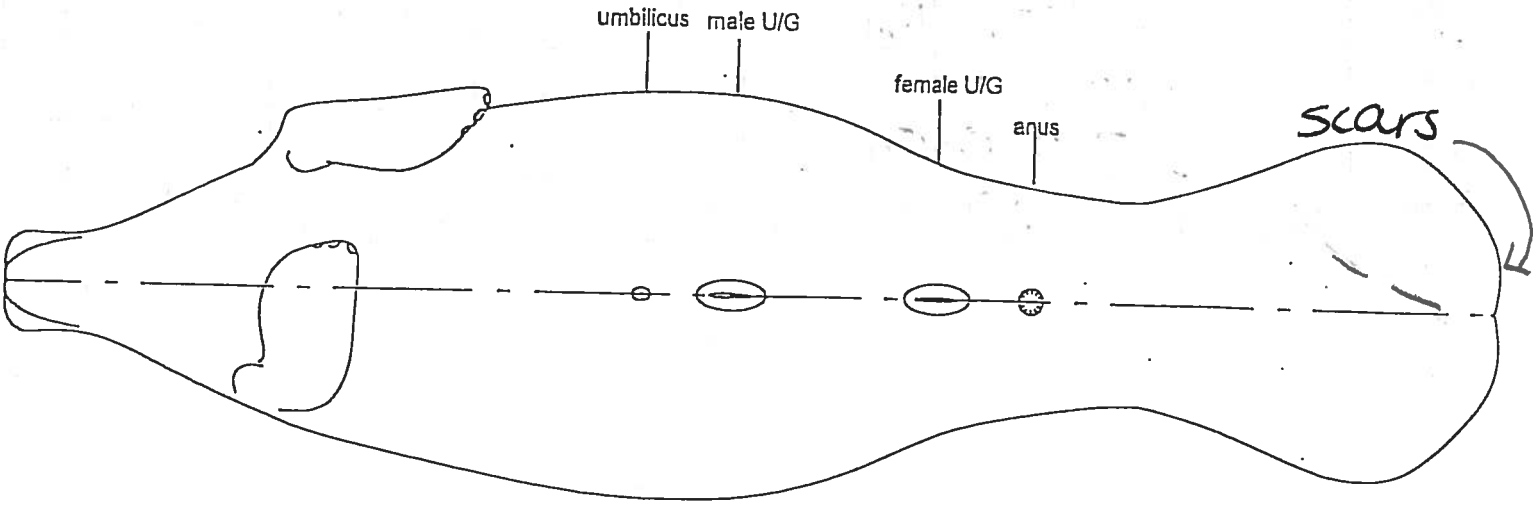
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Width	6.2	0.9	6.8	1.0	4.0	2.7	1.2													
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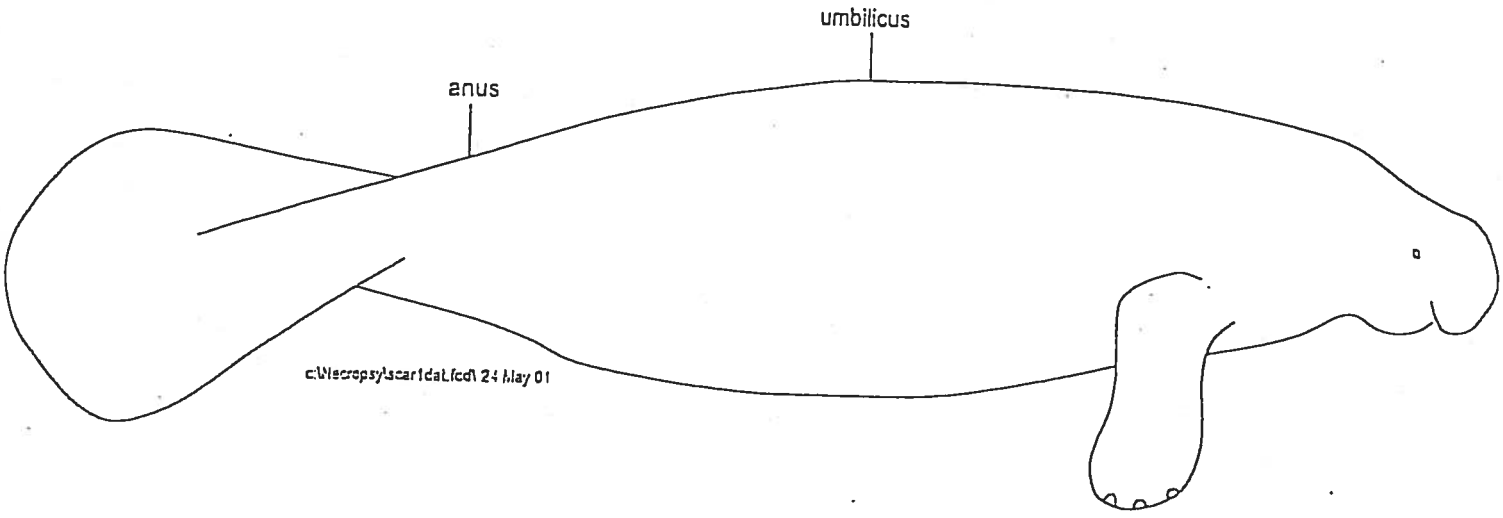
OVER →



FIELD I.D. MEC19060

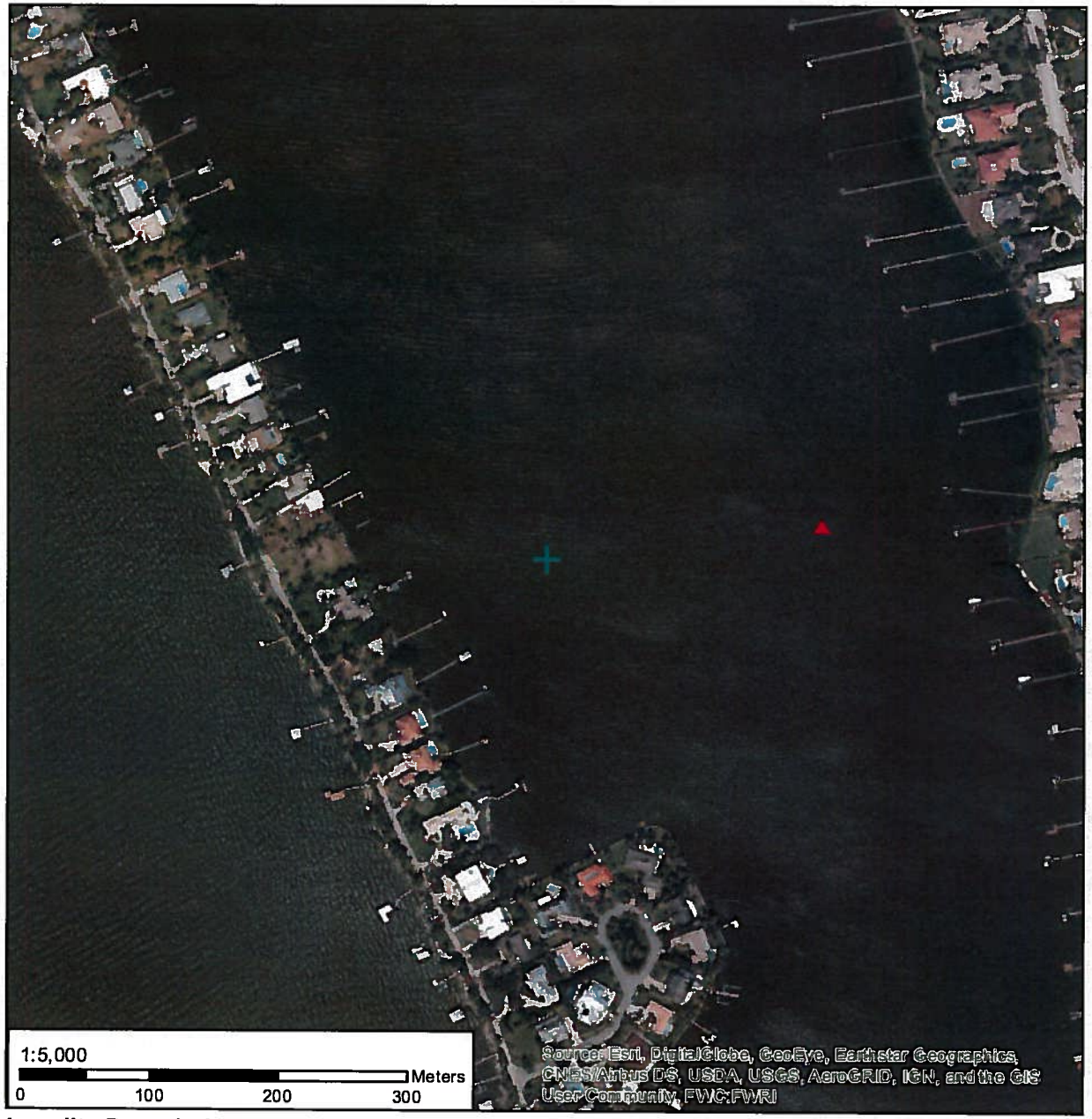


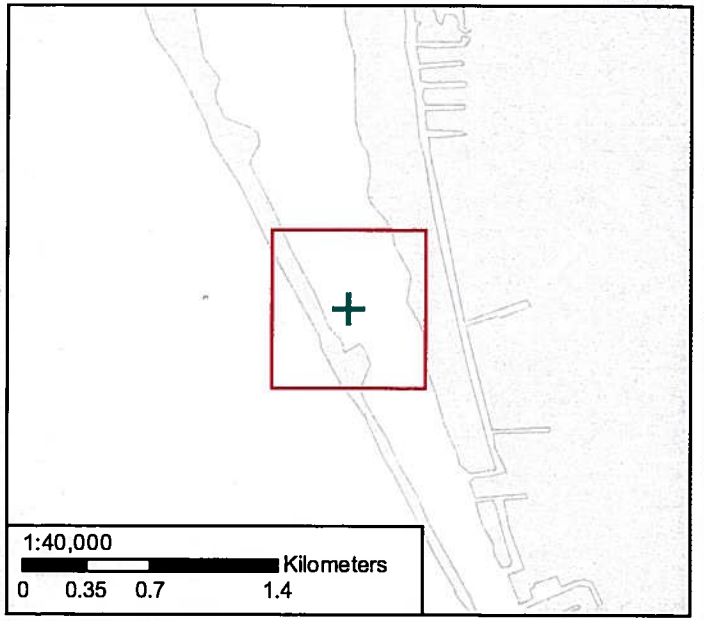


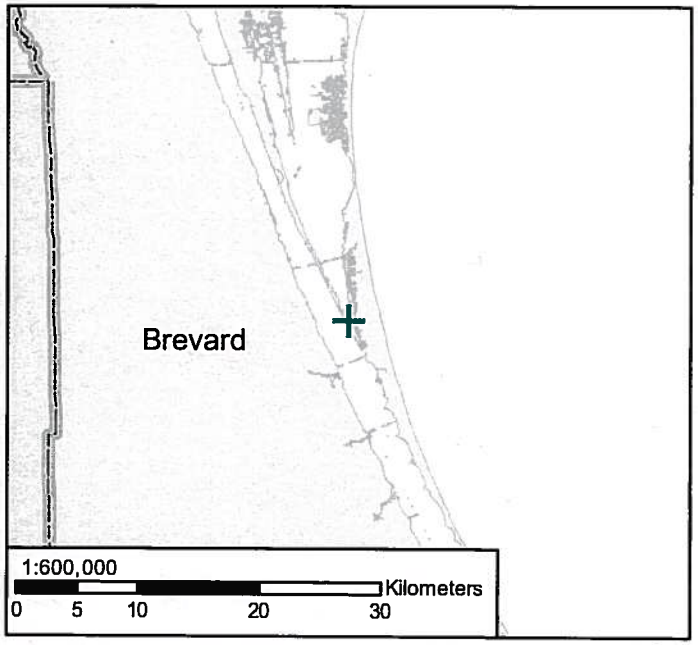


Verified Recovery Location of Manatee Carcass MEC19060

Report Date: 5/25/2019 **Received Date:** 5/26/2019 **Received By:** FWC-SMW Map Created: 10/27/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 150 m NE of 10820 S Tropical Trail.

Latitude: 28.16371°N **Longitude:** -80.61384°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC190600
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8477 FWC District: NE
Sex: M (F) Undetermined Length: 273 cm (estimated _____) Weight N/T kg.
Date reported: 25 May 2019 By: _____
Date collected: 26 May 2019 By: FWC-SMW
Date necropsied: 28 May 19 By: MMPL - TDW HAW BUB GLL SMT ALP

LOCATION: State: (FL) ( ) County: Brevard Waterway: Banana 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 - wounds)
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) macroalgae mouth
Genetics Box # 92
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

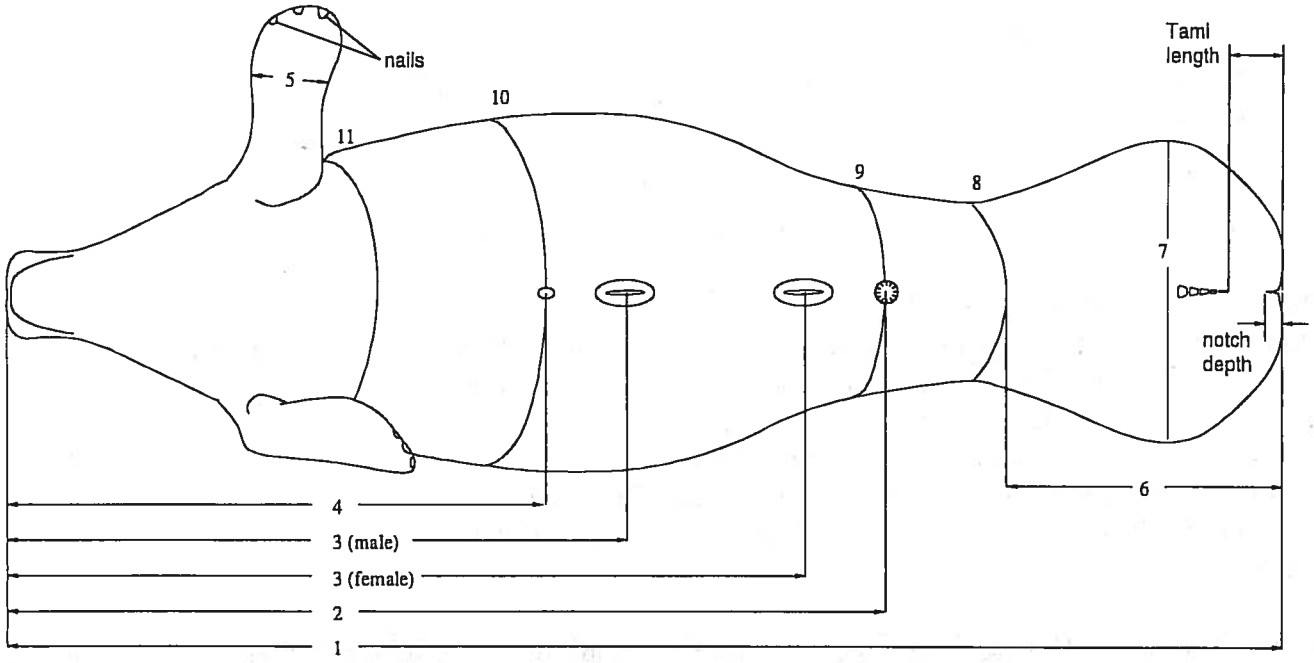
REMARKS: small amount of watery clear fluid exiting from nares mixed with a small amount of dead algae.

Field ID # MEC190600

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.

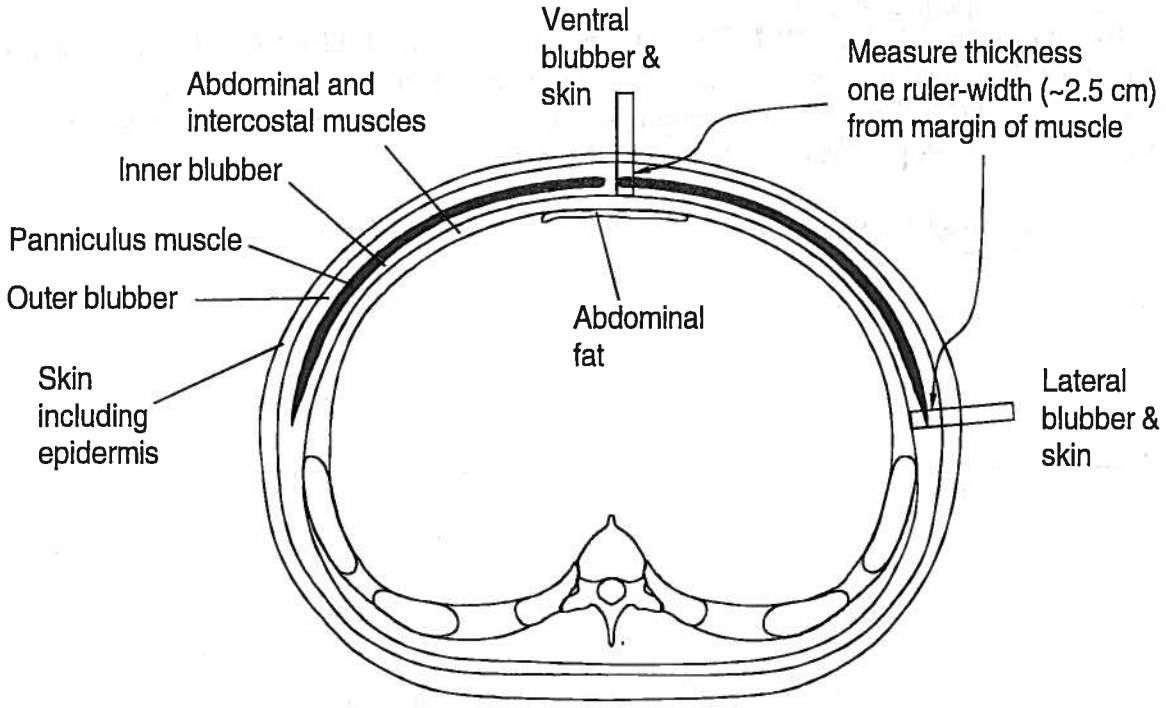
1. Total length 273 cm
2. Snout to anus -C 182 cm
3. Snout to U/G -C 170 cm
4. Snout to umbilicus -C 93 cm
5. Flipper width 15 cm
6. Fluke base 71 cm
7. Fluke width 63 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus ____ cm
10. *Girth at umbilicus ____ cm
11. *Girth at axillae ____ cm

(Nail count: L 3 R 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.6 cm	1.9 cm	(Epidermis 0.1 cm)
Outer fat	0.7 cm	0.6 cm	(Abdominal fat 1.0 cm)
Inner fat	0.2 cm	1.0 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19060
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8477 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 25 May 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 26 May 2019 **By**: FWC-SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 150m NE of 10820 S Tropical Trail.

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 #: **MEC19061**
Date of Report: 2019-May-27
Filed By: FWC EC Field Station

FWC Case # 8635 **FWC Region:** NE

Sex: Female **Length:** 233 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-27 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-28 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-May-28 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.18533 **N**
County: Brevard **Longitude:** -80.62439 **W**
Waterway: Banana River
Locality description: Merritt Island, floating approximately 85 m E of 9620 South Tropical Trail.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Hemorrhagic muscle; Hemoabdomen; Blood clots; Fractured kidney(s); Organ pallor; Hemorrhagic kidney parenchyma; Congested colon serosa.

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. Also FWC case numbers 8621 and 8881.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MEC19061

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. MEC19061
RECOVERY DATE 28 May 2019
GENDER Female **TL** 223 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 28 May 2019
CONDITION Badly Decomposed

HISTORY 27 May 2019, at 0739 hrs, FWC on-call 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 8621 was assigned. The complainant, Glenn Turner (321-432-6747), stated that the manatee was five feet long, gray, and was in one foot of water. At 0749 hrs, WDG received a photo of the carcass from the complainant. At 0752 hrs, WDG requested FWC LE assistance to tow the carcass. FWC-Officer Kerney informed WDG that no FWC officers would be available that day. WDG contacted Satellite Beach and Indian Harbour Beach police departments to request assistance, but both boats were unavailable due to servicing issues. At 0936 hrs, WDG received a text alert from Dispatch regarding the same dead manatee. FWC case number 8635 was assigned. The complainant, Trent Morrow (321-720-0402), stated that the carcass was 8 feet long, gray, and fresh. **28 May**, WDG and FWC biologist-Lucy R. Bukowksi launched the Key West boat from Patrick Air Force Base at 0900 hrs, located the carcass at 0930 hrs, and towed it to Sampson Island where a field necropsy was completed at 1102 hrs. The remains were left on site. **30 May**, at 2018 hrs, WDG received a text alert from Dispatch regarding multiple dead manatees on Samson's Island. FWC case number 8881 was assigned. Based on the complainant's description and location, the carcasses were the remains of field necropsies MEC19059 and MEC19061.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the nares. A thin brown algal mat was present on the dorsal and lateral aspects. There was an eroded superficial watercraft-related wound series on the caudal dorsum which consisted of three parallel propeller wounds (#1 – 3) and a long linear wound (#4) caudal and perpendicular to the propeller wounds. There was a second eroded superficial watercraft-related wound series on the dorsal left aspect of the fluke which consisted of a roughly linear wound (#6) and two parallel wounds (#5 and 7) perpendicular to and through wound #1. No watercraft-related scars were observed. One small well-healed v-shaped mutilation was present at the 5 o'clock position of the fluke margin. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, omental, and mesenteric fat. There were 2 L of loose, well-formed blood clots in the abdominal cavity (see photo).

STOMACH The stomach contained 10 L of moist, fibrous, homogeneous, brown ingesta mixed with well-chewed mangrove propagules (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 750 mL of wet, fibrous, homogeneous, brown ingesta mixed with well-chewed mangrove propagules (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained wet, fibrous, homogeneous, brown ingesta mixed with well-chewed mangrove propagules. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 250 mL of wet, fibrous, homogeneous, brown digesta mixed with well-digested mangrove propagules (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon serosa was mildly congested. The colon contained moist, poorly formed, well-digested, fibrous, homogeneous, brown feces throughout. The mucosa was black and sloughing. No parasites were observed.

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

SPLEEN The spleen was 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 moderate reproductive fat. The diameter of the uterus was small. No scars were present. The ovaries were soft, friable, and autolyzed.

KIDNEYS Both kidneys were fractured, which was deep to wound #4. There were loose, well-formed blood clots surrounding the right kidney. There was hemorrhagic tissue associated with the left kidney fracture. Both kidneys were tan on serosal surfaces (pallor). On cut surfaces, the cortices were tan and the medullae were light pink (see photos).

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 intact. The lungs were pink to gray on serosal surfaces and dark red on cut surfaces. The primary airways contained a small amount of red-tinged fluid. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER There was hemorrhagic tissue deep to wound #4 (see photo).

PHOTOGRAPHS 2019-05-28_FWC025_8955 through 8979.

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wounds
- Hemorrhagic tissue
- Hemoabdomen
- Blood clots
- Fractured kidneys
- Kidney pallor
- Hemorrhagic kidney parenchyma
- Congested colon serosa
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

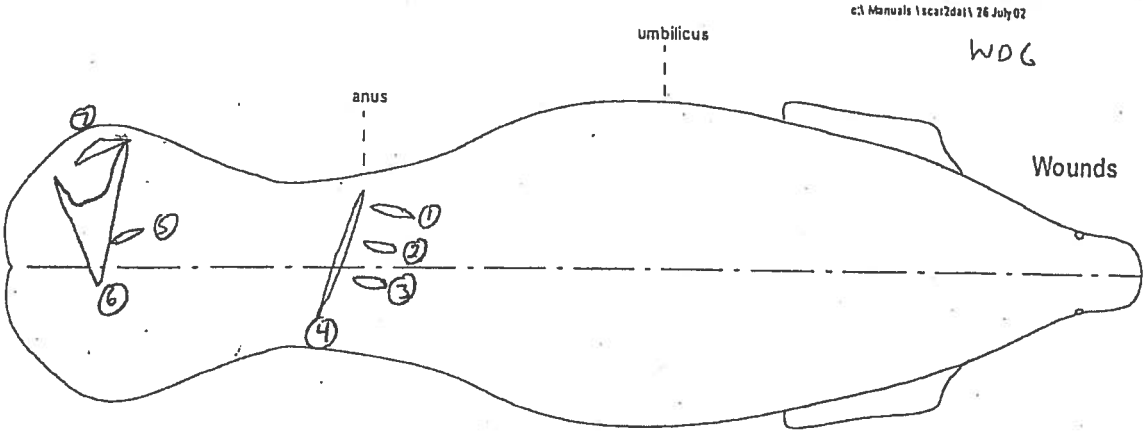
William D. Greer
Lucy R. Bukowski

REPORT FILED BY Greer

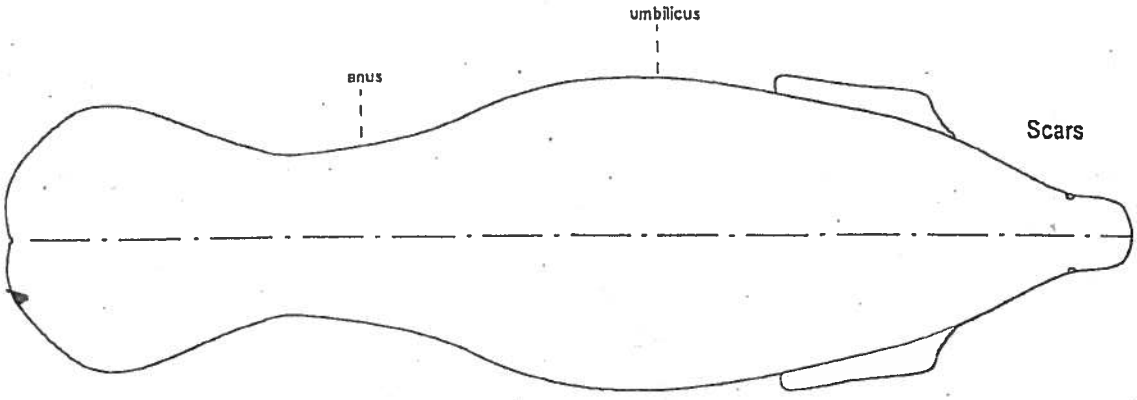
Date 28 MAY 2019 Field I.D. MEC19061

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WDG

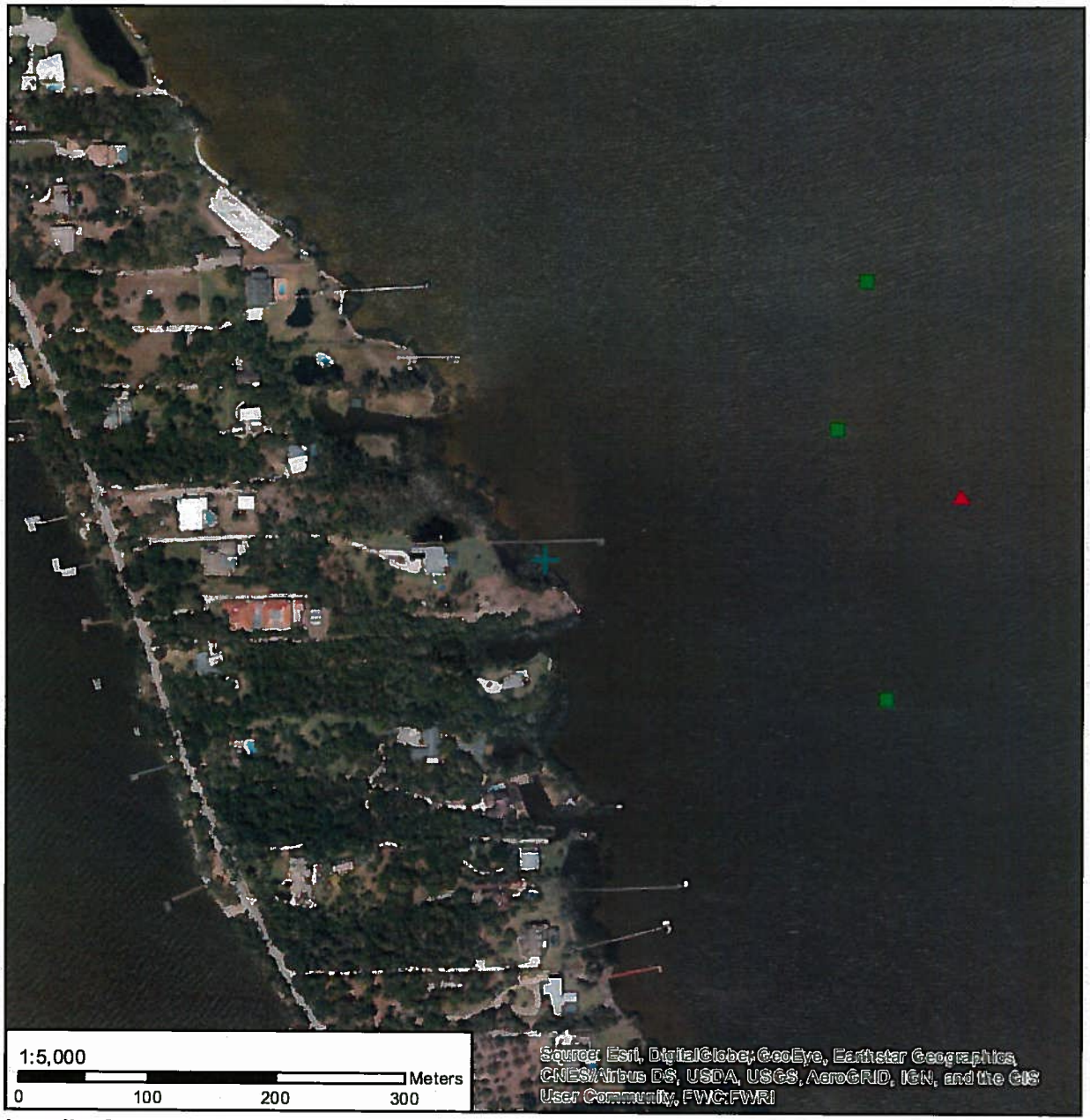


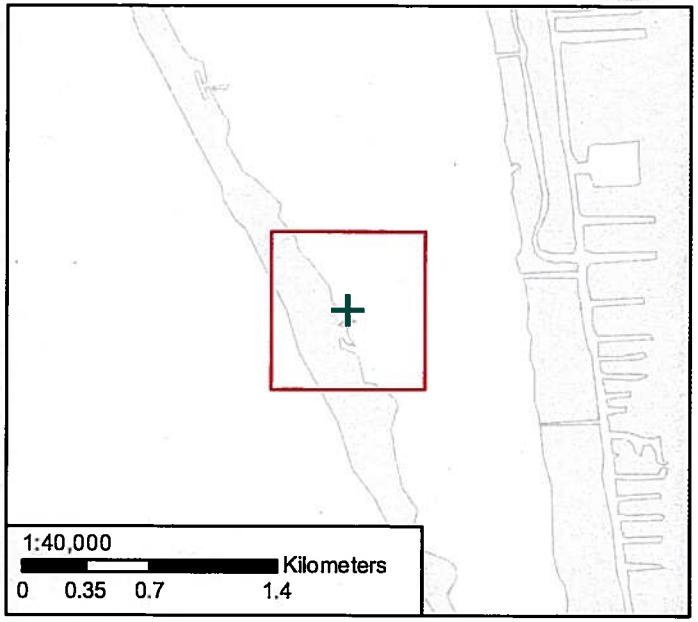
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	15	15	19	46																
Width	4.0	3.4	3.0	1.1																
Depth	–	–																		
Distance	9.2	10.7																		

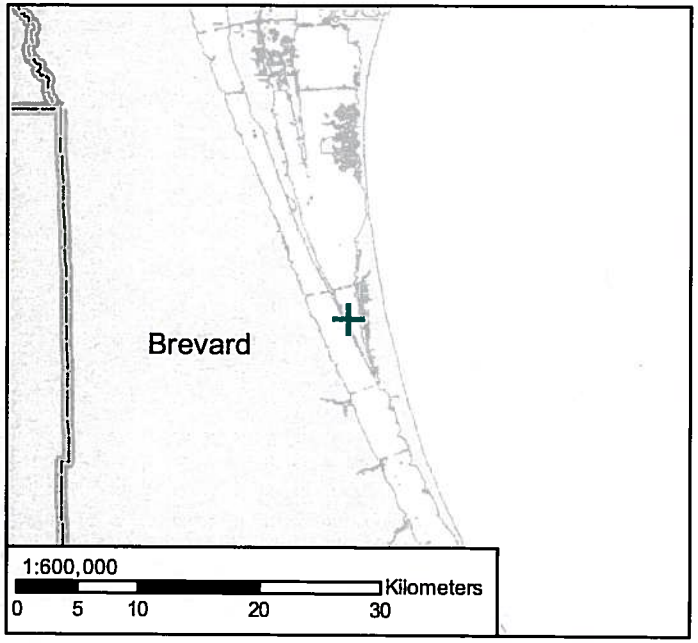


Verified Recovery Location of Manatee Carcass MEC19061

Report Date: 5/27/2019 **Received Date:** 5/28/2019 **Received By:** FWC-WDG,LRB Map Created: 10/27/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 85 m E of 9620 South Tropical Trail.

Latitude: 28.18533°N **Longitude:** -80.62439°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19061
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8621,8635 **FWC District**: Northeast
Sex: Female **Length (cm)**: 233 **Estimated** _____ **Weight (kg)** N/T
Date reported: 27 May 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 28 May 2019 **By**: FWC- WDG, LRB
Date necropsied: 28 May 2019 **By**: FWC- WDG, LRB

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 85 m E 9620 South Tropical Trail

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: Fresh wound on dorsal aspect, hemorrhagic tissue below wound, 2 L well formed blood clots, fractured kidneys, kidney paler

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 #: **MEC19062**
Date of Report: 2019-Jun-01
Filed By: FWC EC Field Station

FWC Case # 8984 **FWC Region:** NE

Sex: Female **Length:** 107 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jun-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jun-01 **By:** FWC-LRB

DATE NECROPSIED: 2019-Jun-01 **By:** FWC-LRB

LOCATION: **State:** FL **Latitude:** 28.38973 **N**
County: Brevard **Longitude:** -80.67295 **W**
Waterway: Banana River
Locality description: Merritt Island, floating approximately 20 m S of 1995 Porpoise Street.

CONDITION: Moderately Decomposed

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

EXPLAIN: Natural: Stillborn; Fetal folds; Umbilical skirt; Consolidated lungs; Meconium.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Perinatal evaluation performed.

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	06 NOV 2020
Necropsy Report	06 NOV 2020
Lat/Long	06 NOV 2020

Field ID #: MEC19062

MORPHOMETRICS:

Total length:	107 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 filled with blood clots lateral and cranial to the urinary bladder. Urachus closed at bladder tip.

Ductus Arteriosis Diameter: 1 cm

Left Pulmonary Artery Diameter: 1.1 cm

Right Pulmonary Artery Diameter: 1.1 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. MEC19062
RECOVERY DATE 01 June 2019
GENDER Female **TL** 107 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 01 June 2019
CONDITION Moderately Decomposed

HISTORY 01 June 2019, at 1103 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River, Merritt Island, Brevard County. FWC case number 8984 was assigned. The complainant, Erin Ward (816-305-4492), stated that the manatee was very small, gray, and being pushed around by another manatee. At 1111 hrs, LRB received photo confirmation. At 1215 hrs, LRB arrived on site and launched a kayak from the complainant's dock. The carcass was secured by 1220 hrs, loaded into the truck bed by 1235 hrs, and transported to the Brevard County Landfill. A field necropsy was completed by 1415 hrs. The remains were disposed of at the Landfill.

EXTERNAL All of the epidermis was present but sloughing. Bloody fluid exuded from the nares. The epidermis was smooth with no lesions or epibiota and dark gray in color. Transverse folds were present on the ventrum. The fluke margin was scalloped. An umbilical skirt was present. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant abdominal fat. There was no omental or mesenteric fat.

STOMACH The stomach contained 20 mL of viscous, flocculent, white fluid (see photos). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 10 mL of viscous, flocculent, white fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal and mid small intestine contained viscous, white fluid. The distal small intestine contained moist, well-formed, homogeneous, rubbery, dark green meconium. The mucosa was sloughing. No parasites were grossly observed.

CECUM The cecum contained 25 mL of moist, well-formed, homogeneous, rubbery, dark green meconium (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon contained moist, well-formed, homogeneous, rubbery, dark green meconium (see photo). The mucosa was sloughing. No parasites were observed.

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

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

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained a scant amount of viscous, golden-yellow bile. The mucosa was bile-stained.

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

KIDNEYS The kidneys were soft and friable. Serosal surfaces were light pink. On cut surfaces, the cortices

were dark red and the medullae were light pink. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained approximately 5 mL of pink-tinged urine. The mucosa was unremarkable. The urachus was closed at the bladder tip.

HEART There was no epicardial fat. Valves and chambers were unremarkable. The flat diameter of the ductus arteriosus measured 1.0 cm. The flat diameter of both pulmonary arteries measured 1.1 cm.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were mottled pink and gray on serosal surfaces, and dark red on cut surfaces. The lungs were consolidated and slightly wet (see photos). The primary airways were clear.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER The umbilical arteries were probe patent and filled with blood clots lateral and cranial to the urinary bladder.

PHOTOGRAPHS 2019-06-01_FWC025_8980 through 8990, 8992 through 8998.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Umbilical skirt
- Consolidated lungs
- Meconium

PROBABLE CAUSE OF DEATH Perinatal; Natural (Stillborn)

NECROPSY CONDUCTED BY

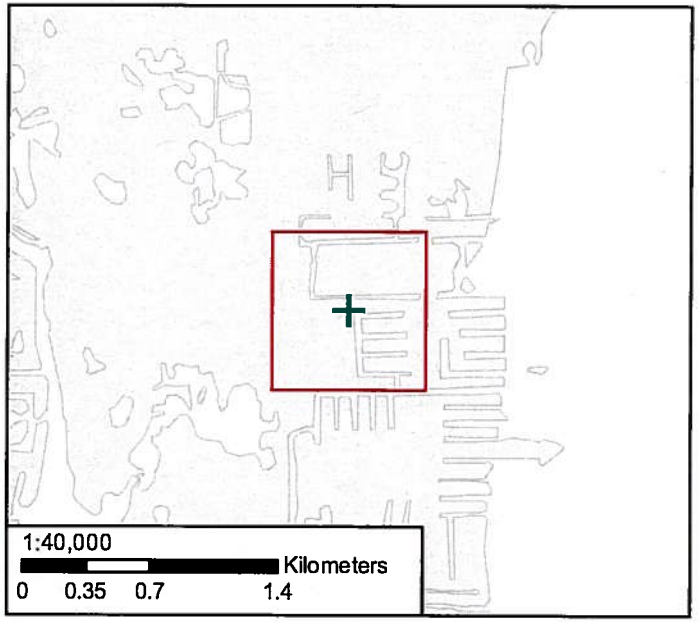
Lucy R. Bukowski

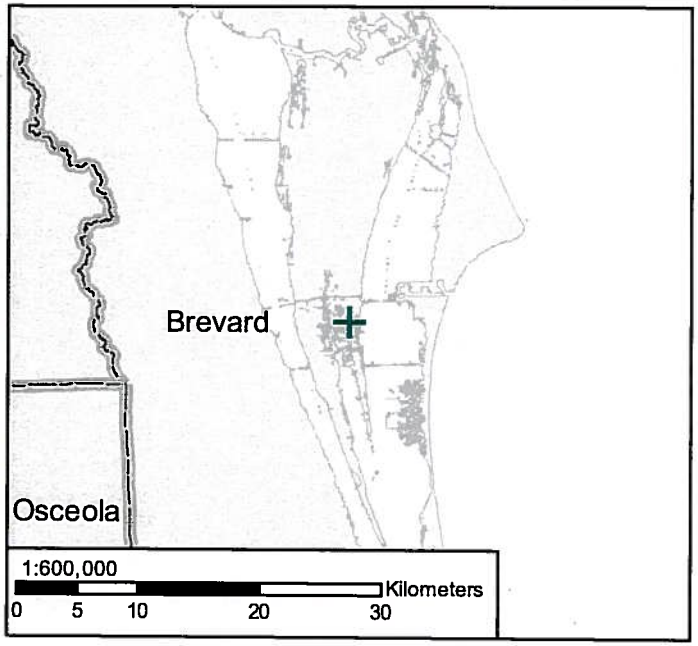
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19062

Report Date: 6/1/2019 **Received Date:** 6/1/2019 **Received By:** FWC-LRB Map Created: 11/2/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 20 m S of 1995 Porpoise Street.

Latitude: 28.38973°N **Longitude:** -80.67295°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19062
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8984 **FWC District**: Northeast
Sex: Female **Length (cm)**: 107 **Estimated** _____ **Weight (kg)** N/T
Date reported: 01 June 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 01 June 2019 **By**: FWC-LRB
Date necropsied: 01 June 2019 **By**: FWC-LRB

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 20m S of 1995 Porpoise St.

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: Meconium in cecum and colon; stomach, duodenum, and small intestine mostly empty; fetal folds present, scalloped fluke margin; umbilical skirt present; partially consolidated 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 #: **MEC19063**
Date of Report: 2019-Jun-01
Filed By: FWC EC Field Station

FWC Case # 9024 **FWC Region:** NE

Sex: Male **Length:** 140 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jun-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jun-02 **By:** FWC-SMW

DATE NECROPSIED: 2019-Jun-02 **By:** FWC-SMW HSWRI-M. Stolen

LOCATION: **State:** FL **Latitude:** 28.38043 **N**
County: Brevard **Longitude:** -80.6692 **W**
Waterway: Banana River
Locality description: Merritt Island, floating approximately 15 m W of 1355 Fiddler Avenue.

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. Scavenging; Dirt in trachea.

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	Dec NOV 2020
Necropsy Report	Dec NOV 2020
Lat/Long	Dec NOV 2020

Field ID #: MEC19063

MORPHOMETRICS:

Total length:	140 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. MEC19063
RECOVERY DATE 02 June 2019
GENDER Male **TL** 140 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 02 June 2019
CONDITION Badly Decomposed

HISTORY 01 June 2019, at 1753 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 Merritt Island, Brevard County. FWC case number 9024 was assigned. The complainant, Herb Stanfield (321-288-2462), stated that the carcass was small and back-up in the water. MRS forwarded the information to the EC Field Station at 1812 hrs and received a photo verifying the carcass at 1822 hrs. MRS requested FWC LE assistance to tow the carcass. **02 June**, at 0800 hrs, FWC biologist-Sara M. Wappes (SMW) cancelled the request for an officer. SMW arrived at the complainant's house at 0925 hrs, recovered the carcass via kayak, loaded it into the truck by 0945 hrs, and transported it to the field station at 1030 hrs. A field necropsy was completed by 1100 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The remaining epidermis was smooth without any lesions, scars, or epibiota. There was a large rent due to decomposition and/or scavenging on the mid ventrum. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered or missing. Internal organs were missing unless mentioned below.

REPRODUCTIVE Only the penis remained.

HEART There was no epicardial fat. The heart was liquified.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition.

HEAD & NECK REGIONS There was dirt in the trachea (see photo).

SKELETON Ribs were luxated or subluxated due to decomposition.

OTHER

PHOTOGRAPHS 2019-06-02_FWC025_9001 through 9011.

SIGNIFICANT FINDINGS

- Missing, autolyzed internal organs
- Scavenging
- Dirt in trachea

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

NECROPSY CONDUCTED BY

Sara M. Wappes
Megan Stolen (HSWRI)
Casie Farrell (FWC volunteer)

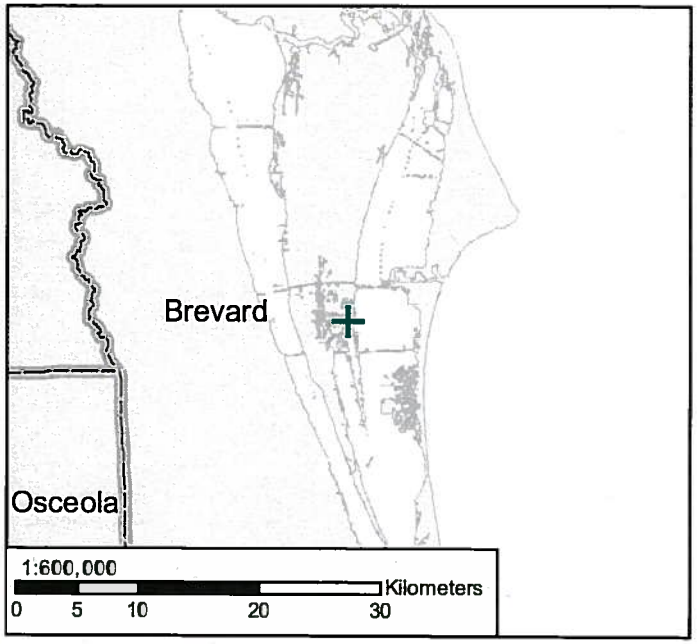
REPORT FILED BY Wappes

Verified Recovery Location of Manatee Carcass MEC19063

Report Date: 6/1/2019 **Received Date:** 6/2/2019 **Received By:** FWC-SMW Map Created: 11/2/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 15 m W of 1355 Fiddler Avenue.

Latitude: 28.38043°N **Longitude:** -80.6692°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19063
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9024 **FWC District**: Northeast
Sex: Male **Length (cm)**: 140 **Estimated** _____ **Weight (kg)** N/T
Date reported: 01 June 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 02 June 2019 **By**: FWC-SMW
Date necropsied: 02 June 2019 **By**: FWC-SMW, HSWRI-M. Stolen, FWC vol-C. Farrell

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 15 m W of 1355 Fiddler Ave.

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

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 #: **MEC19064**
Date of Report: 2019-Jun-12
Filed By: FWC EC Field Station

FWC Case # 9919 **FWC Region:** NE

Sex: Female **Length:** 279 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jun-12 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jun-15 **By:** FWC-LRB

DATE NECROPSIED: 2019-Jun-15 **By:** FWC-LRB

LOCATION: **State:** FL **Latitude:** 28.46246 **N**
County: Brevard **Longitude:** -80.76164 **W**
Waterway: Indian River
Locality description: Cocoa, floating approximately 30 m SE of 219 Red Fish Lane.

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; Macroalgae in mouth.

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 number 9758.

Page 1&2	06 NOV 2020
Necropsy Report	06 NOV 2020
Lat/Long	06 NOV 2020

Field ID #: MEC19064

MORPHOMETRICS:

Total length:	279 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. MEC19064
RECOVERY DATE 15 June 2019
GENDER Female **TL** 279 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 15 June 2019
CONDITION Badly Decomposed

HISTORY 12 June 2019, at 1716 hrs, on-call FWC biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River, Cocoa, Brevard County. FWC case number 9758 was assigned. The complainant, Joann Scruggs (321-616-4650), stated that there was a large dead manatee at the end of her dock. At 1900 hrs, NJG received photo confirmation and requested FWC LE assistance. At 1909 hrs, NJG forwarded the information to EC Field Station staff. **13 June**, at 0939 hrs, FWC biologists-William D. Greer (WDG), Sara M. Wappes (SMW), and Lucy R. Bukowski (LRB) arrived at Port St John Boat ramp and launched the Key West boat. WDG, SMW, and LRB searched the area for approximately two hours and were unable to locate the carcass. **15 June**, at 0855 hrs, LRB received a text alert from Dispatch regarding a dead manatee in the Indian River, Cocoa. FWC case number 9919 was assigned. The complainant, Sherri Holder (321-226-3962), stated that she had received the report from members of a church group and had not seen the manatee herself. She was able to go to the reported address and sent LRB confirmation photos at 0913 hrs. At 1100 hrs, LRB and FWC intern-Mary Buford Turnage arrived at the reported location and walked the carcass to a nearby vacant lot. A field necropsy was completed by 1245 hrs. The remains were left on site.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. Red-tinged fluid exuded from the nares. Patches of eroded dermis were present on all aspects. There were rents at the anus and cranial ventrum due to decomposition and/or scavenging. A minimum of one well-healed watercraft-related scar was observed on the dorsum. The fluke margin had shark bites from the 3 to 4 o'clock and 4 to 5 o'clock positions. There were two eroded circular mutilations at the 7 and 8 o'clock positions. 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 contained 5.25 L of moist, leafy, moderately chewed, yellow to brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 1 L of moist, leafy, moderately chewed, yellow to brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM Only the proximal one-third of the small intestine remained and contained viscous, dark red to brown ingesta. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 2 L of moist, leafy, moderately digested, yellow to brown digesta (see photo). The mucosa was unremarkable. No parasites were observed.

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

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

LIVER The liver was soft and friable. The margins were rounded. The serosal surfaces were dark purple and the cut surfaces were dark red.

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

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were mottled

pink and gray on serosal surfaces and dark red on cut surfaces. The primary airways were clear.

HEAD & NECK REGIONS There was a small thatch of unchewed purple macroalgae in the mouth (see photo). Otherwise NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-06-15_FWC025_9018 through 9036.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Shark scavenging
- Macroalgae in mouth

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

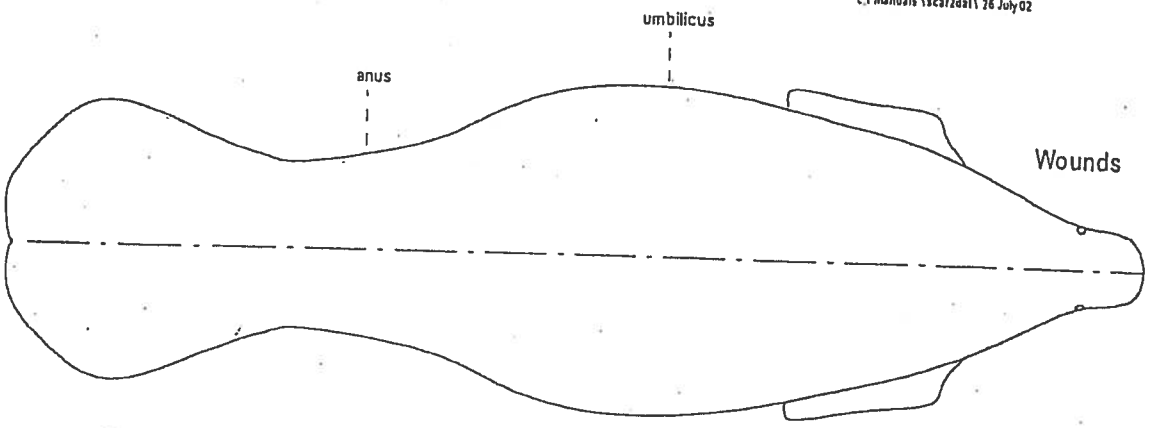
Lucy R. Bukowski
Mary Buford Turnage (FWC intern)

REPORT FILED BY Bukowski

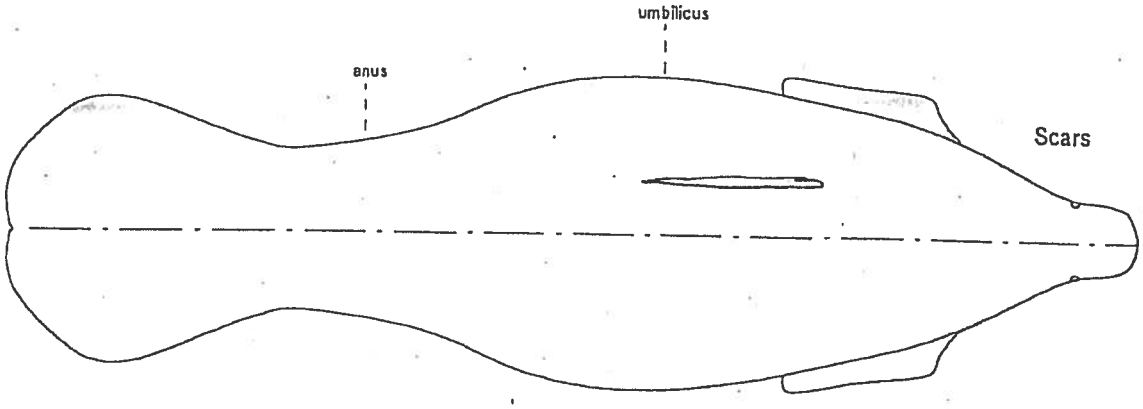
Date 06/15/2019 LRB

Field I.D. MEC19064.

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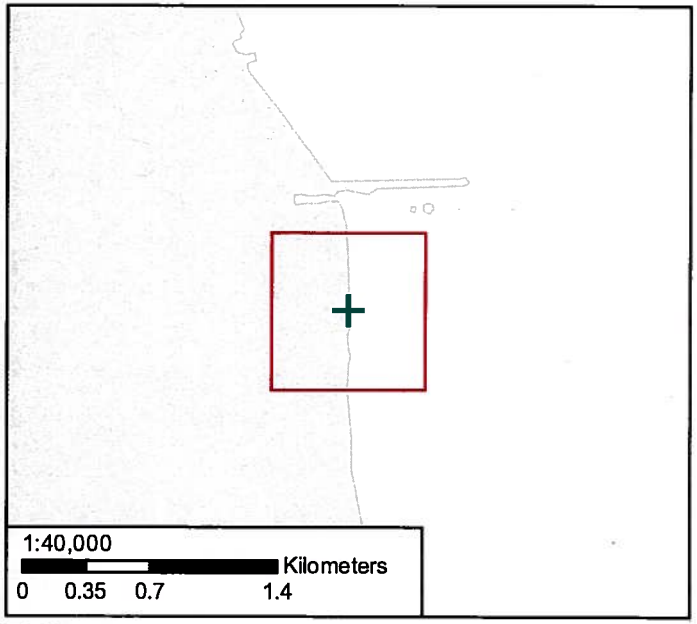
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Length																				
Width																				
Depth																				
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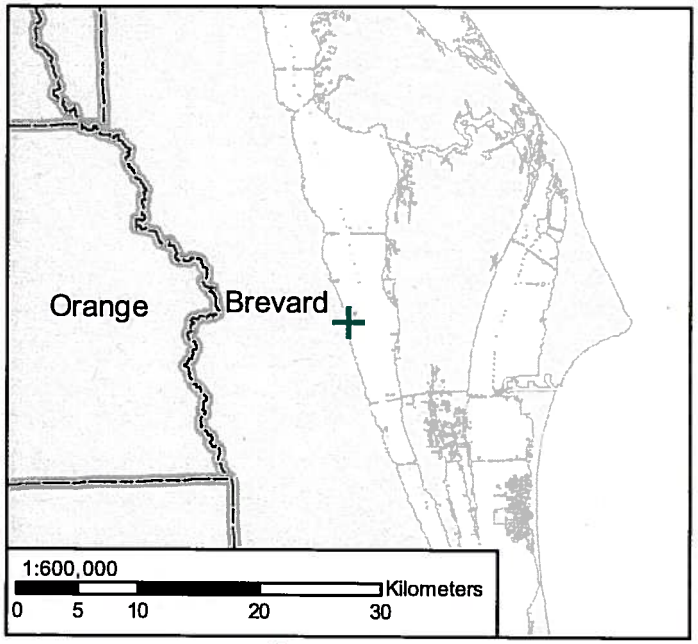


Verified Recovery Location of Manatee Carcass MEC19064

Report Date: 6/12/2019 **Received Date:** 6/15/2019 **Received By:** FWC-LRB Map Created: 11/2/2020







Locality Description:
Cocoa, Brevard
Floating, approximately 30 m SE of 219 Red Fish Lane.

Latitude: 28.46246°N **Longitude:** -80.76164°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19064
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9758, 9919 **FWC District**: Northeast
Sex: Female **Length (cm)**: 279 **Estimated** _____ **Weight (kg)** _____
Date reported: 12 June 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 15 June 2019 **By**: FWC-LRB, FWC Intern- M. B. Turnage
Date necropsied: 15 June 2019 **By**: FWC-LRB, FWC Intern- M. B. Turnage

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 100 m E of 5400 US-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: Missing and/or autolyzed internal organs, scavenging.

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

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 #: **MEC19065**
Date of Report: 2019-Jun-15
Filed By: FWC EC Field Station

FWC Case # 10021 **FWC Region:** NE

Sex: Male **Length:** 233 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jun-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jun-16 **By:** FWC-SMW

DATE NECROPSIED: 2019-Jun-16 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.89031 **N**
County: Volusia **Longitude:** -80.84415 **W**
Waterway: Mosquito Lagoon
Locality description: Oak Hill, grounded approximately 375 m ENE of 623 Riverside Landing Drive.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Luxated rib(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Hemothorax; Hemoabdomen; Torn lung(s); Torn hemidiaphragm(s); Torn parietal pleura; Organ pallor; Torn small intestine; Blood clot in primary airway; Blood-stained ingesta; Congested mesenteries; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, 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. Elastic bungie in colon. Also FWC case number 9930.

Page 1&2	06 NOV 2020
Necropsy Report	06 NOV 2020
Lat/Long	06 NOV 2020

Field ID #: MEC19065

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. MEC19065
RECOVERY DATE 16 June 2019
GENDER Male **TL** 233 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 16 June 2019
CONDITION Moderately Decomposed

HISTORY 15 June 2019, at 1055 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee across from the Riverbreeze boat ramp in the Mosquito Lagoon in Oak Hill, Volusia County. FWC case number 9930 was assigned. The complainant, Jason (407-375-1871), stated that the manatee was back-up with a propeller mark on it and was 6 feet long. At 1104 hrs, LRB requested FWC LE assistance to verify and tow the carcass. LRB also requested assistance from Volusia County Marine Mammal Stranding Team, but no one was available. At 1849 hrs, FWC-Officer Jessica Pelzel reported that she was unable to locate the carcass. **16 June**, at 1043 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding a dead manatee east of the Riverbreeze boat ramp. FWC case number 10021 was assigned. The complainant, Dan Walker (386-265-3195), stated that the manatee was belly-up. SMW received a photograph at 1105 hrs. SMW and Volusia County Marine Mammal Stranding Team-Ashley Ambert arrived at the Riverbreeze boat ramp at 1355 hrs, launched the Key West boat, and located the carcass at 1430 hrs. A field necropsy was completed by 1615 hrs. The remains were left on site.

EXTERNAL Almost all of the epidermis was present but sloughing. The carcass was distended with gas. A small amount of red-tinged fluid exuded from the nares. There was a fresh watercraft-related wound series on the mid dorsal aspect. The series consisted of a wide superficial linear wound across the mid dorsum (wound #1) and four parallel wounds (#2 – 5) perpendicular and cranial to wound #1. Wounds #2, 3, and 5 were superficial, and wound #4 penetrated the dermis. There was a moderate brown algal mat on the dorsal and lateral aspects. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal and mesenteric fat and a small amount of omental fat. There were 150 mL of loose, well-formed blood clots and a small amount of loose GI contents in the abdominal cavity (see photo).

STOMACH The stomach contained 4.5 L of moist, well-chewed, slightly fibrous, yellow to green ingesta (see photo). The ingesta were coated in a thin layer of white mucus. There were blood-stained ingesta at the esophageal inlet. There was a mild infection of live and dead nematodes. The mucosa was unremarkable.

DUODENUM The duodenum contained 900 mL of moist, well-chewed, fibrous, yellow to green ingesta (see photo). There was a mild infection of live nematodes. The mucosa was unremarkable.

JEJUNUM & ILEUM The mesentery was moderately congested. The small intestine contained watery, tan to green fluid mixed with well-chewed, light green to dark green vegetation. There was a tear in the distal small intestine just cranial to the cecum (see photo). The tear margins were rounded. No parasites were grossly observed. The mucosa was unremarkable.

CECUM The cecum contained 150 mL of wet, well-digested, slightly stringy, green to brown digesta (see photo). No parasites were observed. The mucosa was sloughing.

COLON The mesentery was moderately congested. The proximal colon contained wet, poorly formed, moderately digested, slightly stringy, fibrous, green feces. The distal colon contained moist, well-formed, well-digested, slightly fibrous, green to brown feces. There was a 20 cm long piece of white and red elastic bungee material in the distal colon (see photo). No parasites were observed. The mucosa was unremarkable.

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

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

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

GALLBLADDER The gallbladder contained approximately 20 mL of watery, yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The seminal vesicles and testes were small. The epididymides were not examined.

KIDNEYS There was a small amount of perirenal fat. Serosal surfaces were tan to light pink (pallor). On cut surfaces, the cortices were tan and the medullae were light red to dark red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 75 mL of cloudy, light yellow urine. The mucosa was unremarkable.

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

RESPIRATORY SYSTEM The left hemidiaphragm was intact. The left pleural cavity contained 400 mL of watery, red fluid. The right hemidiaphragm was torn due to luxated right rib 11 (see photo) and had bloody tissue and blood clots on its dorsal aspect in association with luxated right ribs 12 and 13 (see photo). The right pleural cavity contained a large (4.9 L) well-formed blood clot and 500 mL of watery, red fluid (see photo). The left lung was white to light pink on serosal surfaces and dark pink on cut surfaces. The primary airway was clear. The right lung was pink on serosal surfaces and dark pink on cut surfaces. The right lung had a full perforation through the caudal medial aspect due to luxated right ribs 11 - 13 (see photo). The primary airway contained two small well-formed blood clots (see photo).

HEAD & NECK REGIONS There was a thatch of poorly chewed seagrass in the mouth (see photo).

SKELETON Right ribs 9 and 10 had transverse fractures at the proximal one-quarter. Right ribs 9 and 10 also had oblique fractures at mid-shaft which tore the parietal pleura. Right ribs 11 - 13 were luxated and tore the parietal pleura, right lung, and hemidiaphragm. Right rib 14 had an oblique fracture at the proximal one-third. Right rib 15 had a partial fracture at the proximal one-third. The fractured and luxated ribs were surrounded by hemorrhagic tissue and well-formed blood clots and were deep to wound #1.

OTHER There was shredded, hemorrhagic tissue on the dorsum deep to wound #1.

PHOTOGRAPHS 2019-06-16_FWC023_6460 through 6487, 6491 through 6505, 6509 through 6513.

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wounds
- Fractured, luxated ribs
- Shredded, hemorrhagic tissue
- Blood clots

- Hemothorax
- Hemoabdomen with loose GI contents
- Torn lung, parietal pleura, hemidiaphragm, small intestine
- Blood clot in airway
- Kidney pallor
- Blood-stained ingesta
- Congested mesenteries
- Seagrass in mouth
- Elastic bungie material in colon

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

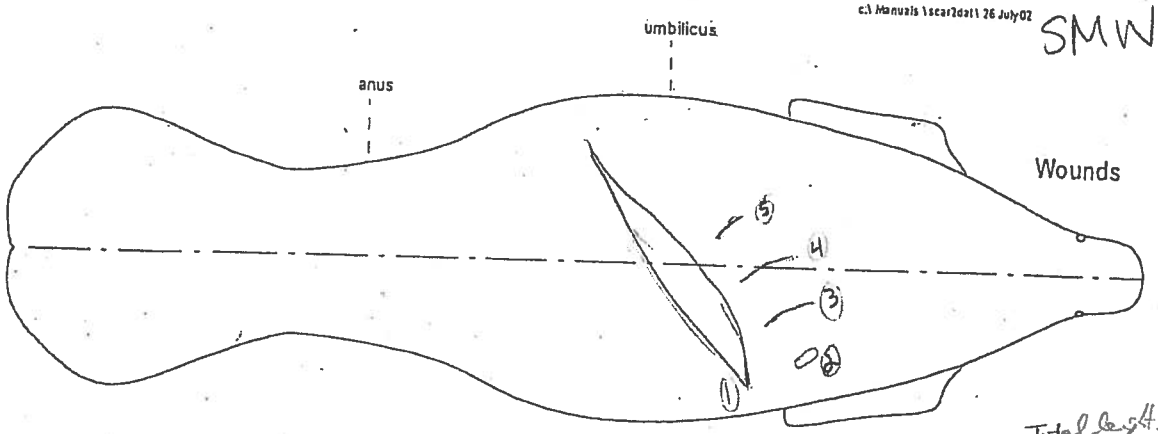
NECROPSY CONDUCTED BY

Sara M. Wappes
Ashley Ambert (VCMMST)

REPORT FILED BY Wappes

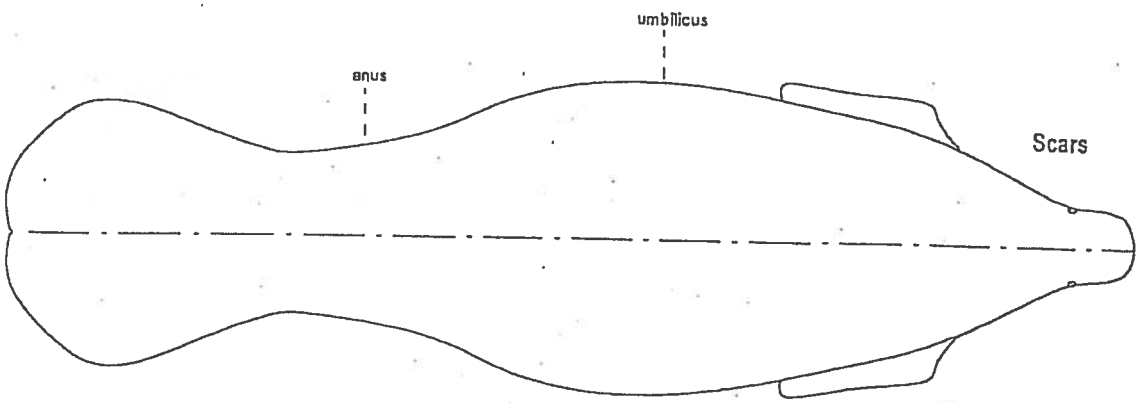
Date 16 JUNE 2019 Field I.D. MEC19065

c:\ Manuals \ scar2dat1 26 July02 SMW



Total length: 233

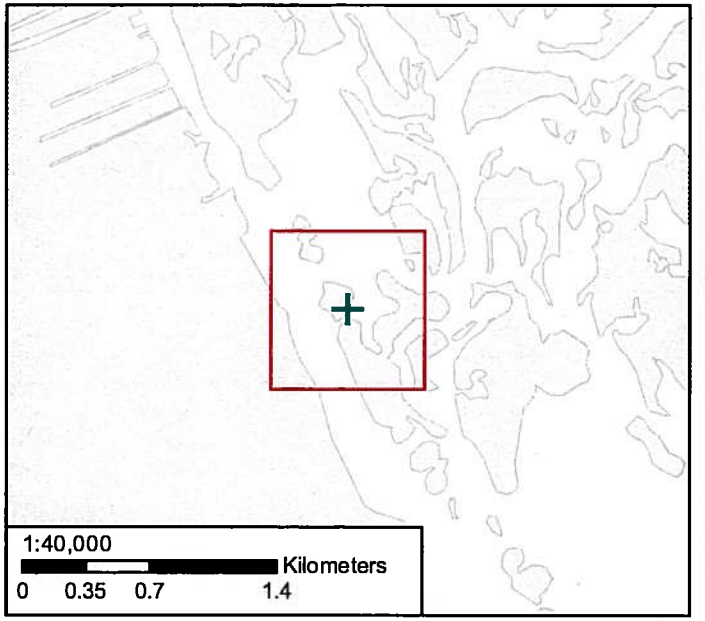
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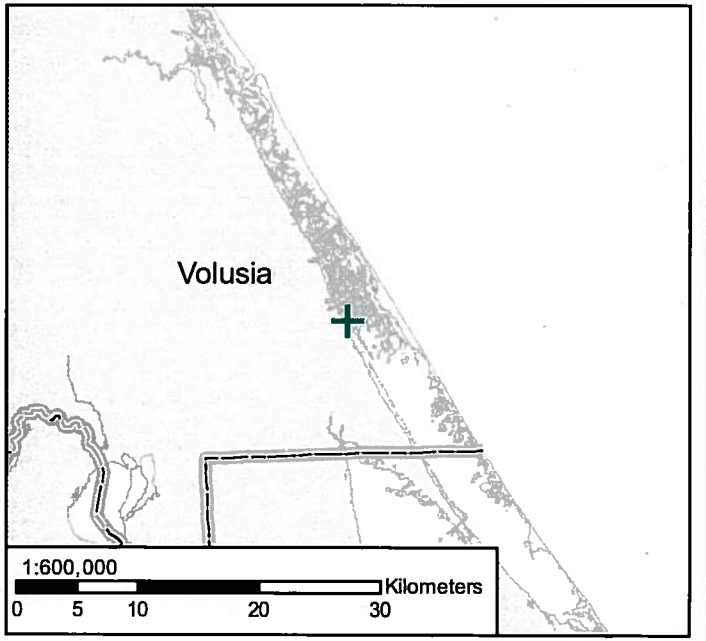


Verified Recovery Location of Manatee Carcass MEC19065

Report Date: 6/15/2019 **Received Date:** 6/16/2019 **Received By:** FWC-SMW Map Created: 11/2/2020







Locality Description:
Oak Hill, Volusia
Grounded, approximately 375 m ENE of 623 Riverside Landing Drive.

Latitude: 28.89031°N **Longitude:** -80.84415°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19065
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9930, 10021 **FWC District**: Northeast
Sex: Male **Length (cm)**: 233 **Estimated** _____ **Weight (kg)** _____
Date reported: 15 June 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 16 June 2019 **By**: FWC-SMW, VCMMST-A. Ambert
Date necropsied: 16 June 2019 **By**: FWC-SMW, VCMMST-A. Ambert

LOCATION INFORMATION: State FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 375 m ENE of 623 Riverside Landing Dr

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: External wound, 4 fractured ribs, 3 luxated ribs, punctured lung, blood clots in pleural and abdominal cavity

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 #: **MEC19067**
Date of Report: 2019-Jul-04
Filed By: FWC EC Field Station

FWC Case # 11394 **FWC Region:** NE

Sex: Female **Length:** 129 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jul-04 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2019-Jul-05 **By:** FWC-WDG
DATE NECROPSIED: 2019-Jul-05 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.38784 **N**
County: Brevard **Longitude:** -80.69608 **W**
Waterway: Sykes Creek
Locality description: Merritt Island, floating approximately 25 m SSE of 335 Inlet Avenue.

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; Meconium; Scavenging; Missing skull.

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. Actual length of the remains was 125 cm.

Page 1&2	04 Dec 2020
Necropsy Report	04 Dec 2020
Lat/Long	04 Dec 2020

Field ID #: MEC19067

MORPHOMETRICS:

Total length:	129 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. MEC19067
RECOVERY DATE 05 July 2019
GENDER Female **TL** 129 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 05 July 2019
CONDITION Badly Decomposed

HISTORY 04 July 2019, at 1814 hrs, FWC on-call biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Sykes Creek, Merritt Island, Brevard County. FWC case number 11394 was assigned. The complainant, Janice (321-432-7590), stated that a small dead manatee was lodged under her dock but had since floated free and was still in the area around other docks. At 1825 hrs, NJG received photo confirmation. At 1832 hrs, NJG forwarded the information to EC Field Station staff. **05 July**, at 0945 hrs, FWC biologist-William D. Greer and FWC intern-Mary Buford Turnage arrived at 345 Inlet Ave, launched a kayak, and recovered the carcass. The carcass was transported to the Brevard County Landfill. A field necropsy was completed by 1052 hrs.

EXTERNAL Approximately 20% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. The dorsal dermis was severely eroded due to decomposition. The fluke margin was partially scavenged. There were rents at the head, urogenital opening, umbilicus, right axilla, and on the dorsal peduncle due to decomposition. A few faint transverse folds were present on the ventrum. The skull was missing. No watercraft-related wounds or scars were observed. Actual length of the remains was 125 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered. Internal organs were missing unless mentioned below. Moist, well-formed, rubbery, dark green meconium was loose in the body cavity (see photo).

LIVER The liver was liquified.

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

RESPIRATORY SYSTEM The right lung remained and was soft, friable, and autolyzed.

HEAD & NECK REGIONS The skull and trachea were missing.

SKELETON The ribs were luxated or sub-luxated and many vertebrae were separated due to decomposition.

PHOTOGRAPHS 2019-07-05_FWC025_9037 through 9047.

SIGNIFICANT FINDINGS

- Missing, autolyzed internal organs
- Missing skull
- Scavenging
- Fetal folds
- Meconium

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

NECROPSY CONDUCTED BY

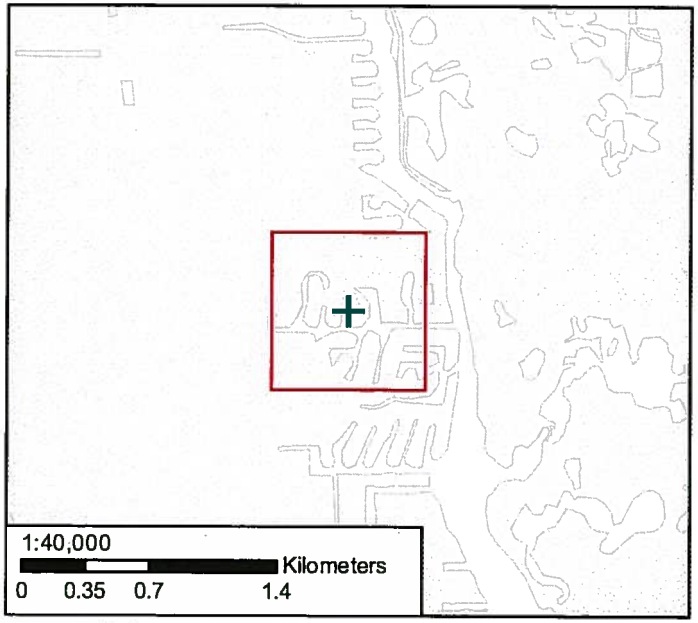
William D. Greer
Mary Buford Turnage (FWC intern)

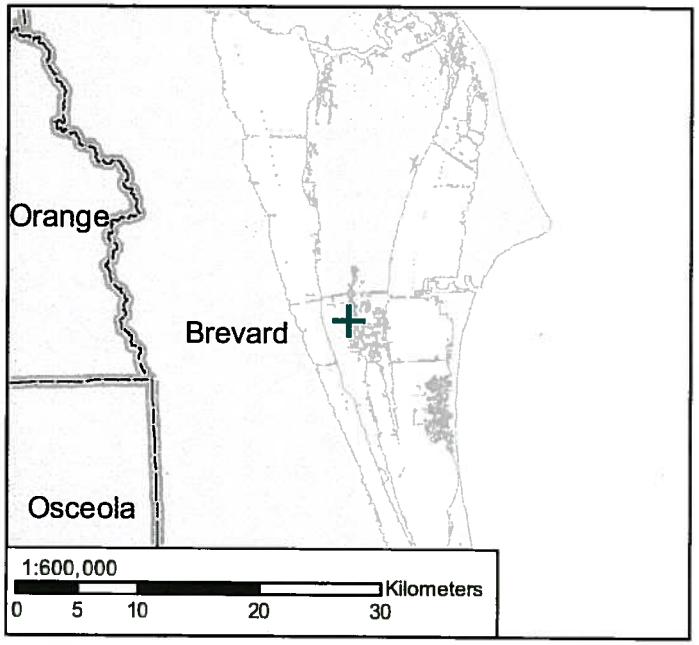
REPORT FILED BY Turnage / Greer

Verified Recovery Location of Manatee Carcass MEC19067

Report Date: 7/4/2019 **Received Date:** 7/5/2019 **Received By:** FWC-WDG Map Created: 12/2/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 25 m SSE of 335 Inlet Avenue.

Latitude: 28.38784°N **Longitude:** -80.69608°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19067
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11394 **FWC District**: Northeast
Sex: Female **Length (cm)**: 129 **Estimated** 125 **Weight (kg)** N/T
Date reported: 04 July 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 05 July 2019 **By**: FWC-WDG, FWC Intern - M. B. Turnage
Date necropsied: 05 July 2019 **By**: FWC-WDG, FWC Intern - M. B. Turnage

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Sykes Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, 25 m SSE of 335 Inlet Ave

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: Too decomposed, autolyzed and missing internal organs and skull.

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: Perinatal evaluation not preformed due to decomposition.

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 #: **MEC19068**
Date of Report: 2019-Jul-11
Filed By: FWC EC Field Station

FWC Case # 11814 **FWC Region:** NE

Sex: Male **Length:** 244 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jul-11 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jul-12 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Jul-12 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.88735 **N**
County: Volusia **Longitude:** -80.80193 **W**
Waterway: Mosquito Lagoon
Locality description: Oak Hill, floating approximately 4 km E of 426 E Halifax Avenue.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Acute; Watercraft wound(s); Fractured skull; Hemorrhagic muscle.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, 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	04 Dec 2020
Necropsy Report	04 Dec 2020
Lat/Long	04 Dec 2020

Field ID #: MEC19068

MORPHOMETRICS:

Total length:	244 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. MEC19068
RECOVERY DATE 12 July 2019
GENDER Male **TL** 244 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 12 July 2019
CONDITION Badly Decomposed

HISTORY 11 July 2019, at 0801 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon, Oak Hill, Volusia County. FWC case number 11814 was assigned. The complainant, Ben Farajallah (386-473-9293), stated that the carcass was bloated and floating belly-up against an embankment. At 0816 hrs, LRB received photo confirmation and coordinates from the complainant. Due to staffing logistics and inclement weather, the recovery and necropsy were postponed until the following day. **12 July**, at 0955 hrs, LRB and FWC biologist-William D. Greer arrived at Riverbreeze boat ramp and launched the Key West boat. At 1100 hrs, the carcass was located and towed to a nearby spoil island. A field necropsy was completed by 1230 hrs. The remains were left onsite.

EXTERNAL Approximately 20% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. There was an eroded watercraft-related wound series on the dorsal cranial aspect which consisted of at least ten parallel propeller wounds. The skull was exposed in Wound #1. Wounds #2 - 10 were superficial. The dorsal dermis was eroded due to decomposition. There was an eroded hole on the right aspect of the head just caudal to the eye. No watercraft-related scars were grossly observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal, omental, and mesenteric fat. Internal organs were missing unless mentioned below.

STOMACH The stomach was torn due to decomposition and contained at least 7.5 L of moist, moderately chewed, fibrous, brown to green ingesta (see photo). The mucosa was autolyzed. There was a mild infection of dead nematodes.

DUODENUM The duodenum contained 1 L of moist, moderately chewed, fibrous, brown to green ingesta (see photo). The mucosa was autolyzed. There was a moderate infection of dead nematodes.

JEJUNUM & ILEUM The proximal small intestine contained a small amount of moist, moderately digested, fibrous, brown ingesta. The distal small intestine contained moist, moderately digested, fibrous, brown ingesta. The mucosa was autolyzed. There was a mild infection of dead trematodes.

CECUM The cecum contained 1 L of moist, moderately digested, fibrous, green to brown digesta (see photo). The mucosa was autolyzed. There was a mild infection of dead trematodes.

COLON The proximal and mid colon contained moist, moderately digested, fibrous, green to brown feces. The distal colon contained moist, well-digested, fibrous, green feces. The mucosa was autolyzed. There was a moderate infection of dead nematodes and trematodes.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was torn due to decomposition and empty of contents. The mucosa was bile-stained.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was torn due to decomposition and empty of contents. The mucosa was gassy.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. No parasites were observed.

HEAD & NECK REGIONS There were transverse fractures along the mid aspect of the right squamosal, transverse fractures along the jugal, and a transverse fracture at both frontal, maxilla, and parietal bones which completely separated the skull into two halves. The fractures were deep to wound #1. There was hemorrhagic tissue surrounding the skull and deep to the wound (see photos).

SKELETON The ribs were luxated and subluxated due to decomposition.

OTHER

PHOTOGRAPHS 2019-07-12_FWC025_9048 through 9074.

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wounds
- Fractured skull
- Hemorrhagic tissue
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Watercraft (Acute)

NECROPSY CONDUCTED BY

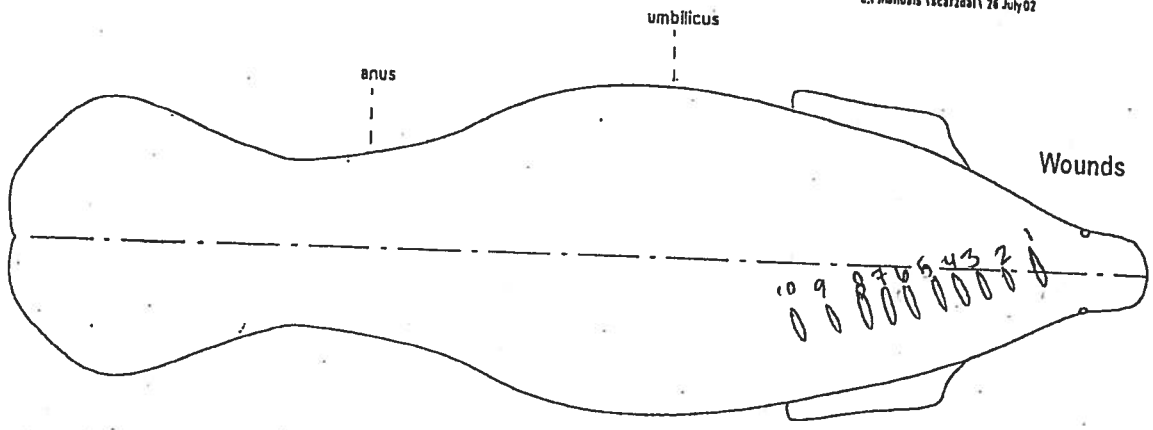
William D. Greer
Lucy R. Bukowski

REPORT FILED BY Bukowski / Greer

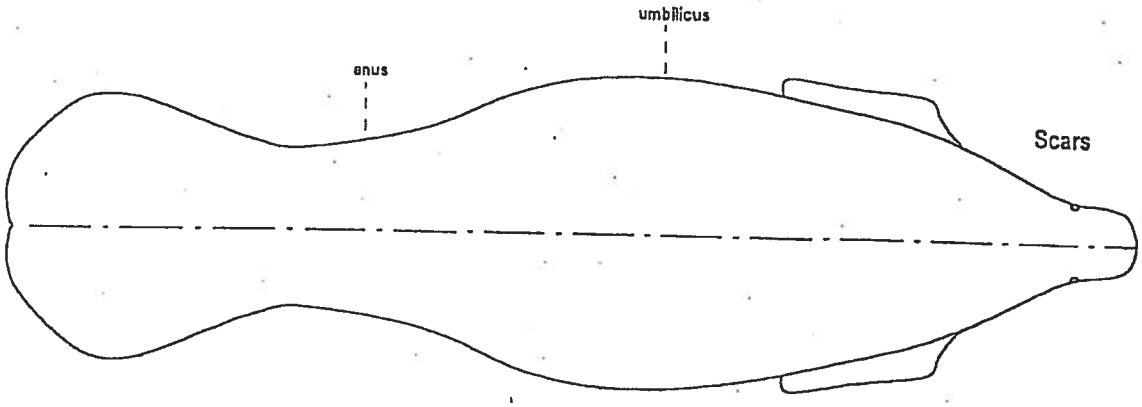
Date 7/12/2019 LRB

Field I.D. MEC1906B

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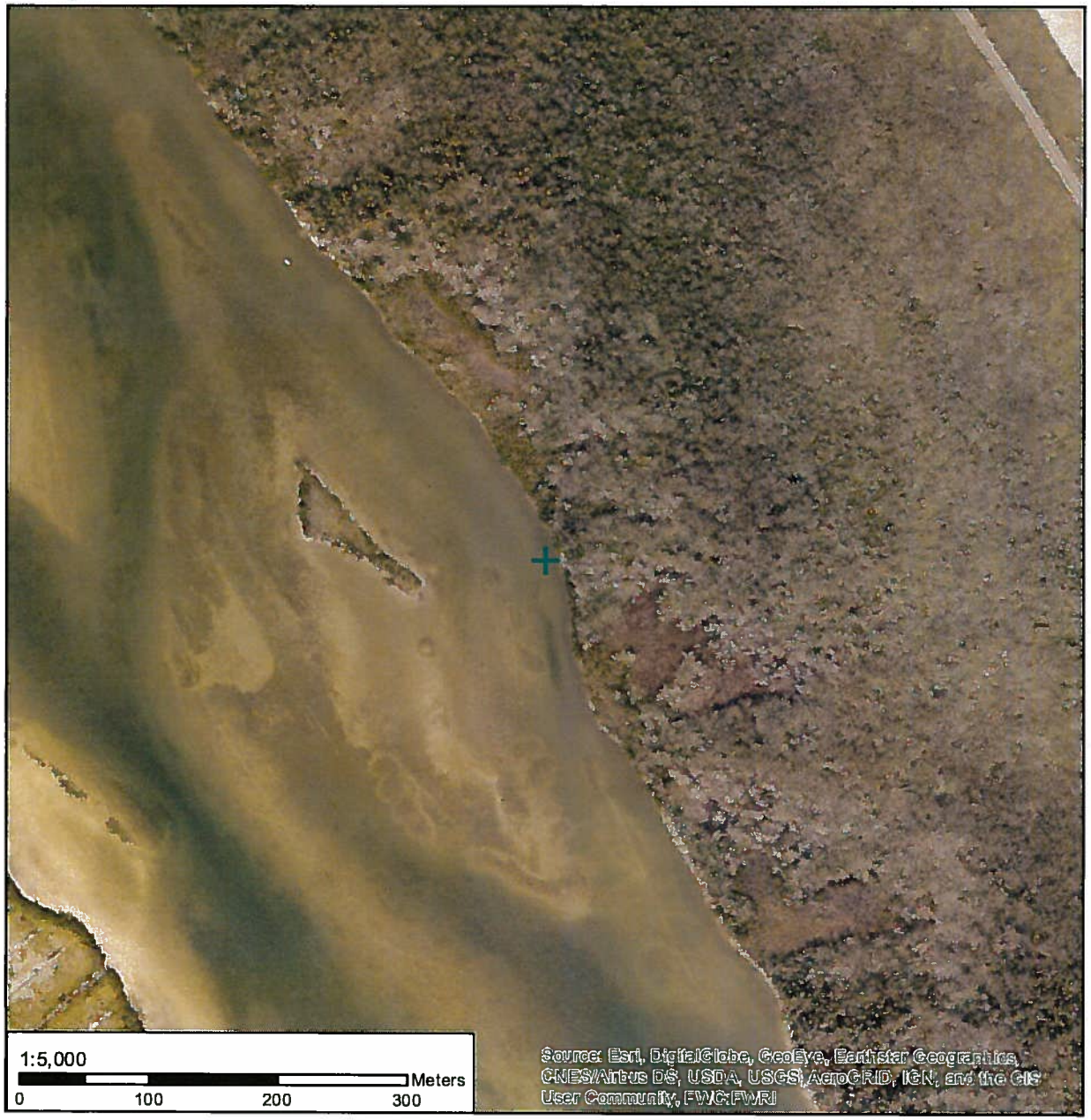
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Width																				
Depth																				
Distance																				

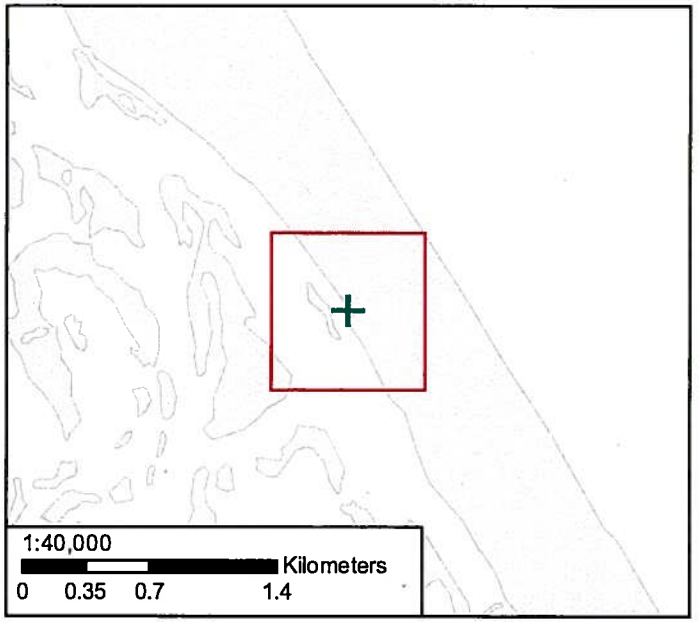


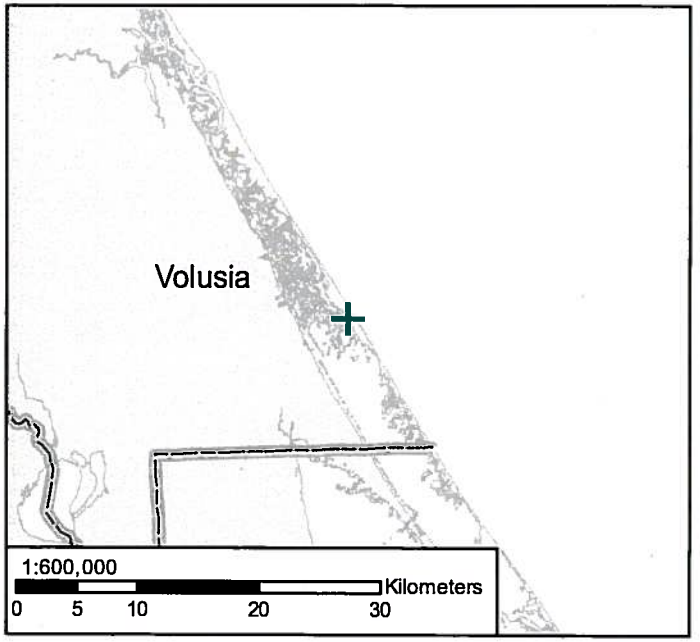
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Verified Recovery Location of Manatee Carcass MEC19068

Report Date: 7/11/2019 **Received Date:** 7/12/2019 **Received By:** FWC-WDG,LRB Map Created: 12/2/2020







Locality Description:
Oak Hill, Volusia
Floating, approximately 4 km E of 426 E Halifax Avenue.

Latitude: 28.88735°N **Longitude:** -80.80193°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19068
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 11814 **FWC District**: Northeast
Sex: Male **Length (cm)**: 244 **Estimated** _____ **Weight (kg)** N/T
Date reported: 11 July 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 12 July 2019 **By**: FWC-WDG, LRB
Date necropsied: 12 July 2019 **By**: FWC-WDG, LRB

LOCATION INFORMATION: State FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 4.0 km E of 426 E Halifax Ave.

Carcass Orientation: Floating

CONDITION: Badly Decomposed

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: Eroded wounds on the cranial aspect, multiple fractures on skull, hemorrhagic tissue surrounding skull, full 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: - **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: Wounds not measured due to decomposition.

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 #: **MEC19069**
Date of Report: 2019-Jul-13
Filed By: FWC EC Field Station

FWC Case # 12007 **FWC Region:** NE

Sex: Male **Length:** 275 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jul-13 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jul-14 **By:** FWC-SMW

DATE NECROPSIED: 2019-Jul-14 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.8581 **N**
County: Brevard **Longitude:** -80.81055 **W**
Waterway: Indian River
Locality description: Oak Hill, floating near a small island approximately 2.3 km SE of 488 East Halifax Avenue.

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.

PHOTOGRAPHS TAKEN: Dorsal, Ventral.

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 259 cm.

Page 1&2	04 Dec 2020
Necropsy Report	04 Dec 2020
Lat/Long	04 Dec 2020

Field ID #: MEC19069

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. MEC19069
RECOVERY DATE 14 July 2019
GENDER Male **TL** 275 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 14 July 2019
CONDITION Badly Decomposed

HISTORY 13 July 2019, at 1804 hrs, FWC on-call biologist-Brandon Bassett (BLB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon near New Smyrna Beach, Volusia County. FWC case number 12007 was assigned. The complainant, Canaveral National Seashore-Officer Mullen, had found the carcass while on patrol. BLB called Officer Mullen but had to leave a message. At 2106 hrs, Officer Mullen called back and provided a verification photograph and location. BLB forwarded the information to FWC EC Field Station staff. **14 July**, at 1030 hrs, FWC biologist-Sara M. Wappes and FWC intern-Mary Buford Turnage arrived at Riverbreeze Park boat ramp and launched the Key West boat. The carcass was located at 1120 hrs, and a field necropsy was completed by 1152 hrs. The remains were left on site.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. All of the dorsal dermis and the ventral dermis of the cranial one-third were missing due to decomposition. The skull and cranial vertebrae were exposed. The fluke margin was eroded. There were rents at the urogenital opening, anus, and lateral to the anus. No watercraft-related wounds or scars were grossly observed. Actual length of the remains was 259 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered or missing. All internal organs were missing.

HEAD & NECK REGIONS NVL.

SKELETON Most vertebrae and all ribs were scattered on the ground near the carcass.

OTHER

PHOTOGRAPHS 2019-07-14_FWC025_9075 through 9083.

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

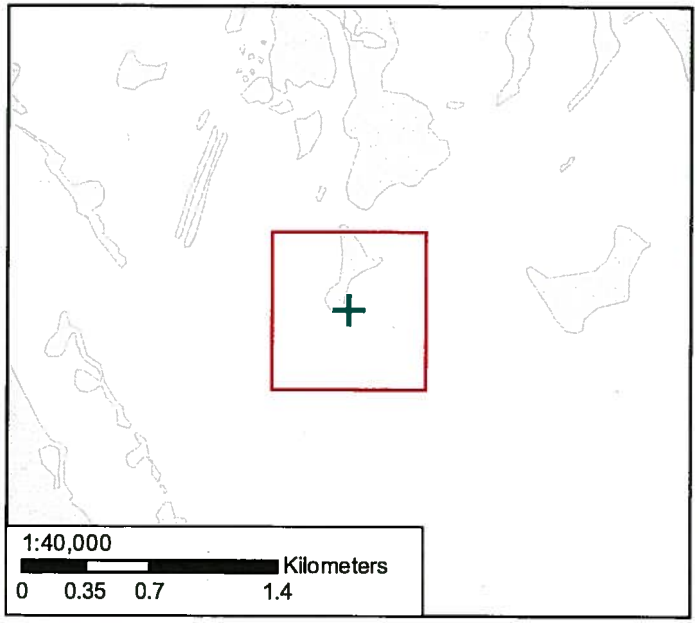
Sara M. Wappes
Mary Buford Turnage (FWC intern)

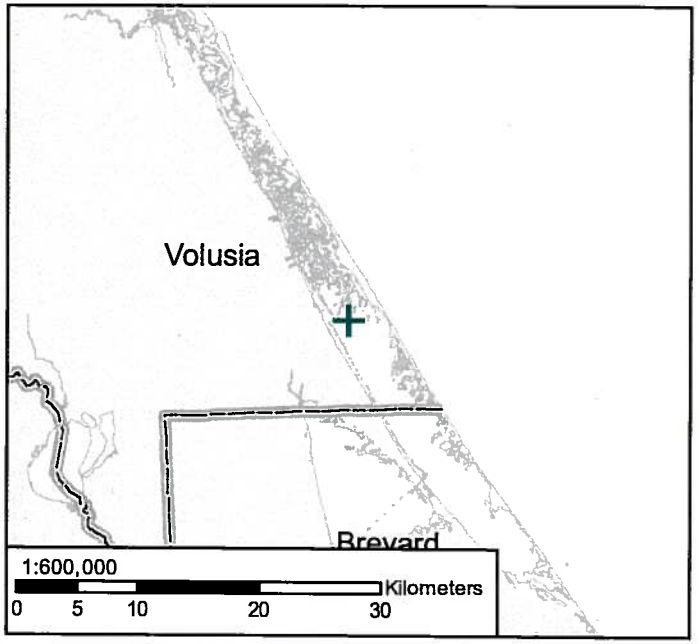
REPORT FILED BY Wappes

Verified Recovery Location of Manatee Carcass MEC19069

Report Date: 7/13/2019 **Received Date:** 7/14/2019 **Received By:** FWC-SMW Map Created: 12/2/2020







Locality Description:
Oak Hill, Brevard
Floating, near a small island approximately 2.3 km SE of 488 East Halifax Avenue.

Latitude: 28.8581°N **Longitude:** -80.81055°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19069
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12007 **FWC District**: Northeast
Sex: Male **Length (cm)**: 259 **Estimated** 275 **Weight (kg)** N/T
Date reported: 13 July 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 13 July 2019 **By**: FWC-SMW, FWCINTERN-MBT
Date necropsied: 13 July 2019 **By**: FWC-SMW, FWCINTERN-MBT

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Oak Hill, approximately 2.3km SE of 488 East Halifax Ave

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, most bones 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: - **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 #: **MEC19070**
Date of Report: 2019-Jul-15
Filed By: FWC EC Field Station

FWC Case # 12187 **FWC Region:** NE

Sex: Female **Length:** 275 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jul-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jul-16 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Jul-16 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.62356 **N**
County: Brevard **Longitude:** -80.79377 **W**
Waterway: Indian River
Locality description: Titusville, floating approximately 75 m SSE of the southernmost building at 1 Max Brewer Memorial Parkway.

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); Remodeled rib; Adhered lung; Resolving blood clots; Macroalgae in GI tract, mouth; Congested urinary bladder mucosa.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case numbers 12108 and 12498.

Page 1&2	04 Dec 2020
Necropsy Report	04 Dec 2020
Lat/Long	04 Dec 2020

Field ID #: MEC19070

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. MEC19070
RECOVERY DATE 16 July 2019
GENDER Female **TL** 275 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 16 July 2019
CONDITION Badly Decomposed

HISTORY 15 July 2019, at 0628 hrs, FWC on-call biologist-Brandon Bassett (BLB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Titusville, Brevard County. FWC case number 12108 was assigned. The complainant, Jane (301-667-0868), said that the carcass was floating along the rocks on the SE side of the Max Brewer bridge causeway. Jane provided a photograph of the carcass. BLB requested FWC LE assistance, but no officers were available. Dispatch stated that the first available officer would be sent. BLB forwarded the information to FWC EC Field Station staff. At 0813 hrs, FWC biologist-Sara M. Wappes (SMW) called Dispatch to cancel the officer request and was told FWC Officer-Jeff Luce had already been dispatched by land. SMW requested that Officer Luce secure the carcass. At 0852 hrs, Officer Luce secured the carcass to the rocks near the bridge. At 1000 hrs, SMW and FWC intern-Mary Buford Turnage (MBT) arrived at the causeway and kayaked/walked the carcass to the Parrish Park boat ramp. At 1045 hrs, when SMW and MBT tried to load the carcass, the Ezy-Lift failed. SMW called Dispatch and requested FWC LE assistance to tow the carcass, but no officers or boats were available. At 1145 hrs, SMW and MBT secured the carcass to the dock and left for a rescue in Melbourne Beach (REC1905). **16 July**, at 0653 hrs, BLB received a text alert from Dispatch regarding a dead manatee in Titusville, Brevard County. FWC case number 12187 was assigned. The complainant, Joe Burdzy (321-614-1711), stated there was a dead manatee tied to a dock at Parrish Park boat ramp. FWC biologist-William D. Greer (WDG) informed BLB that staff would recover the carcass later that morning. At 0945 hrs, SMW, MBT, and WDG arrived at the Parrish Park boat ramp and launched the Key West boat. The carcass was towed to a nearby secluded shoreline where a necropsy was completed by 1245 hrs. The remains were left on site. **21 July**, at 0844 hrs, SMW received a text alert from Dispatch regarding the carcass. FWC case number 12498 was assigned. The complainant, Andrew Deardorff, stated that the carcass was badly decomposed and missing its head.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was distended with gas. There was one healing watercraft-related wound pattern on the right lateral aspect consisting of two eroded mostly healed propeller wounds and two well-healed propeller scars. There was a minimum of five well-healed watercraft-related scar patterns on the dorsum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal and mesenteric fat and moderate omental fat. There were loose feces in the body cavity (see photo).

STOMACH The stomach contained 13.2 L of moist, stringy, well-chewed, light green to brown ingesta mixed with red and yellow macroalgae (see photos). The ingesta were coated in a thin layer of pink mucus. There was a mild infection of dead nematodes. The mucosa was unremarkable.

DUODENUM The duodenum contained 2 L of wet, stringy, well-chewed, light green to brown ingesta mixed with yellow macroalgae (see photo). No parasites were observed. The mucosa was unremarkable.

JEJUNUM & ILEUM The proximal small intestine contained wet, well-chewed, fibrous, light green to brown ingesta. No parasites were observed. The distal small intestine contained a small amount of wet, well-chewed, fibrous, light green to brown ingesta. There was a mild infection of dead trematodes. The mucosa was autolyzed throughout.

CECUM The cecum contained 2.9 L of moist, moderately digested, fibrous, stringy, light green to brown digesta (see photo). There was a moderate infection of dead trematodes. The mucosa was sloughing.

COLON The colon contained wet, poorly formed, fibrous, moderately digested, brown feces. There was a moderate infection of dead trematodes in the proximal colon. The mucosa was autolyzed. There was a post-mortem tear in the distal colon (see photo).

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 was missing due to decomposition.

REPRODUCTIVE There was moderate reproductive fat. The uterine horns were contracted. The ovaries were small and contained numerous fluid-filled follicles (maximum diameter 0.8 cm).

KIDNEYS The kidneys were soft, friable, and autolyzed.

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

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 caudal one-third of the right lung was adhered to the parietal pleura at remodeled right rib 11 (see photos). The right lung primary airway contained a mild infection of dead trematodes. There were small resolving blood clots in the right pleural cavity (see photo).

HEAD & NECK REGIONS There was a small thatch of poorly chewed *Caulerpa* in the mouth.

SKELETON Right rib 11 was remodeled at mid-shaft (see photos).

PHOTOGRAPHS 2019-07-16_FWC025_9096 through 9118, 9121 through 9138.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Healing watercraft wounds
- Congested urinary bladder mucosa
- Remodeled rib
- Adhered lung
- Resolving blood clots
- Macroalgae in mouth, GI tract

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

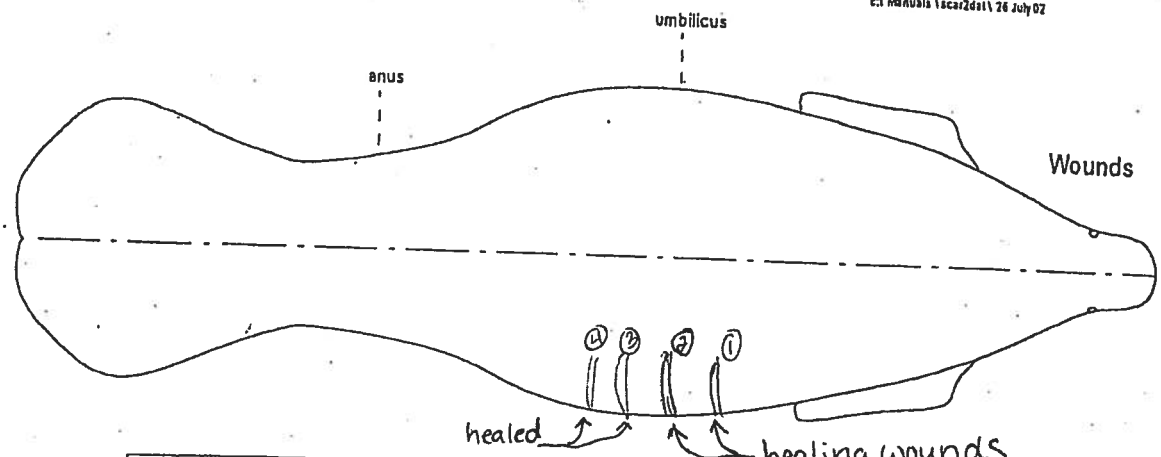
William D. Greer
Sara M. Wappes
Mary Buford Turnage (FWC intern)

REPORT FILED BY Bukowski / Wappes

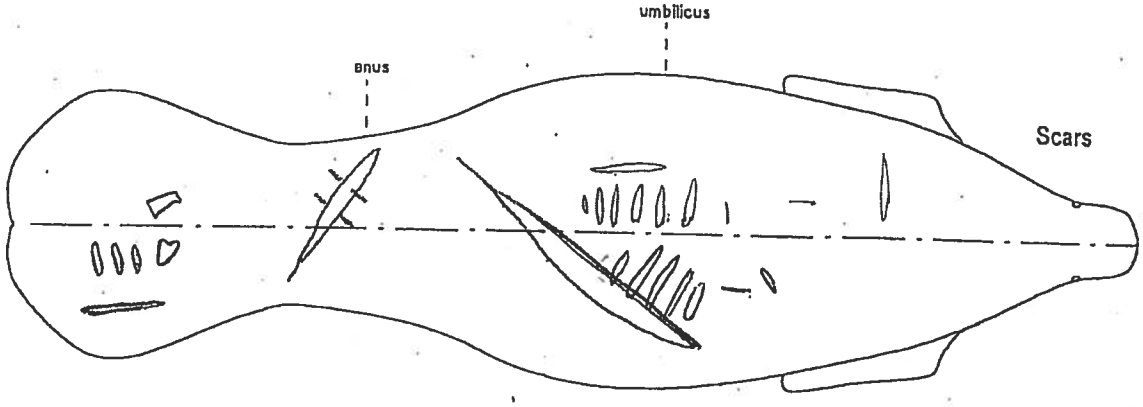
Date 16 July 2019 SMW

Field I.D. MEC19070

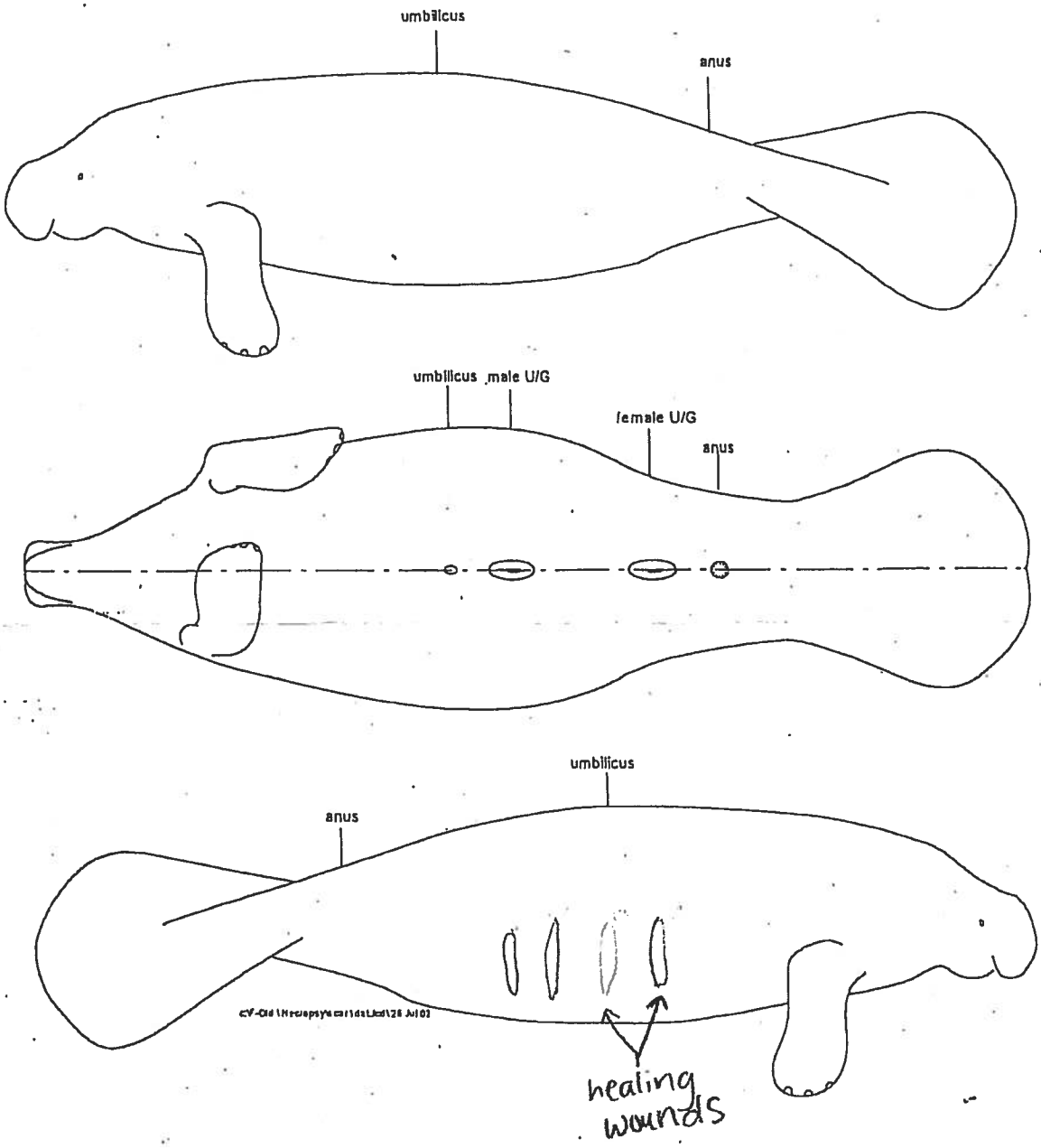
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Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

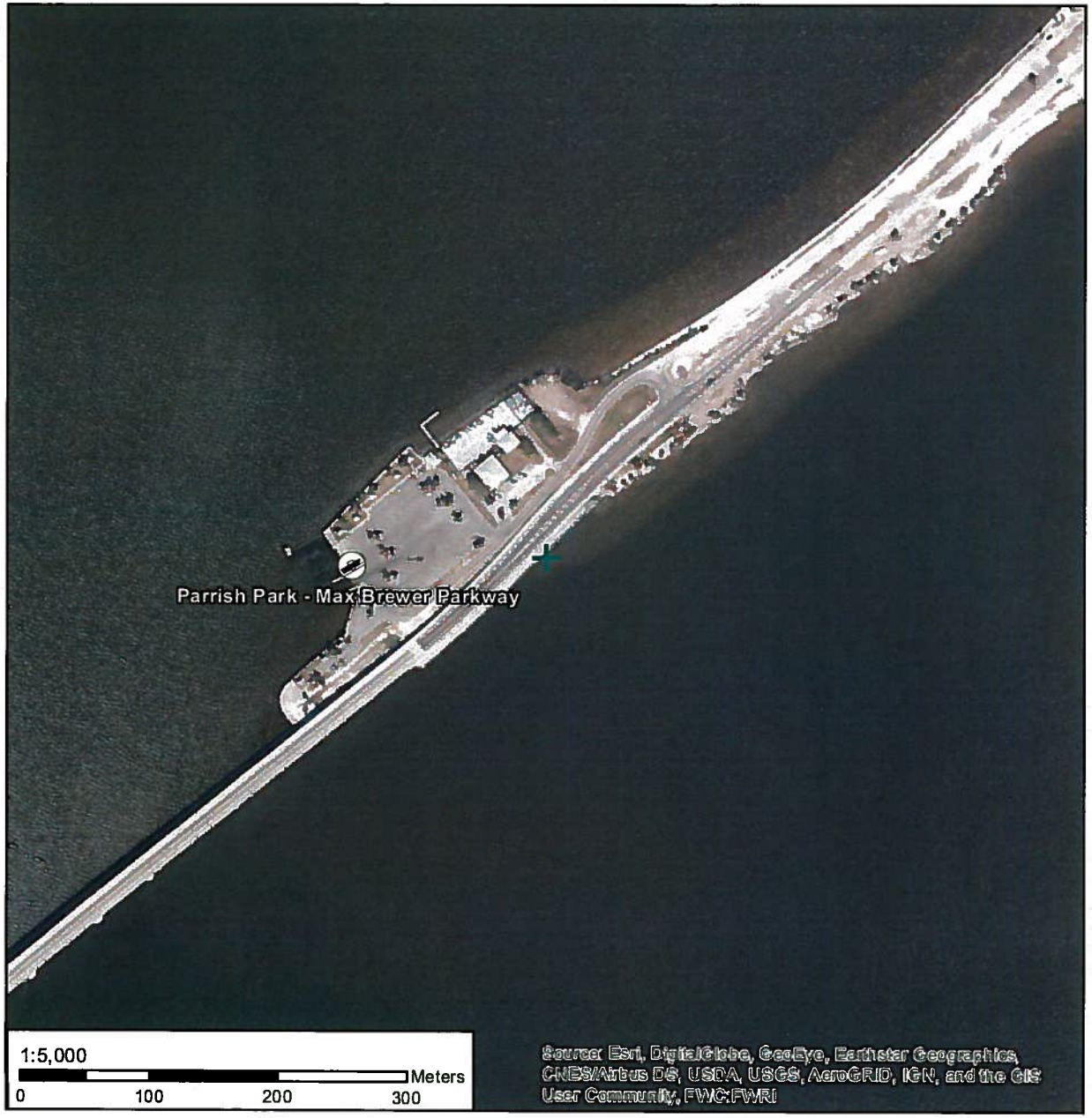


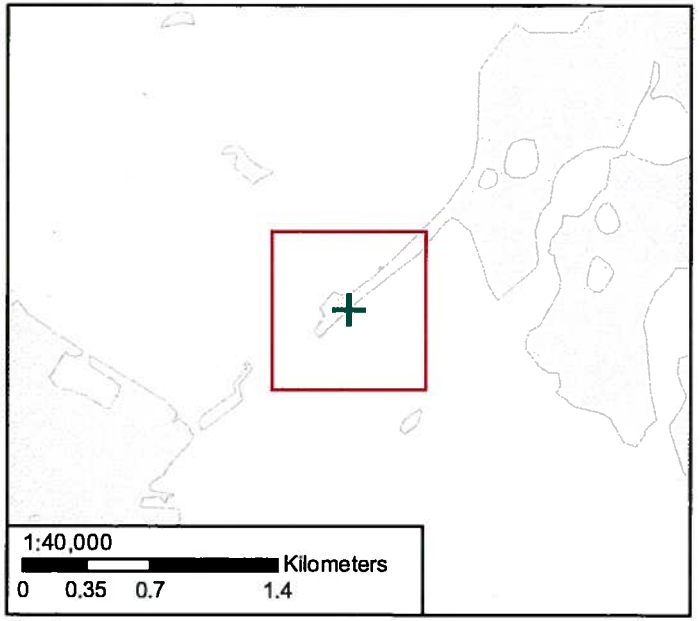
FIELD I.D. MEC19070

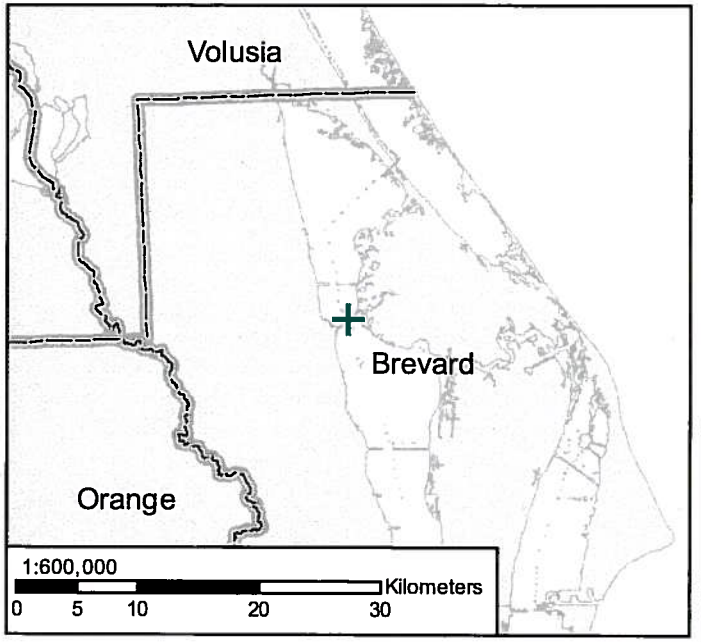


Verified Recovery Location of Manatee Carcass MEC19070

Report Date: 7/15/2019 **Received Date:** 7/16/2019 **Received By:** FWC-WDG,SMW Map Created: 12/2/2020







Locality Description:
Titusville, Brevard
Floating, approximately 75 m SSE of the southernmost building at 1 Max Brewer Memorial Parkway.

Latitude: 28.62356°N **Longitude:** -80.79377°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19070
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12108, 12187 **FWC District**: Northeast
Sex: Female **Length (cm)**: 275 **Estimated** _____ **Weight (kg)** N/T
Date reported: 15 July 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 16 July 2019 **By**: FWC-WDG, SMW and FWC INTERN-MBT
Date necropsied: 16 July 2019 **By**: FWC-WDG, SMW and FWC INTERN-MBT

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 75 m SSE of southernmost building of 1 Max Brewer Memorial Parkway.
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: Healing wound series on right lateral aspect, remodeled rib associated with wound, lung tears and adhesion to body wall associated with wound, tear in distal colon, loose GI contents in body cavity.

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 #: **MEC19071**
Date of Report: 2019-Jul-24
Filed By: FWC MMPL

FWC Case #
FWC Region: NE

Sex: Female **Length:** 252 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jul-24 **By:** Citizen to FWC-LRB
DATE COLLECTED: 2019-Jul-24 **By:** FWC-LRB,WDG
DATE NECROPSIED: 2019-Jul-25 **By:** MMPL-MdW,BLB,BDB,SMT,ALP

LOCATION:
State: FL **Latitude:** 28.22297 **N**
County: Brevard **Longitude:** -80.62099 **W**
Waterway: Banana River
Locality description: Satellite Beach, floating approximately 1.27 km NW of the Manatee Cove Boat Ramp on Patrick Air Force Base.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Fractured rib(s); Fractured vertebra(e); Luxated rib(s); Vertebral separation(s); Shredded muscle; Torn muscle; Hemorrhagic muscle; Hemoabdomen; Hemothorax; Blood clots; Torn lung(s); Torn hemidiaphragm(s); Torn parietal pleura; Wet lung(s); Dark line kidney(s);Bloody nares, eyes; Torn colon; Hemorrhagic lung parenchyma; Fluid in airways; Congested mesenteries, urinary bladder mucosa; Petechiae colon mesentery; Vegetation in mouth.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Depleted fat(s); Macroalgae in GI tract.

Page 1&2	04 Dec 2020
Necropsy Report	04 Dec 2020
Lat/Long	04 Dec 2020

Field ID #: MEC19071

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:	0.5 cm	1.8 cm		
Outer Blubber Thickness:	0.6 cm	0.3 cm	**Abdominal Fat Thickness:**	0.4 cm
Inner Blubber Thickness:	0.2 cm	0.5 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. MEC19071
RECOVERY DATE 24 July 2019
GENDER Female **TL** 252 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 25 July 2019
CONDITION Badly Decomposed

HISTORY 24 July 2019, at 0804 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a call on the EC Field Station office line regarding a dead manatee in the Banana River near Patrick Air Force Base, Brevard County. The complainant, Bennett Stein (321-591-0724), stated that the carcass was 5 feet long, back-up with the flippers folded and drifting north. At 0831 hrs, LRB received a photo of the carcass. At 0832 hrs, FWC biologist-William D. Greer (WDG) contacted FWC NE Dispatch-Orlando to request officer assistance to tow the carcass, but no officers were available. At 0930 hrs, LRB and WDG launched the Key West boat from the Patrick Air Force Base Marina, located the carcass at 1010 hrs, and towed it to the boat ramp. The carcass was loaded via Ezy-Lift at 1055 hrs and transported to the MMPL arriving at 1330 hrs.

EXTERNAL All of the epidermis was present. Bloody fluid and foam exuded from the nares. The eyes were bloody. There was a fresh superficial wide linear wound on the mid dorsum. The caudal ventrum was distended. There was a moderate green algal mat on the dorsal and lateral aspects. There was a minimum of one well-healed watercraft-related scar pattern on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal, mesenteric, and omental fat. The abdomen contained 2 L of bloody, dark red fluid and 300 mL of loose, well-formed blood clots.

STOMACH The stomach contained 8 L of moist, well-chewed, stringy, fibrous, brown macroalgae and pasty soft, green to light grey macroalgae. The ingesta were coated with a thin layer of tan mucus. The mucosa was discolored dark grey around the esophageal inlet and was otherwise tan. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 3 L of moist, well-chewed, stringy, fibrous, brown macroalgae and pasty soft, green to light grey macroalgae. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The small intestine contained a moderate amount of wet, well-chewed, stringy, fibrous, brown macroalgae and pasty soft, green to light grey macroalgae. The mucosa was sloughing. No parasites were grossly observed.

CECUM The cecum contained 2 L of moist, well-chewed, stringy, fibrous, brown macroalgae and pasty soft, green to light grey macroalgae. The mucosa was sloughing. The wall had prominent lymph nodules. No parasites were observed.

COLON The mesentery was severely congested and had petechiae. The colon serosa was dark grey discolored. The proximal colon had one 4.5 cm diameter tear at 165 cm caudal to the cecum, and one 2.5 cm diameter tear at 400 cm caudal to the cecum. The tears were surrounded by loose, well-formed blood clots and the tear margins were rounded. The proximal colon contained a large amount of moist, poorly formed, moderately digested, stringy, leafy, light grey to green and brown feces including macroalgae. The mucosa was tan and sloughing. The mid- and distal colon contained a large amount of moist, poorly formed, well-digested, stringy, light grey to green and brown feces. The mucosa was black and sloughing. The wall had prominent lymph nodules 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. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained a small amount of viscous, cloudy, yellow 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. The ovaries had numerous fluid-filled follicles (maximum diameter 0.5 cm).

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

URINARY BLADDER The bladder contained 70 mL of slightly cloudy, light yellow urine. The mucosa was moderately congested. An ELISA toxicology sample was collected.

HEART There was abundant gassy epicardial fat. The right ventricle was dark red discolored. Otherwise, valves and chambers were unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was intact. The right hemidiaphragm had four tears through the mid aspect of the caudal two-thirds. The cranial tear measured 6.0 x 0.5 cm and was associated with luxated right rib 9. The next tear measured 12.2 x 1.1 cm and was associated with luxated right rib 10. The next tear measured 16.6 x 8.4 cm and was associated with fractured right ribs 11 and 12. The caudal tear measured 8.4 x 0.9 cm and was associated with fractured right rib 13. The pleural cavities were connected through a separation between T11 and T12. The left pleural cavity contained 100 mL of bloody fluid and 200 mL of loose, well-formed blood clots. The right pleural cavity contained 1 L of bloody fluid and 2.5 L of loose, well-formed blood clots. The right lung had two tears (on the dorsal aspect) and four full perforations between the medial aspect of the mid one-third and the lateral aspect of the caudal one-third, which were associated with trauma to right ribs 9-14. The tears and perforations were surrounded by loose, well-formed blood clots and hemorrhagic lung parenchyma. The lungs were pink, red, and light purple on serosal surfaces, and pink to red and slightly wet on cut surfaces. The airways contained a moderate amount of cloudy, red-tinged fluid. There was a moderate infection of dead trematodes. The mucosa was pink to dark pink. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a large thatch of poorly chewed hairy green macroalgae in the mouth. An ELISA toxicology sample was collected. There was a moderate infection of dead trematodes in the trachea. The mucosa was pink.

SKELETON Right ribs 9 and 10 were luxated and the heads tore the parietal pleura, lung, and hemidiaphragm. Right rib 11 had a comminuted fracture at mid-shaft that tore the parietal pleura, lung, and hemidiaphragm. Right ribs 12 and 13 had oblique fractures at mid-shaft that tore the parietal pleura, lung, and hemidiaphragm. Right rib 14 had a comminuted transverse fracture at mid-shaft that did not tear the parietal pleura but was associated with a lung tear. Right rib 15 had a closed transverse fracture at the proximal one-third. There were separations between T9 and T10, between T10 and T11 and between T11 and T12. T9 and T10 were shattered. The rib and vertebral trauma was deep to wound #1 and was surrounded by loose, well-formed blood clots and torn, shredded, hemorrhagic tissue.

OTHER There was shredded, hemorrhagic tissue on the mid-dorsum deep to wound #1.

PHOTOGRAPHS 2019-07-25_FWC047_1626, 1631 through 1638, 1640 through 1643, 1650 through 1652,

1660, 1668, 1679 through 1688, 1690 through 1695, 1698 through 1706, 1708.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wound
- Bloody nares, eyes
- Fractured ribs, vertebrae
- Luxated ribs
- Vertebral separations
- Blood clots
- Shredded, torn, hemorrhagic tissue
- Hemoabdomen, -thorax
- Torn lung, hemidiaphragm, colon, parietal pleura
- Hemorrhagic lung parenchyma
- Wet lungs
- Fluid in airways
- Congested mesenteries, urinary bladder mucosa
- Petechiae colon mesentery
- Dark line kidneys
- Vegetation in mouth
- Depleted fat
- Macroalgae in GI tract

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

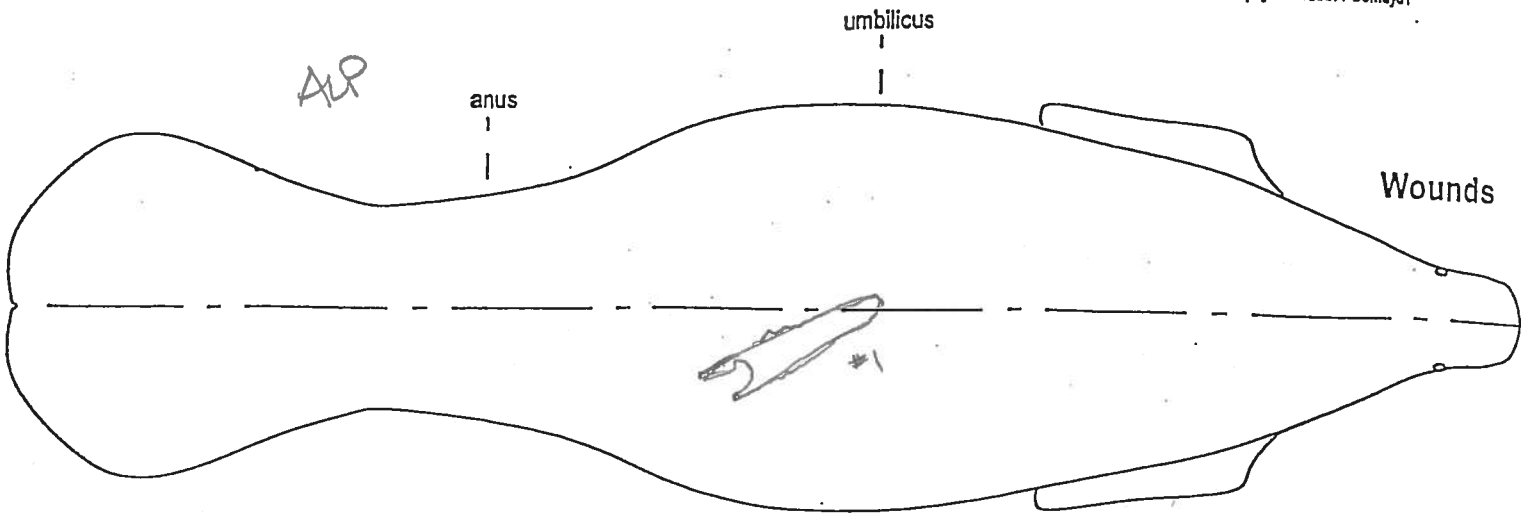
NECROPSY CONDUCTED BY

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

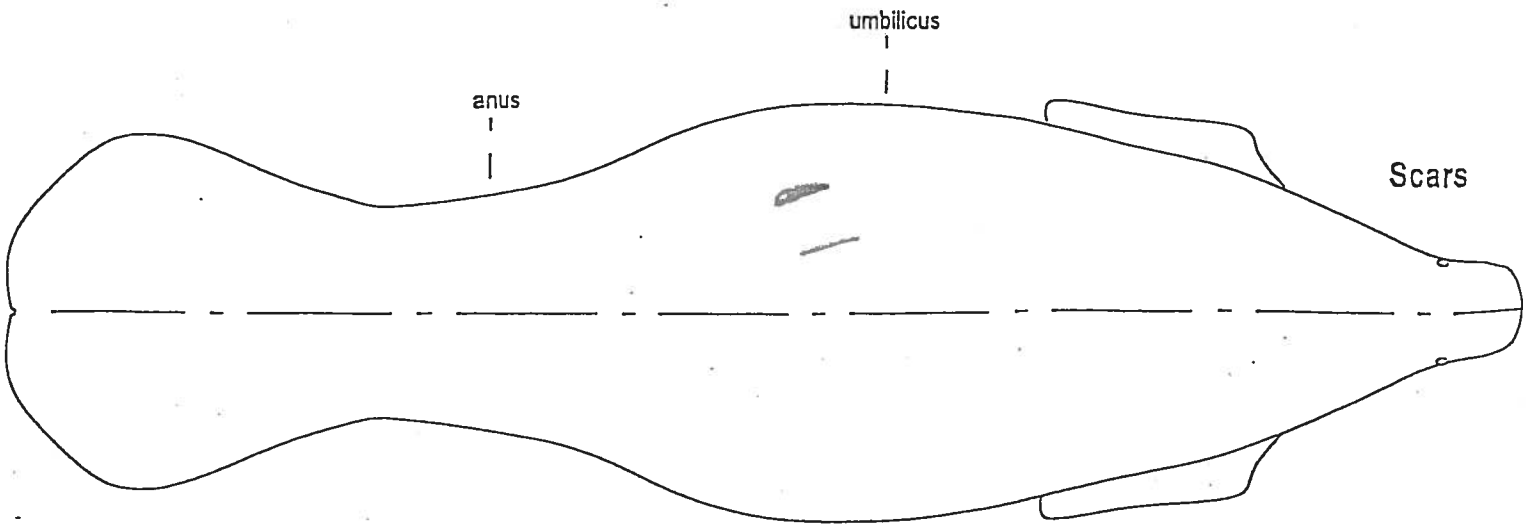
REPORT FILED BY de Wit

Date 25 Jul 2019 Field I.D. MFC19071

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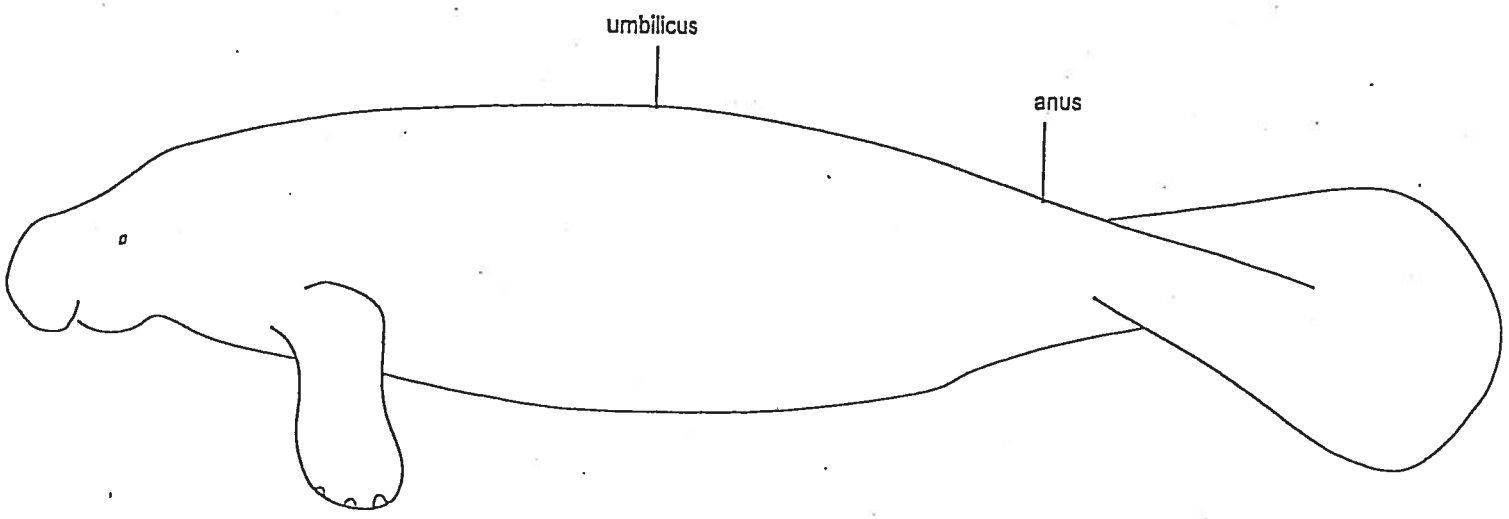


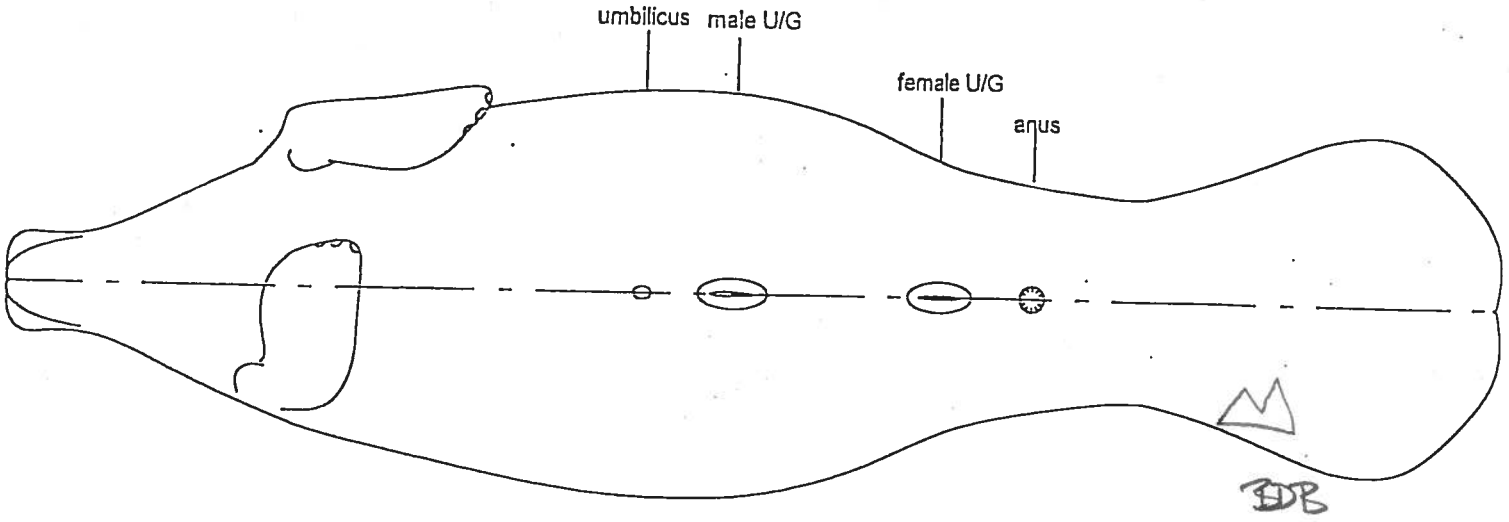
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	37.2																			
Width	6.9																			
Depth	0																			
Distance																				

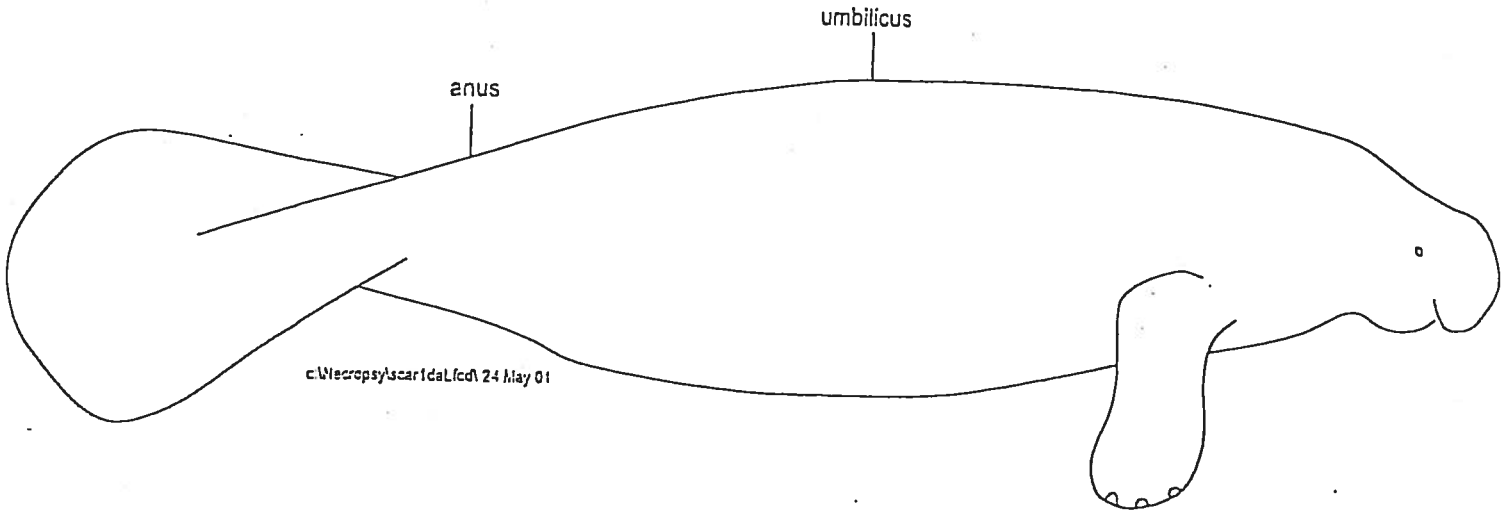


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FIELD I.D. MEC19071

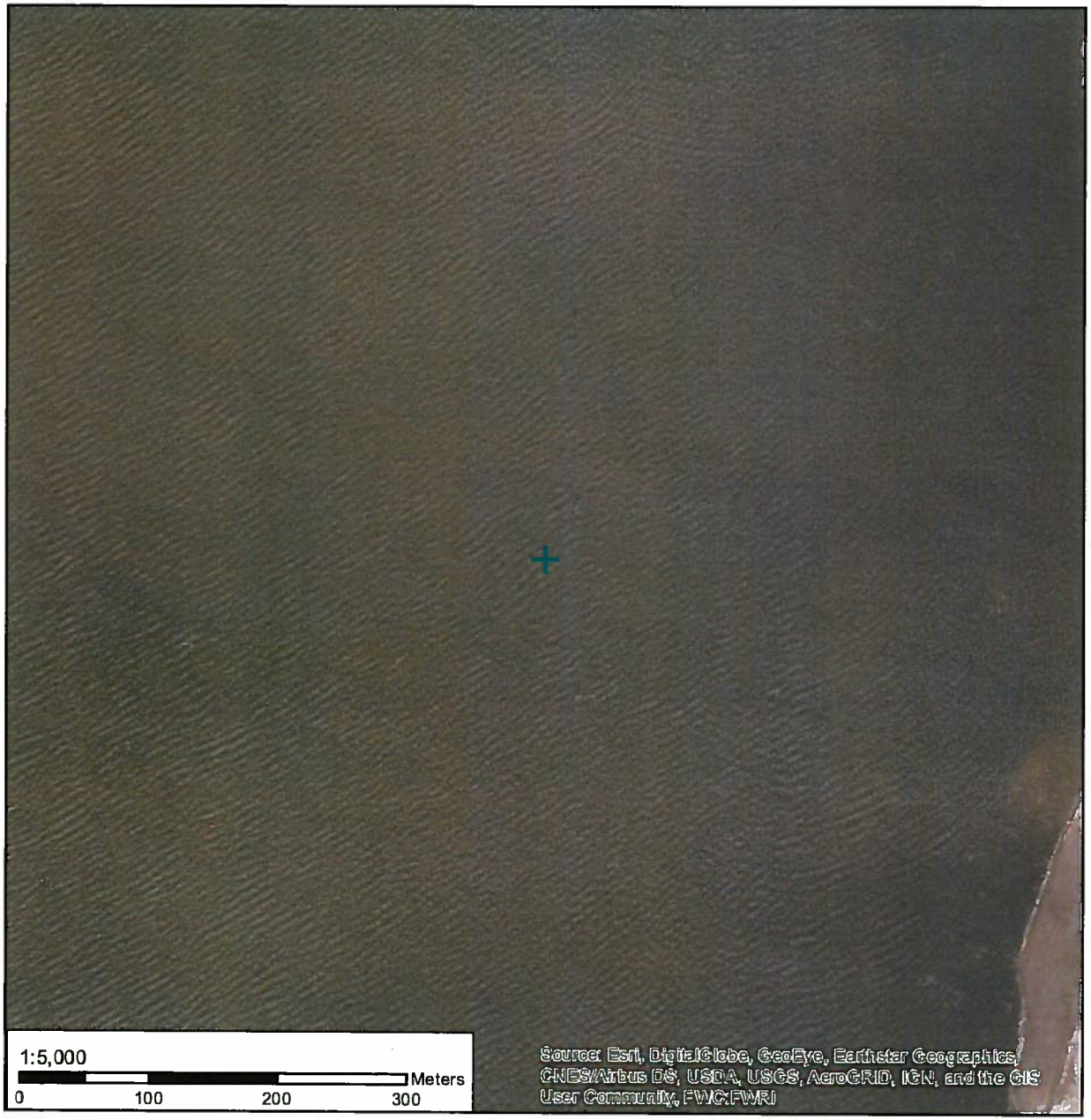




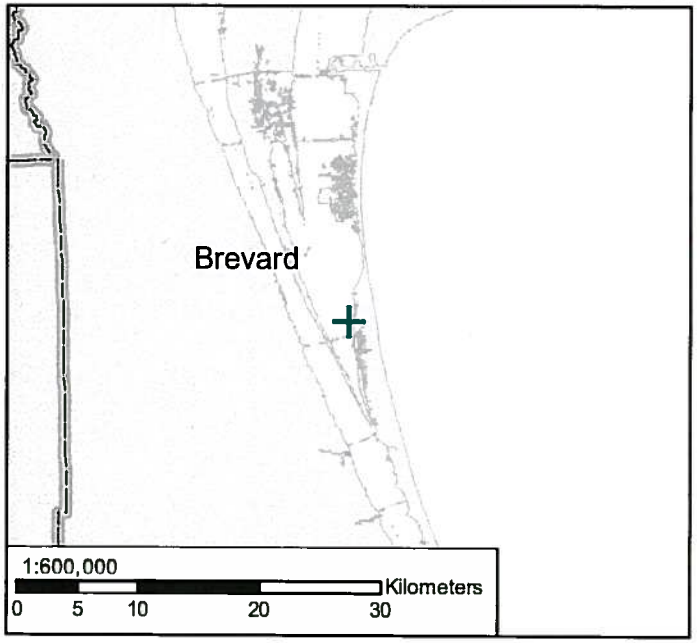


Verified Recovery Location of Manatee Carcass MEC19071

Report Date: 7/24/2019 **Received Date:** 7/24/2019 **Received By:** FWC-LRB,WDG Map Created: 12/2/2020







Locality Description:
Satellite Beach, Brevard
Floating, approximately 1.27 km NW of the Manatee Cove Boat Ramp on Patrick Air Force Base.

Latitude: 28.22297°N **Longitude:** -80.62099°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19071
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A FWC District: Northeast
Sex: M / F / Undetermined Length: 252 cm (estimated _____) Weight _____ kg.
Date reported: 24 July 2019 By: Citizen to FWC-LRB
Date collected: 24 July 2019 By: FWC- LRB, WDW
Date necropsied: 25 July 19 By: MMPL MdW BWB BDB SMT ALP

LOCATION: State FL (___) County: Brevard Waterway: Banana River
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 – wounds
Histology - Other_____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: Stomach - Liver - Lung - Urine - Kidney (if no urine) - Other vegetation mouth
Genetics Box # 93
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_____

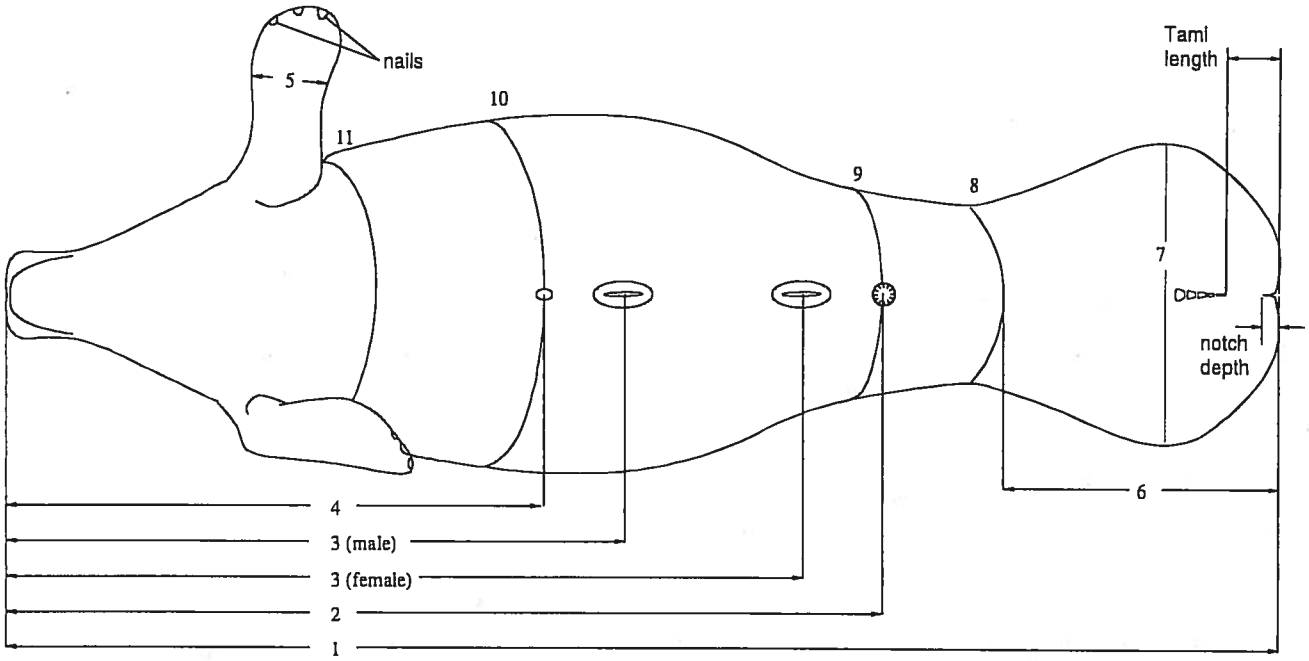
PIT TAG Scan: Negative, Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

REMARKS: _____

Field ID #_____

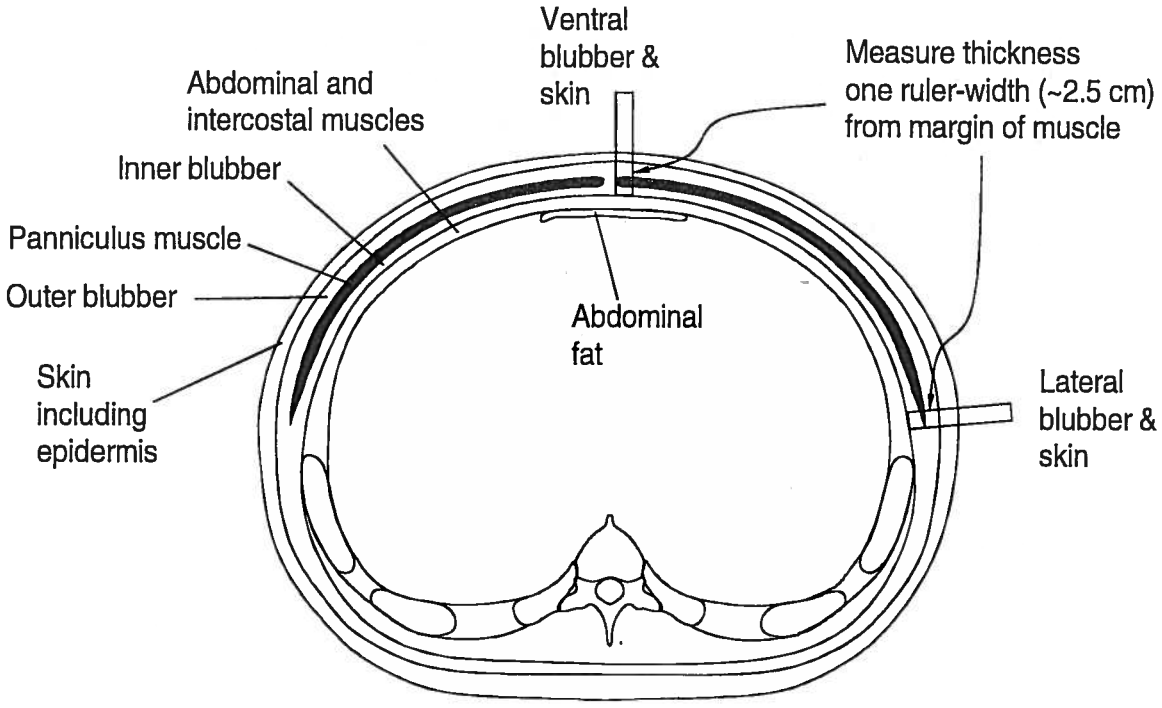
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

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.....	0.5	cm	1.8	cm	(Epidermis 0.1 cm)
Outer fat.....	0.6	cm	0.3	cm	(Abdominal fat 0.4 cm)
Inner fat.....	0.2	cm	0.5	cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19071
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 24 July 2019 **By**: Citizen to FWC-LRB
Date collected: 24 July 2019 **By**: FWC- LRB, WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 1.27 kM NW of the Manatee Cove Boat Ramp on Patrick Air Force Base
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 #: **MEC19072**
Date of Report: 2019-Aug-01
Filed By: FWC EC Field Station

FWC Case # 13159 **FWC Region:** NE

Sex: Male **Length:** 128 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Aug-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Aug-01 **By:** FWC-LRB, FWC Intern-M. Turnage

DATE NECROPSIED: 2019-Aug-01 **By:** FWC-LRB,WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.35152 **N**
County: Brevard **Longitude:** -80.72335 **W**
Waterway: Indian River
Locality description: Cocoa, floating approximately 55 m E of 55 Riverside Drive.

CONDITION: Badly Decomposed

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

EXPLAIN: Natural: Stillborn; Fetal folds; Consolidated lungs.

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.

Page 1&2	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: MEC19072

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:

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. MEC19072
RECOVERY DATE 01 August 2019
GENDER Male **TL** 128 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 01 August 2019
CONDITION Badly Decomposed

HISTORY 01 August 2019, at 0828 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a small dead manatee in the Indian River, Cocoa, Brevard County. FWC case number 13159 was assigned. The complainant, Denise Hyer (508-237-7938), reported that the carcass might have a wound. At 0836 hrs, FWC intern-Mary B. Turnage (MBT) received a photo of the carcass. At 0920 hrs, LRB and MBT arrived at 55 Riverside Drive, launched a kayak, and recovered the carcass. The carcass was transported to the EC Field Station. A field necropsy was completed by 1235 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL All of the epidermis was present but sloughing. The epidermis was smooth and dark gray. The stomach, liver, a lung, and bloody fluid protruded from a rent at the umbilicus due to decomposition. The fluke margin was scalloped. Transverse folds were present on the ventrum. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL No abdominal, mesenteric, or omental fat was present. Internal organs were missing unless mentioned below.

STOMACH The stomach was empty of contents. The mucosa was autolyzed. No parasites were observed.

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

LIVER The liver was soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 25 mL of pink-tinged fluid. The urachus was closed at the bladder tip.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM The left hemidiaphragm remained and was torn due to decomposition. The lungs were gassy but appeared consolidated. The primary airways were clear.

HEAD & NECK REGIONS NVL.

SKELETON The ribs were luxated or subluxated due to decomposition. Otherwise, NVL.

OTHER

PHOTOGRAPHS 2019-08-01_FWC025_9179 through 9186.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Consolidated lungs
- Missing, autolyzed internal organs

PROBABLE CAUSE OF DEATH Perinatal; Natural (Stillborn)

NECROPSY CONDUCTED BY

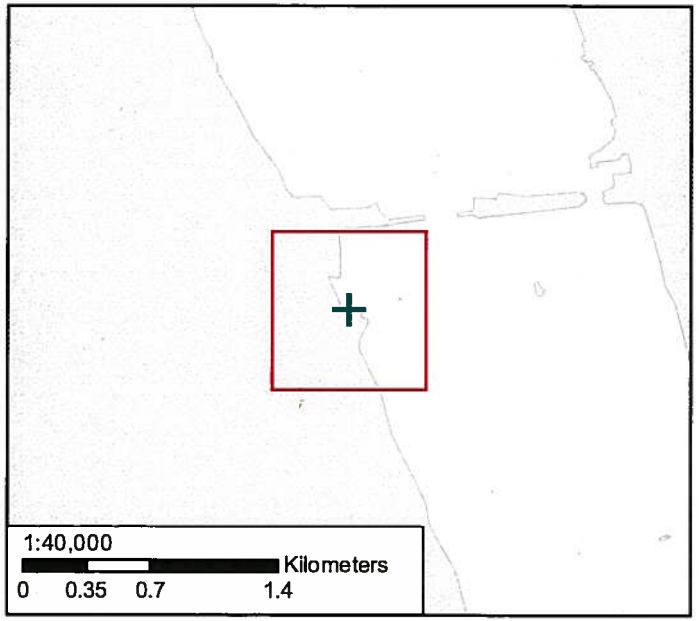
William D. Greer
Sara M. Wappes
Lucy R. Bukowski
Mary Buford Turnage (FWC intern)

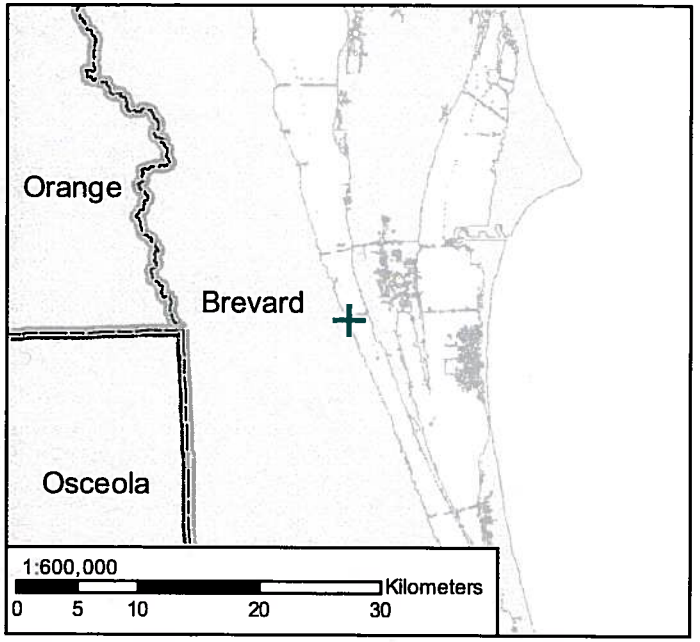
REPORT FILED BY Turnage / Greer

Verified Recovery Location of Manatee Carcass MEC19072

Report Date: 8/1/2019 **Received Date:** 8/1/2019 **Received By:** FWC-LRB, FWC Intern M. Turnage Map Created: 12/7/2020







Locality Description:
Cocoa, Brevard
Floating, approximately 55 m E of 55 Riverside Drive.

Latitude: 28.35152°N **Longitude:** -80.72335°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19072
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13159 **FWC District**: Northeast
Sex: Male **Length (cm)**: 128 **Estimated** _____ **Weight (kg)** N/T
Date reported: 01 Aug 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 01 Aug 2019 **By**: FWC-LRB, FWCINTERN-M.Turnage
Date necropsied: 01 Aug 2019 **By**: FWC-LRB, WDG, SMW, FWCINTERN-M.Turnage

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 55 m E of 55 Riverside Dr

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: Too decomposed. Internal organs autolyzed and/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: - **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: Perinatal evaluation could not be completed due to decomposition

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 #: **MEC19073**
Date of Report: 2019-Aug-01
Filed By: FWC MMPL

FWC Case # 13188 **FWC Region:** NE

Sex: Female **Length:** 101 **cm** **Weight:** 17.0 **kg**

DATE REPORTED: 2019-Aug-01 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Aug-01 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Aug-05 **By:** MMPL-MdW,BDB,TDW

LOCATION: **State:** FL **Latitude:** 28.21373 **N**
County: Brevard **Longitude:** -80.61218 **W**
Waterway: Banana River
Locality description: Satellite Beach, floating approximately 175 m NNW of 452 Sparrow Drive.

CONDITION: Moderately Decomposed

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

EXPLAIN: Natural: Other; Fetal folds; Umbilical skirt; Meconium; Bi-lateral hemothorax; Fluid, sediment from nares; Partially consolidated lungs; Sediment in stomach, duodenum, mouth; Dark red fluid in abdomen, pleural cavity; Congested urinary bladder mucosa; High concentration lymph nodules cecum wall; Enlarged dark red lymph node.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Histology.

DISPOSITION OF MATERIAL: FWC MMPL

ADDITIONAL DATA:

Perinatal evaluation performed. Histology report.

REMARKS:

PIT tag scan negative. Also FWC case number 13186.

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Lat/Long	17 Dec 2020

Field ID #: MEC19073

MORPHOMETRICS:

Total length:	101 cm	**Fluke base:**	32 cm	**Girth at axillae:**	59 **cm**
Snout to anus:	65 cm	**Fluke width:**	28 cm		
Snout to U/G:	63 cm	**Girth at fluke base:**	38 cm		
Snout to umbilicus:	39 cm	**Girth at anus:**	50 cm		
Flipper width:	6 cm	**Girth at umbilicus:**	63 cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	0.5 cm	0.8 cm		
Outer Blubber Thickness:	0.5 cm	0.4 cm	**Abdominal Fat Thickness:**	0 cm
Inner Blubber Thickness:	0.2 cm	0.5 cm	**Epidermis Thickness:**	0.1 cm

Perinatal:

Umbilical arteries closed at the umbilicus, but probe patent lateral to the bladder. Left umbilical artery contained blood clots. Urachus closed at bladder tip.

Ductus Arteriosis Diameter:	1.1 cm
Left Pulmonary Artery Diameter:	1.1 cm
Right Pulmonary Artery Diameter:	1.1 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. MEC19073
RECOVERY DATE 01 August 2019
GENDER Female **TL** 101 **cm WT** 17 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 05 August 2019
CONDITION Moderately Decomposed

HISTORY 01 August 2019, at 1338 hrs, FWC intern-Mary B. Turnage (MBT) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee in the Banana River at Patrick Air Force Base in Satellite Beach, Brevard County. FWC case number 13186 was assigned. The complainant, Patrick Helton (704-451-2812), stated that the carcass was grey, back-up, and around 4 feet long. MBT received a photo of the carcass at 1342 hrs. FWC biologists-Sara M. Wappes and William D. Greer arrived at Manatee Cove Marina in the Patrick Air Force Base at 1425 hrs, loaded the manatee into the truck at 1435 hrs, and transported it to the EC Field Station at 1515 hrs. The carcass was placed in a cooler with ice. **05 August**, MBT transported the carcass to the MMPL arriving at 0800 hrs.

EXTERNAL All of the epidermis was present but sloughing. The epidermis was dark grey to black, smooth, and did not have any epibiota or scars. Bloody fluid and sediment exuded from the nares. The fluke margin was scalloped. There were transverse folds on the ventrum. An umbilical skirt was present. There was a fresh, small, superficial scrape on the caudal left dorsum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant abdominal, mesenteric, and omental fat. The abdomen contained 150 mL of watery, dark red fluid.

STOMACH The stomach contained 20 mL of watery, tan to light pink fluid mixed with a small amount of gritty green to black sediment. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained a moderate amount of watery, gritty, green and dark green sediment. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained a small amount of viscous, tan mucus. The mid- and distal small intestine contained a small amount of viscous, golden yellow mucus. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 25 mL of moist, pasty, homogeneous, rubbery, dark green meconium. The mucosa was sloughing. There was a high concentration of lymph nodules in the wall. No parasites were observed.

COLON The colon contained a moderate amount of moist, moderately formed, homogeneous, pasty, rubbery, dark green meconium. The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

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

LIVER The liver was firm. The margins were rounded. The serosal surfaces were dark pink to light purple, and the cut surfaces were brown. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 2 mL of viscous, flocculent, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant reproductive fat. The diameter of the uterus was small. No scars were present. The uterine mucosa was pink. The ovaries did not have any follicles.

KIDNEYS There was scant serous dark red perirenal fat. The left kidney was tan on serosal and cut surfaces. The right kidney was light red on serosal surfaces and red on cut surfaces. The corticomedullary boundaries were indistinct in both kidneys.

URINARY BLADDER The bladder contained 3 mL of light red urine. The mucosa was mildly congested. The urachus was closed at the bladder tip. An ELISA toxicology sample was collected.

HEART There was no epicardial fat. Valves and chambers were unremarkable. The flat diameter of the ductus arteriosus measured 1.1 cm, and that of each pulmonary artery measured 1.1 cm.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right pleural cavity contained 25 mL of watery dark red fluid. The lungs were mottled light pink and purple on serosal surfaces, and dark pink on cut surfaces. The right lung was consolidated. The left lung was partially consolidated (mostly along the margins) and the remainder was inflated and/or gassy. The airways were clear. The mucosa was pink. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was serous dark red tissue in the ventral neck region. The mouth contained approximately 5 mL of gritty dark green mud.

SKELETON NVL.

OTHER The umbilical arteries were closed at the umbilicus, but probe patent lateral to the bladder. The left umbilical artery contained blood clots. There was serous dark red tissue surrounding the right scapula. One anorectal lymph node was enlarged and dark red.

PHOTOGRAPHS 2019-08-05_FWC047_1874 through 1885, 1887.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Umbilical skirt
- Fluid, sediment from nares
- Partially consolidated lungs
- Sediment in stomach, duodenum, mouth
- Meconium
- Dark red fluid in abdomen, pleural cavity
- Congested urinary bladder mucosa
- High concentration lymph nodules cecum wall
- Enlarged, dark red lymph node
- Serous, dark red tissue

PROBABLE CAUSE OF DEATH Perinatal; Natural

NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brittany D. Barbeau

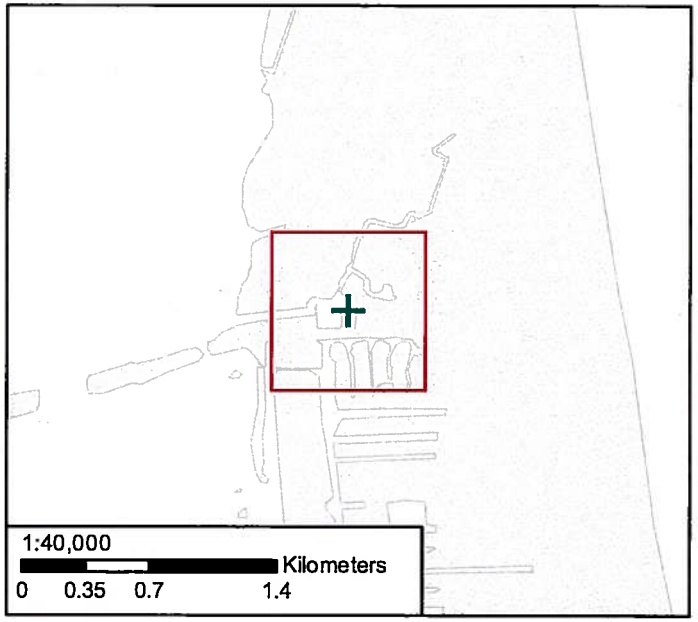
Tara D. Whitcomb

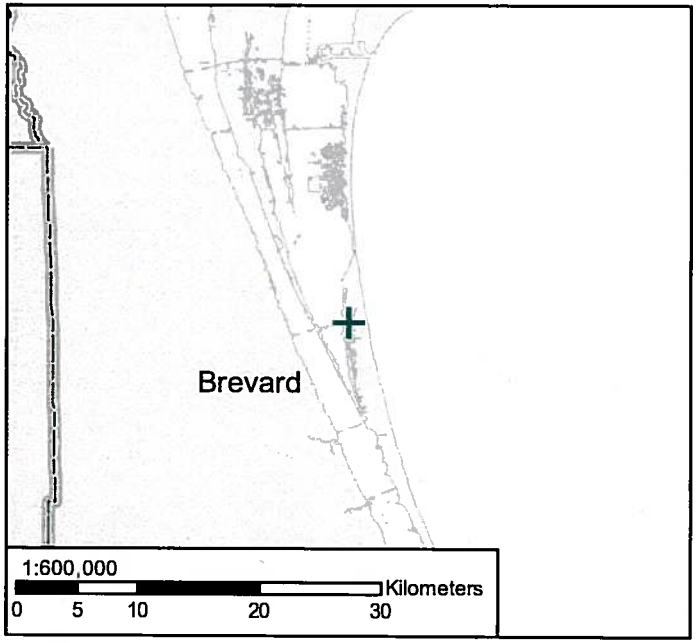
REPORT FILED BY de Wit

Verified Recovery Location of Manatee Carcass MEC19073

Report Date: 8/1/2019 **Received Date:** 8/1/2019 **Received By:** FWC-WDG,SMW Map Created: 12/7/2020







Locality Description:
Satellite Beach, Brevard
Floating, approximately 175 m NNW of 452 Sparrow Drive.

Latitude: 28.21373°N **Longitude:** -80.61218°W

NECROPSY REPORT
FINAL REPORT

Field ID: MEC19073
Alternate Field ID:
Accession Number: 20-002
Species: *Trichechus manatus latirostris*
Date: 01 August 2019 (DOR); 05 August 2019 (DON)
Location: FL
Sex, Age: M
TL: 101 cm
WT: 17 kg
Body Condition: Good
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: >48 hours

HISTORY

Findings include:

- Fetal folds
- Umbilical skirt
- Partially consolidated lungs
- Sediment in stomach, duodenum, mouth
- Meconium
- Dark red fluid abdomen, pleural cavity
- Congested bladder mucosa
- High concentration lymph nodules cecum wall
- Enlarged dark red lymph node
- Serous dark red tissue

Summary: Perinatal; Natural

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment

MICROSCOPIC DESCRIPTION

Received 8 Jan 2020 are 6 H&E slides.

The anorectal lymph node is mildly depleted. Follicles are loosely formed. Macrophages are mildly increased within the medullary sinus.

Hepatocytes are vacuolated. There is moderate extramedullary hematopoiesis.

Approximately 80% of alveolar spaces are aerated and 20% are partially collapsed. Eosinophilic granular fluid is present within alveolar spaces along with small amounts of meconium and individual epithelial squames.

Umbilical arteries contain either clumped erythrocytes or a fibrin thrombus.

The following tissues have no significant histological findings: Heart, stomach, proximal large intestine, kidney, skeletal muscle (body wall), spleen

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System

A. Umbilicus: Intravascular fibrin thrombi and clumped erythrocytes (post-parturition).

Respiratory Sytstem

A. Lung:
    a. Atelectasis, multifocal, mild.
    b. Intra-alveolar epithelial squames and meconinum, multifocal, minimal.
    c. Edema.

Nervous System
NE

Urinary and Reproductive System
NSF

Digestive System/Body as a Whole
NSF

Cardiovascular System
NSF

Hepatobiliary System

A. Liver: Extramedullary hematopoiesis.

Endocrine System
NSF

Hematolymphatic System

INTERPRETATIVE SUMMARY

DIAGNOSES
Pulmonary Atelectasis

Primary Diagnostic Category: Neonatal/Maternal (Post-Parturient)

Linked Cases:

There is no evidence of infectious diseases or organ specific changes. The majority of the lung was aerated. There was a small amount of meconium; fetal stress can't be excluded. Extramedullary hematopoiesis in the liver is an expected finding.

TEST	PURPOSE	SITE	RESULT

DATE: 1/10/2020

REPORTING PATHOLOGIST: David S. Rotstein, DVM, MPVM, DACVP

FIGURES

No Figures

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19073
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # _____ FWC District: _____
Sex: M (F) Undetermined Length: 101 cm (estimated _____) Weight 17 kg.
Date reported: _____ By: _____
Date collected: _____ By: _____
Date necropsied: 5Aug19 By: MMPL – MW, BDB, TDW

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)
MTLS COLLECTED: **(Genetics)** - **Earbone** – Partial Skeleton – Complete Skeleton – (Histology) - Other • umbilical SK if t
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – **(Liver)** – **(Lung)** – **(Urine)** – **Kidney (if no urine)** – Other _____
Genetics Box # 93
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

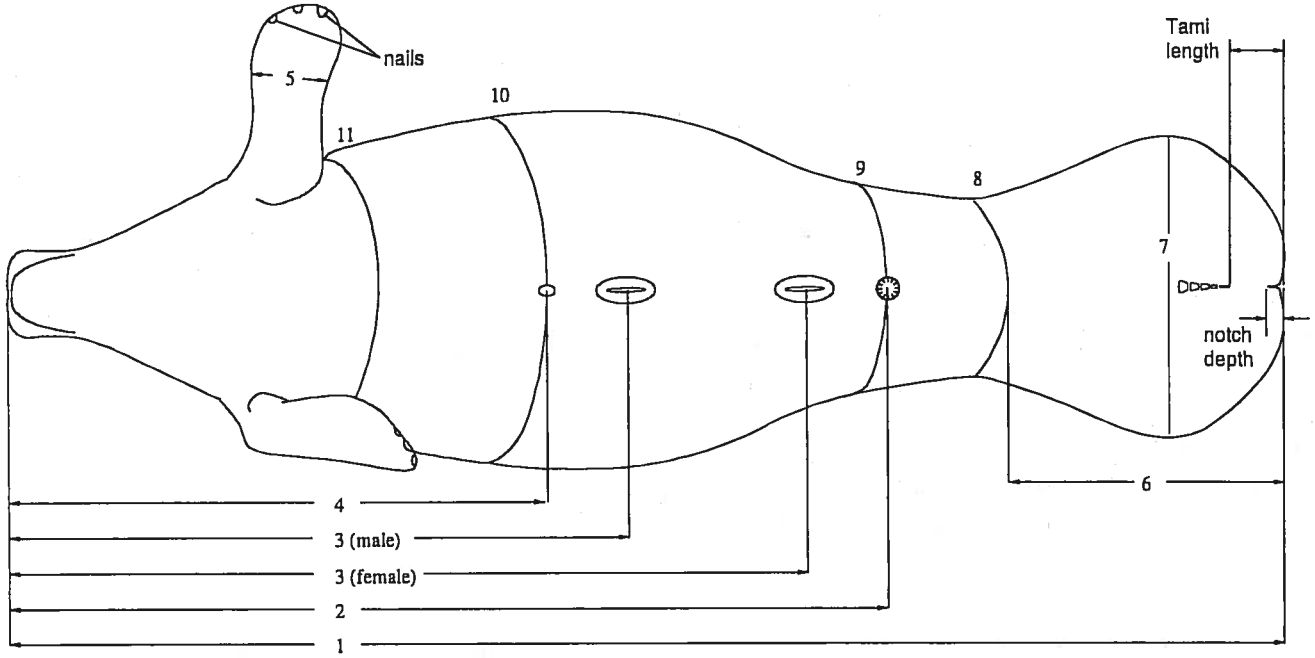
REMARKS: _____

Field ID # MEC19073

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.

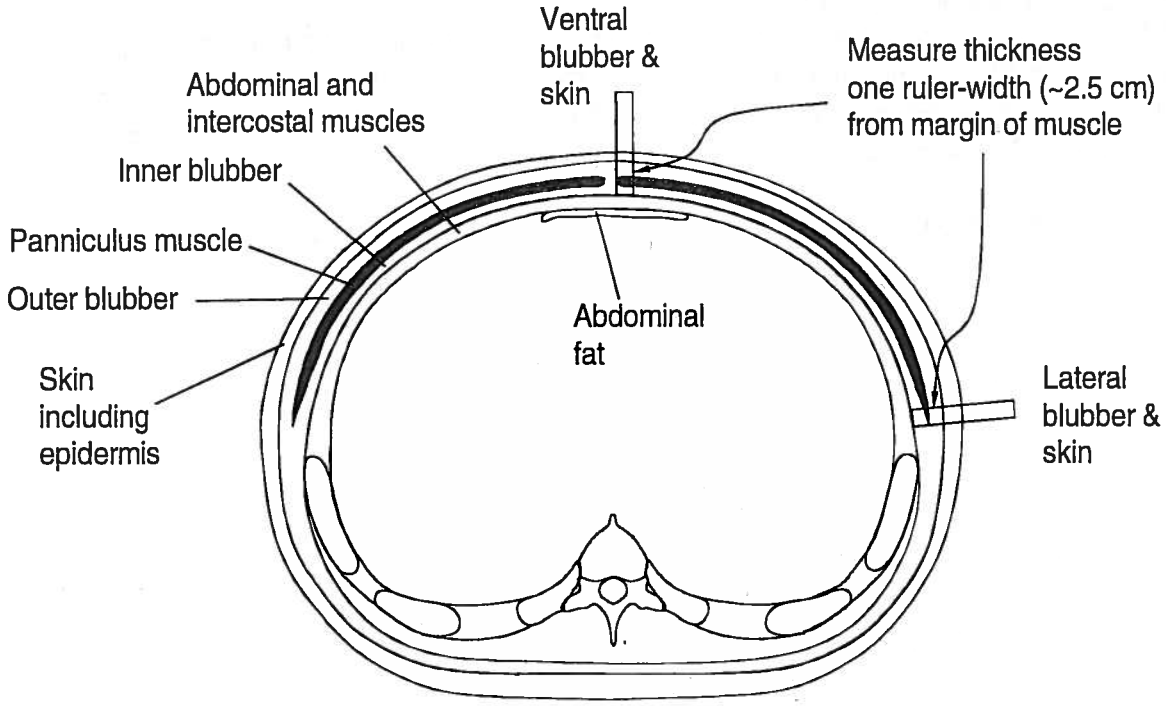
1. Total length 104 cm
2. Snout to anus -C 65 cm
3. Snout to U/G -C 63 cm
4. Snout to umbilicus -C 39 cm
5. Flipper width 16 cm
6. Fluke base 32 cm
7. Fluke width 28 cm
8. *Girth at fluke base 38 cm
9. * Girth at anus 50 cm
10. *Girth at umbilicus 63 cm
11. *Girth at axillae 59 cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.5 cm	0.8 cm	(Epidermis 0.1 cm)
Outer fat	0.5 cm	0.4 cm	(Abdominal fat 0 cm)
Inner fat	0.2 cm	0.5 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19073
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13186, 13188 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 01 August 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 01 August 2019 **By**: FWC-WDG, SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 175 m NNW of 453 Sparrow 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 #: **MEC19074**
Date of Report: 2019-Aug-21
Filed By: FWC EC Field Station

FWC Case # 14353 **FWC Region:** NE

Sex: Female **Length:** 118 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Aug-21 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Aug-22 **By:** FWC-WDG,LRB

DATE NECROPSIED: 2019-Aug-22 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.27887 **N**
County: Brevard **Longitude:** -80.67399 **W**
Waterway: Honeymoon Lake
Locality description: Merritt Island, floating approximately 45 m E of 4305 Randon Lane.

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; Missing bones.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, 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.

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Field ID #: MEC19074

MORPHOMETRICS:

Total length:	118 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. MEC19074
RECOVERY DATE 22 August 2019
GENDER Female **TL** 118 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 22 August 2019
CONDITION Badly Decomposed

HISTORY 21 August 2019, at 1157 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Honeymoon Lake, Merritt Island, Brevard County. FWC case number 14353 was assigned. The complainant, Brian Ziegler (321-693-8938), stated that there was a dead manatee calf near his address. LRB received photo confirmation at 1204 hrs. Due to an additional carcass report (MEC19075), recovery of MEC19074 was planned for the next day. **22 August**, at 0900 hrs, LRB, FWC biologist-William D. Greer, and FWC intern-Mary Buford Turnage arrived at the Pineday Causeway boat ramp and launched the EC Field Station Key West boat. The carcass was located at 0935 hrs and towed to a nearby shoreline. A field necropsy was completed at 1005 hrs. The remains were left onsite.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. A few faint transverse folds were observed on the ventrum. There were rents on the ventrum, at the umbilicus, urogenital opening, anus, and both flippers due to decomposition. The face and fluke margin were eroded due to decomposition and scavenging. The eyes were missing due to decomposition. No watercraft-related scars or wounds were present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered and/or missing. All internal organs were missing.

HEAD & NECK REGIONS The skull was missing.

SKELETON Only the lumbar and caudal vertebrae remained which were unremarkable.

OTHER

PHOTOGRAPHS 2019-08-22_FWC025_9252 through 9256.

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs, bones
- Scavenging
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

NECROPSY CONDUCTED BY

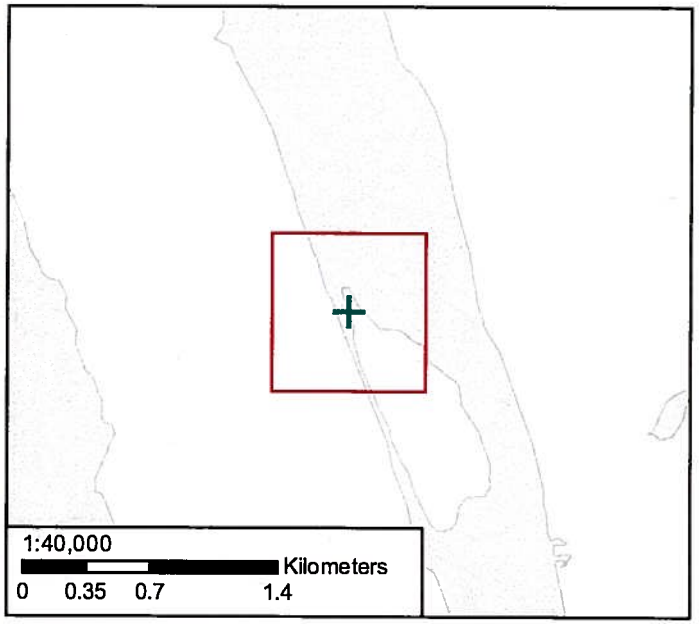
William D. Greer
Lucy R. Bukowski
Mary Buford Turnage (FWC intern)

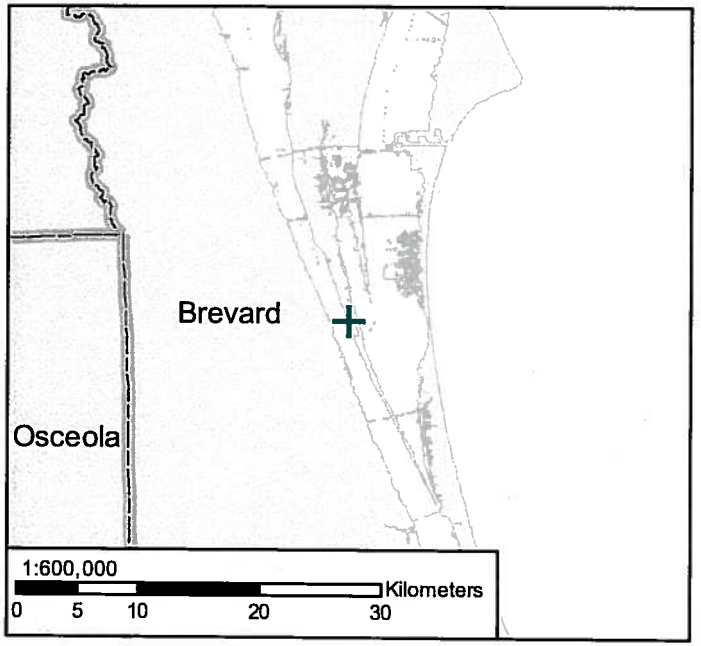
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19074

Report Date: 8/21/2019 **Received Date:** 8/22/2019 **Received By:** FWC-WDG,LRB Map Created: 12/7/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 45 m E of 4305 Randon Lane.

Latitude: 28.27887°N **Longitude:** -80.67399°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19074
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14353 **FWC District**: Northeast
Sex: Female **Length (cm)**: 118 **Estimated** _____ **Weight (kg)** N/T
Date reported: 21 August 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 22 August 2019 **By**: FWC-LRB, WDG, FWCIntern-MBT
Date necropsied: 22 August 2019 **By**: FWC-LRB, WDG, FWCIntern-MBT

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Honeymoon Lake
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, 45m E of 4305 Randon 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: Too decomposed. All internal organs missing or autolyzed, most of skeleton 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 #: **MEC19075**
Date of Report: 2019-Aug-21
Filed By: FWC EC Field Station

FWC Case # 14355 **FWC Region:** NE

Sex: Female **Length:** 275 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Aug-21 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2019-Aug-21 **By:** FWC-WDG,LRB
DATE NECROPSIED: 2019-Aug-21 **By:** FWC-WDG,LRB

LOCATION: **State:** FL **Latitude:** 28.15661 **N**
County: Brevard **Longitude:** -80.61151 **W**
Waterway: Banana River
Locality description: Merritt Island, floating approximately 20 m E of 11150 S Tropical Trail.

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. Fractured rib(s); Missing skull, flippers, vertebrae.

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.

Page 1&2	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: MEC19075

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. MEC19075
RECOVERY DATE 21 August 2019
GENDER Female **TL** 275 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 21 August 2019
CONDITION Badly Decomposed

HISTORY 21 August 2019, at 1229 hrs, FWC intern-Mary Buford Turnage (MBT) 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 14355 was assigned. The complainant, Peter Dillon (321-795-2324), stated that the carcass was white in color. At 1244 hrs, MBT received a photo of the carcass. MBT and FWC biologists-William D. Greer and Lucy R. Bukowski arrived at the Eau Gallie Causeway boat ramp at 1305 hrs, launched the Key West boat, and located the carcass at 1330 hrs. The carcass was towed to Samson's Island, a nearby nature preserve, where a field necropsy was completed by 1500 hrs. The remains were left onsite.

EXTERNAL All of the epidermis was missing. The skull and flippers were missing. There were rents at the urogenital opening and the anus due to decomposition. The fluke and dorsal dermis were severely eroded due to decomposition. There was a large eroded hole on the right lateral aspect. No watercraft-related wounds or scars were grossly observed. Actual length of the remains was not measured. 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.

JEJUNUM & ILEUM The small intestine was empty of contents. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum was torn due to decomposition and contained a scant amount of wet, slightly fibrous, moderately digested, dark brown digesta (see photo). The mucosa was sloughing. No parasites were observed.

COLON The colon contained wet, slightly fibrous, poorly formed, moderately digested, dark green to brown feces mixed with well-chewed mangrove propagules. The mucosa was autolyzed. No parasites were observed.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was torn due to decomposition and empty of contents. The mucosa was gassy.

HEAD & NECK REGIONS The trachea was torn due to decomposition. Otherwise, NVL.

SKELETON Right ribs 10 - 14 had oblique fractures at the proximal one-third. The distal two-third of right rib 14 was missing. Many of the tail vertebrae were missing.

OTHER

PHOTOGRAPHS 2019-08-21_FWC025_9229 through 9251.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Missing skull, flippers, vertebrae

- Fractured ribs

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

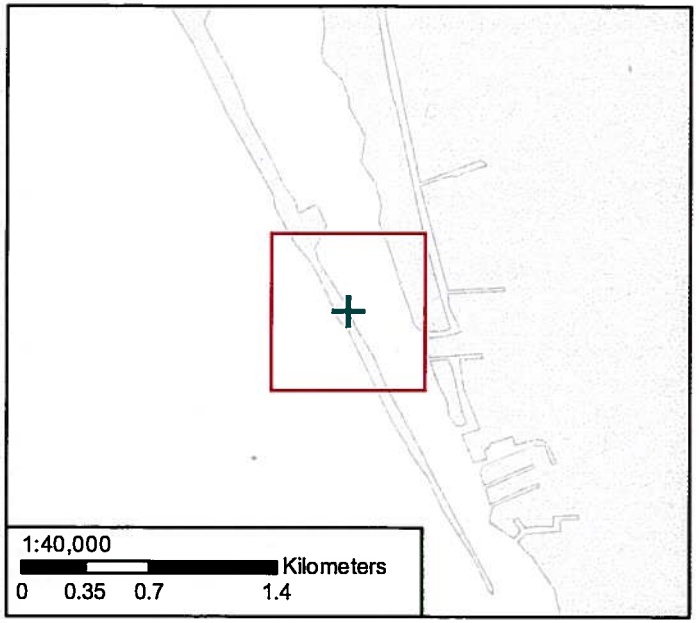
William D. Greer
Lucy R. Bukowski
Mary Buford Turnage (FWC intern)

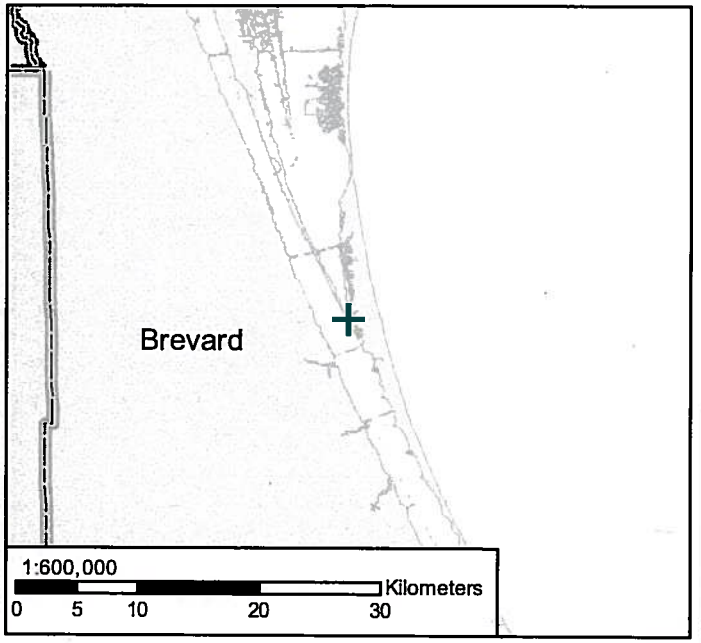
REPORT FILED BY Bukowski

Verified Recovery Location of Manatee Carcass MEC19075

Report Date: 8/21/2019 **Received Date:** 8/21/2019 **Received By:** FWC-WDG,LRB Map Created: 12/7/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 20 m E of 11150 S Tropical Trail.

Latitude: 28.15661°N **Longitude:** -80.61151°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19075
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14355 **FWC District**: Northeast
Sex: Female **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** N/T
Date reported: 21 August 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 21 August 2019 **By**: FWC-LRB, WDG, FWCIntern-MBT
Date necropsied: 21 August 2019 **By**: FWC-LRB, WDG, FWCIntern-MBT

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, 20m E of 11150 S 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: Missing and/or autolyzed internal organs, missing skull and flippers. Right ribs 10-14 fractured at the proximal one-third.

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 #: **MEC19076**
Date of Report: 2019-Aug-27
Filed By: FWC MMPL

FWC Case # 14727 **FWC Region:** NE

Sex: Male **Length:** 274 **cm** **Weight:** 361.0 **kg**

DATE REPORTED: 2019-Aug-27 **By:** Citizen to FWC Dispatch

DATE COLLECTED: 2019-Aug-27 **By:** FWC-SMW

DATE NECROPSIED: 2019-Aug-28 **By:** MMPL-MdW,BLB,BDB,SMT

LOCATION: **State:** FL **Latitude:** 28.73015 **N**
County: Brevard **Longitude:** -80.76176 **W**
Waterway: Haulover Canal
Locality description: Merritt Island, floating approximately 565 m SW of Bairs Cove Boat Ramp.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Depleted fat(s); Wet lung(s); Bloody lung(s); Dark line kidney(s); Organ pallor; Bloody eyes, nares; Fluid in pleural cavities; Firm, swollen lung portion; Specks, ecchymoses in lung, parietal pleura; Congested peritoneum, parietal pleura, hemidiaphragms, lung, small intestine serosa, urinary bladder mucosa; Ecchymoses mesentery; Dark red ascites; Sediment in naris; Enlarged mesenteric lymph nodes.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Histology.

DISPOSITION OF MATERIAL: FWC MMPL

ADDITIONAL DATA:

Histology report.

REMARKS:

PIT tag scan negative. Remodeled rib. Calcified, necrotic muscle pocket in dorsal muscle associated with external hump and watercraft-related scar.

Page 1&2	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: MEC19076

MORPHOMETRICS:

Total length:	274 cm	**Fluke base:**	81 cm	**Girth at axillae:**	**cm**
Snout to anus:	187 cm	**Fluke width:**	69 cm		
Snout to U/G:	118 cm	**Girth at fluke base:**	cm		
Snout to umbilicus:	104 cm	**Girth at anus:**	cm		
Flipper width:	17 cm	**Girth at umbilicus:**	cm	**Nail count: R:** 4	**L:** 4

	Ventral	**Lateral**		
Skin Thickness:	0.5 cm	1.7 cm		
Outer Blubber Thickness:	0.4 cm	0.2 cm	**Abdominal Fat Thickness:**	0.9 cm
Inner Blubber Thickness:	0.1 cm	0.3 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. MEC19076
RECOVERY DATE 27 August 2019
GENDER Male **TL** 274 **cm WT** 361 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 28 August 2019
CONDITION Badly Decomposed

HISTORY 27 August 2019, at 0746 hrs, FWC intern-Mary Buford Turnage (MBT) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Haulover Canal in Allenhurst, Brevard County. FWC case number 14727 was assigned. The complainant, Scott Paul (407-832-5648), stated that the manatee was seven feet long, belly-up, and surrounded by a mating herd. At 0755 hrs, MBT received photos of the carcass and requested FWC LE assistance to tow it since all EC Field Station staff were busy with a dolphin rescue. FWC biologist-Sara M. Wappes (SMW) canceled the officer request at 0825 hrs and arrived at the NW Haulover Canal kayak launch at 0940 hrs. The complainant and SMW towed the carcass to the kayak launch with the complainant's boat. SMW loaded the carcass via Ezy-Lift at 1045 hrs and transported it to the MMPL arriving by 1330 hrs.

EXTERNAL All of the epidermis was present. The carcass was distended with gas. Copious bloody fluid and foam exuded from the nares. The eyes were bloody. No watercraft-related wounds were observed. There was a minimum of five well-healed watercraft-related scar patterns on the dorsal aspect. One scar series on the cranial dorsum was associated with a small firm hump on the cranial right dorsum. There was a thin light brown and green algal mat on the dorsal aspect. Copepods were present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal, mesenteric and omental fat. The peritoneum had streaks of severe congestion. The abdomen contained 5.5 L of watery, dark red fluid mixed with a scant amount of loose gastrointestinal contents. The ventrum was flat after abdominal incision.

STOMACH The stomach contained 4.5 L of moist, well-chewed, stringy, light to dark green vegetation. There was a mild infection of dead nematodes. The mucosa was grey and tan. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 3 L of moist, well-chewed, stringy, light to dark green vegetation. There was a mild infection of dead nematodes. The mucosa was unremarkable.

JEJUNUM & ILEUM The serosa of the small intestine was mildly congested. The mesentery had small regions with ecchymoses. The proximal small intestine contained a moderate amount of moist, well-chewed, stringy, light to dark green vegetation. The mid and distal small intestine contained a moderate amount of watery, light green fluid mixed with well-chewed, stringy, dark green vegetation. The wall had distinct small Peyer's patches and diffuse small tan nodules throughout. No parasites were grossly observed. The mucosa was autolyzed.

CECUM The cecum contained 750 mL of wet, well-digested, stringy, dark green digesta. There was a mild infection of dead nematodes. The mucosa was sloughing.

COLON The proximal colon contained a moderate amount of moist, well-digested, stringy, moderately formed, light to dark green feces. There was a moderate infection of dead trematodes. The distal colon contained a large amount of moist, moderately digested, moderately formed, green feces. No parasites were observed. The mucosa was sloughing throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

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

LIVER The margins of the liver were rounded. The serosa was separated from the parenchyma. The liver was soft and slightly friable. The liver was dark pink to dark blue on serosal surfaces, and dark brown on cut surfaces. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained approximately 100 mL of viscous, flocculent, cloudy, dark yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of 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 watery, dark pink fluid.

KIDNEYS There was moderate, slightly gassy perirenal fat. The kidneys were light pink, light purple, and red on serosal surfaces. On cut surfaces, the cortices were dark pink, and the medullae were pink to dark red. There was a wide, dark purple line at most of the corticomedullary boundaries. The corticomedullary boundaries were distinct. An ELISA toxicology sample was collected.

URINARY BLADDER The urinary bladder contained approximately 1 mL of cloudy, light brown urine. The mucosa was moderately congested.

HEART There was moderate epicardial fat. The myocardium was pale. Valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact and had patches of severe congestion (see photo). The left pleural cavity contained 0.75 L of watery, dark red fluid. The left parietal pleural was severely congested and had numerous raised black specks. There were a few black gelatinous tags on the lateral aspect of the cranial one-third. The left lung had patches of severe congestion and numerous black specks and ecchymoses on the ventral serosal aspect. The medial aspect and caudal one-third of the left lung were firm and swollen. The left lung was pink to dark red on serosal surfaces. The cut surfaces of the lateral aspect of the left lung were dark red and wet, and the cut surfaces of the medial aspect were pink to dark pink and speckled tan (see photos) and had numerous ecchymoses. The right pleural cavity contained 0.25 L of watery, dark red fluid. The right parietal pleura had a few small patches of moderate congestion and a small number of black specks. The right lung was mottled pink and purple on serosal surfaces, and dark red, bloody and wet on cut surfaces (see photo). The airways of both lungs contained a small amount of slightly viscous, dark red fluid. The mucosa was pink to dark red. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The right naris contained a moderate amount of gritty brown sediment. The periotic cavities contained a moderate amount of watery dark red fluid.

SKELETON Left rib 7 was remodeled at the proximal one-third.

OTHER There was a 12.5 x 11.0 x 6.8 cm pocket which contained dry, necrotic, yellow muscle and flocculent tan fluid with a calcified wall and was dorsal to right ribs 7 and 8 deep to the cranial hump. There was a linear region of black scar tissue deep to the linear scar that was associated with the small hump. The cranial mesenteric lymph nodes appeared enlarged (see photos).

PHOTOGRAPHS 2019-08-28_FWC047_2234 through 2266, 2268 through 2272, 2274, 2276 through 2278, 2280, 2281, 2283 through 2293.

COMMENTS The GI contents appeared to be seagrass.

SIGNIFICANT FINDINGS

- Bloody eyes, nares
- Depleted fat
- Fluid in pleural cavities
- Firm, swollen lung portion
- Wet, bloody lungs
- Specks, ecchymoses in lung, parietal pleura
- Congested peritoneum, parietal pleura, hemidiaphragms, lung, small intestine serosa, urinary bladder mucosa
- Ecchymoses mesentery
- Dark line kidneys
- Dark red ascites
- Sediment in naris
- Heart pallor
- Enlarged mesenteric lymph nodes
- Remodeled rib
- Calcified, necrotic muscle pocket in dorsal muscle associated with external hump and watercraft-related scar

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PROBABLE CAUSE OF DEATH Natural; Other

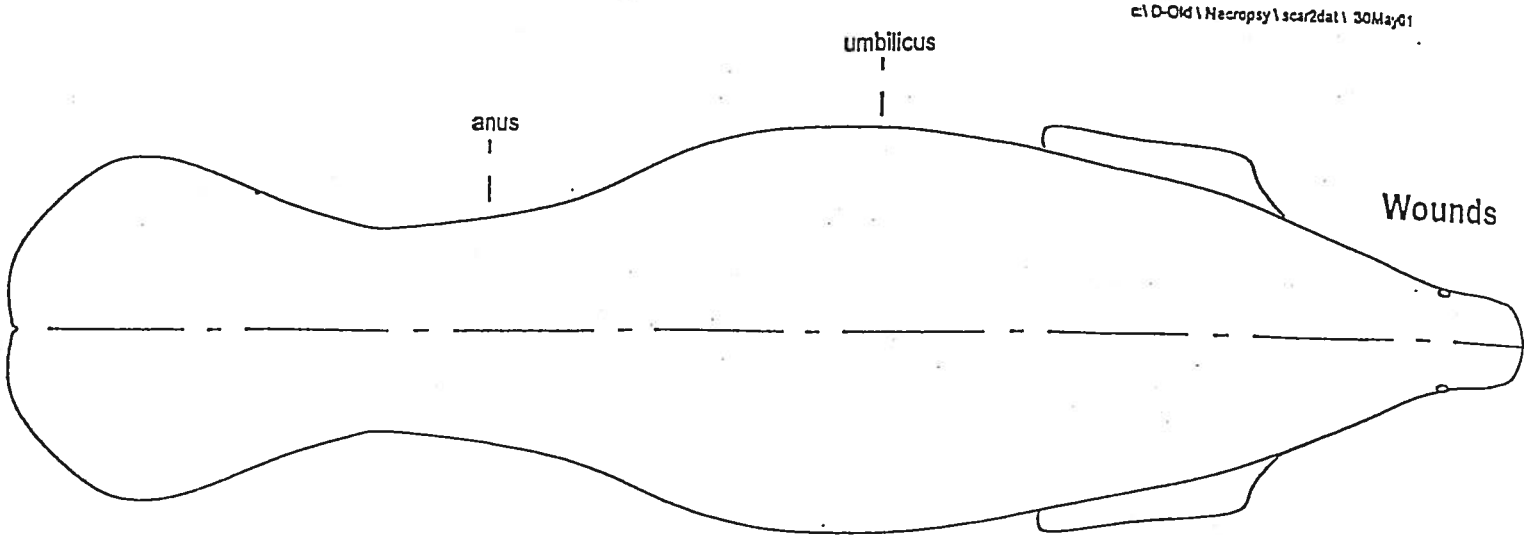
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Brittany D. Barbeau
Sean M. Tennant

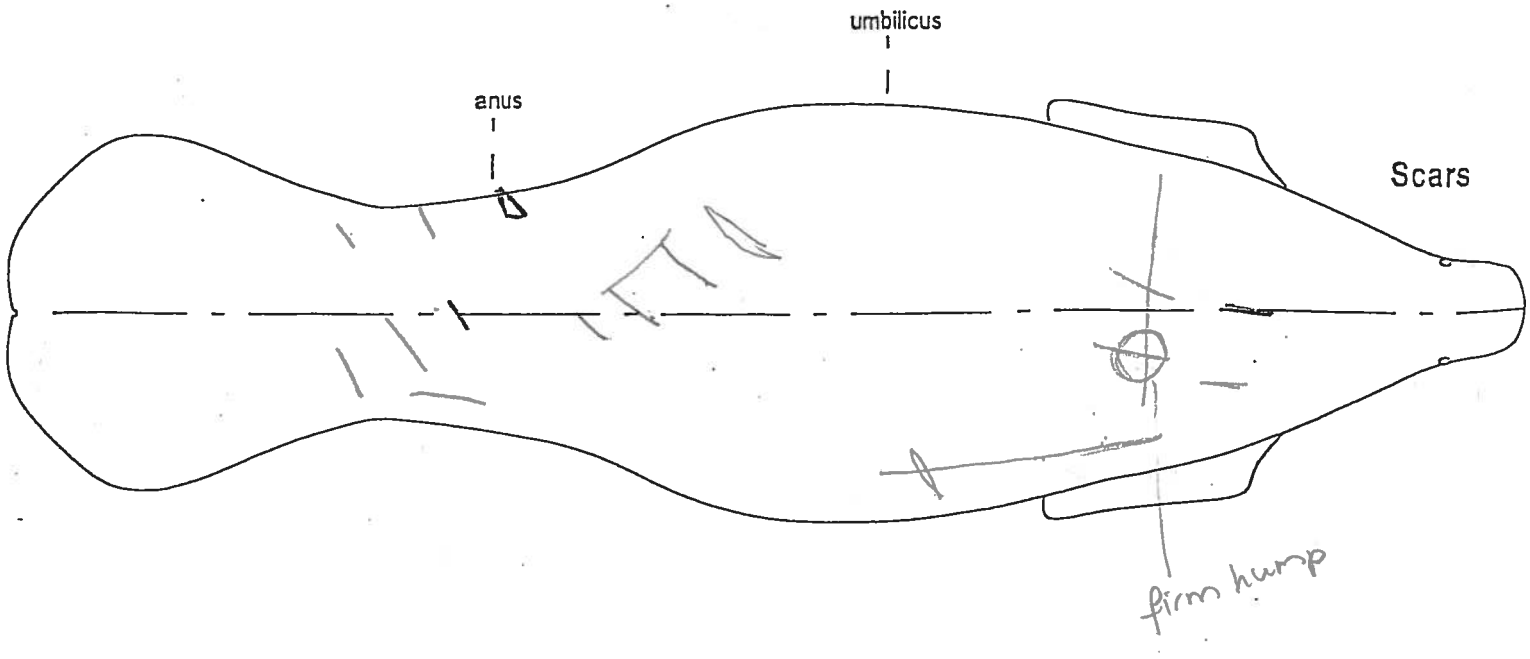
REPORT FILED BY de Wit

Date 28Aug19 Field I.D. MEC19076

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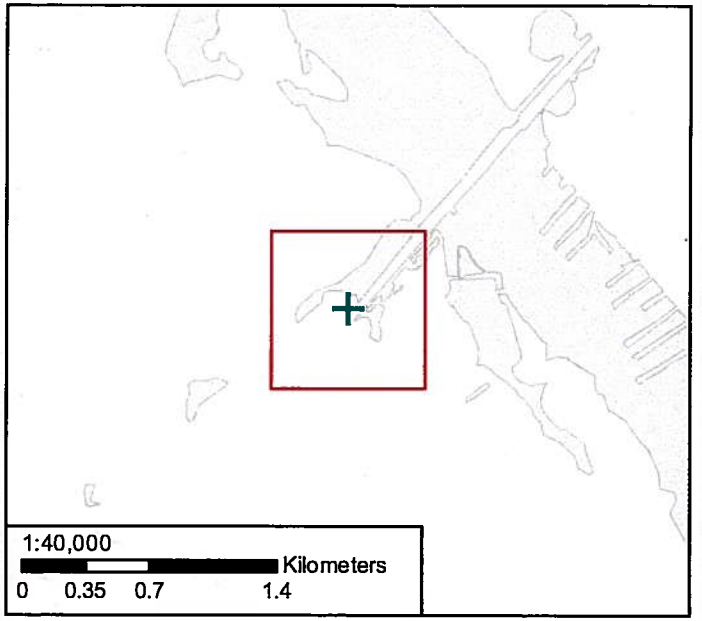
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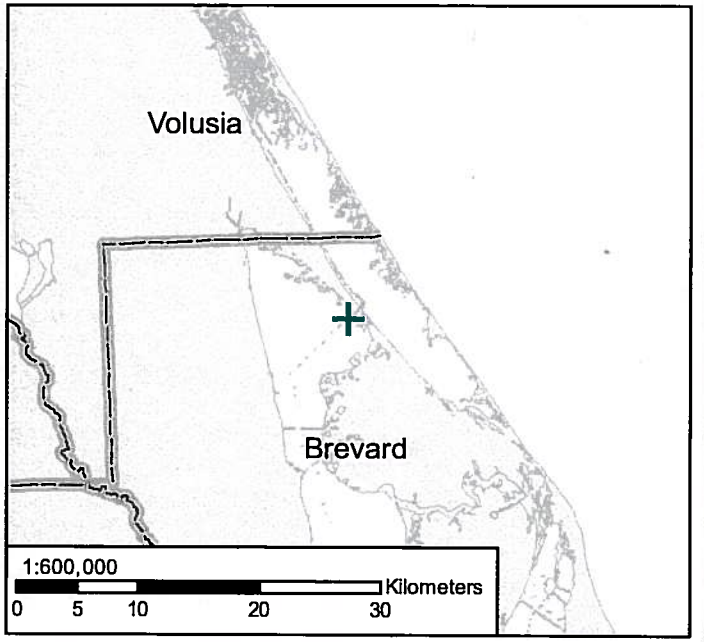


Verified Recovery Location of Manatee Carcass MEC19076

Report Date: 8/27/2019 **Received Date:** 8/27/2019 **Received By:** FWC-SMW Map Created: 12/7/2020







Locality Description:
Merritt Island, Brevard
Floating, approximately 565 m SW of Bairs Cove Boat Ramp.

Latitude: 28.73015°N **Longitude:** -80.76176°W

\NECROPSY REPORT
ADDENDUM

Field ID: MEC19076
Alternate Field ID:
Accession Number: 20-007
Species: *Trichechus manatus latirostris*
Date: 27 August 2019 (DOR); 28 August 2019 (DON)
Location: FL
Sex, Age: M
TL: 274 cm
WT: 361 kg
Body Condition: Good
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: 24> hours

HISTORY

Findings include:

- Bloody eyes, nares
- Depleted fat
- Fluid pleural cavities
- Firm, swollen lung portion
- Wet, bloody lungs
- Specks, ecchymoses in lung, parietal pleura
- Congested peritoneum, parietal pleura, hemidiaphragms, lung, small intestine, urinary bladder mucosa
- Dark line kidneys
- Dark red ascites
- Sediment in naris
- Heart pallor
- Enlarged mesenteric lymph nodes
- Remodeled rib
- Calcified, necrotic muscle pocket in dorsal muscle associated with external hump and watercraft-related scar

Summary: Natural; Other

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment

Test	Tissue/Sample	Result	Comment

MICROSCOPIC DESCRIPTION

Received 8 Jan 2020 are 9 H&E slides.

There is mild, diffuse renal interstitial edema.

Hepatocytes and Kupffer cells contain small to occasionally moderate amounts of intracytoplasmic brown pigment (hemosiderin).

There is diffuse, mild thinning of the adrenal cortex.

Vessels in the right lung are moderately to markedly dilated and filled with erythrocytes. There is multifocal flooding of alveolar spaces with granular eosinophilic proteinaceous fluid. Three sections of the left lung are examined and there is a bacterial pneumonia. Alveolar spaces are flooded with abundant fibrin, heterophils, macrophages, necrotic cellular debris, and colonies of bacterial cocci. There is moderate congestion. The pleura is expanded by fibrin and lightly eosinophilic proteinaceous fluid. The pleural surface is covered by fibrin with enmeshed heterophils.

The following tissues have no significant histological findings: Mid large intestine, heart, proximal small intestine, heart, distal small intestine, stomach, mid intestine, peduncle muscle, spleen, cecum, distal large intestine,

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System
NSF

Respiratory Sytstem

A. Lung:
    a. Pneumonia, heterohistiocytic and fibrinous, subacute, coalescing, moderate to marked with intralesional bacterial cocci and moderate congestion.
    b. Pulmonary edema, multifocal, moderate.

Nervous System
NE

Urinary and Reproductive System

A. Kidney: Interstitial edema, diffuse, mild.

Digestive System/Body as a Whole
NSF

Cardiovascular System
NSF

Hepatobiliary System
A. Liver: Hemosiderosis, multifocal, mild.

Endocrine System
A. Adrenal Cortex: Cortical atrophy, diffuse, mild.

Hematolymphatic System
NSF

INTERPRETATIVE SUMMARY

DIAGNOSES
Bacterial Pneumonia

Primary Diagnostic Category: Infectious Bacterial

Linked Cases:

Death is attributed to bacterial pneumonia involving the left lung. Septicemia and respiratory dysfunction would be the likely end result. The petechiae observed grossly correspond to moderately dilated and congested vessels. There was no evidence of necrosis, edema, or inflammation in the intestine. There was mild atrophy of the adrenal cortex. Whether this is functionally/physiologically significant would need to be correlated with plasma cortisol and other endocrine levels. While not of the same severity, adrenal cortical atrophy was observed in cetaceans after the Deep Water Horizon oil spill.[1]

[1] Venn-Watson S, Colegrove KM, Litz J, Kinsel M, Terio K, Saliki J, Fire S, Carmichael R, Chevis C, Hatchett W, Pitchford J, Tumlin M, Field C, Smith S, Ewing R, Fauquier D, Lovewell G, Whitehead H, RosteinD, McFee W, Fougeres E, Rowles T. (2015) Adrenal Gland and Lung Lesions in Gulf of Mexico Common Bottlenose Dolphins (*Tursiops truncatus*) Found Dead following the *Deepwater Horizon* Oil Spill. PLoS ONE 10(5): e0126538. https://doi.org/10.1371/journal.pone.0126538

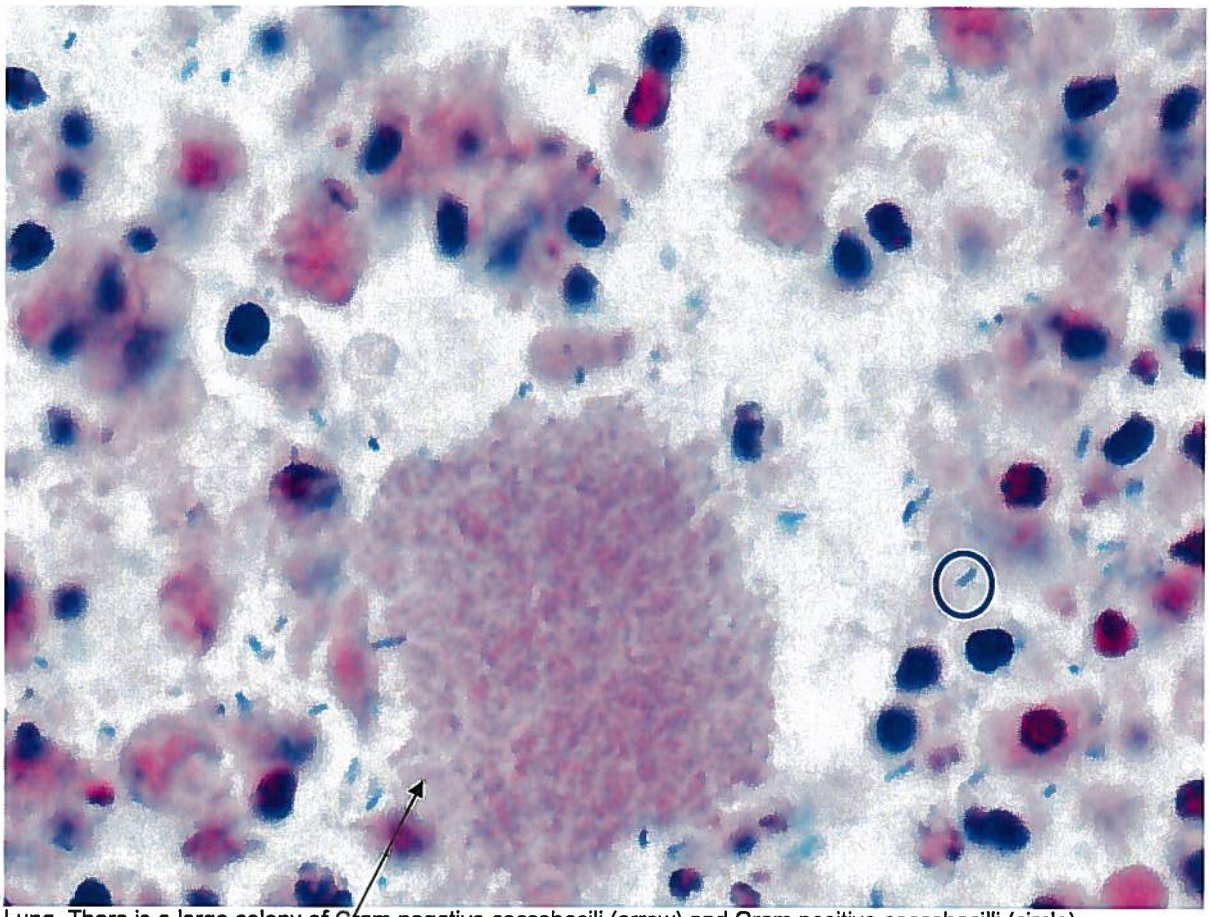
ADDENDUM 3-3-2020
Gram stained section of lung indicates the presence of few colonies of Gram negative coccobacilli and small, Gram positive bacilli. While culture and PCR would provide speciation, it should be noted that Pasturella multocida isa Gram negative coccobacillus. The present of Gram positive bacilli could indicate bacterial overgrowth or that the pneumonia involves multiple bacteria.

TEST	PURPOSE	SITE	RESULT
Culture or PCR	Pathogen detection	Lung- frozen or paraffin block (PCR)	suggested

DATE:
1/10/2020
3/3/2020 (addendum)

REPORTING PATHOLOGIST:
David S. Rotstein, DVM, MPVM, DACVP

FIGURES



Lung. There is a large colony of Gram negative coccobacili (arrow) and Gram positive coccobacilli (circle).

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19076
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14727 FWC District: NE
Sex: M / F / Undetermined Length: 274 cm (estimated _____) Weight 361 kg.
Date reported: 27 Aug 2019 By: Citizen to FWC NE Dispatch-Orlando
Date collected: 27 Aug 2019 By: FWC-SMW
Date necropsied: 28 Aug 19 By: MMPL MdW BLB BDB SMT

LOCATION: State: FL (___) County: Brevard Waterway: IR
Latitude: _____ N Longitude: _____ W
Locality description: Allenhurst

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 # 93
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

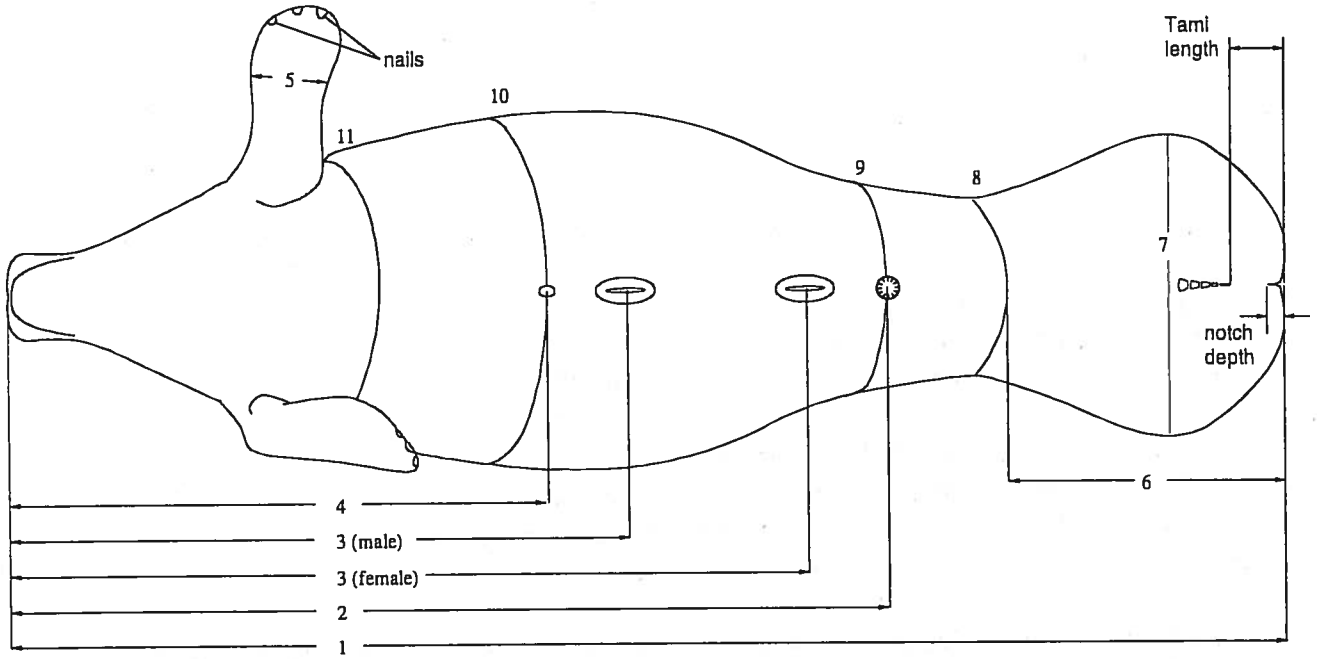
REMARKS: _____

Field ID # MEC19076

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.

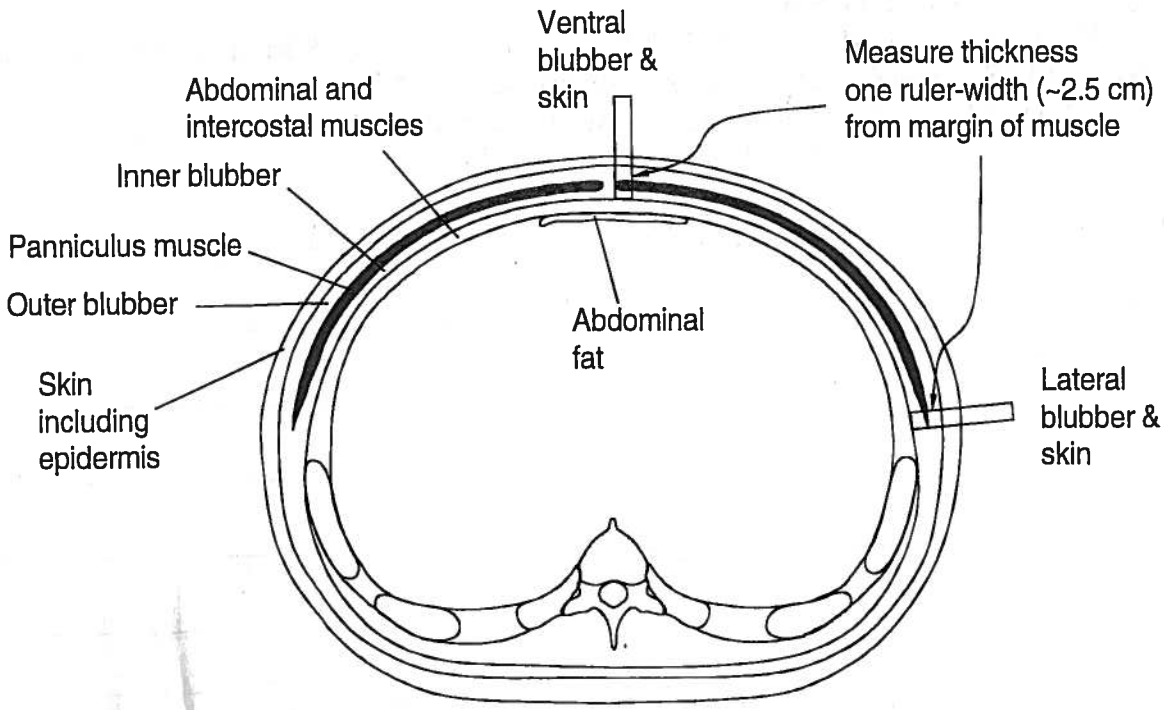
1. Total length 274 cm
2. Snout to anus -C 187 cm
3. Snout to U/G -C 118 cm
4. Snout to umbilicus -C 104 cm
5. Flipper width 17 cm
6. Fluke base 81 cm
7. Fluke width 69 cm
8. *Girth at fluke base ____ cm
9. * Girth at anus ____ cm
10. *Girth at umbilicus ____ cm
11. *Girth at axillae ____ cm

(Nail count: L 4 R 4)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.5 cm	1.7 cm	(Epidermis 0.1 cm)
Outer fat	0.4 cm	0.2 cm	(Abdominal fat 0.9 cm)
Inner fat	0.1 cm	0.3 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19076
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14727 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 27 August 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 27 August 2019 **By**: FWC-SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Haulover Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 565 m SW of Bairs Cove boat ramp.

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 #: **MEC19077**
Date of Report: 2019-Sep-07
Filed By: FWC EC Field Station

FWC Case # 15470 **FWC Region:** NE

Sex: Female **Length:** 322 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Sep-07 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Sep-08 **By:** FWC-SMW

DATE NECROPSIED: 2019-Sep-08 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 27.65193 **N**
County: Indian River **Longitude:** -80.3861 **W**
Waterway: Indian River
Locality description: Vero Beach, floating approximately 25 m E of 3012 Nassau Drive.

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. Bloody lung(s); Congested urinary bladder mucosa; Hemorrhagic region stomach wall.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Fused flipper nails).

MATERIALS COLLECTED:

Genetics, Partial skeleton (Skull).

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Uterine Scar. Known as MIPS ID RB601, first sighted on 16 Dec 1993 at the Riviera Beach Power Plant. Also FWC case number 15454. Fused flipper nails.

Page 1&2	4 JAN 2021
Necropsy Report	4 JAN 2021
Lat/Long	4 JAN 2021

Field ID #: MEC19077

MORPHOMETRICS:

Total length:	322 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. MEC19077
RECOVERY DATE 08 September 2019
GENDER Female **TL** 322 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 08 September 2019
CONDITION Badly Decomposed

HISTORY 07 September 2019, at 1841 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 in Vero Beach, Indian River County. FWC case number 15454 was assigned. The complainant, Annjill Miller (772-532-7533), stated that the carcass was floating belly-up and gray in color. ARH received a verification photo at 1846 hrs, requested FWC LE assistance to tow the carcass, and passed the information to the EC field station at 1852 hrs. FWC-Officer Marroquin secured the carcass at MacWilliams Park at 2100 hrs. **08 September**, at 0817 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding an injured manatee at MacWilliams Park. FWC case number 15470 was assigned. The complainant, Indian River Fire and Rescue-Lieutenant Russell Thompson, stated that they had received a call about a manatee that had been hit by a boat, was bleeding, and was tied up at the dock. Based on the description and location, it was determined to be the secured carcass. SMW arrived at the boat ramp at 0855 hrs, loaded the carcass via Ezy-Lift at 0950 hrs, and transported it to the EC Field Station at 1040 hrs. A field necropsy was completed at 1320 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. The carcass was distended with gas. Viscous, red-tinged fluid and a small amount of dead trematodes exuded from the nares. Viscous, pink fluid and rendered tissue exuded from the anus (see photo). A minimum of twelve well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. One scar on the dorsal head was indented. The fluke margin had a distinct well-healed mutilation from the 5 to 6 o'clock position. Two nails on each flipper were fused (see photos). PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal and mesenteric fat, and moderate omental fat.

STOMACH The stomach contained 1.5 L of wet, poorly chewed, fibrous, stringy, light green to tan vegetation mixed with watery, gray fluid. There was a mild infection of dead nematodes. The mucosa was unremarkable. *From photos*: There was one small hemorrhagic region on the serosa and in the wall of the major curvature.

DUODENUM The duodenum contained 200 mL of moist, poorly chewed, fibrous, stringy, light green to tan vegetation mixed with watery, gray fluid. There was a moderate infection of dead nematodes. The mucosa was stained light green.

JEJUNUM & ILEUM The proximal small intestine contained watery, gray fluid. There was a mild infection of dead nematodes. The distal small intestine was empty of contents. There was a mild infection of dead trematodes. The mucosa was unremarkable throughout.

CECUM The cecum contained 200 mL of watery, green to brown fluid mixed with small pieces of vegetation. There was a mild infection of dead trematodes. The mucosa was unremarkable.

COLON The proximal colon contained moist, moderately formed, well-digested, slightly fibrous, green to brown feces. There was a moderate infection of dead trematodes and a mild infection of dead nematodes. The mid colon contained very moist, moderately formed, well-digested, slightly fibrous, green to brown feces. There was a severe infection of dead trematodes (see photo). The distal colon contained moist, well-formed, well-digested, slightly fibrous, brown feces. The mucosa was sloughing throughout.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was mottled purple 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 brown to dark purple and cut surfaces were brown.

GALLBLADDER The gallbladder contained 60 mL of watery, dark yellow to brown bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The uterus was contracted (see photos). There was a mostly resolved scar in the left uterine horn. The ovaries 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 congested.

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

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft and friable. Serosal surfaces were light pink to dark pink and cut surfaces were dark red and bloody (see photo). The left lung primary airway contained a small amount of viscous, brown material (see photo). The primary airways of both lungs contained a scant amount of watery, red-tinged fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-09-08_FWC025_9257 through 9286, 2019-09-08_FWC025_9288 through 9291, 2019-09-08_FWC025_9293 through 9303.

COMMENTS There was no trauma or remodeling observed deep to the indented head scar.

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Bloody lungs
- Congested urinary bladder mucosa
- Hemorrhagic region stomach wall
- Uterine scar
- Fused flipper nails

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

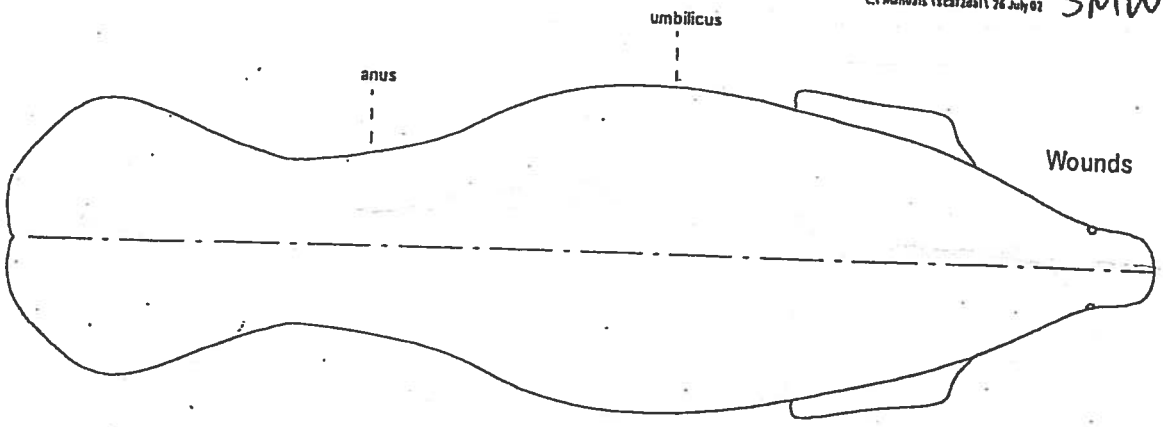
NECROPSY CONDUCTED BY

Sara M. Wappes
Gisele Nieman (FWC volunteer)
Brittiny Bennett (FWC volunteer)

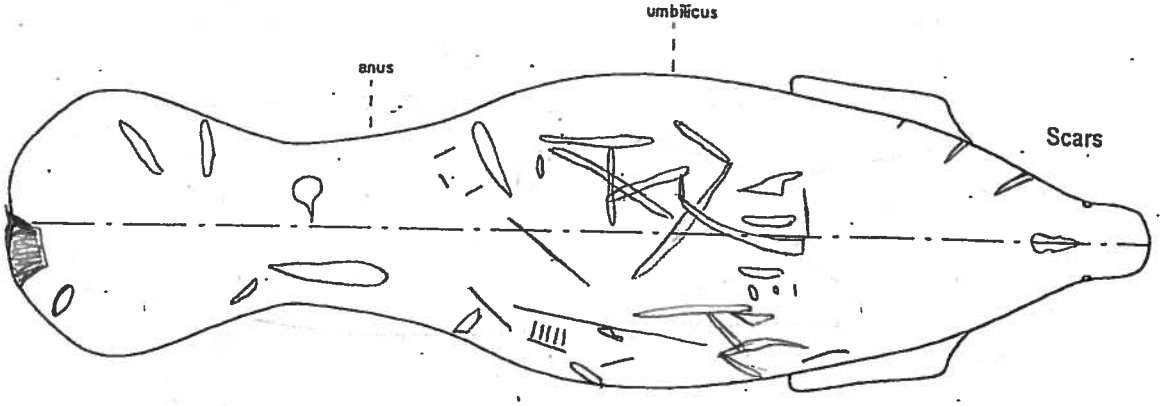
REPORT FILED BY Wappes

Date 08 Sep 2019 Field I.D. MEC19077

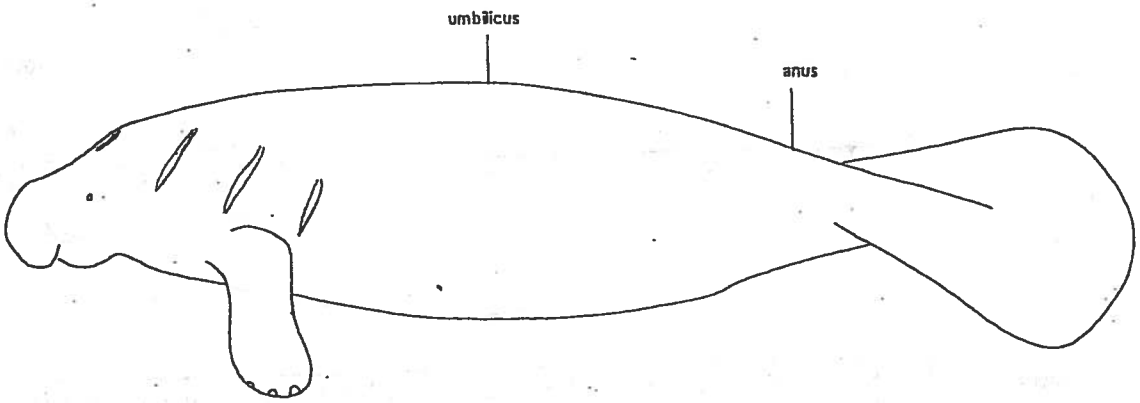
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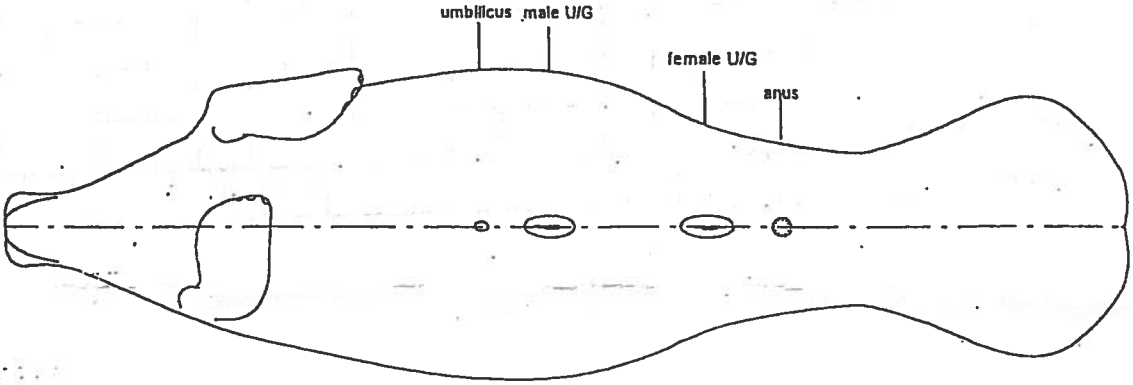


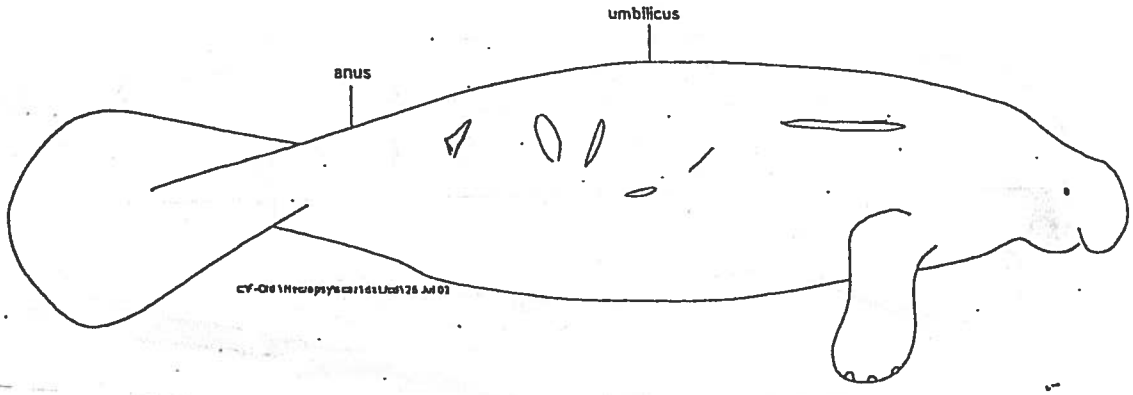
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. MEC19077



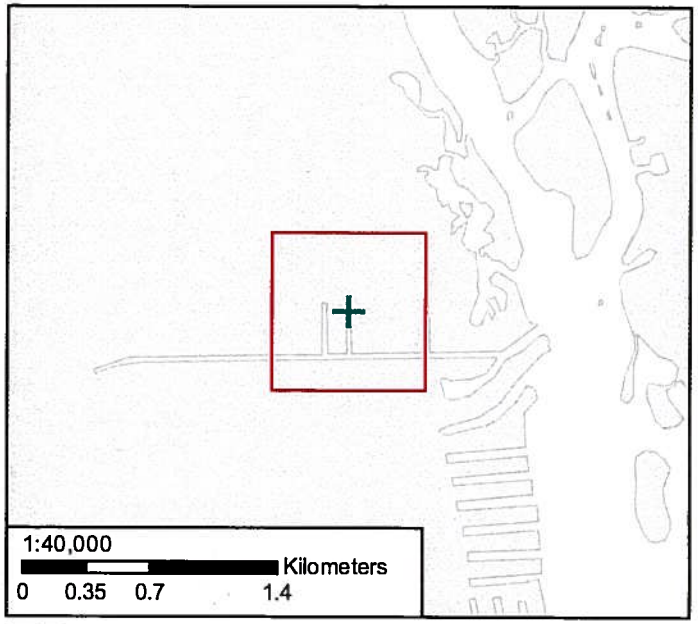


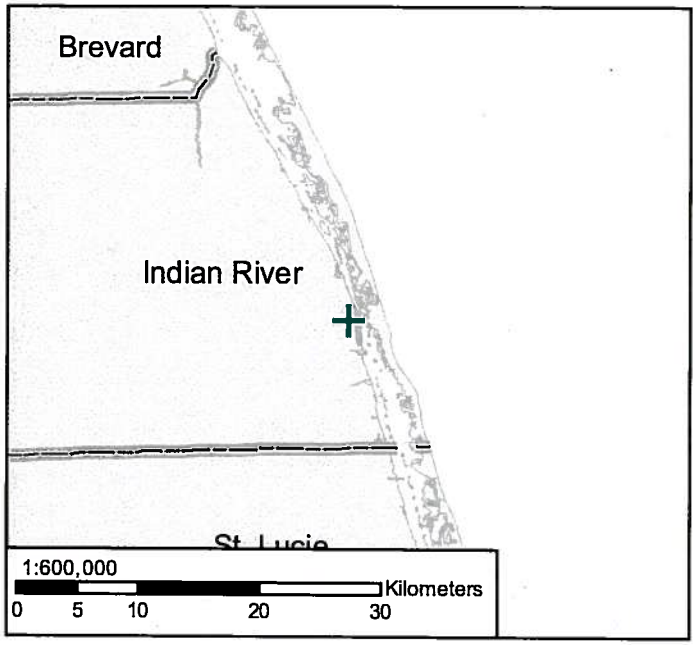


Verified Recovery Location of Manatee Carcass MEC19077

Report Date: 9/7/2019 **Received Date:** 9/8/2019 **Received By:** FWC-SMW Map Created: 12/30/2020







Locality Description:
Vero Beach, Indian River
Floating, approximately 25 m E of 3012 Nassau Drive.

Latitude: 27.65193°N **Longitude:** -80.3861°W

Bassett, Brandon

From: Rood, Kari
Sent: Monday, September 9, 2019 10:05 AM
To: Howell, Amber; amy_teague@usgs.gov; Barbeau, Brittany; Barlas, Margie; Bassett, Brandon; Boyd, Denise; Bukowski, Lucy; 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; Nader, Ana; Nelson, Rachael; Panike, Anna; Peek, Austin; Perna, Allison; Schubert, Molly; sheri@mote.org; Szemer, Donna; Tamborini, Kyanna; Tennant, Sean; Wappes, Sara; Whitcomb, Tara
Subject: MEC19077=RB601

MEC19077=RB601

Carcass location: Not available yet
Carcass sex: Female

First sighted 12/16/93 at Riviera Beach Power Plant
Last sighted 3/4/14 in St. Lucie County
USGS should be able to provide the complete sighting history if needed.

Verifiers: HONAKER & KAH 9/9/19

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 #** MEC19077
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 15454 **FWC District**: Northeast
Sex: Female **Length (cm)**: 322 **Estimated** _____ **Weight (kg)** _____
Date reported: 07 September 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 08 September 201 **By**: FWC-SMW
Date necropsied: 08 September 2 **By**: FWC-SMW, FWC vol-B. Bennett, G. Nieman

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 25 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: Internal organs soft and friable, some autolyzed. Abundant fats, relatively empty upper GI tract. Severe infection of trematodes 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: No **PREGNANT:** No **UTERINE SCAR**: Unknown
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 #: **MEC19078**
Date of Report: 2019-Sep-09
Filed By: FWC MMPL

FWC Case # 15605 **FWC Region:** NE

Sex: Male **Length:** 296 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Sep-09 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Sep-10 **By:** FWC-LRB

DATE NECROPSIED: 2019-Sep-11 **By:** MMPL-MdW,BLB,ALP,BDB FWC-BMF,AP

LOCATION: **State:** FL **Latitude:** 27.8087 **N**
County: Indian River **Longitude:** -80.46317 **W**
Waterway: Indian River
Locality description: Sebastian, grounded approximately 235 m NE of 490 US Highway 1.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Watercraft wound(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Dark line kidney(s); Bloody eyes, nares; Head trauma; Congested mesenteries, peritoneum, urinary bladder-, seminal vesicle mucosa, hemidiaphragms; Dark red ascites; Fluid in pleural cavities; Mucus, blood clots in airways; Vegetation in mouth.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Wound measurements.

REMARKS:

PIT tag scan negative. Remodeled rib. Tissue tags on lung, hemidiaphragm. Notch in lung with fibrin tags. Kidney cysts. Also FWC case numbers 15575 and 15593.

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Necropsy Report	4 Jan 2021
Lat/Long	4 Jan 2021

Field ID #: MEC19078

MORPHOMETRICS:

Total length:	296 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:	0.8 cm	2.5 cm		
Outer Blubber Thickness:	0.6 cm	0.2 cm	**Abdominal Fat Thickness:**	0.9 cm
Inner Blubber Thickness:	0.2 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:

Fluid in epididymides (Abundant amount of thick, viscous, white 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. MEC19078
RECOVERY DATE 10 September 2019
GENDER Male **TL** 296 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 11 September 2019
CONDITION Badly Decomposed

HISTORY 09 September 2019, at 1528 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a possible dead manatee in the Indian River in Sebastian, Indian River County. FWC case number 15575 was assigned. The complainant, Laurie White (239-633-4323), stated that the carcass was full grown, belly-up, and grey in color. SMW received a verification photo at 1538 hrs and requested FWC LE assistance at 1540 hrs to tow the carcass. At 2000 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from Dispatch regarding the same dead manatee. FWC case number 15593 was assigned. The complainant, Christopher Geiselmann (772-486-6300), was unable to take photos. At 2039 hrs, ARH forwarded the information to the EC Field Station and requested FWC LE assistance to tow the carcass, but no officers were available. At 2048 hrs, a third complainant, Cathy Chesire (772-584-9267), reported the same carcass in the same area. **10 September**, at 0730 hrs, ARH received a text alert from Dispatch regarding the same dead manatee. FWC case number 15605 was assigned. The complainant, Judith Bairstow (772-589-1688), stated that the carcass was grounded and belly-up. At 0807 hrs, SMW canceled the request for officer assistance. SMW and FWC biologists-William D. Greer and Lucy R. Bukowski (LRB) arrived at the Sebastian Yacht Club boat ramp at 0900 hrs, launched the Key West boat, and located the carcass at 0925 hrs. The carcass was secured at the Sebastian Yacht Club at 1010 hrs and LRB returned to the field station for a carcass trailer. LRB then returned to the boat ramp with the trailer at 1145 hrs, loaded the carcass at 1204 hrs, and transported it to the MMPL arriving by 1520 hrs.

EXTERNAL All of the epidermis was present. Copious bloody fluid, mucus, and blood clots exuded from the nares. Several dead trematodes also exuded from the nares. The eyes were bloody. There were superficial fresh wounds on the dorsal and lateral aspects. The caudal dorsal head and neck region had at least three parallel transverse linear wounds (#1-3). The epidermis was scraped off the dorsum. The right lateral aspect had at least two wide linear scrapes in the length of the body (wounds #4 and 5). There was a minimum of two well-healed watercraft-related scar patterns on the dorsal and lateral aspects. The fluke margin had a distinct well-healed mutilation at the 4 o'clock position. Copepods were present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal and omental fat, and moderate mesenteric fat. The peritoneum had patches of severe congestion. The abdomen contained 2 L of watery, cloudy, dark red fluid.

STOMACH The stomach contained 7.5 L of moist, fibrous, well-chewed, stringy, tan to green ingesta. The ingesta were coated with a thin layer of viscous, tan mucus. The mucosa was tan and had purple spotting. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 4.5 L of moist, fibrous, well-chewed, stringy, tan to green ingesta. The mucosa was tan to purple. No parasites were observed.

JEJUNUM & ILEUM The mesentery had patches of severe congestion. The small intestine was torn due to decomposition. The distal small intestine contained a moderate amount of moist, well-chewed, slightly stringy, light and dark green ingesta. The proximal small intestine contained a moderate amount of wet, well-chewed, slightly stringy, light and dark green ingesta mixed with tan fluid. The mucosa was unremarkable throughout. The Peyer's patches were prominent throughout. No parasites were grossly observed.

CECUM The cecum contained 2 L of moist, moderately digested, slightly stringy, leafy, light and dark green digesta. The mucosa was sloughing. No parasites were observed.

COLON The mesentery had patches of severe congestion. The distal colon contained a large amount of moist, moderately digested, stringy, well-formed, dark green feces. The proximal colon was torn due to decomposition and contained a large amount of moist, moderately digested, stringy, slightly leafy, poorly formed, light and dark green feces. The mucosa was sloughing throughout. There was a moderate infection of dead trematodes in the proximal colon.

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

SPLEEN The spleen was small (3.5 x 1.0 x 0.5 cm). The serosal surfaces were mottled pink and black, and cut surfaces were red.

LIVER The liver was soft and friable. 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 10 mL of viscous, flocculent, dark yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The testes were large. There was an abundant amount of thick, viscous, white fluid on cut surfaces of the epididymides and deferent ducts. The seminal vesicles were moderate in size and contained an abundant amount of watery, cloudy, tan fluid. The mucosa was moderately congested.

KIDNEYS There was moderate perirenal fat. The kidneys were pink to dark purple on serosal surfaces. On cut surfaces of the left kidney, the cortices were pale pink to pink and the medullae were red to dark purple. There was a 2 cm diameter cyst in the parenchyma of the caudal one-third. The corticomedullary boundaries were mostly distinct. On cut surfaces of the right kidney, the cortices were pink to dark pink and the medullae were dark red. There were a 0.7 cm cyst in the middle and a 2 cm cyst in the cranial one-third of the parenchyma. There was a dark red line at most of the corticomedullary boundaries which were distinct. An ELISA toxicology sample was collected.

URINARY BLADDER The bladder was empty of contents. The mucosa was severely congested.

HEART There was moderate epicardial fat. The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were intact and moderately congested. The right pleural cavity contained 175 ml and the left pleural cavity contained 300 mL of watery, dark red fluid. There were numerous tan tissue tags on the ventral aspect of the lungs along the airways and on the pleural aspect of the hemidiaphragms. The lungs were light pink, pink, and purple on serosal surfaces, and red to dark red on cut surfaces. The airways contained a moderate amount of viscous red-tinged mucus and loose, well-formed blood clots. There was a mild infection of dead trematodes. The mucosa was red to dark red. There was a well-healed notch at the mid-lateral aspect of the left lung which was associated with fibrin strings. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a large thatch of moderately chewed *Halodule* in the mouth. An ELISA toxicology sample was collected. There was a 13 x 6 cm region of hemorrhagic, shredded, muscle on the caudal dorsal head deep to wound #1. The neck tissue was bloody and contained small blood clots.

SKELETON Left rib 11 was remodeled at the proximal one-third which was deep to a small well-healed linear scar on the caudal left dorsum.

OTHER There were small streaks and spots of hemorrhage in the muscle dorsal to the right scapula. There was slightly serous dark red tissue dorsal to the proximal one-third of right ribs 1-4 deep to a scrape on the cranial right lateral aspect. The dermis had a hemorrhagic band deep to wound #5.

PHOTOGRAPHS 2019-09-10_FWC047_2437, 2438; 2019-09-11_2439 through 2442, 2444, 2445, 2447 through 2449, 2451, 2452, 2455 through 2459, 2460 through 2463, 2465, 2467 through 2476, 2478 through 2486.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh watercraft wounds
- Bloody eyes, nares
- Head trauma
- Shredded, hemorrhagic muscle
- Blood clots
- Congested mesenteries, peritoneum, urinary bladder-, seminal vesicle mucosa, hemidiaphragms
- Dark line kidneys
- Dark red ascites
- Fluid in pleural cavities
- Mucus, blood clots in airways
- Vegetation in mouth
- Kidney cysts
- Remodeled rib
- Tissue tags on lung, hemidiaphragm
- Notch in lung with fibrin tags
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

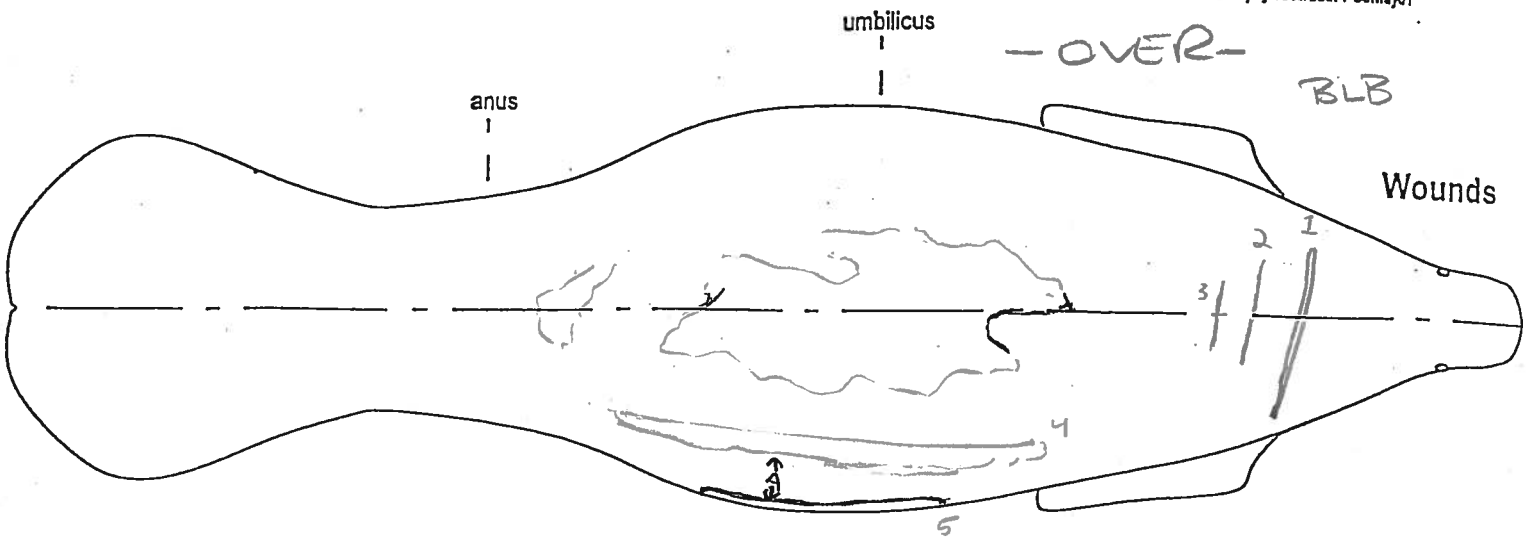
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brandon L. Bassett
Anna L. Panike
Brittany D. Barbeau
Blake M. Faucett (SE Field Station)
Austin L. Peek (SE Field Station)

REPORT FILED BY de Wit

Date 11 Sept 2019 Field I.D. MEC19078

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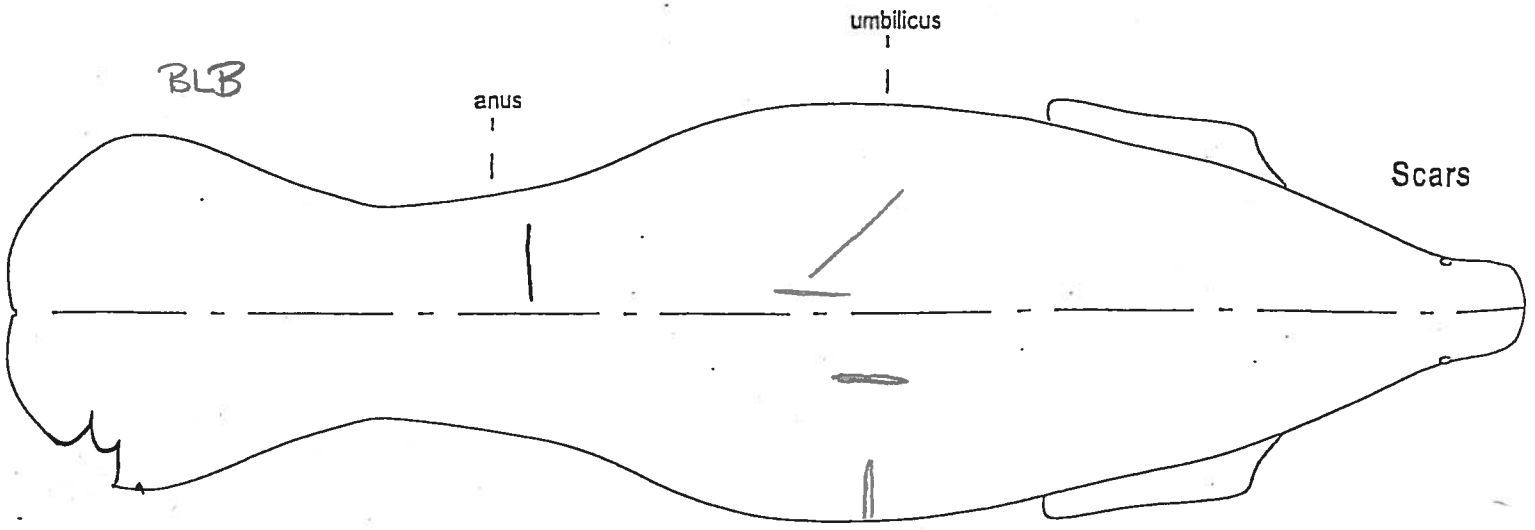


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BLB

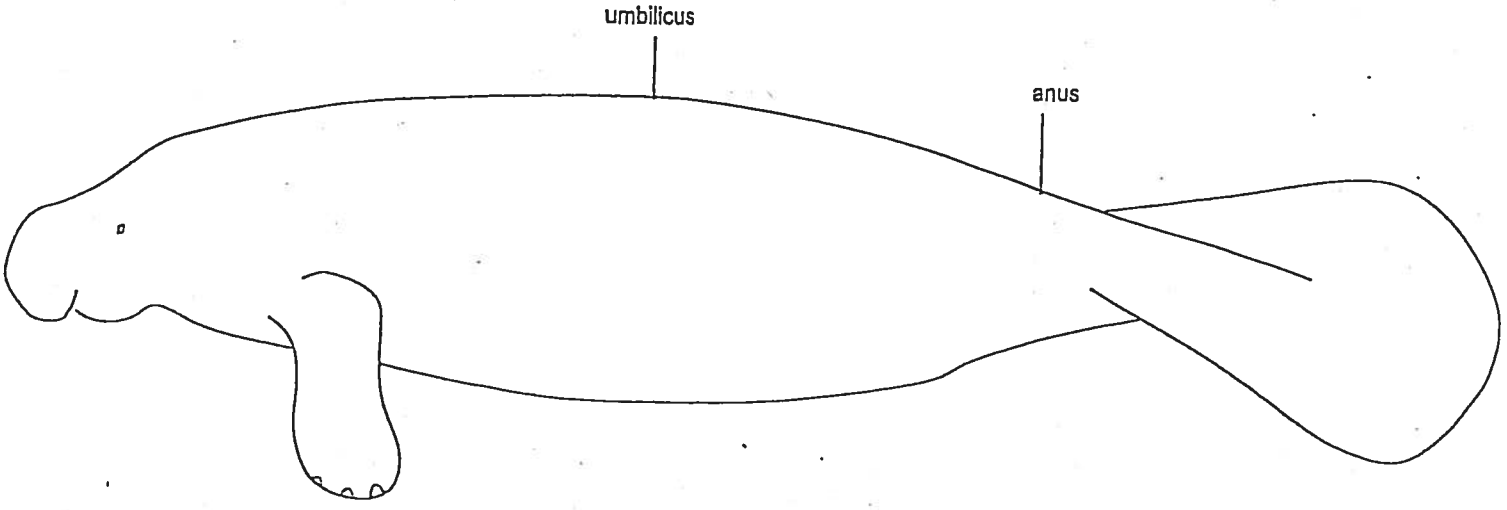
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Width	0.9	0.2	0.4	7.2	6.4															
Depth	0	0	0	0	0															
Distance		10.5	4.2		18.7															

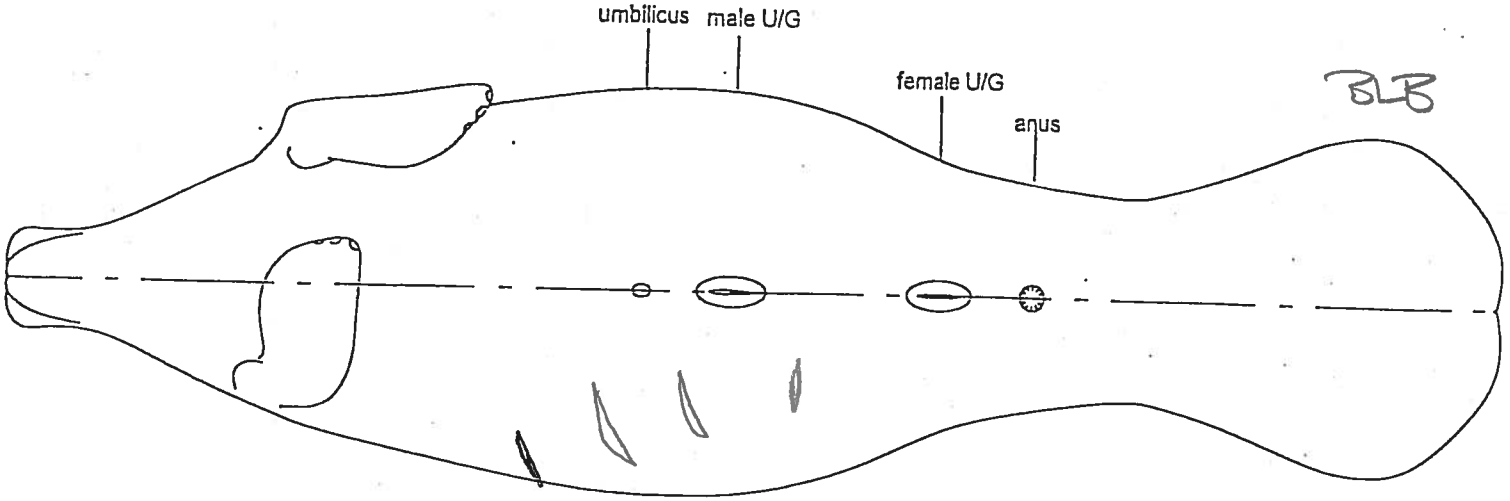
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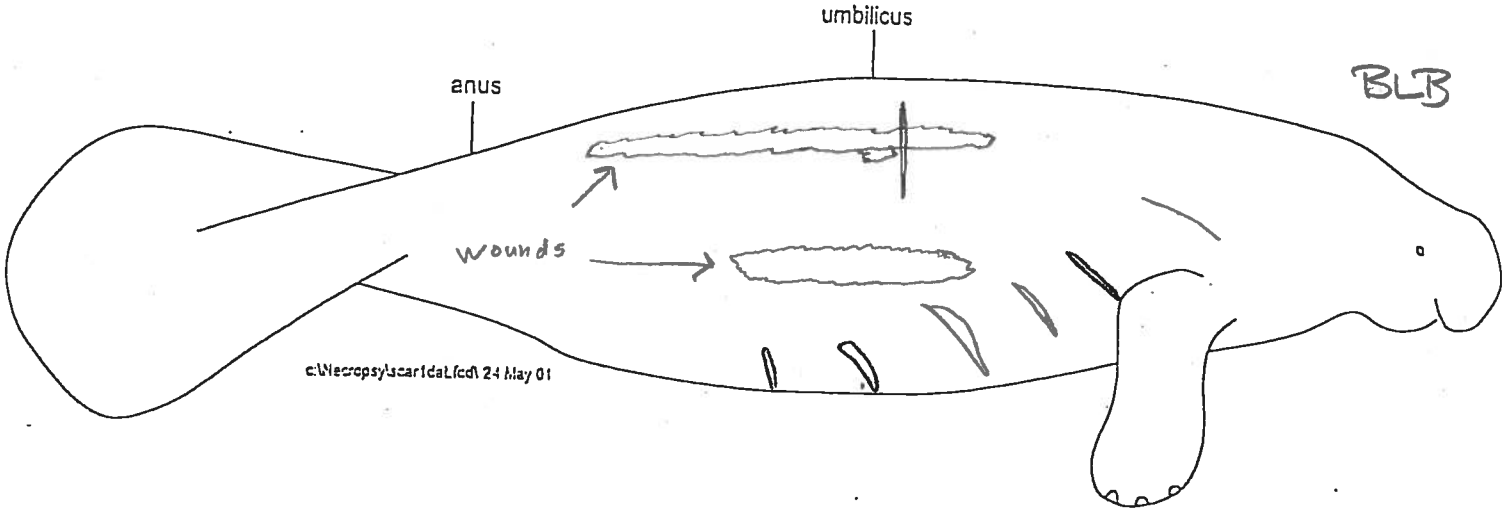


over →

FIELD I.D. MEC 19078

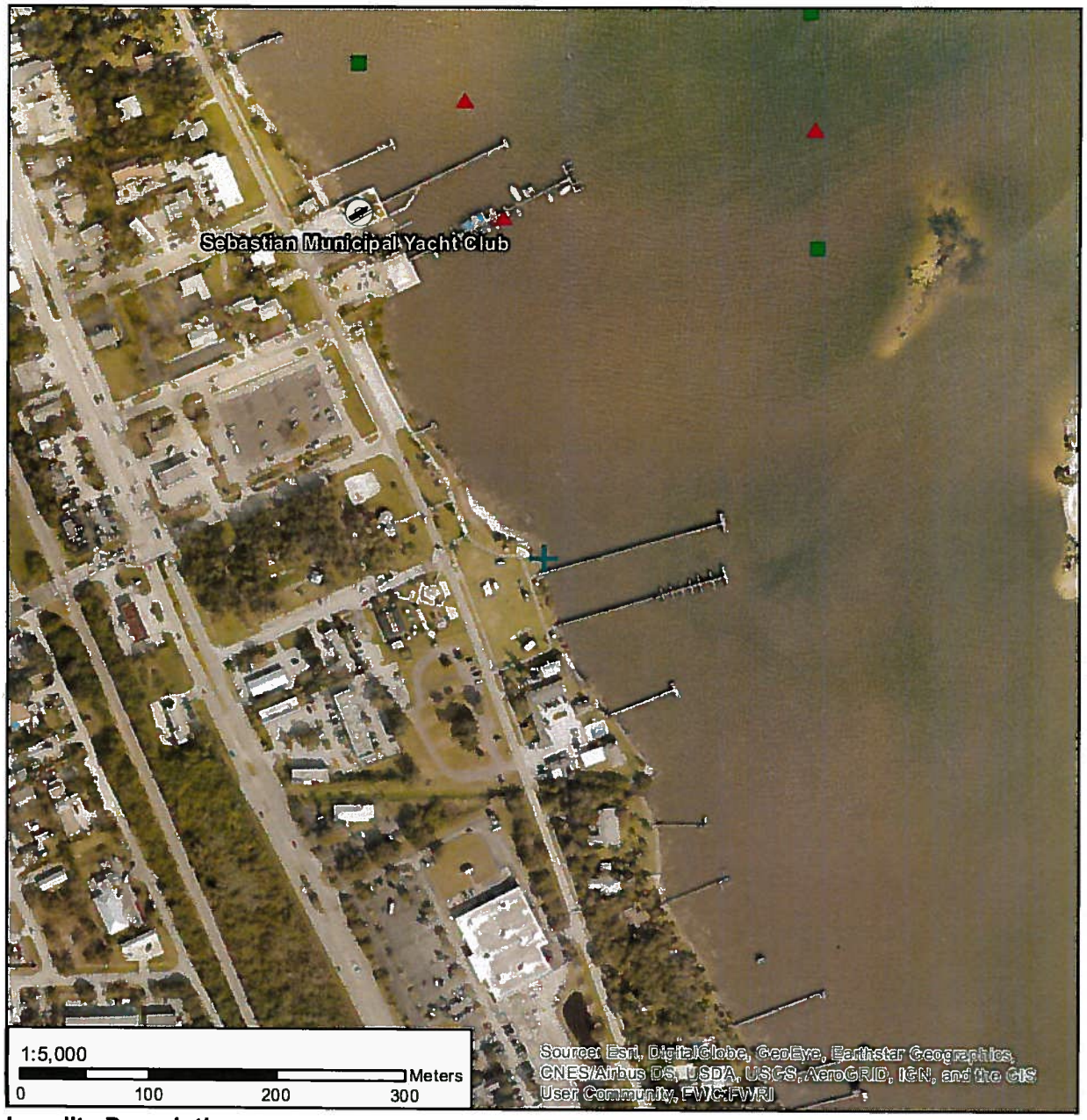


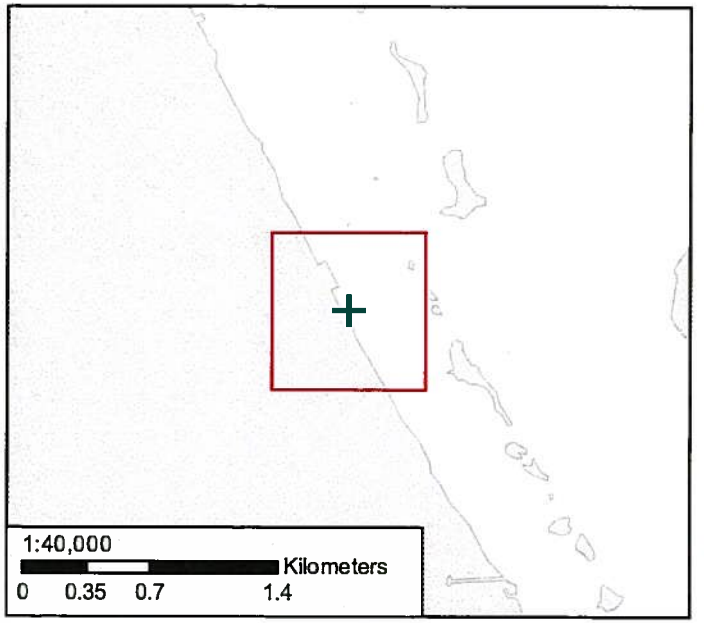


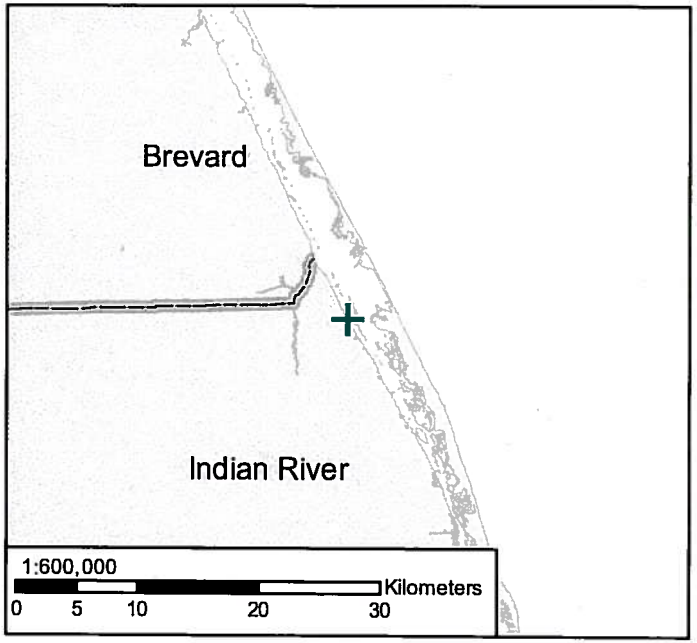


Verified Recovery Location of Manatee Carcass MEC19078

Report Date: 9/9/2019 **Received Date:** 9/10/2019 **Received By:** FWC-LRB Map Created: 12/30/2020







Locality Description:
Sebastian, Indian River
Grounded, approximately 235 m NE of 490 US Highway 1.

Latitude: 27.8087°N **Longitude:** -80.46317°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19078
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 15575, 15593 FWC District: Northwest
Sex: M / F / Undetermined Length: 296 cm (estimated _____) Weight _____ kg.
Date reported: 09 Sept 2019 By: Citizen to FWC NE Dispatch - Orlando
Date collected: 10 Sept 2019 By: _____
Date necropsied: 11 Sept 19 By: MMPL MdW BLB BDB ALP FWC BMF, AP

LOCATION: State: FL ( ) County: Indian River Waterway: Indian River
Latitude: _____ N Longitude: _____ W
Locality description: Sebastian, 300 m S of Mulligans boat ramp

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 – ward
Histology - Other _____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach - Liver - Lung - Urine - Kidney (if no urine) - Other) vegetation mouth
Genetics Box # 94
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 _____

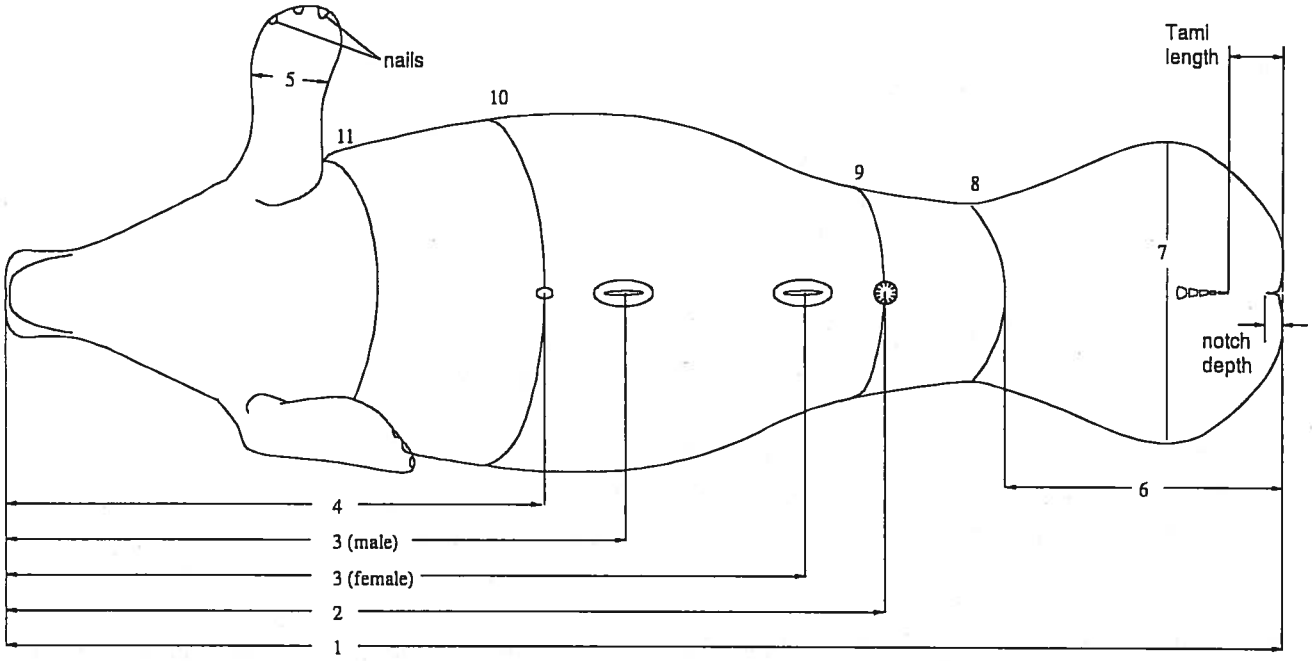
PIT TAG Scan: Negative; Positive (Left_____ - _____ - _____)(Right_____ - _____ - _____); N/T

REMARKS: _____

Field ID # MEC 19078

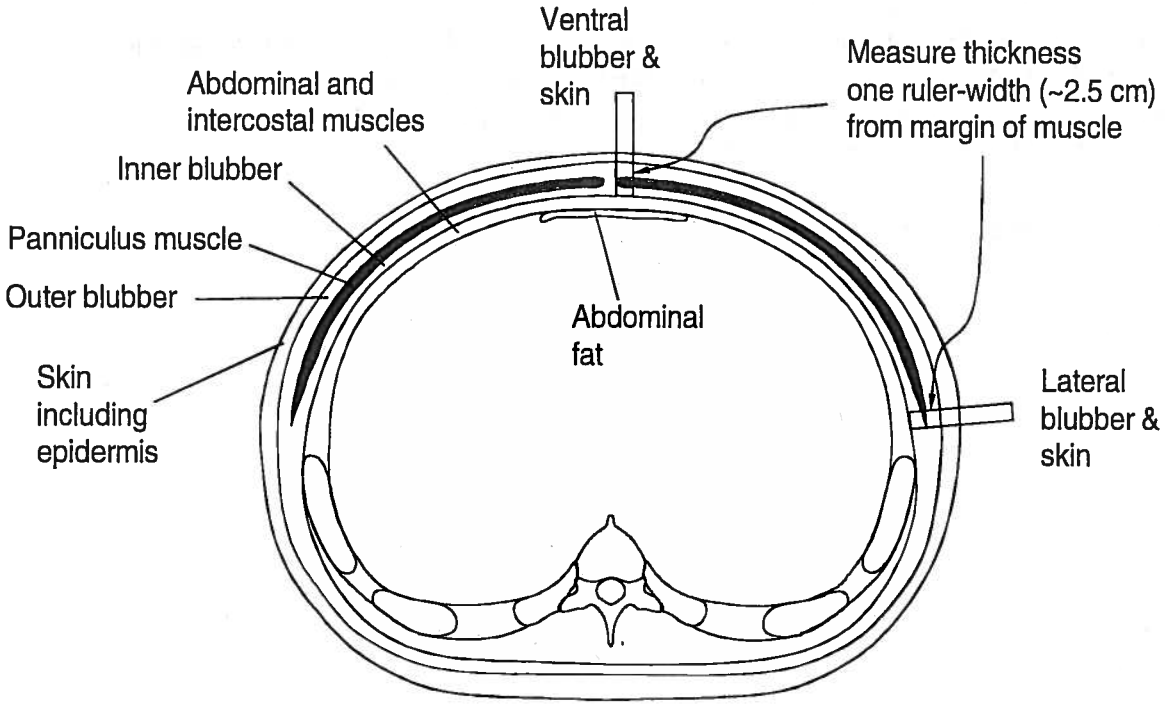
Morphometrics: All measurements are straight-line, unless indicated by an asterisk (*). Measure to center of openings marked with C below. Record girths* and flipper lengths on fresh (non-bloated) carcasses only.
USE METRIC SYSTEM FOR ALL MEASUREMENTS. Measurement in parenthesis are optional.

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	0.8 cm	2.5 cm	(Epidermis 0.1 cm)
Outer fat	0.6 cm	0.2 cm	(Abdominal fat 0.9 cm)
Inner fat	0.2 cm	0.4 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19078
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 15575, 15593 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 09 September 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 10 September 201 **By**: FWC-LRB
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Sebastian, approximately 175 m ENE of 720 Harrison 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:

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 #: **MEC19079**
Date of Report: 2019-Sep-17
Filed By: FWC EC Field Station

FWC Case # 16195 **FWC Region:** NE

Sex: Female **Length:** 308 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Sep-17 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Sep-18 **By:** FWC-LRB,SMW,WDG

DATE NECROPSIED: 2019-Sep-18 **By:** FWC-LRB,SMW,WDG

LOCATION: **State:** FL **Latitude:** 28.499 **N**
County: Brevard **Longitude:** -80.77647 **W**
Waterway: Indian River
Locality description: Titusville, grounded approximately 30 m ESE of the easternmost building at 7645 South Highway 1.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact and Propeller; Acute; Watercraft wound(s); Fractured rib(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Bloody lung(s); Fluid in pleural cavities.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Uterine Scar. White blaze on ventrum. A field necropsy was performed. Also FWC case number 16165. Macroalgae, tunicates in GI tract.

Page 1&2	4 Jan 2021
Necropsy Report	4 JAN 2021
Lat/Long	4 JAN 2021

Field ID #: MEC19079

MORPHOMETRICS:

Total length:	308 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. MEC19079
RECOVERY DATE 18 September 2019
GENDER Female **TL** 308 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 18 September 2019
CONDITION Badly Decomposed

HISTORY 17 September 2019, at 1708 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 16165 was assigned. The complainant, Madeline Johnson (954-410-4467), stated that the carcass was large and gray in color. At 1739 hrs, WDG received a photo of the carcass and requested FWC LE assistance to tow it, but no officers were available. **18 September**, at 0830 hrs, WDG canceled the request for FWC LE assistance. WDG and FWC biologists-Sara M. Wappes (SMW) and Lucy R. Bukowski (LRB) arrived at the OUC boat ramp at 1050 hrs and launched the Key West boat at 1058 hrs. At 1106 hrs, SMW received a text from Dispatch regarding the same dead manatee. FWC case number 16195 was assigned. The complainant, Bill Tillford (321-961-8887), stated that the manatee was against the shoreline and belly up. WDG, SMW, and LRB located the carcass at 1115 hrs, towed it to uninhabited shoreline, and completed a field necropsy by 1317 hrs. The remains were left onsite.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The carcass was distended with gas. There was a fresh watercraft-related wound series on the mid dorsal aspect which consisted of two sets of penetrating propeller wounds (#1 – 6) at 45-degree angles to and through each other. There was an additional superficial wound (#7) through wounds #3, 5 and 6. Most of the soft tissue within the wounds was missing, and left ribs 11 – 13 were exposed. Bloody fluid exuded from the wounds. There was a moderate brown algal mat on the dorsal aspect. A mild infestation of copepods was present on the ventral aspect. A minimum of three watercraft-related scar patterns was observed on the dorsal and lateral aspects. There was a small white blaze on the mid ventrum. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained 5.75 L of moist, well-chewed, fibrous, green to brown ingesta and well-chewed mangrove propagules mixed with a small amount of red macroalgae and tunicates (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 1.25 L of watery, brown fluid mixed with wet, well-chewed, fibrous, green to brown ingesta and tunicates (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, gray fluid and tunicates. The mid-small intestine contained viscous, brown fluid. The distal small intestine contained viscous, gray fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 500 mL of wet, slightly fibrous, moderately digested, dark brown digesta mixed with a few tunicates (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon contained moist, very fibrous, well-digested, well-formed, brown feces. The mucosa was unremarkable. The was a mild infection of dead trematodes in the proximal and mid colon

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

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

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

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

REPRODUCTIVE There was abundant reproductive fat. The uterus was contracted. The left uterine horn contained a scar. The ovaries contained numerous, fluid-filled follicles.

KIDNEYS The perirenal fat was rendered. The kidneys were brown on serosal surfaces. On cut surfaces, the cortices were brown and the medullae were dark red. The corticomedullary boundaries were indistinct. The right kidney capsule contained well-formed blood clots.

URINARY BLADDER The urinary bladder contained 350 mL of flocculent, red-tinged urine. The mucosa was unremarkable.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right pleural cavity contained 800 mL of watery, dark red fluid. The left pleural cavity contained 2.2 L of watery, dark red fluid. The lungs were gray to pink on serosal surfaces, and dark red to light red and bloody on cut surfaces. The primary airways contained a small amount of watery, red-tinged fluid.

HEAD & NECK REGIONS There was a moderate amount of watery, red-tinged fluid in the trachea.

SKELETON Left rib 11 was chipped at the dorsal mid aspect (see photo) deep to the watercraft wound series.

OTHER There was hemorrhagic, shredded tissue deep to all wounds.

PHOTOGRAPHS 2019-09-18_FWC025_9304 through 9321, 9325, 9328; 9330 through 9337.

COMMENTS The wound series was consistent with that caused by contra-rotating propellers.

SIGNIFICANT FINDINGS

- Watercraft wounds
- Fractured rib
- Shredded, hemorrhagic tissue
- Blood clots
- Bloody lungs
- Fluid in pleural cavities
- Macroalgae, tunicates in GI tract
- Small white blaze
- Uterine scar

PROBABLE CAUSE OF DEATH Watercraft; Both (Acute)

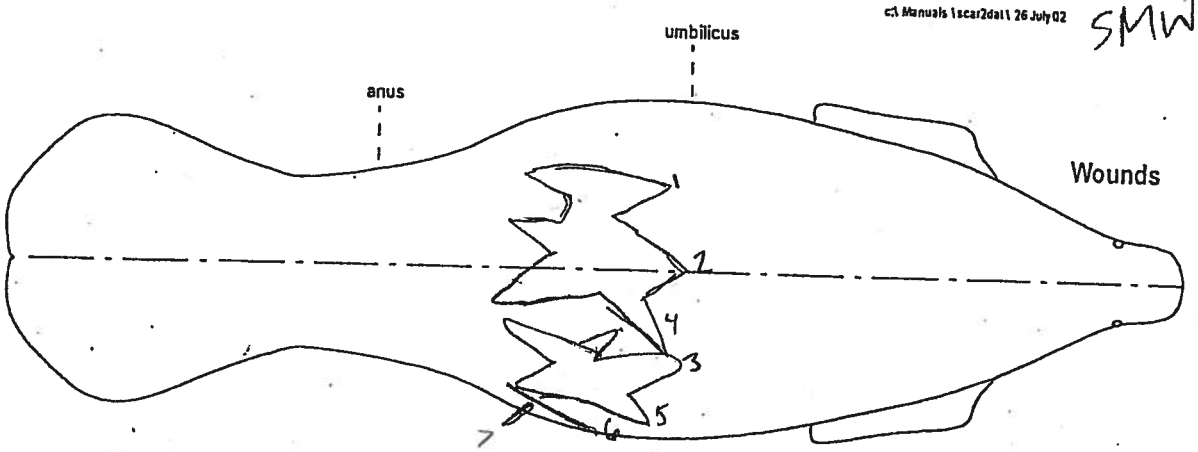
NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes
Lucy R. Bukowski

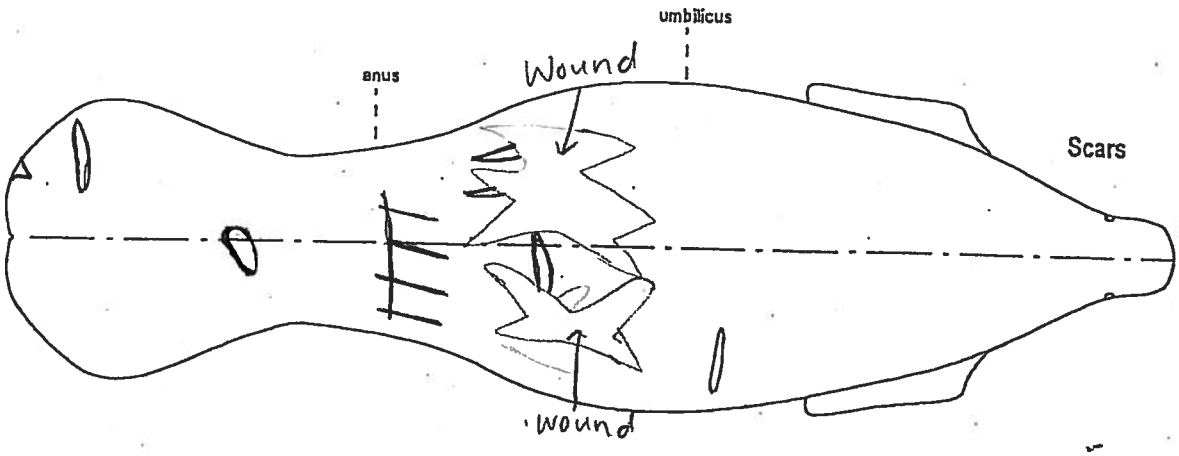
REPORT FILED BY Bukowski / Wappes / Greer

Date 9/18/19 Field I.D. MEC19079

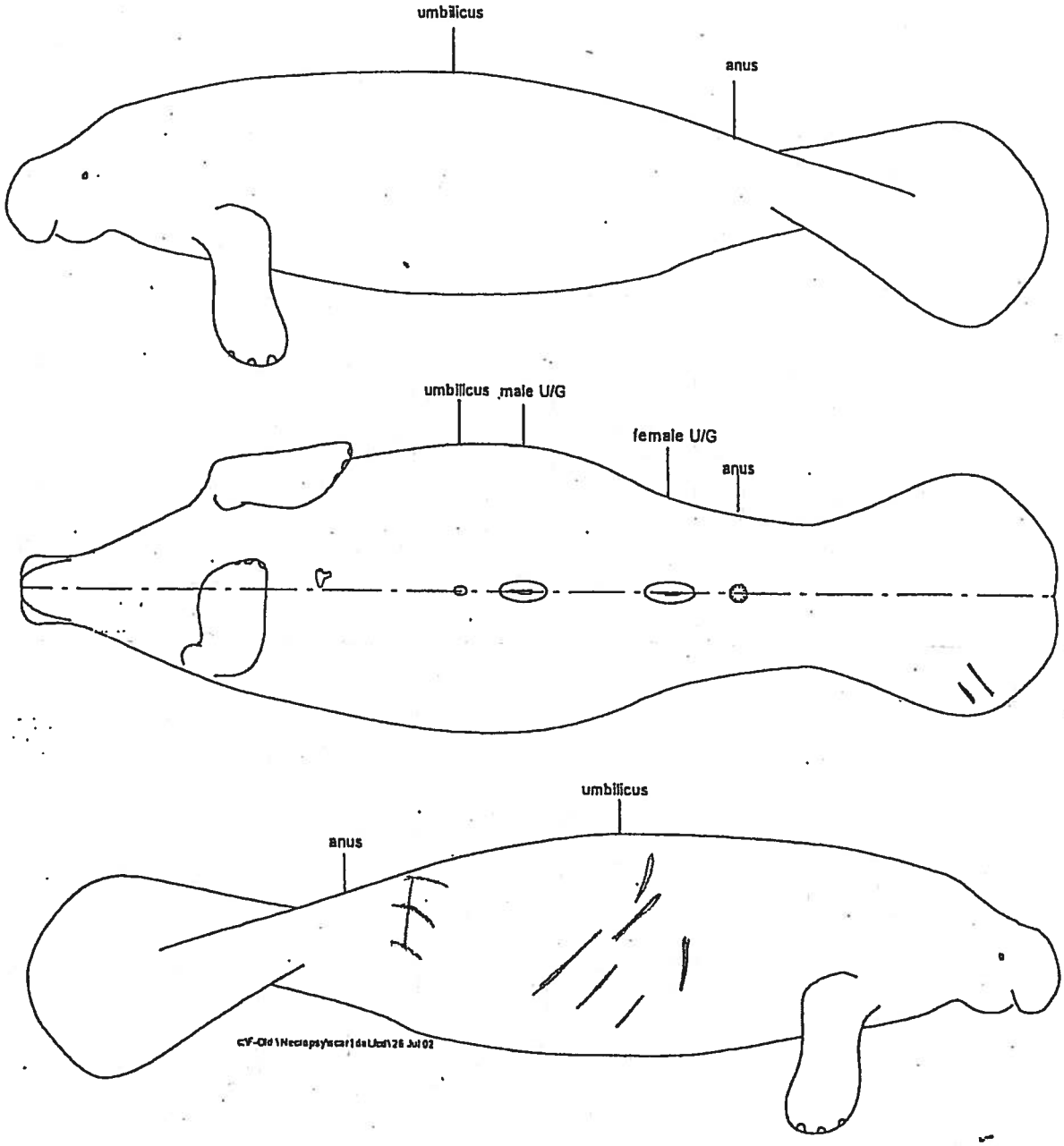
c:\ Manuals \ scar2dat \ 26 July 02 SMW



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																				



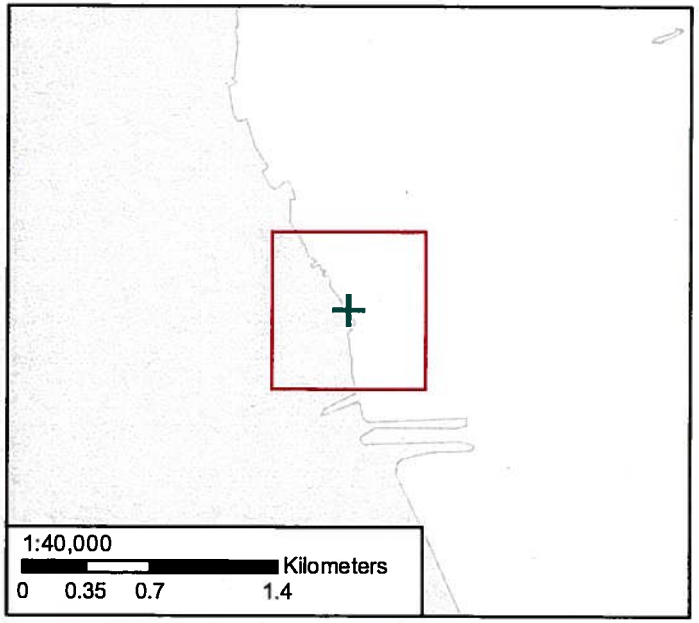
FIELD I.D. MEC19079

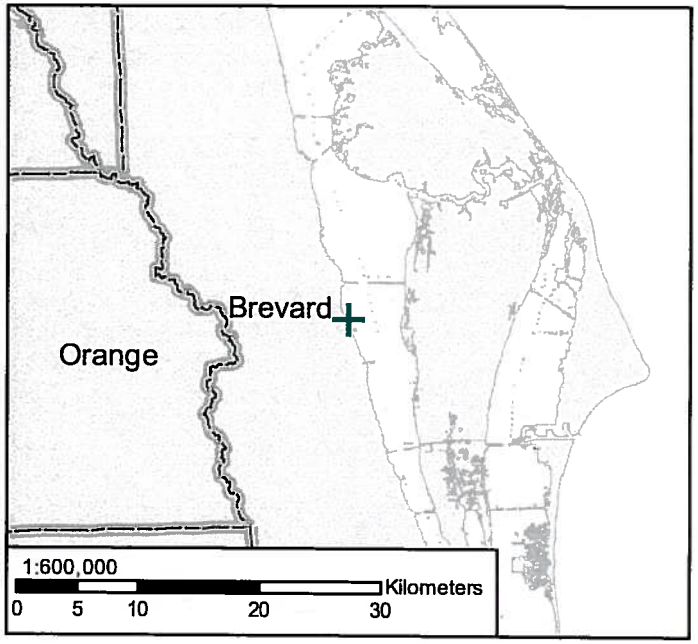


Verified Recovery Location of Manatee Carcass MEC19079

Report Date: 9/17/2019 **Received Date:** 9/18/2019 **Received By:** FWC-LRB,SMW,WDC Map Created: 12/30/2020







Locality Description:
Titusville, Brevard
Grounded, approximately 30 m ESE of the easternmost building at 7645 South Highway 1.

Latitude: 28.499°N **Longitude:** -80.77647°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19079
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 16165, 16195 **FWC District**: Northeast
Sex: Female **Length (cm)**: 308 **Estimated** _____ **Weight (kg)** N/T
Date reported: 17 Sept 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 18 Sept 2019 **By**: FWC- LRB, SMW, WDG
Date necropsied: 18 Sept 2019 **By**: FWC- LRB, SMW, WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 30 M ESE of the easternmost building at 7645 South Highway 1
Carcass Orientation: Grounded

CONDITION: Badly Decomposed

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: Large wound series penetrating to body cavity, well formed blood clots, hemorrhagic and shredded tissue associated with 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 _____

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: Wounds not measured due to decomposition

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 #: **MEC19080**
Date of Report: 2019-Sep-20
Filed By: FWC EC Field Station

FWC Case # 16293 **FWC Region:** NE

Sex: Female **Length:** 293 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Sep-20 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Sep-21 **By:** FWC-LRB

DATE NECROPSIED: 2019-Sep-21 **By:** FWC-LRB

LOCATION: **State:** FL **Latitude:** 28.22541 **N**
County: Brevard **Longitude:** -80.61652 **W**
Waterway: Banana River
Locality description: Satellite Beach, floating approximately 1.12 km SE of Banana River Buoy 6B.

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. Necrotic linear lesion in proximal small intestine mucosa; Relatively empty duodenum.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Uterine Scar. A field necropsy was performed. Also FWC case number 16785.

Page 1&2	4 JAN 2021
Necropsy Report	4 JAN 2021
Lat/Long	4 JAN 2021

Field ID #: MEC19080

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. MEC19080
RECOVERY DATE 21 September 2019
GENDER Female **TL** 293 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 21 September 2019
CONDITION Badly Decomposed

HISTORY 20 September 2019, at 1113 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Banana River, Satellite Beach, Brevard County. FWC case number 16293 was assigned. The complainant, Ken (321-506-6152), stated that the manatee was back-up, in the mangroves, and had intestines protruding out of its stomach. No confirmation photos were available. Due to a truck failure, SMW and FWC biologist-Lucy R. Bukowski (LRB) were unable to respond. **21 September**, at 0900 hrs, LRB and FWC volunteers-Gisele Nieman and Alex Lang arrived at the Patrick Air Force Base Marina and launched the Key West boat. The carcass was located at 0945 hrs and towed to a nearby vacant shoreline. A field necropsy was completed at 1110 hrs, and the carcass was left onsite. **26 September**, at 1711 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a text alert from Dispatch regarding a dead manatee in the Banana River in Satellite Beach. FWC case number 16785 was assigned. The complainant, Anthony McCue (321-405-8048), stated there was a dead manatee near Patrick Air Force Base. Due to the location description, it was determined to be MEC19080. At 1744 hrs, DMB received a text alert from Dispatch regarding the same carcass. The complainant, Aaron Huston (321-432-7227), stated the manatee was beached, white, and smelled very bad.

EXTERNAL Approximately 50% of the epidermis was present but sloughing. The carcass was distended with gas. Red-tinged fluid exuded from the nares. There were small eroded patches of dermis on the dorsum. Portions of the GI tract protruded through the urogenital opening. The eyes were missing due to decomposition. There were four small well-healed mutilations of the fluke margin between the 8 and 10 o'clock positions. The fluke margin was eroded at the 7 o'clock position. A minimum of three 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 abundant abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 7.5 L of moist, fibrous, moderately chewed, brown ingesta mixed with mangrove propagules (see photo). The mucosa was unremarkable. There was a moderate infection of dead nematodes.

DUODENUM The duodenum contained 300 mL of watery, brown fluid mixed with watery, fibrous, moderately chewed ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, brown to yellow fluid. There was a long linear necrotic lesion in the mucosa (see photo). A mild infection of dead nematodes was observed. The mid- and distal small intestine contained viscous, gray fluid. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 4.75 L of moist, fibrous, moderately digested, brown digesta (see photo). The mucosa was sloughing. There was a moderate infection of dead trematodes.

COLON The colon contained moist, fibrous, moderately digested, well-formed, brown feces mixed with mangrove propagules. The mucosa was unremarkable. There was a mild infection of dead trematodes.

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

SPLEEN The spleen was mottled black and gray 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 abundant, gassy reproductive fat. The uterus was contracted. The left uterine horn contained a scar. The ovaries contained numerous fluid-filled follicles.

KIDNEYS The kidneys were soft, friable, and autolyzed.

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

HEART There was moderate, gassy 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 and red, and cut surfaces were dark red. The primary airways contained a scant amount of watery, red-tinged fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-09-21_FWC025_9338 through 9352.

COMMENTS The lesion in the small intestine was consistent with that caused by line. However, the manatee was in good body condition and was eating well, and no foreign objects were found in the GI tract. It is unknown how the lesion might have been related to the cause of death.

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Necrotic linear lesion in small intestine mucosa
- Relatively empty duodenum
- Uterine scar

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

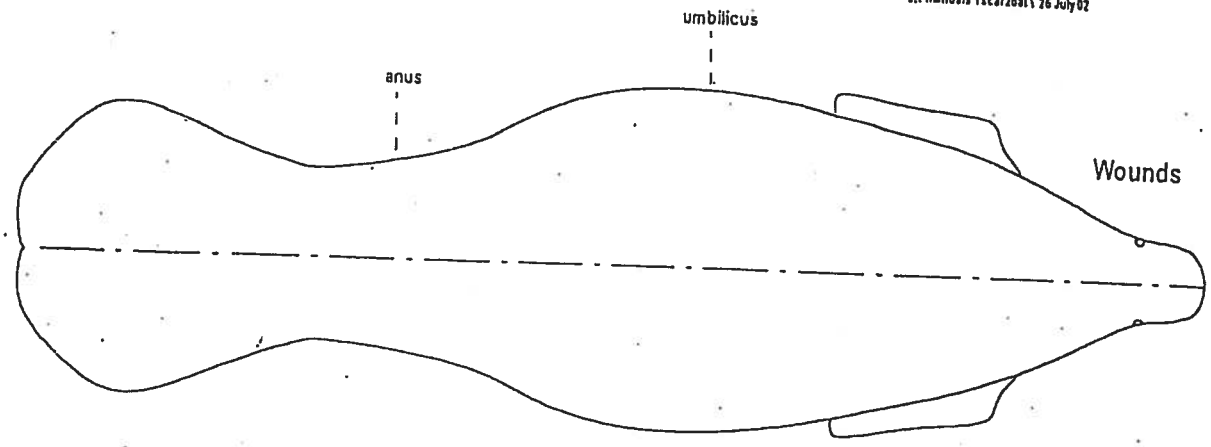
Lucy R. Bukowski
Gisele Nieman (FWC volunteer)
Alex Lang (FWC volunteer)

REPORT FILED BY Bukowski

Date 21 Sept 2019 LRB

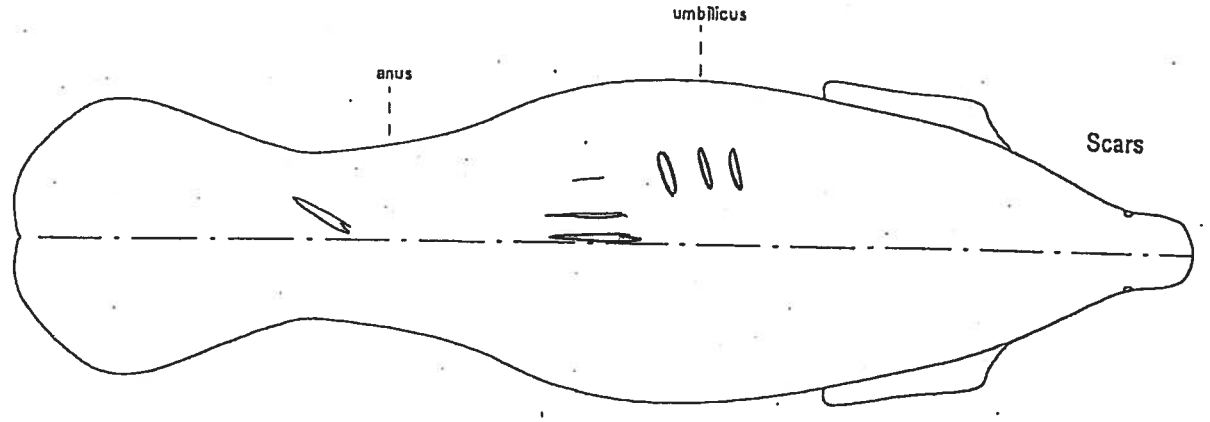
Field I.D. MEC190080

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Wounds

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																				

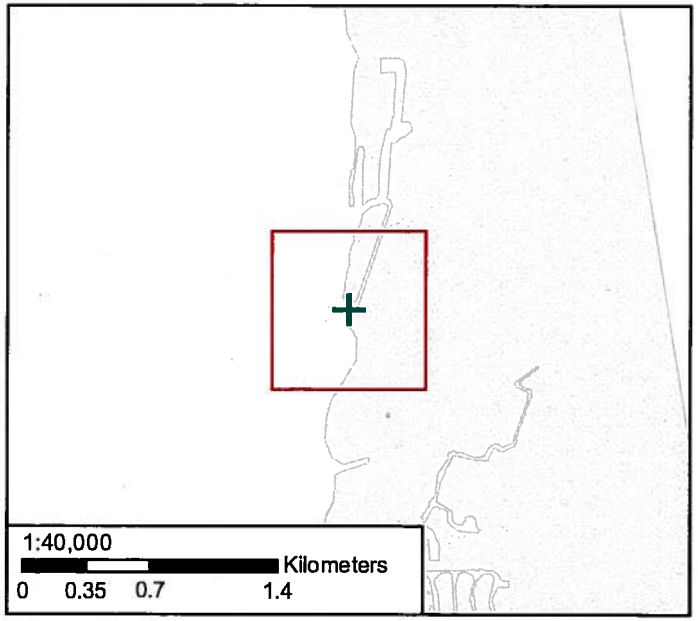


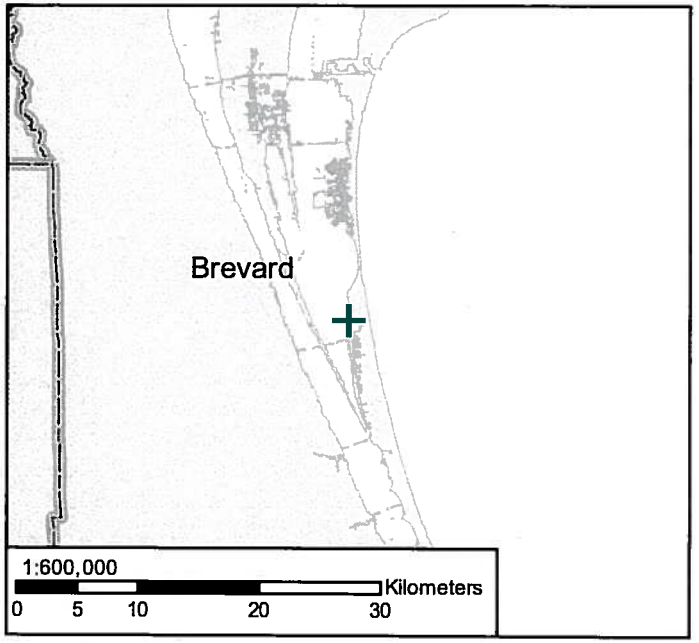
Scars

Verified Recovery Location of Manatee Carcass MEC19080

Report Date: 9/20/2019 **Received Date:** 9/21/2019 **Received By:** FWC-LRB Map Created: 12/30/2020







Locality Description:
Satellite Beach, Brevard
Floating, approximately 1.12 km SE of Banana River Buoy 6B.

Latitude: 28.22541°N **Longitude:** -80.61652°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19080
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 16293 **FWC District**: Northeast
Sex: Female **Length (cm)**: 293 **Estimated** _____ **Weight (kg)** N/T
Date reported: 20 September 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 21 September 201 **By**: FWC-LRB, FWC Vols-G.Nieman, A.Lang
Date necropsied: 21 September 2 **By**: FWC-LRB, FWC Vols-G.Nieman, A.Lang

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 930 m W of 1319 Control 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: Internal organs 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 _____

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: Laterals not taken due to orientation of carcass.

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 #: **MEC19081**
Date of Report: 2019-Sep-23
Filed By: FWC EC Field Station

FWC Case # 16567 **FWC Region:** NE

Sex: Female **Length:** 307 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Sep-23 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Sep-23 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Sep-23 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 27.64946 **N**
County: Indian River **Longitude:** -80.38454 **W**
Waterway: Indian River
Locality description: Vero Beach, floating approximately 50 m NE of 2775 Whippoorwill Lane.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Chronic; Watercraft wound(s); Fractured rib(s); Fractured vertebra(e); Vertebral separation(s); First sighted alive on 31 August 2019 with fresh deeply penetrating wound, and additional live sighting on 13 September 2019 with the same poorly healing wound.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

Live sighting photographs.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in stomach. Scavenging. Also FWC case numbers 14932, 15856, 16702,16766, 16957, 17063, and 20483.

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Necropsy Report	4 Jan 2021
Lat/Long	4 Jan 2021

Field ID #: MEC19081

MORPHOMETRICS:

Total length:	307 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. MEC19081
RECOVERY DATE 23 September 2019
GENDER Female **TL** 307 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 23 September 2019
CONDITION Badly Decomposed

HISTORY 31 August 2019, at 1125 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding an injured manatee with a calf in Indian River in Vero Beach, Indian River County. FWC case number 14932 was assigned. The complainant, Sherry Glaab (772-473-2380), stated that the wound was deep and bleeding, the manatee was barely moving, and did not seem to be using its tail. At 1132 hrs, LRB received a photo of the injury. LRB relayed the information to FWC biologist-William D. Greer (WDG) who then relayed it to FWC rescue coordinator-Andrew J. Garrett (AJG). Due to Hurricane Dorian, a rescue response was not available. **13 September**, at 1410 hrs, WDG received a text alert from Dispatch regarding an injured manatee with a calf in the Indian River in Vero Beach. FWC case number 15856 was assigned. The complainant, Laura Hopkins (912-682-7757), stated that the manatee had a large gash across the peduncle, was very lethargic, and was breathing once a minute. At 1414 hrs, WDG received photos and confirmed it was the same manatee. WDG contacted AJG who agreed that due to time of day and the need for SeaWorld assistance, a response was not feasible that day. **23 September**, at 1502 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding a dead manatee in the Indian River in Vero Beach. FWC case number 16567 was assigned. The complainant, Shannon (770-316-7298), stated that the manatee was white, belly-down, and about 10 feet long. At 1513 hrs, SMW received a photo of the carcass via text. SMW and WDG launched the Key West boat from MacWilliams Park in Vero Beach at 1610 hrs, located the carcass at 1630 hrs, and towed it to a remote location nearby. A field necropsy was completed at 1733 hrs. The remains were left on site. Additional reports of the carcass were received on 25 September (FWC case number 16702), 26 September (FWC case number 16766), 29 September (FWC case number 16957), 30 September (FWC case number 17063), and 22 November (FWC case number 20483).

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There were larges patches of eroded dermis on the dorsum. Rents were present at the urogenital opening, anus, and axillae due to decomposition. There was an eroded watercraft-related wound pattern (wounds #1 - 6) across the dorsal peduncle which exposed fractured vertebrae and the body cavity. A minimum of six well-healed watercraft-related scar patterns was grossly observed on the dorsal aspect. There was a well-healed triangular mutation between the 7 and 8 o'clock positions of the fluke. The fluke margin was eroded at the 4 and 5 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal fat was rendered. There was moderate omental fat. There was abundant mesenteric fat. Internal organs were missing unless mentioned below.

STOMACH The stomach contained 9.9 L of moist, poorly chewed, stringy, very fibrous, yellow ingesta mixed with poorly chewed mangrove propagules (see photo). There was an 8 cm long piece of >30 lb test diameter green monofilament line in the contents (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 25 mL of wet, moderately chewed, fibrous, yellow ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM Only the proximal small intestine remained and contained wet, moderately chewed, fibrous, yellow ingesta. The mucosa was autolyzed. No parasites were grossly observed.

COLON Only a one-meter long section of loose colon was present in the abdominal cavity which contained slightly moist, well-formed, moderately digested, stringy, yellow to brown feces. The mucosa was autolyzed.

No parasites were observed.

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 There was watery, red-tinged fluid in the trachea.

SKELETON Right rib 16 had an oblique fracture at the proximal one-third (see photo). The right transverse processes of Ca1 – Ca3 were fractured at the vertebral body (see photo). There was a vertebral separation between Ca3 and Ca4 (see photo). All fractures and the separation were deep to the watercraft wounds.

OTHER

PHOTOGRAPHS 2019-09-23_FWC025_9353 through 9376.

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wounds
- Fractured vertebrae, rib
- Vertebral separation
- Monofilament in stomach
- Autolyzed, missing internal organs
- Scavenging
- Observed alive with deep watercraft wounds in the weeks before carcass report

PROBABLE CAUSE OF DEATH Watercraft; Chronic

NECROPSY CONDUCTED BY

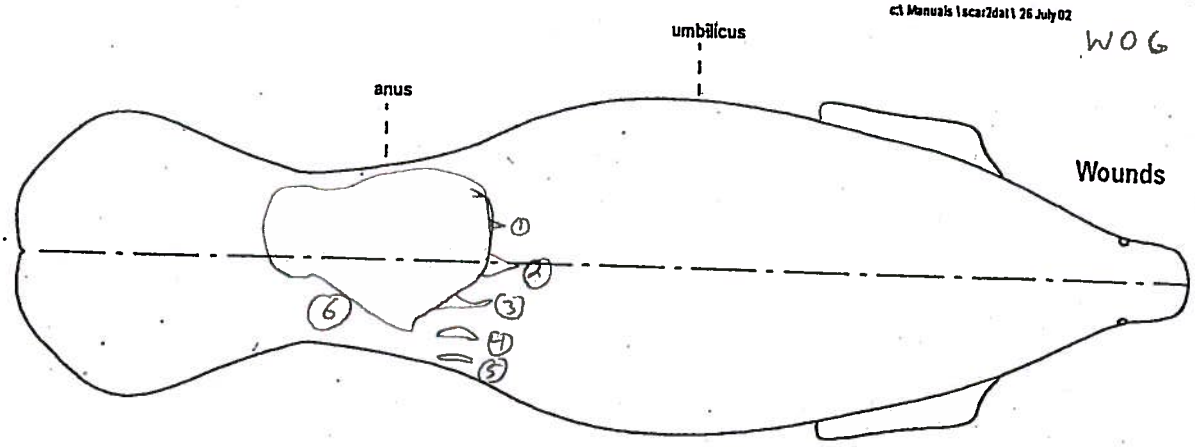
William D. Greer
Sara M. Wappes

REPORT FILED BY Greer

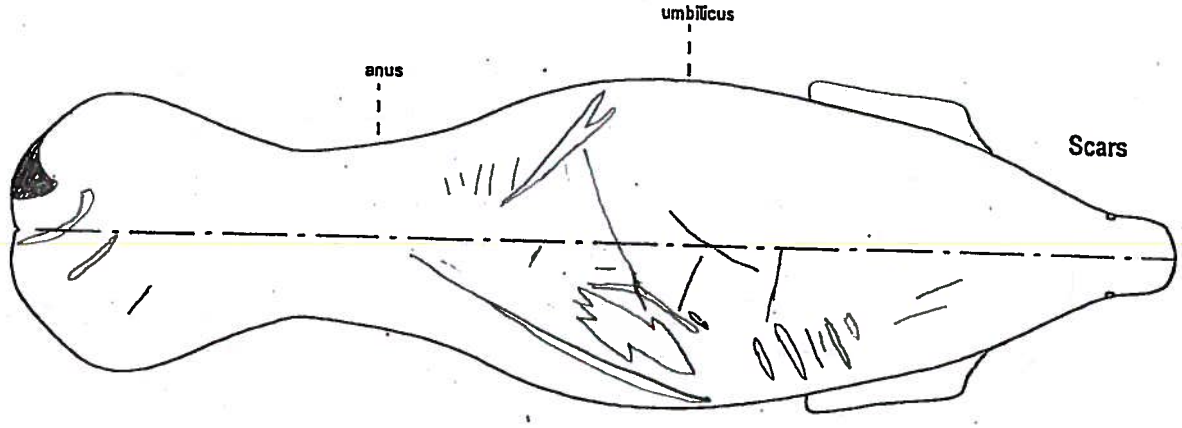
Date 23 SEPT 2019 Field I.D. MEC19081.

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WOG



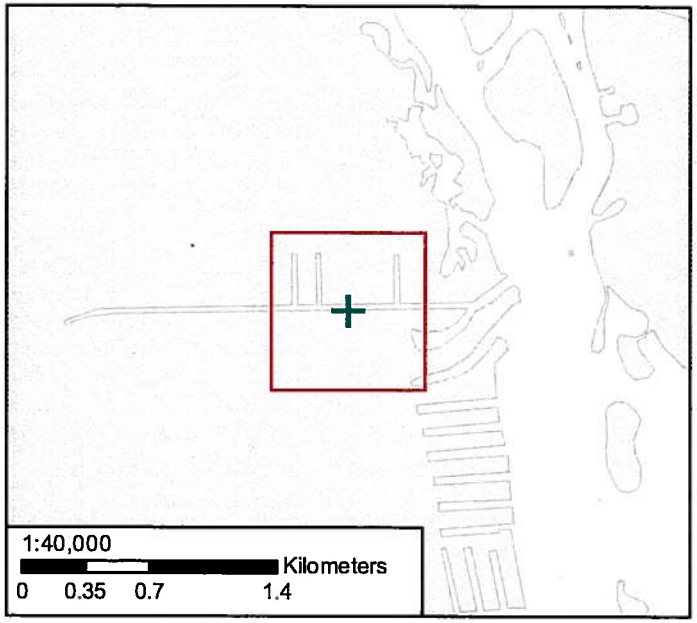
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				

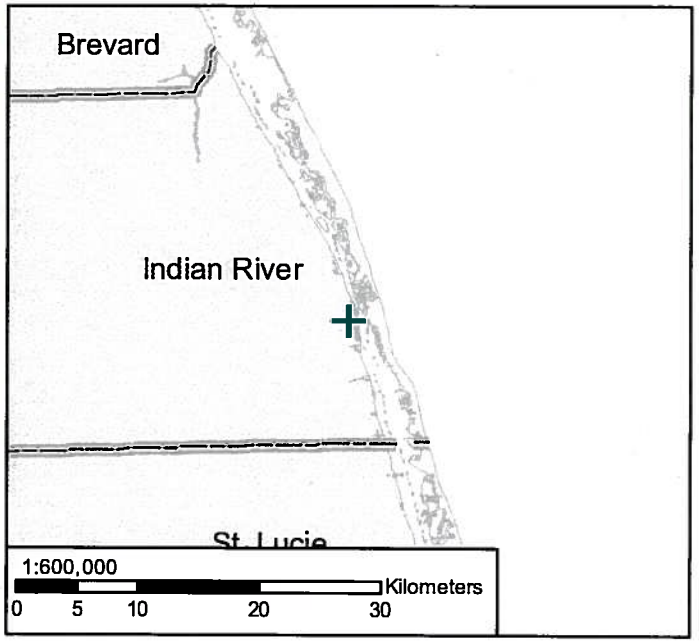


Verified Recovery Location of Manatee Carcass MEC19081

Report Date: 9/23/2019 **Received Date:** 9/23/2019 **Received By:** FWC-WDG,SMW Map Created: 12/30/2020







Locality Description:
Vero Beach, Indian River
Floating, approximately 50 m NE of 2775 Whippoorwill Lane.

Latitude: 27.64946°N **Longitude:** -80.38454°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19081
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 16567, 15856 **FWC District**: Northeast
Sex: Female **Length (cm)**: 307 **Estimated** _____ **Weight (kg)** N/T
Date reported: 23 Sept 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 23 Sept 2019 **By**: FWC- WDG, SMW
Date necropsied: 23 Sept 2019 **By**: FWC- WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Vero Beach, approximately 50 m NE of 2775 Whippoorwill Lane

Carcass Orientation: Floating

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:
Human related: ☑ Watercraft Collision: Both; 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: Severed spine, 3 fractured caudal vertbrae, 1 fractured rib, large wounds series assicatied with fractures across the peduncle. Live sightings on 31 Aug and 13 Sep showing deep wounds.

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: Urogenital track was missing.

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 #: **MEC19082**
Date of Report: 2019-Sep-28
Filed By: FWC EC Field Station

FWC Case # 16909 **FWC Region:** NE

Sex: Female **Length:** 225 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Sep-28 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Sep-29 **By:** FWC-SMW

DATE NECROPSIED: 2019-Sep-29 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.72315 **N**
County: Brevard **Longitude:** -80.83714 **W**
Waterway: Indian River
Locality description: Mims, grounded approximately 1.1 km ENE of the southernmost building at 4315 Dixie Way.

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; Remodeling rib fractures; Empty stomach.

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

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Actual length of the remains was 200 cm.

Page 1&2	4 Jan 2021
Necropsy Report	4 Jan 2021
Lat/Long	4 Jan 2021

Field ID #: MEC19082

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. MEC19082
RECOVERY DATE 29 September 2019
GENDER Female **TL** 225 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 29 September 2019
CONDITION Badly Decomposed

HISTORY 28 September 2019, at 1414 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Indian River in Scottsmoor, Brevard County. FWC case number 16909 was assigned. The complainant, Chris Adams (904-238-6817), stated that the manatee was about 7 feet long, white, and bloated. At 1416 hrs, LRB received a photo of the carcass from the complainant. LRB requested FWC LE assistance, but no officers were available. At 1614 hrs, LRB arrived by land but was unable to access the carcass safely. **29 September**, at 1000 hrs, FWC biologist-Sara M. Wappes (SMW) and FWC volunteer-Brittiny Bennett (BB) arrived at the Jones Avenue boat ramp and launched the Jon boat. SMW and BB located the carcass at 1114 hrs and completed a field necropsy by 1219 hrs. The remains were left on site.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. Most of the dermis was severely eroded. There were rents due to decomposition and/or scavenging at the head, axillae, umbilicus, urogenital opening, anus, and fluke. The skull was exposed. There was an eroded linear lesion on the left dorsal lateral aspect. A few short well-healed linear scars were present on the dorsum. Actual length of the remains was 200 cm. PIT tag scan was negative. A genetics sample was not 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 watery, gray fluid (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum was torn and empty of contents. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was soft, friable, torn in multiple locations, and empty of contents. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 1.25 L of moist, moderately digested, fibrous, stringy, yellow to red-brown digesta (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The distal colon contained dry, slightly hard, well-formed, moderately digested, fibrous, yellow to brown feces. The mid colon contained moist, well-formed, moderately digested, fibrous, yellow to brown feces. The proximal colon was missing. The mucosa was autolyzed throughout. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON Left rib 7 was remodeled at the proximal one-third (see photo). Left rib 8 had a partially remodeled oblique fracture at the proximal one-third (see photo).

OTHER

PHOTOGRAPHS 2019-09-29_FWC025_9377 through 9378, 9380 through 9396, 9398.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Remodeled rib
- Remodeling rib fracture
- Empty stomach
- Dry, hard feces

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

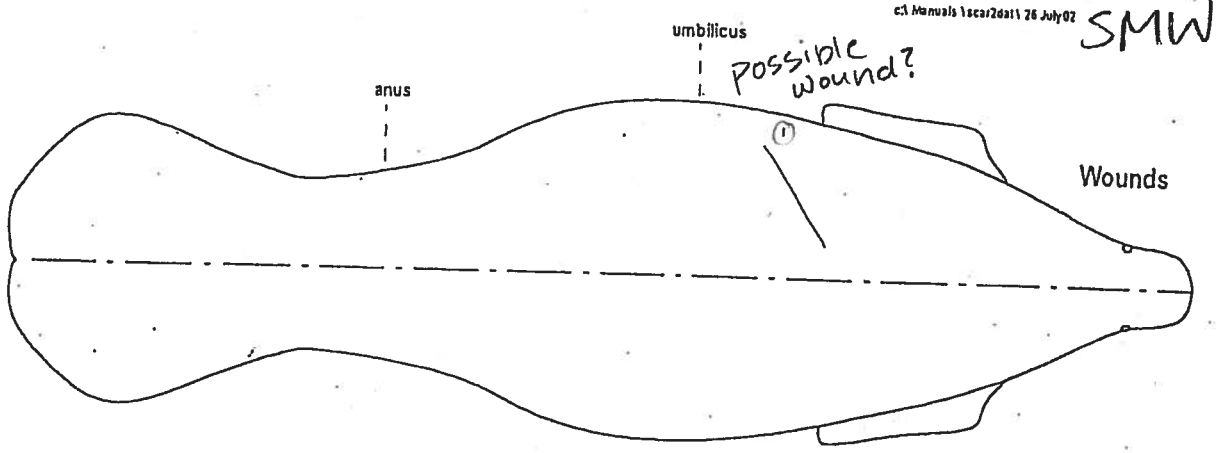
NECROPSY CONDUCTED BY

Sara M. Wappes
Brittiny Bennett (FWC volunteer)

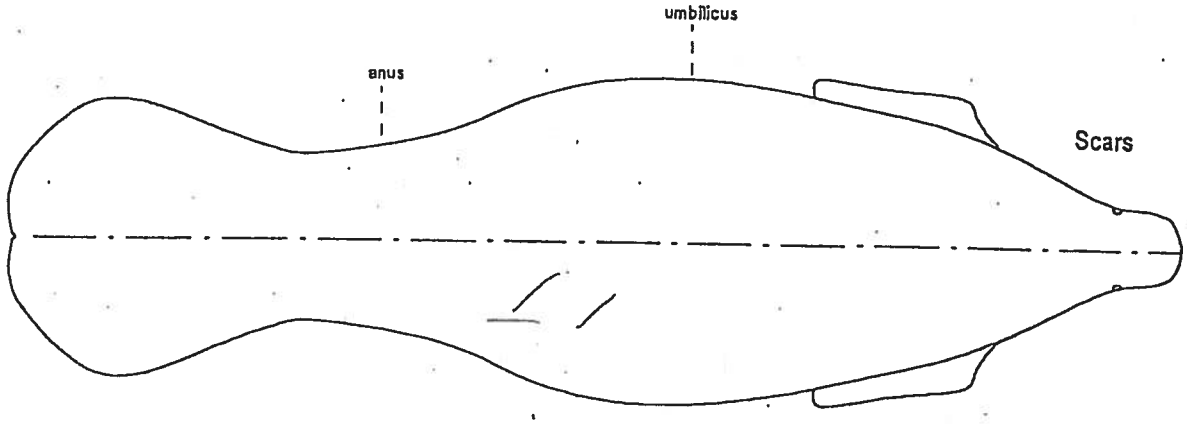
REPORT FILED BY Greer / Wappes

Date 29 SEP 2019 Field I.D. MEC19082

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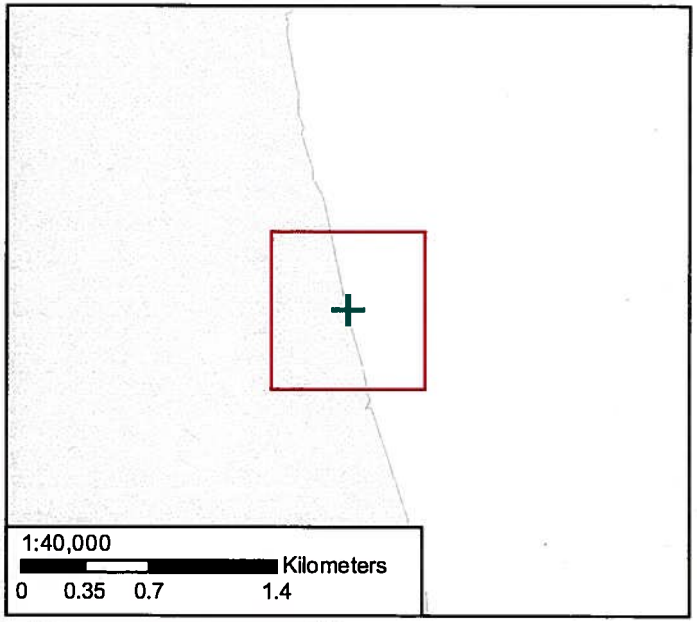
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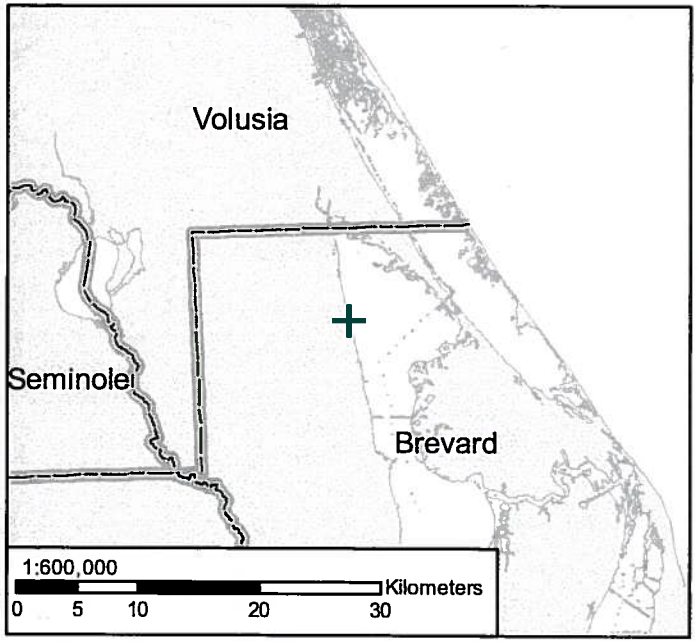


Verified Recovery Location of Manatee Carcass MEC19082

Report Date: 9/28/2019 **Received Date:** 9/29/2019 **Received By:** FWC-SMW Map Created: 12/30/2020







Locality Description:
Mims, Brevard
Grounded, approximately 1.1 km ENE of the southernmost building at 4315 Dixie Way.

Latitude: 28.72315°N **Longitude:** -80.83714°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19082
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 16909 **FWC District**: Northeast
Sex: Female **Length (cm)**: 200 **Estimated** 225 **Weight (kg)** N/T
Date reported: 28 Sept 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 29 Sept 2019 **By**: FWC- SMW; FWC vol- B. Bennett
Date necropsied: 29 Sept 2019 **By**: FWC- SMW; FWC vol- B. Bennett

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Mims, approximately 1.1 kM ENE of the southernmost building at 4315 Dixie 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:

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 #: **MEC19083**
Date of Report: 2019-Oct-03
Filed By: FWC EC Field Station

FWC Case # 17229 **FWC Region:** NE

Sex: Female **Length:** 273 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Oct-03 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Oct-03 **By:** FWC-SMW,WDG

DATE NECROPSIED: 2019-Oct-03 **By:** FWC-SMW,WDG

LOCATION: **State:** FL **Latitude:** 28.30688 **N**
County: Brevard **Longitude:** -80.65729 **W**
Waterway: Banana River
Locality description: Merritt Island, grounded approximately 30 m SW of 2942 Newfound Harbor Drive.

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. Eroded watercraft wound; Remodeling rib fractures; Adhered left lung; Lung abscesses; Relatively empty duodenum, lower GI tract.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Fused flipper nails, Eroded wound).

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed. Monofilament in stomach. Fused flipper nails.

Page 1&2	5 Jan 2021
Necropsy Report	5 Jan 2021
Lat/Long	5 Jan 2021

Field ID #: MEC19083

MORPHOMETRICS:

Total length:	273 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. MEC19083
RECOVERY DATE 03 October 2019
GENDER Female **TL** 273 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 03 October 2019
CONDITION Badly Decomposed

HISTORY 03 October 2019, at 1045 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 17229 was assigned. The complainant, Dan Cilcotrelli (321-735-8728), stated that the carcass was large and white. At 1053 hrs, WDG received a photo of the carcass. WDG and FWC biologist-Sara M. Wappes arrived at the Ramp Road boat ramp at 1155 hrs, located the carcass at 1237 hrs, and towed it to a remote island. A field necropsy was completed by 1425 hrs. The remains were left onsite.

EXTERNAL Almost all of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. The tissue of the face was torn due to scavenging. There was one eroded wound on the right dorso-lateral aspect. The right lung and right rib 8 protruded from the lateral portion of the wound. A minimum of three well-healed watercraft-related scar patterns was observed on the caudal dorsal aspect. Two of the flipper nails on each flipper were fused. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant, gassy abdominal fat and moderate, gassy mesenteric fat. The omental fat was rendered.

STOMACH The stomach contained 3.1 L of moist, moderately chewed, fibrous, stringy, light green to dark green ingesta (see photo). An approximately 60 cm long piece of >15lb test diameter clear monofilament line was observed in the contents. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained a scant amount of moderately chewed, fibrous pieces of ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

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

CECUM The cecum was torn and contained a scant amount of watery, yellow fluid (see photo). The mucosa was autolyzed. There was a mild infection of dead trematodes.

COLON The colon was mostly empty of contents but intermittent sections contained moist, poorly digested, poorly formed, fibrous, stringy, yellow to brown feces. The mucosa was autolyzed. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft. Serosal surfaces were mottled gray and purple, and cut surfaces were purple to black.

LIVER The liver was missing due to decomposition.

GALLBLADDER The gallbladder was missing due to decomposition.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The right kidney was missing. The left kidney was soft, friable, and autolyzed.

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. The right lung was soft, friable, and autolyzed. There was one small pocket of caseous yellow material in the right lung parenchyma. The caudal aspect of the left lung was adhered to the left hemidiaphragm. The left lung was soft, friable, light pink to purple on serosal surfaces, and light pink to red on cut surfaces. The cut surfaces were infested with numerous abscesses (see photos).

HEAD & NECK REGIONS NVL.

SKELETON Right rib 6 had a partially remodeled fracture near the rib head. Right rib 7 had a partially remodeled non-union fracture at the proximal one-quarter. Right rib 8 had a partially remodeled non-union fracture at the proximal one-third. All remodeled ribs were associated with the watercraft wound (see photos).

OTHER

PHOTOGRAPHS 2019-10-03_FWC025_9399 through 9400, 9402 through 9404, 9406 through 9415, 9417 through 9419, 9421 through 9426, 9428 through 9434, 9437 through 9441.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Eroded watercraft wound
- Remodeling right rib fractures
- Adhered left lung
- Lung abscesses
- Relatively empty duodenum, lower GI tract
- Monofilament in stomach

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

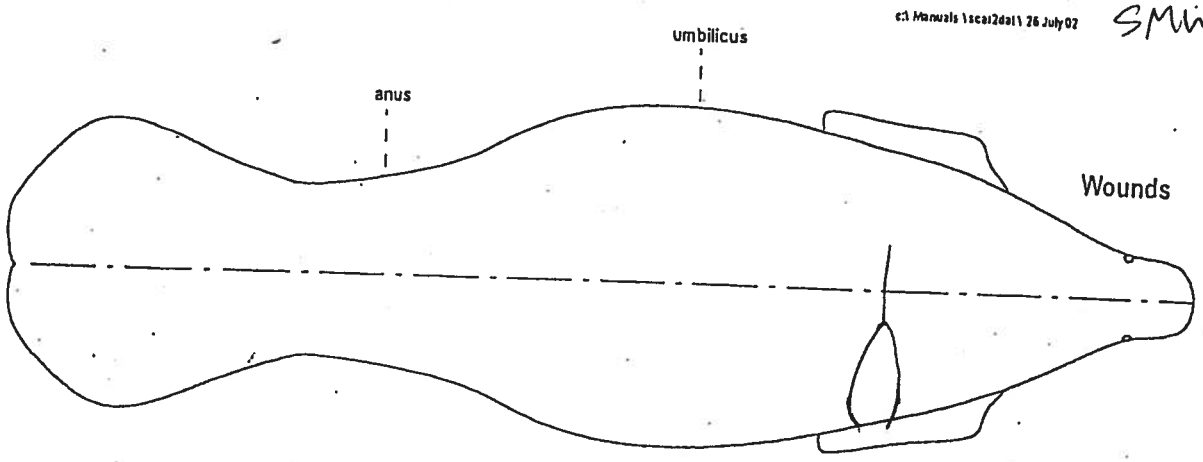
NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes

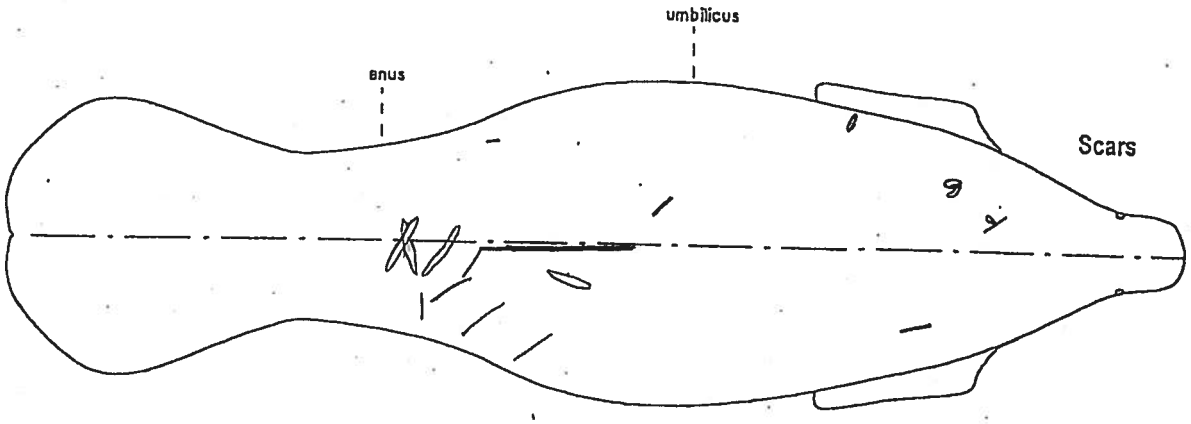
REPORT FILED BY Wappes / Greer

Date 03 OCT 2019 Field I.D. MEC19083

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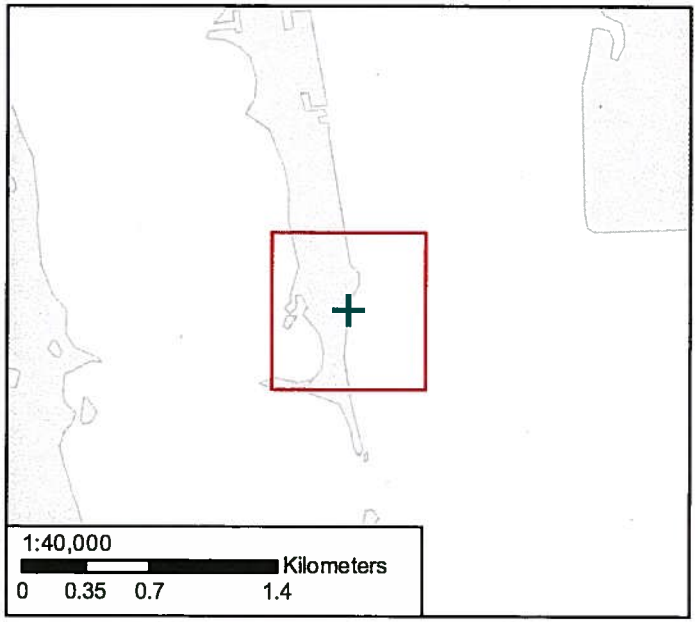
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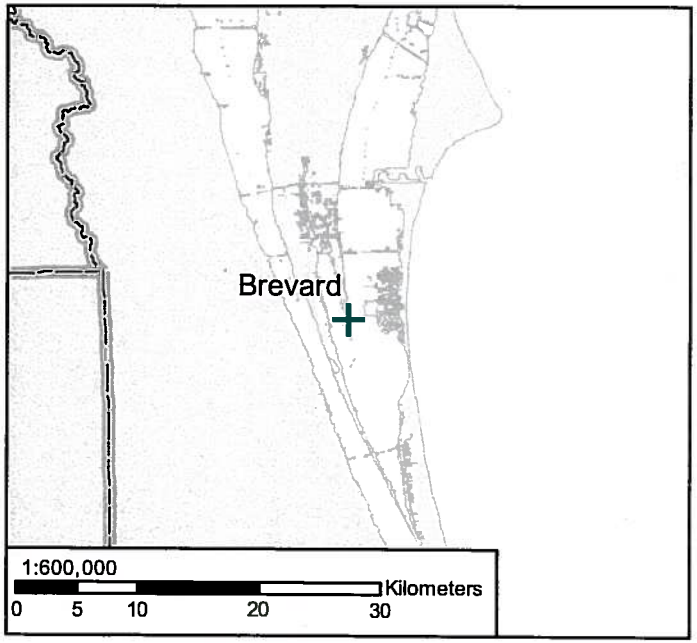


Verified Recovery Location of Manatee Carcass MEC19083

Report Date: 10/3/2019 **Received Date:** 10/3/2019 **Received By:** FWC-SMW,WDG Map Created: 12/28/2020







Locality Description:
Merritt Island, Brevard
Grounded, approximately 30 m SW of 2942 Newfound Harbor Drive.

Latitude: 28.30688°N **Longitude:** -80.65729°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19083
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 17229 **FWC District**: Northeast
Sex: Female **Length (cm)**: 273 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 Oct 2019 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 03 Oct 2019 **By**: FWC- SMW, WDG
Date necropsied: 03 Oct 2019 **By**: FWC- SMW, WDG

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 30 m ESE of 2943 Newfound Harbor Drive

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: Open wound with healing margins, 3 broken ribs with healing/remodeling, left lung full of pus, right lung was outside of body and very friable, lower GI tract almost completely empty

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: -

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

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

REMARKS: Wound not measured due to decomposition, urogenital organs were SFA

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 #: **MEC19084**
Date of Report: 2019-Oct-22
Filed By: FWC EC Field Station

FWC Case # 18559 **FWC Region:** NE

Sex: Male **Length:** 121 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Oct-22 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Oct-22 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Oct-22 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.75034 **N**
County: Brevard **Longitude:** -80.77114 **W**
Waterway: Indian River
Locality description: Merritt Island, grounded approximately 825 m SW of the Beacon 42 boat ramp.

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; Bleached epidermis; Healing skin lesions; Relatively empty 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.

Page 1&2	5 Jan 2021
Necropsy Report	5 Jan 2021
Lat/Long	5 Jan 2021

Field ID #: MEC19084

MORPHOMETRICS:

Total length:	121 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:	0.7 cm
Left Pulmonary Artery Diameter:	1.5 cm
Right Pulmonary Artery Diameter:	1.4 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. MEC19084
RECOVERY DATE 22 October 2019
GENDER Male **TL** 121 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 22 October 2019
CONDITION Badly Decomposed

HISTORY 22 October 2019, at 0836 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf in the Indian River in Allenhurst, Brevard County. FWC case number 18559 was assigned. The complainant, Anthony Galardo (321-512-1521), stated that the carcass was small, appeared fresh, and was grounded. He did not have any photos. WDG and FWC biologist-Sara M. Wappes arrived at the reported location at 1040 hrs, located the carcass at 1050 hrs, and completed a field necropsy at 1117 hrs. The remains were left on site.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was slightly distended with gas. Bloody fluid exuded from the mouth and nares. There was a thin brown algal mat on the ventral aspect of the peduncle. Transverse folds were observed on the ventrum. Some of the folds appeared bleached. There were a few small healing lesions on the ventral peduncle. The fluke margin had a ruffled appearance. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL No abdominal, mesenteric, or omental fat was observed. Internal organs were missing unless mentioned below.

STOMACH The stomach contained a scant amount of viscous, pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained a scant amount of viscous, pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained a scant amount of viscous, pink fluid. The distal small intestine contained a scant amount of watery, yellow fluid. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 5 mL of moist, poorly digested, poorly chewed, fibrous, stringy, yellow digesta. The mucosa was unremarkable. No parasites were observed.

COLON The colon was mostly empty but intermittent sections contained moist, poorly formed, poorly digested, fibrous, stringy, yellow feces. The mucosa was unremarkable. No parasites were observed.

LIVER The liver was liquified.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained 25 mL of flocculent, red-tinged fluid. The mucosa was unremarkable. The urachus was closed at the bladder tip.

HEART No epicardial fat was observed. The heart was soft and friable. Valves and chambers were unremarkable. The left pulmonary artery measured 1.5 cm flat diameter. The right pulmonary artery measured 1.4 cm flat diameter. The ductus arteriosus measured 0.7 cm flat diameter.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed. The primary airways were clear. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON The left ribs were subluxated due to decomposition. Otherwise, NVL.

OTHER The umbilical arteries were autolyzed.

PHOTOGRAPHS 2019-10-22_FWC023_8033 through 8045.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Fetal folds
- Bleached epidermis
- Healing skin lesions
- Relatively empty GI tract

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

NECROPSY CONDUCTED BY

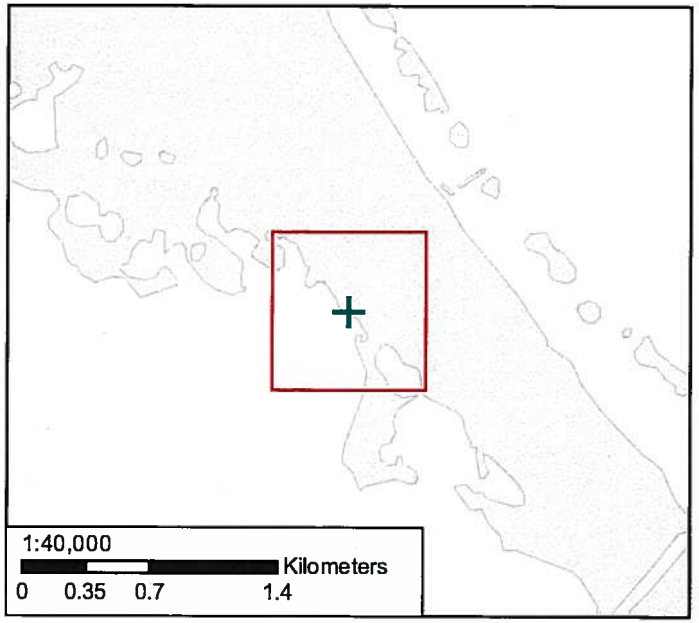
William D. Greer
Sara M. Wappes

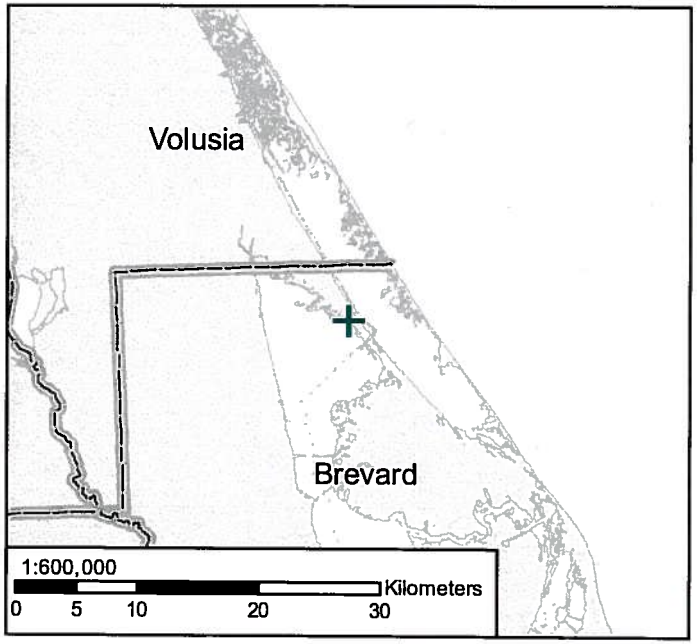
REPORT FILED BY Greer

Verified Recovery Location of Manatee Carcass MEC19084

Report Date: 10/22/2019 **Received Date:** 10/22/2019 **Received By:** FWC-WDG,SMW Map Created: 12/28/2020







Locality Description:
Merritt Island, Brevard
Grounded, approximately 825 m SW of the Beacon 42 boat ramp.

Latitude: 28.75034°N **Longitude:** -80.77114°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19084
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 18559 **FWC District**: Northeast
Sex: Male **Length (cm)**: 121 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 Oct 2019 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 22 Oct 2019 **By**: FWC- WDG, SMW
Date necropsied: 22 Oct 2019 **By**: FWC- WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Allenhurst, approximately 825 m SW of the Beacon 42 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 #: **MEC19085**
Date of Report: 2019-Oct-29
Filed By: FWC EC Field Station

FWC Case #
FWC Region: NE

Sex: Female **Length:** 187 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Oct-29 **By:** FPL-Jennifer Pickett to FWC-WDG
DATE COLLECTED: 2019-Oct-29 **By:** FWC-WDG,SMW
DATE NECROPSIED: 2019-Oct-29 **By:** FWC-WDG,SMW

LOCATION:
State: FL **Latitude:** 28.46936 **N**
County: Brevard **Longitude:** -80.76283 **W**
Waterway: Indian River
Locality description: Port St. John, floating approximately 265 m N of 132 Cottrell Avenue, just N of the FPL southern warm water discharge.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Torn hemidiaphragm(s); Diaphragmatic hernia; Relatively empty GI tract; Remodeled left rib; Adhered lung, hemidiaphragm; Torn, necrotic, adhered colon; Discolored small intestine serosa.

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	5 Jan 2021
Necropsy Report	5 Jan 2021
Lat/Long	5 Jan 2021

Field ID #: MEC19085

MORPHOMETRICS:

Total length:	187 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. MEC19085
RECOVERY DATE 29 October 2019
GENDER Female **TL** 187 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 29 October 2019
CONDITION Badly Decomposed

HISTORY 29 October 2019, at 0954 hrs, FWC biologist-William D. Greer (WDG) received a phone call from Florida Power and Light (FPL)-Jennifer Pickett regarding a dead manatee at the FPL Cape Canaveral Energy Center (CCEC) in Cocoa, Brevard County. Jennifer stated that the carcass was 6 feet long, bloated, and floating north of the southern discharge. At 0956 hrs, WDG received a verification photo. FWC biologist-Sara M. Wappes (SMW) was in the area and arrived at the site at 1015 hrs, but she did not have a boat to tow the carcass. WDG arrived at CCEC with the Jon boat at 1430 hrs. WDG and SMW located the carcass at 1515 hrs, loaded it at 1545 hrs, and transported it to the Brevard County Landfill at 1612 hrs. A field necropsy was completed by 1705 hrs.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. The carcass was distended with gas. A minimum of one well-healed watercraft-related scar pattern was observed on the dorsal aspect. 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 100 mL of moist, poorly chewed, very fibrous, very stringy, yellow ingesta mixed with 100 mL of watery, brown fluid (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 200 mL of moist, poorly chewed, very fibrous, very stringy, yellow ingesta mixed with 150 mL of watery, brown fluid (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a small amount of tan fluid throughout. Approximately 30 cm of the proximal small intestine serosa was black, small in diameter, and herniated through a tear in the left hemidiaphragm (see photo). Approximately 1.5 meter of the mid small intestine was herniated through a tear in the left hemidiaphragm (see photos). The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained approximately 5 mL of watery, brown fluid (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The colon was friable when handled. The proximal and mid colon contained watery, pink to brown fluid. The distal colon contained a small amount of wet, tacky, poorly formed, slightly fibrous, gritty, brown feces. There was an approximately 10 cm long tear in the mid colon with rough margins, necrotic tissue, and caseous material in the wall (see photos). A large portion of the mid colon was adhered to itself in the same region (see photos). The mucosa was autolyzed. No parasites were observed.

LIVER The liver 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 empty of contents. The mucosa was gassy.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM The right hemidiaphragm was intact. The left hemidiaphragm had a tear at the mid medial aspect in association with remodeled left rib 12. The left lung was adhered to the left hemidiaphragm (see photo). The lungs were soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON Left rib 12 was remodeled at the rib head.

OTHER

PHOTOGRAPHS 2019-10-29_FWC023_8187, 8190 through 8222.

COMMENTS Remodeled left rib 12 was deep to a well-healed watercraft-related scar pattern.

SIGNIFICANT FINDINGS

- Remodeled rib
- Torn hemidiaphragm
- Diaphragmatic hernia
- Discolored small intestine serosa
- Torn, necrotic, adhered colon
- Relatively empty GI tract
- Adhered lung, hemidiaphragm
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

NECROPSY CONDUCTED BY

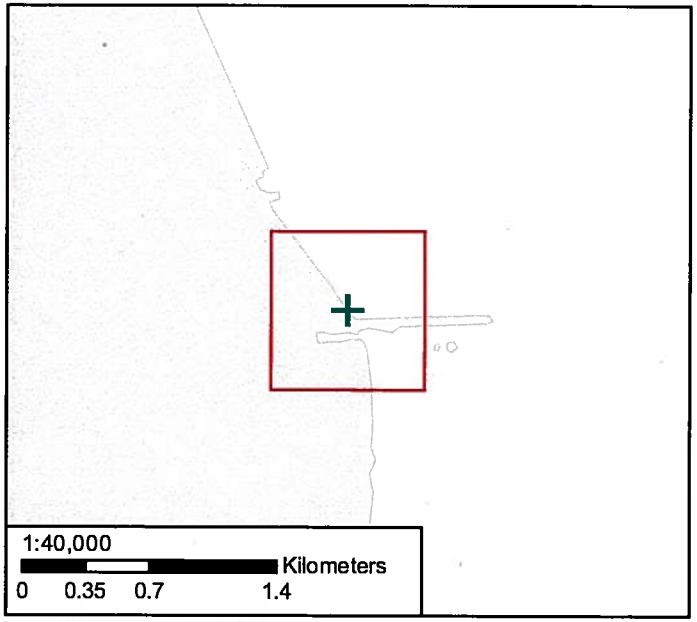
William D. Greer
Sara M. Wappes

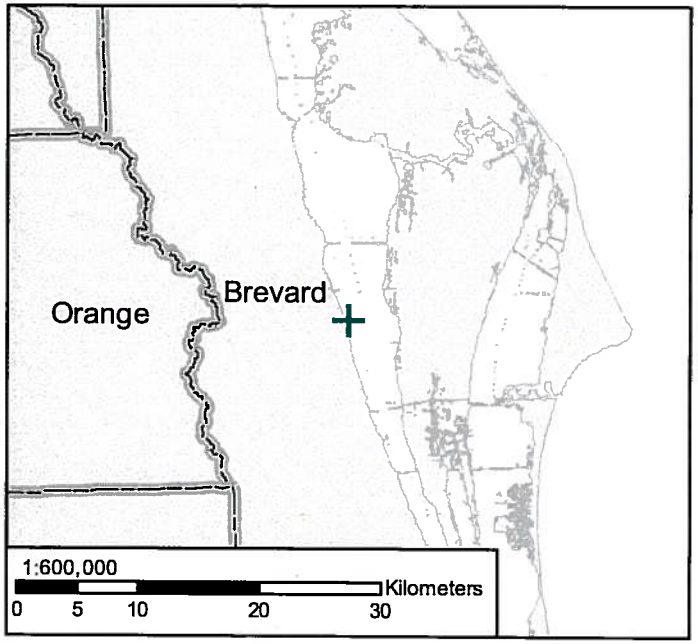
REPORT FILED BY Wappes

Verified Recovery Location of Manatee Carcass MEC19085

Report Date: 10/29/2019 **Received Date:** 10/29/2019 **Received By:** FWC-WDG,SMW Map Created: 12/28/2020





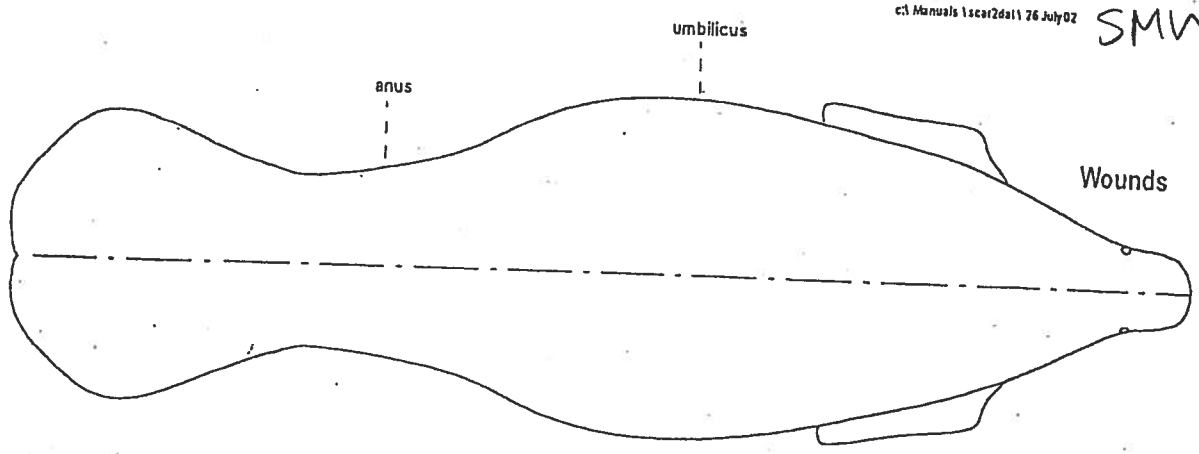


Locality Description:
Port St. John, Brevard
Floating, approximately 265 m N of 132 Cottrell Avenue, just N of the FPL southern warm water discharge.

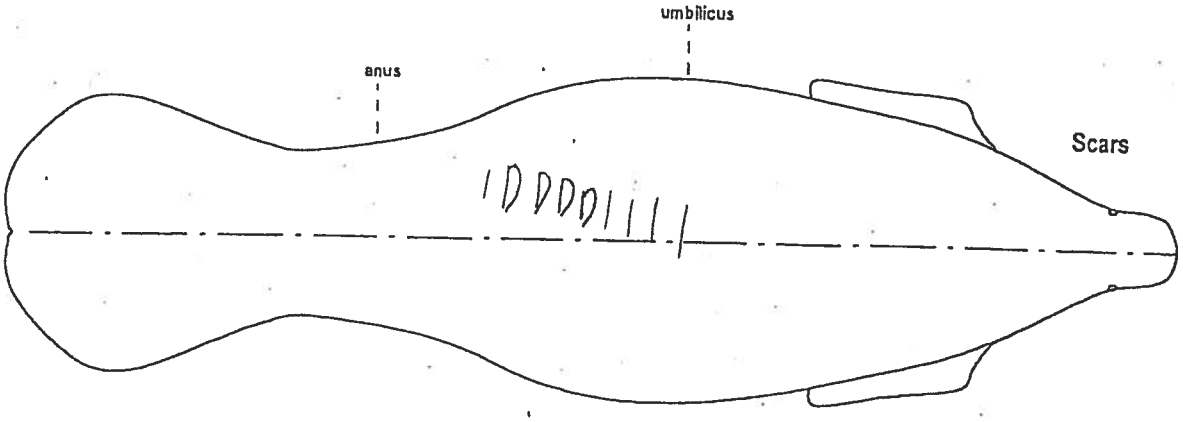
Latitude: 28.46936°N **Longitude:** -80.76283°W

Date 29 OCT 2019 Field I.D. MEC19085

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Number																				
Length																				
Width																				
Depth																				
Distance																				



Scar Dat sht Sep 2002

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19085
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: 187 **Estimated** _____ **Weight (kg)** N/T
Date reported: 29 October 2019 **By**: FPL-Jennifer Pickett to FWC-WDG
Date collected: 29 October 2019 **By**: FWC-WDG, SMW
Date necropsied: 29 October 201! **By**: FWC-WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 265 m N of 132 Cottrell 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
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Remodeled rib, tear in hemidiaphragm, small intestine herniated through hemidiaphragm, lung adhered to hemidiaphragm, tear in colon, adhesion and necrotic tissue in colon wall, watery or empty GI tract, autolyzed 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: 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 #: **MEC19086**
Date of Report: 2019-Nov-02
Filed By: FWC EC Field Station

FWC Case # 19270 **FWC Region:** NE

Sex: Female **Length:** 286 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-02 **By:** Canaveral National Seashore Officer to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-03 **By:** FWC-SMW

DATE NECROPSIED: 2019-Nov-03 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.91767 **N**
County: Volusia **Longitude:** -80.8236 **W**
Waterway: Mosquito Lagoon
Locality description: New Smyrna Beach, grounded approximately 1.95 km SSE of Canaveral National Seashore-North Apollo Beach Paved boat ramp.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Fractured rib(s); Fractured vertebra(e); Hemorrhagic muscle; Blood clots; Eoded dermis on caudal dorsum.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Eroded 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. Scavenging. Tunicates in GI tract.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19086

MORPHOMETRICS:

Total length:	286 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. MEC19086
RECOVERY DATE 03 November 2019
GENDER Female **TL** 286 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 03 November 2019
CONDITION Badly Decomposed

HISTORY 02 November 2019, at 1453 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Mosquito Lagoon in New Smyrna Beach, Volusia County. FWC case number 19270 was assigned. The complainant, Canaveral National Seashore-Officer Doug Mullen stated that he had received a report of a carcass with buzzards on it, and that he was willing to go check it out. At 1613 hrs, LRB received a verification photo and coordinates from Officer Mullen. **03 November**, FWC biologist-Sara M. Wappes and FWC volunteer-Brittiny Bennett arrived at Canaveral National Seashore kayak launch at 1030 hrs, launched kayaks, and located the carcass at 1100 hrs. A field necropsy was completed at 1245 hrs. The remains were left onsite.

EXTERNAL Almost all of the epidermis was missing. The ventral dermis was covered in bird droppings. There were rents due to decomposition and/or scavenging at the anus, urogenital opening, head, and both axillae. The skull was exposed through the rents on the head. The caudal dorsum had patches of dermis that were more eroded than the rest. The remaining epidermis had a moderate dark green algal mat. A minimum of five well-healed watercraft-related scar patterns was observed on the dorsal aspect. The fluke margin was eroded from the 3 to 4 o'clock positions and at the 7 o'clock position. There was an eroded hole near the fluke margin at the 6 o'clock position. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. There were loose feces and tunicates throughout the body cavity. There was 100 mL of loose, well-formed blood clots in the caudal aspect of the abdominal cavity (see photo). Internal organs were missing unless mentioned below.

STOMACH Half of the stomach was missing. The remaining half was empty of contents. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 1 L of moist, moderately chewed, spongy, stringy, yellow, brown and olive green ingesta. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was friable when handled. The proximal small intestine contained moist, poorly chewed, poorly formed, fibrous, leafy, light brown to dark brown ingesta. The mid small intestine contained viscous, dark brown to black fluid. The distal small intestine contained moist, poorly chewed, moderately formed, fibrous, leafy, light brown to dark brown ingesta. There were tunicates throughout the small intestine. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 2 L of moist, moderately digested, stringy, fibrous, light green to brown digesta. The mucosa was autolyzed but appeared to be stained black. No parasites were observed.

COLON The colon was friable when handled. The proximal colon contained moist, moderately formed, moderately digested, stringy, fibrous, dark brown feces. The mid colon contained wet, poorly formed, moderately digested, stringy, light brown feces. The distal colon was torn into approximately half meter long pieces throughout the body cavity and contained slightly moist, slightly hard, well-formed, poorly digested, very fibrous, yellow to brown feces. There were tunicates found throughout the colon. The mucosa was black and sloughing in the mid colon (see photo). The mucosa was autolyzed in the proximal and distal colon. There was a mild infection of dead trematodes in the proximal and mid colon.

LIVER The liver was liquified.

RESPIRATORY SYSTEM Both hemidiaphragms were missing due to decomposition. The lungs were soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON Left rib 17 had a transverse fracture at the proximal one-quarter (see photo). Right rib 17 had an oblique fracture at the proximal one-quarter (see photo). T18 was fractured and surrounded by bloody, hemorrhagic tissue and loose blood clots (see photos). The right transverse process of L1 was fractured (see photo) and surrounded by bloody, hemorrhagic tissue and loose blood clots. The trauma was deep to the eroded region on the caudal dorsum.

OTHER There was bloody tissue deep to the eroded area on the caudal dorsum (see photo).

PHOTOGRAPHS 2019-11-03_FWC025_9473 through 9515.

COMMENTS

SIGNIFICANT FINDINGS

- Eroded dermis on caudal dorsum
- Fractured ribs, vertebrae
- Hemorrhagic tissue
- Blood clots
- Tunicates in GI tract
- Autolyzed, missing internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

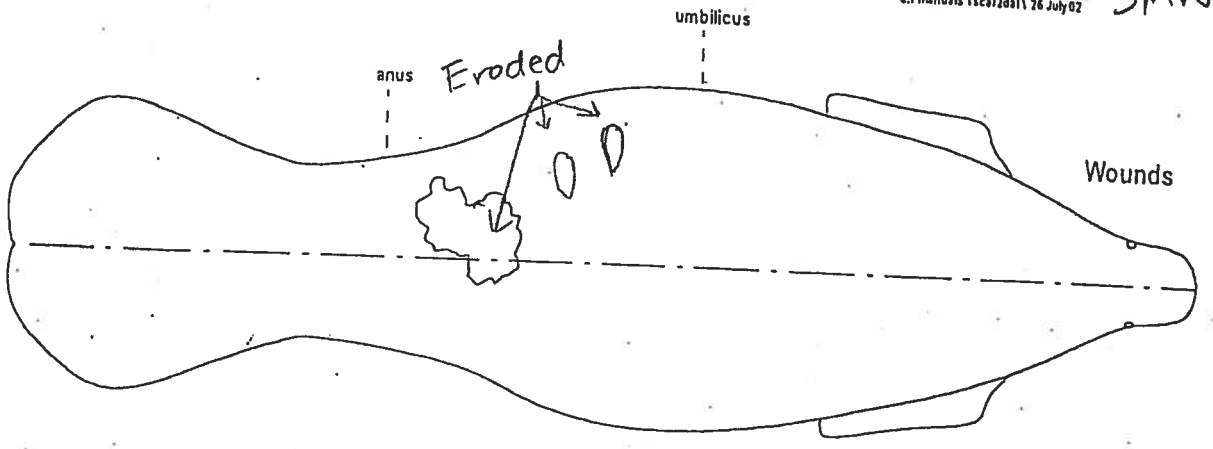
Sara M. Wappes
Brittiny Bennett (FWC volunteer)

REPORT FILED BY Wappes

Date 11/4/19

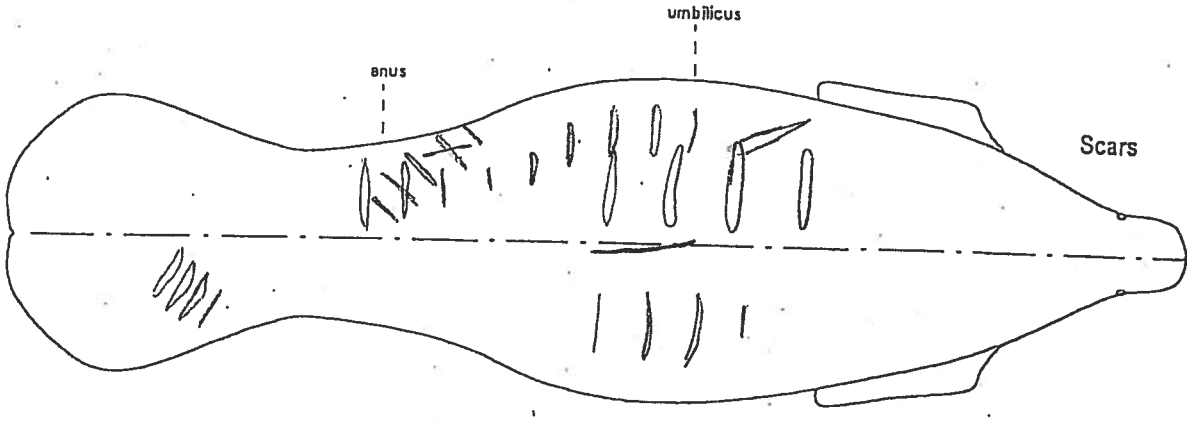
Field I.D. MEC19086 SMW

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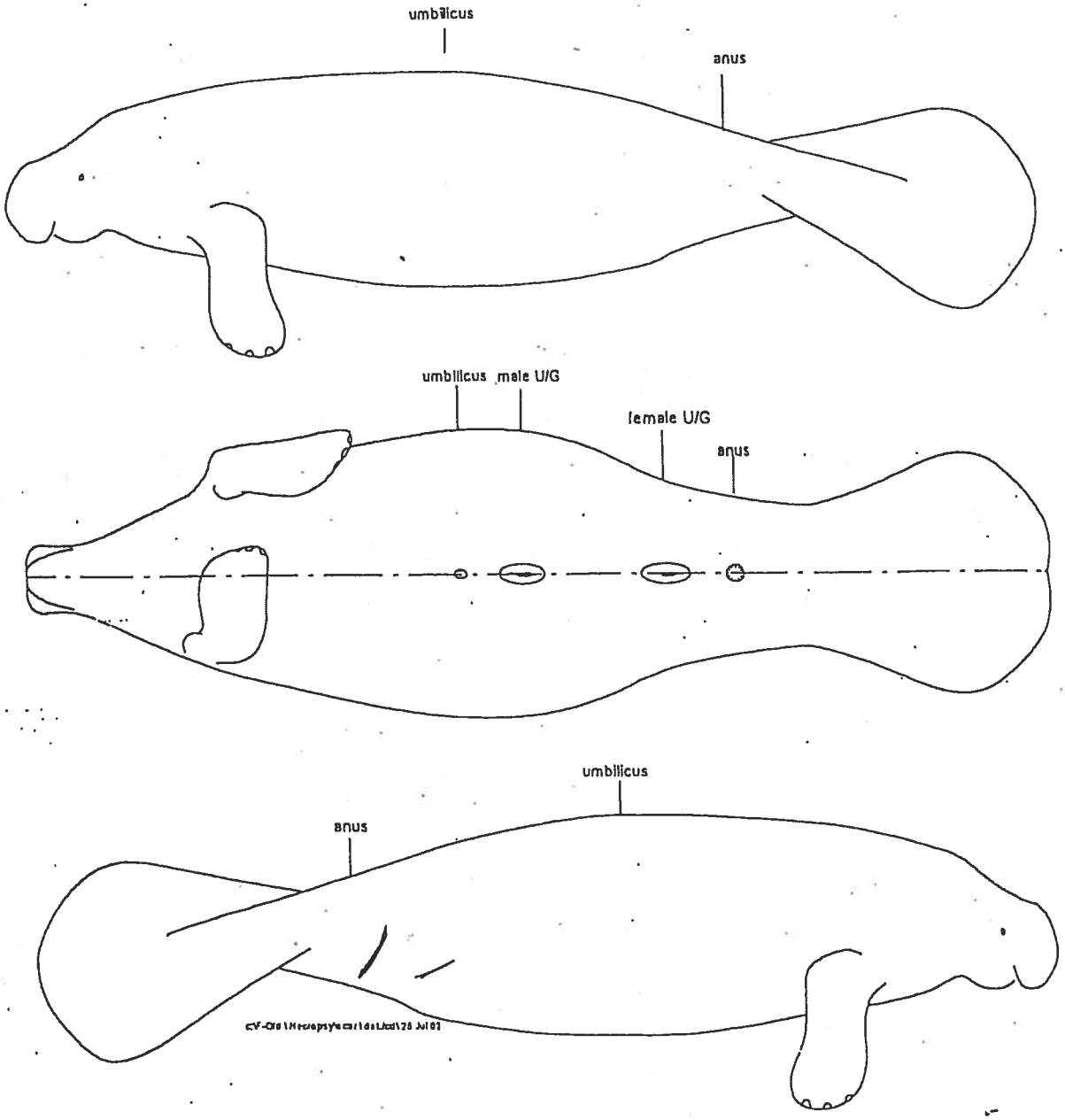
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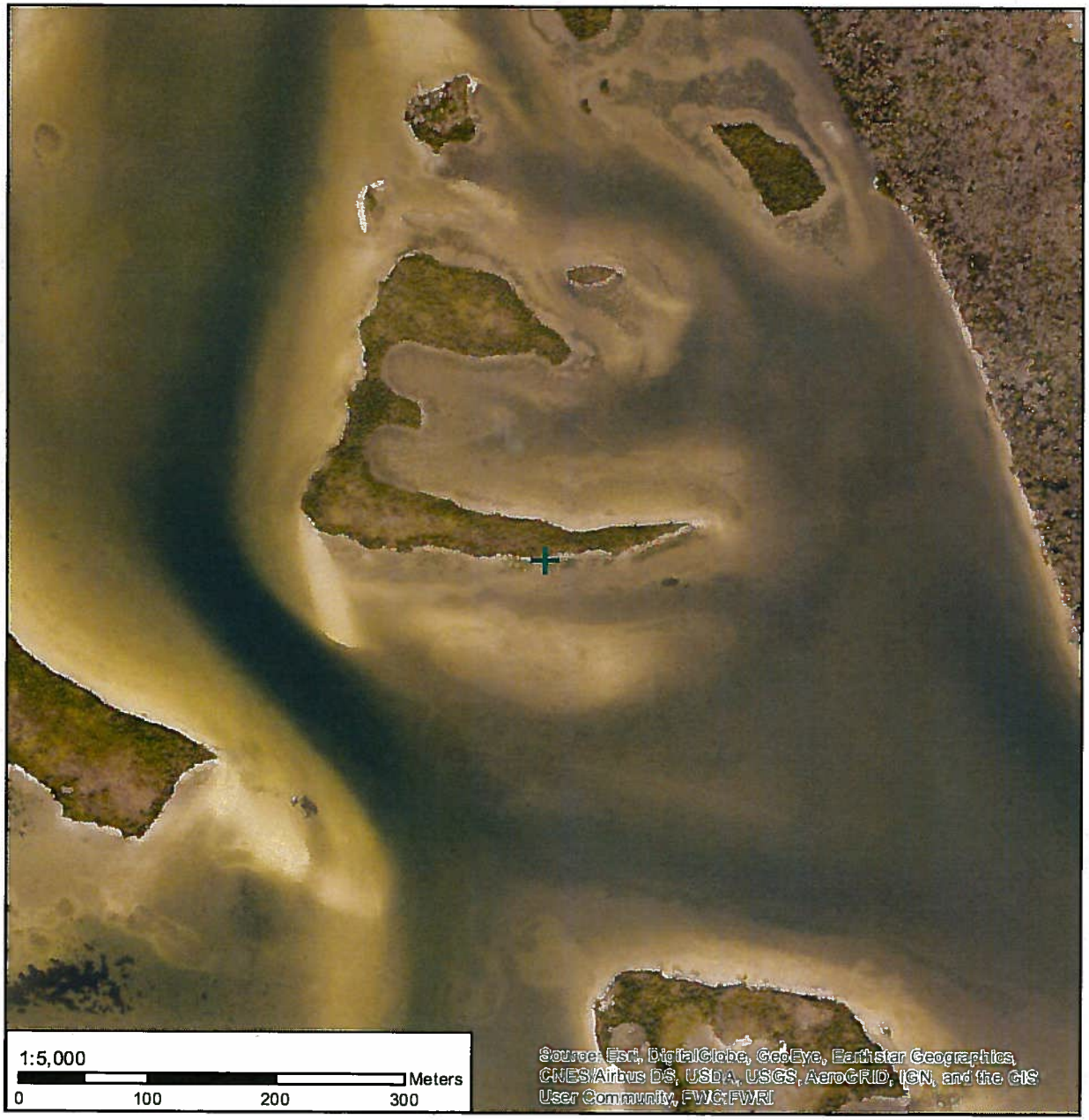
FIELD I.D. MEC19086

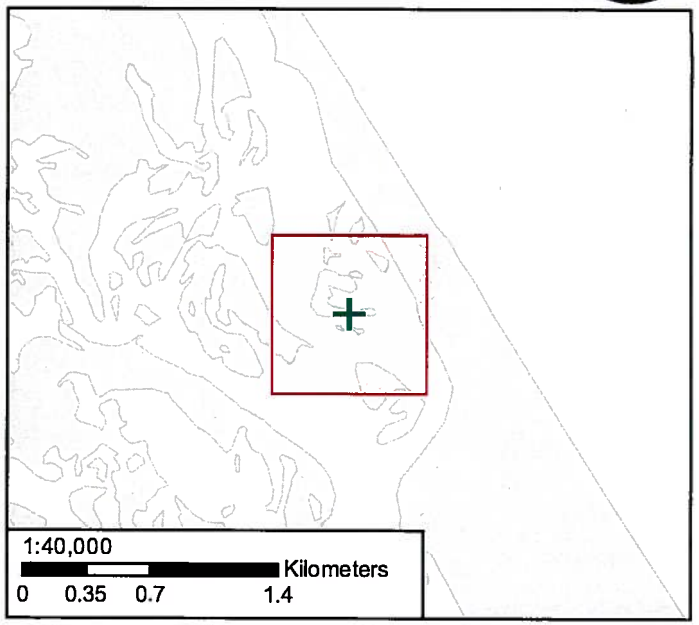
SMW

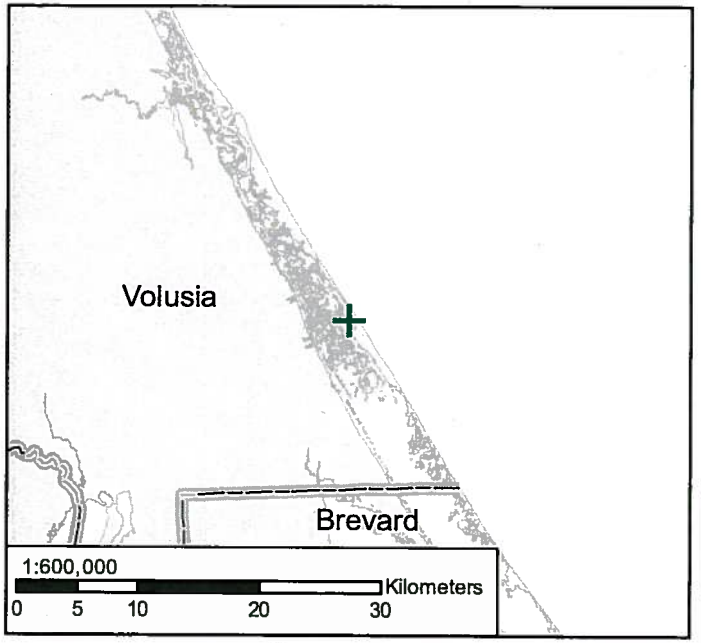


Verified Recovery Location of Manatee Carcass MEC19086

Report Date: 11/2/2019 **Received Date:** 11/3/2019 **Received By:** FWC-SMW Map Created: 1/14/2021







Locality Description:
New Smyrna Beach, Volusia
Grounded, approximately 1.95 km SSE of Canaveral National Seashore-North Apollo Beach Paved boat ramp.

Latitude: 28.91767°N **Longitude:** -80.8236°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19086
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 19270 **FWC District**: Northeast
Sex: Female **Length (cm)**: 286 **Estimated** _____ **Weight (kg)** _____
Date reported: 02 November 201 **By**: Canaveral Natl Seashore Ofc. Mullen to FWC Dispatch-Orla
Date collected: 03 November 201 **By**: FWC-SMW, FWC vol-B. Bennett
Date necropsied: 03 November 2(**By**: FWC-SMW, FWC vol-B. Bennett

LOCATION INFORMATION: State FL **County**: Volusia **Waterway**: Mosquito Lagoon
Latitude: N _____ **Longitude**: W _____
Locality description: New Smyrna Beach, approximately 1.95 km SSE of Canaveral National Seashore-North Apollo Beach Paved boat ramp.
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
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Eroded external wound series, 2 fractured ribs and 1 fractured vertebrae, blood clots and bloody tissue surrounding the fractures, most 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 #: **MEC19087**
Date of Report: 2019-Nov-13
Filed By: FWC NE Field Station

FWC Case # 19936 **FWC Region:** NE

Sex: Female **Length:** 264 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-13 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-14 **By:** FWC-SMW,LRB

DATE NECROPSIED: 2019-Nov-14 **By:** FWC-SMW,LRB,WDG

LOCATION: **State:** FL **Latitude:** 28.35145 **N**
County: Brevard **Longitude:** -80.70513 **W**
Waterway: Indian River
Locality description: Merritt Island, grounded approximately 25 m W of 327 South Tropical Trail.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Dry, hard feces; Bloody nares; Raised lesions small intestine with plaques; Fluid-filled duodenum; Congested mesentery, urinary baldder mucosa; Vegetation in mouth.

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	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19087

MORPHOMETRICS:

Total length:	264 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. MEC19087
RECOVERY DATE 14 November 2019
GENDER Female **TL** 264 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 14 November 2019
CONDITION Badly Decomposed

HISTORY 13 November 2019, at 1002 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River in Merritt Island, Brevard County. FWC case number 19936 was assigned. The complainant, Mike Simpson (321-266-2499), stated that the carcass was 5 feet long, gray in color, belly-up, and he did not have any photos. A small craft advisory was in effect for all of Brevard County, so no officers were available to tow the carcass. At 1939 hrs, LRB received a photo of the carcass. **14 November**, LRB and FWC biologist-Sara M. Wappes (SMW) arrived at Lee Wenner Park and launched the Key West boat at 0940 hrs, located the carcass at 1000 hrs, and loaded it via Ezy-Lift at 1047 hrs. Due to a pending rescue, LRB and SMW began heading to Blue Spring State Park. However, the manatee in need of rescue left the spring and the rescue was postponed. At 1235 hrs, SMW and LRB arrived at the Brevard County Landfill. FWC biologist-William D. Greer arrived at the landfill at 1250 hrs. A field necropsy was completed at 1340 hrs. The remains were disposed of at the landfill.

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 lateral aspects. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal aspect. There were two healing superficial wounds on the fluke between the 2 o'clock 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.

STOMACH The stomach contained 3 L of wet, poorly chewed, fibrous, leafy, green to orange and brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 150 mL of watery, tan fluid mixed with a small amount of fibrous pieces of ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was moderately congested (see photo). The proximal small intestine contained watery, brown to gray fluid. The mid and distal small intestine contained viscous, gray to green fluid. There were numerous raised, mostly circular, tan nodules in the mid small intestine wall, many of which were associated with yellow to orange plaques (see photo). Otherwise, the mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 350 mL of moist, moderately digested, stringy, yellow digesta. The mucosa was black and sloughing. No parasites were observed.

COLON The proximal colon contained small boluses of dry, hard, well-formed, poorly digested, stringy, fibrous, yellow feces (see photo). The mid colon contained small pieces of dry, hard, crumbly, moderately digested, yellow to green feces (see photo). The distal colon contained small boluses of moist, well-formed, moderately digested, fibrous, stringy, yellow to dark green feces (see photo). The mid and distal colon wall was contracted and thickened. The mucosa was black and sloughing throughout. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

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

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder contained 10 mL of golden yellow 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 soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was 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 lungs were soft, friable, and autolyzed. The primary airways were clear. No parasites were observed.

HEAD & NECK REGIONS There was a small amount of long, stringy, brown vegetation in the mouth (see photo).

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-14_FWC023_8231 through 8257.

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Raised lesions small intestine wall with plaques
- Congested mesentery, urinary bladder mucosa
- Fluid-filled duodenum
- Dry, hard feces
- Vegetation in mouth
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

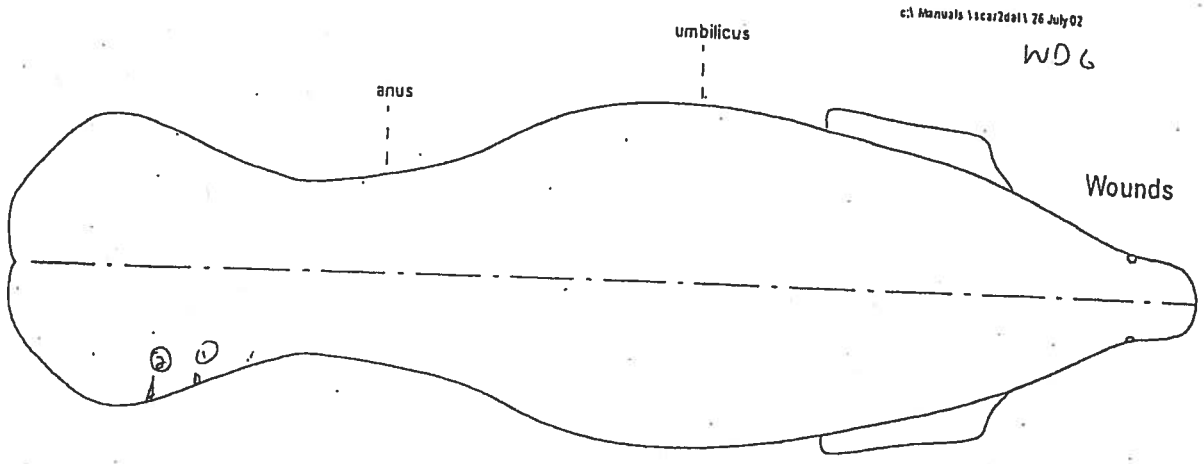
William D. Greer
Sara M. Wappes
Lucy R. Bukowski

REPORT FILED BY Greer / Wappes

Date 14 Nov 2019 Field I.D. MEC19087.

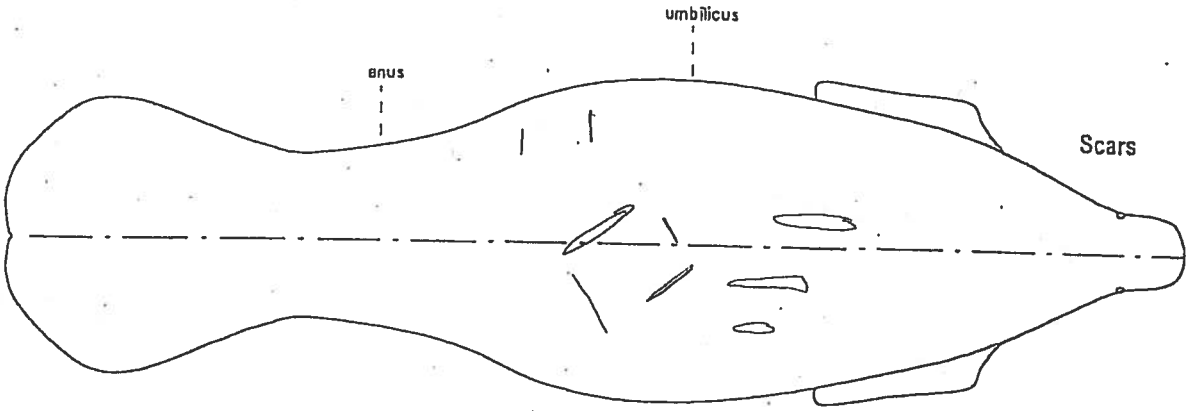
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WD6



Wounds

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

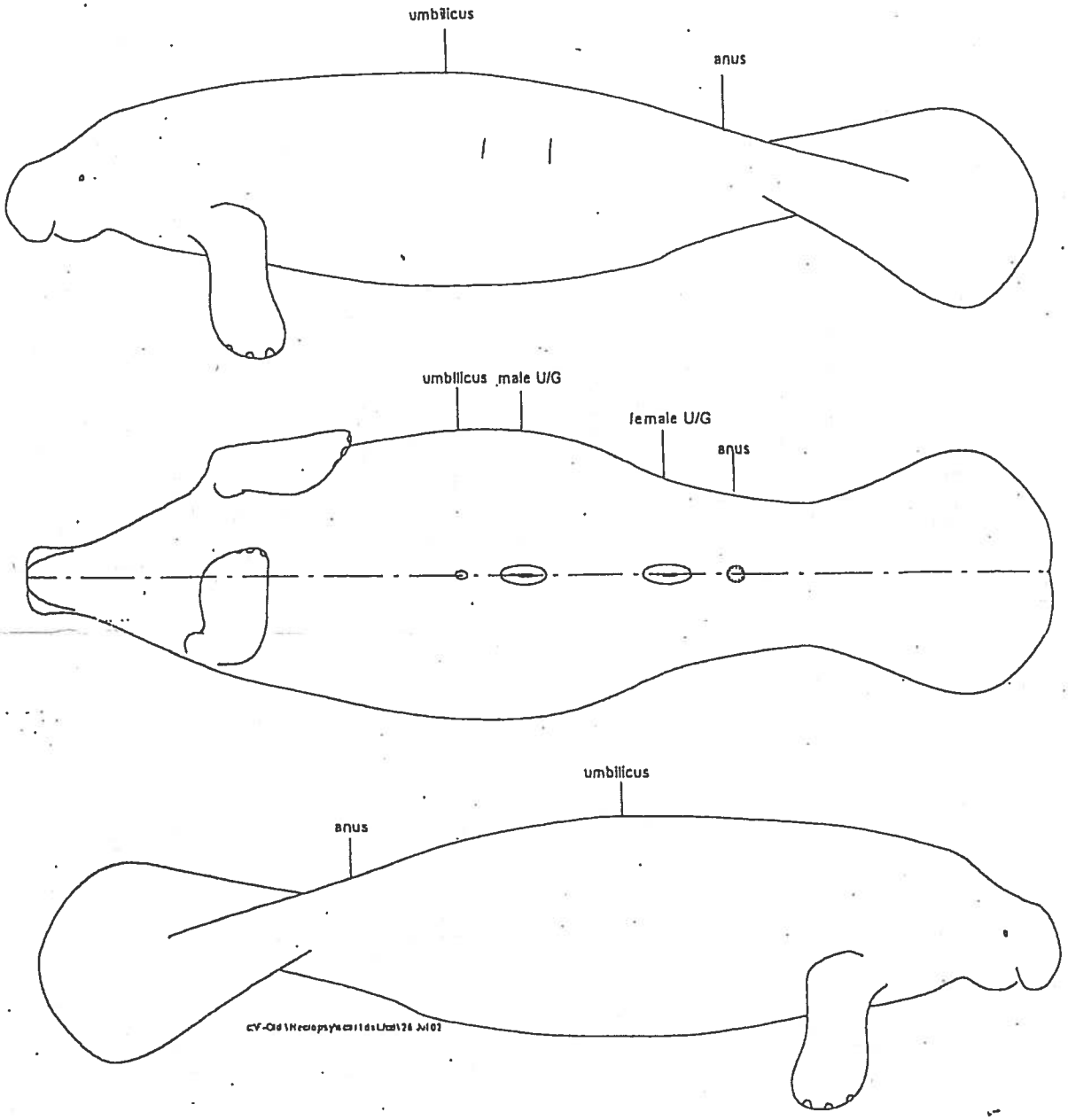


Scars

over

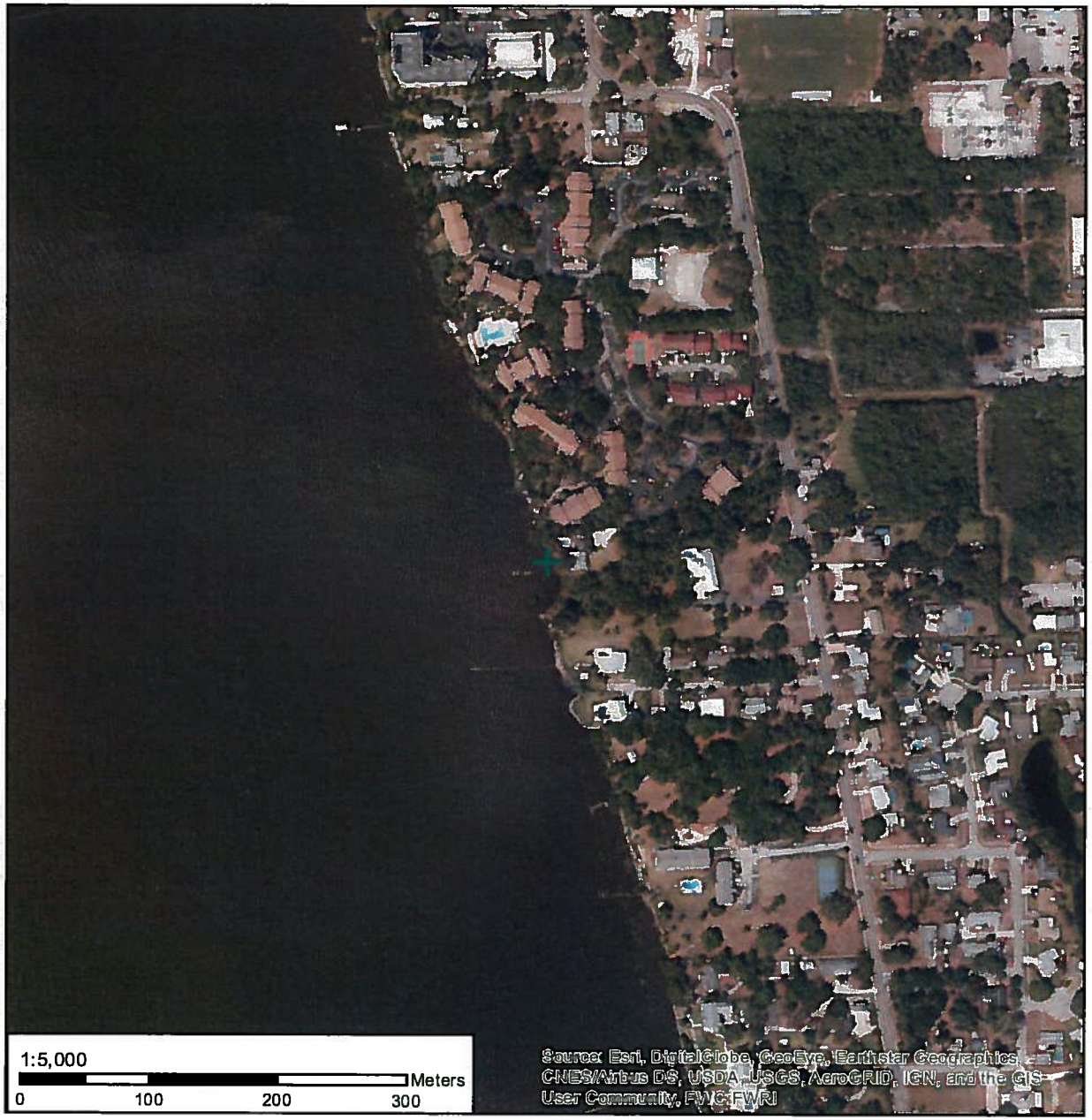
FIELD I.D. MEC19087

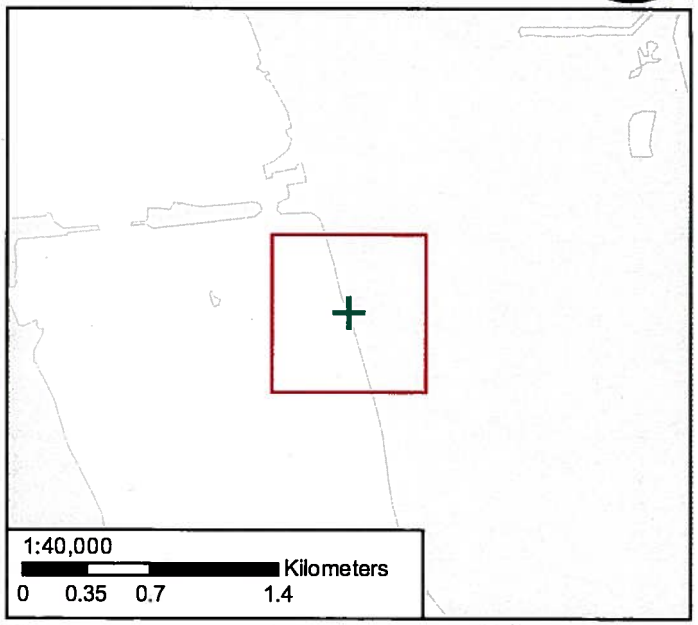
WDG

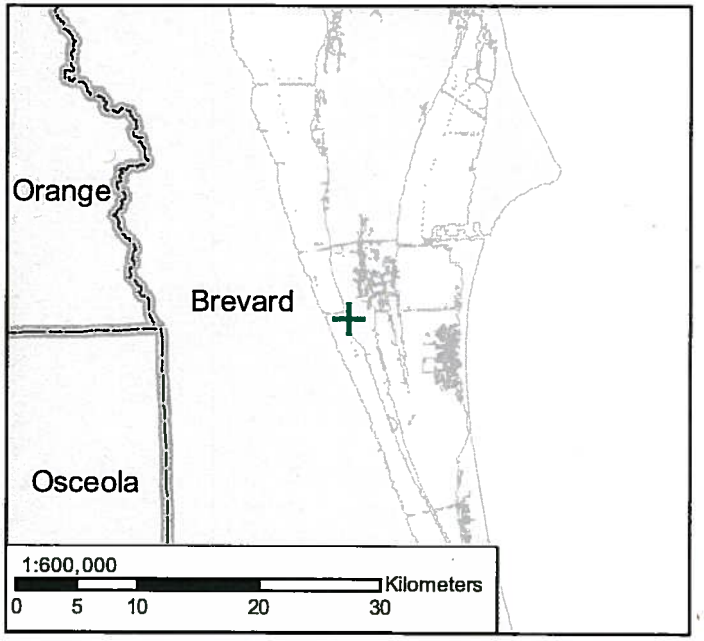


Verified Recovery Location of Manatee Carcass MEC19087

Report Date: 11/13/2019 **Received Date:** 11/14/2019 **Received By:** FWC-SMW,LRB Map Created: 1/14/2021







Locality Description:
Merritt Island, Brevard
Grounded, approximately 25 m W of 327 South Tropical Trail.

Latitude: 28.35145°N **Longitude:** -80.70513°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19087
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 19936 **FWC District**: Northeast
Sex: Female **Length (cm)**: 264 **Estimated** _____ **Weight (kg)** N/T
Date reported: 13 November 201 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 14 November 201 **By**: FWC- SMW, LRB
Date necropsied: 14 November 2(**By**: FWC- SMW, LRB, WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 25 m W of 327 South Tropical Trail
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: 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 #: **MEC19088**
Date of Report: 2019-Nov-14
Filed By: FWC EC Field Station

FWC Case # 19970 **FWC Region:** NE

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

DATE REPORTED: 2019-Nov-14 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-14 **By:** FWC-WDG,SMW,LRB

DATE NECROPSIED: 2019-Nov-14 **By:** FWC-WDG,SMW,LRB

LOCATION: **State:** FL **Latitude:** 28.39431 **N**
County: Brevard **Longitude:** -80.67413 **W**
Waterway: Banana River
Locality description: Merritt Island, floating approximately 25 m NNE of 1300 Girard Boulevard.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Emaciated; Depleted fat(s); Serous fat(s); Wet lung(s); Crumbly feces; Dry feces; Black Peyer's patches; Fluid-filled upper GI tract; Wet cecum contents; Fluid in airways; Congested mesenteries.

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	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19088

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. MEC19088
RECOVERY DATE 14 November 2019
GENDER Male **TL** 210 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 14 November 2019
CONDITION Badly Decomposed

HISTORY 14 November 2019, at 0929 hrs, FWC biologist-Sara M. Wappes (SMW) 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 19970 was assigned. The complainant, Gary Haugh (321-298-0737), stated that the carcass was 5 feet long, turning white, and was floating behind his home. Gary sent a photo of the carcass to SMW at 0955 hrs and secured it to his dock at 1000 hrs. Due to a pending rescue at Blue Spring State Park, SMW requested FWC LE to tow the carcass, but no officers were available. The rescue was called off, so SMW and FWC biologists-William D. Greer (WDG) and Lucy R. Bukowski (LRB) arrived at Kelly Park at 1430 hrs and launched the Key West boat. Due to a low bridge, staff were unable to get to the carcass using the Key West. A citizen offered a tandem kayak, so SMW and WDG used the kayak to tow the carcass from the complainant's residence to the bridge. SMW, WDG, and LRB then towed the carcass to a nearby island where a field necropsy was completed at 1645 hrs. The remains were left on site.

EXTERNAL Approximately 30% of the epidermis was present but sloughing. The carcass had a peanut-shaped head and appeared slightly thin. Bloody fluid and dead trematodes exuded from the nares. There was a minimum of one well-healed watercraft-related scar pattern on the right dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained 500 mL of viscous, tan fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 100 mL of watery, moderately chewed, woody, seedy, light yellow to light tan ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was mildly congested (see photo). The small intestine contained a small amount of light brown fluid throughout. The mucosa was unremarkable. The Peyer's patches were black in color and slightly raised (see photos). There was a mild infection of dead trematodes throughout.

CECUM The cecum contained 150 mL of wet, moderately digested, fibrous, woody, seedy, yellow to tan digesta mixed with pieces of dark brown digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The mesentery was severely congested (see photo). The proximal colon contained moist, moderately formed, poorly digested, fibrous, stringy, yellow to green feces (see photo). The mid colon contained dry, crumbly, well-formed, moderately digested, fibrous, stringy, tan feces (see photo). The distal colon contained moist, poorly formed, moderately digested, clay-like, tan feces (see photo). There was a moderate infection of dead trematodes in the proximal colon (see photo).

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

SPLEEN The spleen was 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 dark blue to dark

purple and cut surfaces were dark red.

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

REPRODUCTIVE No reproductive fat was observed. The seminal vesicles and testes were small.

KIDNEYS No perirenal fat was observed. The kidneys were gray to light blue on serosal surfaces. On cut surfaces, the cortices were tan to brown and the medullae were pink to red. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained approximately 10 mL of yellow urine. The mucosa was unremarkable.

HEART No epicardial fat was observed. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were pink to red on serosal surfaces and dark red and wet on cut surfaces. The primary airways contained a moderate amount of viscous, red-tinged fluid (see photo).

HEAD & NECK REGIONS The trachea contained a moderate amount of viscous, red fluid. There was a mild infection of dead trematodes.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-14_FWC023_8258 through 8283.

COMMENTS

SIGNIFICANT FINDINGS

- Emaciated
- Serous, depleted fat
- Black Peyer's patches
- Fluid-filled upper GI tract
- Wet cecum contents
- Dry, crumbly feces
- Wet lungs
- Fluid in airways
- Congested mesenteries

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

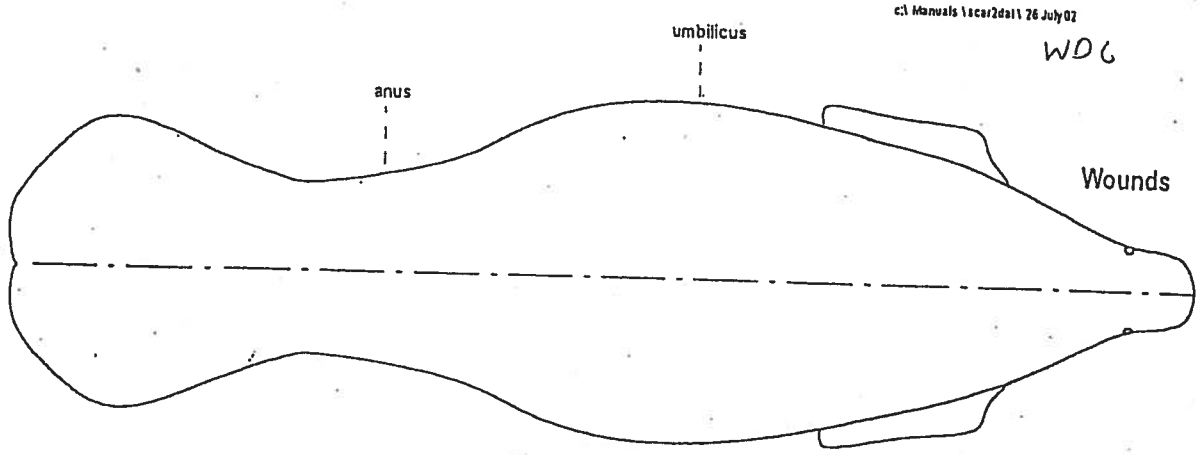
William D. Greer
Sara M. Wappes
Lucy R. Bukowski

REPORT FILED BY Greer / Wappes

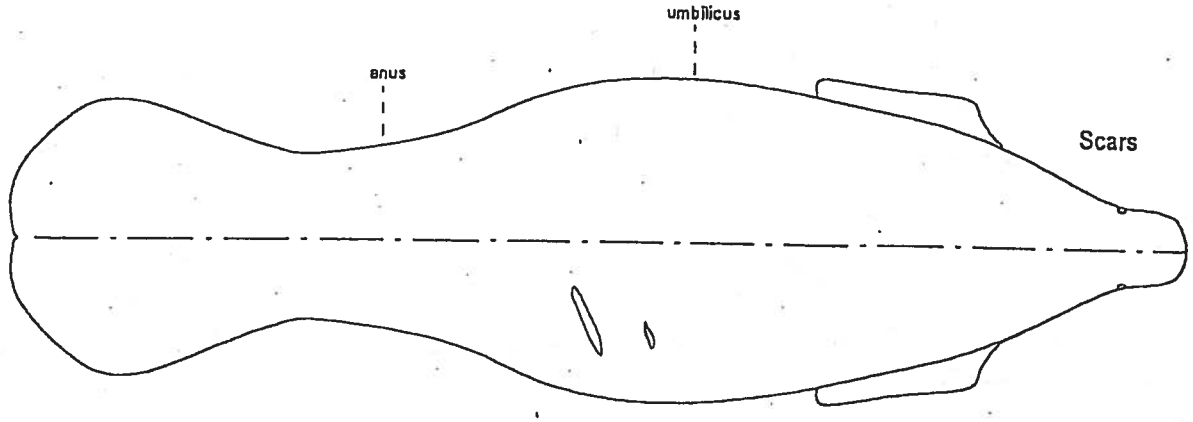
Date 14 Nov 2019 Field I.D. MEC19088.

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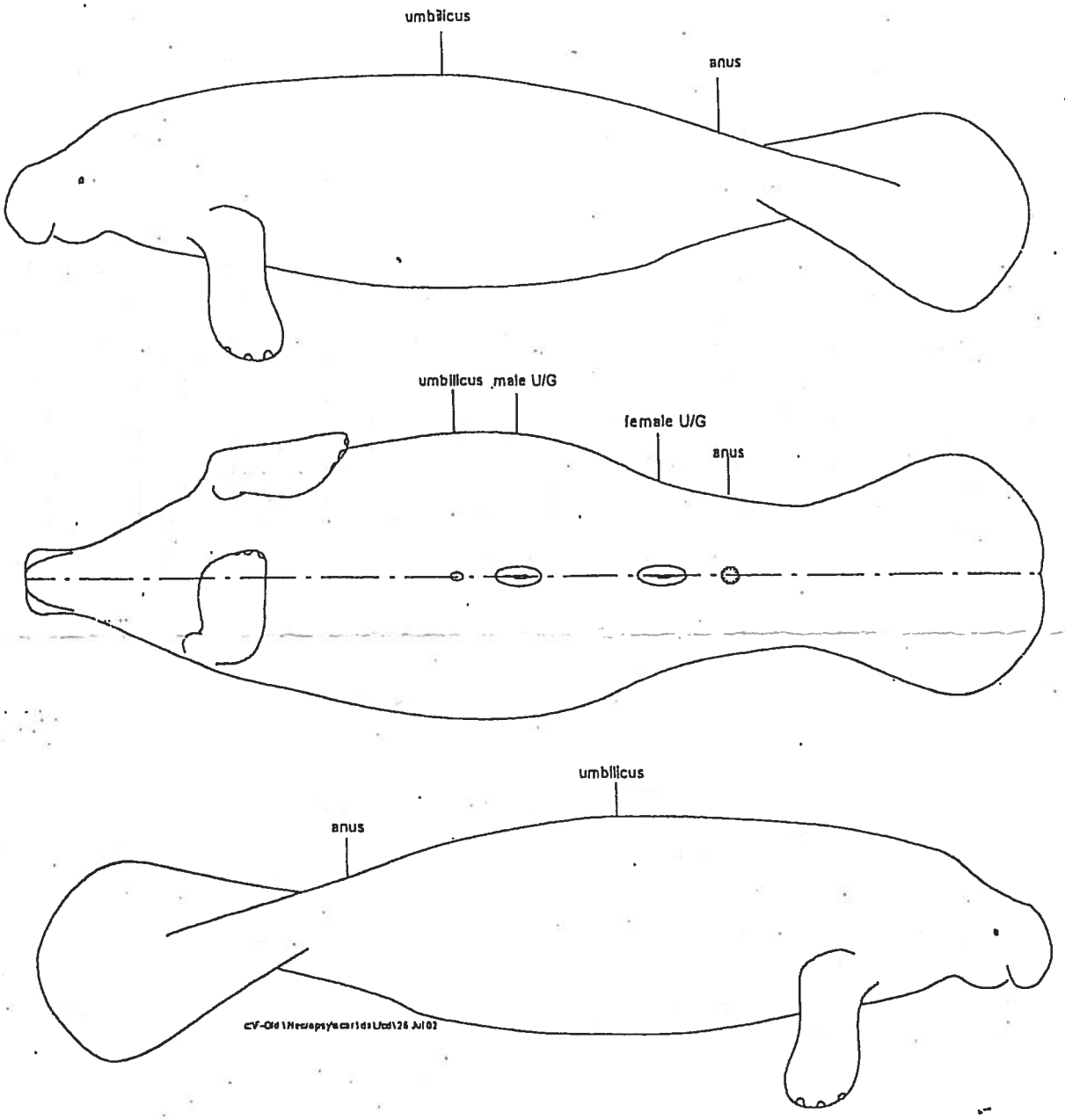
WDG



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



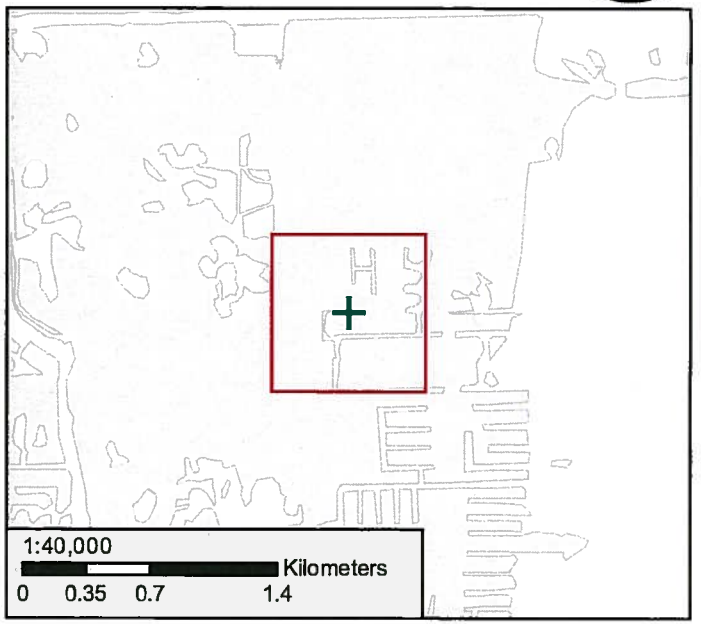
FIELD I.D. _____

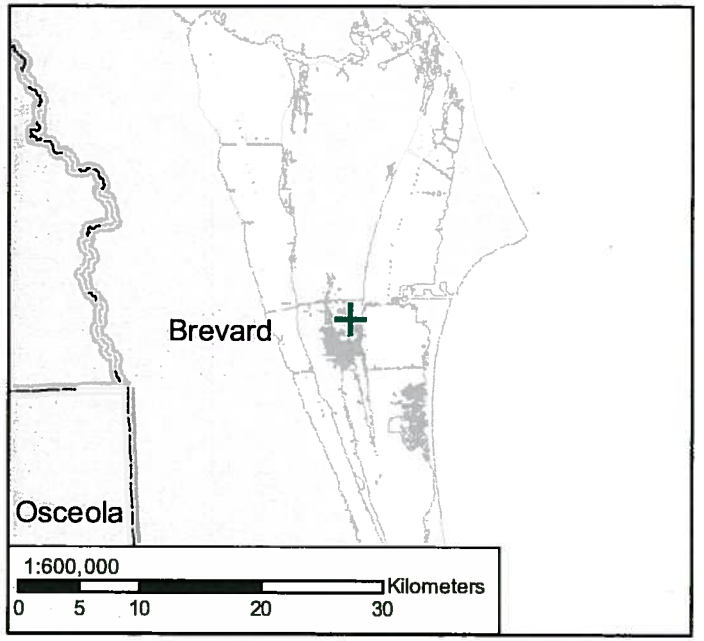

umbilicus
anus
umbilicus
male U/G
female U/G
anus
umbilicus
anus

Verified Recovery Location of Manatee Carcass MEC19088

Report Date: 11/14/2019 **Received Date:** 11/14/2019 **Received By:** FWC-WDG,SMW,LRB Map Created: 1/14/2021







Locality Description:
Merritt Island, Brevard
Floating, approximately 25 m NNE of 1300 Girard Boulevard.

Latitude: 28.39431°N **Longitude:** -80.67413°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19088
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 19970 **FWC District**: Northeast
Sex: Male **Length (cm)**: 210 **Estimated** _____ **Weight (kg)** N/T
Date reported: 14 November 201 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 14 November 201 **By**: FWC- WDG, SMW, LRB
Date necropsied: 14 November 2(**By**: FWC- WDG, SMW, LRB

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 25m NNE of 1300 Girard Blvd

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:

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 #: **MEC19089**
Date of Report: 2019-Nov-22
Filed By: FWC EC Field Station

FWC Case # 20453 **FWC Region:** NE

Sex: Male **Length:** 138 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-22 **By:** Citizen to FWC Officer to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-22 **By:** FWC-WDG

DATE NECROPSIED: 2019-Nov-22 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.62823 **N**
County: Brevard **Longitude:** -80.7887 **W**
Waterway: Indian River
Locality description: Titusville, grounded approximately 675 m NE of the easternmost building at 1 Max Brewer Memorial Parkway.

CONDITION: Moderately Decomposed

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

EXPLAIN: Natural: Cold Stress; Peanut-shaped head; Cobblestone-like epidermis; Skin lesions; Depleted fat(s); Crumbly feces; Dry feces; 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. Tunicates in lower GI tract.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19089

MORPHOMETRICS:

Total length:	138 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. MEC19089
RECOVERY DATE 22 November 2019
GENDER Male **TL** 138 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 22 November 2019
CONDITION Moderately Decomposed

HISTORY 22 November 2019, at 0831 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 Titusville, Brevard County. FWC case number 20453 was assigned. The complainant, FWC-Officer Dan Rasey, stated that a dead manatee calf was reported by a third party to the FWC LE Titusville Office. At 0831 hrs, Officer Rasey located the carcass. WDG arrived at the Max Brewer Causeway at 1040 hrs, loaded the carcass at 1050 hrs, and transported it to the Brevard County Landfill at 1120 hrs. A field necropsy was completed by 1246 hrs. The remains were disposed of at the landfill.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The carcass was distended with gas. Red-tinged fluid exuded from the nares. The carcass had a slight peanut-shaped head. A few small pitted lesions were present on the right cranial lateral aspect. There was a moderate brown algal mat on the dorsal aspect. A mild infestation of barnacles was observed on the ventral fluke. The ventral epidermis was cobblestone-like. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL No abdominal, mesenteric, or omental fat was observed.

STOMACH The stomach was empty of contents (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 50 mL of viscous, opaque, dark pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, yellow to orange fluid. The distal small intestine contained a small amount of dark green ingesta. The mucosa was sloughing throughout. No parasites were grossly observed.

CECUM The cecum contained 225 mL of moist, poorly digested, fibrous, stringy, yellow to dark green digesta (see photo). A small number of tunicates was observed. The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained moist, poorly formed, poorly digested, fibrous, stringy, green digesta. A small number of tunicates was observed. The mid colon contained moist, well-formed, poorly digested, fibrous, stringy, green feces (see photo). An abundant amount of tunicates was observed. The distal colon contained dry, crumbly, well-formed, well-digested, brown feces (see photo). The mucosa was sloughing throughout. No parasites were observed.

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

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

LIVER The margins of the liver were rounded. The liver was dark purple on serosal surfaces and black on cut surfaces.

GALLBLADDER The gallbladder contained a scant amount of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE No reproductive fat was observed. The testes and seminal vesicles were small.

KIDNEYS No perirenal fat was observed. The kidneys were gray on serosal surfaces. On cut surfaces, the cortices were dark red and the medullae were red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 100 mL of red-tinged fluid. The mucosa was unremarkable. The urachus was closed at the bladder tip.

HEART No epicardial fat was observed. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were light pink to gray 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

PHOTOGRAPHS 2019-11-22_FWC025_0148 through 0167.

COMMENTS

SIGNIFICANT FINDINGS

- Peanut-shaped head
- Cobblestone-like epidermis
- Skin lesions
- Depleted fat
- Empty upper GI tract
- Dry, crumbly feces
- Tunicates in lower GI tract

PROBABLE CAUSE OF DEATH Perinatal; Natural (Cold Stress)

NECROPSY CONDUCTED BY

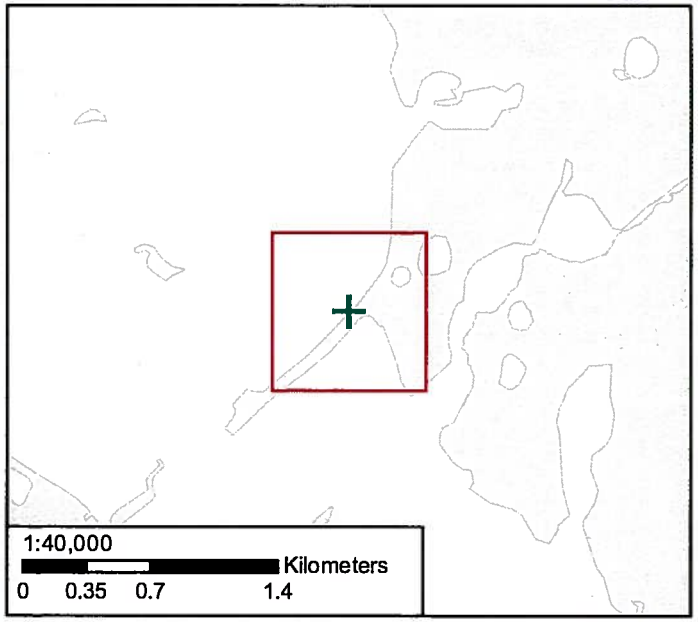
William D. Greer

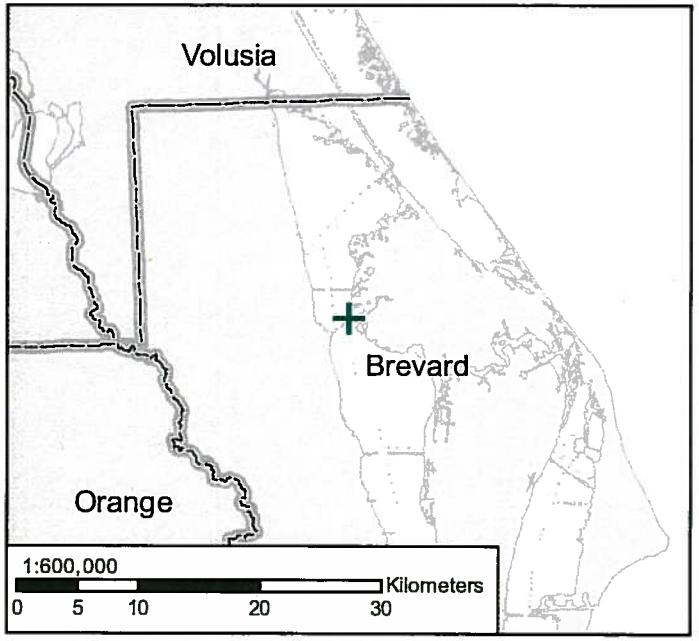
REPORT FILED BY Wappes / Greer

Verified Recovery Location of Manatee Carcass MEC19089

Report Date: 11/22/2019 **Received Date:** 11/22/2019 **Received By:** FWC-WDG Map Created: 1/14/2021







Locality Description:
Titusville, Brevard
Grounded, approximately 675 m NE of the easternmost building at 1 Max Brewer Memorial Parkway.

Latitude: 28.62823°N **Longitude:** -80.7887°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19089
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20453 **FWC District**: Northeast
Sex: Male **Length (cm)**: 138 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 November 201 **By**: FWC Ofc- Dan Rasey to FWC NE Dispatch-Orlando
Date collected: 22 November 201 **By**: FWC- WDG
Date necropsied: 22 November 2(**By**: FWC- WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 675 m NE of the easternmost building at 1 Max Brewer Memorial Parkway
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:

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: Perinatal evaluation not completed due to presence of epibiota, GI contents and 4 other carcasses reported on that day.

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 #: **MEC19090**
Date of Report: 2019-Nov-22
Filed By: FWC EC Field Station

FWC Case # 20448 **FWC Region:** NE

Sex: Female **Length:** 214 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-22 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-22 **By:** FWC-WDG

DATE NECROPSIED: 2019-Nov-22 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.16625 **N**
County: Brevard **Longitude:** -80.64544 **W**
Waterway: Horse Creek
Locality description: Melbourne, grounded approximately 75 m SE of 1561 Riverside Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Emaciated; Depleted fat(s); Serous fat(s); Relatively empty upper GI tract; Congested mesentery, colon wall, urinary bladder mucosa; Fluid in airways; Lung abscess; Black specks parietal pleura, lung serosa.

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.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19090

MORPHOMETRICS:

Total length:	214 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. MEC19090
RECOVERY DATE 22 November 2019
GENDER Female **TL** 214 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 22 November 2019
CONDITION Badly Decomposed

HISTORY 22 November 2019, at 0801 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Horse Creek in Melbourne, Brevard County. FWC case number 20448 was assigned. The complainant, June Becker (321-652-2891), stated that the carcass was back-up and had been there since the previous afternoon. WDG arrived at the complainant's address at 0855 hrs and located the carcass at 0857 hrs. WDG launched a kayak, towed the carcass to the Horse Creek kayak launch at 0921 hrs, and loaded the carcass via Ezy-Lift at 0945 hrs. WDG collected another carcass, MEC19089, and transported both carcasses to the Brevard County Landfill at 1120 hrs. A field necropsy was completed at 1357 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. The carcass was slightly dorsoventrally flattened due to emaciation. The carcass had a peanut-shaped head and was markedly thin. There was a moderate infestation of small barnacles and a few large barnacles on the ventral aspect. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained 200 mL of moist, moderately chewed, fibrous, stringy, orange to brown ingesta (see photo). The mucosa was unremarkable. There was a severe infection of dead nematodes.

DUODENUM The duodenum contained 100 mL of viscous, gray fluid (see photo). The mucosa was unremarkable. There was a severe infection of dead nematodes.

JEJUNUM & ILEUM The small intestine contained viscous, gray fluid throughout. The mid small intestine also contained a small amount of green vegetation. The mucosa was sloughing throughout. There was a mild infection of dead nematodes and trematodes.

CECUM The cecum contained 650 mL of moist, moderately digested, fibrous, very stringy, pink to green digesta (see photo). The mucosa was unremarkable. There was a moderate infection of dead nematodes.

COLON The mesentery was mildly congested (see photo). The proximal colon contained moist, poorly formed, poorly digested, fibrous, stringy, green to brown feces (see photo). There was a severe infection of dead trematodes. The mid and distal colon contained moist, well-formed, well-digested, slightly seedy, yellow to brown feces (see photo). The mucosa was sloughing throughout. The colon wall was mildly congested. There was a mild infection of dead nematodes throughout.

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 5 mL of golden 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 tan on serosal surfaces. On cut surfaces, the cortices and medullae were dark red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 50 mL of pink-tinged fluid. The mucosa was slightly congested.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the parietal pleura and caudal aspects of the lungs (see photos). The lungs were tan to pink on serosal surfaces and pink to red on cut surfaces. There was one small abscess in the dorsal caudal aspect of the right lung (see photo). The primary airways contained a moderate amount of watery, red fluid. There was a moderate infection of dead trematodes.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-22_FWC025_0168 through 0192.

COMMENTS The carcass was recovered after sudden cold weather in mid-November 2019. It is possible the poor condition was somewhat related to the cold.

SIGNIFICANT FINDINGS

- Emaciated
- Depleted, serous fat
- Relatively empty upper GI tract
- Congested mesentery, colon wall, urinary bladder mucosa
- Fluid in airways
- Lung abscess
- Black specks parietal pleura, lung serosa
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Other

NECROPSY CONDUCTED BY

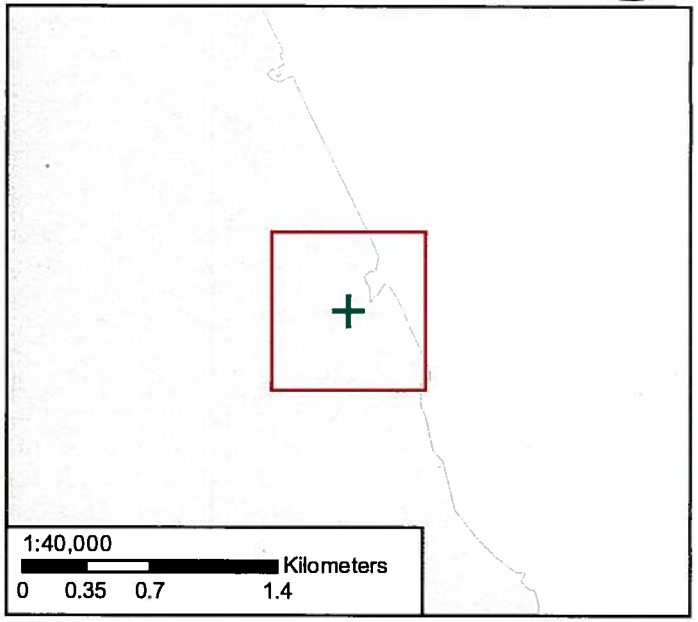
William D. Greer

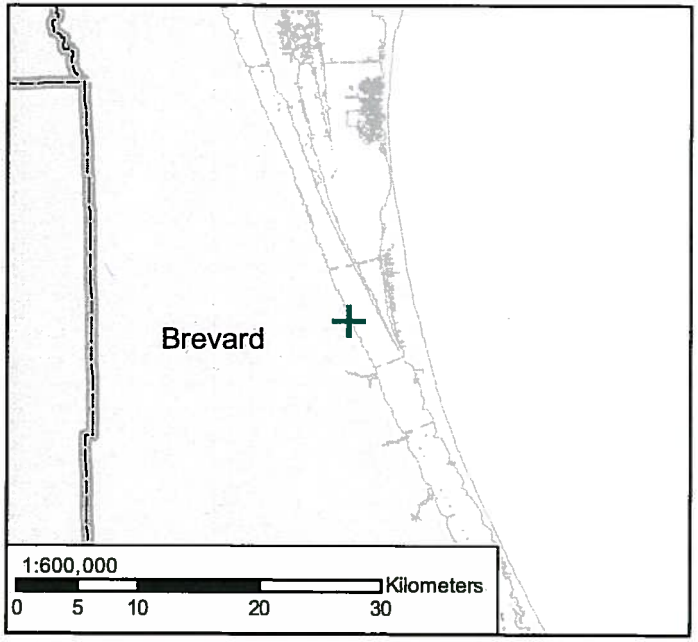
REPORT FILED BY Wappes / Greer

Verified Recovery Location of Manatee Carcass MEC19090

Report Date: 11/22/2019 **Received Date**: 11/22/2019 **Received By**: FWC-WDG Map Created: 1/14/2021







Locality Description:
Melbourne, Brevard
Grounded, approximately 75 m SE of 1561 Riverside Drive.

Latitude: 28.16625°N **Longitude**: -80.64544°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19090
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20448 **FWC District**: Northeast
Sex: Female **Length (cm)**: 214 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 November 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 22 November 201 **By**: FWC-WDG
Date necropsied: 22 November 2(**By**: FWC-WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Horse Creek
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 75 m SE of 1561 Riverside 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 parasite infection in GI tract, infection in lungs, very emaciated

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 #: **MEC19091**
Date of Report: 2019-Nov-22
Filed By: FWC EC Field Station

FWC Case # 20502 **FWC Region:** NE

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

DATE REPORTED: 2019-Nov-22 **By:** FWC biologist to FWC-WDG

DATE COLLECTED: 2019-Nov-23 **By:** FWC-WDG

DATE NECROPSIED: 2019-Nov-23 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.04081 **N**
County: Brevard **Longitude:** -80.58078 **W**
Waterway: Indian River
Locality description: Palm Bay, grounded approximately 140 m E of 4001 Dixie Highway Northeast.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Healing watercraft wound(s); Depleted fat(s); Serous fat(s); Pyothorax; Asymmetric carcass; Remodeling rib fractures; Adhered left lung, hemidiaphragm; Empty upper GI tract.

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

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	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19091

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. MEC19091
RECOVERY DATE 23 November 2019
GENDER Female **TL** 218 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 23 November 2019
CONDITION Badly Decomposed

HISTORY 22 November 2019, at 1128 hrs, FWC biologist-William D. Greer (WDG) received a call from FWC-Dwayne Edwards regarding a dead manatee in the Indian River in Palm Bay, Brevard County. Dwayne stated that the carcass was 5 feet long and its skin was sloughing. At 1132 hrs, WDG received a photo verifying the carcass. Due to the recoveries and necropsies of MEC19089, MEC19090, and MEC19093, WDG was unable to respond that day. At 1721 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 in Palm Bay, Brevard County. FWC case number 20502 was assigned. The complainant, Steve Mayo (321-419-4964), stated that the carcass was in the same location. **23 November**, WDG and FWC volunteer-Brittiny Bennett arrived at Castaway Point Park at 1015 hrs and completed a field necropsy by 1107 hrs. The remains were left onsite.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was distended with gas. The carcass was distended to the right aspect. Bloody fluid exuded from the nares. There was a healing linear watercraft-related wound on the left mid lateral aspect that penetrated into the dermis. A thin, brown algal mat was present on the dorsal aspect. A minimum of one well-healed watercraft-related scar pattern was observed on the dorsal aspect. There were a few small circular well-healed mutilations at the 7 o'clock position. A small well-healed hole was present near the fluke margin at the 5 o'clock position. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach was empty of contents (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 100 mL of viscous, gray fluid (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a small amount of well-chewed, fibrous, brown and green ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 2 L of moist, poorly digested, very fibrous, very stringy, yellow to brown digesta (see photo). The mucosa was autolyzed. There was a severe infection of dead trematodes.

COLON The proximal colon contained moist, poorly formed, poorly digested, very fibrous, very stringy, yellow to brown feces. The mid colon contained moist, moderately formed, poorly digested, very fibrous, very stringy, yellow to brown feces. The distal colon contained dry, well-formed, poorly digested, very fibrous, very stringy, brown feces. The mucosa was sloughing. There was a severe infection of dead trematodes in the proximal 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 soft, friable, and autolyzed.

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 was empty of contents. The mucosa was unremarkable.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM The right hemidiaphragm was intact. The left hemidiaphragm was torn due to decomposition. The left pleural cavity contained 5 L of fibrin and tan purulent material (see photos). The left lung was adhered to the caudal aspect of the left hemidiaphragm. The lungs were soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON Left ribs 10 and 11 had slightly remodeled fractures at the proximal aspect which tore the parietal pleura and were deep to the healing wound.

OTHER

PHOTOGRAPHS 2019-11-23_FWC025_0251 through 0281.

COMMENTS

SIGNIFICANT FINDINGS

- Healing watercraft wound
- Asymmetric carcass
- Remodeling rib fractures
- Depleted, serous fat
- Pyothorax
- Adhered left lung, hemidiaphragm
- Empty upper GI tract
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

NECROPSY CONDUCTED BY

William D. Greer

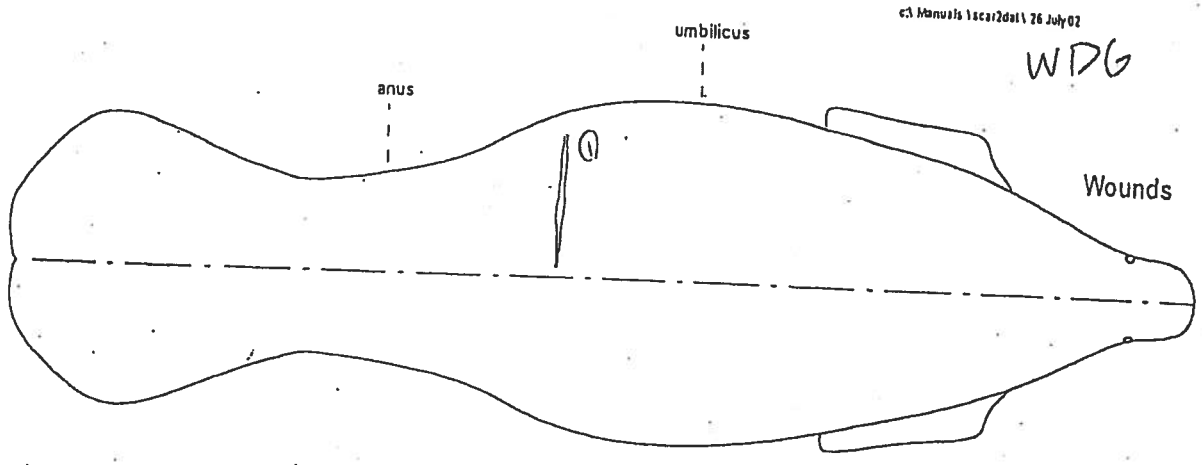
REPORT FILED BY Wappes / Greer

Date 11/23/19

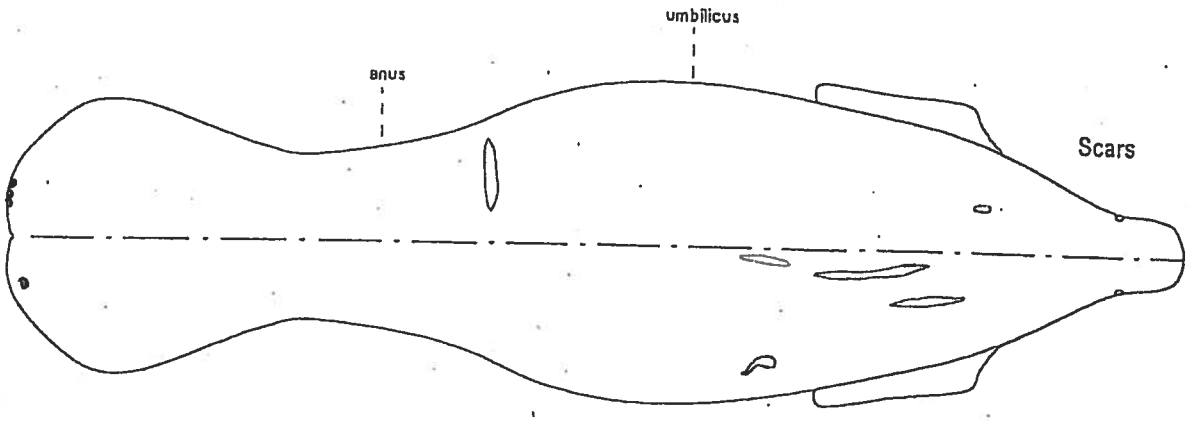
Field I.D. MEC19091

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WDG



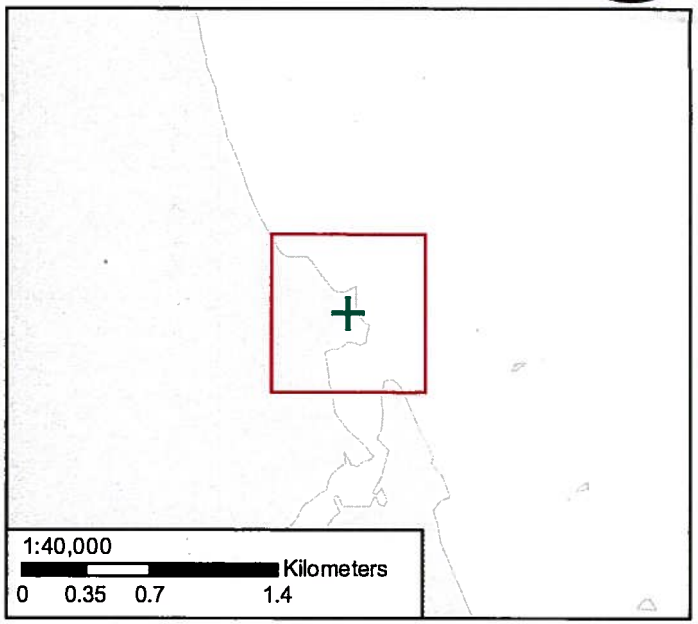
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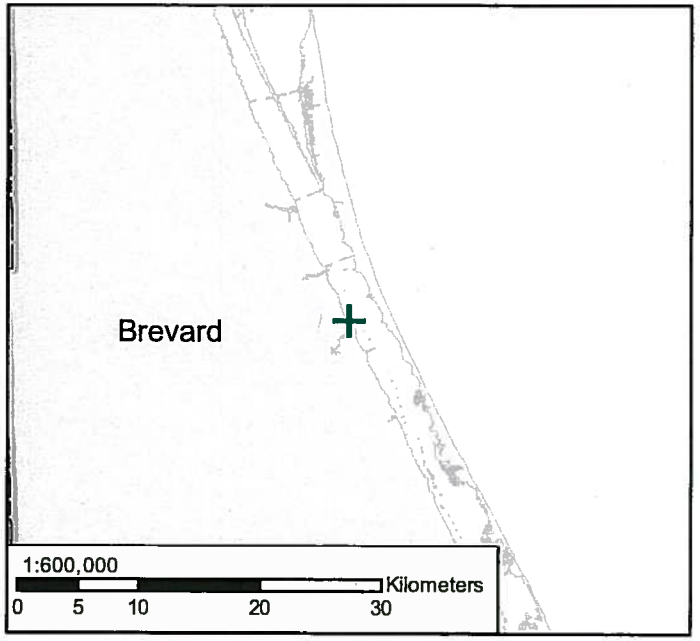


Verified Recovery Location of Manatee Carcass MEC19091

Report Date: 11/22/2019 **Received Date:** 11/23/2019 **Received By:** FWC-WDG Map Created: 1/14/2021







Locality Description:
Palm Bay, Brevard
Grounded, approximately 140 m E of 4001 Dixie Highway Northeast.

Latitude: 28.04081°N **Longitude:** -80.58078°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19091
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A, 20502 **FWC District**: Northeast
Sex: Female **Length (cm)**: 218 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 November 201 **By**: FWC FIM biologist- Dwayne Edwards to FWC-WDG
Date collected: 23 November 201 **By**: FWC-WDG, FWC vol- B. Bennett
Date necropsied: 23 November 2(**By**: FWC- WDG, FWC vol- B. Bennett

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Palm Bay
Latitude: N _____ **Longitude**: W _____
Locality description: Palm Bay, approximately 140 m E of 4001 Dixie Highway NE

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: Healing wound on dorsum, reddish tissue under wound, 2 fractured and healing ribs, left pleural cavity 5 L of fibrin and pus, 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: 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 #: **MEC19092**
Date of Report: 2019-Nov-22
Filed By: FWC EC Field Station

FWC Case # 20505 **FWC Region:** NE

Sex: Female **Length:** 211 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-22 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-22 **By:** FWC-WDG

DATE NECROPSIED: 2019-Nov-23 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.17246 **N**
County: Brevard **Longitude:** -80.64538 **W**
Waterway: Indian River
Locality description: Melbourne, floating approximately 60 m ESE of 4035 North Habor City Boulevard.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Enteritis; Depleted fat(s); Serous fat(s); Dry, hard feces; Bloody nares; Adhered small intestine; Empty cecum.

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 20472.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19092

MORPHOMETRICS:

Total length:	211 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. MEC19092
RECOVERY DATE 22 November 2019
GENDER Female **TL** 211 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 23 November 2019
CONDITION Moderately Decomposed

HISTORY 22 November 2019, at 1208 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf in the Indian River in Melbourne, Brevard County. FWC case number 20472 was assigned. The complainant, Sal Menendez (321-626-8926), stated that the carcass was 5 feet long, floating on its back, and the skin on its face was starting to peel. At 1211 hrs, WDG requested FWC LE assistance to tow the carcass. At 1227 hrs, WDG received a photo verifying the carcass. At 1521 hrs, FWC-Officer Morgan Maslo secured the carcass at the Pineda Landing boat ramp. At 1728 hrs, FWC on-call biologist-Nadia J. Gordon (NJG) received a text alert from Dispatch regarding the carcass. FWC case number 20505 was assigned. The complainant, Ginger Knox (321-288-1689), stated that the carcass was tied up at the dock. WDG arrived at the boat ramp at 1810 hrs, loaded the carcass via Ezy-Lift at 1832 hrs, and transported it to the EC Field Station at 1915 hrs. **23 November**, at 0914 hrs, WDG and FWC volunteer-Brittiny Bennett completed a field necropsy at the field station. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid and dead trematodes exuded from the nares. A moderate brown algal mat was present on the dorsal and lateral aspects. There was a mild infestation of small barnacles on the ventrum. A minimum of one well-healed linear scar was observed on the mid left lateral aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, serous abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 4 L of moist, well-chewed, fibrous, tan to green ingesta (see photo). The mucosa was sloughing. There was a mild infection of dead nematodes.

DUODENUM The duodenum contained 625 mL of wet, well-chewed, fibrous, tan to green ingesta (see photo). The mucosa was black and sloughing. There was a mild infection of dead nematodes.

JEJUNUM & ILEUM The proximal small intestine serosa was discolored dark red to dark purple. The proximal and mid small intestine contained a small amount of watery, red fluid (see photo). The mucosa was thickened, severely rugose, red to dark red, and bloody (see photo). An 8 cm long section of the mid small intestine was adhered to another section of the mid small intestine (see photo). The distal small intestine contained a small amount of moist, well-chewed, fibrous, brown ingesta. The mucosa was sloughing. No parasites were grossly observed.

CECUM The cecum was empty of contents. The mucosa was unremarkable. No parasites were observed.

COLON The proximal-most 25 cm of the colon contained watery, red fluid (see photo). There was a mild infection of dead trematodes. The remainder of the proximal colon contained moist, poorly formed, moderately digested, fibrous, brown feces. The mid colon contained moist, moderately formed, moderately digested, fibrous, brown feces. The mucosa was sloughing in the proximal and mid colon. No parasites were observed. The distal colon contained dry, hard, well-formed, moderately digested, fibrous, light brown feces. The mucosa was black and sloughing. No parasites were observed.

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

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

LIVER The margins of the liver were rounded. The serosa was separated from the parenchyma. The liver was blue to black on serosal surfaces and brown on cut surfaces.

GALLBLADDER The gallbladder contained a small amount of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was scant, serous reproductive fat. The diameter of the uterus was small. No scars were present. Both ovaries contained fluid-filled follicles (maximum diameter 1.1 cm).

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

URINARY BLADDER The urinary bladder was 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 lungs were tan to blue on serosal surfaces and pink to red on cut surfaces. The primary airways contained a small amount of viscous, pink fluid. There was a severe infection of dead trematodes (see photos).

HEAD & NECK REGIONS The trachea contained a severe infection of dead trematodes. Otherwise, NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-23_FWC025_0219 through 0250.

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Serous, depleted fat
- Enteritis
- Adhered small intestine
- Empty cecum
- Dry, hard feces

PROBABLE CAUSE OF DEATH Natural; Other

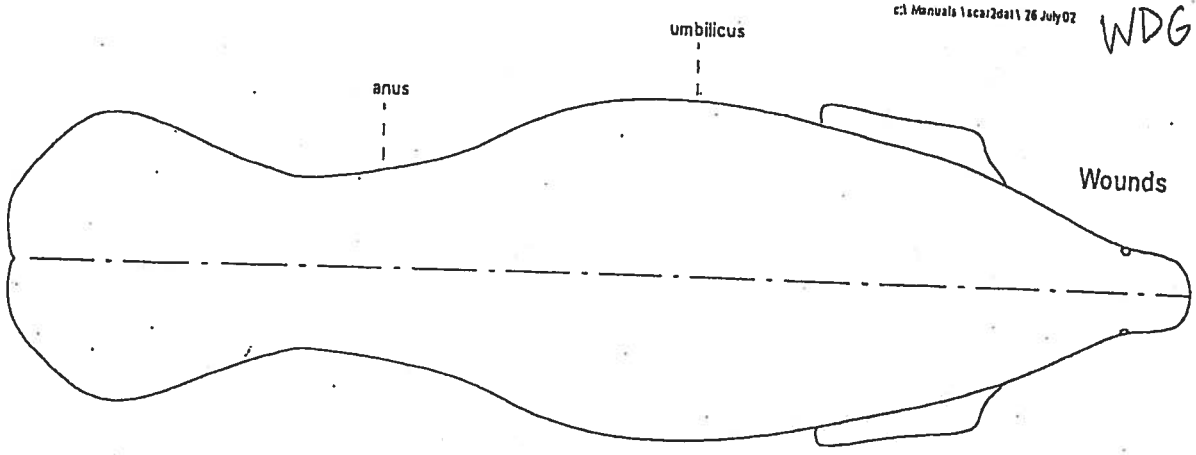
NECROPSY CONDUCTED BY

William D. Greer
Brittiny Bennett (FWC volunteer)

REPORT FILED BY Wappes / Greer

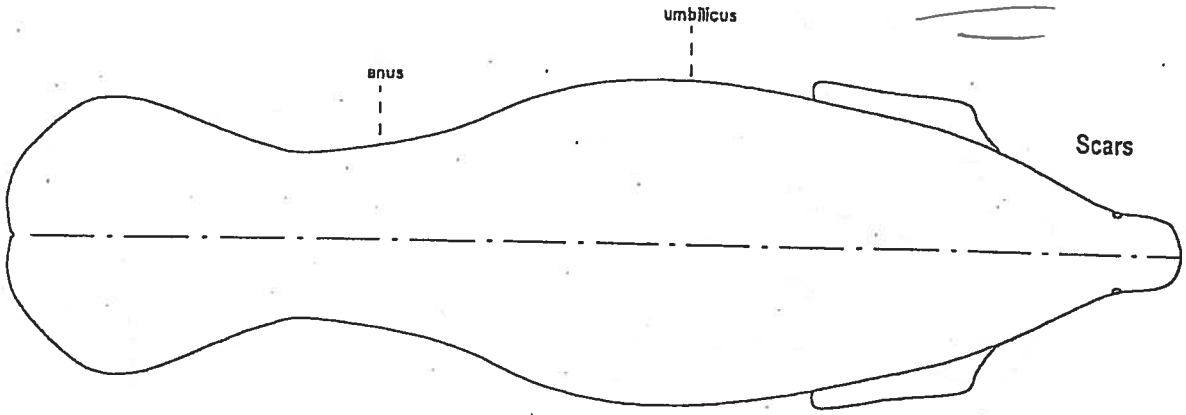
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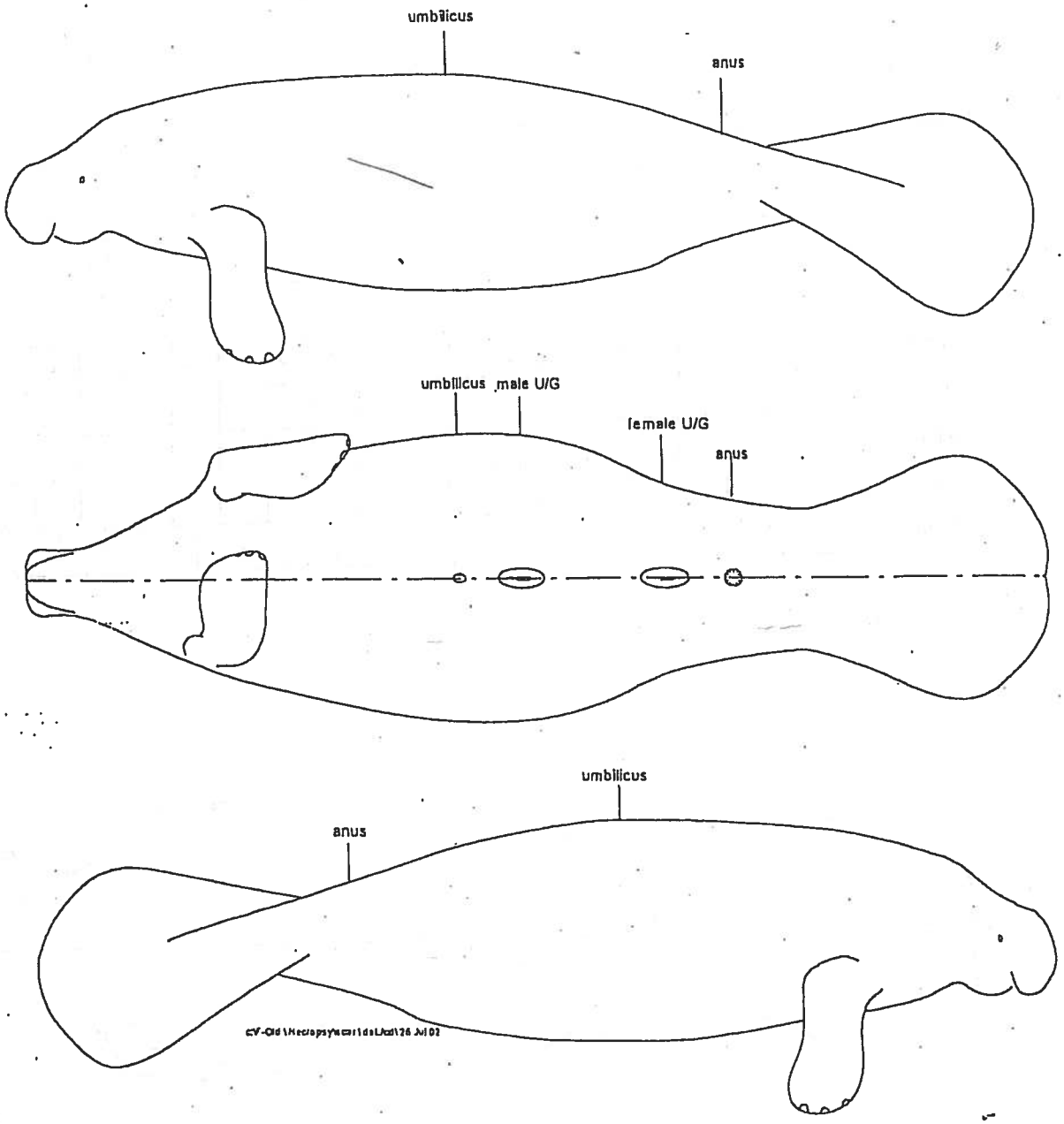


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Length																				
Width																				
Depth																				
Distance																				

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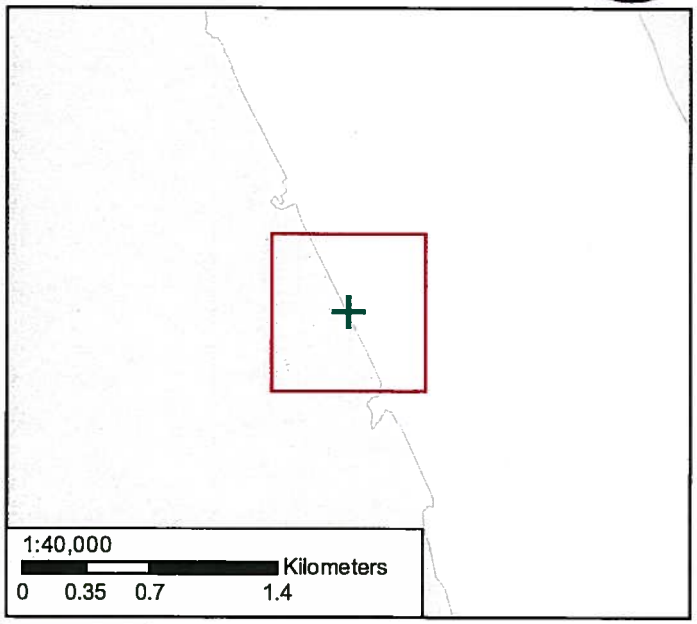
FIELD I.D. MEC19092

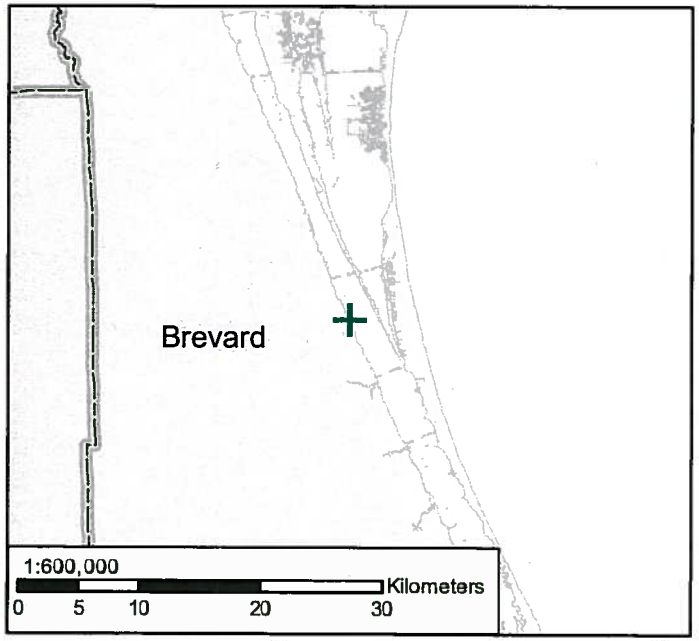


Verified Recovery Location of Manatee Carcass MEC19092

Report Date: 11/22/2019 **Received Date:** 11/22/2019 **Received By:** FWC-WDG Map Created: 1/14/2021







Locality Description:
Melbourne, Brevard
Floating, approximately 60 m ESE of 4035 North Habor City Boulevard.

Latitude: 28.17246°N **Longitude:** -80.64538°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19092
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20472, 20505 **FWC District**: Northeast
Sex: Female **Length (cm)**: 211 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 November 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 22 November 201 **By**: FWC-WDG
Date necropsied: 23 November 2(**By**: FWC-WDG, FWC vol- B. Bennett

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 65 m ESE of 4035 North Harbor City Blvd

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: Severe enteritis in small intestine, adhesion in small intestine, severe infection of dead trematodes in primary airways 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 _____

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 #: **MEC19093**
Date of Report: 2019-Nov-22
Filed By: FWC EC Field Station

FWC Case #
FWC Region: NE

Sex: Male **Length:** 292 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-22 **By:** FWC volunteer to FWC-WDG
DATE COLLECTED: 2019-Nov-22 **By:** FWC-WDG
DATE NECROPSIED: 2019-Nov-22 **By:** FWC-WDG

LOCATION:
State: FL **Latitude:** 28.43368 **N**
County: Brevard **Longitude:** -80.74136 **W**
Waterway: Indian River
Locality description: Sharpes, floating approximately 1.51 km E of 4021 North Indian River Drive.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Peanut-shaped head; Cobblestone-like epidermis; Serous fat(s); Depleted fat(s); Congested GI serosa, colon wall, urinary bladder mucosa, mesenteries. Found after sudden cold weather.

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. Monofilament in colon. Macroalgae in stomach. Purple-stained stomach mucosa.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19093

MORPHOMETRICS:

Total length:	292 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 (Thick, milky 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. MEC19093
RECOVERY DATE 22 November 2019
GENDER Male **TL** 292 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 22 November 2019
CONDITION Moderately Decomposed

HISTORY 22 November 2019, at 1309 hrs, FWC biologist-William D. Greer (WDG) received a call from FWC volunteer-Jamie Smith (JS) regarding a dead manatee near the Port St John boat ramp in the Indian River in Cocoa, Brevard County. Jamie stated that the carcass was 7 to 8 feet long, listing to one side, and that he could tow it to a boat ramp. At 1416 hrs, Jamie secured the carcass at the Port St John boat ramp. WDG arrived at the boat ramp at 1500 hrs, loaded the carcass via Ezy-Lift by 1518 hrs, and transported it to the Brevard County Landfill by 1540 hrs. A field necropsy was completed by 1657 hrs.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. A small amount of watery, red-tinged fluid exuded from the nares. The carcass had a peanut-shaped head. The left aspect was distended. There was cobblestone-like epidermis on all aspects. A severe infestation of small barnacles was present on the dorsal and lateral aspects, and a few were present on the ventral aspect. A minimum of four well-healed watercraft-related scar patterns was observed on the left lateral and dorsal aspects. There was a small well-healed circular mutilation at the 4 o'clock position of the fluke margin. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant, serous abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 3 L of moist, well-chewed, stringy, yellow and pink to brown ingesta mixed with yellow and red macroalgae (see photo). The mucosa was stained purple (see photo). No parasites were observed.

DUODENUM The duodenum contained 800 mL of moist, well-chewed, stringy, light green to brown ingesta (see photo).

JEJUNUM & ILEUM The small intestine serosa was mildly congested. The small intestine contained a small amount of moist, well-chewed, stringy, green to brown ingesta (see photo). The mucosa was black and sloughing throughout. No parasites were grossly observed.

CECUM The cecum contained 2.7 L of moist, well-digested, stringy, fibrous, orange to brown digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The colon serosa was moderately congested (see photo). The colon contained slightly moist, well-formed, well-digested, fibrous, stringy, brown to black feces throughout. There were a 13 cm long piece of >20 lb test diameter clear monofilament line and a 59 cm long piece of >10 lb test diameter clear monofilament line in the distal colon. The mucosa was sloughing throughout. The mid colon wall was moderately congested (see photo). No parasites were observed.

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

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

LIVER The margins of the liver were rounded. The liver was blue to purple on serosal surfaces and dark red to purple on cut surfaces.

GALLBLADDER The gallbladder contained a small amount of golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of reproductive fat. The seminal vesicles were large and contained a moderate amount of tan fluid. The testes were large. There was thick, milky fluid on cut surfaces of the epididymides.

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

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

HEART Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were gray to blue on serosal surfaces and pink to red on cut surfaces. The primary airways were unremarkable.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-22_FWC025_0193 through 0218.

COMMENTS The carcass was recovered after sudden, severe cold weather in mid-November.

SIGNIFICANT FINDINGS

- Peanut-shaped head
- Cobblestone-like epidermis
- Serous, depleted fat
- Congested GI serosa, colon wall, urinary bladder mucosa, mesenteries
- Macroalgae in stomach
- Stomach mucosa stained purple
- Monofilament in colon
- Found after sudden cold weather

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

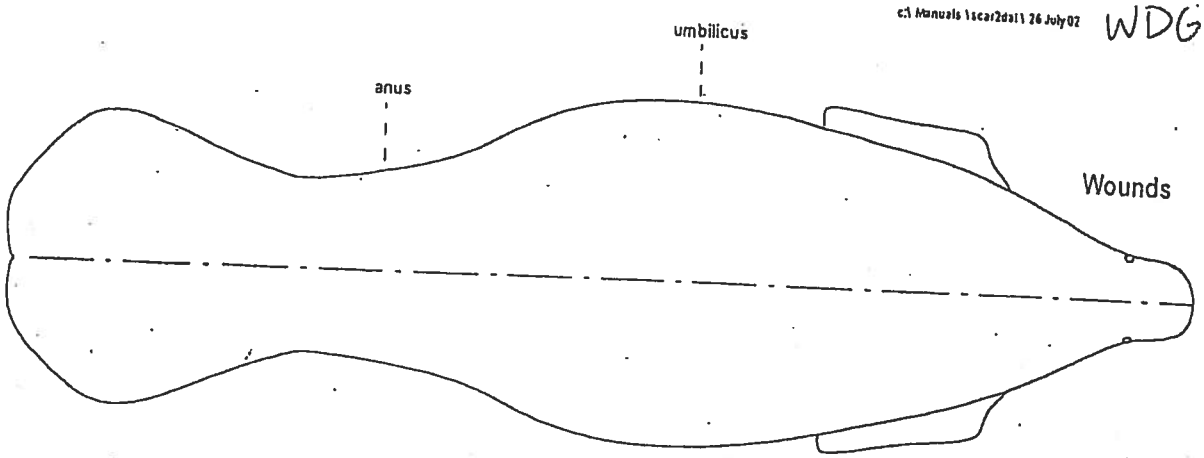
William D. Greer

REPORT FILED BY Wappes / Greer

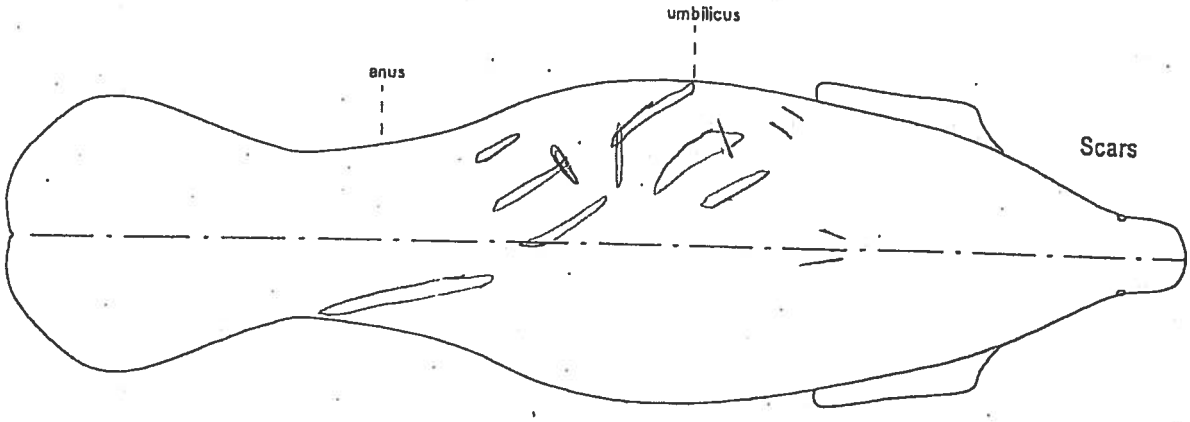
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Field I.D. MEC19093

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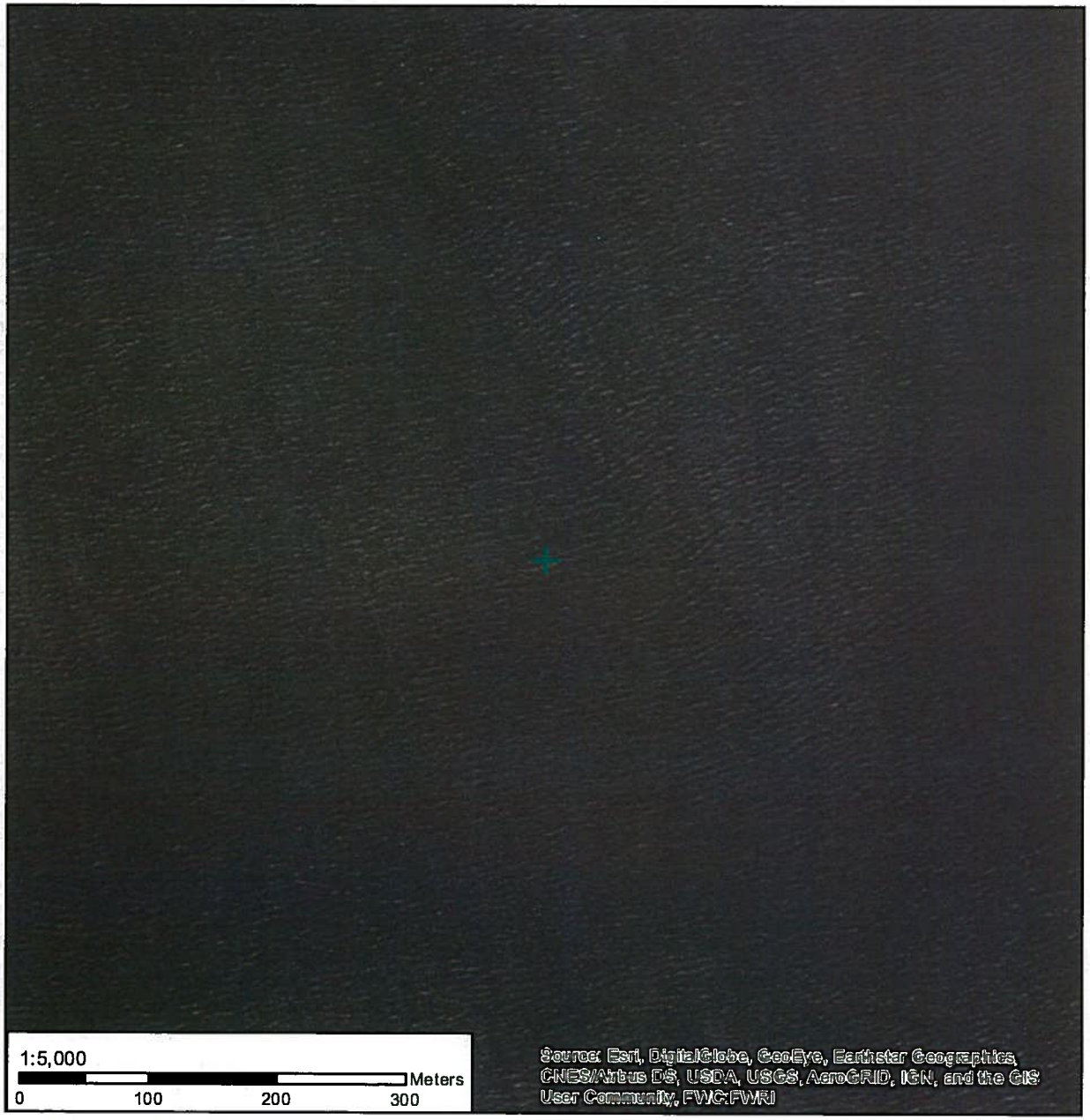


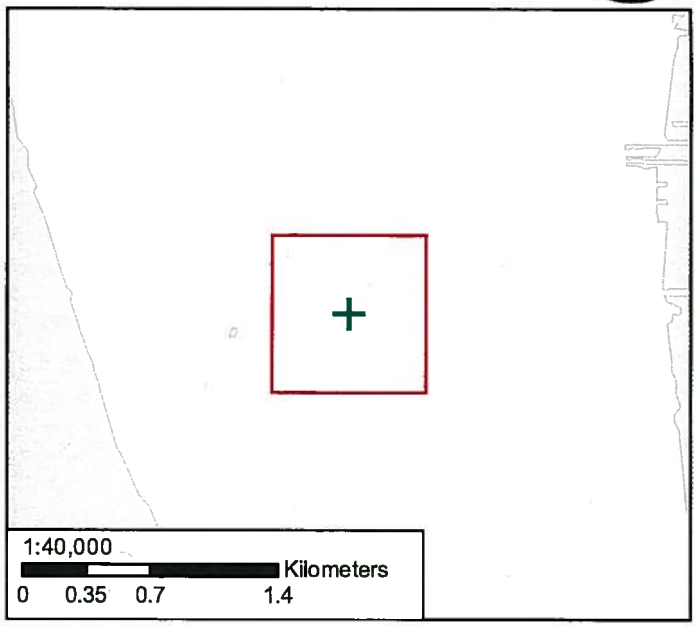
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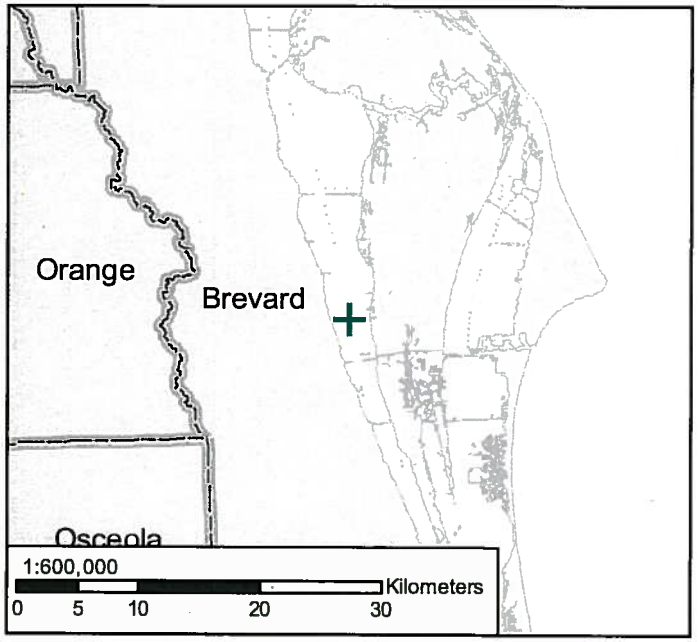


Verified Recovery Location of Manatee Carcass MEC19093

Report Date: 11/22/2019 **Received Date:** 11/22/2019 **Received By:** FWC-WDG Map Created: 1/14/2021







Locality Description:
Sharpes, Brevard
Floating, approximately 1.51 km E of 4021 North Indian River Drive.

Latitude: 28.43368°N **Longitude:** -80.74136°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19093
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Male **Length (cm)**: 292 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 November 201 **By**: FWC Vol- J. Smith to FWC- WDG
Date collected: 22 November 201 **By**: FWC- WDG
Date necropsied: 22 November 2(**By**: FWC- WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 1.51 km E of 4021 North Indian River Drive

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:

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 #: **MEC19094**
Date of Report: 2019-Nov-23
Filed By: FWC EC Field Station

FWC Case # 20776 **FWC Region:** NE

Sex: Female **Length:** 263 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-23 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-27 **By:** FWC-SMW

DATE NECROPSIED: 2019-Nov-27 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 27.84366 **N**
County: Indian River **Longitude:** -80.47551 **W**
Waterway: Indian River
Locality description: Roseland, grounded approximately 550 m WNW of 13610 N Indian River Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Serous fat(s); Depleted fat(s); Dry, hard feces; Relatively empty upper GI tract. Found after sudden cold.

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. Uterine Scar. A field necropsy was performed. Also FWC case number 20552. Macroalgae in lower GI tract. Scavenging.

Page 1&2	18 JAN 2021
Necropsy Report	18 JAN 2021
Lat/Long	18 JAN 2021

Field ID #: MEC19094

MORPHOMETRICS:

Total length:	263 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. MEC19094
RECOVERY DATE 27 November 2019
GENDER Female **TL** 263 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 27 November 2019
CONDITION Badly Decomposed

HISTORY 23 November 2019, at 1230 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River in Sebastian, Indian River County. FWC case number 20552 was assigned. The complainant, Peter Binns (772-501-6750), stated that the carcass was 8 feet in length, back-up, and floating near the channel. At 1238 hrs, WDG received a photo of the carcass. At 1240 hrs, WDG requested FWC LE assistance to tow the carcass. At 1302 hrs, Clearwater Marine Aquarium Research Institute biologist-Amanda Mathieu sent WDG a text regarding the same carcass, stating that a third party had reported it to her. Later that day, US Fish and Wildlife Service-Officer Nicole Prescott searched for the carcass but was unable to locate it. **27 November**, at 0800 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding a dead manatee on a spoil island in the Indian River. FWC case number 20776 was assigned. The complainant, TJ Lachante (772-646-1853), stated that the carcass was dorsum-up and starting to turn white. At 0816 hrs, SMW received a verification photo. SMW and FWC volunteer-Joe Wolf arrived at the Sebastian Inlet State Park boat ramp at 0933 hrs, launched the Jon boat, and located the carcass at 1005 hrs. A field necropsy was completed by 1110 hrs. The remains were left onsite.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. There were rents due to decomposition and/or scavenging on the cranial right lateral aspect. Watery, red fluid exuded from the nares and the rents. There was a thin brown algal mat on the remaining epidermis of the fluke. A mild infestation of barnacles was present on the ventral fluke. A minimum of two well-healed watercraft-related scar patterns was observed. The fluke margin had eroded mutilations from the 3 to 8 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained 600 mL of wet, poorly chewed, fibrous, stringy, tan ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 350 mL of moist, poorly chewed, fibrous, stringy, light purple to brown ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained moist, moderately formed, poorly chewed, fibrous, stringy, brown to pink ingesta. The mid and distal small intestine was empty of contents. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 1.3 L of moist, poorly digested, fibrous, stringy, green to pink digesta mixed with red macroalgae (see photo). The mucosa was sloughing. There was a mild infection of dead trematodes.

COLON The proximal colon contained moist, moderately formed, moderately digested, stringy, leafy, red to brown feces mixed with red macroalgae (see photo). There was a moderate infection of dead trematodes. The mid colon contained dry, slightly hard, well-formed, poorly digested, very fibrous, very stringy, yellow to brown feces. The distal colon contained dry, hard, well-formed, well-digested, slightly fibrous, green feces. The mucosa was sloughing throughout. There was a mild infection of dead trematodes in the mid and 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 contained a scant amount of viscous, brown bile. The mucosa was brown.

REPRODUCTIVE The reproductive organs were soft and friable. The left uterine horn contained a scar. The right uterine horn was small in diameter. The ovaries were autolyzed.

KIDNEYS The kidneys were soft. Serosal surfaces were pink. On cut surfaces, the cortices were pink and the medullae were red. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 5 mL of watery, red-tinged urine. 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, friable, and autolyzed. There was a severe infection of dead trematodes in the primary airways (see photo).

HEAD & NECK REGIONS There was abundant watery red fluid and a severe infection of dead trematodes in the trachea.

SKELETON NVL.

OTHER There was dark red, bloody tissue ventral to the sternum between the axillae (see photo).

PHOTOGRAPHS 2019-11-27_FWC025_0351 through 0378.

COMMENTS The carcass was reported after sudden, severe cold weather in mid-November.

SIGNIFICANT FINDINGS

- Depleted, serous fat
- Dry, hard feces
- Relatively empty upper GI tract
- Macroalgae in lower GI tract
- Bloody tissue
- Fluid in trachea
- Uterine scar
- Autolyzed, missing internal organs
- Scavenging
- Found after sudden cold

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

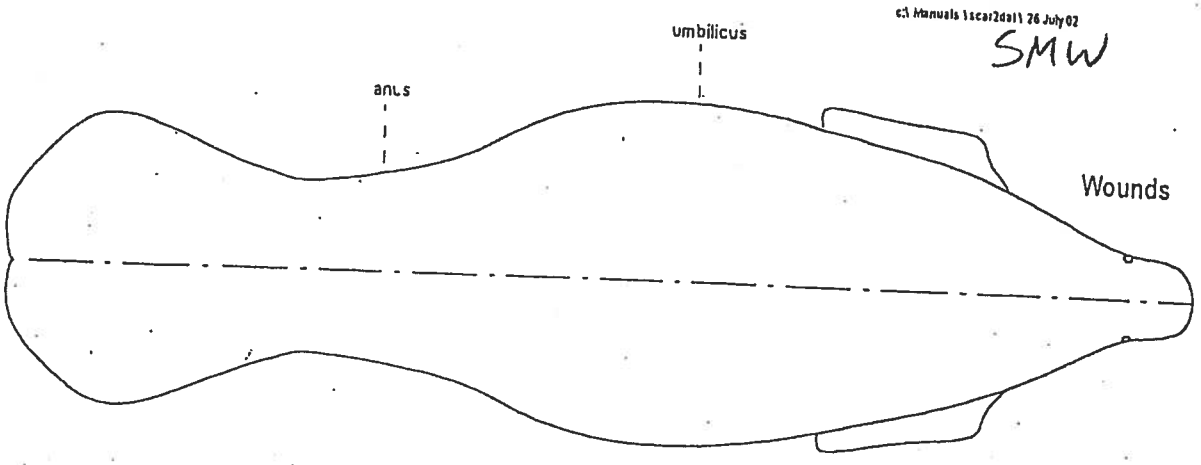
Sara M. Wappes
Joe Wolf (FWC volunteer)

REPORT FILED BY Wappes

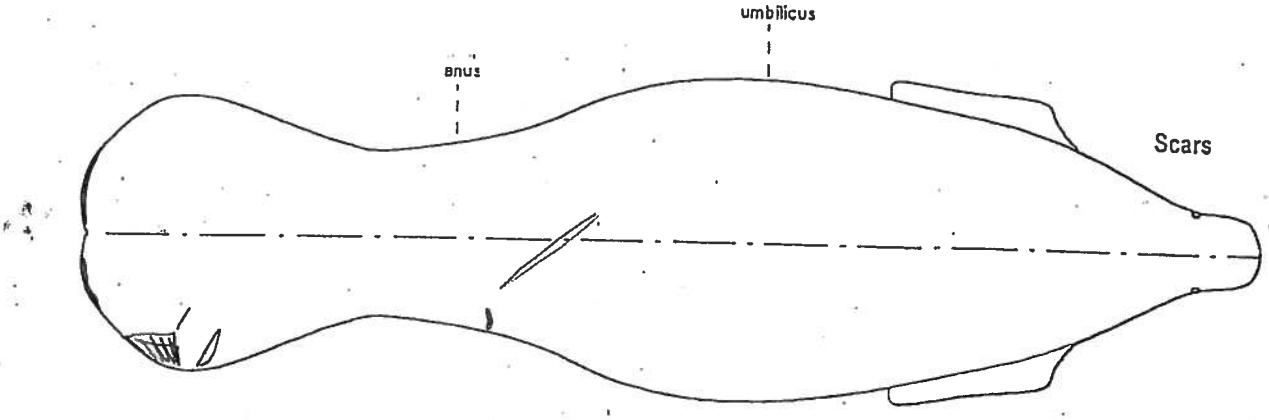
Date 27 NOV 2019 Field I.D. MEC19094

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SMW



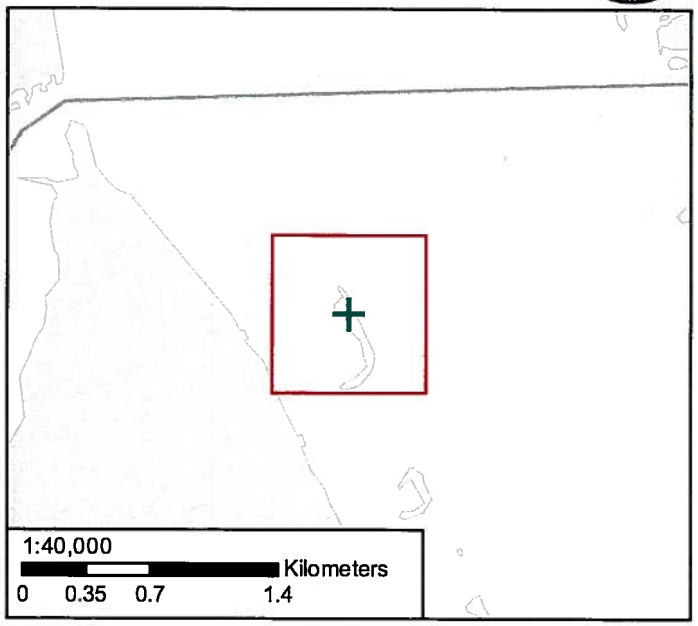
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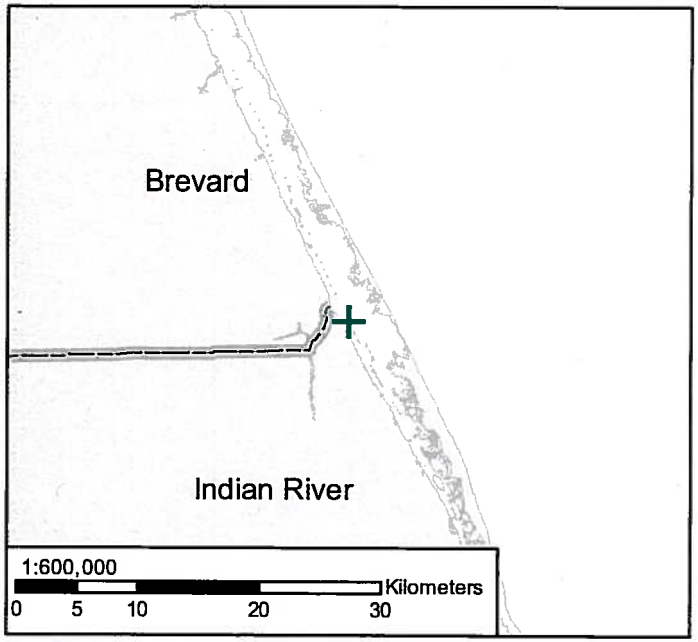


Verified Recovery Location of Manatee Carcass MEC19094

Report Date: 11/23/2019 **Received Date**: 11/27/2019 **Received By**: FWC-SMW Map Created: 1/14/2021







Locality Description:
Roseland, Indian River
Grounded, approximately 550 m WNW of 13610 N Indian River Drive.

Latitude: 27.84366°N **Longitude**: -80.47551°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19094
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20552, 20776 **FWC District**: Northeast
Sex: Female **Length (cm)**: 263 **Estimated** _____ **Weight (kg)** N/T
Date reported: 23 November 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 27 November 201 **By**: FWC-SMW, FWC vol-J. Wolf
Date necropsied: 27 November 2(**By**: FWC-SMW, FWC vol-J. Wolf

LOCATION INFORMATION: **State** FL **County**: Indian River **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Sebastian, approximately 550 m WNW of 13610 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, some serous abdominal fat, dry, hard feces, trematodes in primary airways

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**: 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: The left uterine horn was contracted and had a scar. The right uterine horn was small diameter.

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 #: **MEC19095**
Date of Report: 2019-Nov-23
Filed By: FWC EC Field Station

FWC Case # 20542 **FWC Region:** NE

Sex: Female **Length:** 259 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-23 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-23 **By:** FWC-WDG

DATE NECROPSIED: 2019-Nov-23 **By:** FWC-WDG

LOCATION: **State:** FL **Latitude:** 28.44787 **N**
County: Brevard **Longitude:** -80.72243 **W**
Waterway: Indian River
Locality description: Merritt Island, grounded approximately 50 m WNW of 500 Treasure Lagoon Lane.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Crumbly feces; Dry feces; Bloody nares; Enlarged heart, thickened valves; Red ascites; Congested colon serosa and wall, duodenum-, urinary bladder mucosa; Hemorrhagic spots lungs; Fluid in airways; Bloody liver;

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; Healing watercraft wound(s).

Page 1&2	18 JAN 2021
Necropsy Report	18 JAN 2021
Lat/Long	18 JAN 2021

Field ID #: MEC19095

MORPHOMETRICS:

Total length:	259 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. MEC19095
RECOVERY DATE 23 November 2019
GENDER Female **TL** 259 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 23 November 2019
CONDITION Fresh

HISTORY 23 November 2019, at 1042 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 20542 was assigned. The complainant, Phil Thompson (321-639-3588), stated that the carcass was five feet long, back-up, and fresh. WDG arrived at Manatee Cove Park at 1250 hrs, launched a kayak, and located the carcass at 1258 hrs. WDG towed the carcass to the Treasure Lagoon private boat ramp by 1335 hrs, loaded it via Ezy-Lift at 1353 hrs, and transported it to the Brevard County Landfill at 1420 hrs. A field necropsy was completed by 1610 hrs.

EXTERNAL Almost all of the epidermis was present. The carcass was distended with gas. Red-tinged fluid exuded from the nares. There was a thin layer of dark mud on the ventral aspect at the axillae. One superficial, linear, healing wound was observed on the ventral fluke (see photo). There were numerous bleached spots in the epidermis, many of which were associated with hair follicles. A minimum of two 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, slightly serous abdominal, mesenteric, and omental fat. There was approximately 8 L of watery, red fluid in the abdominal cavity.

STOMACH The stomach contained 5.2 L of moist, well-chewed, fibrous, stringy, green to brown ingesta (see photo). The contents were coated in a layer of white mucus. The mucosa was stained light pink. There was a mild infection of dead nematodes.

DUODENUM The duodenum contained 300 mL of wet, well-chewed, fibrous, stringy, green to brown ingesta (see photo). The mucosa was slightly congested (see photo). No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained moist, well-chewed, fibrous, brown ingesta. The distal small intestine contained viscous, yellow to orange fluid. The mucosa was sloughing. No parasites were grossly observed.

CECUM The cecum contained 250 mL of moist, well-digested, fibrous, stringy, green to brown digesta (see photo). The mucosa was sloughing. There was a mild infection of dead trematodes.

COLON The colon serosa was mildly congested (see photo). The proximal and mid colon contained moist, well-formed, well-digested, fibrous, green to brown feces. The mucosa was black and sloughing. The distal colon contained dry, crumbly, well-formed, well-digested, fibrous, brown feces (see photo). The mucosa was sloughing. There were patches of severe congestion in the colon wall (see photo). No parasites were observed.

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

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

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

GALLBLADDER The gallbladder contained 10 mL of viscous, orange bile. The mucosa was bile stained.

REPRODUCTIVE The diameter of the uterus was small. No scars were present. Both ovaries contained a small number of fluid-filled follicles (maximum diameter 1.0 cm).

KIDNEYS The kidneys were tan on serosal surfaces. On cut surfaces, the cortices were dark red and the medullae were light pink. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained 50 mL of red-tinged fluid. The mucosa was slightly congested.

HEART There was a small amount of serous epicardial fat. The heart was enlarged (21 cm wide, 27 cm maximum length) and contained 7.5 L of loose, well-formed blood clots and fat bodies (see photo). The valves were slightly thickened.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were light pink on serosal surfaces and dark red on cut surfaces. There were hemorrhagic purple spots on the serosal surfaces. The primary airway of the left lung contained a scant amount of watery, red fluid and a mild infection of dead trematodes. The primary airway of the right lung contained an abundant amount of watery, red fluid and a severe infection of dead trematodes (see photo).

HEAD & NECK REGIONS The trachea contained a moderate infection of dead trematodes.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-23_FWC025_0282 through 0311.

COMMENTS

SIGNIFICANT FINDINGS

- Bloody nares
- Enlarged heart, thickened valves
- Red ascites
- Congested colon serosa and wall, duodenum-, urinary bladder mucosa
- Hemorrhagic spots lungs
- Fluid in airways
- Bloody liver
- Dry, crumbly feces
- Bleached spots epidermis
- Healing wound fluke

PROBABLE CAUSE OF DEATH Natural; Other

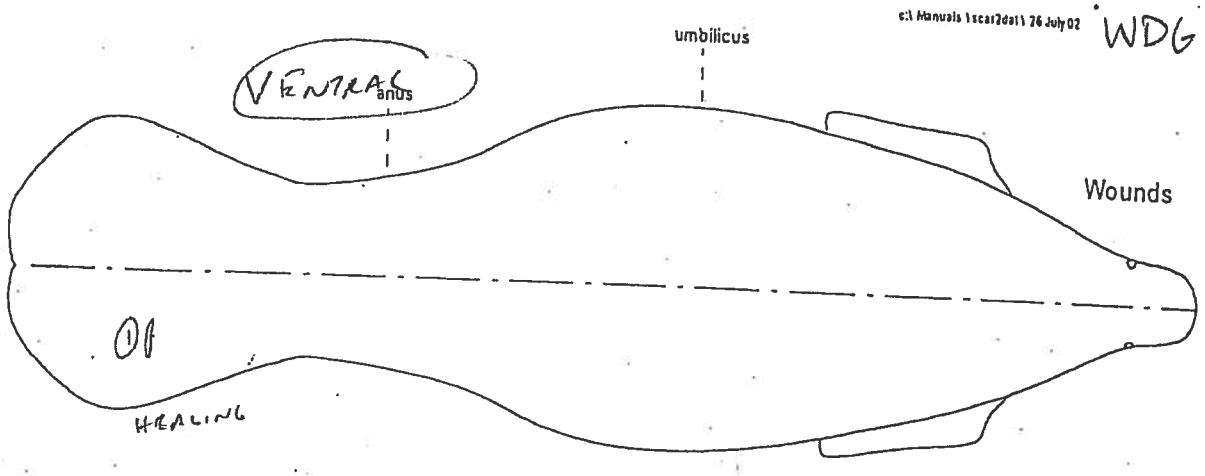
NECROPSY CONDUCTED BY

William D. Greer

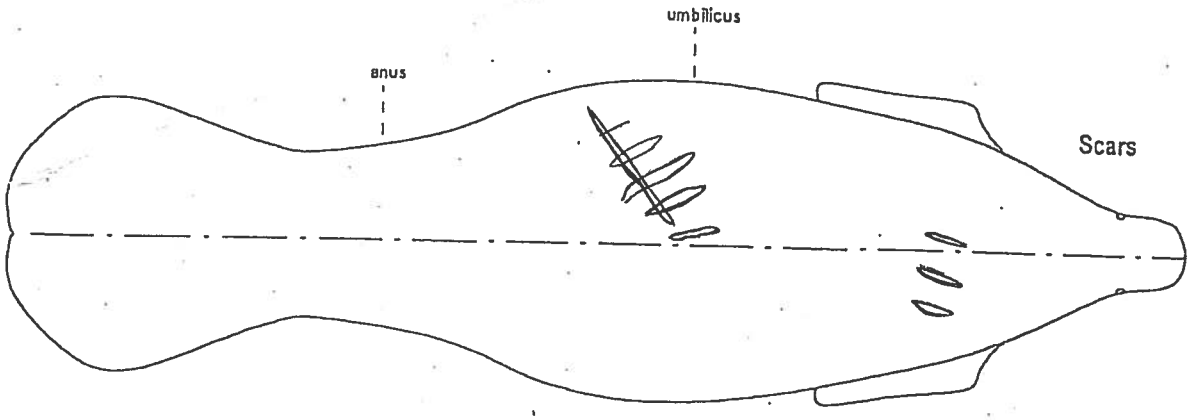
REPORT FILED BY Wappes / Greer

Date 23 NOV 2019 Field I.D. MEC19095.

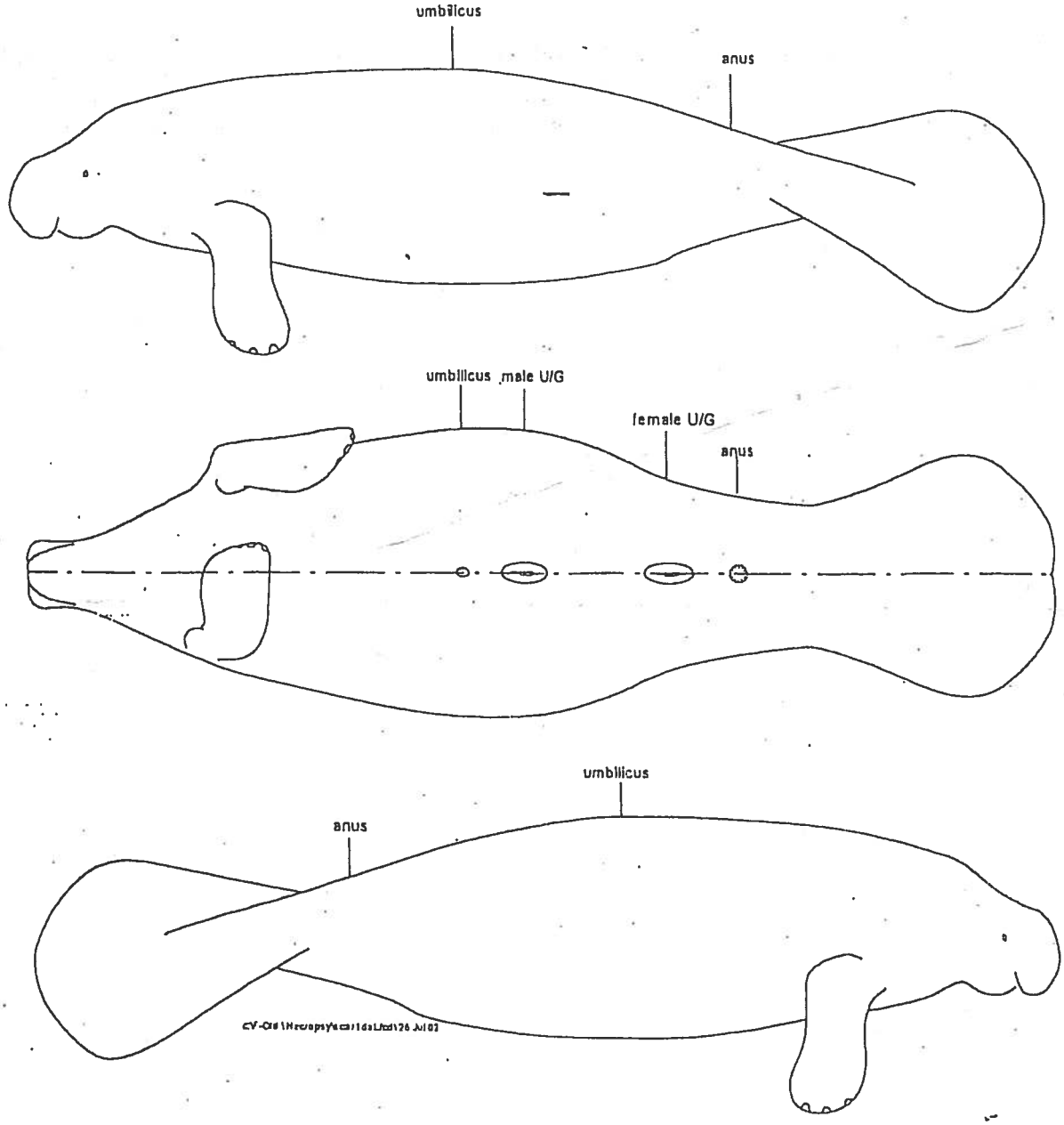
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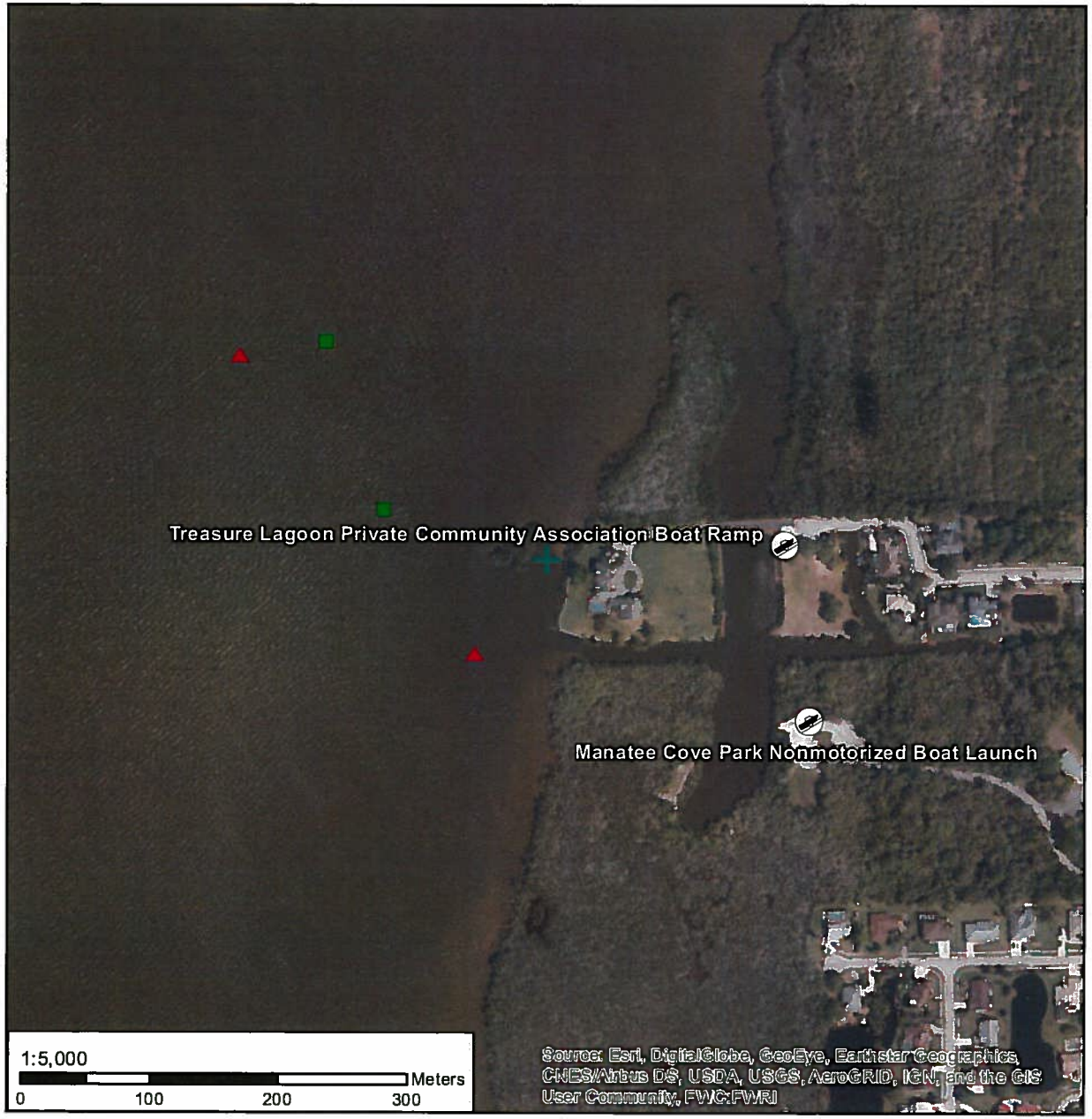


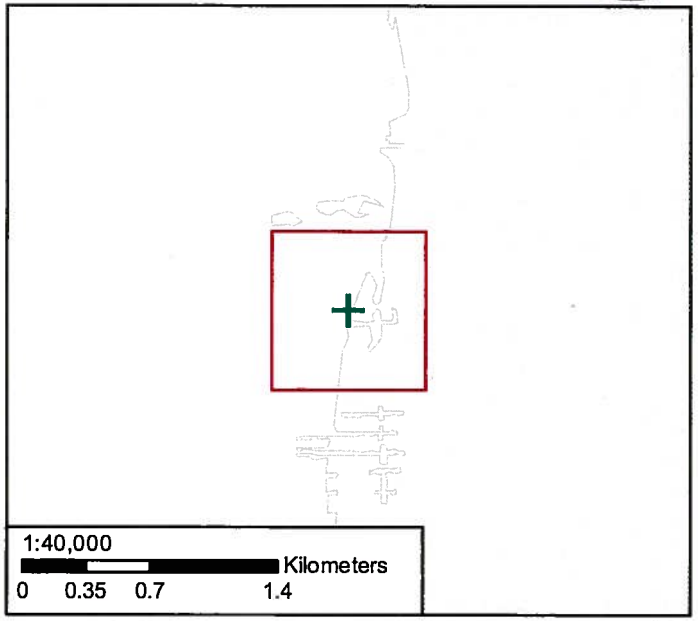
FIELD I.D. MEC19095

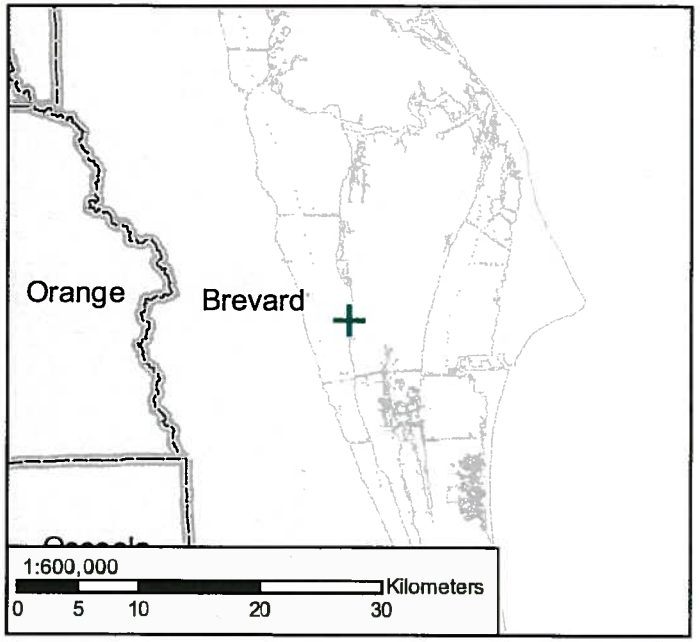


Verified Recovery Location of Manatee Carcass MEC19095

Report Date: 11/23/2019 **Received Date:** 11/23/2019 **Received By:** FWC-WDG Map Created: 1/14/2021







Locality Description:
Merritt Island, Brevard
Grounded, approximately 50 m WNW of 500 Treasure Lagoon Lane.

Latitude: 28.44787°N **Longitude:** -80.72243°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19095
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20542 **FWC District**: Northeast
Sex: Female **Length (cm)**: 259 **Estimated** _____ **Weight (kg)** N/T
Date reported: 23 November 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 23 November 201 **By**: FWC-WDG
Date necropsied: 23 November 2(**By**: FWC-WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 50 m WNW of 500 Treasure Lagoon Lane
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: Enlarged heart, 7.5 L of well formed blood clots in epicardial cavity, 8 L of watery red fluid from abdominal cavity, heart valves thickened slightly, congestion in small intestine, primary airways contained watery red fluid and infection of dead trematodes

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: Superficial wound to ventral fluke

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 #: **MEC19096**
Date of Report: 2019-Nov-25
Filed By: FWC EC Field Station

FWC Case #
FWC Region: NE

Sex: Male **Length:** 132 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-25 **By:** FPL-Jennifer Pickett to FWC-WDG
DATE COLLECTED: 2019-Nov-25 **By:** FWC-WDG,SMW
DATE NECROPSIED: 2019-Nov-25 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.46959 **N**
County: Brevard **Longitude:** -80.76263 **W**
Waterway: Indian River
Locality description: Port St. John, floating approximately 290 m NNE of 132 Cottrell Avenue.

CONDITION: Badly Decomposed

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

EXPLAIN: Natural: Cold Stress; Cobblestone-like epidermis; Fetal folds; Bleached epidermis; Depleted fat(s); Serous fat (s); Wet lung(s); Relatively empty GI tract; Severe infestation of barnacles; Fluid in airways.

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.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19096

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. MEC19096
RECOVERY DATE 25 November 2019
GENDER Male **TL** 132 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 25 November 2019
CONDITION Badly Decomposed

HISTORY 25 November 2019, at 1042 hrs, FWC biologist-William D. Greer (WDG) received a call from Florida Power and Light (FPL)-Jennifer Pickett regarding a dead manatee at the south discharge of the power plant in the Indian River in Port St John, Brevard County. At 1042 hrs, WDG received a photo of the carcass. Clearwater Marine Aquarium Research Institute-Amanda Mathieu (AM) was already at the power plant with a kayak and agreed to tow the carcass. AM secured the carcass to a concrete slab at 1136 hrs. WDG and FWC biologist-Sara M. Wappes (SMW) arrived at FPL at 1243 hrs and loaded the carcass at 1256 hrs. WDG and SMW recovered and necropsied MEC19097, then transported MEC19096 to the EC Field Station at 1540 hrs. A field necropsy was completed by 1617 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL Almost all of the top layer of epidermis was missing. Approximately 70% of the second layer of epidermis was present but sloughing. A few bleached spots were observed. The epidermis had a slight cobblestone-like appearance. The carcass was distended with gas. A moderate amount of watery, red fluid exuded from the nares. Faint transverse folds were present on the ventral aspect. There was a severe infestation of barnacles on the remaining top layer of epidermis. There was a moderate concentration of barnacle scars on the ventral aspect. No watercraft-related wounds or scars were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant, serous abdominal fat. No omental or mesenteric fat was observed.

STOMACH The stomach contained 75 mL of viscous, white to pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 25 mL of watery, flocculent, gray to brown fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained watery, gray fluid. The mid small intestine contained viscous, yellow to orange fluid. The distal small intestine contained a small amount of moist, poorly chewed, poorly digested, fibrous, green ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 5 mL of wet, viscous, orange to brown fluid mixed with a small amount of poorly digested, stringy, brown vegetation. The mucosa was black and sloughing. No parasites were observed.

COLON The proximal colon contained moist, poorly formed, poorly digested, fibrous, stringy, brown feces. The mid colon contained moist, poorly formed, poorly digested, tacky, fibrous, dark green feces. The distal colon was empty of contents. 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 red to black on serosal and cut surfaces.

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

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

REPRODUCTIVE There was no reproductive fat. The seminal vesicles and testes were small.

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

URINARY BLADDER The urinary bladder contained 125 mL of flocculent, 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 light pink on serosal surfaces and dark pink and wet on cut surfaces. The primary airways contained a moderate amount of watery, red fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-25_FWC025_0337 through 0350.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Cobblestone-like epidermis
- Few bleached spots epidermis
- Severe infestation of barnacles
- Depleted, serous fat
- Wet lungs
- Fluid in airways
- Relatively empty GI tract

PROBABLE CAUSE OF DEATH Perinatal; Natural (Cold Stress)

NECROPSY CONDUCTED BY

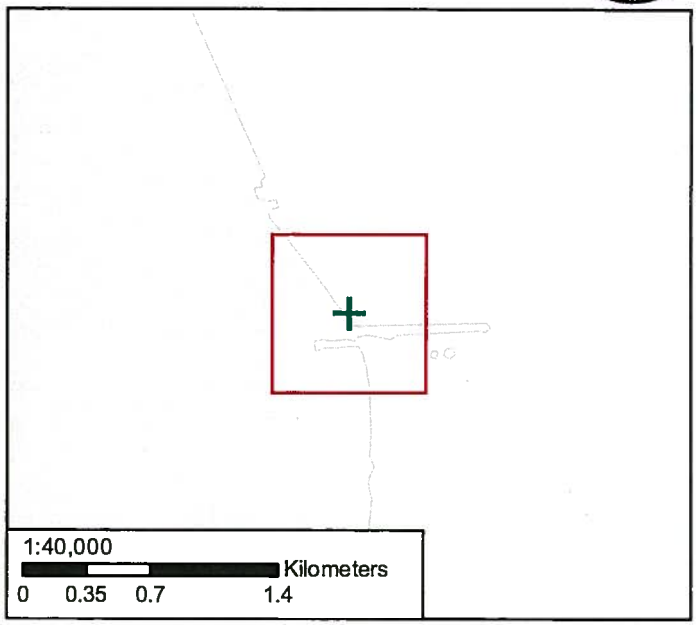
William D. Greer
Sara M. Wappes

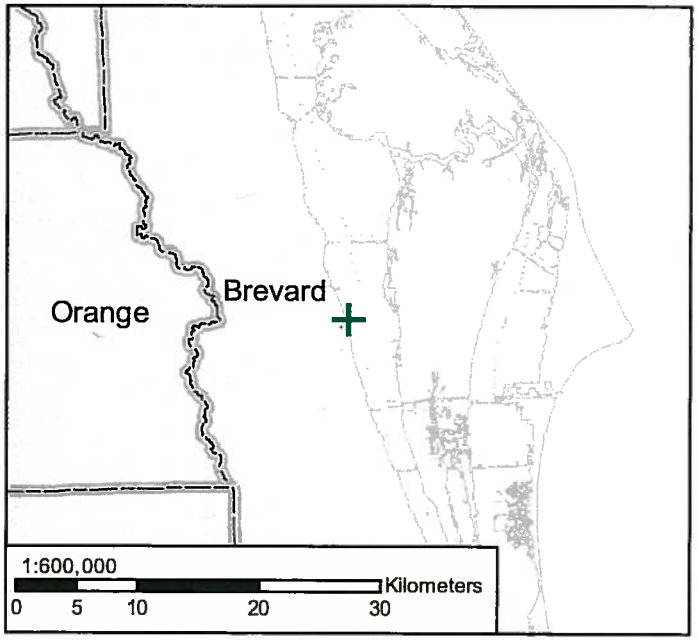
REPORT FILED BY Wappes / Greer

Verified Recovery Location of Manatee Carcass MEC19096

Report Date: 11/25/2019 **Received Date:** 11/25/2019 **Received By:** FWC-WDG,SMW Map Created: 1/14/2021







Locality Description:
Port St. John, Brevard
Floating, approximately 290 m NNE of 132 Cottrell Avenue.

Latitude: 28.46959°N **Longitude:** -80.76263°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19096
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Male **Length (cm)**: 132 **Estimated** _____ **Weight (kg)** N/T
Date reported: 25 November 201 **By**: FPL- Jennifer Pickett to FWC-WDG
Date collected: 25 November 201 **By**: FWC- WDG, SMW
Date necropsied: 25 November 2(**By**: FWC- WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 290 m NNE of 132 Cottrell Ave

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: - **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 perinatal evaluation due to presence of epibiota

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 #: **MEC19097**
Date of Report: 2019-Nov-25
Filed By: FWC EC Field Station

FWC Case # 20683 **FWC Region:** NE

Sex: Male **Length:** 216 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-25 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-25 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Nov-25 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.3306 **N**
County: Brevard **Longitude:** -80.71547 **W**
Waterway: Indian River
Locality description: Rockledge, grounded approximately 95 m NE of 64 Hill Top Lane

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Depleted fat(s); Serous fat(s); Pneumothorax; Relatively empty GI tract; Dry, hard feces; Fluid from nares; Fluid in abdominal cavity; Black specks parietal pleura. Found after sudden cold weather.

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. Macroalgae in GI tract. Also FWC case number 21020.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19097

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. MEC19097
RECOVERY DATE 25 November 2019
GENDER Male **TL** 216 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 25 November 2019
CONDITION Badly Decomposed

HISTORY 25 November 2019, at 1307 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 Rockledge, Brevard County. FWC case number 20683 was assigned. The complainant, Norm Channell (321-302-5578), stated that the carcass was 4 to 5 feet long, had been seen the day before, and was still gray in color. WDG received a verification photo at 1314 hrs. WDG and FWC biologist-Sara M. Wappes (SMW) arrived at the carcass at 1330 hrs and completed a field necropsy at 1438 hrs. The remains were left onsite. **01 December**, at 1325 hrs, SMW received a text alert from Dispatch regarding the carcass. FWC case number 21020 was assigned. The complainant, Rockledge Police Department-Sergeant Chris Cochie, had found the carcass completely beached.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. The carcass was distended with gas. A moderate amount of watery, red fluid exuded from the nares. There was a moderate brown algal mat on the dorsal and lateral aspects. Bleached spots were observed in the remaining epidermis. There was a mild infestation of barnacles on the ventral aspect. A minimum of two well-healed watercraft-related scar patterns was observed on the right ventral and right lateral aspects. The fluke margin had four well-healed mutilations between the 8 and 11 o'clock positions. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of serous abdominal, mesenteric, and omental fat. There was an abundant amount of watery, dark red fluid in the abdominal cavity (see photo).

STOMACH The stomach contained 100 mL of watery, opaque, gray fluid (see photo). There was a mild infection of dead nematodes. The mucosa was unremarkable.

DUODENUM The duodenum contained 20 mL of watery, gray fluid (see photo). There was a severe infection of dead nematodes. The mucosa was unremarkable.

JEJUNUM & ILEUM The proximal small intestine contained a small amount of watery, gray fluid. There was a mild infection of dead nematodes. The mid small intestine contained watery, gray fluid mixed with well-chewed, red macroalgae. No parasites were grossly observed. The distal small intestine contained moist, poorly formed, poorly chewed, fibrous, leafy, green to brown ingesta mixed with yellow macroalgae. There was a mild infection of dead trematodes. The mucosa was autolyzed throughout.

CECUM The cecum contained 900 mL of moist, poorly digested, fibrous, stringy, green digesta (see photo). There was a moderate infection of dead nematodes. The mucosa was sloughing.

COLON The proximal colon contained a small amount of moist, moderately formed, poorly digested, fibrous, leafy, yellow to brown feces. There was a severe infection of dead trematodes. The mucosa was black and sloughing. The mid colon contained moist, well-formed, poorly digested, stringy, fibrous, yellow to brown feces. There was a mild infection of dead trematodes. The distal colon contained dry, hard, crumbly, well-formed, well-digested, homogeneous, brown feces. No parasites were observed. The mucosa was sloughing in the mid and 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. The serosa was separated from the parenchyma. The liver was purple to black on serosal surfaces and red to black on cut surfaces.

GALLBLADDER The gallbladder contained 5 mL of golden yellow bile. The mucosa was bile-stained.

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

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

URINARY BLADDER The urinary bladder contained 25 mL of red-tinged urine. The mucosa was unremarkable.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. There were black specks on the parietal pleura (see photo). The right hemidiaphragm was distended due to gas in the pleural cavity (see photos). The lungs were pink to blue on serosal surfaces and pink to red on cut surfaces. The primary airways contained a small amount of watery, red fluid. There was a moderate infection of dead trematodes.

HEAD & NECK REGIONS There was a moderate infection of dead trematodes in the trachea.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-25_FWC025_0312 through 0336.

COMMENTS The carcass was found after sudden cold weather in mid-November.

SIGNIFICANT FINDINGS

- Bleached spots epidermis
- Fluid from nares
- Depleted, serous fat
- Fluid in abdominal cavity
- Pneumothorax
- Relatively empty GI tract
- Dry, hard feces
- Black specks parietal pleura
- Macroalgae in GI tract
- Found after sudden cold

PROBABLE CAUSE OF DEATH Natural; Cold Stress

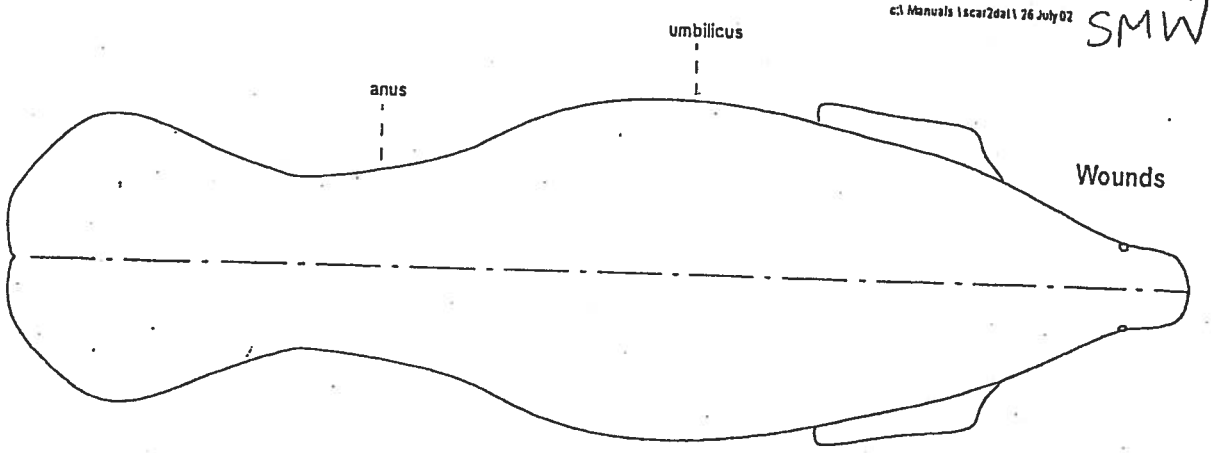
NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes

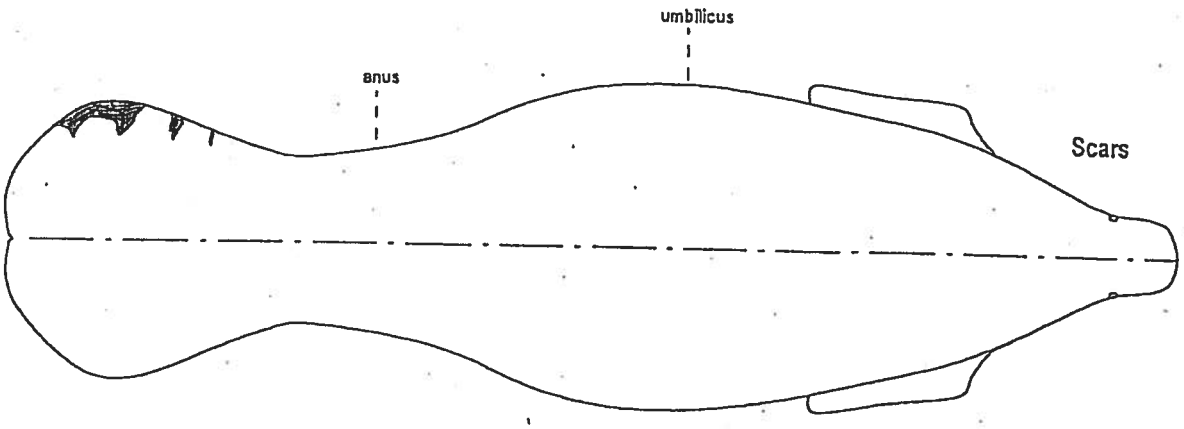
REPORT FILED BY Wappes / Greer

Date 25 NOV 2019 Field I.D. MEC19097

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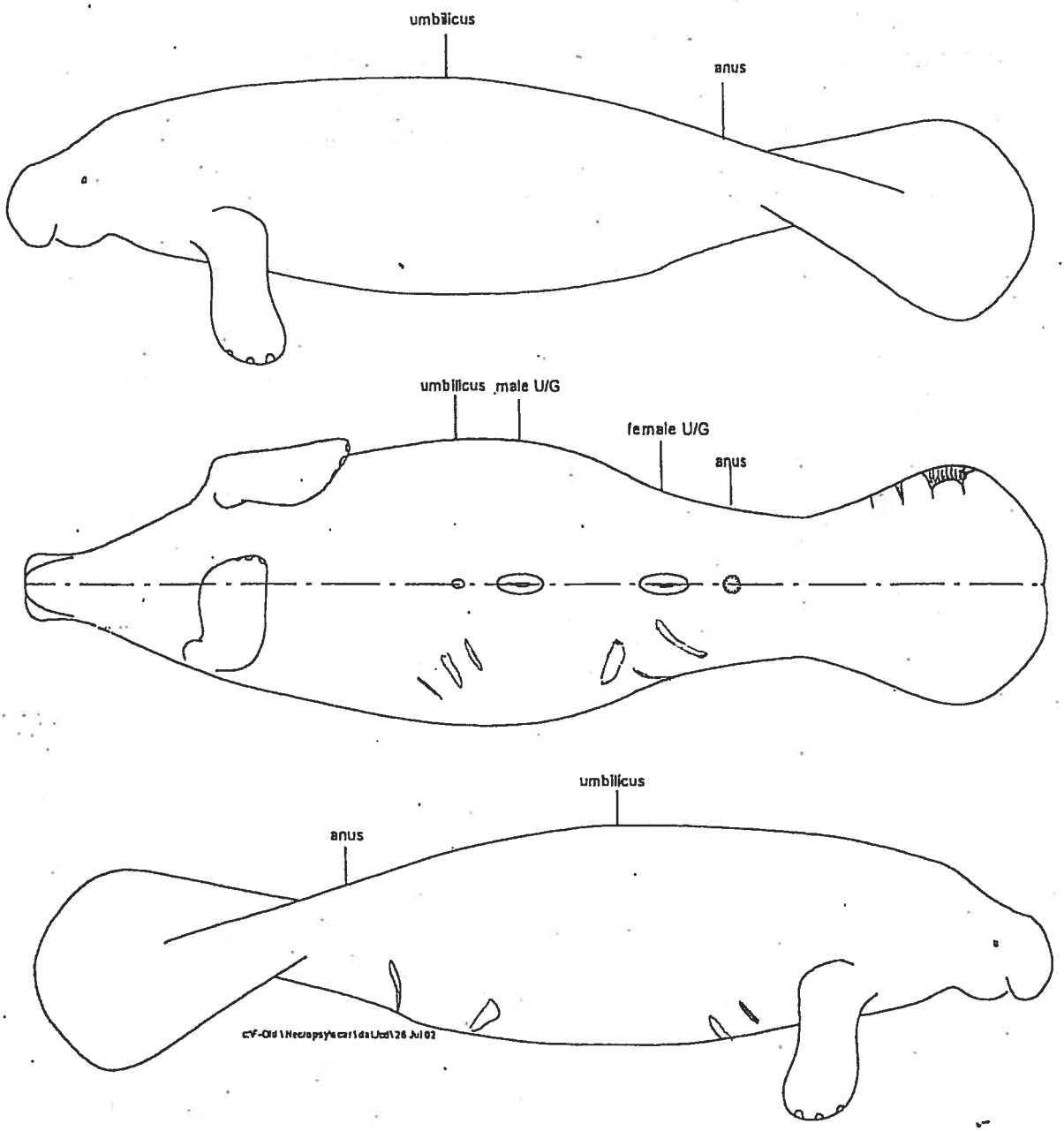
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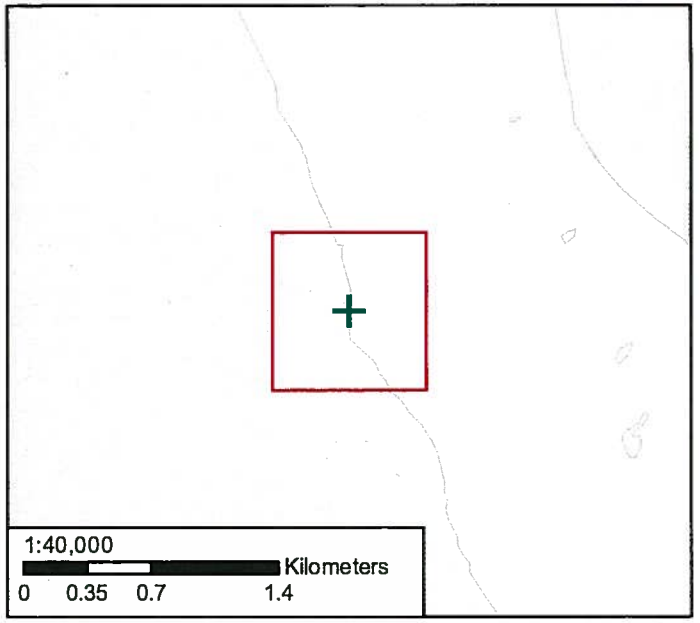
FIELD I.D. MEC19097

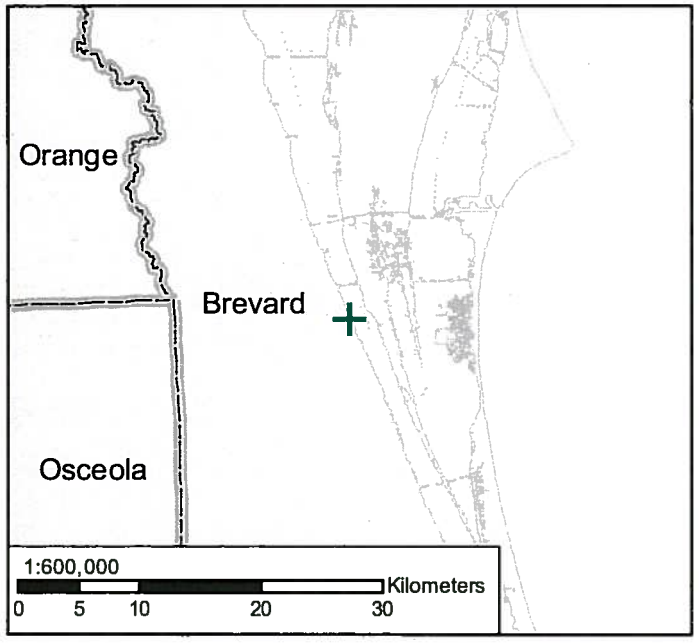


Verified Recovery Location of Manatee Carcass MEC19097

Report Date: 11/25/2019 **Received Date:** 11/25/2019 **Received By:** FWC-WDG,SMW Map Created: 1/14/2021







Locality Description:
Rockledge, Brevard
Grounded, approximately 95 m NE of 64 Hill Top Lane

Latitude: 28.3306°N **Longitude:** -80.71547°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19097
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20683 **FWC District**: Northeast
Sex: Male **Length (cm)**: 216 **Estimated** _____ **Weight (kg)** N/T
Date reported: 25 November 201 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 25 November 201 **By**: FWC- WDG, SMW
Date necropsied: 25 November 2(**By**: FWC- WDG, SMW

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Rockledge, approximately 95 m NE of 64 Hill Top 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
Natural: ☑ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Acute cold stress, watery red fluid in body cavity, dry hard feces in distal colon, serous fats, watery fluid in stomach and primary airways

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 #: **MEC19098**
Date of Report: 2019-Nov-26
Filed By: FWC EC Field Station

FWC Case # 20759 **FWC Region:** NE

Sex: Unknown **Length:** 140 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-26 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.63095 **N**
County: Brevard **Longitude:** -80.81807 **W**
Waterway: Indian River
Locality description: Titusville, floating approximately 170 m SSW of 1810 Oak Grove Road.

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: 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	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19098

MORPHOMETRICS:

Total length:	140 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. MEC19098
SPECIES *T. manatus latirostris*
RECOVERY DATE N/A
NECROPSY DATE N/A
GENDER Undetermined **TL** 140 **cm** (est) **WT** N/T **kg**
CONDITION Confirmed; Not Recovered

HISTORY 26 November 2019, at 1642 hrs, FWC biologist-Sara M. Wappes (SMW) 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 20759 was assigned. The complainant, Russ Glenn (407-267-0888). stated that the carcass was 4 feet long, floating, and beginning to turn white. At 1654 hrs, SMW received a verification photo. Due to multiple pending carcasses, this carcass was not recovered or necropsied.

EXTERNAL From photographs - Approximately 70% of the dorsal epidermis was present but sloughing. The carcass was distended with gas. There was a thick brown algal mat on the dorsal and lateral aspects.

PHOTOGRAPHS 2019-11-26_PUBLIC_ECFL_1341, 1342.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photographs

PROBABLE CAUSE OF DEATH Verified; Not Recovered

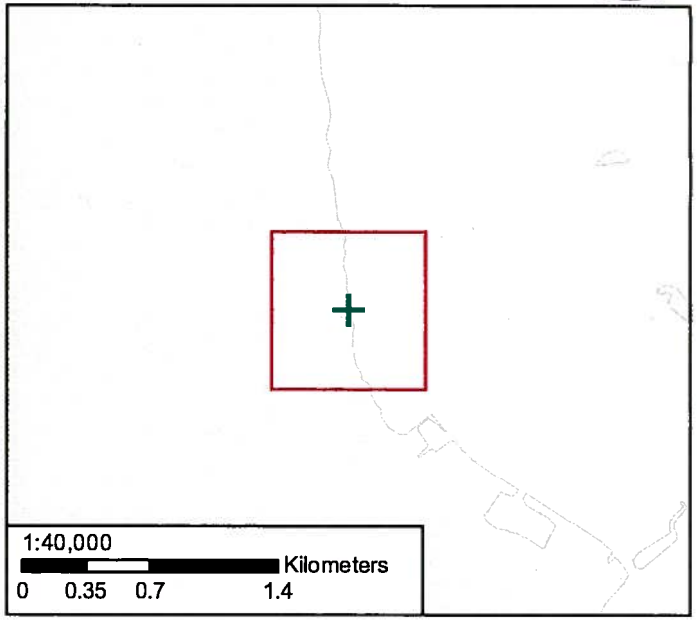
NECROPSY CONDUCTED BY N/A

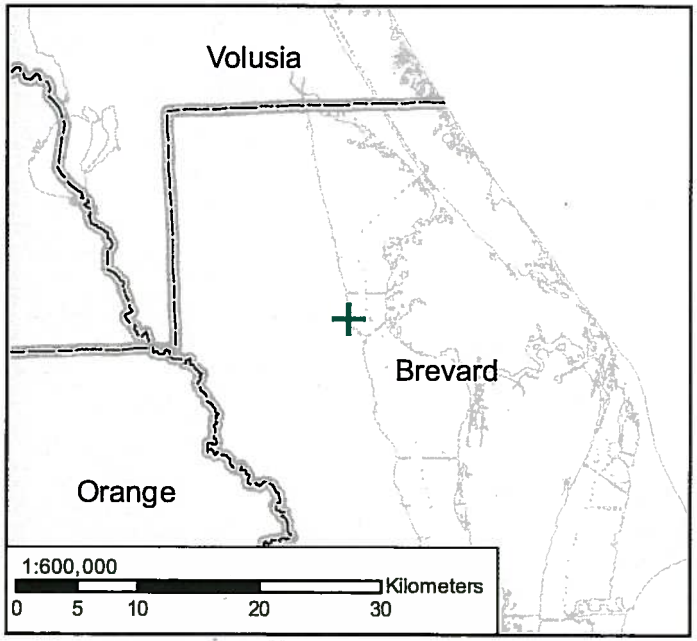
REPORT FILED BY Wappes

Verified Recovery Location of Manatee Carcass MEC19098

Report Date: 11/26/2019 **Received Date**: **Received By**: Map Created: 1/14/2021







Locality Description:
Titusville, Brevard
Floating, approximately 170 m SSW of 1810 Oak Grove Road.

Latitude: 28.63095°N **Longitude**: -80.81807°W

MEC 1076

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19098
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20759 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 140 **Weight (kg)** _____
Date reported: 26 November 201 **By**: Citizen to FWC-Jennifer Bogdan to FWC NE Dispatch-Orland
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 170 m SSW of 1810 Oak Grove 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
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

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: Not Performed
Left side: _____ Right side: _____

REMARKS: The carcass was floating 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 #: **MEC19099**
Date of Report: 2019-Nov-28
Filed By: FWC EC Field Station

FWC Case # 20836 **FWC Region:** NE

Sex: Female **Length:** 268 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-28 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-28 **By:** FWC-SMW

DATE NECROPSIED: 2019-Nov-28 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.44798 **N**
County: Brevard **Longitude:** -80.71999 **W**
Waterway: Indian River
Locality description: Merritt Island, floating approximately 30 m NW of 481 Treasure Lagoon Lane.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Other

EXPLAIN: Depleted fat(s); Serous fat(s); Crumbly feces; Bleached epidermis; Dry feces; Fluid from nares; Abdominal abscesses of unknown origin; Adhered colon, small intestine, cecum, abdominal wall associated with purulent material; Congested peritoneum, abdominal fat, mesenteries, GI serosa, omentum; Fluid-filled duodenum; Fluid in abdominal cavity; Sediment in airways.

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	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19099

MORPHOMETRICS:

Total length:	268 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. MEC19099
RECOVERY DATE 28 November 2019
GENDER Female **TL** 268 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 28 November 2019
CONDITION Badly Decomposed

HISTORY 28 November 2019, at 0813 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 in Merritt Island, Brevard County. FWC case number 20836 was assigned. The complainant, Tim Thomas (321-544-7680), stated that the carcass was in good condition and could be recovered from his yard. At 0839 hrs, NJG received verification photos and forwarded the information to the EC Field Station. FWC biologist-Sara M. Wappes (SMW) arrived at the residence at 1038 hrs, towed the carcass using the complainant's boat to the Treasure Lagoon private boat ramp at 1108 hrs, loaded the carcass via Ezy-Lift at 1140 hrs, and transported it to the field station at 1300 hrs. A field necropsy was completed by 1441 hrs. 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. Watery, red fluid exuded from the nares. There was a moderate brown algal mat on the dorsal and lateral aspects. The flipper margins were bleached. A mild infestation of small barnacles was present on the ventral aspect. A minimum of one well-healed watercraft-related scar pattern was observed on the caudal 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 serous omental fat. There was copious watery, brown fluid in the abdominal cavity (see photos). The peritoneum and abdominal fat were mildly congested. The GI tract was adhered to the abdominal wall in multiple locations (see photos) which was associated with pockets of purulent material.

STOMACH The omentum was severely congested (see photo). The stomach contained 2.6 L of wet, moderately chewed, fibrous, stringy, yellow to brown ingesta (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 750 mL of viscous, brown fluid mixed with moderately chewed, fibrous, orange to brown vegetation (see photo). The mucosa had small areas with yellow, purulent material. No parasites were observed.

JEJUNUM & ILEUM The mesentery and small intestine serosa were severely congested (see photo). The small intestine was adhered to itself, the abdominal wall, the cecum, and the colon in multiple locations. There was light yellow purulent material at the adhesion sites and multiple abscesses along the small intestine. The proximal small intestine contained viscous, white to yellow fluid. The mid small intestine contained moist, moderately formed, moderately chewed, fibrous, yellow to brown ingesta (see photo). The ingesta of the mid small intestine were coated in a thick layer of viscous, white to yellow material. The distal small intestine contained watery, brown fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum was adhered to the small intestine. The cecum contained 500 mL of moist, moderately digested, fibrous, stringy, yellow to brown digesta (see photo). The mucosa was sloughing. No parasites were observed.

COLON The mesentery was severely congested. The colon was adhered to itself, the abdominal wall, and the small intestine at multiple locations. There was light yellow purulent material at the adhesion sites and a few abscesses along the colon. The proximal colon contained moist, well-formed, moderately digested, fibrous, stringy, yellow to brown feces. The mid colon contained dry, crumbly, poorly formed, well-digested, slightly stringy, brown feces. The distal-most 0.5 meter of colon contained slightly dry, slightly hard, well-formed,

well-digested, slightly stringy, brown feces. The remainder of the distal colon contained moist, well-formed, well-digested, stringy, brown feces. The mid and distal colon was contracted (see photo). 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 gray and black on serosal surfaces, and dark red on cut surfaces.

LIVER The margins of the liver were rounded. The liver was soft. The liver was blue to black on serosal surfaces and brown on cut surfaces. There was one small (1 x 1 cm), circular area of purulent material on the dorsal aspect of the left lobe.

GALLBLADDER The gallbladder contained 50 mL of viscous, yellow 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 a small amount of serous perirenal fat. The kidneys were pink to tan on serosal surfaces. On cut surfaces, the cortices were tan to pink and the medullae were pink. The corticomedullary boundaries were indistinct.

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

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were soft. Serosal surfaces were pink to gray and cut surfaces were dark pink. The primary airways contained a small amount of watery, red fluid and a small amount of dirt.

HEAD & NECK REGIONS The trachea contained a moderate amount of dirt.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-28_FWC025_0379 through 0390; 0392 through 0414.

COMMENTS

SIGNIFICANT FINDINGS

- Fluid from nares
- Depleted, serous fat
- Abdominal abscesses and adhesions of unknown origin
- Adhered colon, small intestine, cecum, abdominal wall associated with purulent material
- Fluid in abdominal cavity
- Fluid-filled duodenum
- Dry, crumbly feces
- Sediment in airways
- Congested peritoneum, abdominal fat, omentum, mesenteries, GI serosa

- Bleached epidermis flippers

PROBABLE CAUSE OF DEATH Undetermined; Other

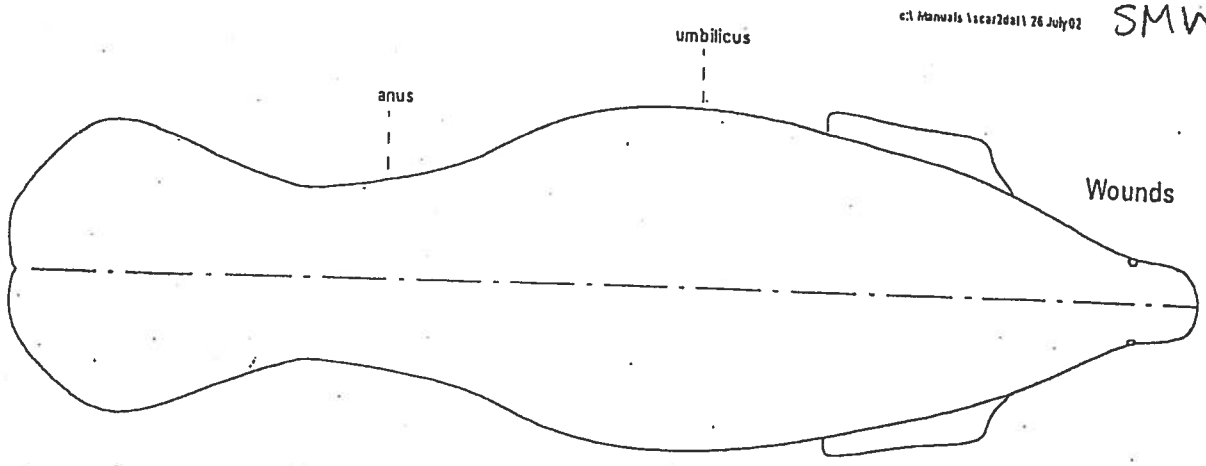
NECROPSY CONDUCTED BY

Sara M. Wappes
Kelley Smith (FWC volunteer)

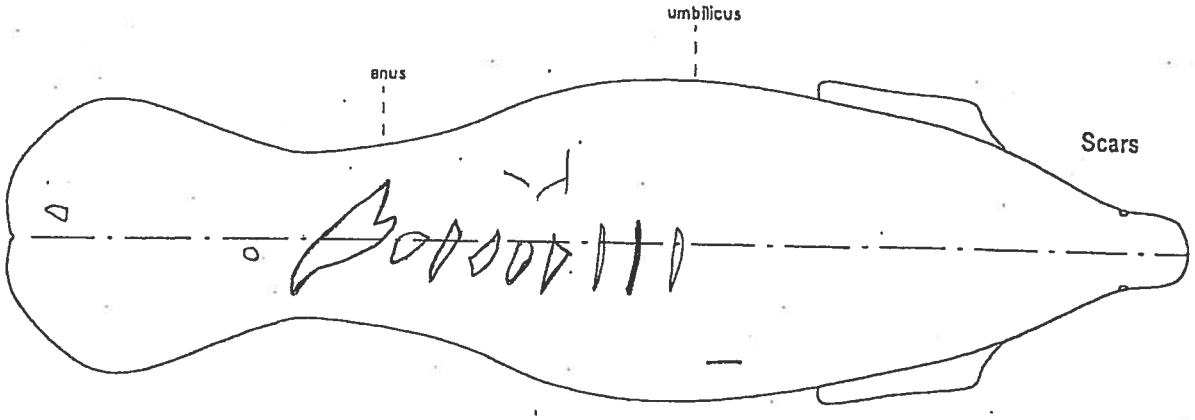
REPORT FILED BY Wappes

Date 28 NOV 2019 Field I.D. MEC190999

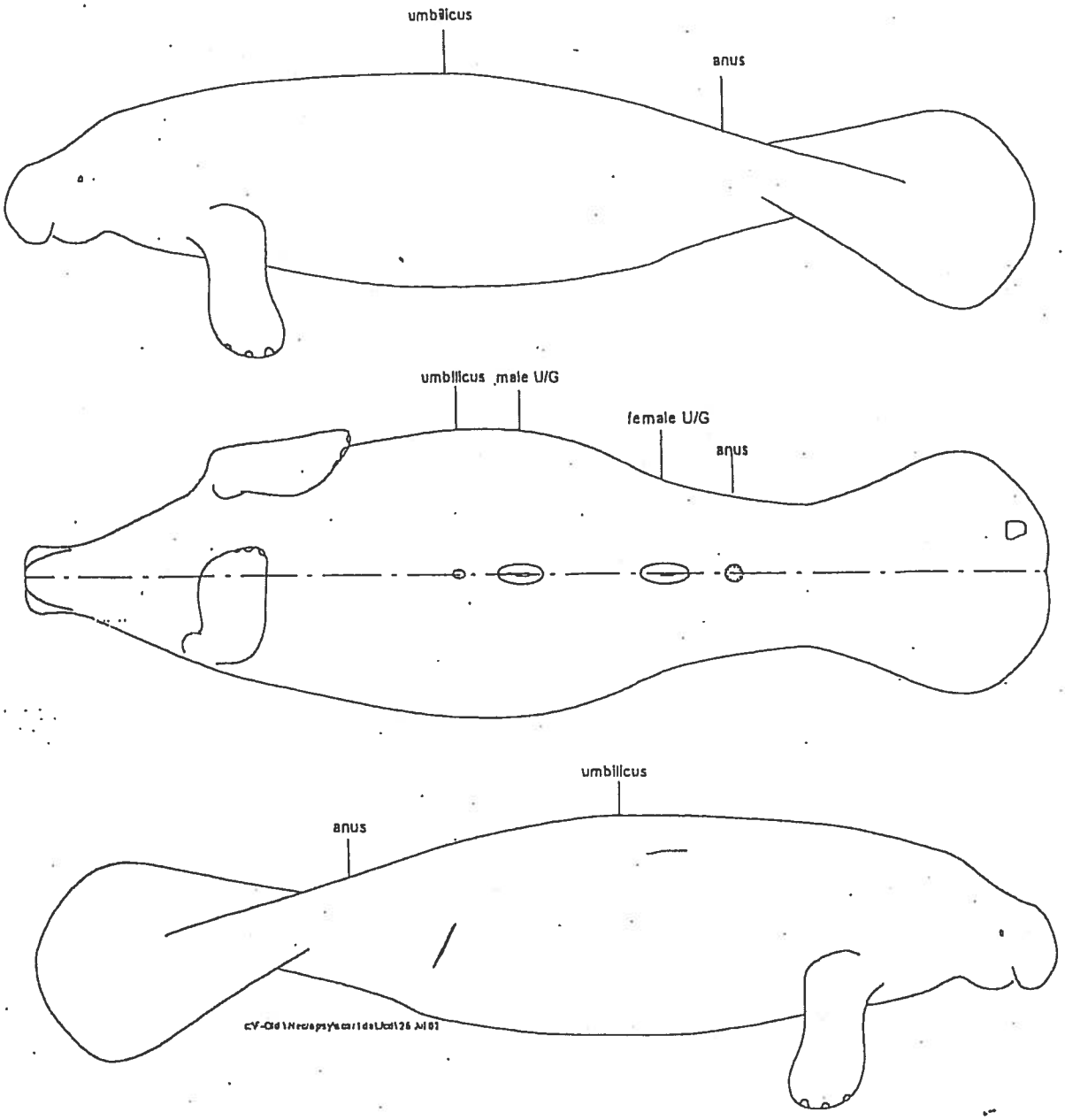
c:\ Manuals \scar2dat\ 26 July02 SMW



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																				



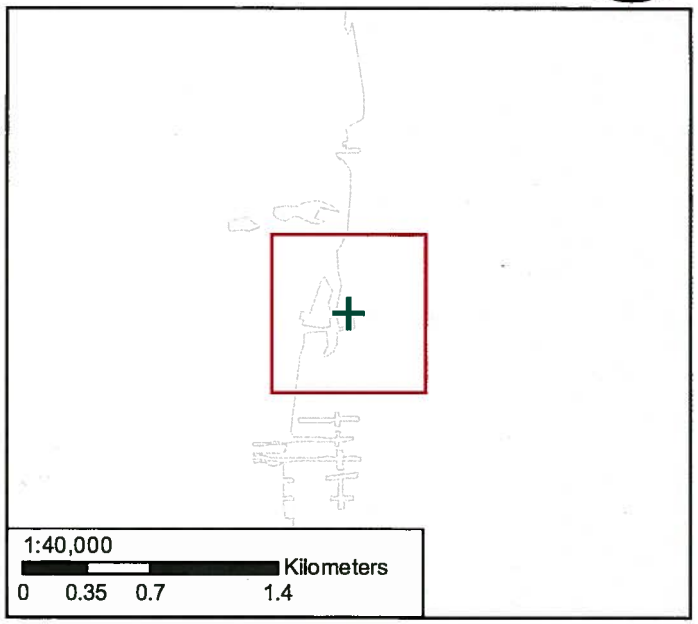
FIELD I.D. MEC19099

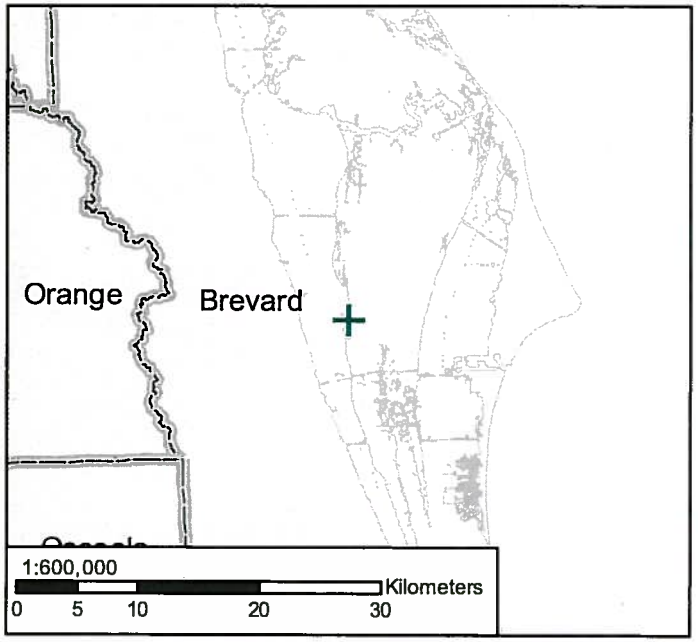


Verified Recovery Location of Manatee Carcass MEC19099

Report Date: 11/28/2019 **Received Date:** 11/28/2019 **Received By:** FWC-SMW Map Created: 1/14/2021







Locality Description:
Merritt Island, Brevard
Floating, approximately 30 m NW of 481 Treasure Lagoon Lane.

Latitude: 28.44798°N **Longitude:** -80.71999°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19099
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20836 **FWC District**: Northeast
Sex: Female **Length (cm)**: 268 **Estimated** _____ **Weight (kg)** _____
Date reported: 28 November 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 28 November 201 **By**: FWC-SMW
Date necropsied: 28 November 2(**By**: FWC-SMW, FWC vol-Kelley Smith

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 30 m NW of 481 Treasure Lagoon 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: Infection throughout GI tract, pockets of pus and adhesions throughout GI tract, heavy congestions, 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 _____

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 #: **MEC19100**
Date of Report: 2019-Nov-30
Filed By: FWC MMPL

FWC Case # 20956 **FWC Region:** NE

Sex: Male **Length:** 102 **cm** **Weight:** 24.0 **kg**

DATE REPORTED: 2019-Nov-30 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-30 **By:** FWC-WDG

DATE NECROPSIED: 2019-Dec-03 **By:** MMPL-MdW,CMF

LOCATION: **State:** FL **Latitude:** 28.44594 **N**
County: Brevard **Longitude:** -80.72123 **W**
Waterway: Indian River
Locality description: Merritt Island, floating approximately 130 m NW of 500 Mohawk Trail.

CONDITION: Badly Decomposed

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

EXPLAIN: Natural: Other; Wet lung(s); Serous fat(s); Dry, hard feces; Cold stress lesions; Emaciated; Relatively empty GI tract; Bleached epidermis; Depleted fat(s); Fetal folds.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Fluke, Cranial, Other (Bleached epidermis).

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Perinatal evaluation performed.

REMARKS:

PIT tag scan negative.

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Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MEC19100

MORPHOMETRICS:

Total length:	102 cm	**Fluke base:**	34 cm	**Girth at axillae:**	68 **cm**
Snout to anus:	73 cm	**Fluke width:**	30 cm		
Snout to U/G:	50 cm	**Girth at fluke base:**	43 cm		
Snout to umbilicus:	44 cm	**Girth at anus:**	53 cm		
Flipper width:	8 cm	**Girth at umbilicus:**	75 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:

Urachus closed at bladder tip. Umbilical arteries closed.

Ductus Arteriosis Diameter:	0.4 cm
Left Pulmonary Artery Diameter:	1.2 cm
Right Pulmonary Artery Diameter:	1.2 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. MEC19100
RECOVERY DATE 30 November 2019
GENDER Male **TL** 102 **cm WT** 24 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 03 December 2019
CONDITION Badly Decomposed

HISTORY 30 November 2019, at 1026 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead baby manatee at Manatee Cove Park in Merritt Island, Brevard County. FWC case number 20956 was assigned. The complainant, Mandy Warwick (321-332-8794), stated that the carcass was gray, fresh, and 4 feet long. A verification photo was received at 1030 hrs. WDG arrived at Manatee Cove Park at 1312 hrs, loaded the carcass at 1331 hrs, and transported it to the EC Field Station at 1430 hrs. The carcass was covered with ice pending transport. **02 December**, FWC biologist-Sara M. Wappes transported the carcass to the MMPL arriving at 1145 hrs.

EXTERNAL All of the epidermis was present and sloughing. The carcass had a slight peanut-shaped head. There were transverse fetal and longitudinal folds on the ventrum. The epidermis was bleached on the muzzle, axillae, and flippers. There were a few small pitted lesions along the fluke margin. The right lateral aspect had several healing linear and curved scrapes. No watercraft-related wounds or scars were observed. There was a moderate infestation of barnacles on the ventral aspect. The ventral fluke had a moderate filamentous brown algal mat. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach was empty of contents. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained a scant amount of thick light brown mucus. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine had sections that were empty of contents and sections that contained a scant amount of viscous dark yellow mucus. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained a scant amount of wet, poorly digested, fibrous, light brown digesta. The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained a scant amount of wet, poorly digested, poorly formed, fibrous, light brown feces. The mid colon contained a small amount of moist, well-formed, moderately digested, fibrous, light brown feces. The distal colon contained a moderate amount of dry, hard, moderately digested, well-formed, fibrous, green feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was pink on serosal and cut surfaces.

SPLEEN The spleen was soft, friable, and autolyzed.

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

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

REPRODUCTIVE There was no reproductive fat. The reproductive organs were small. There was no fluid on

cut surfaces of the epididymides or deferent ducts.

KIDNEYS There was no perirenal fat. The kidneys were dark pink to light red on serosal and cut surfaces. The corticomedullary boundaries were indistinct.

URINARY BLADDER The bladder contained approximately 10 mL of red-tinged urine. The mucosa was unremarkable. The urachus was closed at the bladder tip. An ELISA toxicology sample was collected.

HEART There was scant epicardial fat. Valves and chambers were unremarkable. The flat diameter of the ductus arteriosus measured 0.4 cm, and that of each pulmonary artery measured 1.2 cm.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were pink to purple on serosal surfaces, and dark pink to red on cut surfaces. The cut surfaces of the caudal halves were wet. The airways contained a scant amount of red fluid. The mucosa was red. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER The umbilical arteries were closed.

PHOTOGRAPHS 2019-12-03_FWC047_3981 through 3984, 3986, 3988, 3989

COMMENTS External lesions of cold stress were mild. It is possible cold stress contributed to death, but depleted fat and empty GI tract suggested this was an orphaned or abandoned calf.

SIGNIFICANT FINDINGS

- Bleached epidermis
- Small cold stress-like lesions
- Emaciated
- Depleted, serous fat
- Relatively empty GI tract
- Dry, hard feces
- Wet lungs
- Fetal folds

PROBABLE CAUSE OF DEATH Perinatal; Natural

NECROPSY CONDUCTED BY

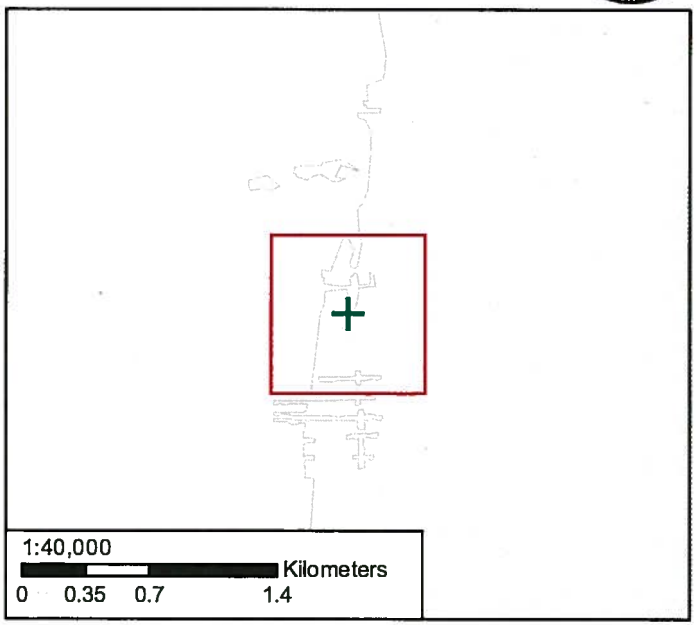
Martine de Wit, DVM
Christine M. Fontaine

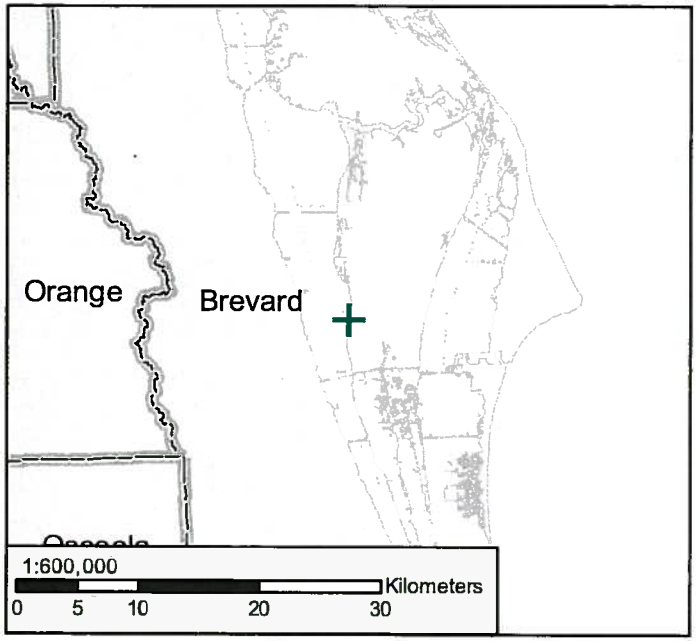
REPORT FILED BY de Wit

Verified Recovery Location of Manatee Carcass MEC19100

Report Date: 11/30/2019 **Received Date:** 11/30/2019 **Received By:** FWC-WDG Map Created: 1/14/2021







Locality Description:
Merritt Island, Brevard
Floating, approximately 130 m NW of 500 Mohawk Trail.

Latitude: 28.44594°N **Longitude:** -80.72123°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19100
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20956 FWC District: NE
Sex: (M) / F / Undetermined Length: 102 cm (estimated _____) Weight 24 kg.
Date reported: 30 Nov 2019 By: Citizen → FWC Dispatch-Orlando
Date collected: 30 NOV 2019 By: FWC-WDG
Date necropsied: 3 Dec '19 By: MMPL FDW CMF

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

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 Skin bleach
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach - **(Liver)** - **(Lung)** - **(Urine)** - **Kidney (if no urine)** - (Other) feces
Genetics Box # 94
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

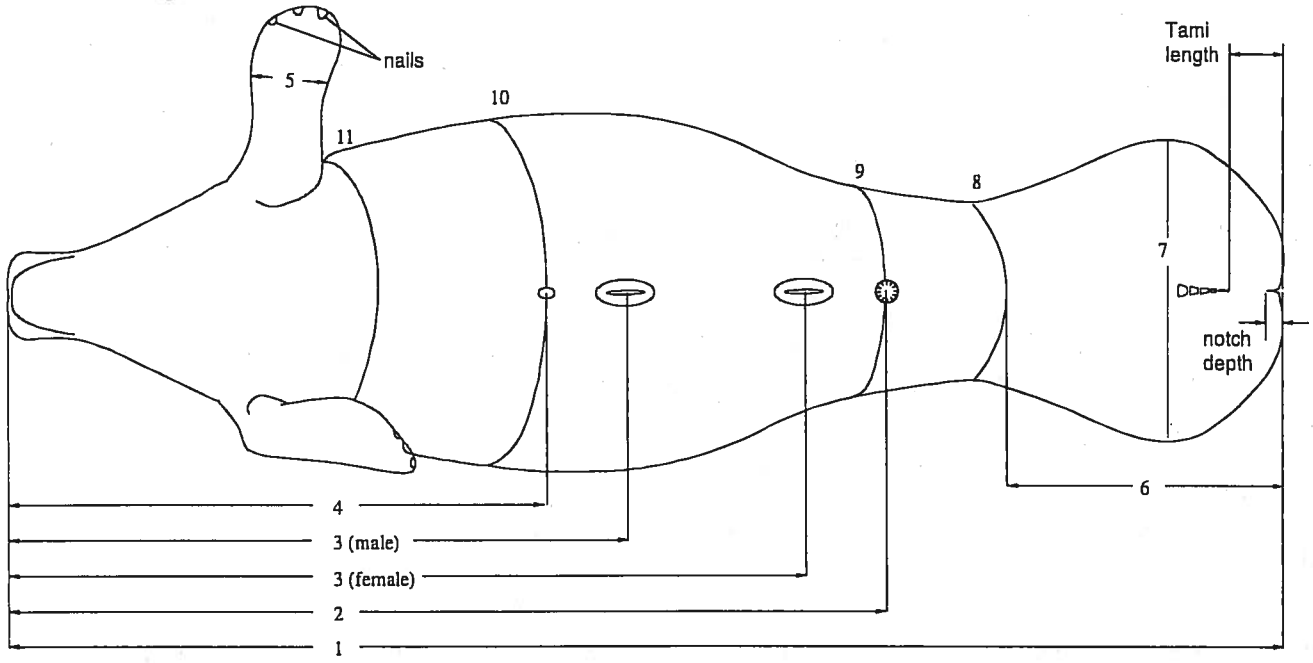
REMARKS: _____

Field ID # MEC 19100

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.

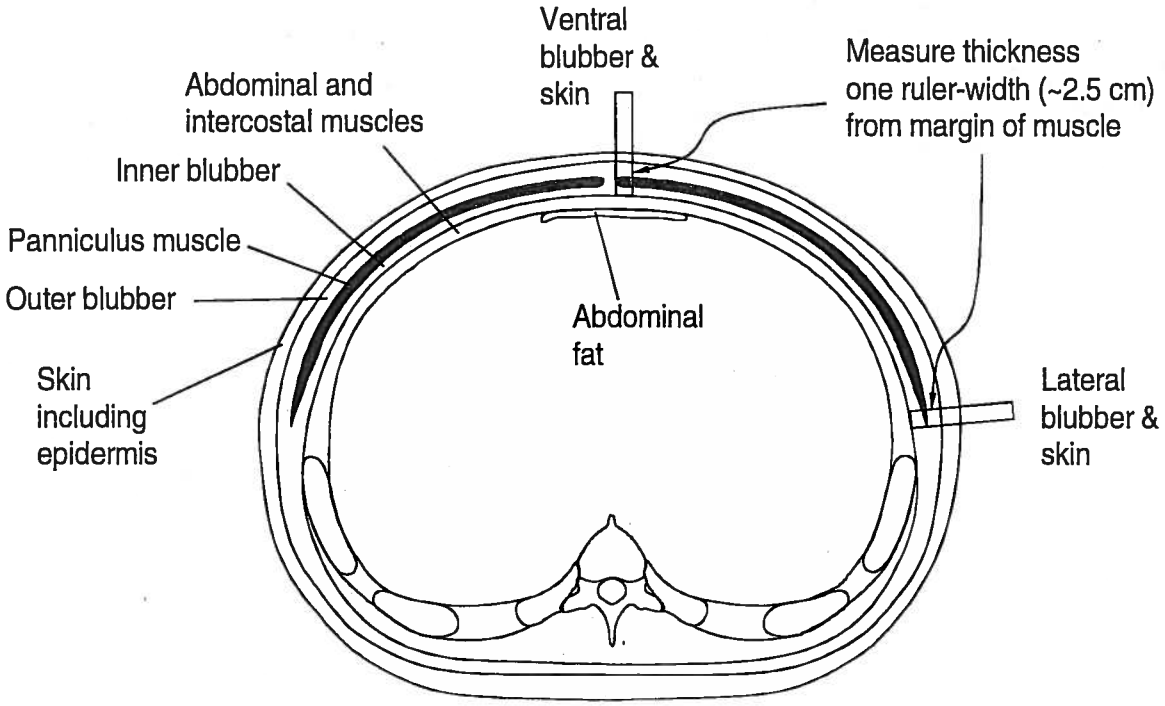
1. Total length 102 cm
2. Snout to anus -C 73 cm
3. Snout to U/G -C 50 cm
4. Snout to umbilicus -C 44 cm
5. Flipper width 8 cm
6. Fluke base 34 cm
7. Fluke width 30 cm
8. *Girth at fluke base 43 cm
9. * Girth at anus 53 cm
10. *Girth at umbilicus 75 cm
11. *Girth at axillae 68 cm

(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 #** MEC19100
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20956 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 30 November 201 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 30 November 201 **By**: FWC- WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 130 m NW of 500 Mohawk Trail
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 dorsum up and was iced from 30 November to 02 December.

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 #: **MEC19101**
Date of Report: 2019-Dec-03
Filed By: FWC EC Field Station

FWC Case # 21130 **FWC Region:** NE

Sex: Female **Length:** 273 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-03 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: 2019-Dec-04 **By:** FWC-WDG
DATE NECROPSIED: 2019-Dec-04 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.44276 **N**
County: Brevard **Longitude:** -80.72361 **W**
Waterway: Indian River
Locality description: Merritt Island, grounded approximately 60 m W of 585 River Moorings Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Healing watercraft wound(s); Depleted fat(s); Serous fat(s); Blood clots; Dry, hard feces; Asymmetric carcass; Remodeling rib fractures; Chronic hemothorax with fibrin; Consolidated lung; Partially calcified hemidiaphragm; Relatively empty, fluid-filed 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:

Wound measurements.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Also FWC case number 21120.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19101

MORPHOMETRICS:

Total length:	273 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. MEC19101
RECOVERY DATE 04 December 2019
GENDER Female **TL** 273 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 04 December 2019
CONDITION Badly Decomposed

HISTORY 03 December 2019, at 1317 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 21120 was assigned. The complainant, David Kolasa (954-336-6165), stated that there was a dead adult manatee belly-up in shallow water behind his home. SMW received a photo of the carcass via text at 1323 hrs, and requested FWC LE assistance to tow it at 1327 hrs. At 1621 hrs, FWC biologist-William D. Greer (WDG) received a text alert from Dispatch regarding a dead manatee in Merritt Island. FWC case number 21130 was assigned. The complainant, Kim Hobbs (321-693-0015), stated that the manatee was about 7 feet long and 100 feet offshore from her home. At 1631 hrs, WDG received a photo to confirm it was the same carcass. At 1943 hrs, FWC-Officer Seth Loeffler secured the carcass to the Orlando Utility Company (OUC) boat ramp in Cocoa. **04 December**, WDG arrived at OUC at 0910 hrs, loaded the carcass into a carcass trailer at 0925 hrs, and transported it to the Brevard County Landfill. A field necropsy was completed at 1201 hrs. The remains were disposed of at the Landfill.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. Pink fluid exuded from the nares. The carcass was distended with gas, and the right side was more distended than the left. There was a healing superficial watercraft-related wound series extending from the mid right dorsal aspect to the left dorsal peduncle which consisted of twelve parallel wounds (#1 - 12) and two long linear wounds (#13 and 14) that were in line with each other, and perpendicular and to the left of wounds #1 - 12. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal and left lateral aspect. There were two well-healed mutations of the fluke margin between the 4 and 5 o'clock positions. A mild infestation of barnacles was observed on the ventral aspect. There was a thin brown algal mat on the lateral aspects. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of abdominal and omental fat. There was a small amount of serous mesenteric fat. Internal organs were displaced to the left aspect of the abdominal cavity due to distention of the right hemidiaphragm (see photo).

STOMACH The stomach contained 400 mL of watery, opaque pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 300 mL of watery, opaque pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained watery, white to pink fluid. The distal small intestine contained watery, tan to pink fluid. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 250 mL of watery, yellow to green fluid mixed with a small amount of moist, poorly digested, fibrous, leafy, yellow to green digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained a small amount of wet, poorly formed, moderately digested, fibrous, leafy, yellow to brown feces. The mid colon contained dry, hard, well-formed, moderately digested, fibrous, stringy, dark green to black feces. The distal colon contained moist, moderately formed, well-digested, slightly fibrous, slightly stringy, brown feces. The distal-most one meter of the colon contained moist, well-formed, well-digested, homogeneous, dark green to black feces. The mucosa was autolyzed in the proximal and distal

colon, and was sloughing in the mid colon. No parasites were observed throughout.

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 liver was soft, friable, and autolyzed.

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

REPRODUCTIVE There was a small amount of reproductive fat. The diameter of the uterine horns was small. No scars were observed. Both ovaries contained numerous fluid-filled follicles (maximum diameter 1.5 cm).

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained approximately 2 mL of flocculent, red-tinged fluid. The mucosa was unremarkable.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right hemidiaphragm was distended due to fluid in the pleural cavity and was partially calcified on the pleural aspect from the mid to caudal aspect (see photos). The right pleural cavity contained 73 L of watery, red fluid, numerous resolving blood clots, and tan fibrin (see photo). The right lung was consolidated and adhered to the medial cranial aspect of the right hemidiaphragm and parietal pleura near right rib 8. Cut surfaces were pink (see photos). No primary airway was discernable (see photo). The left lung was soft and friable. Serosal surfaces were light to dark pink and cut surfaces were dark pink to red. No parasites were observed.

HEAD & NECK REGIONS There was a small amount of watery, red fluid in the trachea. Otherwise, NVL.

SKELETON Right ribs 10 - 12 were fractured at the proximal one-quarter and slightly remodeled (see photos). The fractured ribs were associated with wound #14.

OTHER

PHOTOGRAPHS 2019-12-04_FWC023_8370 through 8412.

COMMENTS

SIGNIFICANT FINDINGS

- Healing watercraft wounds
- Asymmetric carcass
- Remodeling rib fractures
- Depleted, serous fat
- Chronic hemothorax with fibrin
- Resolving blood clots
- Consolidated lung
- Partially calcified hemidiaphragm
- Relatively empty, fluid-filled GI tract

- Dry, hard feces
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

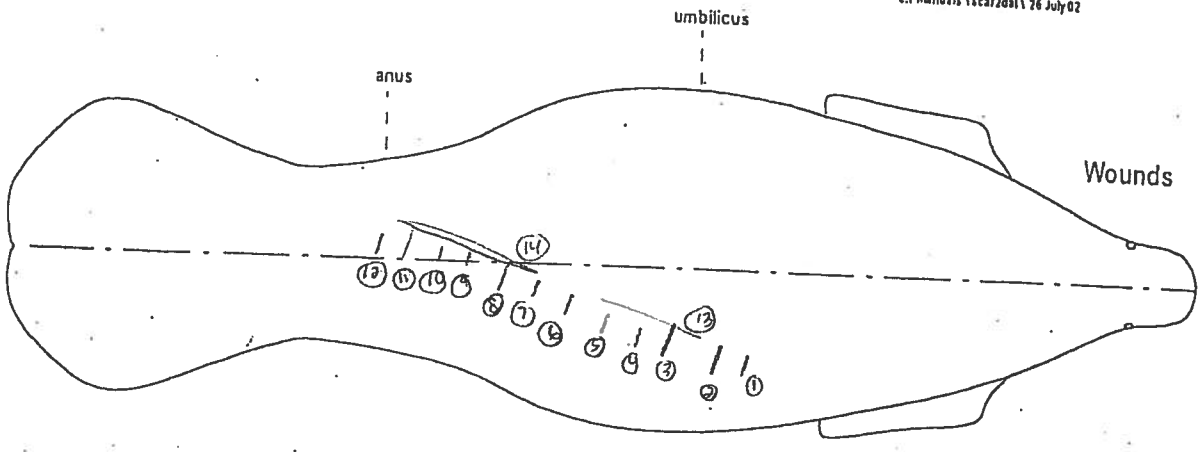
NECROPSY CONDUCTED BY

William D. Greer
Sara M. Wappes

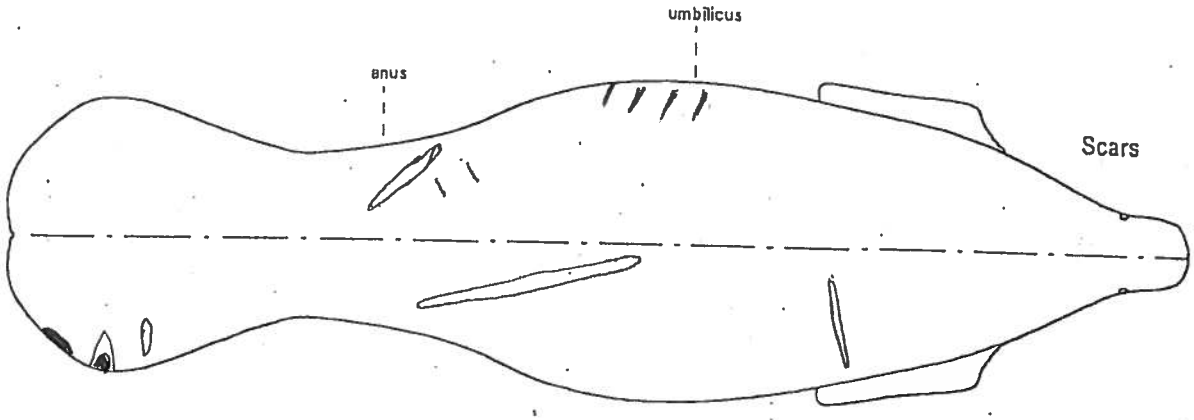
REPORT FILED BY Greer

Date 04 DEC 2019

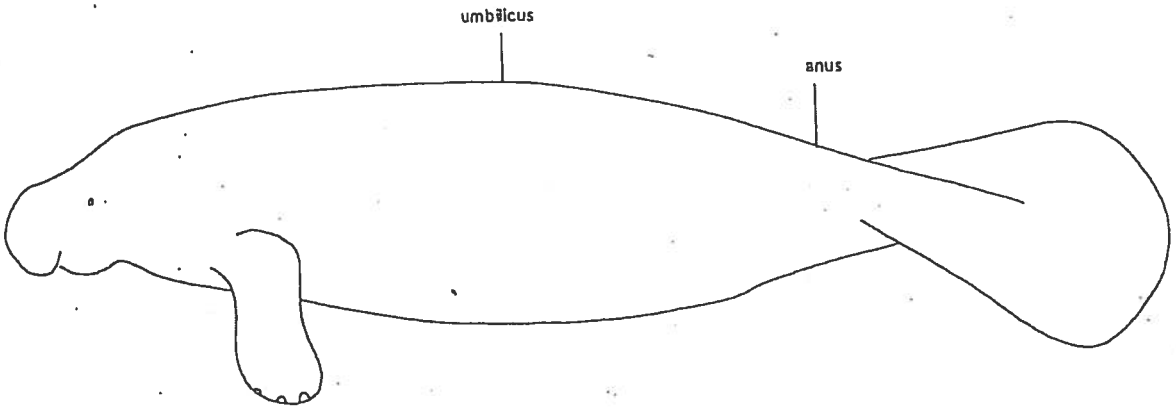
Field I.D. MEC19101.
SMW
c:\ Manuals \ scar2dat \ 26 July 02

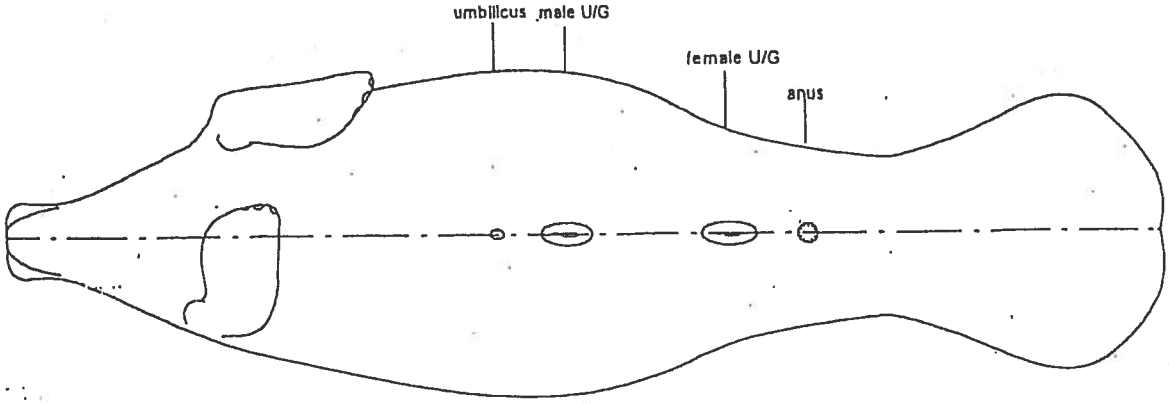


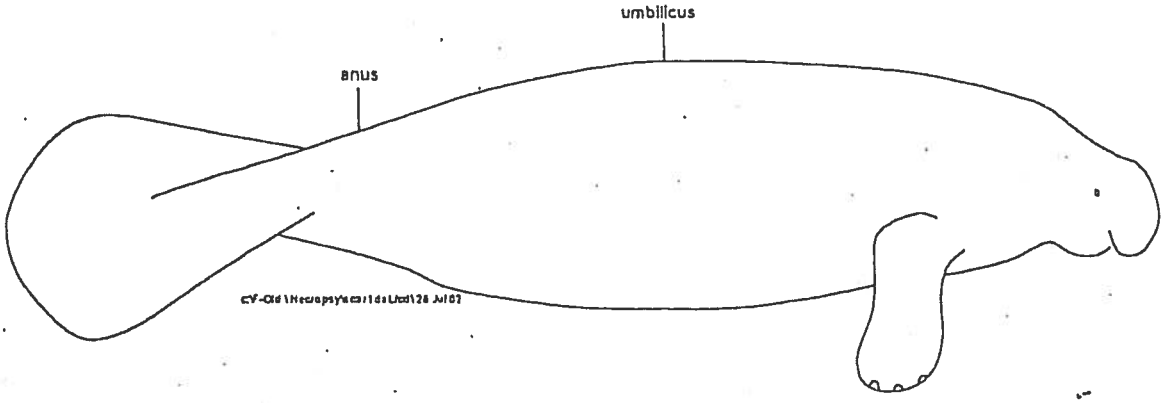
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length	5.1	7.0	9.0	5.4	6.0	4.0	3.4	4.9	2.9	4.1	7.2	4.1	20.7	31.9						
Width	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1						
Depth	–	–	0.1	–	–	–	–	–	–	–	–	–	–	0.2						
Distance	9.6	10.0	8.9	8.0	7.9	7.1	7.1	8.0	6.6	6.1	6.0									



FIELD I.D. _____


umbilicus
anus

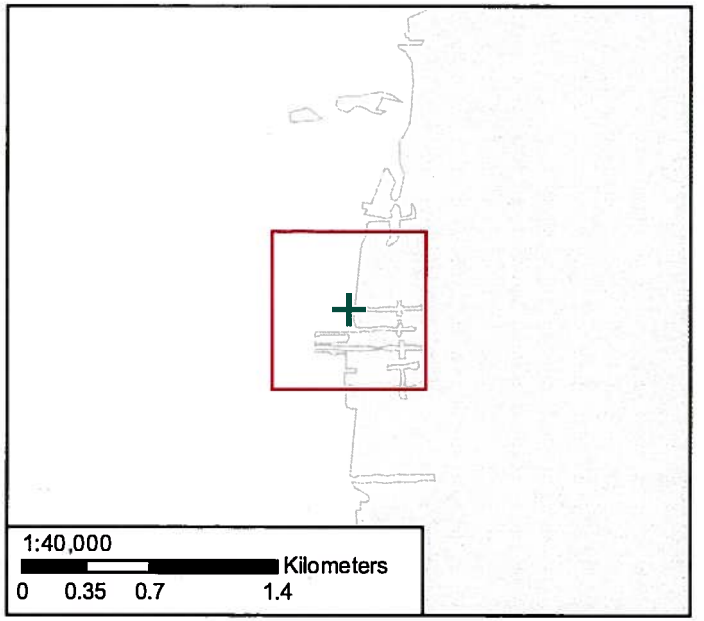

umbilicus
male U/G
female U/G
anus

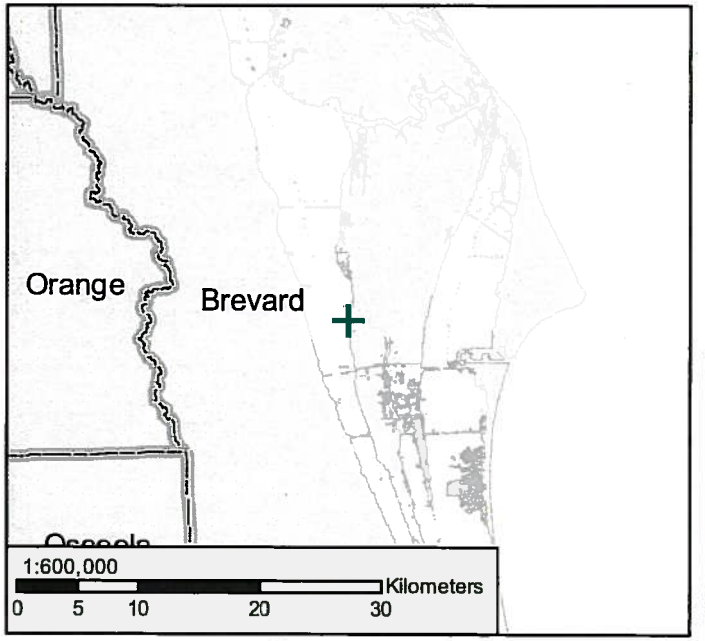

umbilicus
anus

Verified Recovery Location of Manatee Carcass MEC19101

Report Date: 12/3/2019 **Received Date:** 12/4/2019 **Received By:** FWC-WDG Map Created: 1/20/2021







Locality Description:
Merritt Island, Brevard
Grounded, approximately 60 m W of 585 River Moorings Drive.

Latitude: 28.44276°N **Longitude:** -80.72361°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19101
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 21120, 21130 **FWC District**: Northeast
Sex: Female **Length (cm)**: 273 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 December 201 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 04 December 201 **By**: FWC-WDG
Date necropsied: 04 December 2(**By**: FWC- WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Merritt Island, approximately 60 m W of 585 River Moorings Drive
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: External healing wounds, 3 fractured but healing ribs on right side in association with wound, right plural cavity had 73 L of water red fluid, right lung was just stringy tissue and fibrin, resolving blood clots present, upper GI tract empty

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 #: **MEC19102**
Date of Report: 2019-Dec-04
Filed By: FWC EC Field Station

FWC Case # 21167 **FWC Region:** NE

Sex: Male **Length:** 265 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-04 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-04 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Dec-04 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.92504 **N**
County: Volusia **Longitude:** -80.82081 **W**
Waterway: Atlantic Ocean
Locality description: New Smyrna Beach, beached approximately 640 m NNE of the intersection of Eldora Road and Turtle Mound Road.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Emaciated; Cobblestone-like epidermis; Bleached epidermis; Cold stress lesions; Depleted fat(s); Serous fat (s); Dry, hard feces; Necrotic tissue; Poorly digested feces; Relatively empty, fluid-filled upper GI tract; Congested mesentery, colon serosa.

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. Found dorsum up in the tide line. Also FWC case number 21634.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19102

MORPHOMETRICS:

Total length:	265 cm	**Fluke base:**	84 cm	**Girth at axillae:**	133 **cm**
Snout to anus:	179 cm	**Fluke width:**	76 cm		
Snout to U/G:	117 cm	**Girth at fluke base:**	100 cm		
Snout to umbilicus:	105 cm	**Girth at anus:**	121 cm		
Flipper width:	16 cm	**Girth at umbilicus:**	167 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.4 cm	2.1 cm		
Outer Blubber Thickness:	0.6 cm	0.1 cm	**Abdominal Fat Thickness:**	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. MEC19102
RECOVERY DATE 04 December 2019
GENDER Male **TL** 265 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 04 December 2019
CONDITION Fresh

HISTORY 04 December 2019, at 1312 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee on the Atlantic shore in New Smyrna Beach, Volusia County. FWC case number 21167 was assigned. The complainant, Kristin Kneiel (321-403-5680), stated that she had received a third-party report of a fresh dead manatee calf on the beach near the tide line in Canaveral National Seashore. The carcass had been found dorsum-up. At 1318 hrs, WDG received a verification photo via text from the complainant. WDG and FWC biologist-Sara M. Wappes arrived at 1510 hrs and completed a field necropsy at 1630 hrs. The remains were left on site. **13 December**, at 0719 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a text alert from Dispatch regarding a dead manatee on Apollo Beach in New Smyrna Beach. FWC case number 21634 was assigned. The complainant, Donna Bradley (407-920-3659), stated that the carcass was about 8 feet long and badly decomposed. At 0751 hrs, DMB received a verification photo and forwarded the information to the EC Field Station. Based on the photo and the location, the carcass was determined to be the remains of MEC19102.

EXTERNAL All of the epidermis was present. The carcass had a peanut-shaped head and was dorsoventrally flattened due to emacition. The epidermis of the lateral aspects had numerous large linear and irregular-shaped cold stress lesions that had necrotic material in the center. There were numerous smaller linear and circular cold stress-like lesions on the ventrum, dorsal and ventral fluke, and flippers. The epidermis of the head and flippers was slightly bleached. A few thin patches of cobblestone-like epidermis were observed on the ventral fluke. The ventrum was concave and had deep longitudinal folds. A minimum of one well-healed watercraft-related scar pattern was observed on the dorsal aspect. There was a mild infestation of barnacles on the dorsal and ventral aspects. 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 was contracted and contained 100 mL of viscous, yellow fluid (see photo). The mucosa was unremarkable. There was a mild infection of live nematodes.

DUODENUM The duodenum was slightly contracted and contained 200 mL of viscous, yellow fluid (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a small amount of viscous, yellow to orange fluid throughout. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 300 mL of dry, poorly digested, very fibrous, very stringy, green digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The mesentery and colon serosa were mildly congested. The colon contained dry, hard, poorly digested, very fibrous, very stringy, green feces throughout (see photo). The mucosa was unremarkable. No parasites were observed.

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

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

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

surfaces were dark red.

GALLBLADDER The gallbladder contained 25 mL of watery, yellow to green bile. The mucosa was bile-stained.

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

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

URINARY BLADDER The urinary bladder contained 315 mL of golden 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 light pink on serosal surfaces and dark pink on cut surfaces. The primary airways were clear. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-12-04_FWC023_8420 through 8444.

COMMENTS

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Cold stress lesions with necrotic tissue
- Emaciated
- Depleted, serous fat
- Dry, hard, poorly digested feces
- Relatively empty, fluid-filled upper GI tract
- Congested mesentery, colon serosa

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

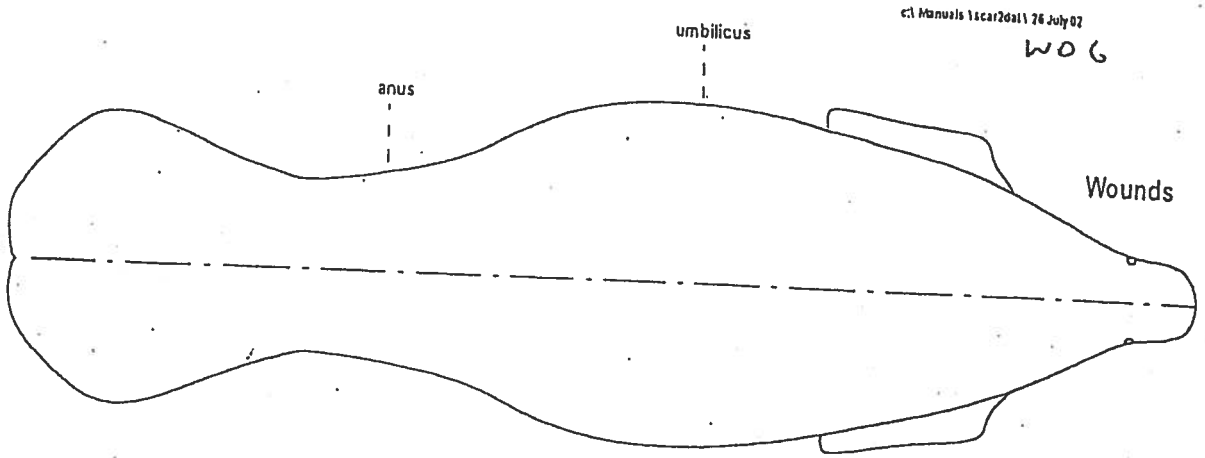
William D. Greer
Sara M. Wappes

REPORT FILED BY Greer

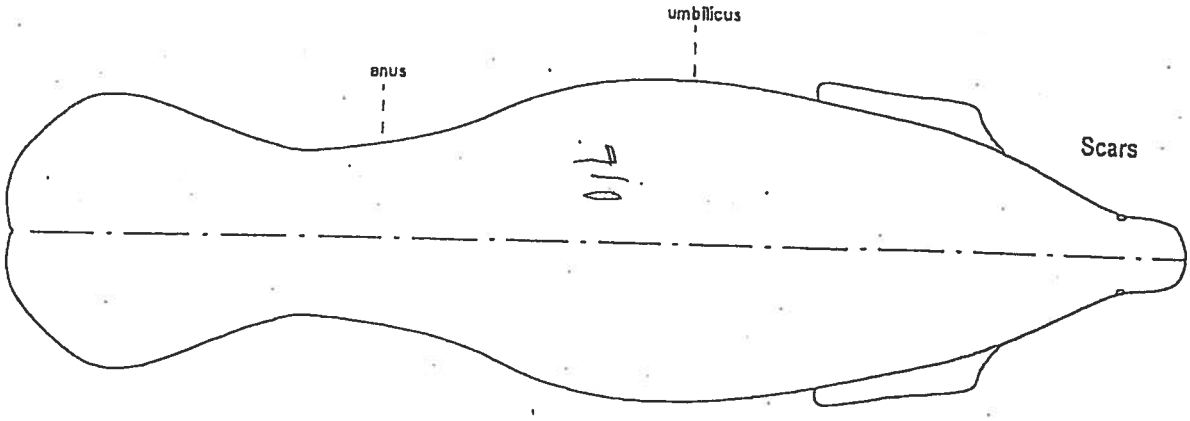
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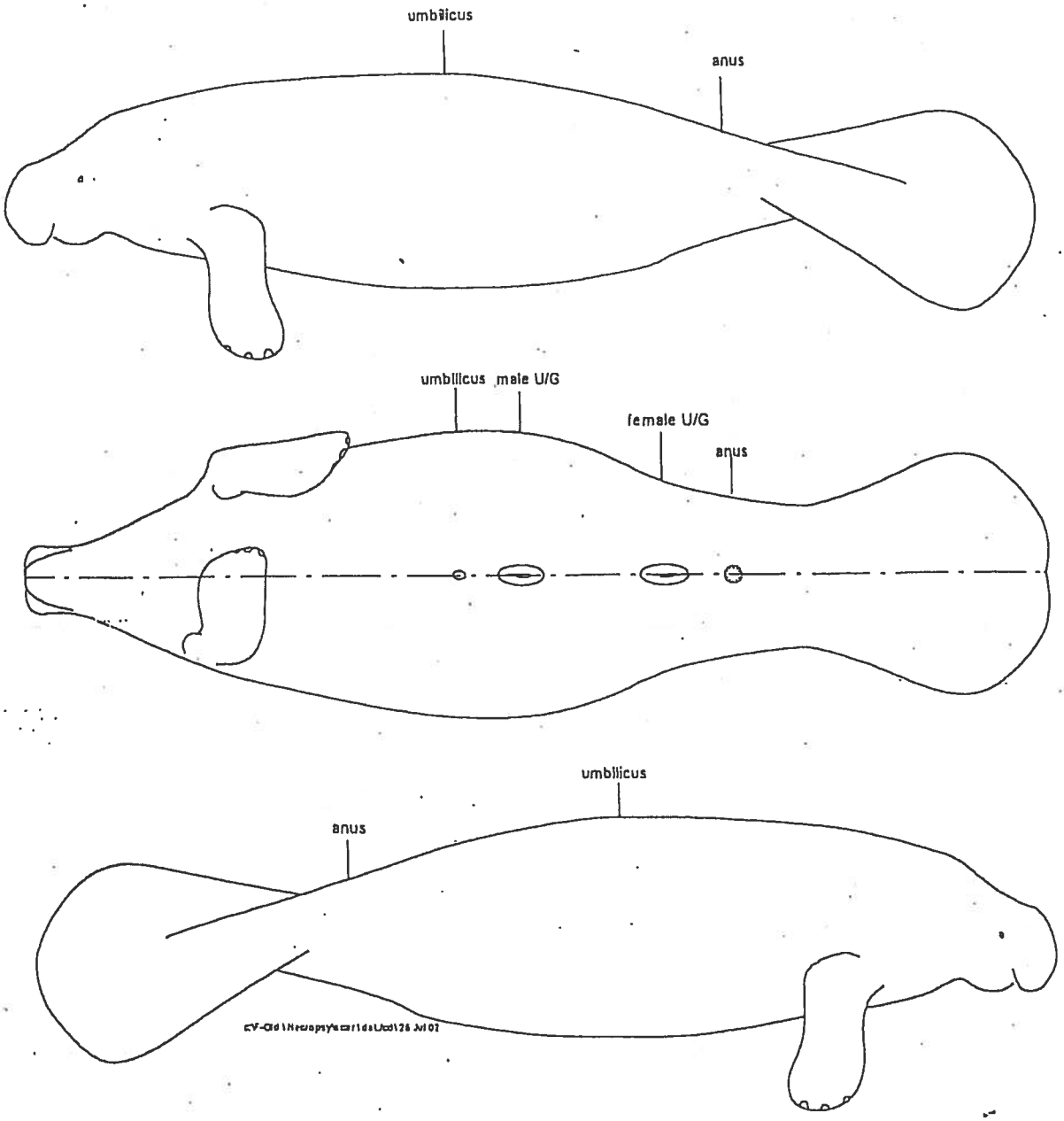
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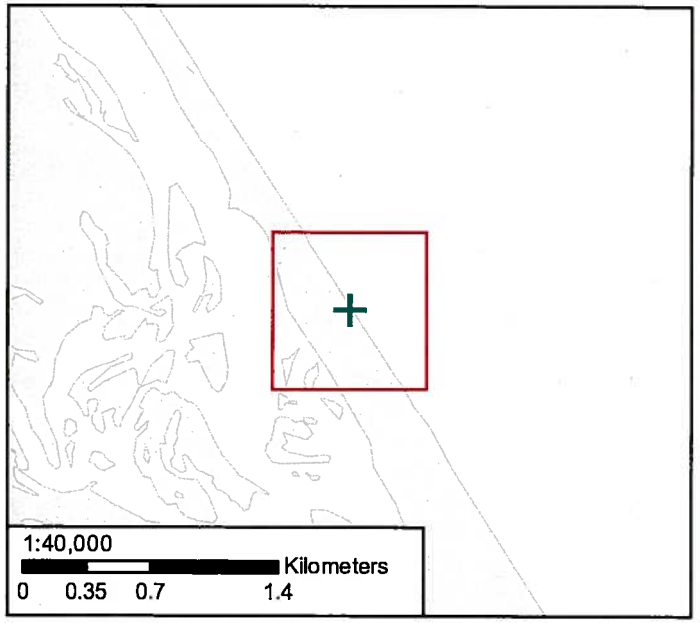
FIELD I.D. MSC19102

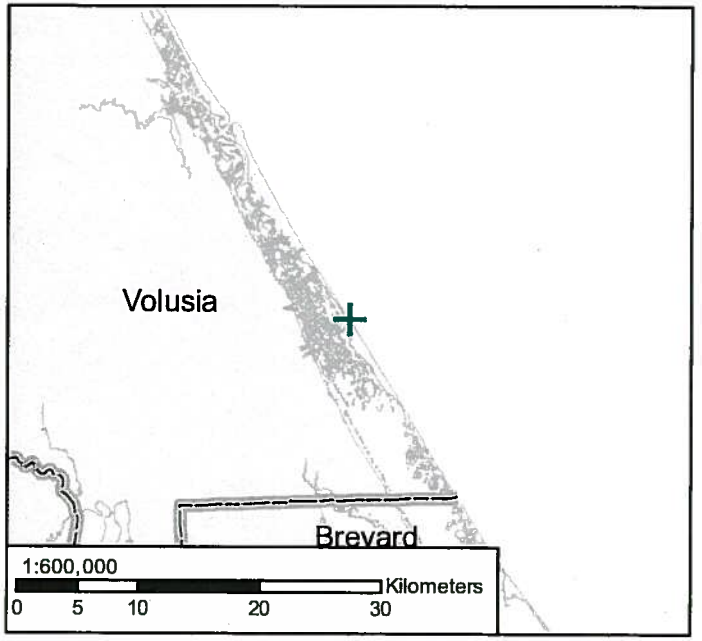


Verified Recovery Location of Manatee Carcass MEC19102

Report Date: 12/4/2019 **Received Date:** 12/4/2019 **Received By:** FWC-WDG,SMW Map Created: 1/20/2021







Locality Description:
New Smyrna Beach, Volusia
Beached, approximately 640 m NNE of the intersection of Eldora Road and Turtle Mound Road.

Latitude: 28.92504°N **Longitude:** -80.82081°W

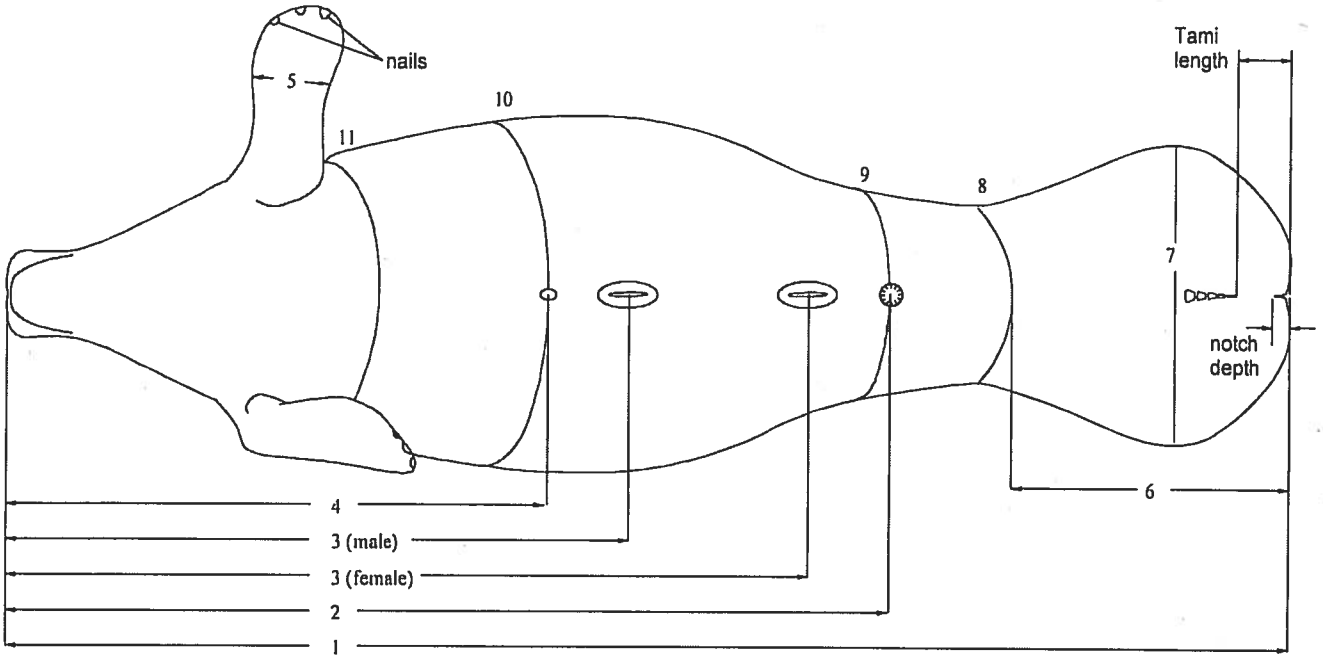
Field ID # MEC19102

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 265 cm
2. Snout to anus -C 179 cm
3. Snout to U/G -C 117 cm
4. Snout to umbilicus -C 105 cm
5. Flipper width 16 cm
6. Fluke base 84 cm
7. Fluke width 76 cm
8. *Girth at fluke base 100 cm
9. * Girth at anus 121 cm
10. *Girth at umbilicus 167 cm
11. *Girth at axillae 133 cm

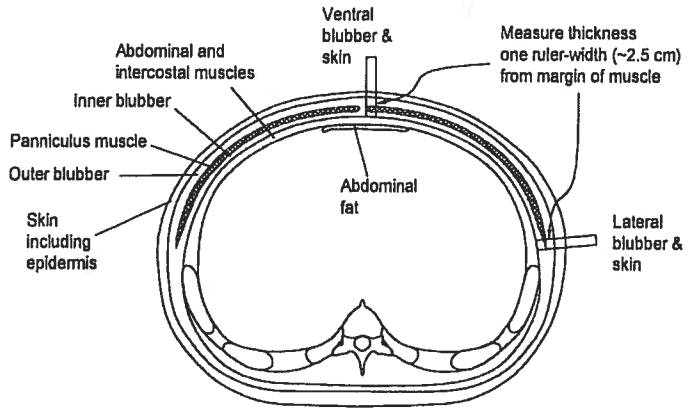
(Depth of notch N/T cm)
(Tami ln N/T cm)

(Nail count: R 3 L 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.4 cm	2.1 cm	(Epidermis 0.1 cm)
Outer blubber	0.6 cm	0.1 cm	(Abdominal fat N/T cm)
Inner blubber	0.1 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, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19102
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 21167 **FWC District**: Northeast
Sex: Male **Length (cm)**: 265 **Estimated** _____ **Weight (kg)** N/T
Date reported: 04 December 201 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 04 December 201 **By**: FWC- WDG, SMW
Date necropsied: 04 December 2(**By**: FWC- WDG, SMW

LOCATION INFORMATION: **State** FL **County**: Volusia **Waterway**: Atlantic Ocean
Latitude: N _____ **Longitude**: W _____
Locality description: New Smyrna Beach, approximately 640 NNE of the intersection of Eldora Road and Turtle Mound Road
Carcass Orientation: Beached

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, longitudinal folds, linear lesions on lateral/ventral/fluke and flippers, serous fats, dry and hard feces throughout colon, 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: - **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 #: **MEC19103**
Date of Report: 2019-Dec-06
Filed By: FWC MMPL

FWC Case # 21262 **FWC Region:** NE

Sex: Male **Length:** 259 **cm** **Weight:** 295.0 **kg**

DATE REPORTED: 2019-Dec-06 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-06 **By:** FWC-WDG

DATE NECROPSIED: 2019-Dec-09 **By:** MMPL-MdW,ALP,BDB,SMT,TDW

LOCATION: **State:** FL **Latitude:** 28.74742 **N**
County: Seminole **Longitude:** -81.08115 **W**
Waterway: Lake Harney
Locality description: Geneva, approximately 640 m ENE of 543 Winona Drive.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Cold stress lesions; Spongy epidermis; Emaciated; Bleached epidermis; Thickened epidermis; Serous fat(s); Depleted fat(s); Raw, necrotic epidermis; Swollen muzzle; Congested mesenteries, abdominal fat, peritoneum, airway mucosa; Slightly bloody liver; Enlarged lymph nodes; Enlarged, pale heart; Dry lung serosa; Hemorrhagic tissue with blood clots.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Archive toxicology samples, Histology.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Histology report. Rescue report.

REMARKS:

PIT tag scan negative. Died on 06 Dec 2019. Died at 1730 hrs. White blaze on ventrum. See rescue report REC1910 (SWFTm1928b). Rescued on 06 Dec 2019, but died during transport. Adhered lung. Resolving blood clot abdomen.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19103

MORPHOMETRICS:

Total length:	259 cm	**Fluke base:**	87 cm	**Girth at axillae:**	141 **cm**
Snout to anus:	170 cm	**Fluke width:**	73 cm		
Snout to U/G:	115 cm	**Girth at fluke base:**	102 cm		
Snout to umbilicus:	100 cm	**Girth at anus:**	125 cm		
Flipper width:	19 cm	**Girth at umbilicus:**	173 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.9 cm	2 cm		
Outer Blubber Thickness:	1 cm	0.4 cm	**Abdominal Fat Thickness:**	0.3 cm
Inner Blubber Thickness:	0.4 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. MEC19103
RECOVERY DATE 06 December 2019
GENDER Male **TL** 259 **cm WT** 295 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 09 December 2019
CONDITION Fresh

HISTORY See Rescue Report REC1910. 06 December 2019, at 1730 hrs, the manatee arrived by rescue boat at C.S. Lee Park boat ramp, but was no longer responsive to any stimulus. At 1801 hrs, WDG and FWC volunteer-Jim Schmitz loaded the carcass via Ezy-Lift and transported it to the field station where it was stored overnight. **07 December**, WDG transported the carcass to the MMPL arriving at 1000 hrs.

EXTERNAL All of the epidermis was present. The carcass had a peanut-shaped head. The body was slender. The ventrum was flat and had a fold in the midline. The muzzle was slightly swollen. The cranial aspect had numerous linear ulcerating cold stress lesions. The dorsal fluke had numerous pitted, raw cold stress lesions in the epidermis. The ventral epidermis was spongy and had bleached mottling. The epidermis was raw on the flippers and lateral ventral aspects. The epidermis of the neck and chin creases was tan and necrotic. The epidermis of the ventral fluke was thickened, necrotic, spongy, tan, and coated with light brown algae. There was a mild infestation of barnacles. Numerous barnacle scars were present on the dorsal aspect. No watercraft-related wounds were observed. A minimum of one well-healed watercraft-related scar pattern was present. There was a thin green algal mat on the dorsal aspect. There was a white blaze on the ventrum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate slightly serous abdominal, mesenteric, and omental fat. The abdominal fat and peritoneum were severely congested. There was one small resolving blood clot in the cranial abdomen.

STOMACH The stomach contained 1.5 L of moist, moderately chewed, very fibrous, stringy, yellow to green ingesta. The ingesta were coated with a thick layer of viscous white mucus. The mucosa was unremarkable. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 1 L of moist, poorly chewed, very fibrous, stringy, yellow to green ingesta. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The distal small intestine contained a moderate amount of wet, poorly chewed, very fibrous, green to dark green ingesta. The mid small intestine contained a scant amount of viscous, tan mucus. The proximal small intestine contained a moderate amount of watery, grey fluid mixed with a scant amount of poorly chewed, fibrous, dark green vegetation. The mucosa was unremarkable. No parasites were grossly observed throughout.

CECUM The cecum contained 400 mL of dry, poorly digested, fibrous, stringy, dark green digesta. The mucosa was sloughing. There was a mild infection of dead trematodes.

COLON The mesentery was severely congested. The colon contained a moderate amount of dry, poorly digested, fibrous, stringy, well-formed, dark green feces. The mucosa was sloughing. There was a mild infection of dead trematodes in the proximal colon.

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

SPLEEN The spleen was very small and dark purple on serosal and cut surfaces.

LIVER The liver was firm. The margins were rounded and sharp. The serosal surfaces were dark blue to purple and the cut surfaces were brown to red and slightly bloody. An ELISA toxicology sample was collected.

GALLBLADDER The gallbladder contained 25 mL of viscous, clear, 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. The seminal vesicles were moderate in size and empty of contents.

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

URINARY BLADDER The bladder contained 175 mL of clear, colorless urine. The mucosa was unremarkable. An ELISA toxicology sample was collected.

HEART There was moderate epicardial fat. The heart appeared enlarged. The myocardium was pale. Valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were dry on serosal surfaces. The dorsal and ventral aspect of the caudal one-quarter of the left lungs had strong stringy adhesions to the parietal pleura and hemidiaphragm. The lungs were light pink to pink on serosal surfaces, and pink to red on cut surfaces. The airways were clear. The mucosa was mildly congested. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a moderate infection of dead trematodes in the back of the mouth. A small region of hemorrhagic tissue and loose, well-formed blood clots was observed dorsal to the left temporal bone deep to the ulcerating scrapes on the left dorsal head and neck region.

SKELETON NVL.

OTHER The cortex:medulla ratio of the adrenal glands was 2:1. The T-septal and axillary lymph nodes were enlarged and dark purple on serosal and cut surfaces. The anorectal lymph nodes were enlarged and purple to tan on cut surfaces.

PHOTOGRAPHS 2019-12-07_FWC047_4118 through 4122, 4128; 2019-12-08_FWC047_4160 through 4175, 4211, 4212, 4239 through 4259.

COMMENTS

SIGNIFICANT FINDINGS

- Cold stress lesions
- Spongy, raw, necrotic epidermis
- Bleached, thickened epidermis
- Swollen muzzle
- Emaciated
- Depleted, serous fat
- Congested mesenteries, abdominal fat, peritoneum, airway mucosa
- Enlarged lymph nodes
- Enlarged, pale heart

- Slightly bloody liver
- Dry lung surfaces
- Adhered lung
- Hemorrhagic tissue with blood clots
- White blaze ventrum
- Resolving blood clot abdomen

PROBABLE CAUSE OF DEATH Natural; Cold Stress

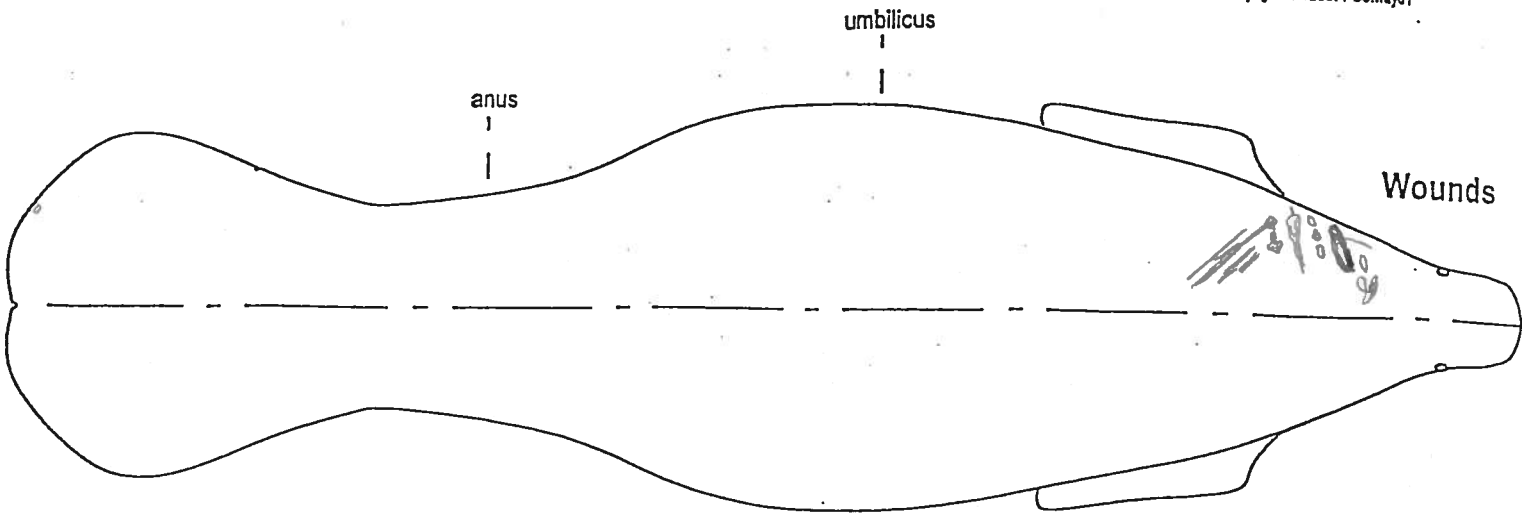
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Anna L. Panike
Brittany D. Barbeau
Tara D. Whitcomb
Sean M. Tennant
Julie Carta (MMPL volunteer)

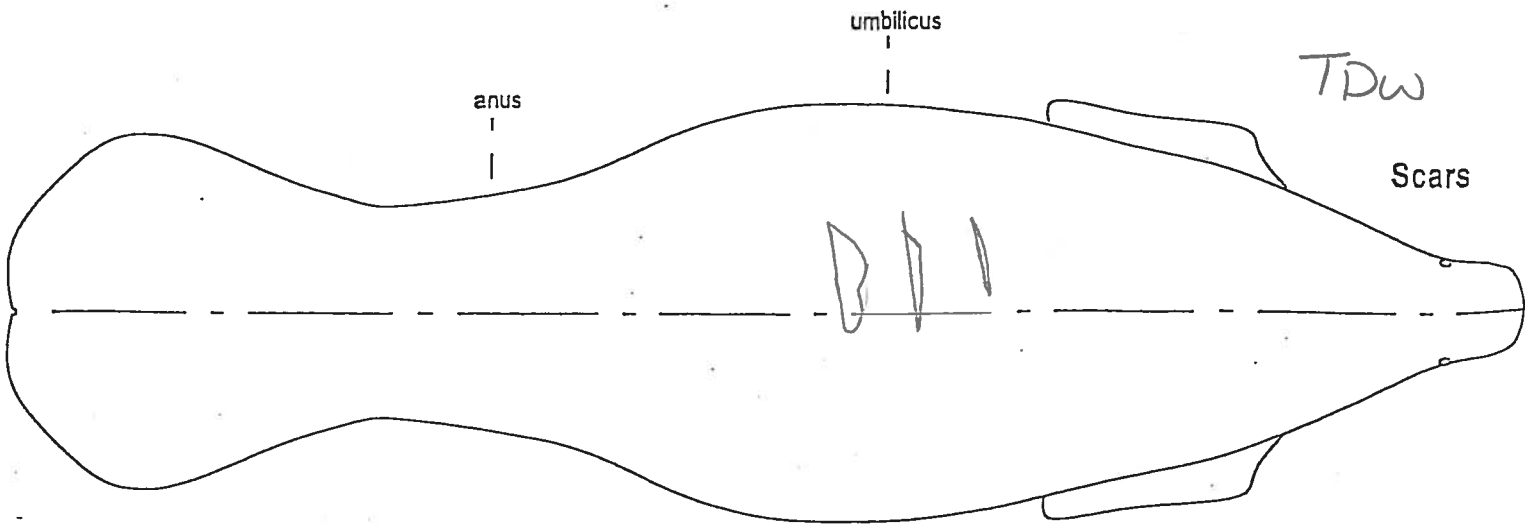
REPORT FILED BY de Wit

Date 08 Dec 2019 Field I.D. KFC1910

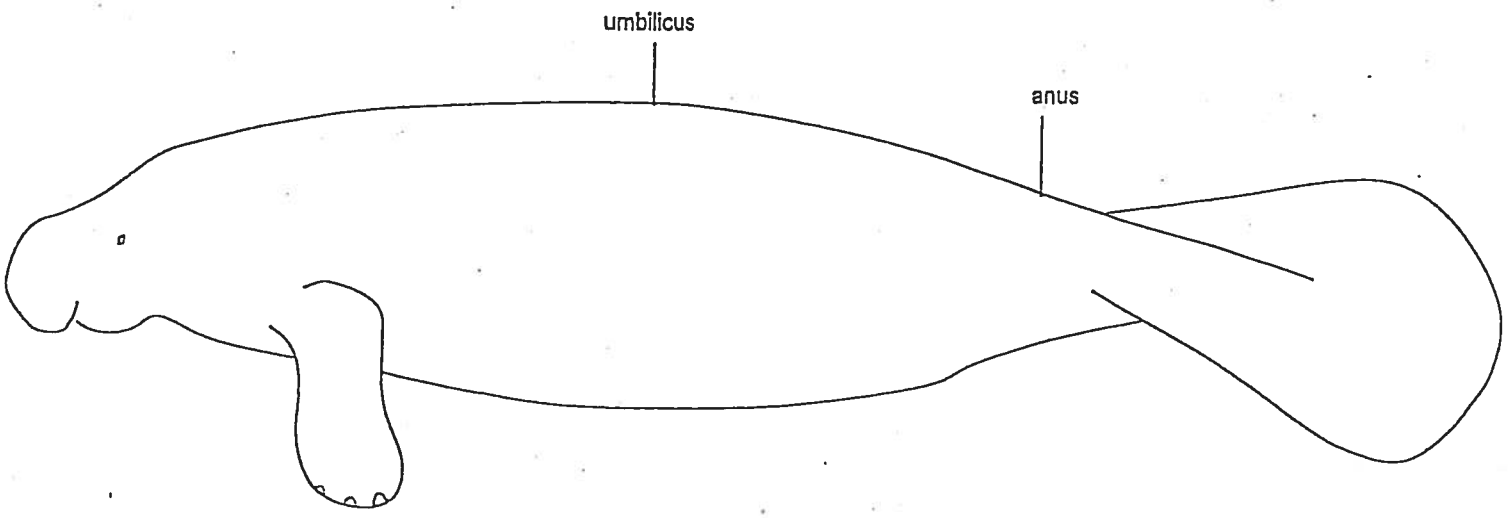
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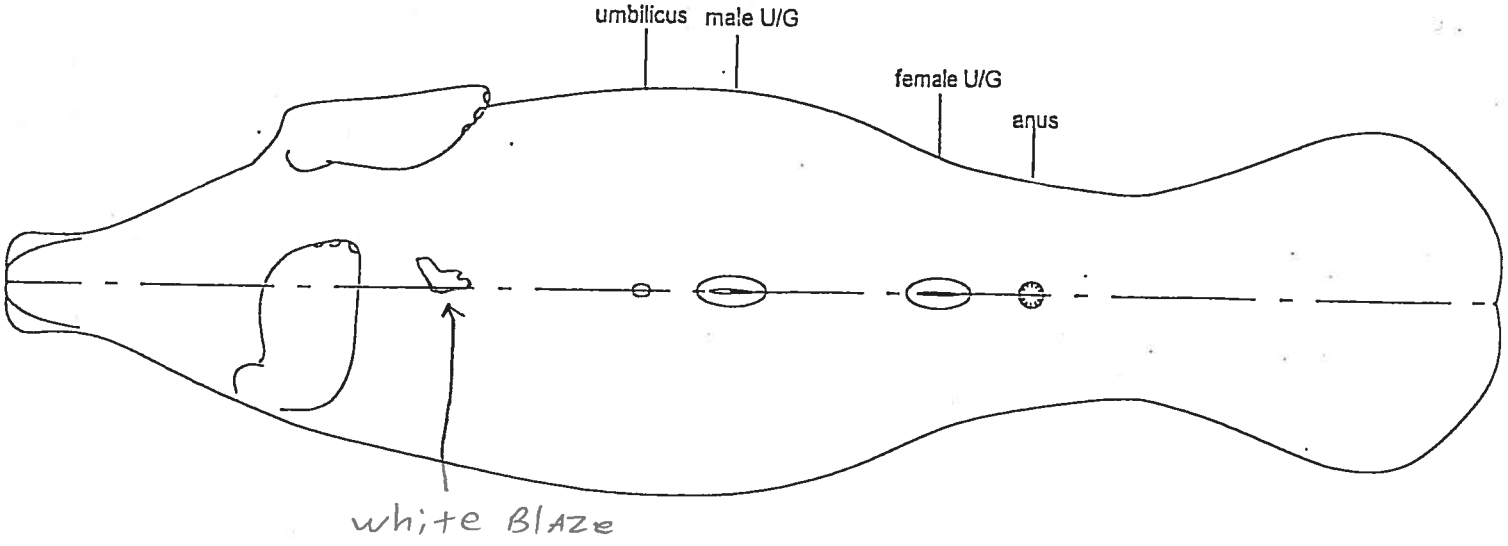


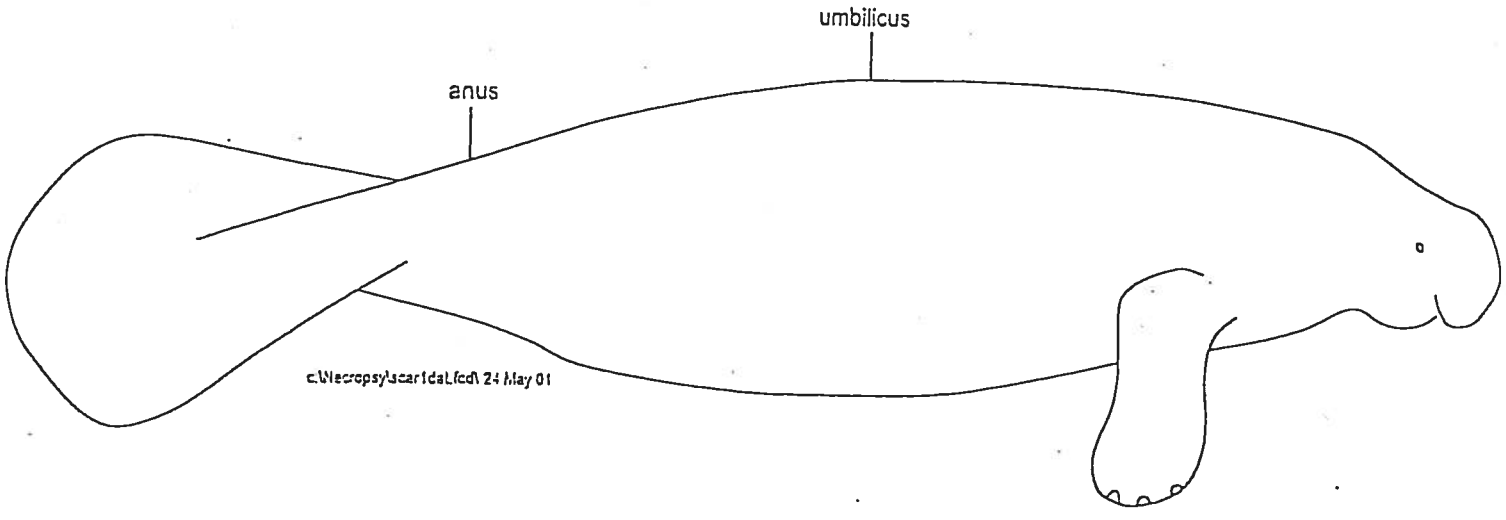
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FIELD I.D. MEC19103

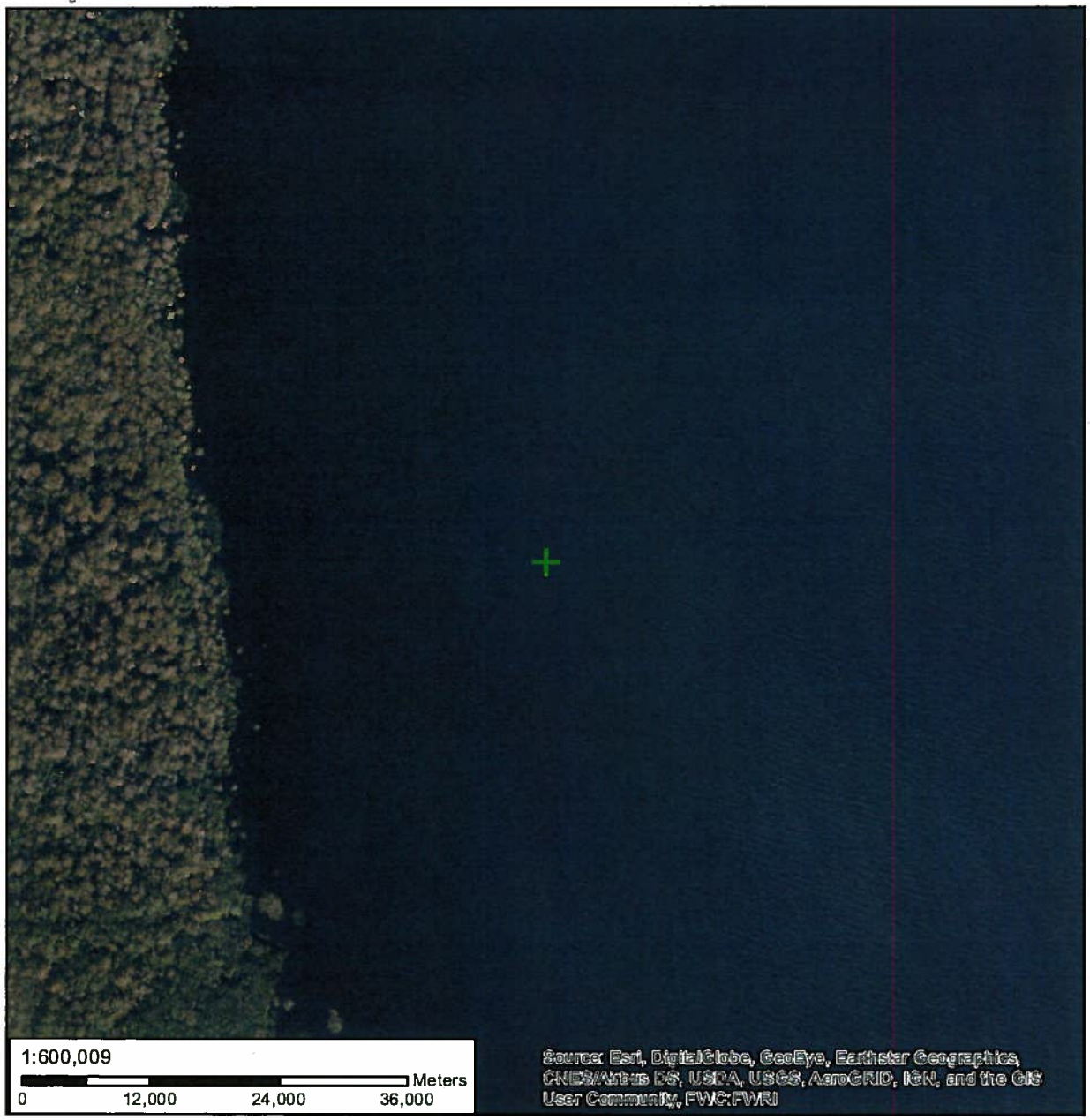


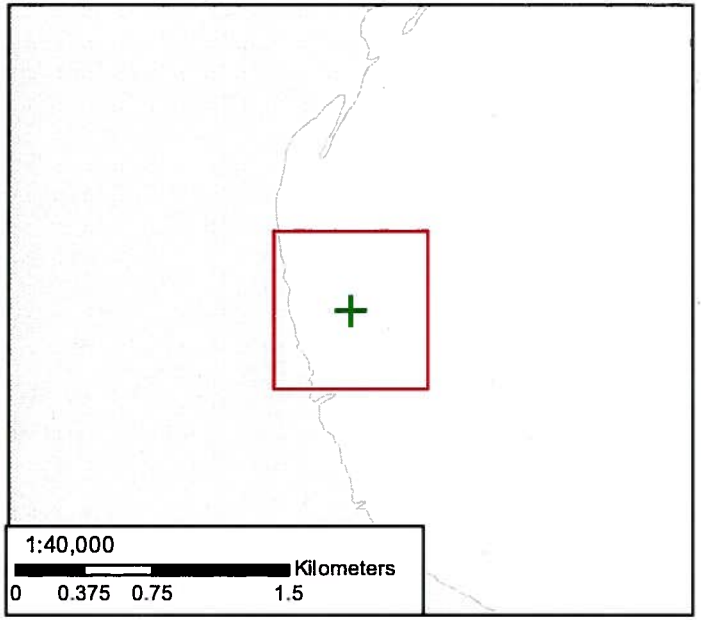


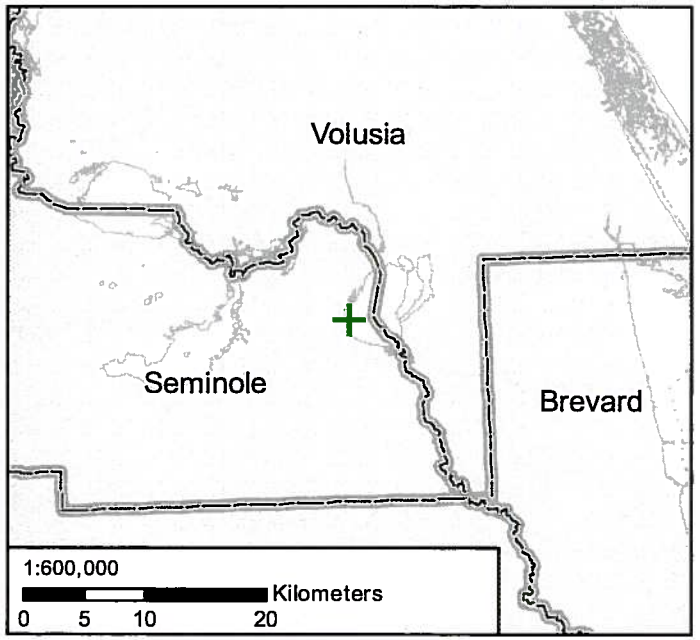


Verified Location of Manatee MEC19103

Rescue ID: REC1910 **Report Date:** 12/6/2019 **Received Date:** 12/6/2019 **Received By:** FWC-WDG







Locality Description:
Geneva, Seminole
, approximately 640 m ENE of 543 Winona Drive.

Latitude: 28.74742°N **Longitude:** -81.08115°W

Map Created: 1/20/2021

Rescue Report REC1910

GENERAL

Date of Rescue: 06 December 2019 Date of Initial Call: 06 December 2019 Filed by: W. Greer

Rescue ID: REC1910 Facility ID: SWFTm1928b Other ID: MEC19103

FWC Case Number: 21262 FWC Region: NE

Sex: Male Length: 259 cm Estimated: No Weight: 295 kg Estimated: No

PIT Tag Present: No PIT Tag Applied: No R: L:

State: FL County: Seminole City: Geneva Waterway: Lake Harney

Latitude (Decimal Degrees): 28.747450° N Longitude (Decimal Degrees): -81.081313° W

Locality Description: approximately 640 m ESE of 543 Winona Drive

Method of Capture or Assistance: Boat Based: Net Set (Other: _____)

REASON FOR RESCUE

Check one of the following:

- ☐ Watercraft
- ☐ Entanglement
- ☐ Entrapment (Human)
- ☒ Cold Stress
- ☐ Red Tide
- ☐ Tidally Stranded
- ☐ Calf by itself
- ☐ Other: (Specify): _____

Cold Stress, Red Tide, Tidally Stranded, Calf by itself or Other

Describe: Subadult manatee not near a known warm water site. The manatee had a peanut-shaped head, bleached face, and lesions on its lateral aspects and fluke.

VISUAL RECORD

	Photo - Digital	Video
Rescue Location	☐	☐
Animal Before Rescue	☒	☐
Actual Rescue	☐	☐
Animal After Rescue	☐	☐
Wounds	☐	☐
Scars	☐	☐
Gear Alone (if entangled)	☐	☐
Photographs file name	2019-12-06_PUBLIC_ECFL_01 through 02	

HISTORY

Date	Narrative
06 December 2019	At 1225 hrs, FWC biologist-William Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a manatee having difficulty submerging in Lake Harney, Geneva, Seminole County. FWC case number 21262 was assigned. The complainant, Bob Boulanger (303-903-7504), stated the manatee

	had been staying at the surface for about 3 hours in a cove behind his home. No wounds or marks were observed, and the manatee was breathing approximately once every two minutes. At 1230 hrs, WDG received a photo from the complainant showing a subadult manatee with a bleached face and peanut-shaped head. At 1237 hrs, WDG contacted FWC rescue coordinator-Andrew Garrett (AJG), and both agreed that due to the size of the manatee, external signs of cold stress, and because the manatee was not near a known warm water source, the manatee should be rescued. At 1247 hrs, WDG contacted SeaWorld Orlando-Jon Peterson, who agreed that SeaWorld Orlando could take the manatee for rehabilitation, and that they could provide a transport truck and 3 staff for a response. At 1416 hrs, Save the Manatee Club staff-Cora Berchem (CB) arrived at the manatee's location and verified the manatee's size and condition. At 1625 hrs, the rescue team arrived at the manatee's location. At 1637 hrs, the manatee was captured. At 1730 hrs, the rescue team arrived back at C.S. Lee Park boat ramp, but the manatee was no longer responsive. At 1801 hrs, WDG and FWC volunteer-Jim Schmitz loaded the carcass via Ezy-lift.
07 December	At 1000 hrs, WDG arrived at MMPL and unloaded the carcass for future necropsy.

PARTICIPANTS

FWC ECFL: William Greer
FWC ECFL Volunteers: Jim Schmitz, Diane Schwartz
SeaWorld Orlando: Jen Parnell, Vivian Crooks, Maggie Mariolis
Save the Manatee Club: Cora Berchem
Brevard Zoo: Rick Teresi

Edited by:
NJG
BDB
AJG

(Rev: 06/11/2019)

PHOTOS



Complainant photo

NECROPSY REPORT
FINAL REPORT

Field ID: MEC19103
Alternate Field ID:
Accession Number: 20-011
Species: *Trichechus manatus latirostris*
Date: 06 Dec 2019 (DOR); 09 Dec 2019 (DON)
Location: FL
Sex, Age: M
TL: 259 cm
WT: 295 kg
Body Condition: Emaciated
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: 24> hours

HISTORY

Findings include:

- Cold stress lesions
- Spongy, raw, necrotic epidermis
- Bleached epidermis
- Swollen muzzle
- Emaciated
- Serous fat
- Congested mesenteries, abdominal fat, peritoneum, airway mucosa
- Enlarged lymph nodes
- Enlarged, pale heart
- Dry lung surfaces
- Adhered lung
- Hemorrhagic tissue with blood clots
- White blaze ventrum
- Resolving blood clot abdomen

Summary: Natural; Cold Stress

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment

MICROSCOPIC DESCRIPTION

Received 8 Jan 2020 are 8 H&E slides.
Skin fluke margin (57) exhibits diffuse epithelial necrosis. Necrotic epithelium is retained and the underlying epithelial layers exhibit cytoplasmic swelling. Basal epithelium is hyperplastic. Heterophils form small aggregates within the epithelium. In the dermis, there are multifocal aggregates of heterophils. Associated collagen bundles are lightly eosinophilic (collagenolysis). Skin ventral fluke (59) is characterized by diffuse partial to full thickness epithelial necrosis. There are abundant heterophils within the necrotic eptihelium admixed with extravasated erythrocytes. Rhabditiform nematodes and mixed bacteria are present on the surface. In the dermis, there are small clusters of heterophils and fewer macrophages. Vascular channels are dilated and lined by plump endothelial cells. The ulcerated skin of the lateral skin (58) is characterized by a V-shaped defect that extends into the dermis. The epithelium lining the defect is necrotic and covered by a dense mat of viable and degenerate heterophils mixed with fibrin, necrotic cellular debris, erythrocytes, and mixed bacteria. Heterophils infiltrate the dermis which exhibits moderate dermal collagenolysis. A large artery is infiltrated by heterophils. In the adjacent epithelium, there is mild epithelial hyperplasia. Skin from the chin (61) is characterized by partial to full thickness necrosis. Heterophils infiltrate the necrotic epithelium. At sites of ulceration, there is extravasation of erythrocytes. Skin from the flipper (60) is characterized by superficial to full thickness epithelial necrosis. Few heterophils transmigrate into the epithelium. There is moderate congestion. Skin from the muzzle (56)

Bronchioles of the right lung contain abundant mucoproteinaceous exudate with interspersed heterophils.

Large intestine mucosal-associated lymphoid tissue is mildly depleted.

The following tissues have no significant histological findings: Heart, axillary lymph node, liver, kidney, adrenal gland, pancreas

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System

A. Skin, Cold Stress Lesions, Multiple: Epithelial necrosis, superficial to full thickness with moderate heterophilic epidermitis and dermatitis, arteritis (lateral skin), collagenolysis, and intralesional rhabditiform nematodes.

Respiratory Sytstem

A. Lung: Bronchiolitis, heterophilic, multifocal, mild.

Nervous System
NE

Urinary and Reproductive System
NSF

Digestive System/Body as a Whole
A. Large Intestine: Mucosal-associated lymphoid tissue depletion.

Cardiovascular System
NSF

Hepatobiliary System
NSF

Endocrine System
NSF

Hematolymphatic System
A. Spleen: Lymphoid depletion, mild to moderate.
B. T-Septal Lymph Node: Draining lymph node.

INTERPRETATIVE SUMMARY

DIAGNOSES
Lymphoid Depletion
Epidermal Necrosis (Cold Stress)

Primary Diagnostic Category: Cold Stress Syndrome

Linked Cases:

Death is attributed to physiological compromise as result of cold stress. Skin lesions were characterized by necrosis and inflammation. Occasionally, there was vasculitis. Rhabditiform nematodes within the necrotic epithelium are secondary invaders. Lymphoid depletion in the spleen and colonic mucosal-associated lymphoid tissue is related to cold stress.

TEST	PURPOSE	SITE	RESULT

DATE: 1/11/2020

REPORTING PATHOLOGIST: David S. Rotstein, DVM, MPVM, DACVP

FIGURES

No Figures

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

Field ID # (REC1910/SWFTA19285) MEC19103

FWC Case # 21262 FWC District: FWE

Sex: M / F / Undetermined Length: 259 cm (estimated _____) Weight 295 kg.

Date reported: 06 DEC 2019 By: CITIZEN TO FWC NR DISPATCH - ORLANDO

Date collected: 06 DEC 2019 By: 1ST FWC - WO6, FWC VOL J. SCHMITZ

Date necropsied: 09DEC2019 By: MMPL - HdW, ALP, BDB, SMT, TDiN

LOCATION: State: FL (___) County: SEMINOLE Waterway: LAKE HARNEY

Latitude: _____ N Longitude: _____ W

Locality description: ADJACENT NEAR 741 WINONA DR. N.

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 _____

- color
- stress lesions
- spongy epi.
- fatty epi.

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

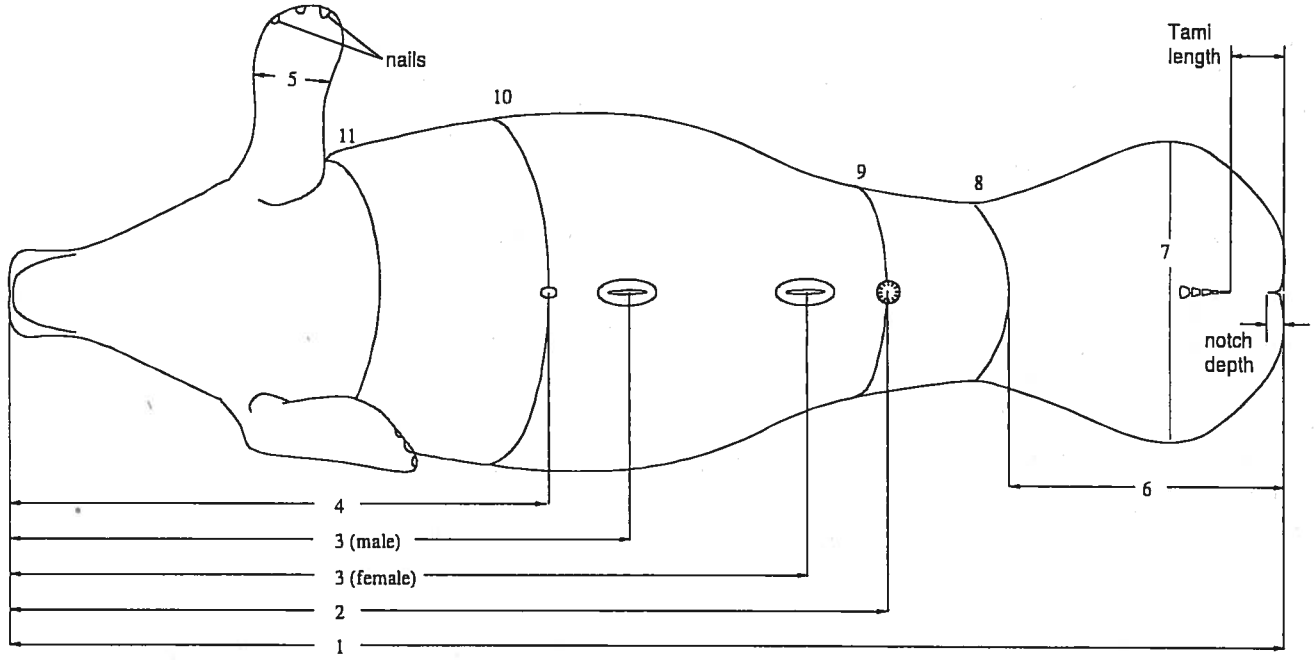
REMARKS: Expired during transport

Field ID # REC1910

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.

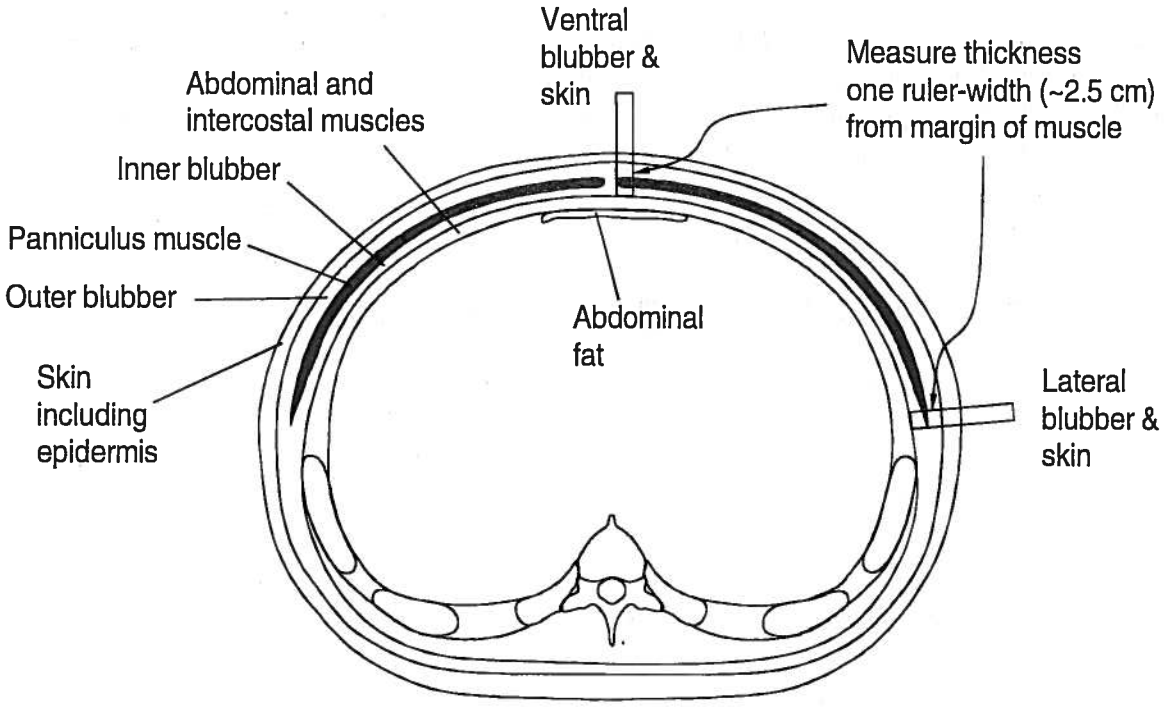
1. Total length 259 cm
2. Snout to anus -C 170 cm
3. Snout to U/G -C 115 cm
4. Snout to umbilicus -C 100 cm
5. Flipper width 19 cm
6. Fluke base 87 cm
7. Fluke width 73 cm
8. *Girth at fluke base 102 cm
9. * Girth at anus 125 cm
10. *Girth at umbilicus 173 cm
11. *Girth at axillae 141 cm

(Nail count: L 3 R 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	0.9 cm	2.0 cm	(Epidermis 0.2 cm)
Outer fat	1.0 cm	0.4 cm	(Abdominal fat 0.3 cm)
Inner fat	0.4 cm	0.7 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19103
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 21262 **FWC District**: Northeast
Sex: Male **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 06 December 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 06 December 201 **By**: FWC-WDG, FWC vol-Jim Schmitz
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Seminole **Waterway**: Lake Harney
Latitude: N _____ **Longitude**: W _____
Locality description: Geneva, approximately 640 m ESE of 543 Winona 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: Negative
Left side: _____ Right side: _____

REMARKS: Initially rescued alive as REC1910, died during boat transport to boat ramp.

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 #: **MEC19105**
Date of Report: 2019-Dec-11
Filed By: FWC MMPL

FWC Case #

FWC Region: NE

Sex: Male **Length:** 297 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-11 **By:** FPL-Jennifer Pickett to FWC-WDG

DATE COLLECTED: 2019-Dec-12 **By:** FWC-SMW

DATE NECROPSIED: 2019-Dec-13 **By:** MMPL-MdW,BDB,SMT,CMF

LOCATION: **State:** FL **Latitude:** 28.46822 **N**

County: Brevard **Longitude:** -80.76435 **W**

Waterway: Indian River

Locality description: Port St. John, floating in FPL intake well #4, approximately 135 m N of 180 Cottrell Avenue.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Serous muscle; Serous fat(s); Depleted fat(s); Wet lung(s); Bloody eyes, nares; Fluid in pleural cavities, abdominal cavity; Vegetation in mouth; Relatively empty lower GI tract; Specks parietal pleura. Found in FPL intake well #4.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. Cold stress lesions; Bleached epidermis; Healing watercraft wound(s); Serous, dark red tissue deep to wounds. Macroalgae in GI tract.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19105

MORPHOMETRICS:

Total length:	297 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. 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. MEC19105
RECOVERY DATE 12 December 2019
GENDER Male **TL** 297 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 13 December 2019
CONDITION Badly Decomposed

HISTORY 11 December 2019, at 0820 hrs, FWC biologist-William D. Greer (WDG) received a text from Florida Power and Light (FPL)-Jennifer Pickett (JP) regarding a dead manatee at the FPL Canaveral power plant on the Indian River in Port St. John, Brevard County. The complainant, JP, stated that the carcass was 8 feet long, in intake well #4, and that FPL was doing work on that well so they wouldn't be able to get the carcass out until later in the day. At 0822 hrs, WDG received a verification photo. At 1440 hrs, a second carcass (MEC19106) was reported in a different intake well. At 1708 hrs, FPL secured both carcasses on a pallet at the FPL Canaveral power plant. **12 December**, FWC biologist-Sara M. Wappes arrived at the power plant at 0930 hrs, loaded the carcasses into the carcass trailer via FPL forklift by 1000 hrs, and transported them to the MMPL arriving by 1235 hrs.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the eyes and nares. There was a healing watercraft-related wound series on the caudal right lateral aspect, right dorsal peduncle, and dorsal fluke. The series consisted of at least seven parallel propeller wounds (#1 - 7) that penetrated into the muscle and had thickened, rounded wound margins, and one superficial linear wound (#8) at the 1 o'clock position of the fluke perpendicular to wounds #4 - 6. The epidermis was bleached on the face, flippers, and axillae. The epidermis had bleached spots on all aspects, some of which were associated with pitted lesions. There was a thin green algal mat on the dorsal aspect. A moderate infestation of small barnacles was present on the ventral aspect. There was a minimum of ten well-healed watercraft-related scar patterns on the dorsal aspect. The fluke margin had numerous well-healed mutilations between the 4 and 10 o'clock positions. There was an oval-shaped white scar on the cranial ventral aspect between the flippers. 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. The abdomen contained 1.5 L of watery, dark brown fluid.

STOMACH The stomach contained 4 L of moist, moderately chewed, stringy, leafy, dark green ingesta. The ingesta were coated with a thin layer of viscous, white mucus. The mucosa was autolyzed. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 2 L of moist, moderately chewed, stringy, leafy, dark green ingesta. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine was autolyzed. The proximal and distal small intestine were empty of contents. The mid small intestine contained a small amount of moist, well-chewed, stringy, leafy, moderately formed, green vegetation. The mucosa was gassy and autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 500 mL of moist, moderately digested, stringy, leafy, dark green digesta. The mucosa was autolyzed. No parasites were observed.

COLON The distal colon contained a moderate amount of moist, well-digested, slightly fibrous, stringy, moderately formed, dark green feces. The proximal colon contained a small amount of moist, moderately digested, stringy, leafy, poorly formed, dark green feces (see photo). 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 contained 25 mL of flocculent, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The testes were moderate in size. There was a small amount of watery tan fluid on cut surfaces of the epididymides and deferent ducts. The seminal vesicles were moderate in size and contained a small amount of watery, tan fluid.

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

URINARY BLADDER The bladder contained 25 mL of flocculent, pink urine. The mucosa was autolyzed. An ELISA toxicology sample was collected.

HEART There was a small amount of serous epicardial fat. 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 at the cranial aspect. The right pleural cavity contained 4 L and the left pleural cavity contained 2 L of watery, dark red fluid. The lungs were mottled pink and grey on serosal surfaces, and dark pink and slightly wet on cut surfaces. The airways contained a small amount of watery, dark red fluid. No parasites were observed. The mucosa was pink. The parietal pleura had gelatinous dark grey specks. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a moderate thatch of moderately chewed, stringy and leafy green macroalgae in the mouth. An ELISA toxicology sample was collected. The trachea contained a small amount of watery, red fluid.

SKELETON NVL.

OTHER The subdermal tissue was serous. There was serous, dark red and grey discolored tissue deep to the healing watercraft wounds.

PHOTOGRAPHS 2019-12-13_FWC047_4301 through 4316, 4331 through 4349.

COMMENTS The carcass was found in FPL intake well #4 and had drowned. It is probable the manatee was weakened when it entered the well. The carcass had a healing wound series on the peduncle and tail, but there was no significant damage underneath. The carcass had depleted fat and serous tissue which could have been from cold stress (although skin lesions were minimal) or a complication of the chronic injury.

SIGNIFICANT FINDINGS

- Bloody eyes, nares
- Depleted, serous fat
- Serous tissue
- Fluid in pleural cavities, abdominal cavity

- Slightly wet lungs
- Vegetation in mouth
- Relatively empty lower GI tract
- Healing watercraft wounds
- Bleached epidermis
- Pitted skin lesions
- Serous, dark red tissue deep to wounds
- Specks parietal pleura
- Macroalgae in GI tract
- Found in FPL-CCEC intake well

PROBABLE CAUSE OF DEATH Human; Other (Entrapment)

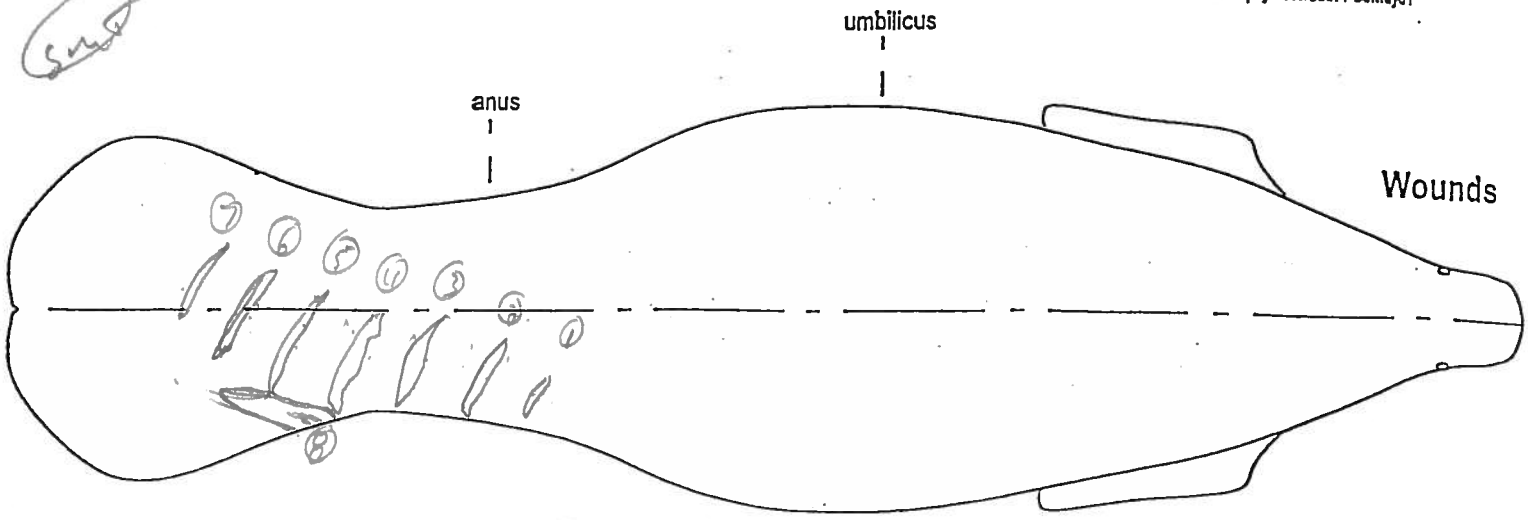
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brittany D. Barbeau
Sean M. Tennant
Christine M. Fontaine

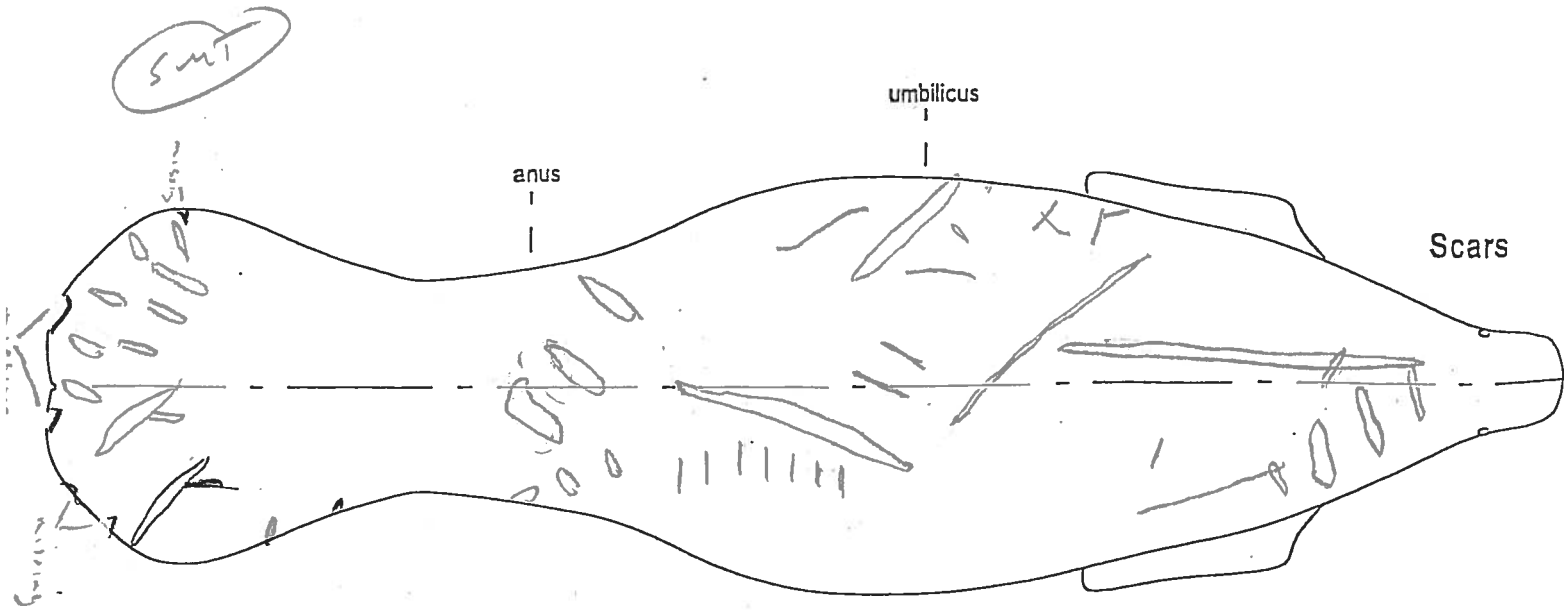
REPORT FILED BY de Wit

Date 13 DEC 2019 Field I.D. MEC19105

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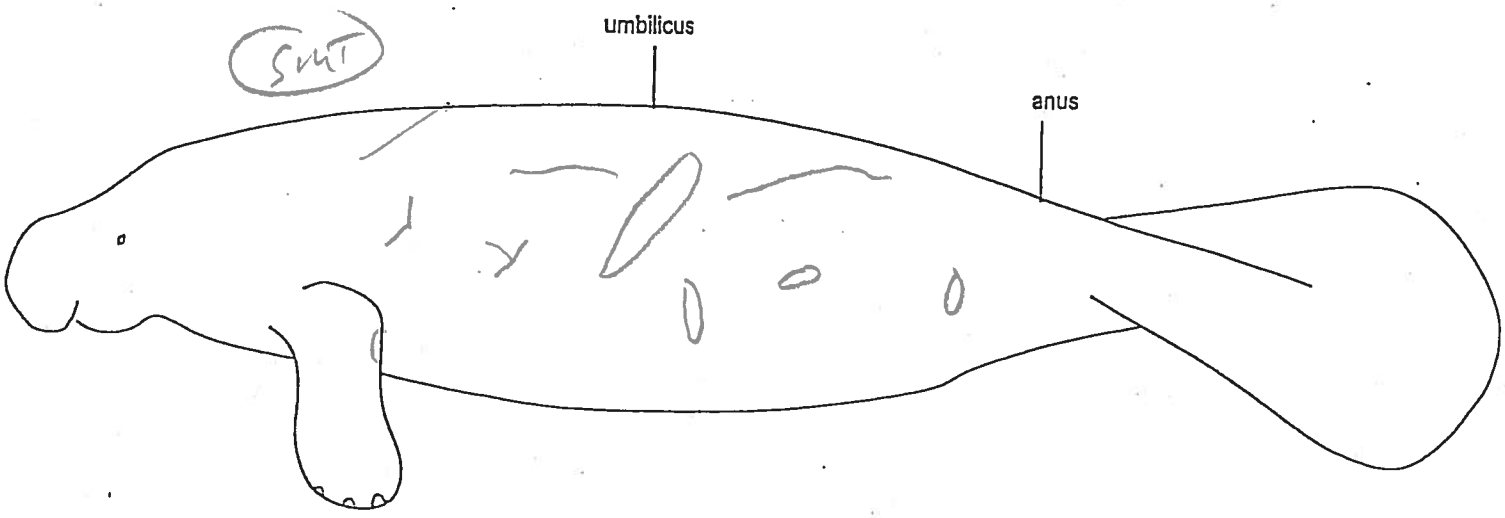


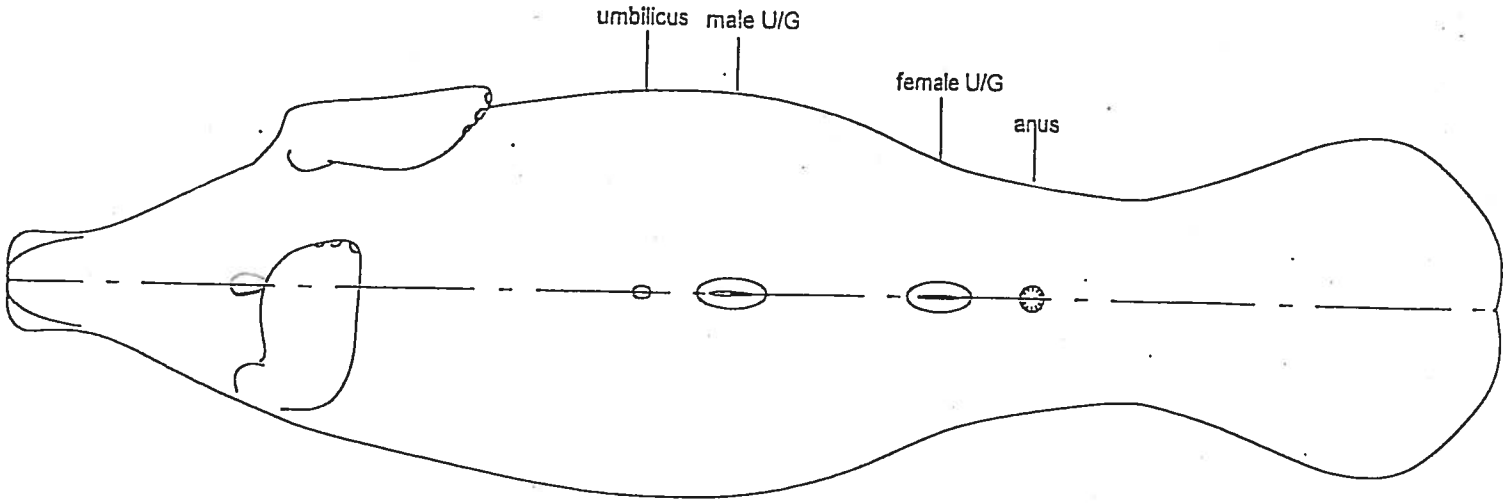
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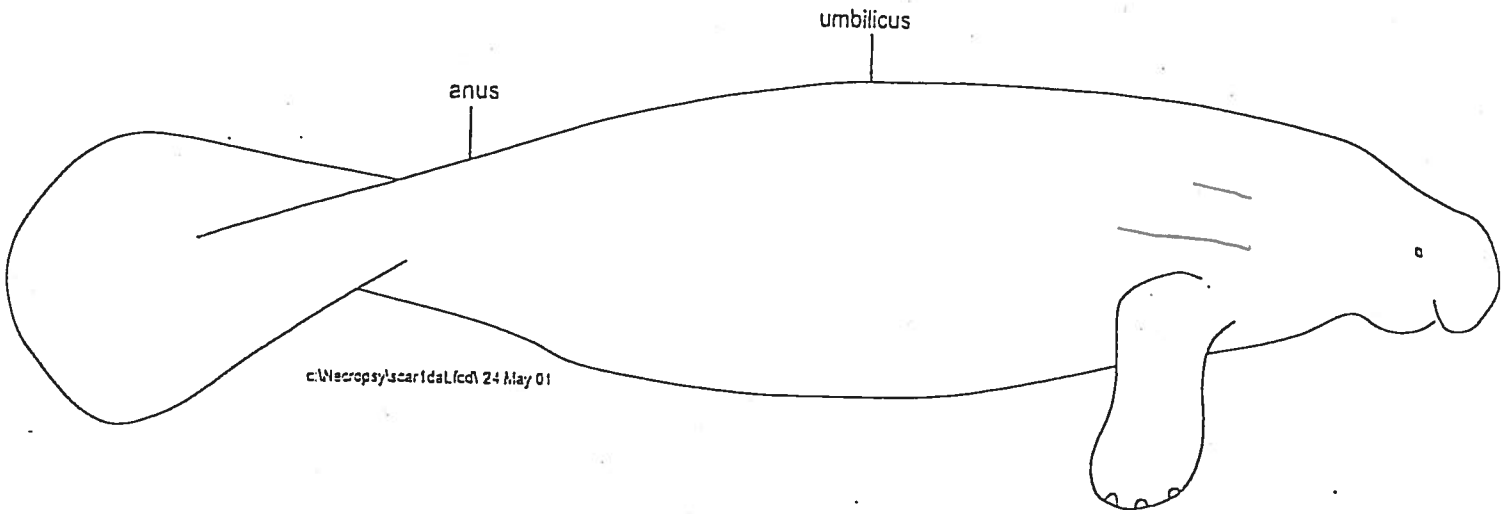


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FIELD I.D. MEC 19105



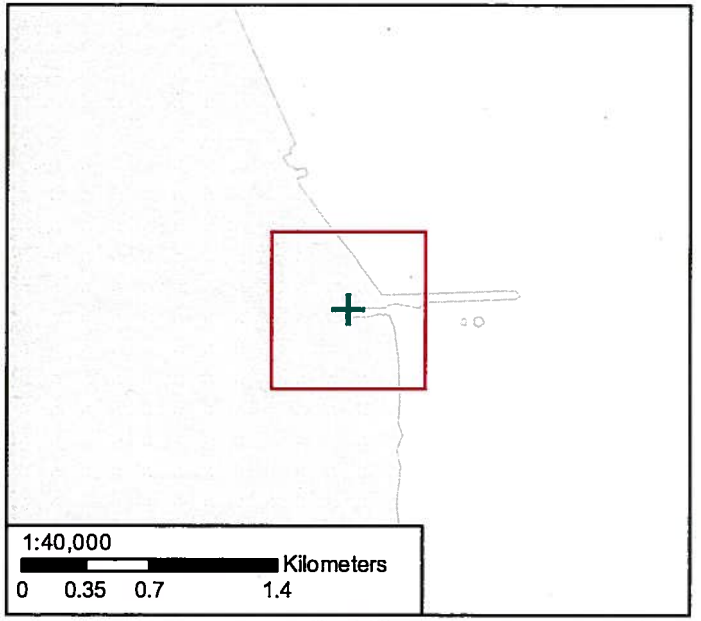


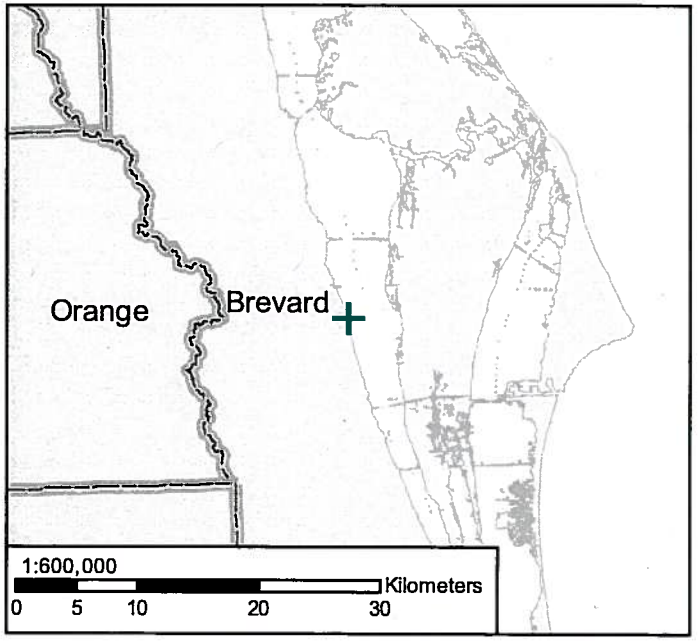


Verified Recovery Location of Manatee Carcass MEC19105

Report Date: 12/11/2019 **Received Date:** 12/12/2019 **Received By:** FWC-SMW Map Created: 1/20/2021







Locality Description:
Port St. John, Brevard
Floating, in FPL intake well #4, approximately 135 m N of 180 Cottrell Avenue.

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

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19105
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A FWC District: NE
Sex (M) F / Undetermined Length: 297 cm (estimated _____) Weight _____ kg.
Date reported: 11 DEC 2019 By: FPL - Jennifer Pickett → FWC-WDG
Date collected: 12 DEC 2019 By: FWC-SMW
Date necropsied: 13 Dec 19 By: MMPL MdW BDB SMT CMF

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 – Healing wound
Histology - Other_____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: Stomach - Liver - Lung - Urine - Kidney (if no urine) - Other vegetation mouth
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

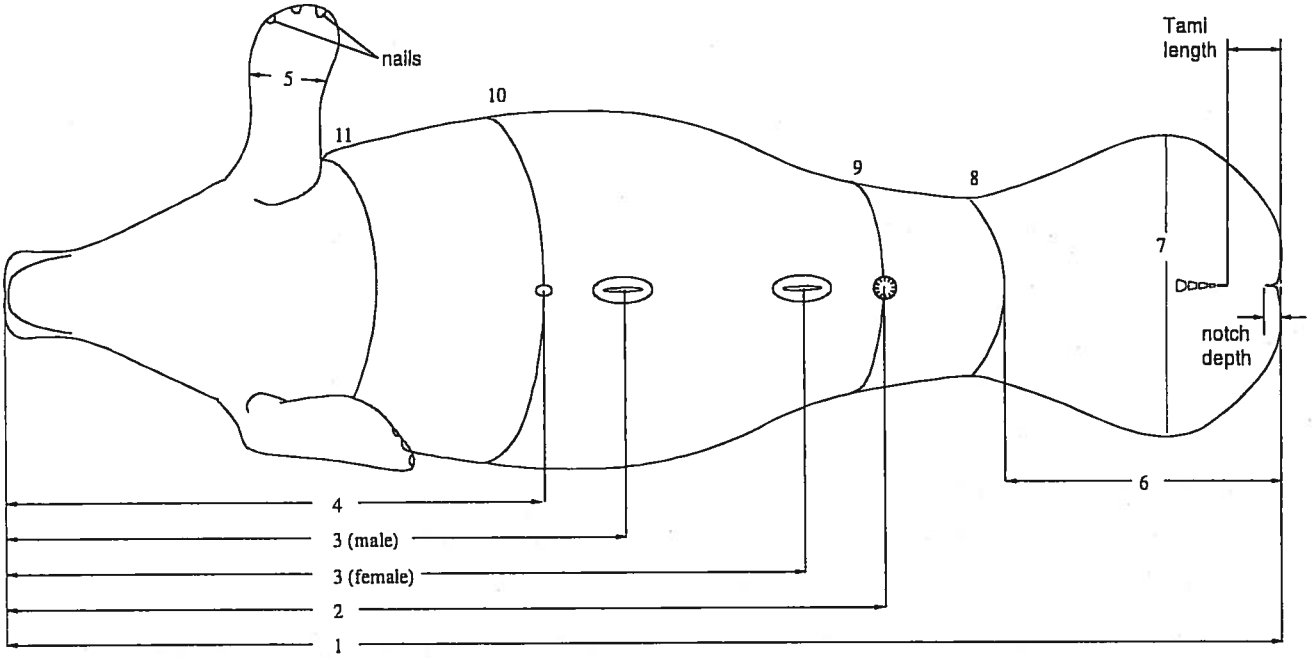
REMARKS: Intake well - FPL - CCEC

Field ID # MEC19105

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.

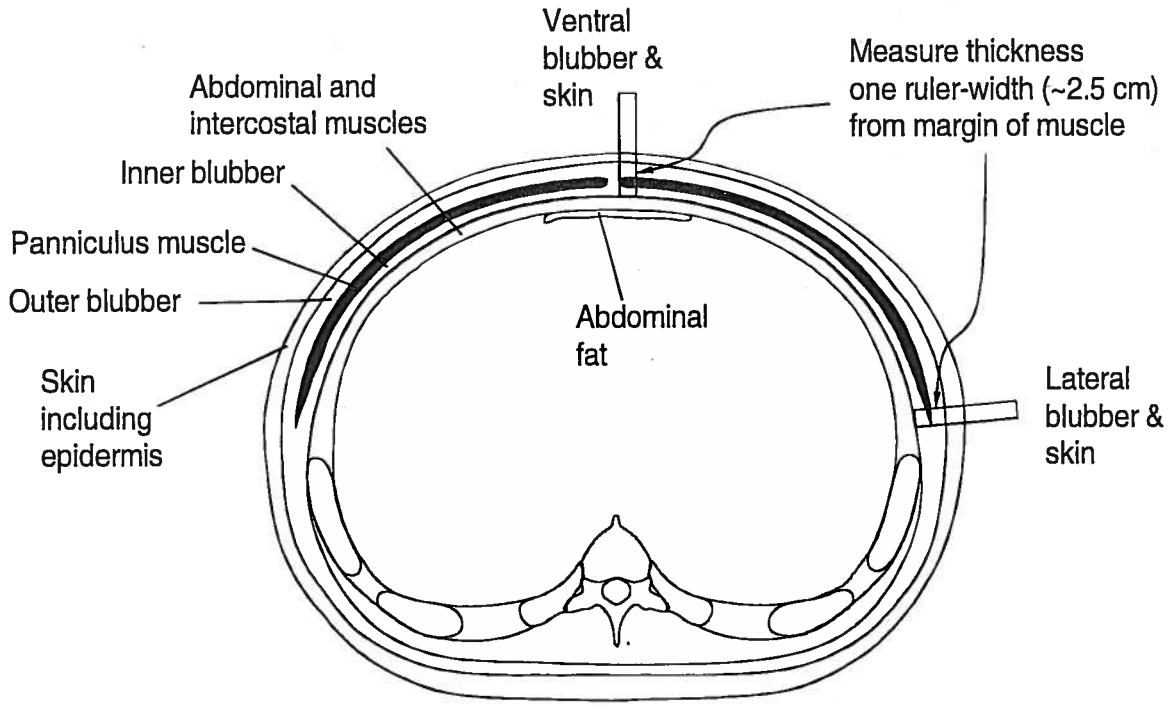
1. Total length _____ cm
2. Snout to anus -C _____ cm
3. Snout to U/G -C _____ cm
4. Snout to umbilicus -C ____ cm
5. Flipper width_____ cm
6. Fluke base _____ cm
7. Fluke width _____ cm
8.*Girth at fluke base ____ cm
9. * Girth at anus _____ cm
10. *Girth at umbilicus _____ cm
11. *Girth at axillae ____ 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 #** MEC19105
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: 11 December 201 **By**: FPL- Jennifer Pickett to FWC- WDG
Date collected: 12 December 201 **By**: FWC- SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 135 m N of 180 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: Recovered from intake well #4 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 #: **MEC19106**
Date of Report: 2019-Dec-11
Filed By: FWC MMPL

FWC Case #

FWC Region: NE

Sex: Male **Length:** 279 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-11 **By:** FPL-Jennifer Pickett to FWC-WDG

DATE COLLECTED: 2019-Dec-12 **By:** FWC-SMW

DATE NECROPSIED: 2019-Dec-13 **By:** MMPL-MdW,BDB,SMT,CMF

LOCATION: **State:** FL **Latitude:** 28.46822 **N**
County: Brevard **Longitude:** -80.76431 **W**
Waterway: Indian River
Locality description: Port St. John, floating in the FPL power plant intake well #3, approximately 135 m N of 180 Cottrell Avenue.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: The advanced stage of decomposition did not permit a causal factor to be determined. Bloody lung(s); Bloody nares; Lightly adhered left lung; Heavy lungs; Sediment in nares; Fluid in pleural cavities; Relatively empty, fluid-filled GI tract; Gritty texture abdominal organs; Loosely adhered intestines; Congested mesenteries; Dark red ascites; Specks parietal pleura. Found in FPL-CCEC intake well #3.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan positive (Left: 00-07BC-8402; Right: 00-06DD-8573). Cold stress lesions; Tracking belt present. Known as "Popehat", SWFTm1740b, TGA033, rescue in South Carolina 28 Nov 2017 and relocated to Port St. John.

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Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19106

MORPHOMETRICS:

Total length:	279 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. MEC19106
RECOVERY DATE 12 December 2019
GENDER Male **TL** 279 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 13 December 2019
CONDITION Badly Decomposed

HISTORY 11 December 2019, at 1440 hrs, FWC biologist-William D. Greer (WDG) received a text from Florida Power and Light (FPL)-Jennifer Pickett (JP) regarding a dead manatee at the FPL Canaveral power plant on the Indian River in Port St. John, Brevard County. JP stated that the carcass had a tracking belt, was white, and was inside intake well #3. At 1441 hrs, WDG received a verification photo. At 1708 hrs, FPL secured the carcass and a previously reported carcass (MEC19105) on a pallet at the FPL Canaveral power plant. **12 December**, FWC biologist-Sara M. Wappes arrived at the power plant at 0930 hrs, loaded the carcasses into the carcass trailer via FPL fork lift by 1000 hrs, and transported them to the MMPL arriving by 1235 hrs.

EXTERNAL All of the epidermis was missing. Bloody fluid exuded from the nares. The dermis was eroded on all aspects. The dermis of the face, flippers, and fluke was severely eroded due to decomposition. There were circular eroded cold stress-like lesions of various sizes on the face and fluke, some of which were raised. The caudal fluke margin was missing between the 3 and 8 o'clock positions which was associated with mutilations and erosion. The carcass had a tracking belt but no tether or tag. No watercraft-related wounds or scars were grossly observed. PIT tag scan was positive (Left: 00-07BC-8402; Right: 00-06DD-8573), known as "Popehat", SWFTm1740b, TGA033. A genetics sample was collected.

ABDOMINAL There was moderate, gassy abdominal, mesenteric, and omental fat. The loops of colon and small intestine were loosely adhered to each other. The abdomen contained 1.5 L of watery, dark red fluid. The peritoneum and all organs had a gritty texture.

STOMACH The stomach contained 0.25 L of watery, green fluid mixed with a small amount of moist, well-chewed, slightly stringy, light and dark green vegetation. The mucosa was autolyzed. The wall was dark grey. No parasites were observed.

DUODENUM The duodenum contained 0.75 L of watery, green fluid mixed with a small amount of moist, well-chewed, slightly stringy, light and dark green vegetation. The mucosa was autolyzed. The wall had dark grey bands surrounding the lymph nodules. No parasites were observed.

JEJUNUM & ILEUM The mesentery had patches of moderate congestion. The proximal small intestine contained a small amount of watery, green fluid mixed with a small amount of moist, well-chewed, slightly stringy, light and dark green vegetation. The mid small intestine contained a small amount of watery, flocculent, pink fluid. The distal small intestine contained of a small amount of watery, flocculent, brown fluid. The wall was coated with a thin layer of dark yellow paste throughout. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 1 L of watery, cloudy, light brown to green fluid mixed with a moderate amount of poorly digested, fibrous, stringy, dark green vegetation. The mucosa was autolyzed. There was a mild infection of dead trematodes. An ELISA toxicology sample was collected.

COLON The mesentery had patches of moderate congestion. The proximal colon contained a moderate amount of watery, flocculent, light brown to green fluid. The distal colon contained a small amount of wet, well-digested, pasty, poorly formed, dark green feces. The mucosa was autolyzed throughout. There was a moderate infection of dead trematodes.

PANCREAS The pancreas was soft. Serosal and cut surfaces were tan.

SPLEEN The spleen was soft. Serosal surfaces were mottled white and black, and cut surfaces were brown.

LIVER The liver was soft, friable, and autolyzed. An ELISA toxicology sample was collected.

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

REPRODUCTIVE There was moderate reproductive fat. The testes were moderate in size and autolyzed. 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 tan fluid.

KIDNEYS There was moderate, gassy perirenal fat. The kidneys were autolyzed.

URINARY BLADDER The 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 The right hemidiaphragm was torn at the cranial aspect due to decomposition. The left hemidiaphragm was intact. The right pleural cavity contained 1.5 L and the left contained 1 L of slightly viscous, dark red fluid. The parietal pleura had gelatinous black specks. The lungs were heavy. The right lung was autolyzed. The left lung was lightly adhered to the hemidiaphragm and parietal pleura. The left lung was mottled grey and light pink on serosal surfaces, and dark red and bloody on cut surfaces. The airways of both lungs contained a small amount of watery, dark red fluid. The mucosa was pink. No parasites were observed. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The trachea contained a small amount of watery, red fluid. The mucosa was dark pink. There was a scant amount of sediment in the nares.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-12-13_FWC047_4317 through 4330, 4350 through 4360

COMMENTS The carcass was found in FPL intake well #3 and had drowned. The carcass had very poor filling of the GI tract, but fat was not depleted yet. There were eroded cold stress-like lesions, but severity of cold stress could not be determined due to decomposition. It is possible the manatee was debilitated before it entered the well.

SIGNIFICANT FINDINGS

- Bloody nares
- Sediment in nares
- Fluid in pleural cavities
- Heavy lungs
- Bloody, lightly adhered left lung
- Relatively empty, fluid-filled GI tract
- Gritty texture abdominal organs
- Loosely adhered intestines

- Congested mesenteries
- Dark red ascites
- Cold stress-like lesions
- Specks parietal pleura
- Autolyzed internal organs
- Tracking belt present
- PIT tag positive, known as "Popehat", SWFTm1740b, TGA033
- Found in FPL-CCEC intake well #3

PROBABLE CAUSE OF DEATH Human; Other (Entrapment)

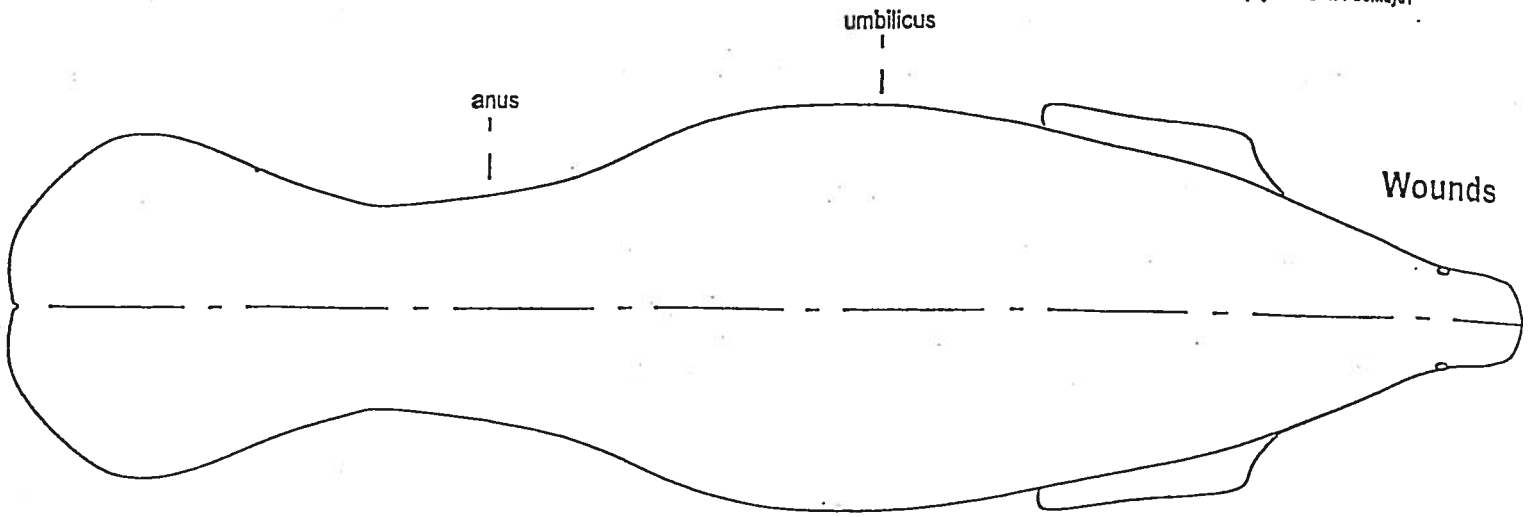
NECROPSY CONDUCTED BY

Martine de Wit, DVM
Brittany D. Barbeau
Sean M. Tennant
Christine M. Fontaine

REPORT FILED BY de Wit

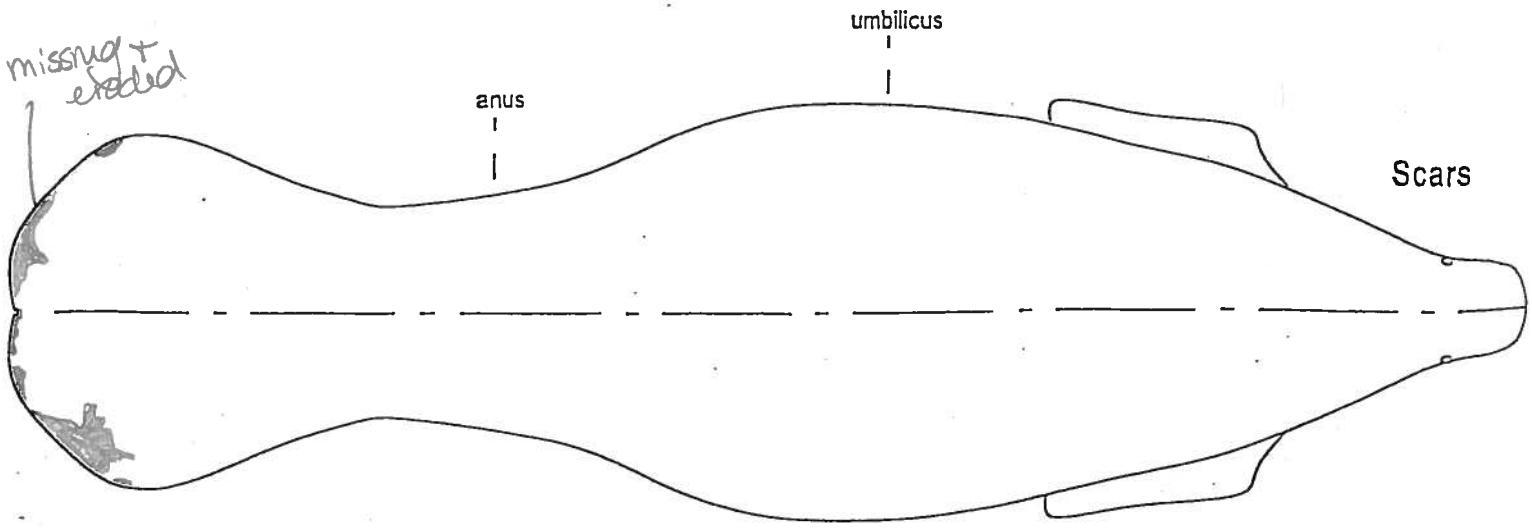
Date 13DEC2019 Field I.D. MEC1910C

c:\D-Old\Necropsy\scar2dat\30May01



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																				

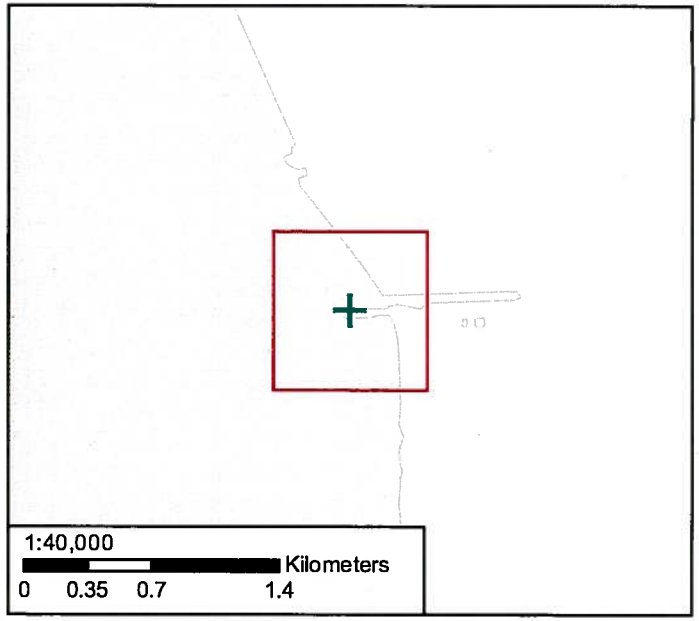
BDB

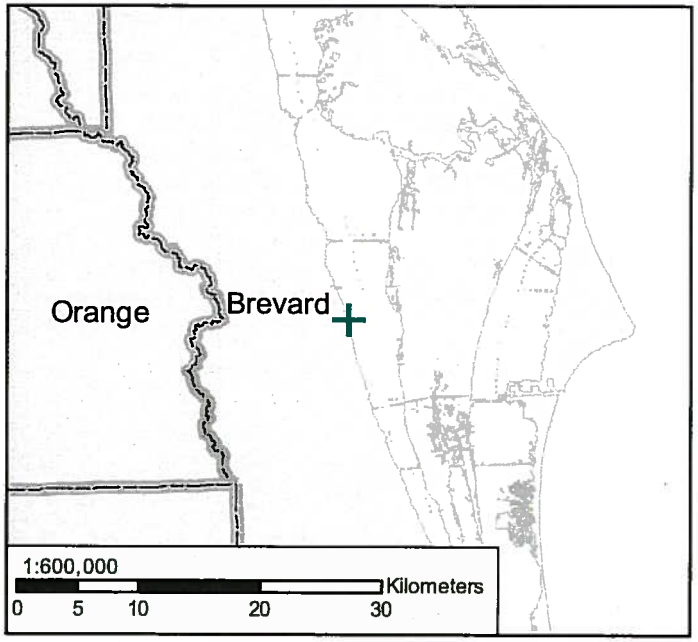


Verified Recovery Location of Manatee Carcass MEC19106

Report Date: 12/11/2019 **Received Date:** 12/12/2019 **Received By:** FWC-SMW Map Created: 1/20/2021







Locality Description:
Port St. John, Brevard
Floating, in the FPL power plant intake well #3, approximately 135 m N of 180 Cottrell Avenue.

Latitude: 28.46822°N **Longitude:** -80.76431°W

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19106
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A FWC District: NE
Sex: M / F / Undetermined Length: 279 cm (estimated _____) Weight _____ kg.
Date reported: 11 DEC 2019 By: FPL-Jennifer Pickett → FWC-ECFL
Date collected: 12 DEC 2019 By: FWC-SMW
Date necropsied: 13 Dec'19 By: MMPL MdW BDB SMT CMF

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 cecum contents
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 00 - 07BC - 8400)(Right 00 - 06DD - 8577); N/T

REMARKS: Belted animal - "Popehat"
Intake Well #3 - FPL CCEC

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19106
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: 11 December 201 **By**: FPL- Jennifer Pickett to FWC- WDG, SMW
Date collected: 12 December 201 **By**: FWC- SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Cocoa, approximately 135 m N of 180 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: Recovered from 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 #: **MEC19107**
Date of Report: 2019-Dec-13
Filed By: FWC EC Field Station

FWC Case #
FWC Region: NE

Sex: Female **Length:** 183 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-13 **By:** Citizen to FWC-WDG
DATE COLLECTED: 2019-Dec-13 **By:** FWC-WDG
DATE NECROPSIED: 2019-Dec-13 **By:** FWC-WDG

LOCATION:
State: FL **Latitude:** 28.55449 **N**
County: Brevard **Longitude:** -80.79598 **W**
Waterway: Indian River
Locality description: Titusville, floating approximately 65 m SE of 4749 S Washington Avenue.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Crumbly feces; Wet lung(s); Depleted fat(s); Cobblestone-like epidermis; Bleached epidermis; Serous fat(s); Dry feces; Bloody nares; Mud in trachea; Congested mesentery, colon serosa, stomach-, colon-, urinary bladder mucosa, abdominal wall; Fluid in airways.

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 mouth. Tunicates in GI tract.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19107

MORPHOMETRICS:

Total length:	183 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. MEC19107
RECOVERY DATE 13 December 2019
GENDER Female **TL** 183 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 13 December 2019
CONDITION Badly Decomposed

HISTORY 13 December 2019, at 0842 hrs, FWC biologist-William D. Greer (WDG) received a text and photo from Kennedy Point Marina Manager-Bruce regarding a dead manatee in the Indian River in Titusville, Brevard County. Bruce (321-362-1254) stated that there was a 5-foot-long dead manatee against the sea wall in the marina. WDG arrived at Kennedy Point Marina at 1015 hrs, towed the carcass by hand to the Kennedy Point Park boat ramp, and loaded it by 1050 hrs. WDG then collected MEC19108 from Kennedy Space Center before transporting both carcasses to the Brevard County Landfill. A field necropsy was completed at 1405 hrs.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. Bloody fluid exuded from the nares. There was a thin brown algal mat on the lateral aspects. A moderate infestation of barnacles was observed on the ventral aspect and dorsal fluke. The ventrum, lateral aspects, fluke, and flippers had cobblestone-like epidermis. The epidermis of the head and flippers was slightly bleached. 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. The peritoneum was slightly congested.

STOMACH The stomach contained 750 mL of moist, moderately chewed, fibrous, stringy, yellow to green ingesta mixed with a small amount of purple macroalgae (see photo). The contents were coated in white mucus. The mucosa was slightly congested. No parasites were observed.

DUODENUM The duodenum contained 150 mL of viscous, gray fluid mixed with a small amount of well-chewed, green ingesta (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, gray fluid. The distal small intestine contained viscous, black fluid. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 1.5 L of slightly moist, moderately chewed, poorly digested, very fibrous, leafy, green digesta mixed with a small number of white tunicates (see photo). The mucosa was sloughing. No parasites were observed.

COLON The mesentery and colon serosa were moderately congested (see photo). The proximal and mid colon contained moist, poorly formed, poorly digested, fibrous, leafy, brown feces mixed with a small number of white tunicates. The distal colon contained very dry, crumbly, well-formed, well-digested, fibrous, brown feces mixed with an abundant amount of white tunicates (see photos). The mucosa was black and sloughings. The distal colon wall was severely congested (see photo). There was a mild infection of dead trematodes in the mid and proximal colon.

PANCREAS The pancreas was soft, friable, and autolyzed.

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 blue to brown and cut surfaces were dark red to brown.

GALLBLADDER The gallbladder contained a small amount 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 There was scant perirenal fat. The kidneys were soft. Serosal surfaces were tan to dark red. 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 20 mL of flocculent, red fluid. The mucosa was slightly congested.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were soft and friable. Serosal surfaces were light pink to purple and cut surfaces were light pink to dark red. The lungs were very wet. The primary airways contained a moderate amount of watery, red-tinged fluid. 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.

OTHER

PHOTOGRAPHS 2019-12-13_FWC025_0685 through 0704.

COMMENTS

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Bloody nares
- Depleted, serous fat
- Wet lungs
- Fluid in airways
- Mud in trachea
- Dry, crumbly feces
- Congested mesentery, colon serosa, stomach-, colon-, urinary bladder mucosa, abdominal wall
- Macroalgae in mouth
- Tunicates in GI tract
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

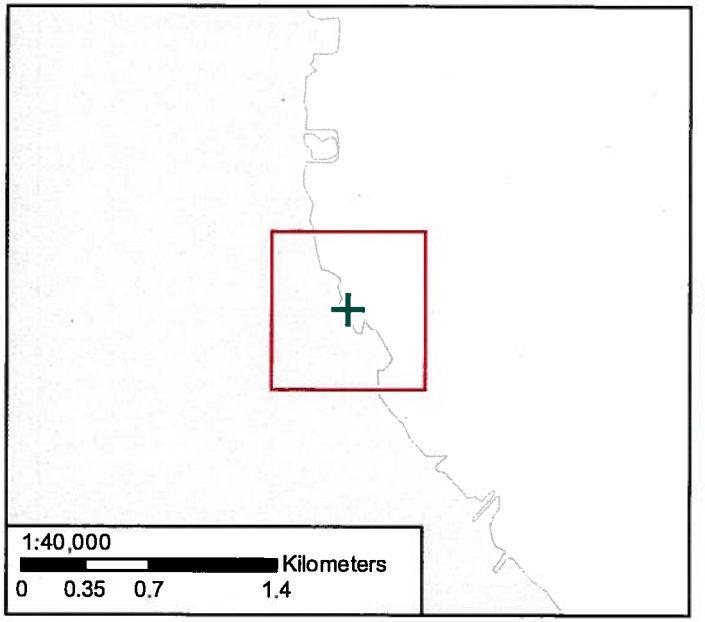
William D. Greer

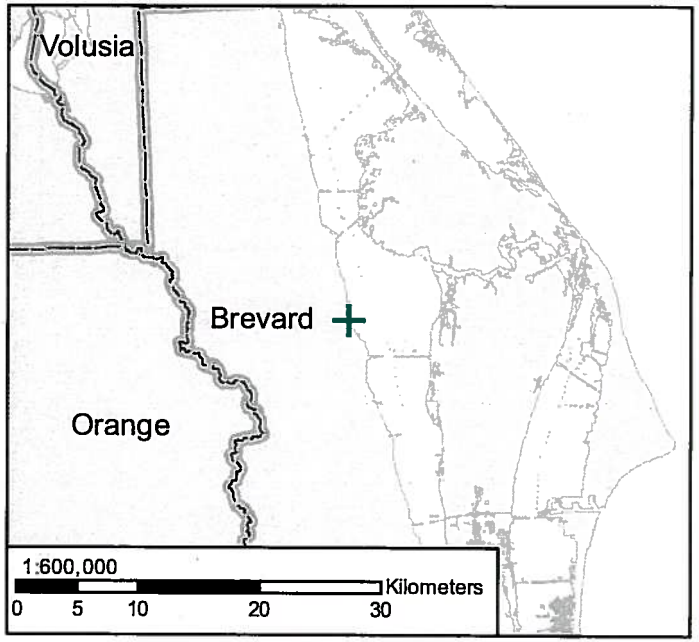
REPORT FILED BY Greer

Verified Recovery Location of Manatee Carcass MEC19107

Report Date: 12/13/2019 **Received Date:** 12/13/2019 **Received By:** FWC-WDG Map Created: 1/20/2021







Locality Description:
Titusville, Brevard
Floating, approximately 65 m SE of 4749 S Washington Avenue.

Latitude: 28.55449°N **Longitude:** -80.79598°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19107
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: 183 **Estimated** _____ **Weight (kg)** N/T
Date reported: 13 December 201 **By**: Citizen to FWC- WDG
Date collected: 13 December 201 **By**: FWC-WDG
Date necropsied: 13 December 2(**By**: FWC- WDG

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 65 m SE of 4749 South Washington Avenue
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: Small amount of serous fats, cobblestone skin on ventrum/fluke/flippers, head and flippers bleached, dry and hard feces in colon, congestion throughout 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 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 #: **MEC19108**
Date of Report: 2019-Dec-13
Filed By: FWC EC Field Station

FWC Case #

FWC Region: NE

Sex: Female **Length:** 229 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-13 **By:** USFWS-Mike Legari to FWC-WDG

DATE COLLECTED: 2019-Dec-13 **By:** FWC-WDG

DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.58377 **N**
County: Brevard **Longitude:** -80.64619 **W**
Waterway: Banana River
Locality description: Kennedy Space Center, grounded approximately 310 m ENE of the intersection of Saturn Causeway and Vab Road.

CONDITION: Confirmed; Not Necropsied

PROBABLE CAUSE OF DEATH: Verified; Not Necropsied

EXPLAIN: Verified by FWC staff. External exam performed, but full necropsy not performed.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC EC Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19108

MORPHOMETRICS:

Total length:	229 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. MEC19108
RECOVERY DATE 13 December 2019
GENDER Female **TL** 229 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE N/A
CONDITION Confirmed; Not Recovered

HISTORY 13 December 2019, at 1023 hrs, FWC biologist-William D. Greer (WDG) received a text and photo from US Fish and Wildlife Service biologist-Mike Legari regarding a dead manatee in the Banana River in Kennedy Space Center, Brevard County. Mike (321-289-8720) stated that the carcass was 7 feet long, all white, and was badly decomposed. WDG arrived at the carcass at 1140 hrs and loaded it by 1210 hrs. WDG transported MEC19107 and MEC19108 to the Brevard County Landfill. After completing the necropsy of MEC19107, poor weather prevented a full necropsy of MEC19108. The remains were disposed of at the Landfill.

EXTERNAL Approximately 20% of the epidermis was present but sloughing. The eyes were missing due to scavenging and bloody fluid exuded from the right eye socket. The carcass was distended with gas. There was a rent at the urogenital opening due to decomposition and/or scavenging. Two parallel superficial healing watercraft-related wounds were observed caudal to the left eye. No watercraft-related scars were observed. PIT tag scan was negative. A genetics sample was collected.

PHOTOGRAPHS 2019-12-13_FWC025_0705 through 0717.

COMMENTS

SIGNIFICANT FINDINGS

- Carcass collected by FWC staff, but necropsy not performed
- Healing watercraft wounds
- Scavenging

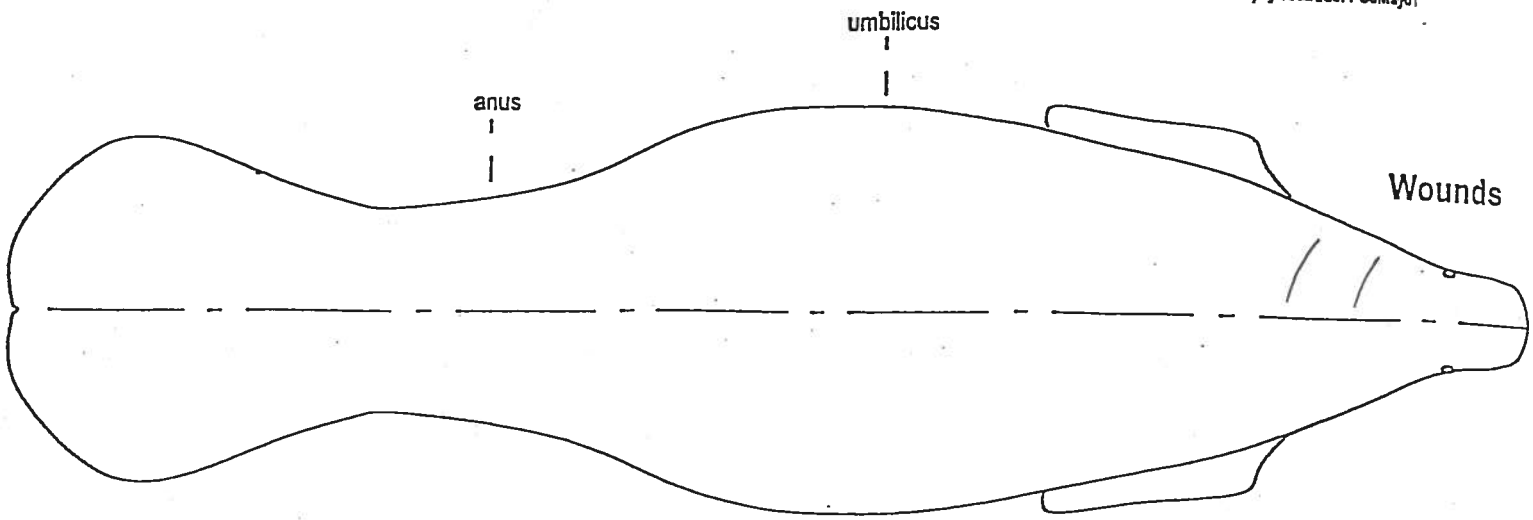
PROBABLE CAUSE OF DEATH Verified; Not Recovered

NECROPSY CONDUCTED BY N/A

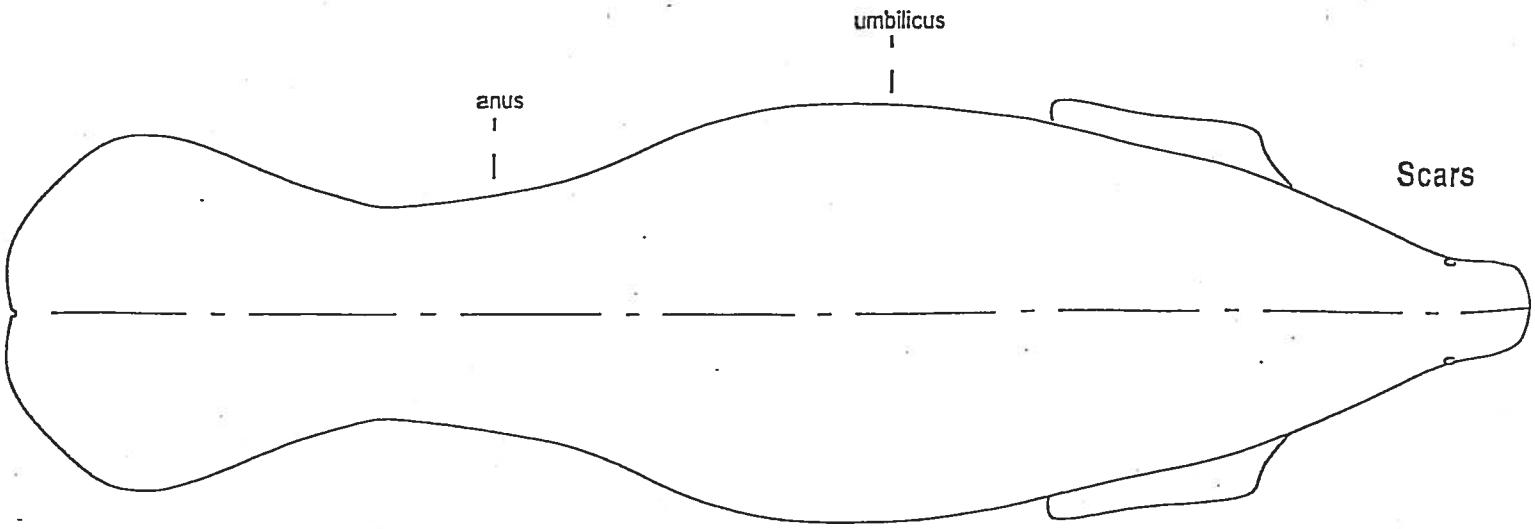
REPORT FILED BY Greer

Date _____ Field I.D. MEC19108

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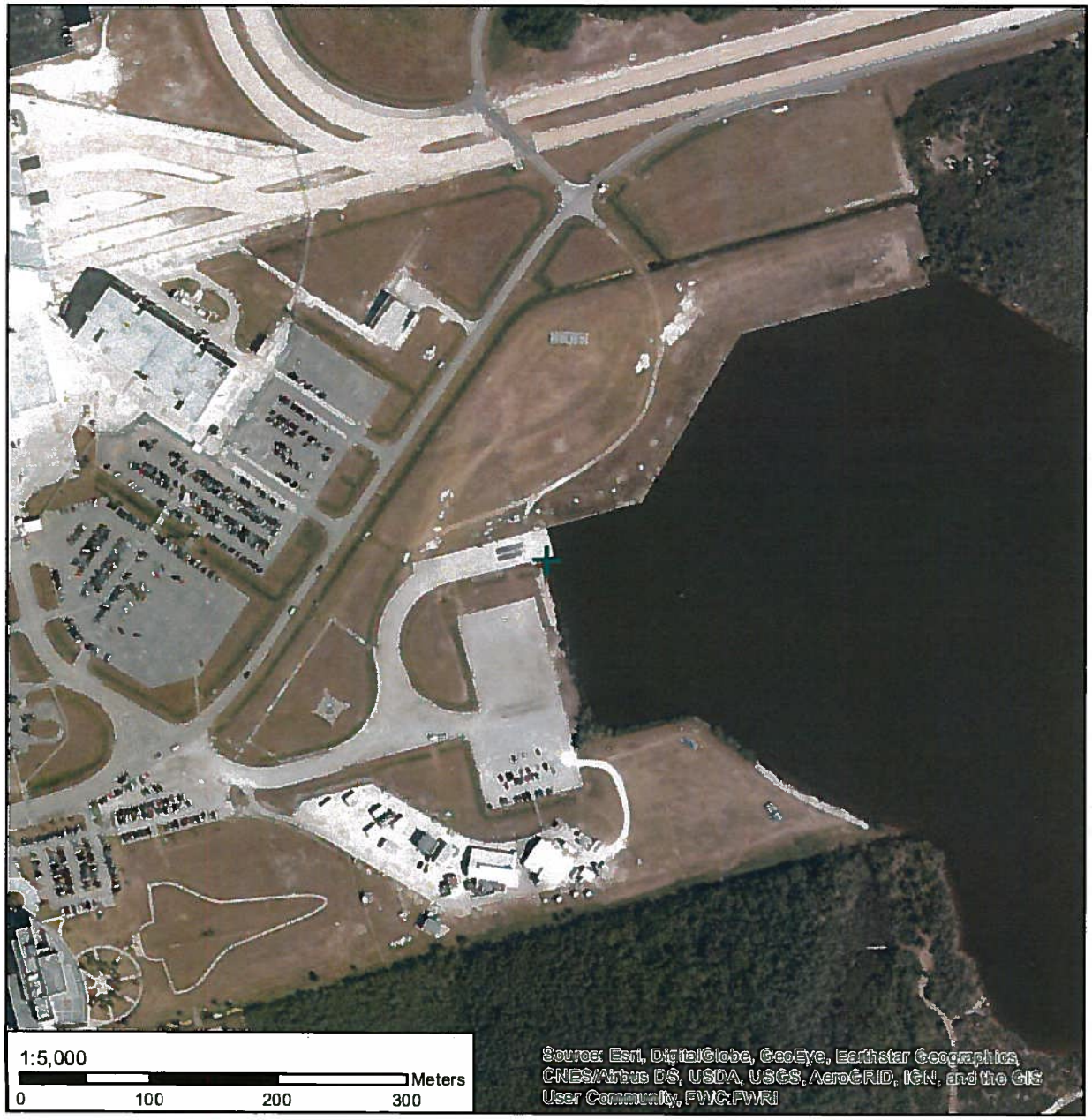


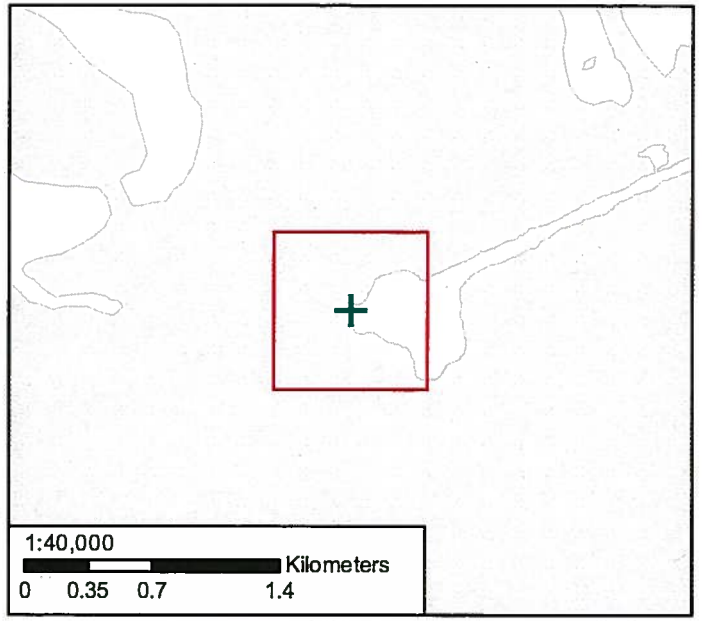
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Length																				
Width																				
Depth																				
Distance																				

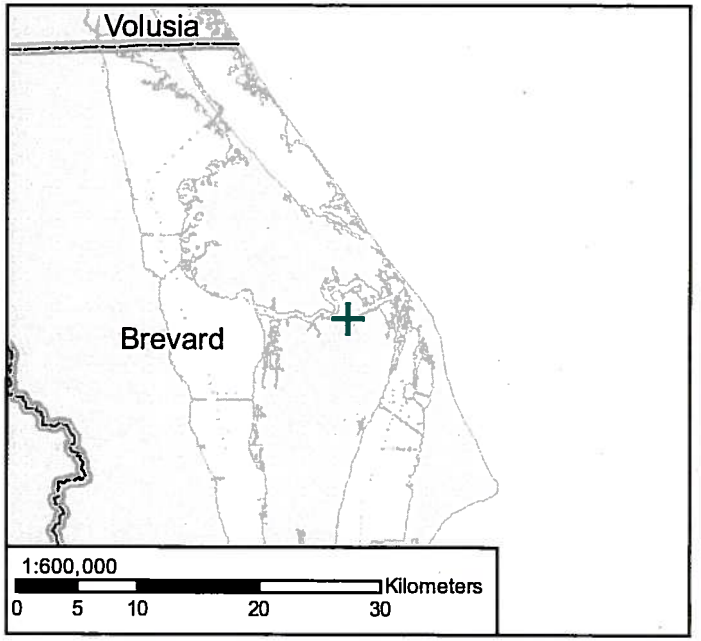


Verified Recovery Location of Manatee Carcass MEC19108

Report Date: 12/13/2019 **Received Date:** 12/13/2019 **Received By:** FWC-WDG Map Created: 1/20/2021







Locality Description:
Kennedy Space Center, Brevard
Grounded, approximately 310 m ENE of the intersection of Saturn Causeway and Vab Road.

Latitude: 28.58377°N **Longitude:** -80.64619°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19108
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: 229 **Estimated** _____ **Weight (kg)** N/T
Date reported: 13 December 201 **By**: USFWS- Mike Legari to FWC- WDG
Date collected: 13 December 201 **By**: FWC-WDG
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Banana River
Latitude: N _____ **Longitude**: W _____
Locality description: Kennedy Space Center, approximately 310 m ENE of the intersection of Saturn Causeway and Vab 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
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☑ Not Recovered
Explain: Carcass was recovered and taken to the Brevard Landfill but bad weather came in before a full necropsy could be completed. Photos, genetics, total length, pit tag scan were 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: 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 #: **MEC19109**
Date of Report: 2019-Dec-19
Filed By: FWC EC Field Station

FWC Case # 21993 **FWC Region:** NE

Sex: Male **Length:** 266 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-19 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-20 **By:** FWC-SMW

DATE NECROPSIED: 2019-Dec-20 **By:** FWC-SMW

LOCATION: **State:** FL **Latitude:** 28.57474 **N**
County: Brevard **Longitude:** -80.79804 **W**
Waterway: Indian River
Locality description: Titusville, grounded approximately 25 m E of 3585 S Washington Avenue.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Serous fat(s); Depleted fat(s); Bleached epidermis; Cobblestone-like epidermis; Relatively empty, fluid-filled GI tract; Fluid in airways.

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 21968.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19109

MORPHOMETRICS:

Total length:	266 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. MEC19109
RECOVERY DATE 20 December 2019
GENDER Male **TL** 266 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 20 December 2019
CONDITION Badly Decomposed

HISTORY 19 December 2019, at 1354 hrs, FWC biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee behind 3461 S Washington Avenue in the Indian River in Titusville, Brevard County. FWC case number 21968 was assigned. The complainant, Lynne Burnbaum (321-269-5872), stated to Dispatch that the carcass was large. At 1356 hrs and 1530 hrs, WDG called the complainant, but she didn't answer. **20 December**, at 0825 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from Dispatch regarding a dead manatee behind 3550 S Washington Avenue. FWC case number 21993 was assigned. The complainant, Steve Dunn (321-607-2311), stated that the carcass was at least 7 feet long and belly-up. At 0832 hrs, SMW received a verification photo. SMW arrived at Shiloh's Steakhouse at 1005 hrs, launched a kayak, and located the carcass at 1020 hrs. SMW secured the carcass to a secluded beach at 1100 hrs, and completed a field necropsy at 1250 hrs. The remains were left on-site.

EXTERNAL Approximately 20% of the epidermis was present but sloughing. Portions of the exposed dermis were eroded due to decomposition. The remaining ventral epidermis appeared bleached, and portions had a cobblestone-like appearance. The carcass was distended with gas. Watery, red fluid exuded from the nares. A few small barnacles were present on the remaining epidermis. A minimum of one, eroded, well-healed watercraft-related scar pattern was observed on the left lateral aspect. The fluke margin was eroded due to decomposition. There was one well-healed mutilation at the 10 o'clock position of the fluke. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained 50 mL of viscous, pink fluid (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 750 mL of viscous, pink fluid (see photo). The mucosa had gray specks. No parasites were observed.

JEJUNUM & ILEUM The proximal and mid small intestine were empty of contents. The distal small intestine contained viscous, gray fluid. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 50 mL of viscous, olive green to gray fluid mixed with a small amount of fibrous pieces of digesta (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The proximal and mid colon contained a small amount of small, brown, fibrous pieces of feces. The distal colon contained a small amount of small diameter pieces of moist, poorly formed, moderately digested, slightly tacky, fibrous, green to brown feces (see photo).

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

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

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

GALLBLADDER The gallbladder contained a small amount of orange to brown bile. The mucosa was bile-stained.

REPRODUCTIVE There was a small amount of serous reproductive fat. The testes and seminal vesicles were medium-sized. There was no fluid on cut surfaces of the epididymides.

KIDNEYS There was scant, serous perirenal fat. The kidneys were soft and friable. The right kidney was dark red on serosal surfaces. On cut surfaces, the cortices and medullae were dark red. The left kidney was pink to dark red on serosal surfaces. On cut surfaces, the cortices were pink and the medullae were pink to dark red. The corticomedullary boundaries were indistinct in both kidneys.

URINARY BLADDER The urinary bladder contained 5 mL of watery, pink fluid. The mucosa was unremarkable.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left hemidiaphragm was distended due to gas in the pleural cavity (see photo). The left parietal pleura was white and the right parietal pleura was pink to red (see photo). The left lung was light gray and light pink to purple on serosal surfaces, and gray to pink on cut surfaces. The primary airway contained a small amount of watery, red fluid. The mucosa was pink. The right lung was pink to dark red on serosal surfaces and red on cut surfaces. The primary airway contained a moderate amount of watery, red fluid. There was a mild infection of dead trematodes. The mucosa was dark red.

HEAD & NECK REGIONS The mucosa of the trachea was moderately rugose and dark red to brown (see photo).

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-12-20_FWC023_8445, 8446, 8448 through 8457, 8459 through 8461, 8463 through 8473, 8475 through 8477, 8480.

COMMENTS The carcass was reported after severe cold in the first week of December.

SIGNIFICANT FINDINGS

- Bleached, cobblestone-like epidermis
- Depleted, serous fat
- Relatively empty, fluid-filled GI tract
- Fluid in airways

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

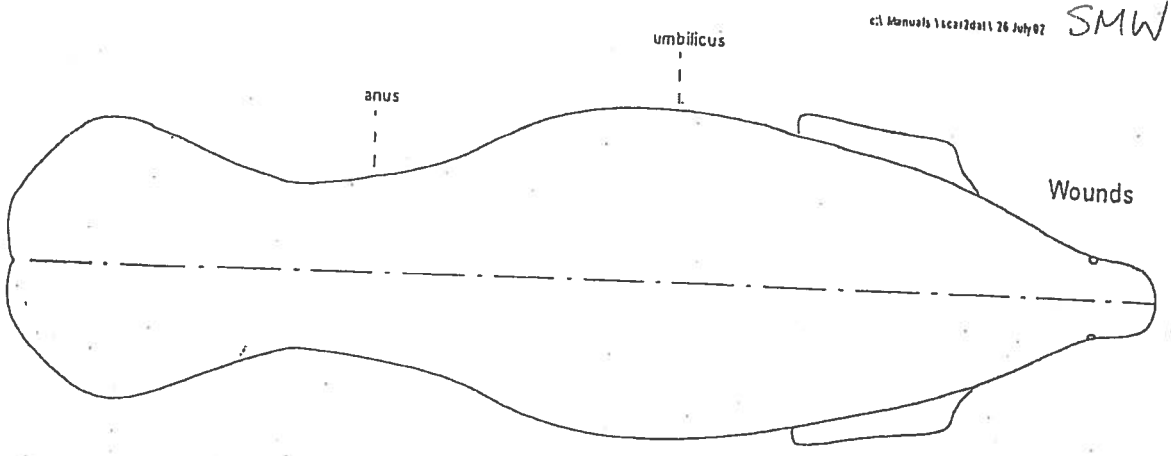
Sara M. Wappes

REPORT FILED BY Wappes

Date 12/21/19

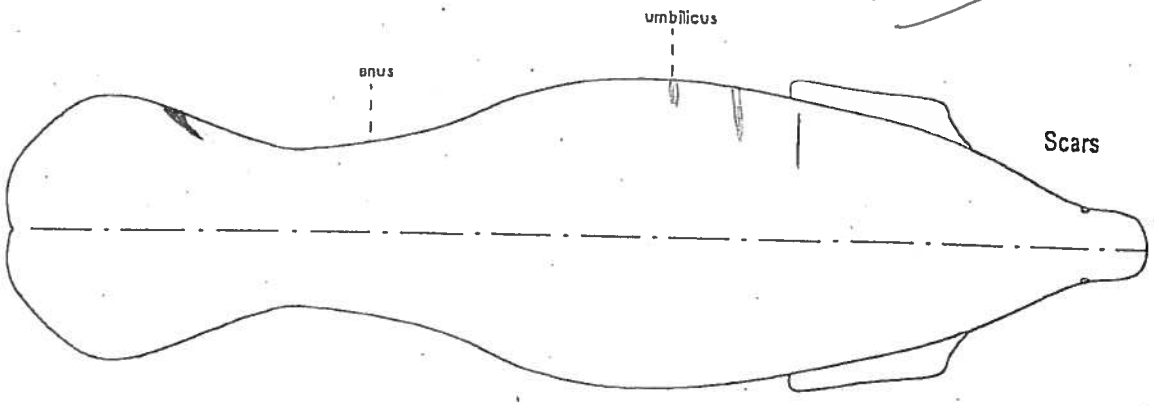
Field I.D. MEC19109

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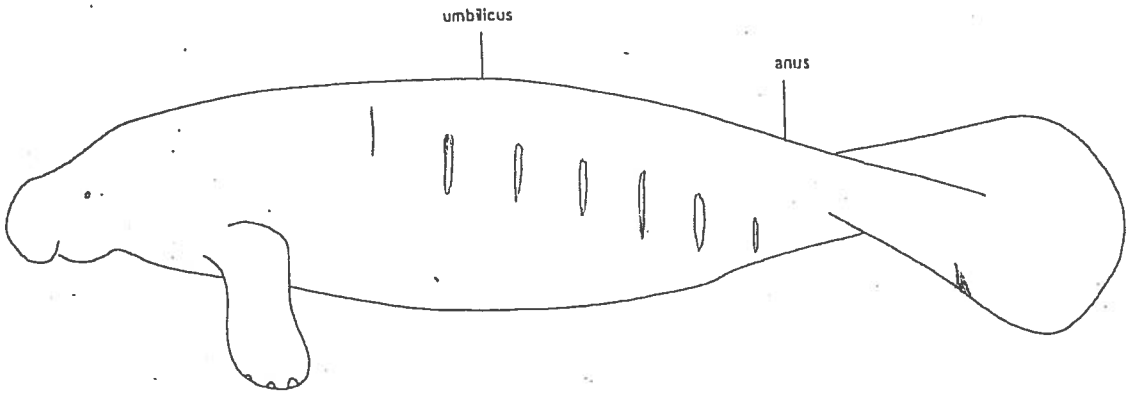


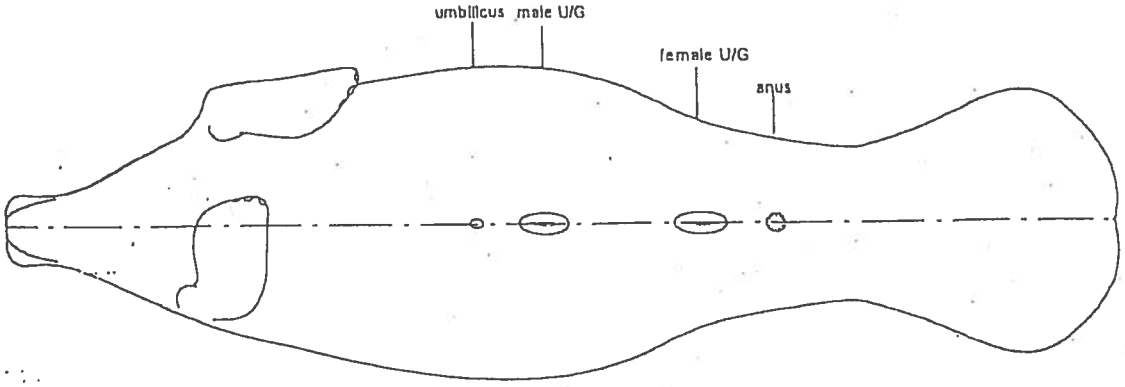
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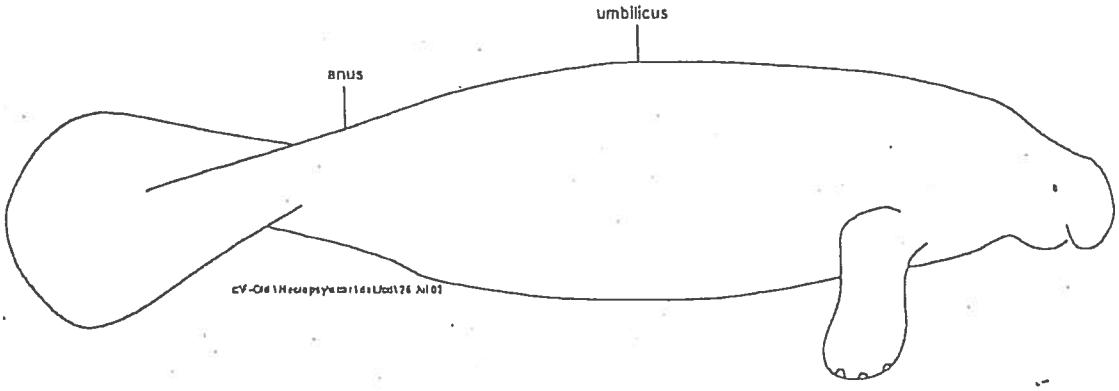
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FIELD I.D. MEC 19109



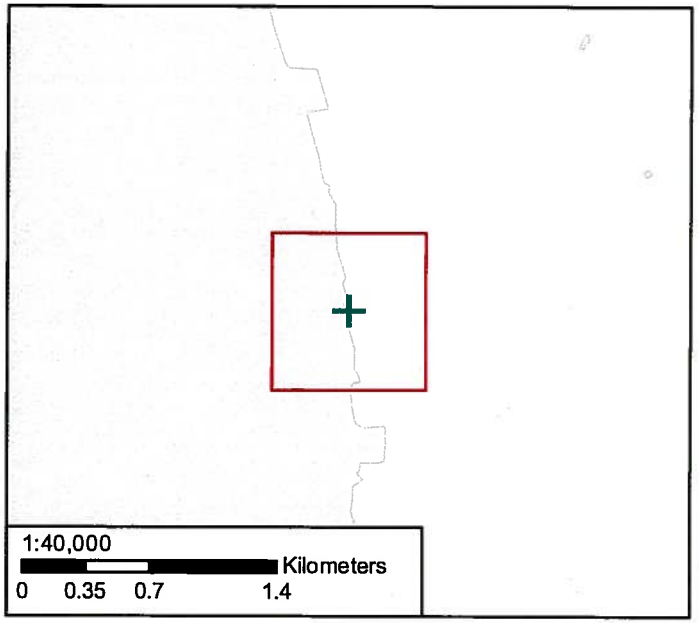


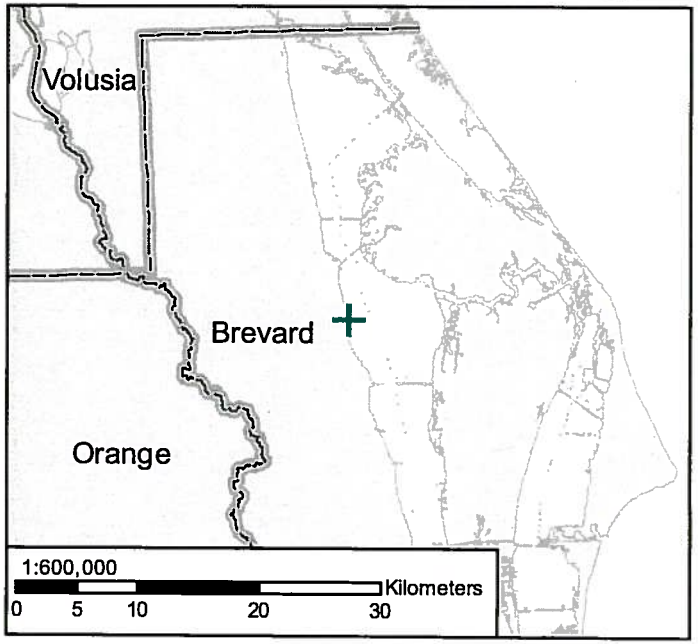


Verified Recovery Location of Manatee Carcass MEC19109

Report Date: 12/19/2019 **Received Date:** 12/20/2019 **Received By:** FWC-SMW Map Created: 1/20/2021







Locality Description:
Titusville, Brevard
Grounded, approximately 25 m E of 3585 S Washington Avenue.

Latitude: 28.57474°N **Longitude:** -80.79804°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19109
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 21968, 21993 **FWC District**: Northeast
Sex: Male **Length (cm)**: 266 **Estimated** _____ **Weight (kg)** _____
Date reported: 19 December 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 20 December 201 **By**: FWC-SMW
Date necropsied: 20 December 2(**By**: FWC-SMW

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Titusville, approximately 25 m E of 3585 S Washington 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: Bleached epidermis, serous fats, empty or fluid-filled GI tract, internal organs soft, friable.

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 #: **MEC19110**
Date of Report: 2019-Dec-22
Filed By: FWC MMPL

FWC Case # 22136 **FWC Region:** NE

Sex: Male **Length:** 190 **cm** **Weight:** 165.0 **kg**

DATE REPORTED: 2019-Dec-22 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-22 **By:** FWC-SMW

DATE NECROPSIED: 2019-Dec-23 **By:** MMPL-MdW,BLB,ALP,SMT,CMF,TDW

LOCATION: **State:** FL **Latitude:** 28.20103 **N**
County: Brevard **Longitude:** -80.60651 **W**
Waterway: Grand Canal
Locality description: Satellite Beach, grounded approximately 50 m WSW of 368 West Arlington Street.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Natural: Other

EXPLAIN: Serous fat(s); Depleted fat(s); Bleached epidermis; Wet lung(s); Swollen lung with small abscesses; Fluid, fibrin in pleural cavity; Foam, mucus in airways; Petechiae right lung serosa, colon mesenteric fat; Congested fat, peritoneum, hemidiaphragms, parietal pleura, airway mucosa, mesenteries, heart; Sediment, mucus in nares; Tan region myocardium; Enlarged lymph nodes; Red-tinged ascites; Discoloration stomach-, duodenum mucosa; Fluid-filled duodenum; Macroalgae in upper GI tract; Vegetation in mouth.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Archive toxicology samples, Histology. Sedimentation sample of small intestine for parasitology. Microbiology samples: lung swab. Cytology.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Bacteriology report. Histology report. Cytology report.

REMARKS:

PIT tag scan negative. Found dorsum-up.

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Field ID #: MEC19110

MORPHOMETRICS:

Total length:	190 cm	**Fluke base:**	55 cm	**Girth at axillae:**	116 **cm**
Snout to anus:	128 cm	**Fluke width:**	50 cm		
Snout to U/G:	81 cm	**Girth at fluke base:**	84 cm		
Snout to umbilicus:	70 cm	**Girth at anus:**	100 cm		
Flipper width:	13 cm	**Girth at umbilicus:**	147 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	1 cm	1.8 cm		
Outer Blubber Thickness:	1.3 cm	0.2 cm	**Abdominal Fat Thickness:**	0.4 cm
Inner Blubber Thickness:	0.7 cm	1 cm	**Epidermis Thickness:**	0.01 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 (Small amount of clear, watery 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. MEC19110
RECOVERY DATE 22 December 2019
GENDER Male **TL** 190 **cm WT** 165 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 23 December 2019
CONDITION Fresh

HISTORY 22 December 2019, at 1353 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Berkeley Canal in Satellite Beach, Brevard County. FWC case number 22136 was assigned. The complainant, Anda (321-427-5476), stated that she had seen the carcass at 0700 hrs and it hadn't moved. SMW requested FWC LE assistance to confirm and tow the carcass, but no officers were available due to inclement weather. SMW arrived at Berkeley Canal at 1435 hrs, verified the carcass at 1442 hrs, loaded it at 1500 hrs, and transported it to the MMPL arriving at 1747 hrs.

EXTERNAL All of the epidermis was present. Copious viscous clear mucus exuded from the nares. The epidermis was bleached on the flippers and fluke margin. The epidermis had bleached spots on the ventral aspect associated with barnacle scars. No watercraft-related wounds were observed. A minimum of one watercraft-related scar pattern was observed. The fluke had a small circular mutilation with fringed epidermis on the margin at the 3 o'clock position, and a small protrusion at the 6 o'clock position. There was a thin green algal mat on the dorsal aspect. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was a small amount of yellow abdominal fat, and a small amount of serous mesenteric and omental fat. The abdominal fat and peritoneum had streaks of severe congestion and petechiae. The cranial and caudal mesenteric lymph nodes were enlarged. The serosal surfaces were dark purple and the cut surfaces were tan to purple. The abdomen contained 250 mL of red-tinged fluid.

STOMACH The stomach contained 3.5 L of moist, fibrous, leafy, well-chewed, dark green ingesta mixed with a moderate amount of well-chewed, light brown and light red macroalgae. The ingesta were coated with a thick layer of tan to light pink mucus. The mucosa had patches of red discoloration in the minor curvature and was otherwise light pink. No parasites were observed. An ELISA toxicology sample was collected.

DUODENUM The duodenum contained 700 mL of watery light green fluid mixed with a small amount of fibrous leafy well-chewed dark green ingesta, well-chewed light brown and light red macroalgae, and segmented white macroalgae. The mucosa was light pink and had streaks of green discoloration. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The small intestine contained an abundant amount of viscous, grey fluid mixed with well-chewed, slightly fibrous, dark green ingesta and light red and light brown macroalgae, and segmented white macroalgae. The mucosa was unremarkable. The Peyer's patches were prominent. There was a mild infection of pinpoint trematodes in the lumen of the proximal small intestine, and a severe infection in the mid and distal small intestine. *Nudacotyle undicola* was identified on microscopic examination of a mid small intestine fluid sedimentation sample.

CECUM The cecum contained 1 L of moist, well-digested, slightly stringy, slightly fibrous, leafy, dark brown digesta. The mucosa was sloughing. No parasites were observed.

COLON The mesentery was severely congested. The mesenteric fat had several regions with petechiae. The proximal colon contained a moderate amount of moist, well-digested, moderately formed, slightly leafy, stringy, dark brown feces. The distal colon contained a moderate amount of moist, well-digested, slightly stringy, moderately formed, dark brown feces. The mucosa was sloughing and black throughout. No parasites were observed.

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

SPLEEN The spleen was mottled white and purple on serosal surfaces, and dark red on cut surfaces. There was one accessory spleen observed.

LIVER The margins of the liver were rounded. The liver was slightly firm. The serosal surfaces were red to purple and the cut surfaces were purple to brown. An ELISA toxicology sample was collected.

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

REPRODUCTIVE There was scant serous reproductive fat. The reproductive organs were small. The seminal vesicles and epididymides contained a small amount of clear watery fluid on cut surfaces.

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

URINARY BLADDER The bladder contained 3 mL of clear light yellow urine. The mucosa was unremarkable. An ELISA toxicology sample was collected.

HEART There was scant serous epicardial fat. The left ventricle myocardium had a region of moderate congestion. There was an approximately 1 cm diameter tan region in the myocardium of the right ventricle. The valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact and severely congested. The right parietal pleura was severely congested. The right pleural cavity contained 750 mL of watery, flocculent, yellow fluid. The right lung, hemidiaphragm, and parietal pleura were coated with loosely adhered white to tan fibrin-like material. The cranial one-third of the right lung was swollen and firm. The serosal surfaces of this portion were tan, light pink, and light purple. The cut surfaces were tan to pink and had small abscesses. The remainder of the right lung serosal surfaces were dark pink to dark purple with numerous petechiae. The cut surfaces were red to dark red and wet. The left lung was mottled pink, purple, and red on serosal surfaces, and dark pink to red and wet on cut surfaces. The airways of both lungs contained an abundant amount of white foam and red-tinged mucus. The mucosa was red to purple and moderately congested. No parasites were observed. The T-septal lymph nodes were enlarged. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS There was a small thatch of poorly chewed, very fibrous, woody, brown vegetation in the mouth. An ELISA toxicology sample was collected. There was a small amount of soft brown sediment in the nares. The trachea contained a small amount of viscous, clear to white mucus.

SKELETON NVL.

OTHER The cortex:medulla ratio of the adrenal glands was 2:1.

PHOTOGRAPHS 2019-12-23_FWC047_4385 through 4392, 4394, 4395, 4397, 4400 through 4432

COMMENTS

SIGNIFICANT FINDINGS

- Bleached epidermis
- Copious mucus from nares

- Depleted, serous fat
- Fluid, fibrin in right pleural cavity
- Swollen lung with small abscesses
- Petechiae right lung serosa, colon mesenteric fat
- Wet lungs
- Foam, mucus in airways
- Congested fat, peritoneum, hemidiaphragms, parietal pleura, airway mucosa, mesenteries, heart
- Sediment in nares
- Tan region myocardium
- Enlarged lymph nodes
- Red-tinged ascites
- Discoloration stomach-, duodenum mucosa
- Fluid-filled duodenum
- Macroalgae upper GI tract
- Vegetation in mouth

PROBABLE CAUSE OF DEATH Natural; Other

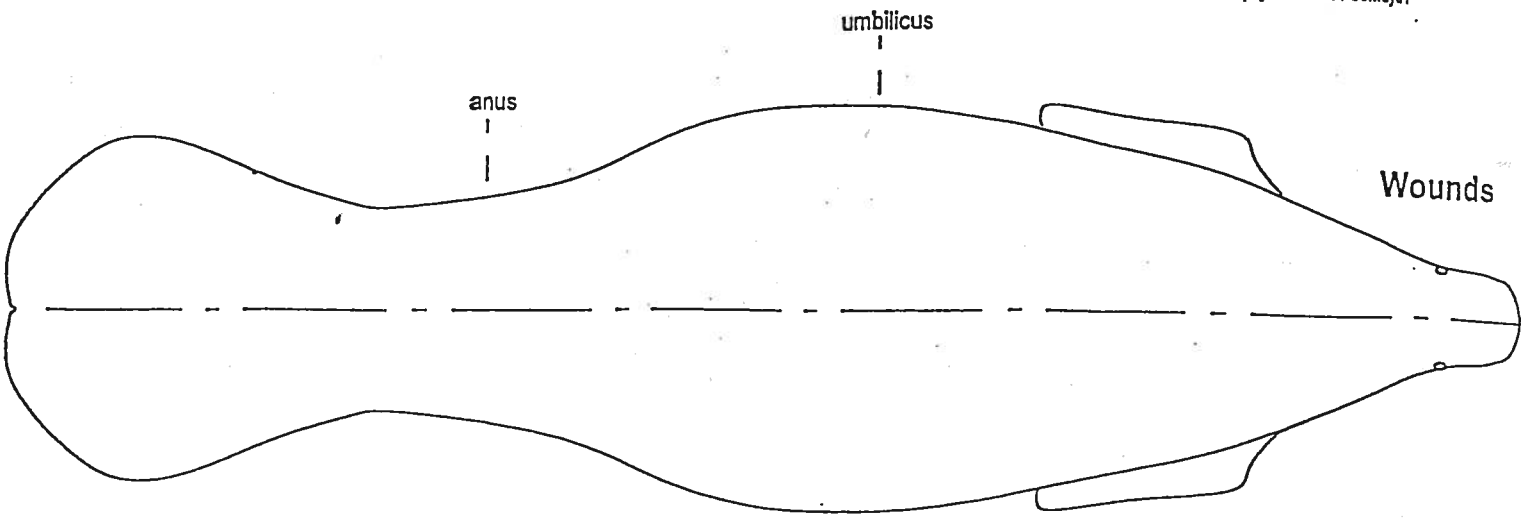
NECROPSY CONDUCTED BY

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

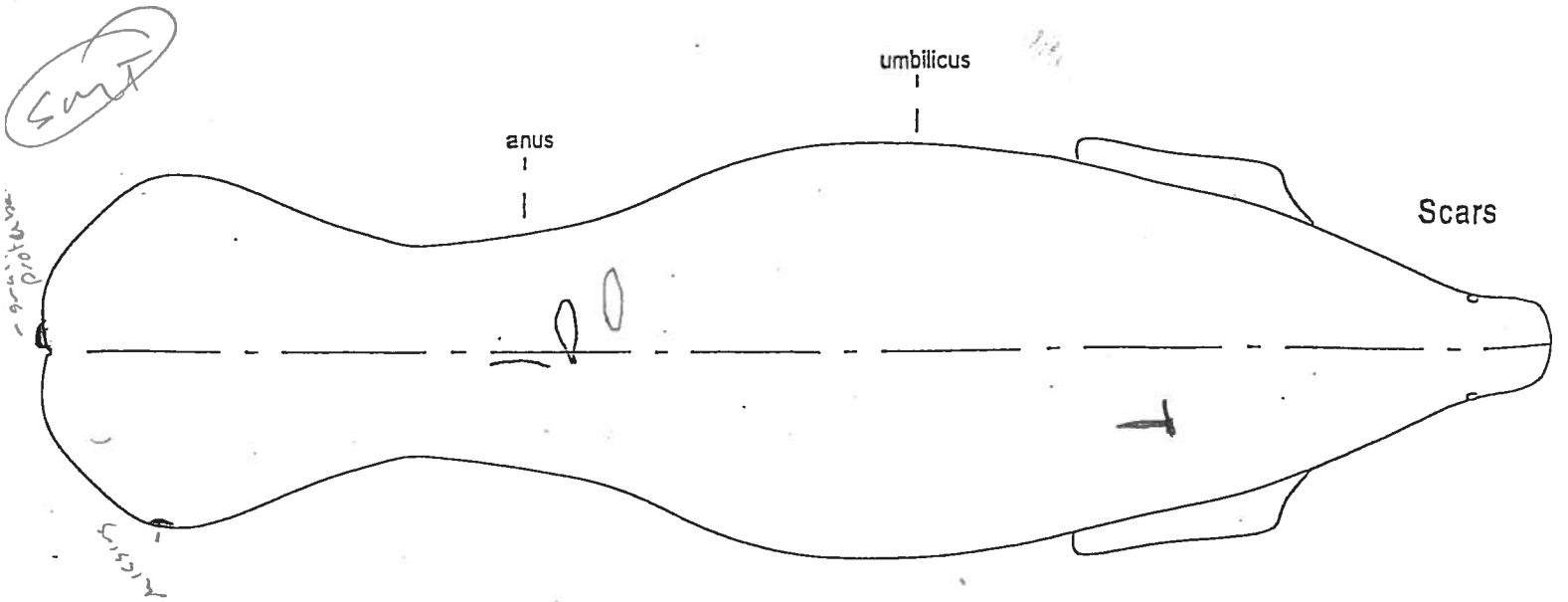
REPORT FILED BY de Wit

Date 23 DEC 2019 Field I.D. MEC1910

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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																				

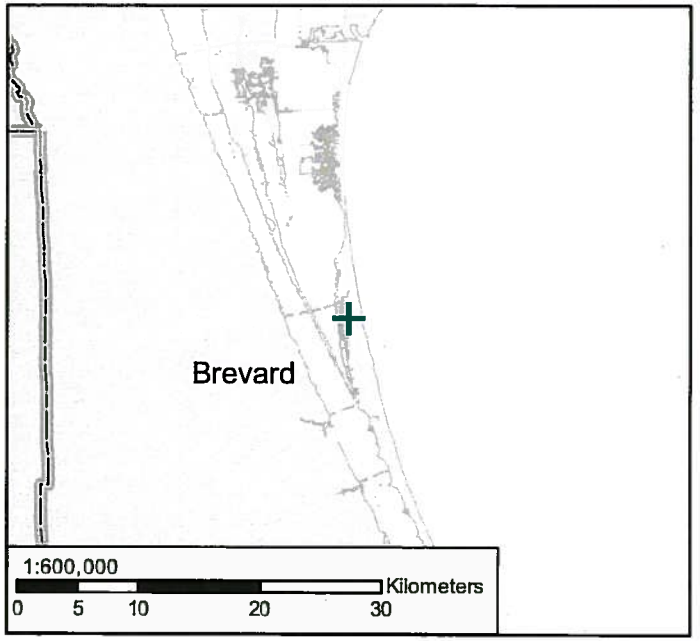


Verified Recovery Location of Manatee Carcass MEC19110

Report Date: 12/22/2019 **Received Date:** 12/22/2019 **Received By:** FWC-SMW Map Created: 1/20/2021







Locality Description:
Satellite Beach, Brevard
Grounded, approximately 50 m WSW of 368 West Arlington Street.

Latitude: 28.20103°N **Longitude:** -80.60651°W

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:**	403221
Client Name:	Res-Aquatic Animal Health	**Patient Name:**	MEC19110
Client Address:	2015 SW 16th Ave. Gainesville, FL 32610	**Received Date:**	12/24/2019
		Specimen:	Lung swab
Primary Phone#	(352) 294-4198		
Clinician:	Clinical Micro Parasitology (collective staff)		
Ordered Tests:	Aerobic culture NO suspt.		
Pending Tests:			
Requisition #	064368	**Finalized By:**	AB 12/27/19

Preliminary Results

Comments:

Final Results

Moderate growth:
Pasteurella multocida ss multocida

Comments:

Technician: MG **Date** 12/24/2019, 12/27/19

Click here to take our survey

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: December 24, 2019	**COLLECTION DATE:** December 23, 2019
ANIMAL ID: MEC19110	**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:
Marked heterophilic and lesser histiocytic pneumonia with mixed bacterial infection
Presence of frequent extracellular and phagocytized bacilli: predominance of small bipolar bacilli, lesser other mixed bacilli
Presence of frequent crystals suggestive of salt origin
Alveolar and ciliated respiratory epithelial cell hyperplasia

COMMENT: No yeast/fungus, parasites, or neoplastic cells are identified. The cytological findings are consistent with chronic-active bacterial pneumonia (consider primary vs. opportunistic in context of clinical findings of this patient). 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

NECROPSY REPORT
FINAL REPORT

Field ID: MEC19110
Alternate Field ID:
Accession Number: 20-078
Species: *Trichechus manatus latirostris*
Date: 22 Dec 2019 (DOR); 23 Dec 2019 (DON)
Location: FL
Sex, Age: M
TL: 190 cm
WT: 165 kg
Body Condition: Thin
Condition at Investigation: Dead
Carcass Disposition/Post-Mortem Interval: 24> hours

HISTORY

Findings include:

- Bleached epidermis
- Depleted fat
- Fluid, fibrin pleural cavity
- Swollen lung with small abscesses
- Wet lungs
- Foam, mucus airways
- Congested fat, peritoneum, hemidiaphragms, parietal pleura, airway mucosa, mesenteries, heart
- Sediment in nares
- Tan region myocardium
- Enlarged lymph nodes
- Red-tinged ascites
- Discoloration stomach-, duodenum mucosa
- Fluid-filled duodenum
- Macroalgae upper GI tract
- Vegetation mouth

Summary: Natural; Other

ANCILLARY DIAGNOSTICS

Test	Tissue/Sample	Result	Comment
Cytology	Lung imprint	Heterophilic bacterial pneumonia	Mixed bacteria
Microbiology	Lung wasb	Pasturella multocida ss multocida	

Test	Tissue/Sample	Result	Comment

MICROSCOPIC DESCRIPTION

Received 10 Feb 2020 are 11 H&E slides.

There is mild hepatic sinusoidal congestion. There is mild renal congestion.

There is mild, diffuse gastric mucosal and submucosal congestion. The mucosa is intact. There is mild congestion of duodenal mucosal vessels. There is expansion of the proximal and distal small intestine submucosa by clear spaces (edema).

Alveolar spaces of the left contain granular eosinophilic debris and few macrophages. There is diffuse, moderate congestion. The pleura of the right lung is coated with fibrin, necrotic cellular debris, heterophils, and small colonies of bacterial coccobacilli. There is expansion of the pleura by lightly eosinophilic proteinaceous fluid (edema). There is moderate congestion. Alveolar spaces are flooded with lamellar fibrin, extravasated erythrocytes, heterophils, and macrophages. There is diffuse depletion of pancreatic acinar zymogen granules.

The T-Septal lymph node is moderately depleted. There is expansion of the parenchyma by fibrillar proteinaceous substance (fibrin) admixed with heterophils and macrophages. Few bacterial coccobacilli are present. There is coating of the capsule by fibrin and heterophils with entrapped necrotic cellular debris. There is moderate congestion of capsular vessels. There is expansion of the parenchyma of the caudal mesenteric lymph node by clear spaces (edema).

There is loss of melanin granules in the basal epithelial cells of the skin.

The following tissues have no significant histological findings: Adrenal gland, distal large intestine, spleen, peduncle muscle, heart, brain,

MORPHOLOGIC DIAGNOSES

Musculoskeletal System/Integumentary System

A. Skin, Axilla: Depigmentation (leukoderma).

Respiratory System

A. Lung: Pleuropneumonia, fibrinosuppurative, subacute, diffuse, marked with pleural edema and intralesional bacterial coccobacilli.

Nervous System
NSF

Urinary and Reproductive System
NSF

Digestive System/Body as a Whole
A. Small Intestine: Submucosal edema, multifocal, mild.
B. Intestine and Stomach: Congestion, diffuse, mild.

Cardiovascular System
NSF

Hepatobiliary System
A. Liver: Congestion, diffuse, mild.

Endocrine System
NSF

Hematolymphatic System
A. T-Septal Lymph Node: Lymphadenitis, fibrinosuppurative, acute, diffuse, moderate with rare intralesional bacterial coccobacilli.
B. Caudal Mesenteric Lymph Node: Congestion, diffuse, moderate.

INTERPRETATIVE SUMMARY

DIAGNOSES
Bacterial Pleuropneumonia
Bacterial Lymphadenitis

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

Linked Cases: 20-78-MEC20007

Death is attributed to bacterial pneumonia, likely secondary septicemia, and hemorrhagic diathesis that may be the result of bacterial toxins. Pure culture of Pasturella multocida ss multocida was isolated from the lung and is the attributed causative agent. While not found as the sole pathogen, this organism was isolated from MEC20007 (see pathology report 20-78). Based on the shared findings, Pasturella was either the sole or contributory cause of pneumonia.

Paturella multocida has 16 serotypes and P. multocida ss multocida is associated with illnesses in cattle, some of which are related to stress and environmental conditions. Animals in close proximity may spread the bacteria. This bacteria may produce hemolysins which may account for the petechiation. Overt hemorrhage was not appreciated histologically, but there was multi-organ congestion.

TEST	PURPOSE	SITE	RESULT

DATE:	REPORTING PATHOLOGIST:
2/16/2020	David S. Rotstein, DVM, MPVM, DACVP

FIGURES

No Figures

MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19110
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 22136 FWC District: NE
Sex: M / F / Undetermined Length: 190 cm (estimated _____) Weight 165 kg.
Date reported: 22 Dec 2019 By: Citizen to FWC Dispatch-Orlando
Date collected: 22 Dec 2019 By: FWC-SMW
Date necropsied: 26 DEC 209 By: MMPL - MdW BUB ALP SMT CMFTDW

LOCATION: State: FL (___) County: Brevard Waterway: Berkeley Canal (Banana River)
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 sedimentation SI ; microbiology lung swab & Cytology
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other _____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) - Other veg mouth
Genetics Box # 95
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

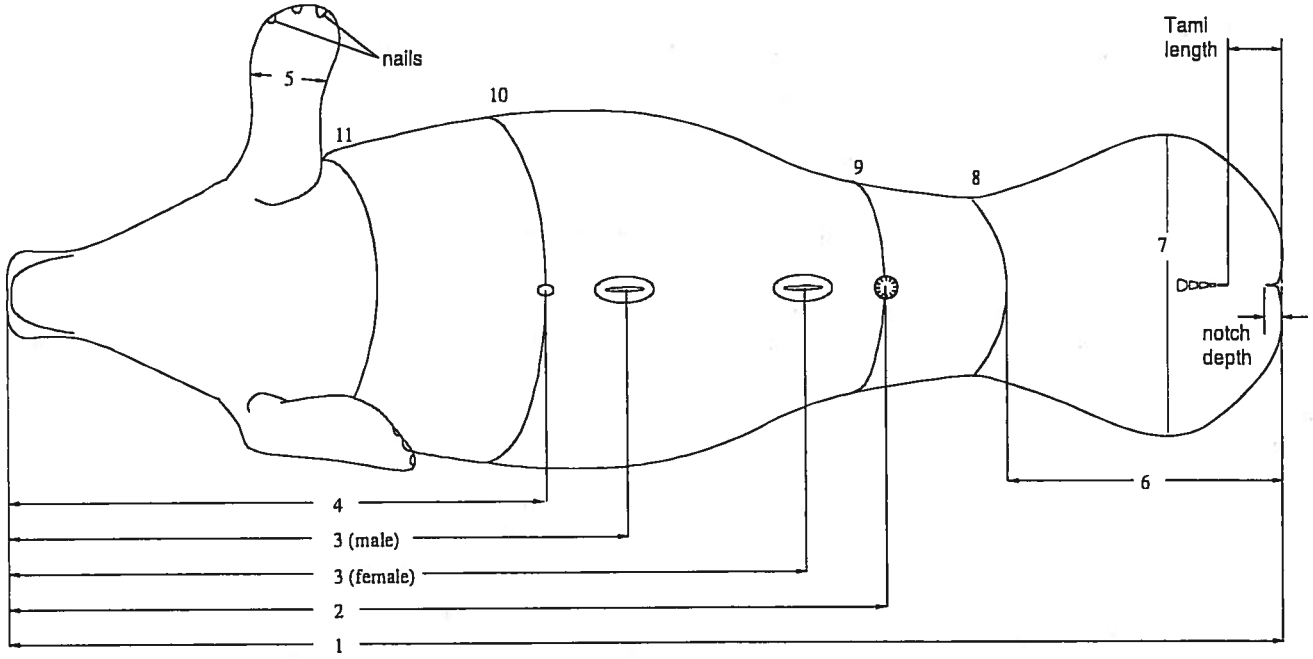
REMARKS: Found dorsum up

Field ID # MEC19110

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.

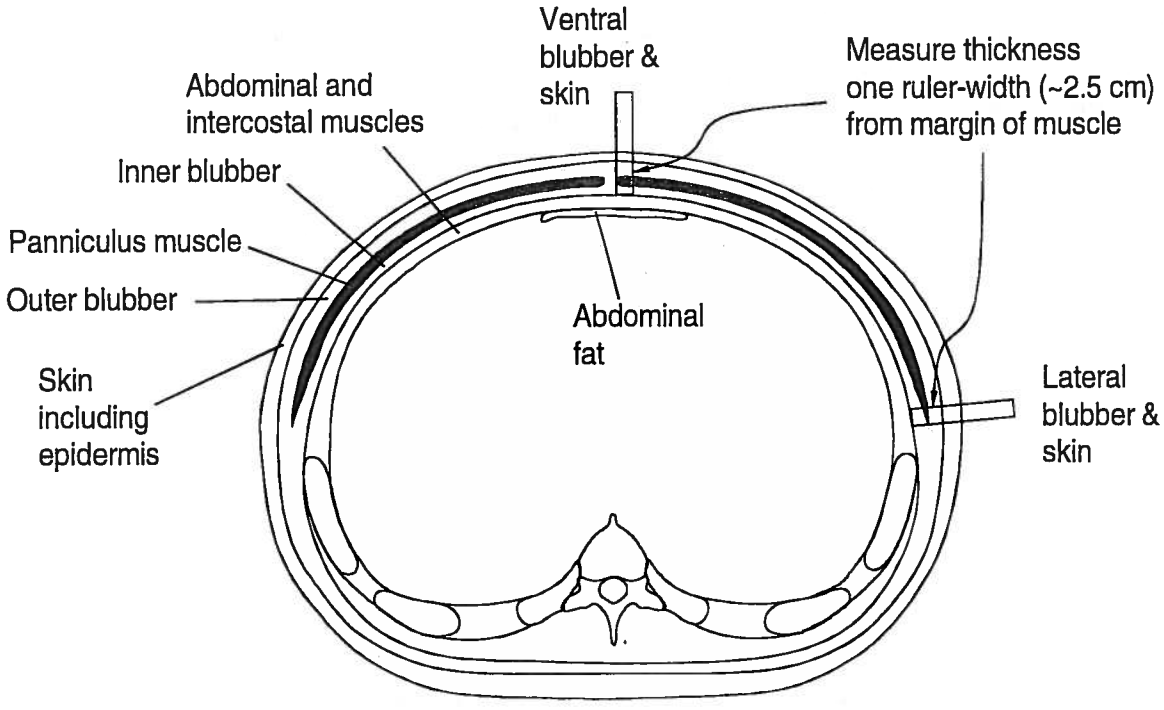
1. Total length 190 cm
2. Snout to anus -C 128 cm
3. Snout to U/G -C 81 cm
4. Snout to umbilicus -C 70 cm
5. Flipper width 13 cm
6. Fluke base 55 cm
7. Fluke width 50 cm
8. *Girth at fluke base 84 cm
9. * Girth at anus 100 cm
10. *Girth at umbilicus 147 cm
11. *Girth at axillae 116 cm

(Nail count: L 3 R 3)



Skin and Blubber (cm).

	Ventral	Lateral	
Skin	1.0 cm	1.8 cm	(Epidermis 0.1 cm)
Outer fat	1.3 cm	0.2 cm	(Abdominal fat 0.4 cm)
Inner fat	0.7 cm	1.0 cm	



MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19110
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 22136 **FWC District**: Northeast
Sex: - **Length (cm)**: _____ **Estimated** _____ **Weight (kg)** _____
Date reported: 22 December 201 **By**: Citizen to FWC NE Dispatch- Orlando
Date collected: 22 December 201 **By**: FWC-SMW
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Berkeley Canal
Latitude: N _____ **Longitude**: W _____
Locality description: Satellite Beach, approximately 50 m WSW of 368 West Arlington 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 #: **MEC19111**
Date of Report: 2019-Dec-23
Filed By: FWC EC Field Station

FWC Case # 22194 **FWC Region:** NE

Sex: Unknown **Length:** 185 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-23 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 28.47263 **N**
County: Brevard **Longitude:** -80.76543 **W**
Waterway: Indian River
Locality description: Port St. John, grounded approximately 80 m SE of 6430 North Highway 1.

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	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19111

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. MEC19111
RECOVERY DATE N/A
GENDER Undetermined **TL** 185 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE N/A
CONDITION Confirmed; Not Recovered

HISTORY 23 December 2019, at 1520 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 Port St. John, Brevard County. FWC case number 22194 was assigned. The complainant, Justin Hefner (321-501-2307), stated that the carcass was 6 feet long, all white, bloated and washed up on shore. At 1527 hrs, WDG received a photo from the complainant to verify the carcass. Due to the holiday and state of decomposition, the carcass was not recovered or necropsied.

EXTERNAL From photograph – All of the visible epidermis was missing. The carcass was distended with gas.

PHOTOGRAPHS 2019-12-23_PUBLIC_ECFL_01.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

PROBABLE CAUSE OF DEATH Verified; Not Recovered

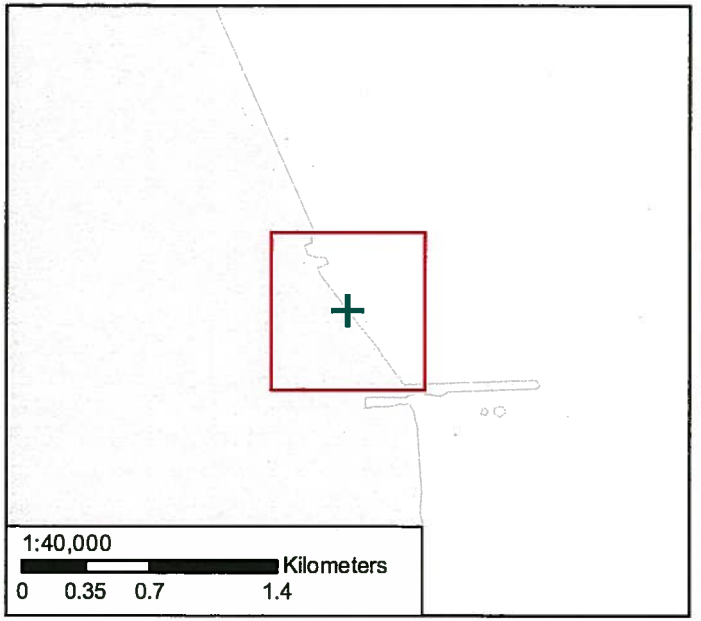
NECROPSY CONDUCTED BY N/A

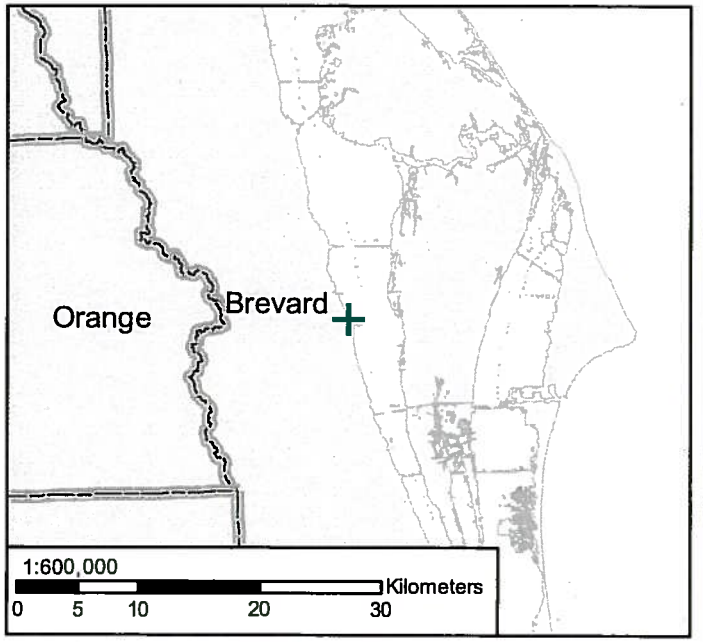
REPORT FILED BY Greer

Verified Recovery Location of Manatee Carcass MEC19111

Report Date: 12/23/2019 **Received Date:** **Received By:** Map Created: 1/20/2021







Locality Description:
Port St. John, Brevard
Grounded, approximately 80 m SE of 6430 North Highway 1.

Latitude: 28.47263°N **Longitude:** -80.76543°W

MEC 19111

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19111
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 22194 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: _____ **Estimated** 185 **Weight (kg)** N/T
Date reported: 23 December 201 **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: Port St. John, approximately 80 m SE of 6430 North Highway 1

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 holiday and state of carcass MdW and WDG agreed to leave

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 #: **MEC19112**
Date of Report: 2019-Dec-24
Filed By: FWC EC Field Station

FWC Case # 22236 **FWC Region:** NE

Sex: Male **Length:** 325 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-24 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-26 **By:** FWC-WDG,BMF

DATE NECROPSIED: 2019-Dec-26 **By:** FWC-WDG,BMF

LOCATION: **State:** FL **Latitude:** 27.85392 **N**
County: Brevard **Longitude:** -80.49498 **W**
Waterway: Sebastian River
Locality description: Micco, grounded approximately 20 m SE of 3909 Canal Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Other

EXPLAIN: Wet lung(s); Bloody lung(s); Fluid from nares; Sediment in mouth, airways; Congested colon wall, urinary bladder mucosa; Wet cecum contents; Watery proximal colon contents; Macroalgae in GI tract. 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 positive (Right: 00-06DD-3446). A field necropsy was performed. Known as CBC1303, TBC094, PE347, "Nopep", first sighted on 25 Jan 1993 at Port Everglades power plant, captured on 10 Dec 2013 at Brevard County research captures. Also FWC case number 22218, 22363, 22593.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MEC19112

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:

Fluid in epididymides (Thick, milky 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. MEC19112
RECOVERY DATE 26 December 2019
GENDER Male **TL** 325 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 26 December 2019
CONDITION Badly Decomposed

HISTORY 24 December 2019, at 1235 hrs, FWC on-call biologist-Anna L. Panike (ALP) received a text alert from FWC NE Dispatch-Orlando regarding a reported boat strike of a manatee in the Sebastian River in Sebastian, Brevard County. FWC case number 22218 was assigned. The complainant, Dennis Stanton (772-418-9848), stated he had not seen the manatee get struck but that it was observed in a wake slick, it was dead, fresh and about 10 feet long. At 1307 hrs, ALP received a photo of the carcass and requested FWC LE assistance to tow it. No officers were available due to a missing person search in the area. **25 December**, at 0853 hrs, ALP received a text alert from Dispatch regarding a dead manatee in the Sebastian River. FWC case number 22236 was assigned. The complainant, Ken Molta (772-882-7716), stated the carcass was 10 feet long and under his dock. He informed ALP that he would send photos and secure the carcass to his dock. ALP never received any further communication from the complainant despite multiple texts and calls. **26 December**, at 0815 hrs, FWC biologist-William D. Greer (WDG) contacted the complainant who confirmed that he had secured the carcass to his dock at approximately 0930 hrs on 25 December, and it was still there but the skin was starting to come off. At 1100 hrs, WDG and FWC biologist-Blake M. Faucett arrived at the Main Street Boat Ramp in Sebastian and launched the Key West boat. The carcass was located at 1135 hrs and towed to a nearby spoil island where a field necropsy was completed by 1355 hrs. The remains were left on site. **27 December**, at 2013 hrs, FWC on-call biologist-Brandon L. Bassett (BLB) received a text alert from Dispatch regarding a dead manatee in the Indian River in Sebastian, Indian River County. FWC case number 22363 was assigned. The complainant, Mike Hammer (321-684-0782), stated that there was a dead manatee on a spoil island directly west of the Sebastian Inlet but didn't have any photos. Based on the description and location, it was determined to be MEC19112. **31 December**, at 1614 hrs, BLB received an additional text alert from Dispatch regarding MEC19112. FWC case number 22593 was assigned.

EXTERNAL Approximately 80% of the epidermis was present but sloughing. A moderate amount of watery red-tinged fluid exuded from the nares. The carcass was distended with gas. There was a moderate brown algal mat on the dorsum. A mild infestation of barnacles and barnacle scars was present on the ventral peduncle and fluke. A minimum of eight well-healed watercraft-related scar patterns was observed on the dorsal and lateral aspects. There was a well-healed triangular mutation at the 9 o'clock position of the fluke. PIT tag scan was positive (Right: 00-06DD-3446), known as CBC1303, TBC094, "Nopep", captured at Brevard County health assessments on 10 December 2013. A genetics sample was collected.

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

STOMACH The stomach contained 14.7 L of moist, well-chewed, homogeneous, tubular, green, red, and purple macroalgae (see photo). The contents were coated in purple mucus. The mucosa was stained pink to purple (see photo). No parasites were observed.

DUODENUM The duodenum contained 3.2 L of wet, well-chewed, homogeneous, tubular, green macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained wet, well-chewed, homogeneous, tubular, green macroalgae. The distal small intestine contained viscous, gray fluid. The mucosa was unremarkable. No parasites were grossly observed.

CECUM The cecum contained 400 mL of wet, well-chewed, poorly digested, homogeneous, tubular, green

macroalgae (see photo). The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained watery, moderately digested, poorly formed, homogeneous, green and red macroalgae (see photo). The distal colon contained very moist, moderately digested, homogeneous, green and red macroalgae. The mucosa was stained blue to black and sloughing throughout. There was moderate congestion throughout the colon wall which was most prominent in the proximal colon. No parasites were observed.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The margins of the liver were rounded. The serosa was separated from the parenchyma. The liver was soft. Serosal surfaces were blue to purple and cut surfaces were red to brown.

GALLBLADDER The gallbladder contained watery, orange bile. The mucosa was bile-stained.

REPRODUCTIVE There was moderate reproductive fat. The seminal vesicles were large and contained a large amount of tan fluid. The testes were large. There was thick, milky fluid on cut surfaces of the epididymides.

KIDNEYS There was a small amount of perirenal fat. The kidneys were soft and friable. Serosal surfaces were red to brown. On cut surfaces, the cortices were light red and the medullae were dark red to purple. The corticomedullary boundaries were indistinct.

URINARY BLADDER The urinary bladder contained 250 mL of pale yellow urine. The mucosa was slightly congested.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The right lung was pink to black on serosal surfaces, and dark red and very bloody and wet on cut surfaces (see photo). The left lung was pink to dark red on serosal surfaces, and dark red and slightly wet on cut surfaces. There were small red circular spots on the left lung serosa (see photo). There was a moderate amount of mud in the primary airways of both lungs (see photos). No parasites were observed.

HEAD & NECK REGIONS There was a small amount of mud in the mouth and trachea (see photo).

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-12-26_FWC025_0882 through 0914.

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

- Fluid from nares
- Bloody, wet lungs
- Mud in mouth, airways

- Congested colon wall, urinary bladder mucosa
- Wet cecum, watery proximal colon contents
- Macroalgae throughout GI tract
- Purple stomach mucosa
- PIT tag positive, CBC1303, TBC094, "Nopep"
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Undetermined; Other

NECROPSY CONDUCTED BY

William D. Greer
Blake M. Faucett (SE Field Station)

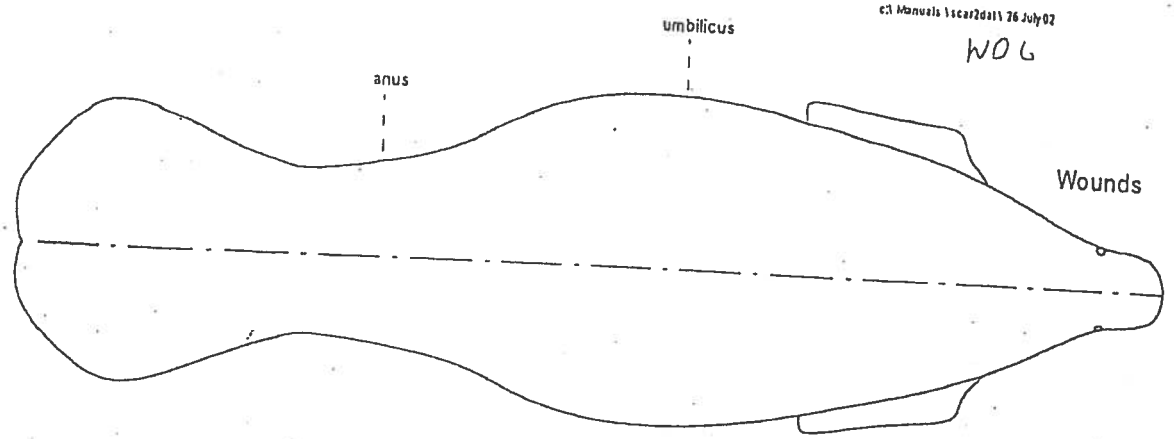
REPORT FILED BY Greer

Date 26 DEC 2019

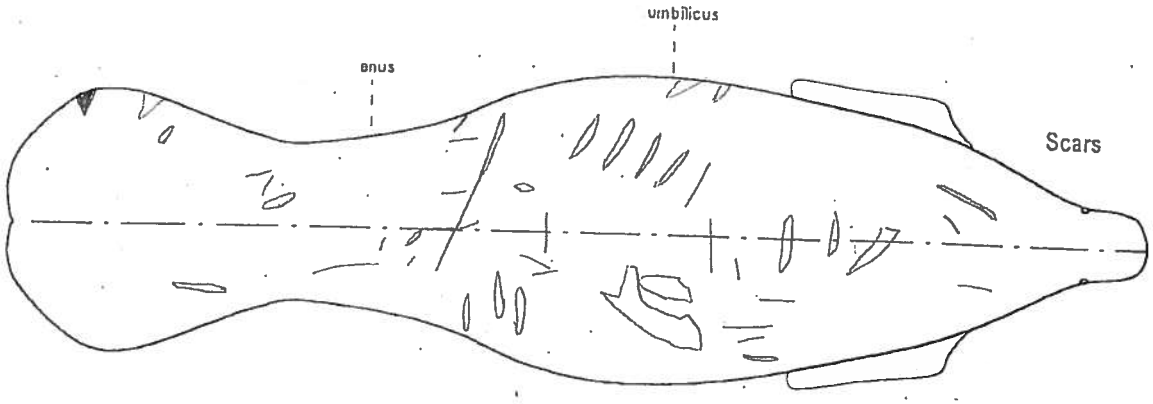
Field I.D. MEC19112.

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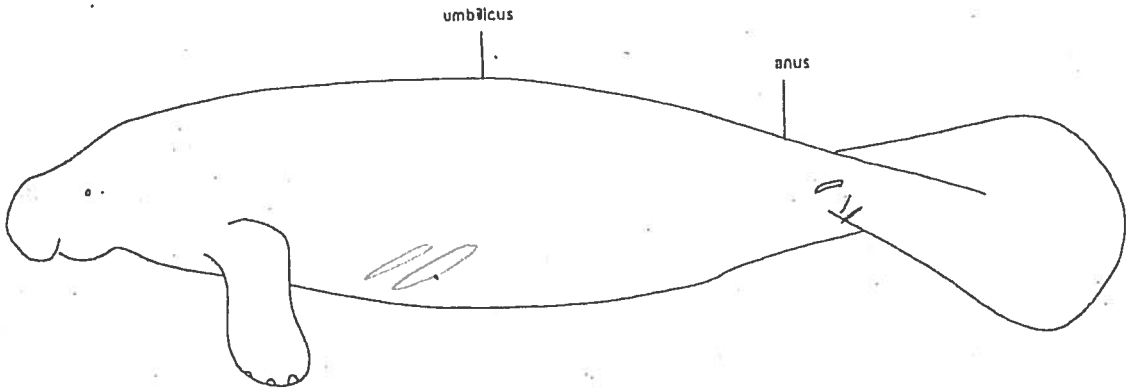
WOG

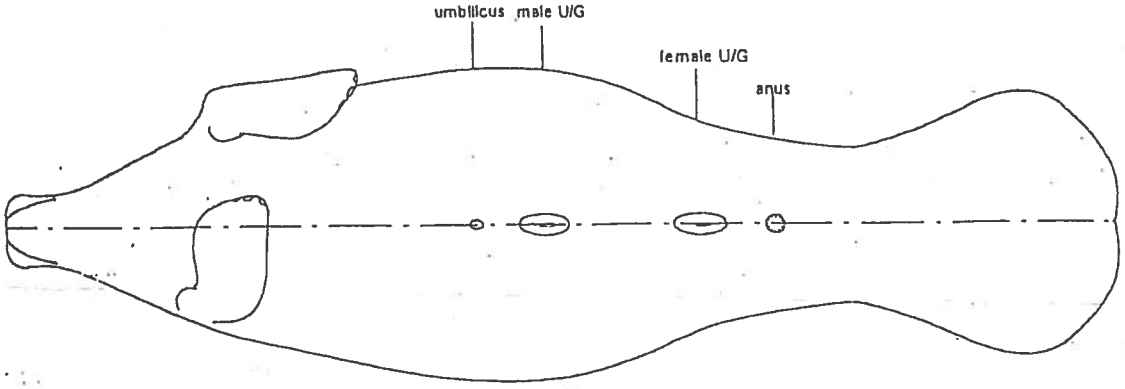


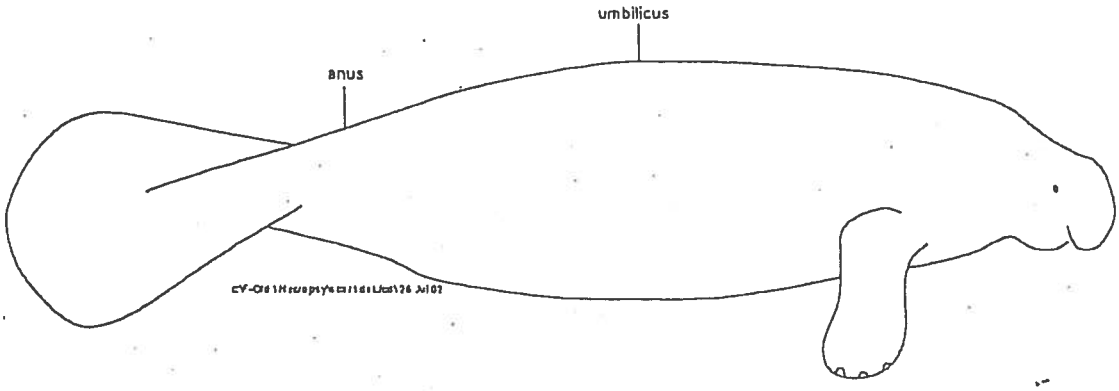
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Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. MSC 19112



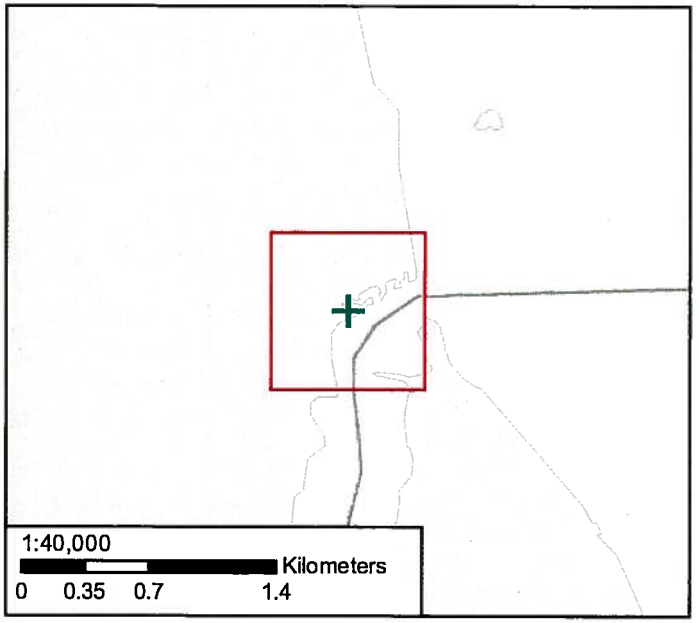


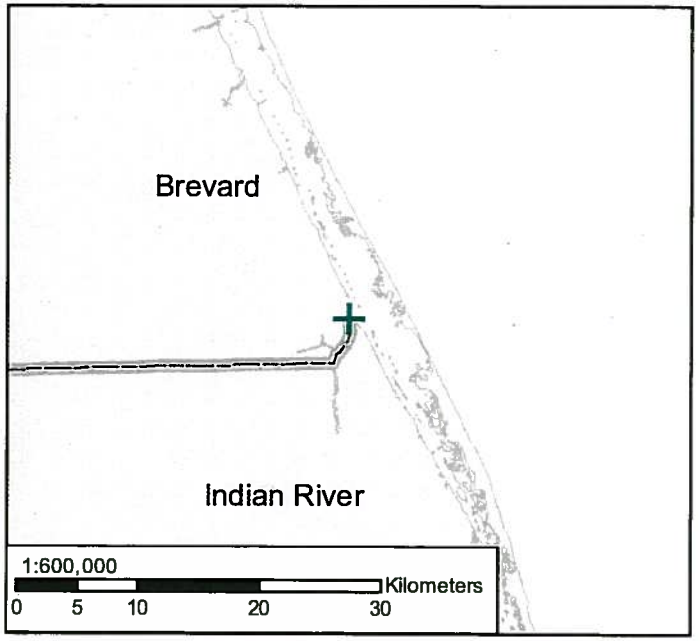


Verified Recovery Location of Manatee Carcass MEC19112

Report Date: 12/24/2019 **Received Date**: 12/26/2019 **Received By**: FWC-WDG,BMF Map Created: 1/20/2021







Locality Description:
Micco, Brevard
Grounded, approximately 20 m SE of 3909 Canal Drive.

Latitude: 27.85392°N **Longitude**: -80.49498°W

Bassett, Brandon

From: Rood, Kari
Sent: Monday, January 13, 2020 4:31 PM
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: MEC19112=PE347

MEC19112=PE347. This animal is also known as Nopep, TBC094, and CBC1303.

Carcass location: Sebastian River
Carcass sex: Male

First sighted 1/25/93 at Port Everglades Power Plant
Last sighted 12/10/13 at Indian River, OUC Reliant Power Plant (tagged)

USGS should be able to provide a complete sighting history if needed.

PIT tag positive and verified via photo-ID – HONAKER 1/3/20 & KAH 1/13/20

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 #** MEC19112
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 22218, 22236 **FWC District**: Northeast
Sex: Male **Length (cm)**: 325 **Estimated** _____ **Weight (kg)** N/T
Date reported: 24 December 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 26 December 201 **By**: FWC- WDG, BMF
Date necropsied: 26 December 2(**By**: FWC- WDG, BMF

LOCATION INFORMATION: **State** FL **County**: Brevard **Waterway**: Sebastian River
Latitude: N _____ **Longitude**: W _____
Locality description: Sebastian, approximately 20 m SE of 3909 Canal 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: UME findings- moderate fats, congestion throughout GI tract, watery macroalgae GI contents, purple mucosa staining in stomach, black mucosa staining in distal colon, watery lungs, mud in mouth/trachea/primary airways

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: Positive
Left side: _____ Right side: 00-06DD-3446

REMARKS: Left side was scanned multiple times but no PIT tag was read

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 #: **MEC19113**
Date of Report: 2019-Dec-30
Filed By: FWC EC Field Station

FWC Case # 22516 **FWC Region:** NE

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

DATE REPORTED: 2019-Dec-30 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-30 **By:** FWC-WDG,SMW

DATE NECROPSIED: 2019-Dec-30 **By:** FWC-WDG,SMW

LOCATION: **State:** FL **Latitude:** 28.08112 **N**
County: Brevard **Longitude:** -80.59879 **W**
Waterway: Indian River
Locality description: Melbourne, floating approximately 225 m NE of the easternmost building at 2205 Front Street.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Pyothorax; Blood clots; Collapsed lung(s); Dry, hard feces; Crumbly feces; Bloody lung(s); Remodeled ribs, offset remodeled bone; Partially calcified 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. Macroalgae in GI tract.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 feb 2021

Field ID #: MEC19113

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:

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. MEC19113
RECOVERY DATE 30 December 2019
GENDER Female **TL** 284 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 30 December 2019
CONDITION Badly Decomposed

HISTORY 30 December 2019, at 1106 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert regarding a dead manatee in the Indian River in Melbourne, Brevard County. FWC case number 22516 was assigned. The complainant, Michael Mills (321-747-3435), stated that the carcass was about 9 feet long, white and bloated. SMW and FWC biologist-William D. Greer (WDG) were nearby in the field station Jon boat and located the carcass at 1120 hrs. They towed the carcass to the Front Street boat ramp and loaded it via Ant-Lift at 1205 hrs. The carcass was transported to the EC Field Station where a field necropsy was completed by 1439 hrs. The remains were disposed of at the Brevard County Landfill.

EXTERNAL All of the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. There were rents on the head, flippers, left lateral aspect, and along the ventral aspect due to decomposition through which watery red fluid exuded. A minimum of three well-healed watercraft-related scar patterns was observed on the dorsal and left lateral aspect. The fluke margin was mostly eroded due to decomposition. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered.

STOMACH The stomach contained 100 mL of wet, poorly chewed, fibrous, woody ingesta mixed with sticks and yellow and green macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum contained 25 mL of wet, poorly chewed, fibrous, woody ingesta mixed with sticks and yellow and green macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM Some sections of the proximal small intestine were empty of contents and other sections contained small pieces of poorly chewed red macroalgae. Some sections of the distal small intestine were empty of contents and other sections contained wet, poorly chewed, fibrous, woody ingesta mixed with sticks and yellow, red, and green macroalgae. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained 1.2 L of moist, poorly digested, very fibrous, stringy, woody, dark brown digesta mixed with green, yellow, and red macroalgae (see photo). The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained dry, crumbly, poorly digested, sediment-like, stringy, dark brown feces (see photo). The mid and distal colon contained dry, hard, poorly digested, fibrous, stringy, light brown to dark black feces (see photo). The mucosa was autolyzed. There was a mild infection of dead trematodes in the mid colon.

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 missing due to decomposition.

REPRODUCTIVE The reproductive organs were soft and friable. The uterine horns were contracted. No

scars were observed. The ovaries were autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained approximately 100 mL of red-tinged fluid. The mucosa was gassy.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The right hemidiaphragm was slightly calcified, and the pleural aspect was coated with fibrin, yellow necrotic tissue, and resolving blood clots (see photo). The right pleural cavity contained 1.5 L of fibrin and resolving blood clots (see photo) and 8 L of watery, pink fluid. The right lung was partially collapsed. Serosal surfaces were white to gray and cut surfaces were dark gray. The left lung was red to black on serosal surfaces, and dark red and bloody on cut surfaces (see photo). The primary airways of both lungs were clear. There was a mild infection of dead trematodes in the right lung primary airway (see photo).

HEAD & NECK REGIONS NVL.

SKELETON Right rib 14 was remodeled at the distal one-third. Right rib 15 was remodeled from the proximal one-third to the rib tip. Right rib 16 was remodeled at the mid one-third and distal one-third (see photos). The remodeled bone of right rib 16 was offset and protruded into the pleural cavity. The remodeled ribs were deep to a large well-healed watercraft-related scar.

OTHER

PHOTOGRAPHS 2019-12-30_FWC023_8484 through 8524.

COMMENTS

SIGNIFICANT FINDINGS

- Remodeled ribs with offset remodeled bone
- Pyothorax
- Resolving blood clots
- Partially calcified hemidiaphragm
- Collapsed right lung
- Bloody left lung
- Relatively empty upper GI tract
- Dry, hard, crumbly feces
- Macroalgae in GI tract
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

NECROPSY CONDUCTED BY

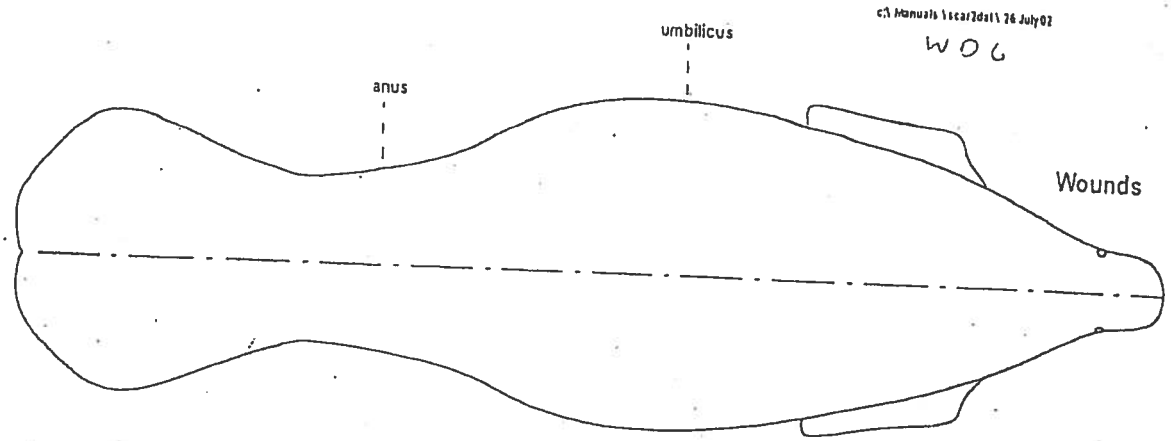
William D. Greer
Sara M. Wappes

REPORT FILED BY Greer

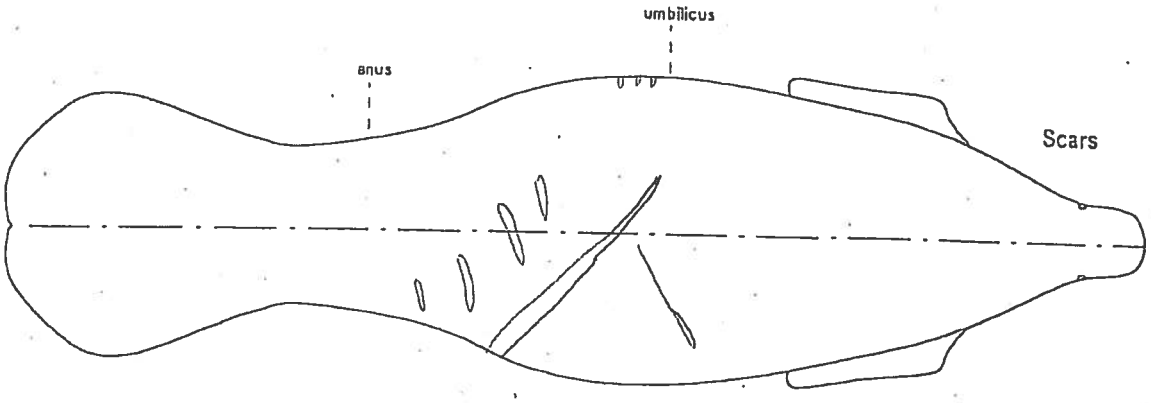
Date 30 DEC 2019 Field I.D. MEC19113.

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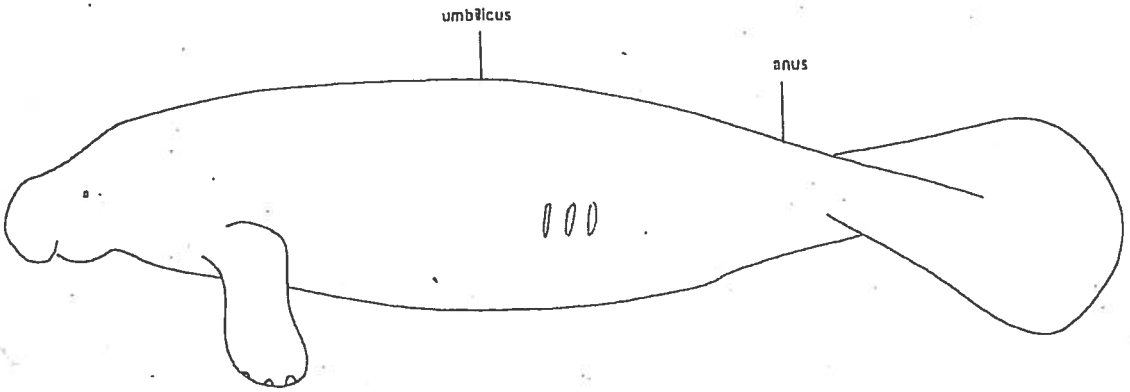
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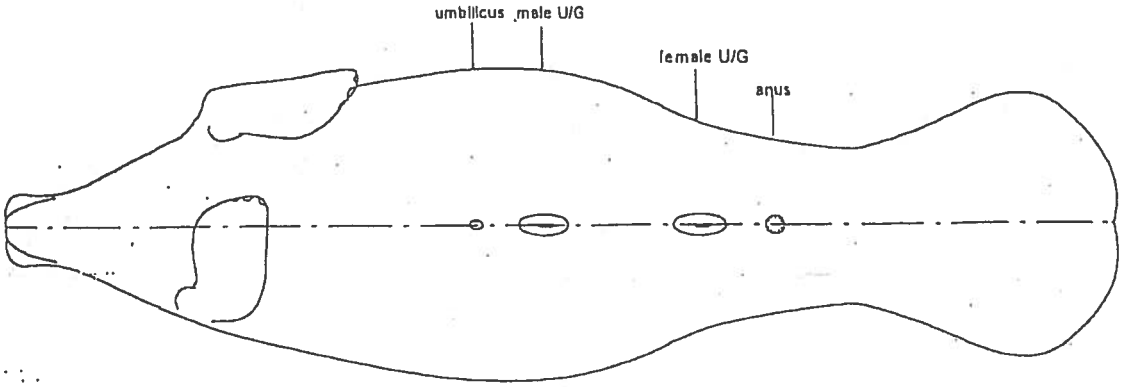


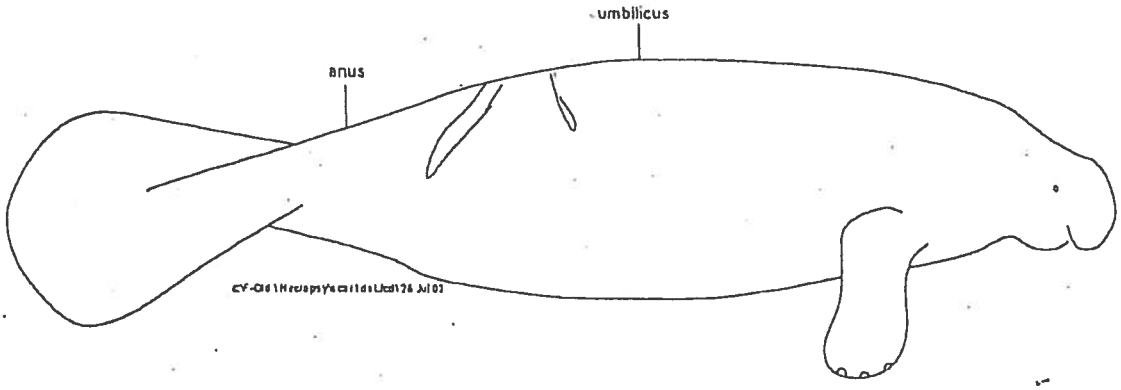
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Length																				
Width																				
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FIELD I.D. MEC19113



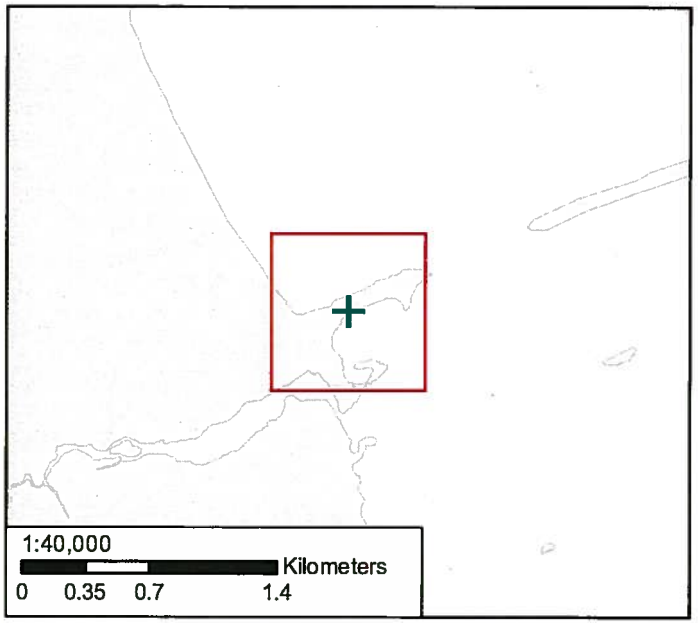


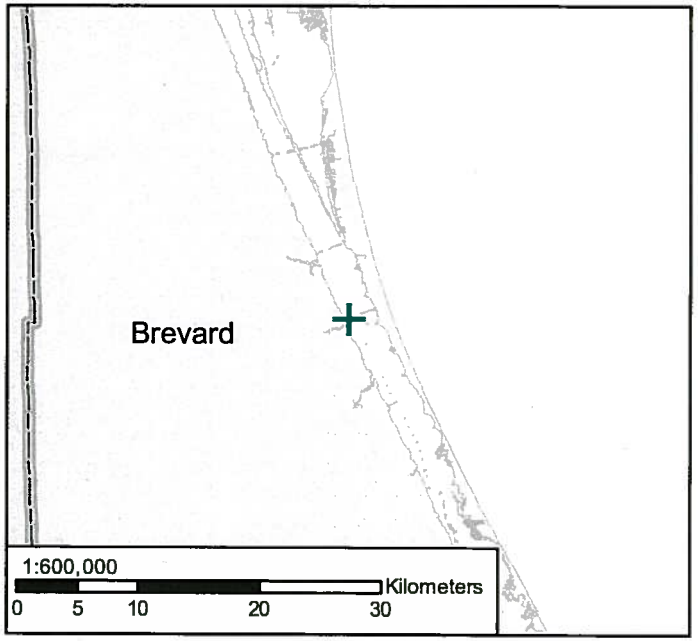


Verified Recovery Location of Manatee Carcass MEC19113

Report Date: 12/30/2019 **Received Date:** 12/30/2019 **Received By:** FWC-WDG,SMW Map Created: 1/20/2021







Locality Description:
Melbourne, Brevard
Floating, approximately 225 m NE of the easternmost building at 2205 Front Street.

Latitude: 28.08112°N **Longitude:** -80.59879°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MEC19113
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 22516 **FWC District**: Northeast
Sex: Female **Length (cm)**: 284 **Estimated** _____ **Weight (kg)** N/T
Date reported: 30 December 201 **By**: Citizen to FWC NE Dispatch-Orlando
Date collected: 0 December 2019 **By**: FWC-WDG, SMW
Date necropsied: 0 December 20 **By**: FWC-WDG, SMW

LOCATION INFORMATION: State FL **County**: Brevard **Waterway**: Indian River
Latitude: N _____ **Longitude**: W _____
Locality description: Melbourne, approximately 225 m NE of the easternmost building at 2205 Front Street
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
Natural: ☐ Cold Stress ☐ Other (includes Red Tide)
Undetermined: ☐ Too Decomposed ☐ Other ☐ Not Recovered
Explain: Healed scar in association with 3 remodeled ribs on right side, right pleural cavity filled with 2.5L of resolving blood clots and fibrin, fibrin and resolving blood clots adhered to left diaphragm, upper GI tract mostly empty, colon contained dry, hard and/or 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 _____

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 #: **MNE19010**
Date of Report: 2019-May-19
Filed By: FWC NE Field Station

FWC Case # 8009 **FWC Region:** NE

Sex: Female **Length:** 135 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-19 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-May-19 **By:** FWC-ACP

DATE NECROPSIED: 2019-May-19 **By:** FWC-ACP

LOCATION: **State:** FL **Latitude:** 29.29725 **N**
County: Volusia **Longitude:** -81.07546 **W**
Waterway: Tomoka River
Locality description: Ormond Beach, floating approximately 162 m WNW of 340 Sanchez Avenue.

CONDITION: Moderately Decomposed

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

EXPLAIN: Natural: Stillborn; Fetal folds; Umbilical skirt; Consolidated lungs; Bloody lung(s); Meconium; Bloody kidneys; Fluid in abdominal cavity.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC NE Field Station pending distribution.

ADDITIONAL DATA:

Perinatal evaluation performed.

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MNE19010

MORPHOMETRICS:

Total length:	135 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 was closed. Umbilical arteries were open and contained red fluid.

Ductus Arteriosis Diameter:	1.1 cm
Left Pulmonary Artery Diameter:	1.1 cm
Right Pulmonary Artery Diameter:	1.1 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. MNE19010
RECOVERY DATE 19 May 2019
GENDER Female **TL** 135 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 19 May 2019
CONDITION Moderately Decomposed

HISTORY 19 May 2019, at 1122 hrs, FWC biologist-Allison C. Perna (ACP) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf near the Sanchez Boat Ramp in Strickland Creek, Ormond Beach, Volusia County. FWC case number 8009 was assigned. The complainant, Lincoln Maynard (386-984-0948), said it was bleeding from the belly. ACP asked if he could tow the carcass to the boat ramp, and he said the ramp was crowded so he would take it to his house which was a block from the ramp. He sent verification photos at 1220 hrs. ACP arrived at Lincoln's house at 1305 hrs, loaded the carcass into the Ezy-lift truck at 1310 hrs, and transported it to Buck Island in Jacksonville. A field necropsy was completed at 1630 hrs.

EXTERNAL Almost all of the epidermis was present but sloughing. The epidermis was smooth without any epibiota and dark gray. There were transverse folds on the ventrum. Red fluid exuded from the nares and left eye. An umbilical skirt was present, and there was red fluid and dried blood surrounding it. Light red fluid exuded from the urogenital opening. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL No abdominal fat was observed. There was scant mesenteric and omental fat. The abdominal cavity contained approximately 300 mL of red fluid.

STOMACH The stomach contained approximately 25 mL of viscous, gelatinous, yellow fluid. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained approximately 25 mL of viscous, bright yellow fluid. The mucosa was dark yellow. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained viscous, yellow to brown fluid. The distal small intestine contained moist, pliable, rubbery, brown meconium. The mucosa was stained yellow throughout. No parasites were grossly observed.

CECUM The cecum contained approximately 50 mL of moist, pliable, rubbery, brown meconium. The mucosa was stained orange to brown. No parasites were observed.

COLON The colon contained moist, pliable, rubbery, brown meconium. The mucosa was stained yellow. No parasites were observed.

PANCREAS The pancreas was soft. Serosal surfaces were red to pink and cut surfaces were pink to purple.

SPLEEN The spleen was slightly enlarged. Serosal and cut surfaces were dark purple to black. Cut surfaces were also slightly bloody.

LIVER The liver was soft, friable, and autolyzed.

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

REPRODUCTIVE There was no reproductive fat. The uterus was small in diameter.

KIDNEYS There was no perirenal fat. The kidneys were dark purple on serosal surfaces. On cut surfaces, the

cortices were dark red and the medullae were dark red to dark purple. Cut surfaces were bloody. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder contained a scant amount of light red urine. The mucosa was unremarkable. The urachus was closed.

HEART Valves and chambers were unremarkable. The ductus arteriosus measured 1.1 cm flat diameter. The left pulmonary artery measured 1.1 cm flat diameter. The right pulmonary artery measured 1.1 cm flat diameter.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were consolidated. Serosal surfaces were red to purple and cut surfaces were dark red and bloody. The primary airways contained a scant amount of red fluid. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER The umbilical arteries were open, contained red fluid cranial to the bladder tip, and were closed lateral to the bladder.

PHOTOGRAPHS 2019-05-19_FWC026_3496 through 3506, 3508 through 3523, 3524.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Umbilical skirt
- Consolidated, bloody lungs
- Meconium
- Fluid in abdominal cavity
- Bloody kidneys
- Open umbilical arteries
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Perinatal; Natural (Stillborn)

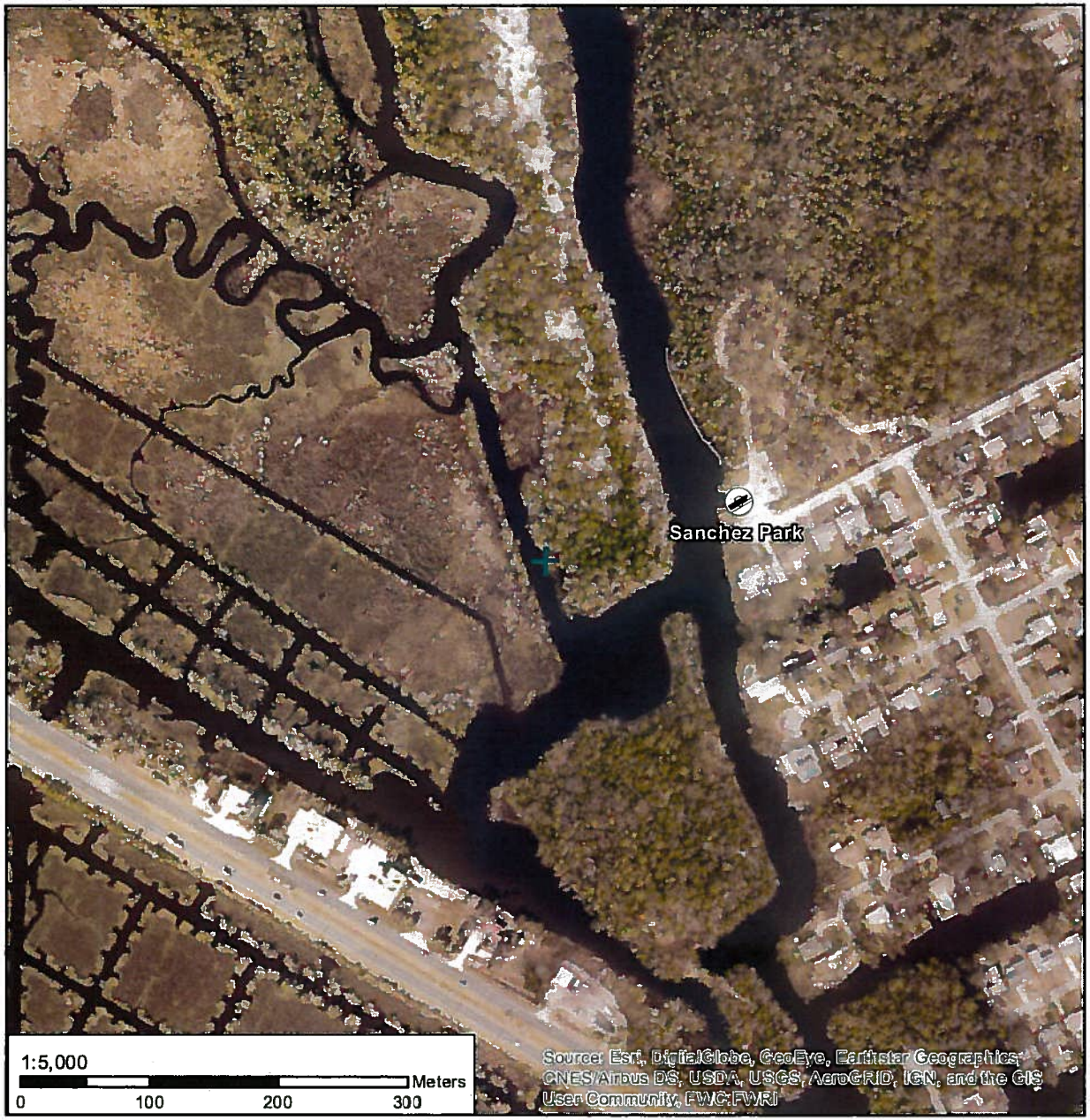
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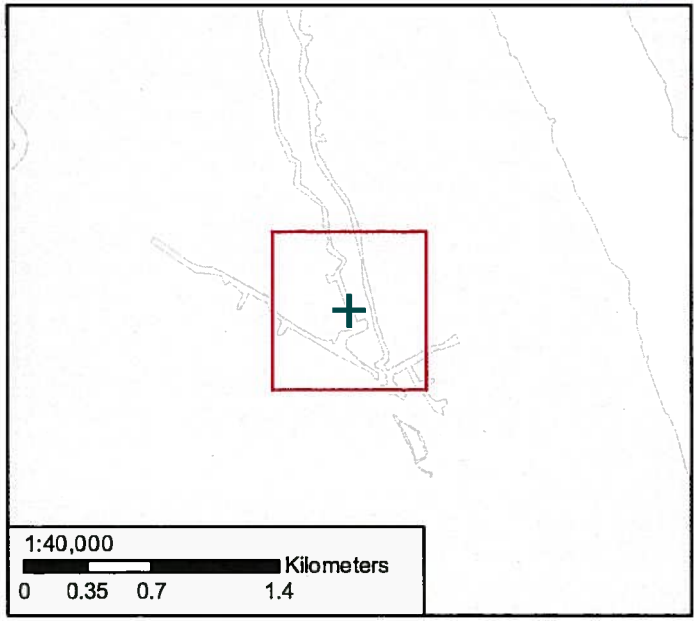
Allison C. Perna

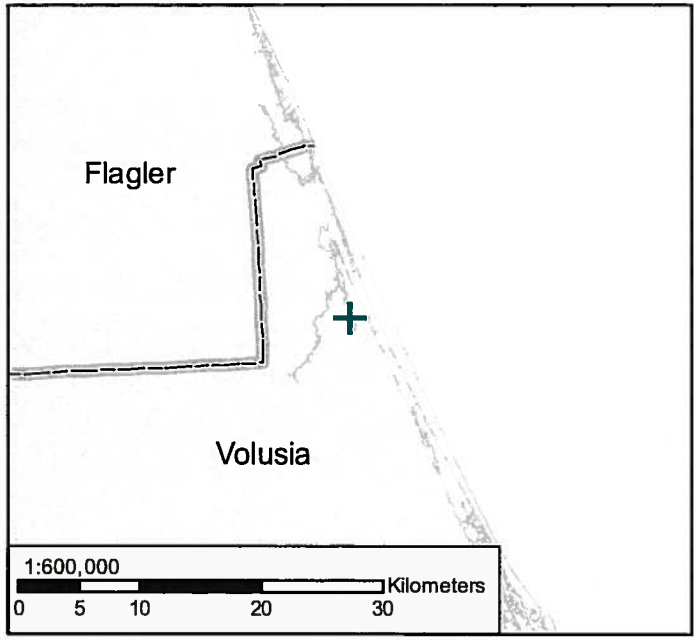
REPORT FILED BY Perna

Verified Recovery Location of Manatee Carcass MNE19010

Report Date: 5/19/2019 **Received Date:** 5/19/2019 **Received By:** FWC-ACP Map Created: 10/27/2020







Locality Description:
Ormond Beach, Volusia
Floating, approximately 162 m WNW of 340 Sanchez Avenue.

Latitude: 29.29725°N **Longitude:** -81.07546°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19010
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8009 **FWC District**: Northeast
Sex: Female **Length (cm)**: 135 **Estimated** _____ **Weight (kg)** N/T
Date reported: 19 May 2019 **By**: Lincoln Maynard (386-984-0948)
Date collected: 19 May 2019 **By**: Allison C. Perna
Date necropsied: 19 May 2019 **By**: Allison C. Perna

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Strickland Creek
Latitude: N 29.297247 **Longitude**: W -81.075473
Locality description: approximately 162 m WNW of 340 Sanchez 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: umbilical skirt present, umbilical arteries open with red fluid, meconium in cecum and colon, ductus arteriosis and left and right pulmonary arteries measured 1.1 cm flat diameter, bloody and consolidated 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 #: **MNE19011**
Date of Report: 2019-May-30
Filed By: FWC NE Field Station

FWC Case # 8835 **FWC Region:** NE

Sex: Unknown **Length:** 120 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-May-30 **By:** Citizen to FWC NE Dispatch
DATE COLLECTED: **By:**
DATE NECROPSIED: **By:**

LOCATION: **State:** FL **Latitude:** 29.08926 **N**
County: Volusia **Longitude:** -81.02811 **W**
Waterway: Spruce Creek
Locality description: Port Orange, floating approximately 62 m SE of 1680 Anita Street.

CONDITION: Confirmed; Not Necropsied
PROBABLE CAUSE OF DEATH: Verified; Not Necropsied
EXPLAIN: Verified by complainant photograph.

PHOTOGRAPHS TAKEN: Other (Verification photograph).

MATERIALS COLLECTED:

DISPOSITION OF MATERIAL:

ADDITIONAL DATA:

REMARKS:

PIT tag scan not performed.

Page 1&2	29 Oct 2020
Necropsy Report	29 Oct 2020
Lat/Long	29 Oct 2020

Field ID #: MNE19011

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. MNE19011
RECOVERY DATE N/A
GENDER Undetermined **TL** 120 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE N/A
CONDITION Confirmed; Not Recovered

HISTORY 30 May 2019, at 0722 hrs, FWC on-call biologist-Bill D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf in Spruce Creek, Port Orange, Volusia County. FWC case number 8835 was assigned. The complainant, Chip Waller (386-566-2871), sent a photo and coordinates for the carcass. WDG passed the information to NE Field Station staff at 0732 hrs. FWC biologists-Allison C. Perna and Kyanna A. Tamborini arrived at the reported location at 1018 hrs and searched the area via kayak, but the carcass was not located.

EXTERNAL From photograph – All of the right lateral epidermis was missing. The carcass was distended with gas. The right eye was bulging due to decomposition. The tissue of the muzzle was torn due to decomposition and/or scavenging.

PHOTOGRAPHS 2019-05-30_PUBLIC_01.

COMMENTS

SIGNIFICANT FINDINGS

- Verified through complainant photograph

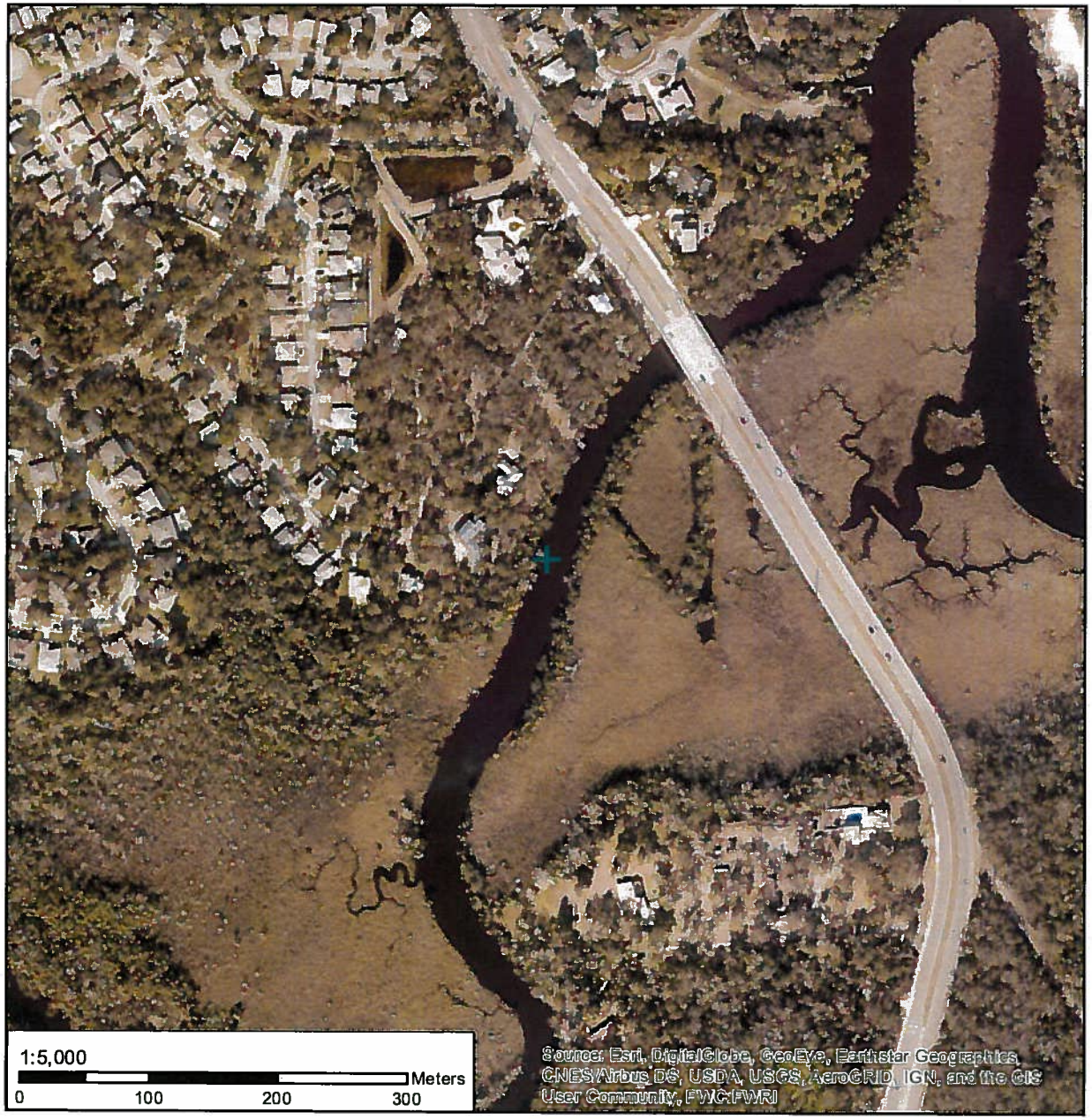
PROBABLE CAUSE OF DEATH Verified; Not Recovered

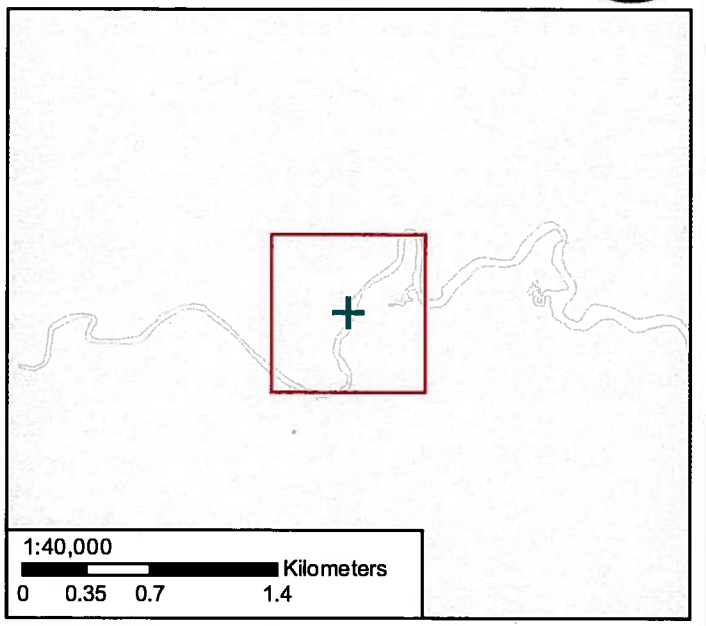
NECROPSY CONDUCTED BY N/A

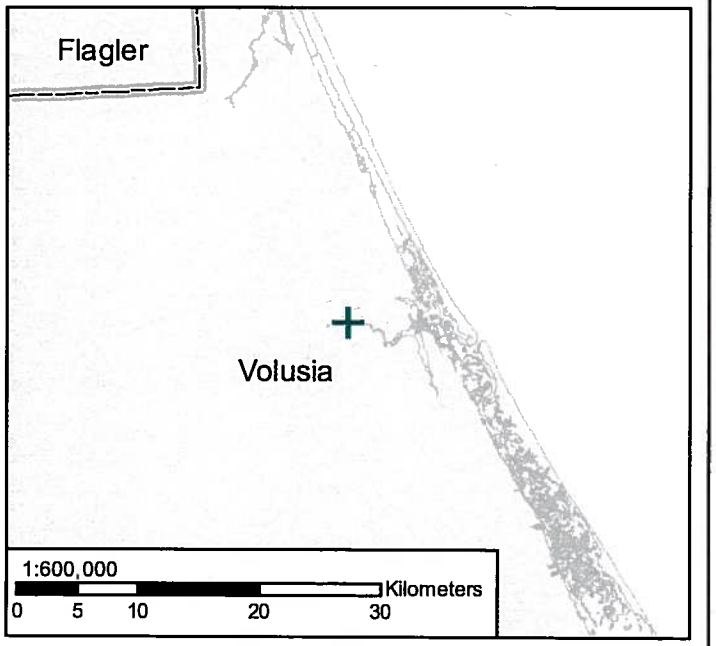
REPORT FILED BY Perna

Verified Recovery Location of Manatee Carcass MNE19011

Report Date: 5/30/2019 **Received Date:** **Received By:** Map Created: 10/27/2020







Locality Description:
Port Orange, Volusia
Floating, approximately 62 m SE of 1680 Anita Street.

Latitude: 29.08926°N **Longitude:** -81.02811°W

PAVEMENT

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19011
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 8835 **FWC District**: Northeast
Sex: Undetermined **Length (cm)**: unk **Estimated** ~~121~~ 120 **Weight (kg)** N/T
Date reported: 30 May 2019 **By**: Chip Waller (386-566-2871)
Date collected: _____ **By**: _____
Date necropsied: _____ **By**: _____

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Spruce Creek
Latitude: N 29.0892616 **Longitude**: W -81.0281258
Locality description: Port Orange, approximately 62 m SE of 1680 Anita St

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: unable to locate the carcass upon arrival, no further calls, but we do have a photo from the complainant

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 #: **MNE19016**
Date of Report: 2019-Jun-15
Filed By: FWC NE Field Station

FWC Case # 9954 **FWC Region:** NE

Sex: Male **Length:** 130 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jun-15 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Jun-15 **By:** FWC-NJG

DATE NECROPSIED: 2019-Jun-15 **By:** FWC-NJG

LOCATION: **State:** FL **Latitude:** 29.31022 **N**
County: Volusia **Longitude:** -81.0949 **W**
Waterway: Tomoka River
Locality description: Ormond Beach, floating approximately 90 m E of 161 Coquina Avenue.

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; Congested urinary bladder mucosa.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC NE Field Station pending distribution.

ADDITIONAL DATA:

Perinatal evaluation performed.

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	06 NOV 2020
Necropsy Report	06 NOV 2020
Lat/Long	06 NOV 2020

Field ID #: MNE19016

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:

Urachus closed. Umbilical arteries probe patent and filled with blood clots.

Ductus Arteriosis Diameter: 1 cm

Left Pulmonary Artery Diameter: 1.5 cm

Right Pulmonary Artery Diameter: 1.5 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. MNE19016
RECOVERY DATE 15 June 2019
GENDER Male **TL** 130 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 15 June 2019
CONDITION Badly Decomposed

HISTORY 15 June 2019, at 1438 hrs, FWC biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Tomoka River, Ormond Beach in Volusia County. FWC case number 9954 was assigned. The complainant, Judy McKernan (386-451-6528), had reported the carcass across from her residence at 161 Coquina Avenue. Dispatch provided Volusia County Sheriff's-Deputy James Greene as a contact since he was at the location of the residence. NJG contacted Deputy Greene who reported that he had flagged down and boarded a citizen's vessel to confirm the carcass. NJG contacted Dispatch but no officers were available to assist, so Deputy Greene flagged down another boater, William Shaffer, and asked him to transport the carcass north to the boat ramp on Palm Avenue. The carcass was transported on the bow of William Shaffer's pontoon to the boat ramp where it was placed in a garbage bag in the shade. NJG arrived at the boat ramp at 1723 hrs, loaded the carcass into the truck with assistance from a resident at 1730 hrs, and transported the carcass to Buck Island. A field necropsy was completed at 2100 hrs.

EXTERNAL Almost all the epidermis was present but sloughing. The carcass was distended with gas. Transverse folds were visible on the ventrum. The right eye was missing, and the left eye was bulging due to decomposition. Red fluid exuded from the nares. There were small linear scrapes on the dorsum. 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 abdominal fat, and scant mesenteric and omental fat.

STOMACH The stomach contained approximately 150 mL of moist, fibrous, stringy, brown to yellow-green ingesta. The mucosa was tan with areas of gray. No parasites were observed.

DUODENUM The duodenum contained a scant amount of wet, pasty, gray ingesta. The mucosa was gray. No parasites were observed.

JEJUNUM & ILEUM The small intestine was gassy and contained wet, pasty, gray ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained approximately 200 mL of gray liquid. The mucosa was autolyzed. No parasites were observed.

COLON The colon was gassy and contained wet, pasty, gray ingesta. The mucosa was autolyzed. No parasites were observed.

PANCREAS The pancreas was gassy. Serosal and cut surfaces were tan.

SPLEEN The spleen was black on serosal and cut surfaces.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was stained dark yellow to brown.

REPRODUCTIVE The reproductive organs were small.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was slightly congested. The urachus was closed.

HEART The ductus arteriosus measured 1.0 cm flat diameter. The left pulmonary artery measured 1.5 cm flat diameter and the right pulmonary artery measured 1.5 cm flat diameter. Valves and chambers were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were gassy. Serosal surfaces were pink and gray and cut surfaces were red to pink. The primary airways were clear.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER Both umbilical arteries were probe patent and contained blood clots, but were torn at the umbilicus.

PHOTOGRAPHS 2019-06-15_FWC026_3665 through 3670, 3672, 3673, 3677 through 3681, 3684 through 3688, 3691 through 3697, 3699 through 3701.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Fetal folds
- Congested urinary bladder mucosa

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

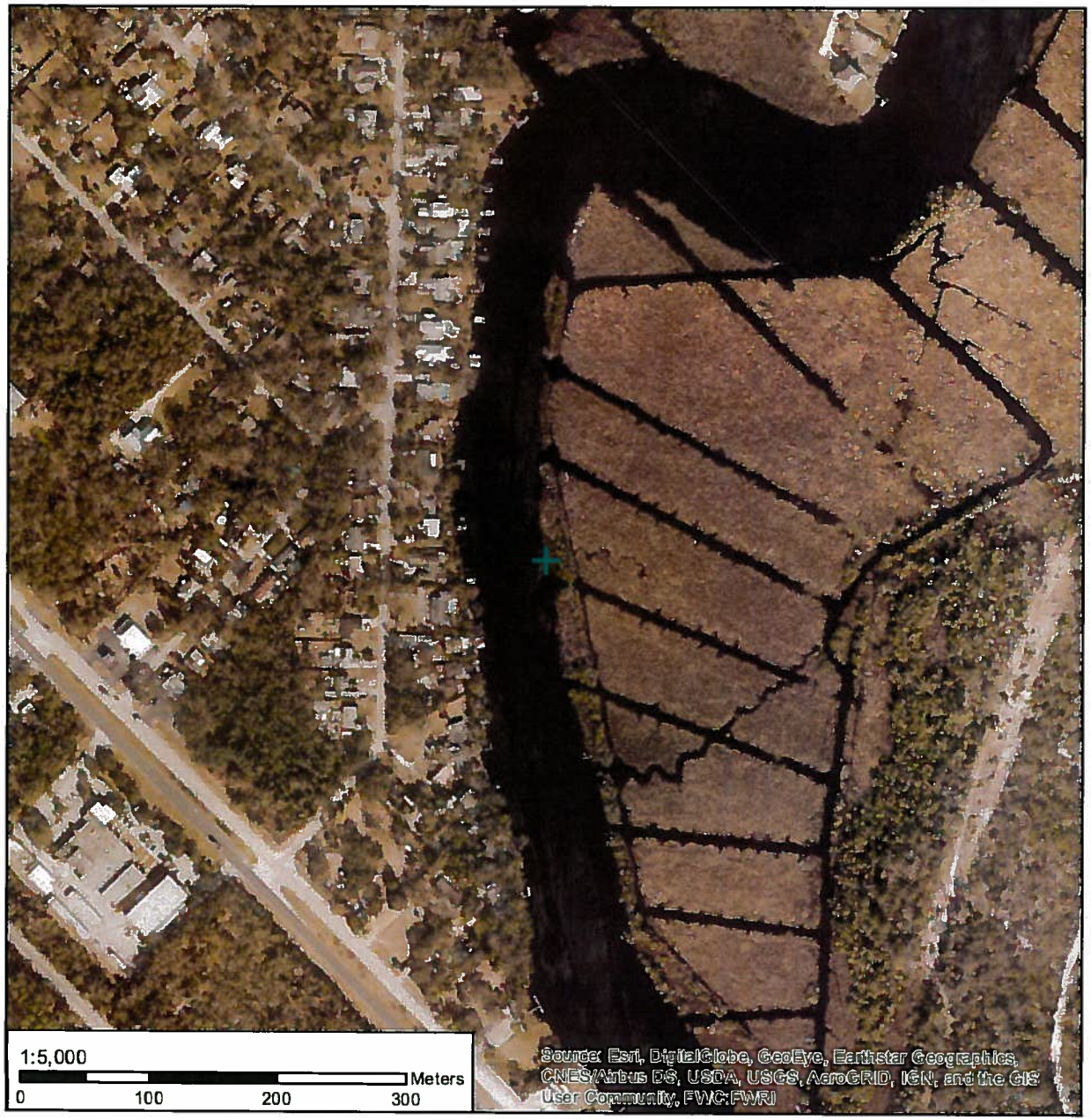
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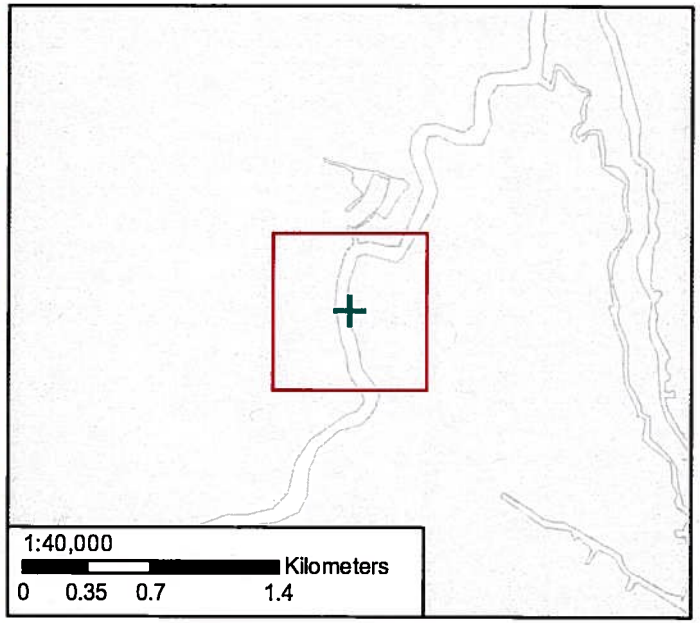
Nadia J. Gordon

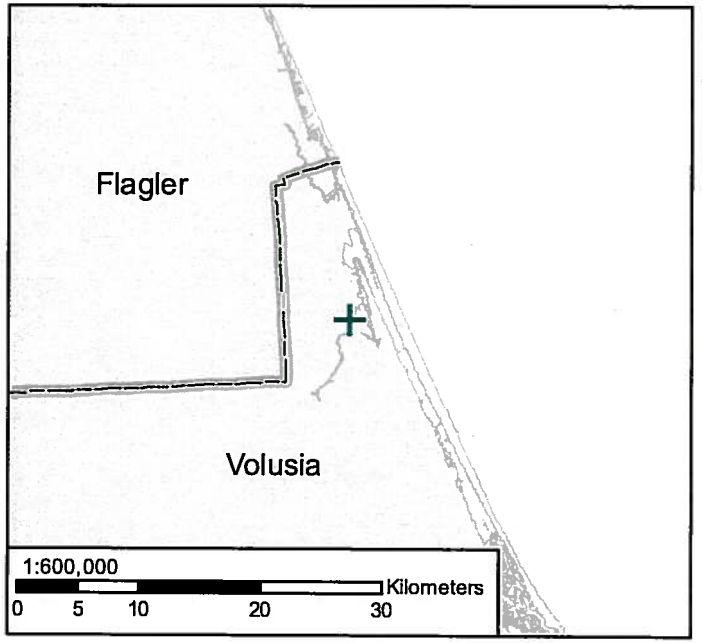
REPORT FILED BY Gordon

Verified Recovery Location of Manatee Carcass MNE19016

Report Date: 6/15/2019 **Received Date:** 6/15/2019 **Received By:** FWC-NJG Map Created: 11/2/2020







Locality Description:
Ormond Beach, Volusia
Floating, approximately 90 m E of 161 Coquina Avenue.

Latitude: 29.31022°N **Longitude:** -81.0949°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19016
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 9954 **FWC District:** Northeast
Sex: Male **Length (cm):** 130 **Estimated** _____ **Weight (kg)** N/T
Date reported: 15 June 2019 **By:** Judy McKernen (386-451-6528)
Date collected: 15 June 2019 **By:** Nadia Gordon
Date necropsied: 15 June 2019 **By:** Nadia Gordon

LOCATION INFORMATION: State: **County:** Volusia **Waterway:** Tomoka River
Latitude: N 29.310222 **Longitude:** W -81.094916
Locality description: Ormond Beach; 90 m E of 161 Coquina Avenue

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: fetal folds and umbilical skirt present

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 #: **MNE19021**
Date of Report: 2019-Aug-03
Filed By: FWC NE Field Station

FWC Case #
FWC Region: NE

Sex: Female **Length:** 154 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Aug-03 **By:** Citizen to FWC-NJG
DATE COLLECTED: 2019-Aug-03 **By:** FWC-KAT
DATE NECROPSIED: 2019-Aug-03 **By:** FWC-KAT

LOCATION:
State: FL **Latitude:** 29.25513 **N**
County: Volusia **Longitude:** -81.12348 **W**
Waterway: Tomoka River
Locality description: Ormond Beach, floating approximately 77 m S of 12 Waterberry Circle.

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; Meconium.

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	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: MNE19021

MORPHOMETRICS:

Total length:	154 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. Left umbilical artery probe patents and filled with blood clots, right umbilical artery closed.

Ductus Arteriosis Diameter:	2 cm
Left Pulmonary Artery Diameter:	1.5 cm
Right Pulmonary Artery Diameter:	1.5 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. MNE19021
RECOVERY DATE 03 August 2019
GENDER Female **TL** 154 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 03 August 2019
CONDITION Badly Decomposed

HISTORY 03 August 2019, at 0951 hrs, FWC biologist-Nadia J. Gordon (NJG) received text messages on her personal phone from former FWC employee-Rachel Tighe sharing pictures of a dead manatee calf and a text copied from Linda Harbison who had secured the carcass to her dock. NJG forwarded the information to FWC biologist-Kyanna A. Tamborini (KAT). KAT called Linda at 1000 hrs, who advised she had found the manatee floating northbound on the Tomoka River, Ormond Beach, Volusia County and towed it by kayak to her residence. KAT arrived at the residence at 1150 hrs, loaded the carcass into the Ezy-Lift truck at 1208 hrs, and transported it to Buck Island in Jacksonville at 1346 hrs. A field necropsy was completed at 1550 hrs.

EXTERNAL Approximately 50% of the epidermis was present but sloughing. The carcass was distended with gas. Both eyes were bulging due to decomposition. Bloody fluid exuded from the nares. The remaining epidermis was dark grey to black and smooth. Transverse folds were observed on the ventrum. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL No abdominal or mesenteric fat was observed. There was scant, gassy omental fat.

STOMACH The stomach contained a scant amount of cloudy, yellow to white fluid. The mucosa was gassy. No parasites were observed.

DUODENUM The duodenum contained a scant amount of cloudy, brown fluid. The mucosa was gassy. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a scant amount of tan to brown fluid throughout. The mucosa was autolyzed. No parasites were observed.

CECUM The cecum contained approximately 70 mL of moist, pasty, yellow to green meconium. The mucosa was stained yellow to orange. No parasites were observed.

COLON The proximal colon contained wet, poorly formed, pasty, dark green meconium. The distal colon contained moist, dark green to brown meconium. The mucosa was autolyzed. 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, gassy, and autolyzed.

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

REPRODUCTIVE The uterus was small in diameter.

KIDNEYS The kidneys were soft, friable, and autolyzed.

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

HEART Valves and chambers were unremarkable. The ductus arteriosus measured 2.0 cm flat diameter. The left pulmonary artery measured 1.5 cm flat diameter. The right pulmonary artery measured 1.5 cm flat diameter.

RESPIRATORY SYSTEM The lungs were soft, gassy, and friable. The right lung was red on serosal and cut surfaces. The left lung was red to purple on serosal surfaces and red on cut surfaces. There was a scant amount of red fluid in the primary airways.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER The umbilicus was autolyzed.

PHOTOGRAPHS 2019-08-03_FWC026_4243 through 4250, 4252, 4254 through 4276, 4278 through 4282.

COMMENTS The appearance of the epidermis and presence of meconium from cecum through colon indicate the carcass was perinatal despite being larger than 150 cm.

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Fetal folds
- Meconium

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

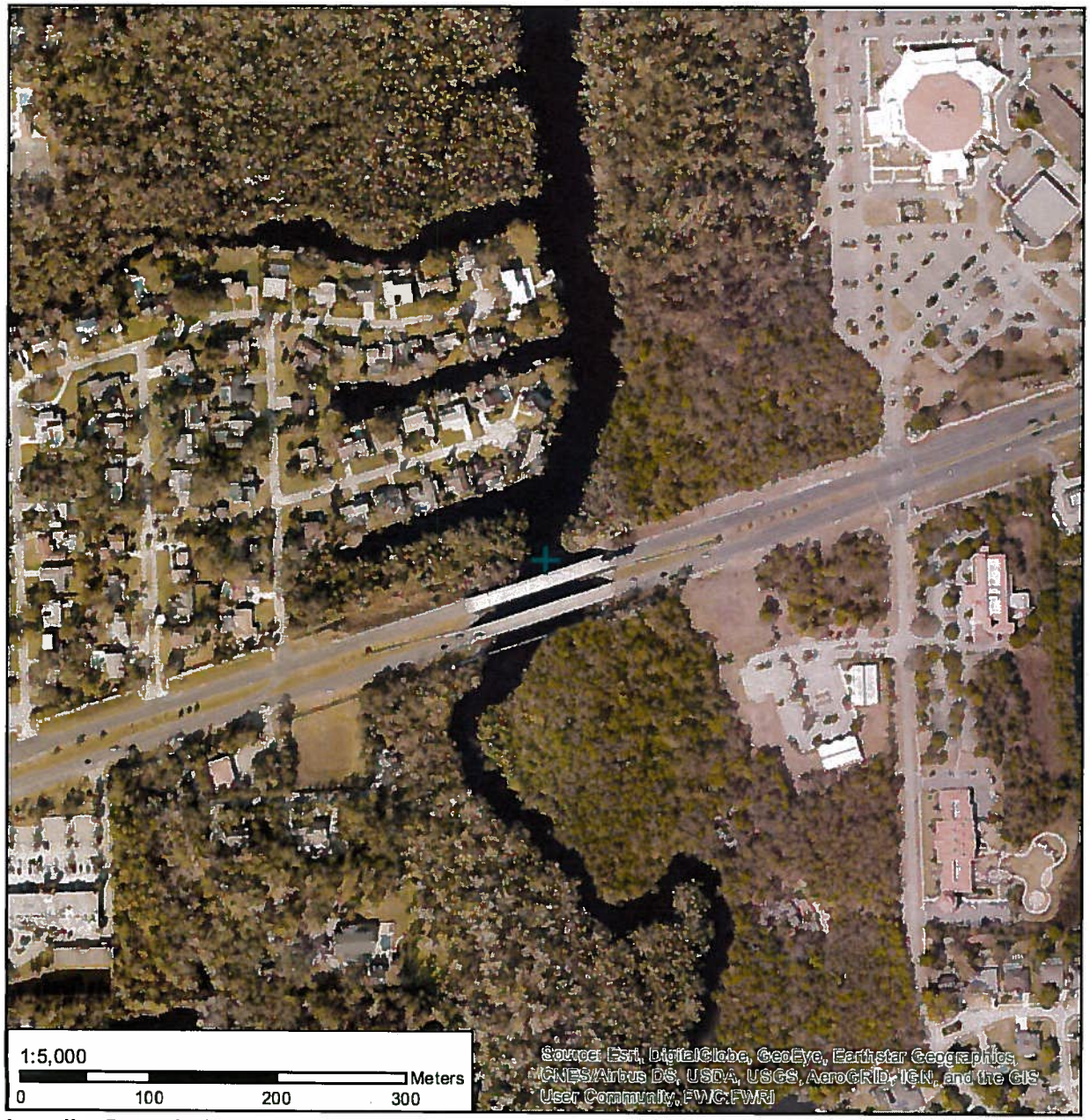
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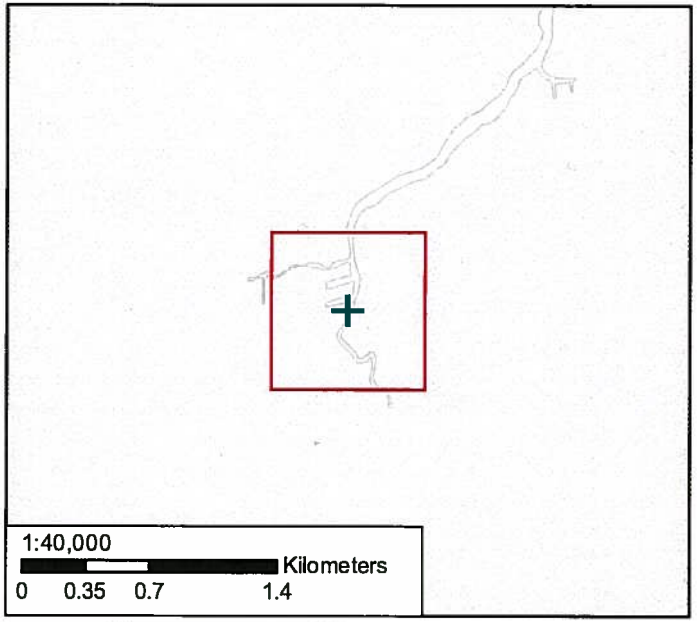
Kyanna A. Tamborini

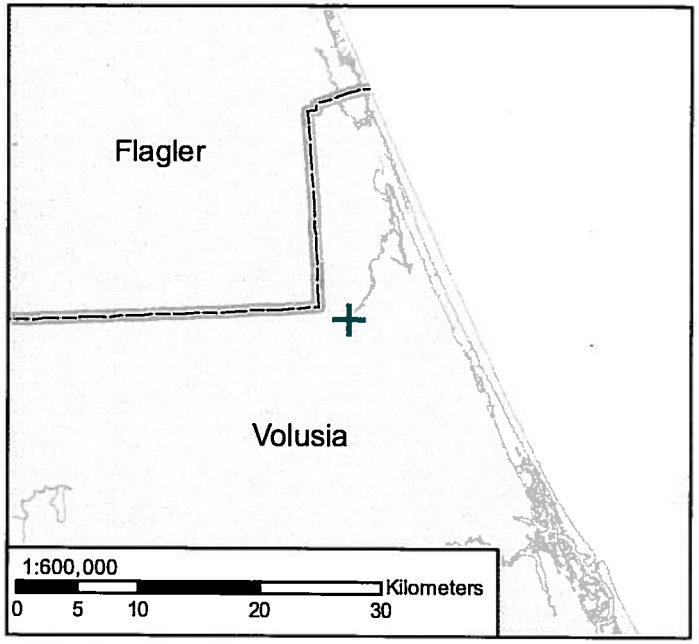
REPORT FILED BY Tamborini / Perna

Verified Recovery Location of Manatee Carcass MNE19021

Report Date: 8/3/2019 **Received Date:** 8/3/2019 **Received By:** FWC-KAT Map Created: 12/7/2020







Locality Description:
Ormond Beach, Volusia
Floating, approximately 77 m S of 12 Waterberry Circle.

Latitude: 29.25513°N **Longitude:** -81.12348°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19021
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: Northeast
Sex: Female **Length (cm)**: 154 **Estimated** _____ **Weight (kg)** N/T
Date reported: 03 August 2019 **By**: Linda Harbison (386-527-8246)
Date collected: 03 August 2019 **By**: Kyanna A. Tamborini
Date necropsied: 03 August 2019 **By**: Kyanna A. Tamborini

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Tomoka River
Latitude: N 29.255131 **Longitude**: W -81.123493
Locality description: Ormond Beach, approximately 77 m S of 12 Waterberry 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: soft, friable, and autolyzed internal organs, meconium in cecum and large 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 _____

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: Meconium in the cecum and colon conclude the calf likely died within days of birth.

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 #: **MNE19022**
Date of Report: 2019-Aug-04
Filed By: FWC NE Field Station

FWC Case # 13358 **FWC Region:** NE

Sex: Male **Length:** 126 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Aug-04 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Aug-04 **By:** FWC-ACP

DATE NECROPSIED: 2019-Aug-04 **By:** FWC-ACP

LOCATION: **State:** FL **Latitude:** 29.25481 **N**
County: Volusia **Longitude:** -81.12332 **W**
Waterway: Tomoka River
Locality description: Ormond Beach, floating approximately 124 m SSE of 12 Waterberry Circle

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; Meconium; Wet lung(s).

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	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: MNE19022

MORPHOMETRICS:

Total length:	126 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. Umbilical arteries open with blood clots.

Ductus Arteriosis Diameter:	0.8 cm
Left Pulmonary Artery Diameter:	1 cm
Right Pulmonary Artery Diameter:	1 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. MNE19022
RECOVERY DATE 04 August 2019
GENDER Male **TL** 126 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 04 August 2019
CONDITION Badly Decomposed

HISTORY 04 August 2019, at 1028 hrs, FWC biologist-Allison C. Perna (ACP) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf in the Tomoka River, Ormond Beach, Volusia County. FWC case number 13358 was assigned. The complainant, Mark Beasley (407-782-3191), said it was under the SR 40 bridge and he could bring it to the Tomoka Estates boat ramp on his boat. ACP met him at the boat ramp at 1215 hrs, loaded the carcass into the truck at 1218 hrs, and transported it to Buck Island in Jacksonville. A field necropsy was completed at 1525 hrs.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. The carcass was distended with gas. Red fluid exuded from the nares. Transverse folds were present on the ventrum. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant abdominal fat. No omental or mesenteric fat was observed.

STOMACH The stomach contained approximately 25 mL of tan fluid. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained approximately 15 mL of gelatinous, flocculent, yellow fluid. The mucosa was brown. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained yellow fluid. The mucosa was yellow. No parasites were grossly observed.

CECUM The cecum contained approximately 25 mL of moist, pliable, green to brown meconium. The mucosa was unremarkable. No parasites were observed.

COLON The colon contained moist, pliable, green to brown meconium. The mucosa was unremarkable. No parasites were observed.

PANCREAS The pancreas was gassy. Serosal and cut surfaces were purple to pink.

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

LIVER The margins of the liver were rounded. The serosa was partially separated from the parenchyma. The liver was gray on serosal surfaces, and dark red to brown and bloody on cut surfaces.

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

REPRODUCTIVE The reproductive organs were small and unremarkable.

KIDNEYS There was no perirenal fat. The kidneys were soft and friable. Serosal surfaces were purple to red. On cut surfaces, the cortices and medullae were pink to red.

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

HEART Valves and chambers were unremarkable. The ductus arteriosus measured 0.8 cm flat diameter. The left pulmonary artery measured 1.0 cm flat diameter. The right pulmonary artery measured 1.0 cm flat diameter.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were gassy. The right lung was purple on serosal surfaces and red and wet on cut surfaces. The left lung was pink to purple on serosal surfaces and red and wet on cut surfaces. The primary airways contained a scant amount of red fluid. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER The umbilical arteries were open lateral and cranial to the urinary bladder and contained blood clots, but were autolyzed at the umbilicus.

PHOTOGRAPHS 2019-08-04_FWC026_4284 through 4312.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Fetal folds
- Meconium
- Wet lungs

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

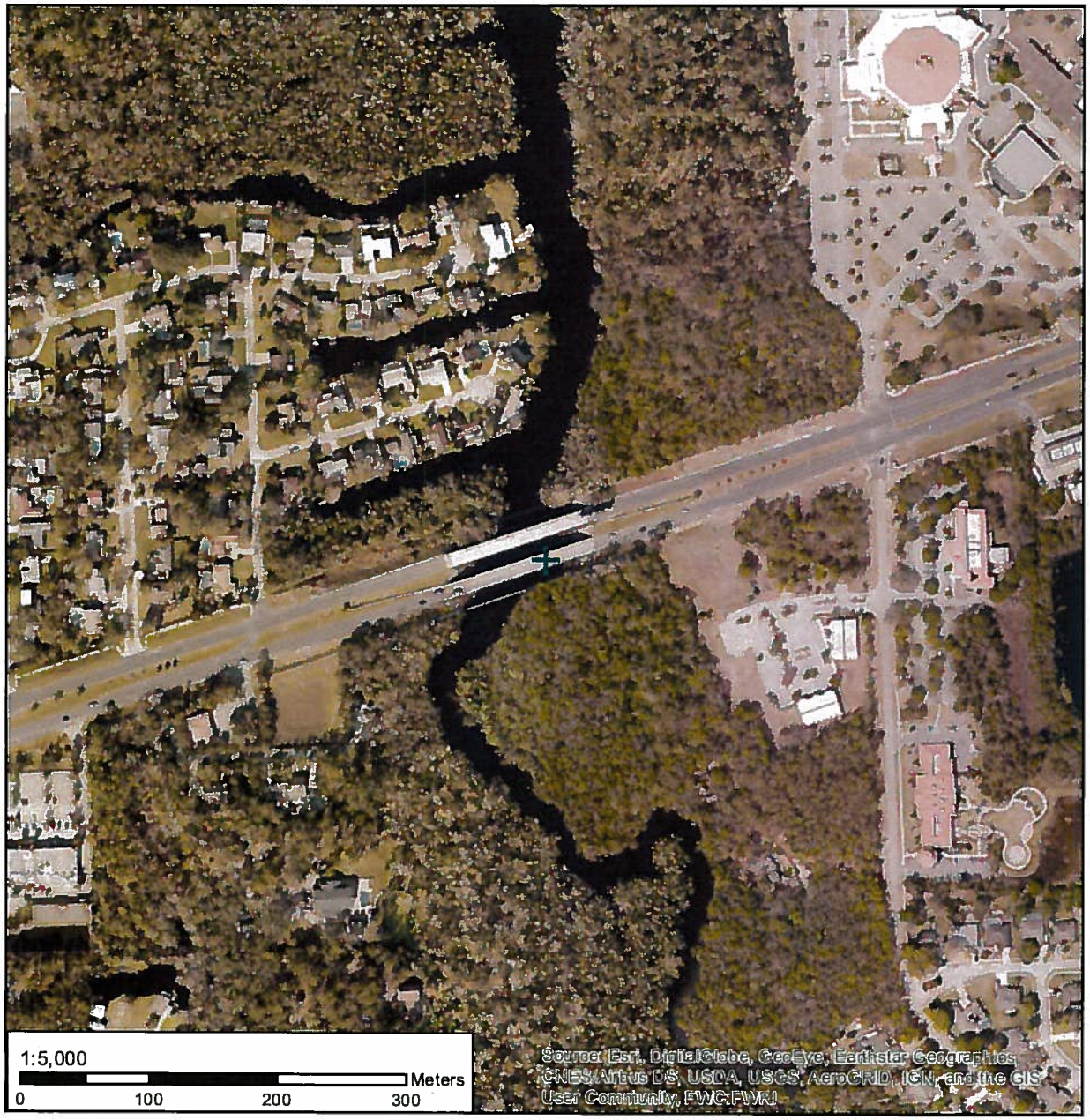
NECROPSY CONDUCTED BY

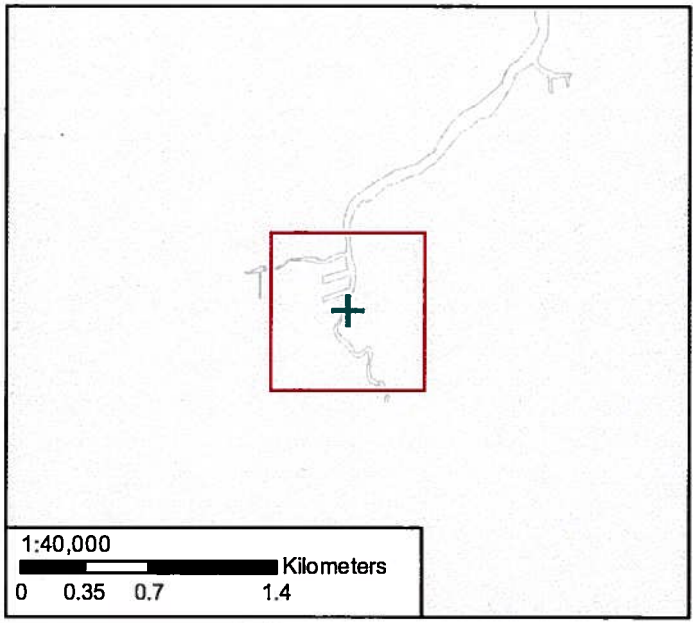
Allison C. Perna

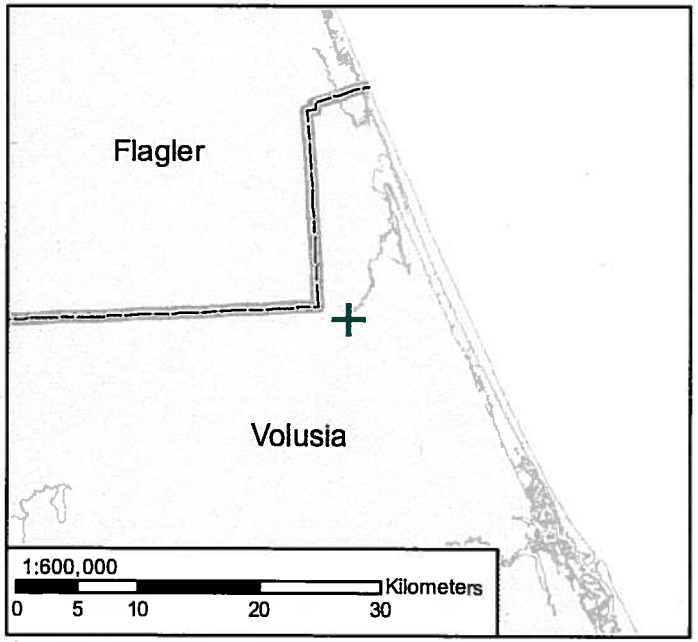
REPORT FILED BY Perna

Verified Recovery Location of Manatee Carcass MNE19022

Report Date: 8/4/2019 **Received Date:** 8/4/2019 **Received By:** FWC-ACP Map Created: 12/7/2020







Locality Description:
Ormond Beach, Volusia
Floating, approximately 124 m SSE of 12 Waterberry Circle

Latitude: 29.25481°N **Longitude:** -81.12332°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19022
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13358 **FWC District**: Northeast
Sex: Male **Length (cm)**: 126 **Estimated** _____ **Weight (kg)** N/T
Date reported: 04 August 2019 **By**: Mark Beasley (407-782-3191)
Date collected: 04 August 2019 **By**: Allison C. Perna
Date necropsied: 04 August 2019 **By**: Allison C. Perna

LOCATION INFORMATION: **State**: **County**: Volusia **Waterway**: Tomoka River
Latitude: N 29.254815 **Longitude**: W -81.123335
Locality description: Ormond Beach, approximately 124 m SSE of 12 Waterberry 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: milk in stomach, meconium in cecum and large 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 _____

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 #: **MNE19023**
Date of Report: 2019-Aug-06
Filed By: FWC NE Field Station

FWC Case # 13510 **FWC Region:** NE

Sex: Male **Length:** 139 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Aug-06 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Aug-07 **By:** FWC-NJG

DATE NECROPSIED: 2019-Aug-07 **By:** FWC-NJG

LOCATION: **State:** FL **Latitude:** 29.10558 **N**
County: Volusia **Longitude:** -80.97489 **W**
Waterway: Rose Bay
Locality description: Port Orange, grounded approximately 25 m SW of 5548 W Bayshore Drive

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; Meconium.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: MNE19023

MORPHOMETRICS:

Total length:	139 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. Umbilicus torn due to decomposition, Umbilical arteries open and contained blood clots.

Ductus Arteriosis Diameter:	2 cm
Left Pulmonary Artery Diameter:	1.3 cm
Right Pulmonary Artery Diameter:	1.5 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. MNE19023
RECOVERY DATE 07 August 2019
GENDER Male **TL** 139 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 07 August 2019
CONDITION Badly Decomposed

HISTORY 06 August 2019, at 1852 hrs, FWC on-call biologist-Amber R. Howell (ARH) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf along the shoreline off the Halifax River in Port Orange, Volusia County. FWC case number 13510 was assigned. The complainant, David Bachniewicz (386-547-3786), reported the manatee was near his home at 5553 W. Bayshore Drive and sent a verification photo. ARH passed the information to NE Field Station staff. **07 August**, at 0806 hrs, FWC biologist-Allison C. Perna confirmed with the complainant that the carcass was at the park across from his address. FWC biologist-Nadia J. Gordon (NJG) arrived at the location at 1030 hrs, loaded the carcass at 1043 hrs, and transported it to the NE Field Station at 1230 hrs. A field necropsy was completed at 1355 hrs. NJG transported the remains to Buck Island in Jacksonville for disposal.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the right naris. There was a large rent at the umbilicus through which internal organs protruded. Faint transverse folds were observed on the ventrum. 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 gassy abdominal fat. There was no omental or mesenteric fat.

STOMACH The stomach was torn and empty of contents. The mucosa was gassy and autolyzed. No parasites were observed.

DUODENUM The duodenum contained a scant amount of tan to yellow ingesta. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM Only a portion of the small intestine remained and contained yellow, gelatinous ingesta. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum was torn and contained a scant amount of pasty, yellow digesta. The mucosa was autolyzed. No parasites were observed.

COLON The colon contained moist, pliable, green to brown meconium. The mucosa was autolyzed. No parasites were observed.

PANCREAS The pancreas was soft and gassy. Serosal surfaces were pink and cut surfaces were gray.

SPLEEN The spleen was soft, friable, and autolyzed.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was gassy and empty of contents. The mucosa was stained yellow.

REPRODUCTIVE The reproductive tract was not examined.

KIDNEYS The right kidney was missing due to decomposition. The left kidney was liquified.

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

urachus was closed.

HEART The heart was soft, friable, and autolyzed. The ductus arteriosus measured 2.0 cm flat diameter. The left pulmonary artery measured 1.3 cm flat diameter. The right pulmonary artery measured 1.5 cm flat diameter.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The caudal portion of the right lung was missing, and the remaining lung was soft, friable, and autolyzed. The left lung was missing.

HEAD & NECK REGIONS NVL.

SKELETON Three right ribs were luxated due to decomposition.

OTHER Both umbilical arteries were open and contained blood clots. The umbilicus was torn due to decomposition.

PHOTOGRAPHS 2019-08-07_FWC026_4382 4403, 4405 through 4408.

COMMENTS

SIGNIFICANT FINDINGS

- Missing, autolyzed internal organs
- Fetal folds
- Meconium

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

NECROPSY CONDUCTED BY

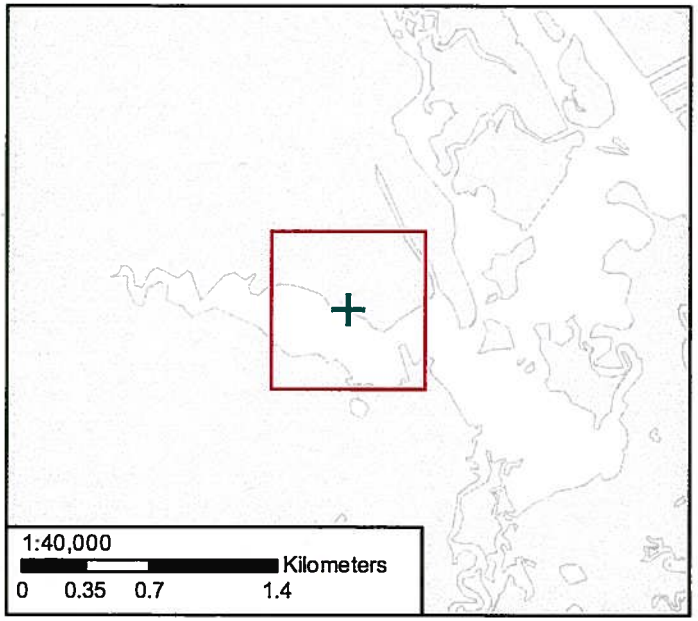
Nadia J. Gordon
Lucas Meers (Jacksonville Zoo and Gardens)

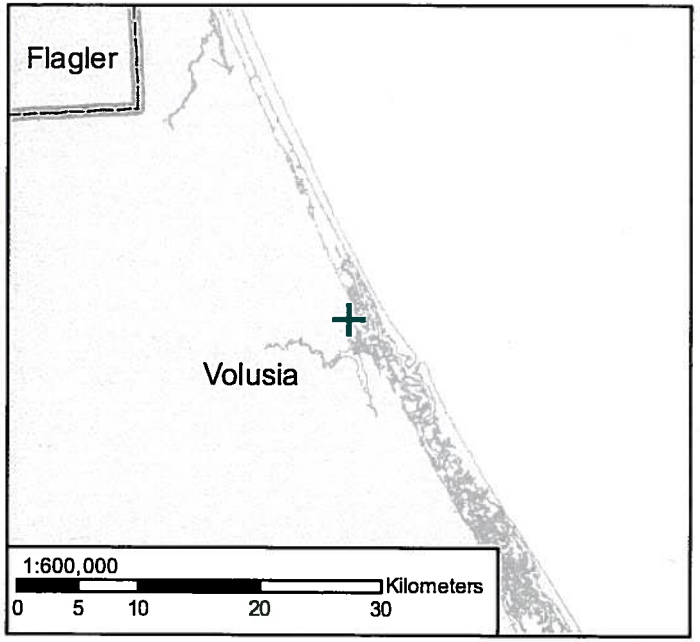
REPORT FILED BY Perna / Gordon

Verified Recovery Location of Manatee Carcass MNE19023

Report Date: 8/6/2019 **Received Date:** 8/7/2019 **Received By:** FWC-NJG Map Created: 12/7/2020







Locality Description:
Port Orange, Volusia
Grounded, approximately 25 m SW of 5548 W Bayshore Drive

Latitude: 29.10558°N **Longitude:** -80.97489°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19023
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13510 **FWC District**: Northeast
Sex: Male **Length (cm)**: 139 **Estimated** _____ **Weight (kg)** N/T
Date reported: 06 August 2019 **By**: David Bachniewicz (386-547-3786)
Date collected: 07 August 2019 **By**: Nadia J. Gordon
Date necropsied: 07 August 2019 **By**: Nadia J. Gordon, Jacksonville Zoo & Gardens- Lucas Meer

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Rose Bay
Latitude: N 29.105582 **Longitude**: W -80.974900
Locality description: Port Orange, approximately 25 m SW of 5548 W Bayshore 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: meconium in the large 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 _____

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 #: **MNE19024**
Date of Report: 2019-Aug-11
Filed By: FWC NE Field Station

FWC Case # 13759 **FWC Region:** NE

Sex: Female **Length:** 130 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Aug-11 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Aug-11 **By:** FWC-ACP

DATE NECROPSIED: 2019-Aug-11 **By:** FWC-ACP

LOCATION: **State:** FL **Latitude:** 29.31709 **N**
County: Volusia **Longitude:** -81.09509 **W**
Waterway: Tomoka River
Locality description: Ormond Beach, floating approximately 30 m SW of 1080 Shockney Drive.

CONDITION: Badly Decomposed

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

EXPLAIN: Natural: Other; Fetal folds; Depleted fat(s); Relatively empty GI tract; Omphalitis; Adhered small intestine mesentery; Fluid, fibrin, caseous material in the abdominal cavity; Congested urinary bladder; Slightly enlarged spleen.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Perinatal evaluation performed.

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: MNE19024

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:

Urachus closed. Umbilical arteries were open and contained red-tinged fluid and blood clots.

Ductus Arteriosis Diameter:	0.9 cm
Left Pulmonary Artery Diameter:	1.1 cm
Right Pulmonary Artery Diameter:	1.1 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. MNE19024
RECOVERY DATE 11 August 2019
GENDER Female **TL** 130 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 11 August 2019
CONDITION Badly Decomposed

HISTORY 11 August 2019, at 0947 hrs, FWC biologist-Allison C. Perna (ACP) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf in the Tomoka River, Ormond Beach, Volusia County. FWC case number 13759 was assigned. The complainant, Mark Begeal (386-341-4658), advised that the carcass was behind his address at 1080 Shockney Drive, and he had seen it a few days prior with an adult manatee. ACP arrived at the carcass at 1139 hrs, loaded it into the truck at 1145 hrs, and transported it to Buck Island in Jacksonville. A field necropsy was completed at 1525 hrs.

EXTERNAL All of the epidermis was present but sloughing. The carcass was distended with gas. Bloody fluid exuded from the nares. Both eyes were bulging due to decomposition. Transverse folds were present on the ventrum. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was scant abdominal and omental fat. There was no mesenteric fat. The mesenteries were coated in caseous, yellow material. The abdominal cavity contained approximately 75 mL of cloudy, red-tinged fluid with caseous, yellow material.

STOMACH The stomach contained approximately 10 mL of flocculent, tan fluid. The mucosa was brown. No parasites were observed.

DUODENUM The duodenum contained approximately 25 mL of gelatinous, yellow fluid. The mucosa was stained yellow. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained tan fluid. The distal small intestine contained yellow fluid. A small section of the mesentery located dorsal to the umbilicus was adhered to itself and associated with caseous, yellow material. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained approximately 50 mL of dark yellow fluid. The mucosa was unremarkable. No parasites were observed.

COLON The proximal colon contained wet, pasty, yellow liquid. The distal colon contained moist, homogeneous, well-formed, yellow to green feces.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen appeared slightly enlarged, soft, and friable. Serosal surfaces were dark gray, and cut surfaces were purple.

LIVER The liver was soft, friable, and autolyzed.

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

REPRODUCTIVE The uterus was small in diameter and unremarkable.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was empty of contents. The mucosa was severely congested. The urachus was closed at the bladder tip.

HEART Valves and chambers were unremarkable. The ductus arteriosus measured 0.9 cm flat diameter. The left pulmonary artery measured 1.1 cm flat diameter. The right pulmonary artery measured 1.1 cm flat diameter.

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were spongy and gassy. Serosal surfaces were light pink to light gray and cut surfaces were pink to red. The primary airways contained a scant amount of watery, red-tinged fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER There was an abscess in the ventral abdominal wall near the umbilicus associated with the umbilical arteries. The remaining portions of the umbilical arteries were open and contained red-tinged fluid and blood clots.

PHOTOGRAPHS 2019-08-11_FWC026_4411 through 4428, 4430 through 4442.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Omphalitis
- Depleted fat
- Adhered small intestine mesentery
- Fluid, fibrin, caseous material in the abdominal cavity
- Congested urinary bladder mucosa
- Slightly enlarged spleen
- Relatively empty GI tract
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Perinatal; Natural

NECROPSY CONDUCTED BY

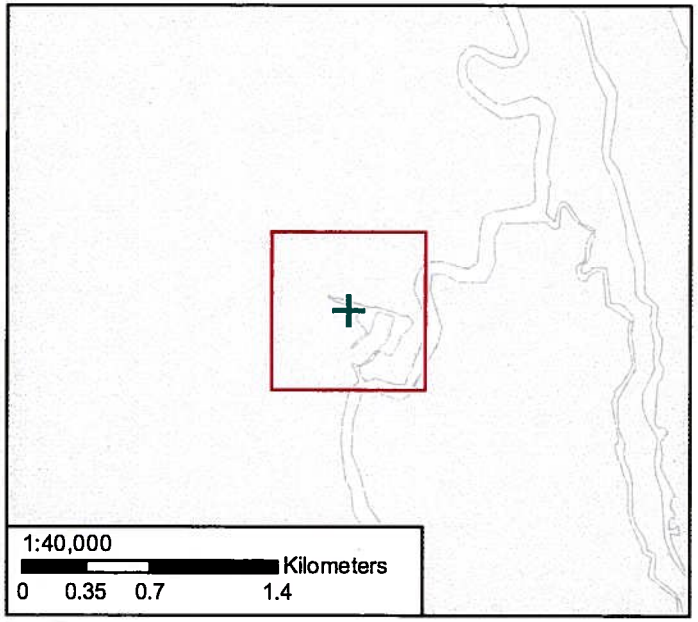
Allison C. Perna

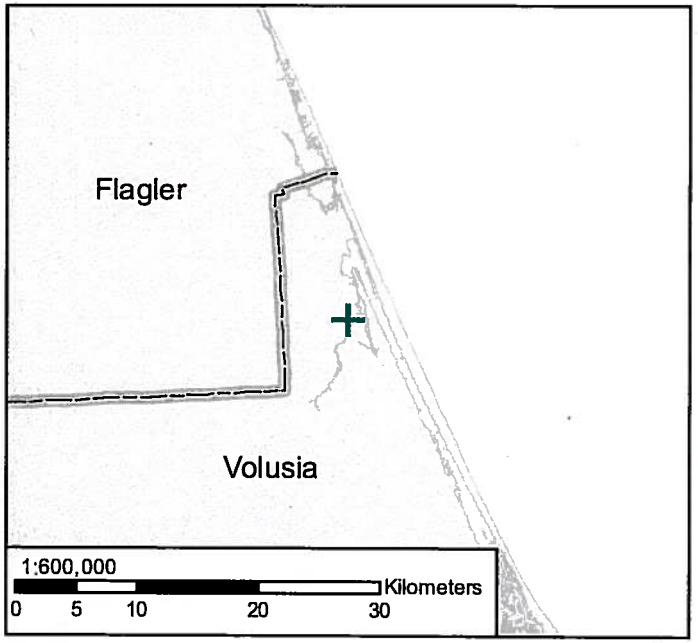
REPORT FILED BY Perna / Tamborini

Verified Recovery Location of Manatee Carcass MNE19024

Report Date: 8/11/2019 **Received Date:** 8/11/2019 **Received By:** FWC-ACP Map Created: 12/7/2020







Locality Description:
Ormond Beach, Volusia
Floating, approximately 30 m SW of 1080 Shockney Drive.

Latitude: 29.31709°N **Longitude:** -81.09509°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19024
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13759 **FWC District**: Northeast
Sex: Female **Length (cm)**: 130 **Estimated** _____ **Weight (kg)** N/T
Date reported: 11 August 2019 **By**: Mark Begeal (386-341-4658)
Date collected: 11 August 2019 **By**: Allison C. Perna
Date necropsied: 11 August 2019 **By**: Allison C. Perna

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Tomoka River
Latitude: N 29.317096 **Longitude**: W -81.095104
Locality description: Ormond Beach, approximately 30 m SW of 1080 Shockney 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: fetal folds; omphalitis; adhered intestine; fluid, fibrin, caseous material in abdominal cavity; milk in stomach; meconium in distal 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: 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 #: **MNE19027**
Date of Report: 2019-Oct-07
Filed By: FWC NE Field Station

FWC Case # 17571 **FWC Region:** NE

Sex: Female **Length:** 289 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Oct-07 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Oct-08 **By:** FWC-KAT

DATE NECROPSIED: 2019-Oct-08 **By:** FWC-NJG,ACP,KAT

LOCATION: **State:** FL **Latitude:** 29.03579 **N**
County: Volusia **Longitude:** -80.9278 **W**
Waterway: Indian River North
Locality description: New Smyrna Beach, floating approximately 55 m ENE of 703 Faulker Street.

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. Hook in small intestine. Braided line in small intestine. Metal weight in small intestine. Longitudinal folds; Dry, hard feces; Relatively empty stomach; Missing flipper bones.

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 positive (Left: 00-0695-9592; Right: 00-0695-7BC9). A field necropsy was performed. Actual length of the remains was 287 cm. Amputated flipper with remodeled humerus. Known as REC0921, MSTm0912, "Indiana", rescued due to a flipper entanglement.

Page 1&2	05 Jan 2021
Necropsy Report	05 Jan 2021
Lat/Long	05 Jan 2021

Field ID #: MNE19027

MORPHOMETRICS:

Total length:	289 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. MNE19027
RECOVERY DATE 08 October 2019
GENDER Female **TL** 289 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 08 October 2019
CONDITION Badly Decomposed

HISTORY 07 October 2019, at 1256 hrs, FWC biologist-Allison C. Burns (ACB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Indian River North, New Smyrna Beach, Volusia County. FWC case number 17571 was assigned. The complainant, Diane Beane (407-948-2616), reported a large manatee with missing skin behind her house and sent photos. ACB requested FWC LE assistance to tow the carcass at 1307 hrs. At 1315 hrs, Volusia County Marine Mammal Response Team (VCMMRT) Member-Debbie Wright (DW) informed ACB that FWC LE had requested her to tow the carcass. At 1438 hrs, DW informed ACP that VCMMRT member-Ashley Ambert (AA) had secured the carcass so that they could tow it first thing the next day. ACP relayed the information to FWC biologist-Kyanna A. Tamborini (KAT). **08 October**, KAT arrived at the North Causeway boat ramp at 1117 hrs, met DW and AA with the carcass, and loaded it into the carcass trailer at 1135 hrs. KAT transported the carcass to Buck Island in Jacksonville where she met ACB and FWC biologist-Nadia J. Gordon. A field necropsy was completed at 1522 hrs.

EXTERNAL Approximately 40% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened. The face, dermis, and fluke margin were eroded due to decomposition. The right humerus, radius, and ulna were exposed due to decomposition and the phalanges were missing. The left humerus was exposed and remodeled at the distal end. The left flipper was missing distal to the humerus. The dermis was severely eroded on the lateral aspects which exposed several of the left rib tips. There were longitudinal folds on the ventrum. A minimum of three well-healed watercraft-related scar patterns was observed. There was a rent on the caudal ventrum due to decomposition. Actual length of the remains was 287 cm. PIT tag scan was positive (Left: 00-0695-9592; Right: 00-0695-7BC9), known as REC0921, MSTm0912, "Indiana", rescued for left flipper entanglement. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered.

STOMACH The stomach contained approximately 250 mL of wet, well-chewed, fibrous, yellow to green ingesta. No parasites were observed.

DUODENUM The duodenum was torn and empty of contents. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM Only the proximal small intestine remained (approximately 345 cm long) and was torn in multiple pieces. There was a 5 cm long hook with a 23 cm long piece of attached braided line and a 0.7 cm long barrel-shaped weight at the duodenum juncture. The weight had a bolus of ingesta surrounding it. Caudal to the hook, the small intestine contained dry, hard, well-formed, fibrous, tan to red ingesta. The remainder was empty of contents. The mucosa was autolyzed.

CECUM The cecum was missing.

COLON The colon contained dry, hard, well-formed, fibrous, tan to red feces. The mucosa was autolyzed. 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 was empty of contents.

REPRODUCTIVE The reproductive tract was soft, friable, and autolyzed.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder contained a scant amount of gray fluid. The mucosa was gassy 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 The left humerus had a large cavity of remodeled bone at the distal aspect.

OTHER

PHOTOGRAPHS 2019-10-08_FWC026_4698 through 4748.

COMMENTS The carcass was too decomposed to determine if the hook and line contributed to the manatee's death.

SIGNIFICANT FINDINGS

- Autolyzed, missing internal organs
- Missing flipper bones
- Longitudinal folds ventrum
- Relatively empty stomach
- Dry, hard feces
- Hook, braided line, and weight in small intestine
- Amputated flipper with remodeled bone
- PIT tag positive, REC0921, MSTm0912, "Indiana"

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

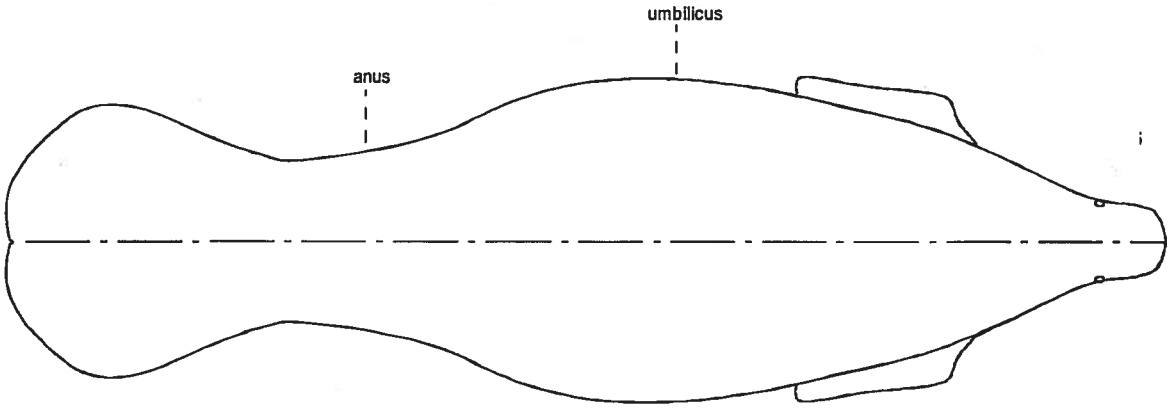
NECROPSY CONDUCTED BY

Nadia J. Gordon
Allison C. Burns
Kyanna A. Tamborini

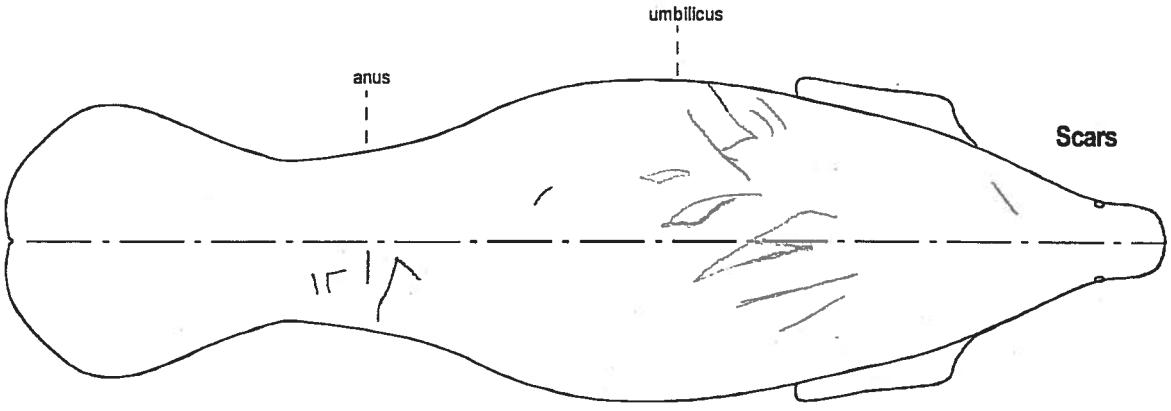
REPORT FILED BY Burns

Date 8 Oct. 2019 Field I.D. MNE19027

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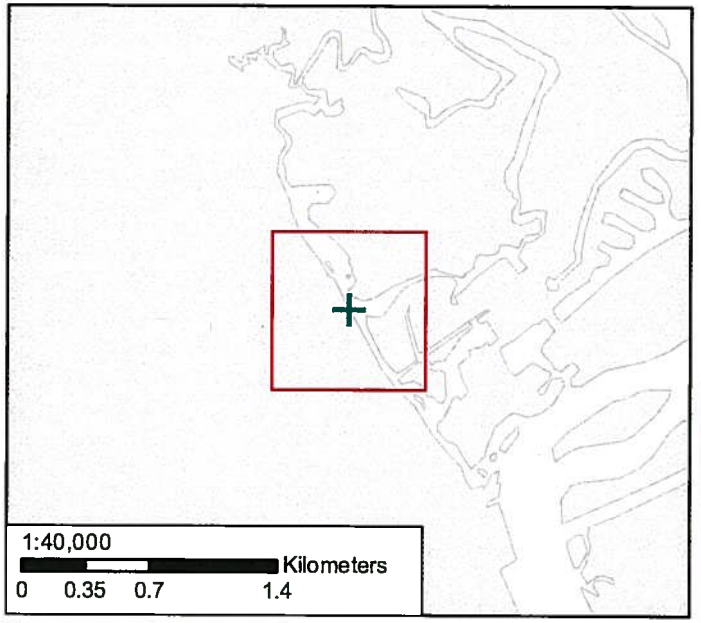
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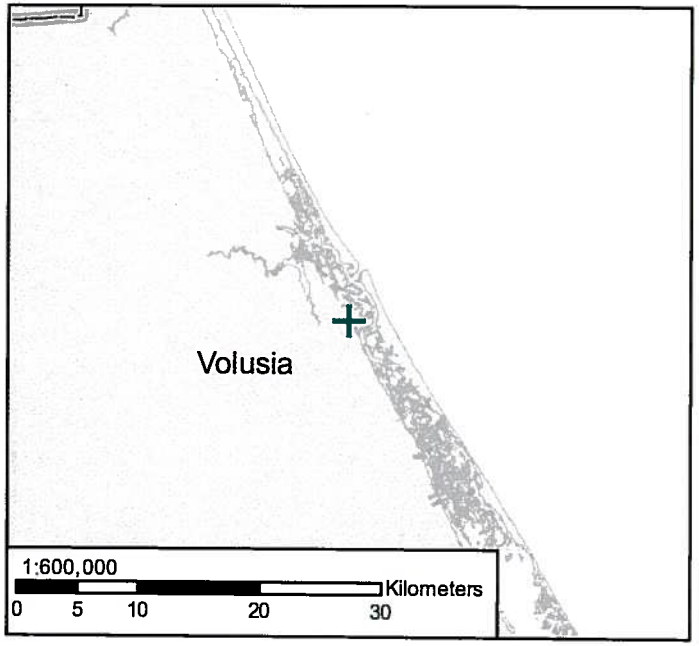


Verified Recovery Location of Manatee Carcass MNE19027

Report Date: 10/7/2019 **Received Date:** 10/8/2019 **Received By:** FWC-KAT Map Created: 12/28/2020







Locality Description:
New Smyrna Beach, Volusia
Floating, approximately 55 m ENE of 703 Faulker Street.

Latitude: 29.03579°N **Longitude:** -80.9278°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19027
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 17571 **FWC District**: Northeast
Sex: Female **Length (cm)**: 287 **Estimated** 289 **Weight (kg)** N/T
Date reported: 07 October 2019 **By**: Diane Beane (407-948-2616)
Date collected: 08 October 2019 **By**: Debbie Wright, Ashley Ambert, Kyanna A. Tamborini
Date necropsied: 08 October 201! **By**: Nadia J. Gordon, Allison C. Burns, Kyanna A. Tamborini

LOCATION INFORMATION: **State**: **County**: Volusia **Waterway**: Indian River North
Latitude: N 29.035799 **Longitude**: W -80.927808
Locality description: New Smyrna Beach, approximately 55 m ENE of 703 Faulkner St

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: hook, line, and weight in small intestine, post nuchal depression, ventral folds, relatively empty GI. dry, hard, well-formed 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 hook and line

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:** No **UTERINE SCAR**: Unknown
UTERINE HORNS: Unknown

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

PIT TAG Scan: Positive
Left side: 00-0695-9592 Right side: 00-0695-7BC9

REMARKS: known manatee Indiana, REC0921, MSTm0912

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 #: **MNE19028**
Date of Report: 2019-Oct-13
Filed By: FWC NE Field Station

FWC Case # 17952 **FWC Region:** NE

Sex: Male **Length:** 245 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Oct-13 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Oct-13 **By:** FWC-ACP

DATE NECROPSIED: 2019-Oct-14 **By:** FWC-NJG,ACP

LOCATION: **State:** FL **Latitude:** 29.26988 **N**
County: Volusia **Longitude:** -81.0472 **W**
Waterway: Halifax River
Locality description: Ormond Beach, floating approximately 50 m E of 630 S Beach Street.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Hemorrhagic muscle; Bloody lung(s); Wet lung(s); Bloody superficial scrapes epidermis; Bloody eyes, nares; Fluid in abdominal cavity; Congested urinary bladder mucosa, peritoneum, mesentery; Vegetation in mouth. First reported approximately 270 m from a culvert.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC NE Field Station pending distribution.

ADDITIONAL DATA:

Culvert schematic, -photographs. Email chain.

REMARKS:

PIT tag scan negative. A field necropsy was performed. Plastic in colon. Also FWC case number 17946.

Page 1&2	5 JAN 2021
Necropsy Report	5 JAN 2021
Lat/Long	5 JAN 2021

Field ID #: MNE19028

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:

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. MNE19028
RECOVERY DATE 13 October 2019
GENDER Male **TL** 245 **cm, WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 14 October 2019
CONDITION Moderately Decomposed

HISTORY 13 October 2019, at 0920 hrs, FWC biologist-Allison C. Burns (ACB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee at Riviera Park, Halifax River, Ormond Beach, Volusia County. FWC case number 17946 was assigned. The complainant, Queenie (386-237-0067), said the carcass was at the park at the end of Plaza Grande Ave, beside the pier, and she sent verification photos. ACB called Dispatch and requested LE assistance at 0933 hrs. At 1000 hrs, ACB received a text alert from Dispatch regarding the carcass. FWC case number 17952 was assigned. The complainant, Robert Lee (386-212-0374), was concerned because it was still there, and he had seen an FWC LE Officer in a truck at the park who didn't get out of the truck. At 1135 hrs, ACB called Dispatch and was told FWC-Officer Pelzel had responded by boat and could not locate the carcass. ACB called Officer Pelzel who said the carcass was inaccessible by land or boat. ACB asked for additional photos of the location to see if the Ezy-Lift could be used. Officer Pelzel sent a photo of the carcass tied to a dock and relayed she might be able to get it by boat after all. ACB arrived at the Granada boat ramp at 1435 hrs and met with Officer Pelzel who was towing the carcass. The carcass was loaded into the Ezy-Lift truck at 1512 hrs. At 1645 hrs, ACB transported the carcass to the NE Field Station where it was stored overnight. **14 October**, at 0830 hrs, ACB, FWC biologist-Nadia J. Gordon, and FWC Volunteer-Kayla Young transported the carcass to Buck Island in Jacksonville. A field necropsy was completed at 1115 hrs.

EXTERNAL Almost all of the epidermis was present. The carcass was distended with gas. Bloody fluid exuded from the eyes and nares. There was a light green algal mat on the dorsal and lateral aspects. There were numerous bloody superficial scrapes on the head, dorsum, ventrum, and left fluke margin. A few barnacles were present on the ventrum. A minimum of two well-healed watercraft-related scar patterns was observed. 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. The abdominal cavity contained approximately 1.4 L of watery, red fluid. There were patches of moderate congestion in the peritoneum.

STOMACH The stomach contained approximately 5 L of moist, fibrous, well-chewed, green ingesta. The ingesta were coated in white to tan mucus. The mucosa was unremarkable. There was a mild infection of live nematodes.

DUODENUM The duodenum contained approximately 2 L of wet, fibrous, well-chewed, green ingesta. The mucosa was unremarkable. There was a mild infection of live nematodes.

JEJUNUM & ILEUM The small intestine contained wet, fibrous, well-chewed, green ingesta and green fluid. The mucosa was sloughing. No parasites were grossly observed.

CECUM The cecum contained approximately 2 L of moist, fibrous, well-digested, green digesta. The mucosa was tan with areas of purple. No parasites were observed.

COLON There were patches of moderate congestion in the mesentery. The colon contained moist, fibrous, well-formed, green feces. There was an approximately 25 cm long piece of thin, black plastic in the contents. The mucosa was sloughing. No parasites were observed.

PANCREAS The pancreas was gassy. Serosal and cut surfaces were tan.

SPLEEN The spleen was black on serosal surfaces and purple on cut surfaces.

LIVER The liver was soft and friable. Serosal surfaces were purple to gray and cut surfaces were dark red to brown and bloody.

GALLBLADDER The gallbladder contained approximately 60 mL of dark yellow bile. The mucosa was stained yellow.

REPRODUCTIVE There was moderate reproductive fat. The seminal vesicles were moderate in size and contained a moderate amount of cloudy, tan fluid. The testes were moderate in size. No fluid was expressed on cut surfaces of the epididymides.

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

URINARY BLADDER The urinary bladder contained approximately 60 mL of clear urine. The mucosa was congested.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were pale gray on serosal surfaces and red, wet, and slightly bloody on cut surfaces. The primary airways contained a scant amount of red fluid.

HEAD & NECK REGIONS The tissue deep to the scrapes on the head appeared hemorrhagic (see photo). There was a thatch of poorly chewed vegetation in the mouth.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-10-14_FWC026_4786 through 4804, 4806 through 4811, 4813 through 4833, 4836 through 4841.

COMMENTS The manatee had external wounds consistent with entrapment within an enclosed space. The hemorrhage in the head and internal findings suggest a struggle and drowning. The carcass was originally reported approximately 270 m N of a pair of culverts located at the end of Granada Street. One culvert was 30 inches in diameter, and the other was 48 inches in diameter. The 48-inch culvert continued west approximately 600 m where it ended with a perpendicular intersection with a 36-inch diameter culvert. A manatee of this size would have been able to enter a 48-inch culvert but would not have been able to turn around. At normal high tide, the culvert is nearly completely submerged at the opening. The stage of decomposition of the carcass suggests that it died near the location it was first reported. It is most likely that the manatee entered the culvert, was unable to back up or turn around, and drowned.

SIGNIFICANT FINDINGS

- Bloody superficial scrapes epidermis
- Bloody eyes, nares
- Hemorrhagic tissue in head
- Wet, slightly bloody lungs

- Fluid in abdominal cavity
- Congested urinary bladder mucosa, peritoneum, mesentery
- Vegetation in mouth
- Plastic string on colon
- Found in proximity of culvert

PROBABLE CAUSE OF DEATH Human; Other (Culvert entrapment)

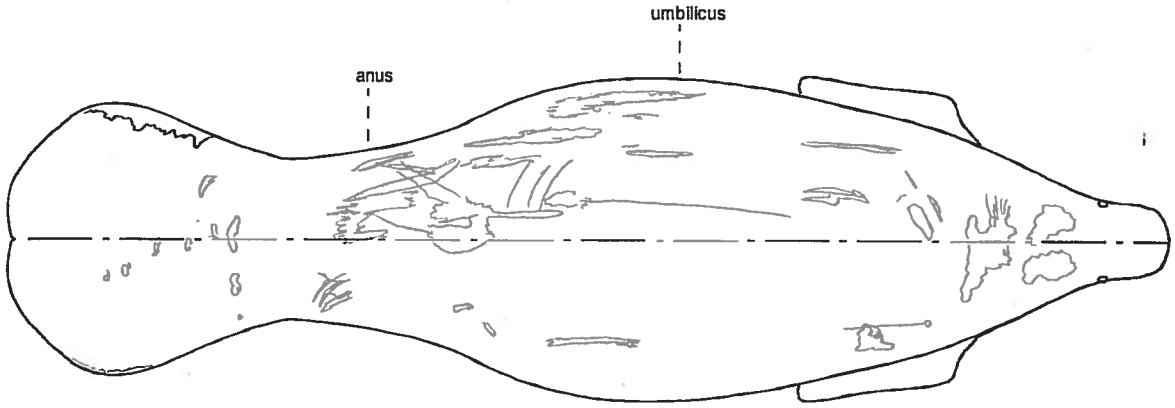
NECROPSY CONDUCTED BY

Nadia J. Gordon
Allison C. Burns
Kayla Young (FWC volunteer)

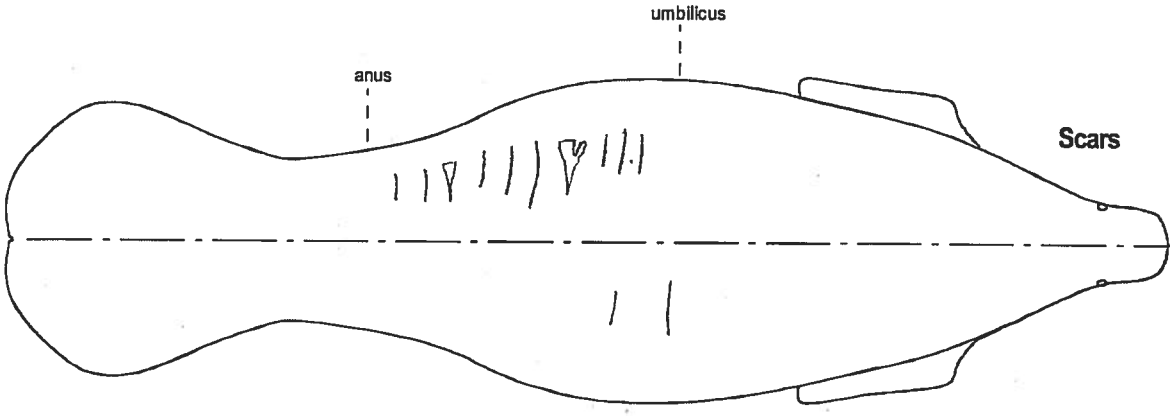
REPORT FILED BY Burns

Date 14 Oct 2019 Field I.D. MNE19028

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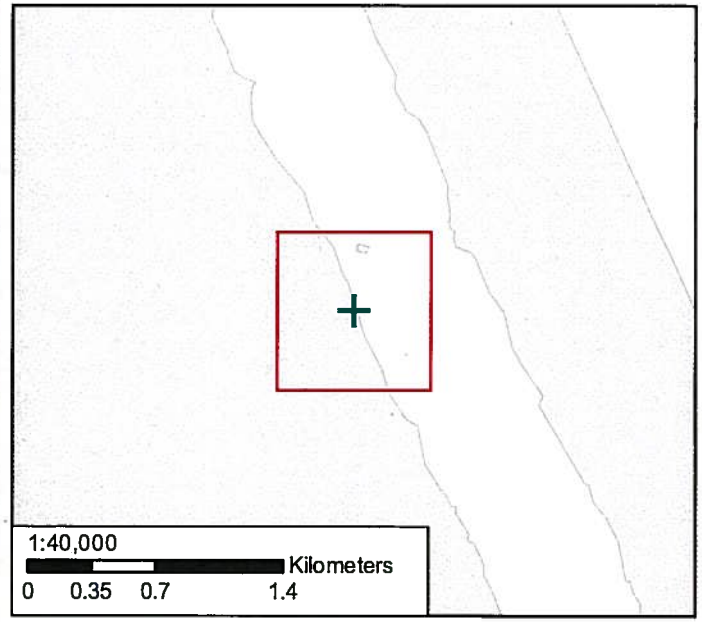
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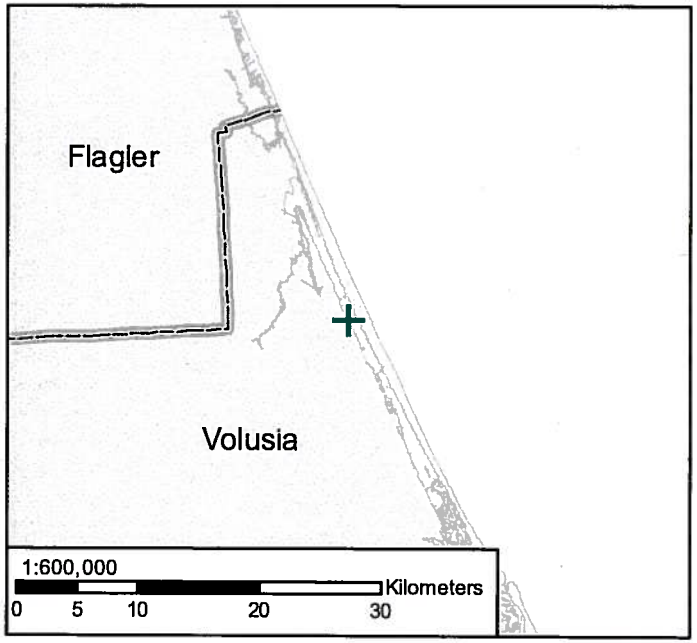


Verified Recovery Location of Manatee Carcass MNE19028

Report Date: 10/13/2019 **Received Date:** 10/13/2019 **Received By:** FWC-ACP Map Created: 12/28/2020







Locality Description:
Ormond Beach, Volusia
Floating, approximately 50 m E of 630 S Beach Street.

Latitude: 29.26988°N **Longitude:** -81.0472°W

Bassett, Brandon

From: Tamborini, Kyanna
Sent: Tuesday, December 17, 2019 4:29 PM
To: Bassett, Brandon
Subject: FW: Culvert Schematics MNE19028
Attachments: drainage map.png; 2019-12-15_FWC026_5464.jpg; 2019-12-15_FWC026_5465.jpg; 2019-12-15_FWC026_5466.jpg

Hello Brandon,

The streets and drainage supervisor (Shawn) for Holly Hill got back to me yesterday regarding the culvert schematics. Please find attached a map with the layout of the pipes and his description in the following email.

I also attached photos of the culvert.

- The opening to the culvert was completely submerged during high tide
- circular in shape
- probed with a long measuring stick and edges of culvert were smooth, no major obstructions
- I was unable to get a good look inside the culvert before tide came in

There were 2 other pipes I observed north of the culvert in question (as I mentioned on Sunday); however, they had doors on them and they are Ormond Beach's (as Shawn mentioned below).

Please let me know if there is any more information you need.

Thanks,

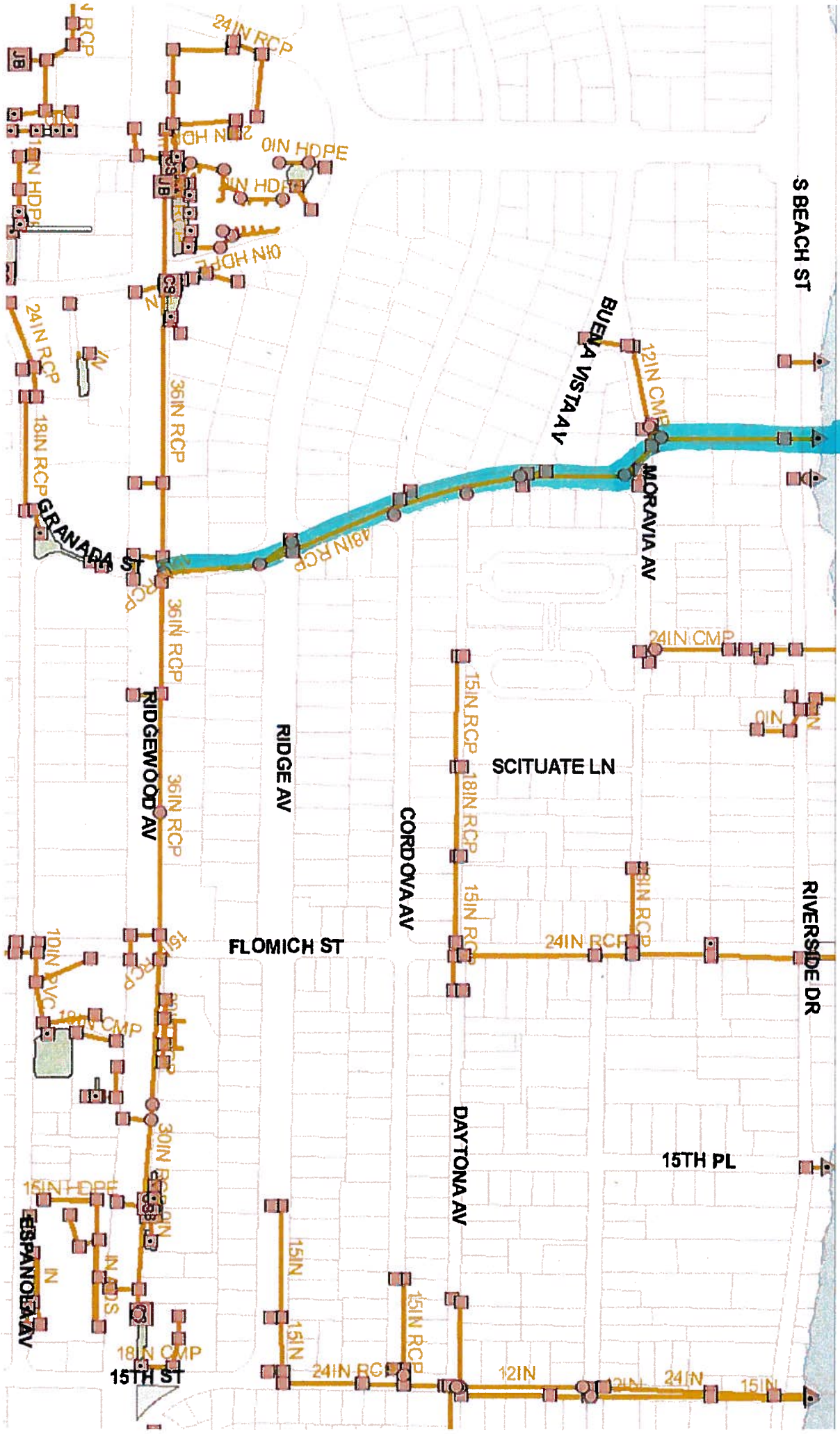
Kyanna

From: Shawn Hebert <shebert@hollyhillfl.org>
Sent: Monday, December 16, 2019 2:05 PM
To: Tamborini, Kyanna <Kyanna.Tamborini@MyFWC.com>
Subject: Re: Culvert Schematics

[EXTERNAL SENDER] Use Caution opening links or attachments

Good Afternoon Kyanna,

I sent her a map and I'm going to send you a better one that shows a bigger picture with all the sizes. You can see where the pipe goes and the size of it. The pipe is 48" from the River to us1 where it dead ends into a 36" pipe that runs North and South with US1. Those other 2 pipes to the North are Ormond Beach not ours. If you have any other questions feel free to ask.


24IN RCP
10IN HDPE
36IN RCP
18IN RCP
GRANADA ST
48IN RCP
BUENA VISTA AV
12IN CMP
MORAVIA AV
S BEACH ST
24IN CMP
15IN RCP
SCITUATE LN
18IN RCP
RIDGEWOOD AV
RIDGE AV
CORDOVA AV
FLOMICH ST
24IN RCP
RIVERSIDE DR
10IN PVC
18IN CMP
30IN RCP
15IN HDPE
ESPANOLA AV
DAYTONA AV
15TH PL
15IN
12IN
15TH ST

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19028
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 17946, 17952 **FWC District**: Northeast
Sex: Male **Length (cm)**: 245 **Estimated** _____ **Weight (kg)** N/T
Date reported: 13 October 2019 **By**: Queenie (386-237-0067)
Date collected: 13 October 2019 **By**: FWC LE Ofc-Pelzel and Allison C. Burns
Date necropsied: 14 October 201 **By**: Nadia Gordon, Allison Burns, FWC Volunteer-Kayla Young

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Halifax River
Latitude: N 29.269888 **Longitude**: W -81.047200
Locality description: Ormond Beach, approximately 50 m E of 630 S Beach St

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:
- Pale, wet, and slightly bloody lungs
- Superficial scrapes
- Grass in mouth

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 #: **MNE19029**
Date of Report: 2019-Oct-24
Filed By: FWC NE Field Station

FWC Case # 18560 **FWC Region:** NE

Sex: Male **Length:** 128 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Oct-24 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Oct-24 **By:** FWC-ACP

DATE NECROPSIED: 2019-Oct-24 **By:** FWC-NJG,ACP

LOCATION: **State:** FL **Latitude:** 29.34745 **N**
County: Volusia **Longitude:** -81.08754 **W**
Waterway: Tomoka River
Locality description: Ormond Beach, floating approximately 640 m ENE of 2179 Old Dixie Highway.

CONDITION: Badly Decomposed

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

EXPLAIN: Undetermined: Too Decomposed; Autolyzed and/or missing internal organs. Fetal folds; Skin lesions; Congested urinary bladder mucosa.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, 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.

Page 1&2	5 Jan 2021
Necropsy Report	5 Jan 2021
Lat/Long	5 Jan 2021

Field ID #: MNE19029

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:

Urachus closed.

Ductus Arteriosis Diameter:	1.7 cm
Left Pulmonary Artery Diameter:	1.2 cm
Right Pulmonary Artery Diameter:	1.3 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. MNE19029
RECOVERY DATE 24 October 2019
GENDER Male **TL** 128 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 24 October 2019
CONDITION Badly Decomposed

HISTORY 22 October 2019, at 0943 hrs, FWC biologist-Allison C. Burns (ACB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee calf at Tomoka State Park, Tomoka River, Ormond Beach, Volusia County. FWC case number 18560 was assigned. The complainant, Scott Cornelius (386-295-4031), said the carcass was drifting toward the Intracoastal Waterway. The complainant was unable to relocate the carcass when ACB asked him to secure it. He said he would continue to look for the manatee and would notify ACB if it was located. **23 October**, at 1645 hrs, ACB received a text message stating that the complainant had found the carcass. **24 October**, the complainant returned to secure the carcass. ACB arrived at the location at 1030 hrs, loaded the carcass at 1040 hrs, and transported it to Buck Island in Jacksonville where she met FWC biologist-Nadia J. Gordon. A field necropsy was completed at 1325 hrs.

EXTERNAL Approximately 90% of the epidermis was present but sloughing. The carcass was dorsoventrally flattened due to decomposition. The right eye was bulging due to decomposition. The left eye was missing due to scavenging. A few healing linear lesions were observed on all aspects. There were small circular pitted lesions in the cranial epidermis. Transverse folds were present on the ventrum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered.

STOMACH The stomach was distended with gas and empty of contents. The mucosa was autolyzed. No parasites were observed.

DUODENUM The duodenum was distended with gas and empty of contents. The mucosa was autolyzed. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained a scant amount of brown fluid throughout. The mucosa was autolyzed. No parasites were grossly observed.

CECUM The cecum contained a small amount of wet, fibrous, well-digested, dark green to brown digesta mixed with pieces of vegetation. The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained moist, fibrous, well-formed, well-digested, pliable, dark green feces. The distal colon contained dry, fibrous, well-formed, black feces. 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 soft, friable, and autolyzed.

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

REPRODUCTIVE The uterus was small in diameter.

KIDNEYS The kidneys were soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was distended with gas and empty of contents. The urachus was closed. The mucosa was slightly congested.

HEART Valves and chambers were unremarkable. The ductus arteriosus measured 1.7 cm flat diameter. The left pulmonary artery measured 1.2 cm flat diameter. The right pulmonary artery measured 1.3 cm flat diameter.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were soft, friable, and autolyzed.

HEAD & NECK REGIONS NVL.

SKELETON Left rib 8 was luxated due to decomposition. Otherwise, NVL.

OTHER The umbilical arteries were decomposed.

PHOTOGRAPHS 2019-10-24_FWC026_4935, 4937, 4939 through 4961, 4963, 4965.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Fetal folds
- Skin lesions
- Congested urinary bladder mucosa

PROBABLE CAUSE OF DEATH Perinatal; Undetermined (Too Decomposed)

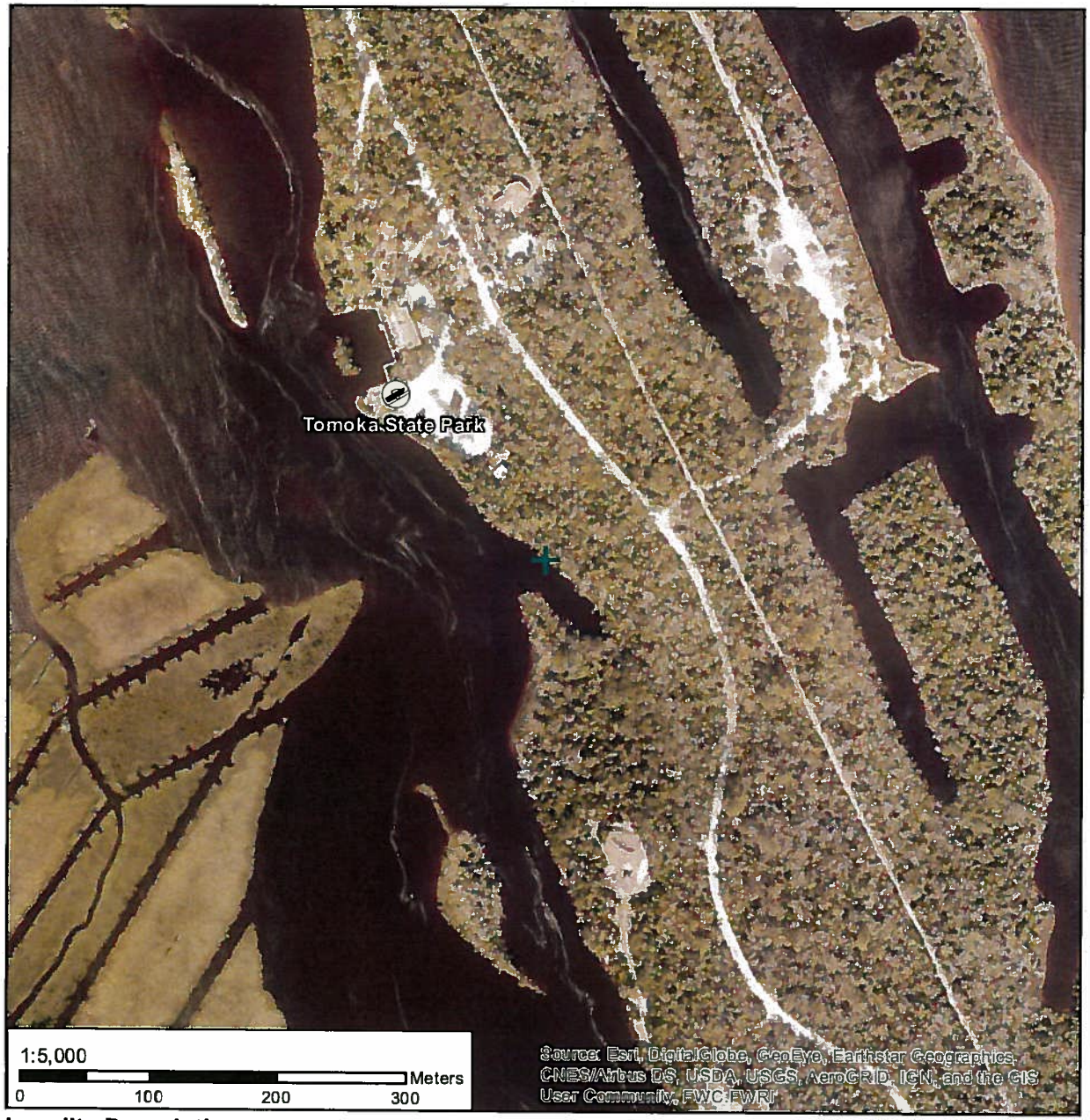
NECROPSY CONDUCTED BY

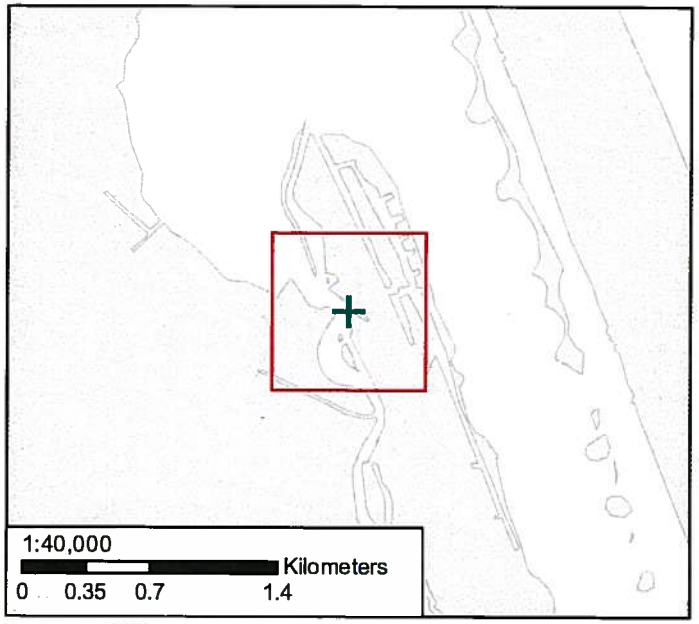
Nadia J. Gordon
Allison C. Burns

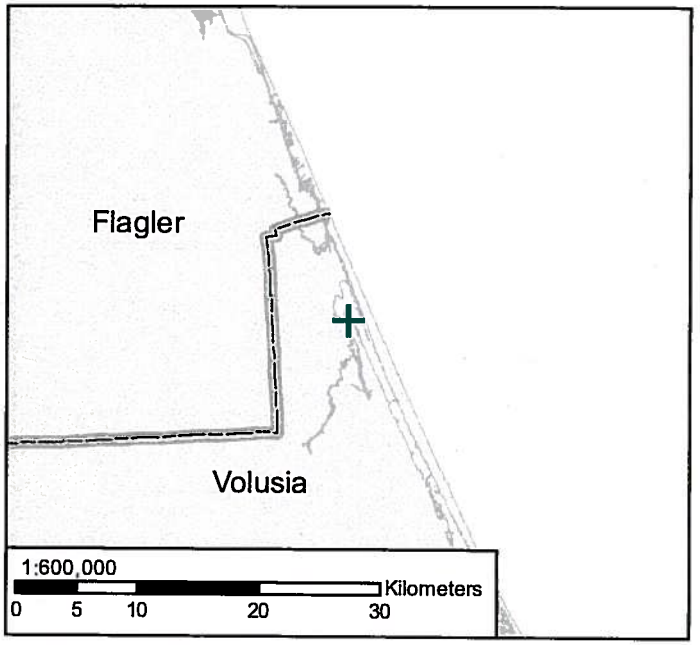
REPORT FILED BY Tamborini / Burns

Verified Recovery Location of Manatee Carcass MNE19029

Report Date: 10/24/2019 **Received Date:** 10/24/2019 **Received By:** FWC-ACP Map Created: 12/28/2020







Locality Description:
Ormond Beach, Volusia
Floating, approximately 640 m ENE of 2179 Old Dixie Highway.

Latitude: 29.34745°N **Longitude:** -81.08754°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19029
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 18560 **FWC District**: Northeast
Sex: Male **Length (cm)**: 128 **Estimated** _____ **Weight (kg)** N/T
Date reported: 22 October 2019 **By**: Scott Cornelius (386-295-4031)
Date collected: 24 October 2019 **By**: Allison C. Burns
Date necropsied: 24 October 2019 **By**: Nadia J. Gordon, Allison C. Burns

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Tomoka River
Latitude: N 29.347456 **Longitude**: W -81.087556
Locality description: Ormond Beach, approximately 640 m ENE of 2179 Old Dixie Highway

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: soft, friable, autolyzed internal organs
fetal folds

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 #: **MNE19030**
Date of Report: 2019-Nov-02
Filed By: FWC NE Field Station

FWC Case # 19260 **FWC Region:** NE

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

DATE REPORTED: 2019-Nov-02 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-03 **By:** FWC-NJG

DATE NECROPSIED: 2019-Nov-04 **By:** FWC-NJG,KAT

LOCATION: **State:** FL **Latitude:** 29.30642 **N**
County: Volusia **Longitude:** -81.0935 **W**
Waterway: Tomoka River
Locality description: Ormond Beach, floating approximately 100 m NE of 1001 N US Highway 1.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Other

EXPLAIN: Braided line in stomach, small intestine. Bloody lung(s); Wet lung(s); Dry, hard feces; Lesions in stomach, duodenum, small intestine; Hemopericardium; Hole in heart wall; Empty mid and distal small intestine; Proximal small intestine plicated around line; Relatively empty cecum, proximal colon.

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. Also FWC case number 19256.

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Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MNE19030

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:

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. MNE19030
RECOVERY DATE 03 November 2019
GENDER Male **TL** 284 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 04 November 2019
CONDITION Badly Decomposed

HISTORY 02 November 2019, at 1214 hrs, FWC biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Tomoka River, Ormond Beach, Volusia County. FWC case number 19256 was assigned. The complainant, Ariel Wind (386-307-5856), reported that she and her husband had observed a dead manatee floating just north of the US 1 bridge an hour prior. A photo of the carcass was provided. NJG requested officer assistance. At 1314 hrs, NJG received a text alert from Dispatch regarding the same carcass. FWC case number 19260 was assigned. The complainant, Tomoka State Park-Ranger James Mutchie, had received a second-hand report of the carcass but did not have the original complainant's name or number. NJG notified the Volusia County Marine Mammal Stranding Team (VCMMST) of the carcass. **03 November**, at 0700 hrs, NJG contacted Dispatch, but no officers were available. At 0834 hrs, NJG contacted VCMMST-Ashley Ambert (AA) for assistance. At 1240 hrs, NJG met AA at the Sanchez boat ramp. A vessel was launched from the boat ramp but then recovered and relaunched from Tomoka State Park at 1355 hrs. The carcass was located at 1431 hrs and towed to the nearby Tomoka Boat Club and Tours private ramp where it was secured at 1457 hrs after receiving permission from the owner. NJG returned to the boat ramp with the carcass trailer just before 1700 hrs. The carcass was loaded and transported to the NE Field Station at 1945 hrs. **04 November**, NJG and FWC biologist-Kyanna A. Tamborini met at the field station at 0700 hrs and transported the carcass to Buck Island in Jacksonville. A field necropsy was completed at 1100 hrs.

EXTERNAL Approximately 75% of the epidermis was present but sloughing. The carcass was distended with gas. Both eyes were bulging due to decomposition. Decompositional fluid exuded from the nares. There was a rent at the urogenital opening through which internal organs protruded. A minimum of three well-healed watercraft-related scar patterns was observed. PIT tag scan was negative. A genetics sample was collected.

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

STOMACH The stomach contained approximately 5.5 L of moist, fibrous, moderately chewed, green and brown ingesta. There was a 7.5 cm long piece of green braided line in the contents. The mucosa was autolyzed. There was a 12.5 x 2.0 cm ulcerating yellow lesion in the stomach wall which continued into the duodenum. There was a mild infection of dead nematodes.

DUODENUM The duodenum was torn and contained at least 50 mL of moist, fibrous, moderately chewed, green ingesta mixed with a scant amount of brown to green liquid. The mucosa was autolyzed. There was an irregular-shaped (10.5 x 5.5 cm) yellow lesion in the wall. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained a scant amount of gray fluid mixed with fibrous pieces of brown to green vegetation. There was a 269.5 cm long piece of green braided line in the contents. Approximately 370 cm of the proximal small intestine was plicated around the line. The mucosa of the proximal small intestine had necrotic, linear, tan lesions throughout. The mid- and distal small intestine (662 cm from the distal end of the braided line to the cecum) were empty of contents. The mucosa was unremarkable. No parasites were grossly observed throughout.

CECUM The cecum contained 250 mL of wet, fibrous, moderately digested, green and brown digesta. The mucosa was autolyzed. No parasites were observed.

COLON The proximal colon contained tan fluid. The mid colon contained moist, fibrous, brown, dark brown,

and green feces. The distal colon contained dry, hard, well-formed, fibrous, green to yellow feces. The mucosa was autolyzed throughout. No parasites were observed.

PANCREAS The pancreas was gassy. Serosal surfaces were pale pink and cut surfaces were pink.

SPLEEN The spleen was soft and friable. Serosal surfaces were mottled dark gray and black and cut surfaces were dark purple to red.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was empty of contents. The mucosa was autolyzed.

REPRODUCTIVE The reproductive organs were mostly missing.

KIDNEYS The kidneys were liquified.

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

HEART There was a small amount of epicardial fat. The heart was enveloped in a large, loose, well-formed blood clot. The right atria had a small hole in the wall. Valves were unremarkable.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The lungs were gassy. Serosal surfaces were mottled red, dark green, and black, and cut surfaces were red, wet, and bloody. The primary airways contained a scant amount of watery, red-tinged fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-04_FWC026_4972 through 4986, 4988, 4990, 4992 through 5002, 5006 through 5045, 5047, 5049 through 5054, 5057, 5058.

COMMENTS The origin of the hemopericardium was not determined.

SIGNIFICANT FINDINGS

- Braided line in stomach, small intestine
- Necrotic, ulcerating lesions in stomach, duodenum, small intestine wall
- Proximal small intestine plicated around line
- Empty mid- and distal small intestine
- Relatively empty cecum, proximal colon
- Dry, hard feces
- Hemopericardium
- Opening in right atria wall
- Wet, bloody lungs
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Human; Other

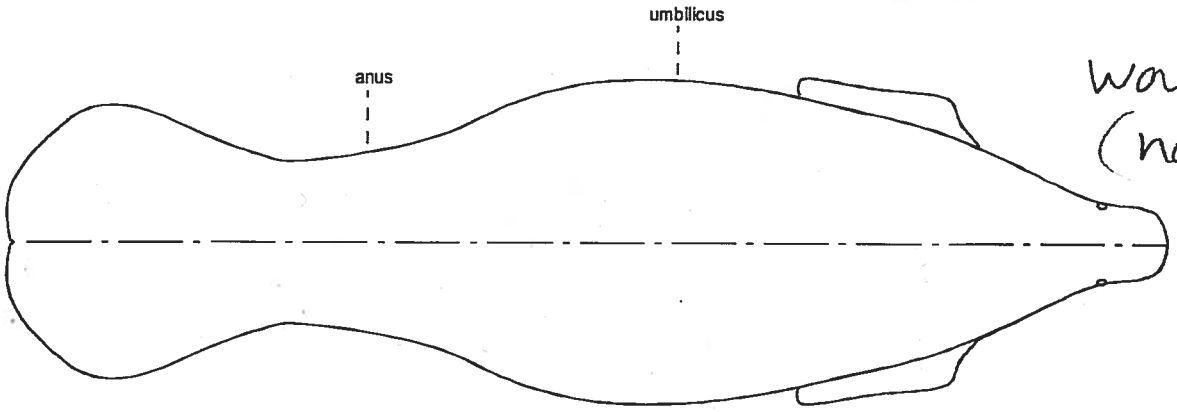
NECROPSY CONDUCTED BY

Nadia J. Gordon
Kyanna A. Tamborini

REPORT FILED BY Gordon

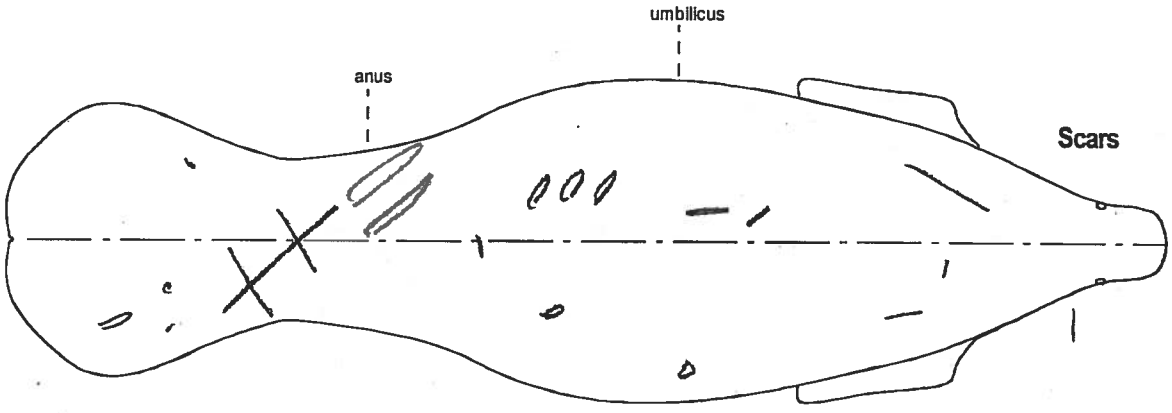
Date 04 November 2019 Field I.D. MNE19030

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Wounds (none observed)

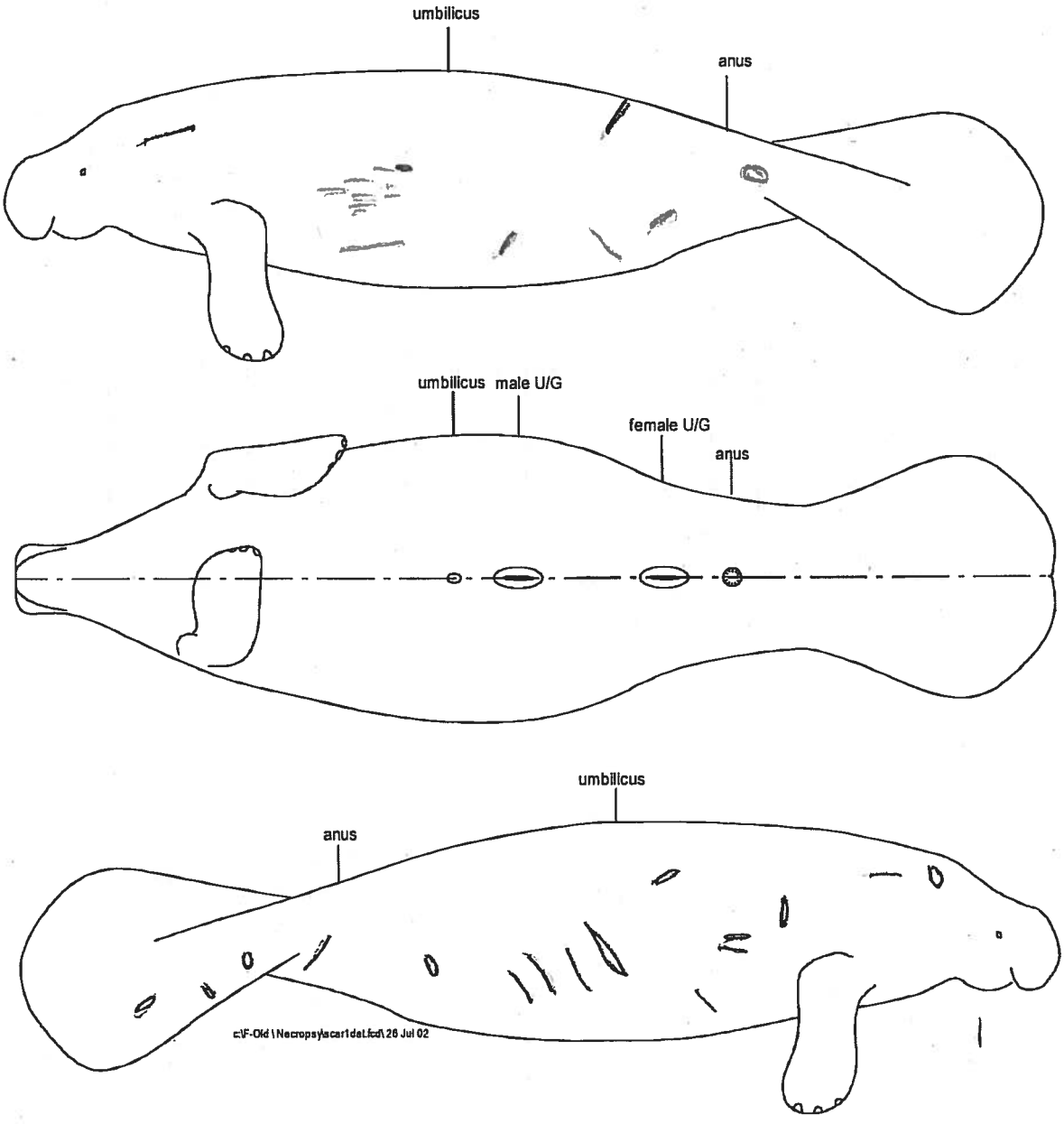
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Length																				
Width																				
Depth																				
Distance																				



Scars

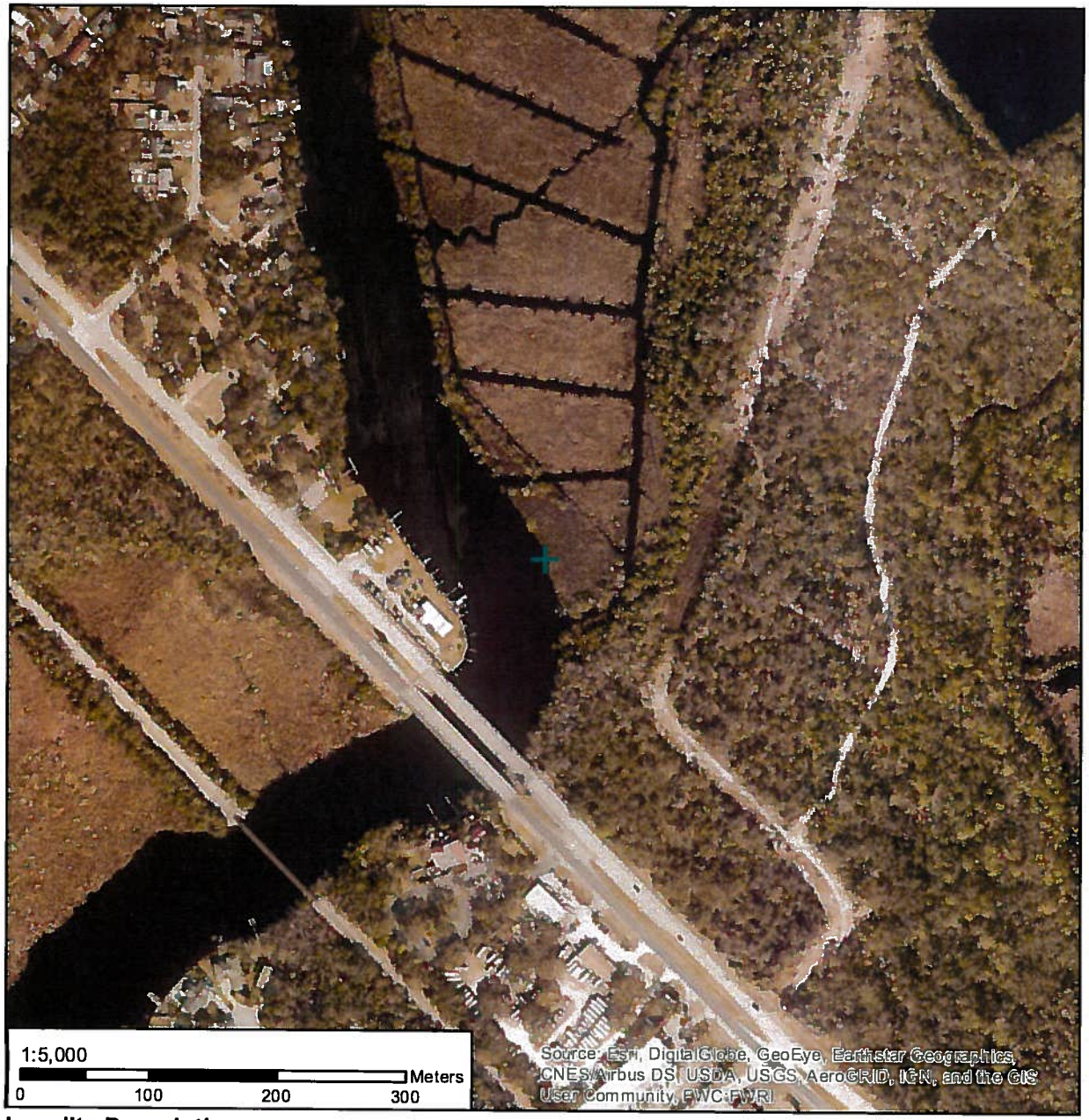
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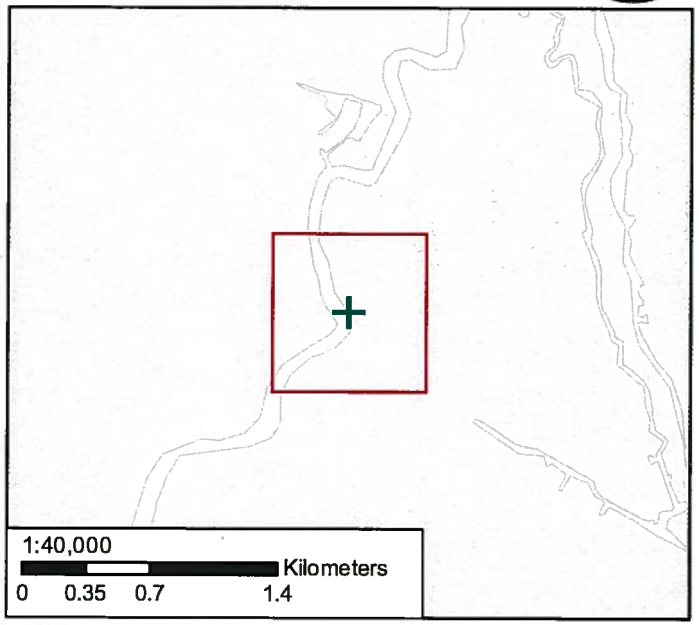
Male 284 cm

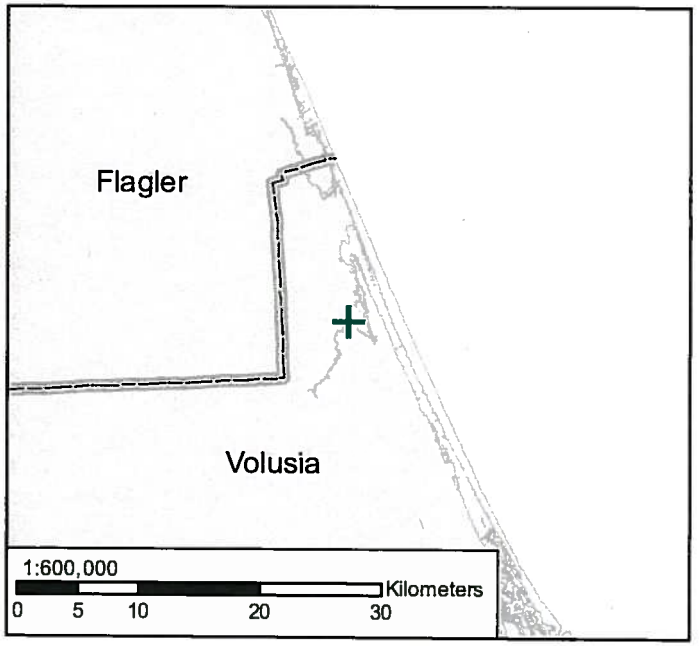


Verified Recovery Location of Manatee Carcass MNE19030

Report Date: 11/2/2019 **Received Date:** 11/3/2019 **Received By:** FWC-NJG Map Created: 1/14/2021







Locality Description:
Ormond Beach, Volusia
Floating, approximately 100 m NE of 1001 N US Highway 1.

Latitude: 29.30642°N **Longitude:** -81.0935°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19030
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 19256, 19260 **FWC District**: Northeast
Sex: Male **Length (cm)**: 284 **Estimated** _____ **Weight (kg)** N/T
Date reported: 2 Nov. 2019 **By**: Ariel Wind 386-307-5856
Date collected: 3 Nov. 2019 **By**: Nadia Gordon and Volusia County-Ashley Ambert
Date necropsied: 4 Nov. 2019 **By**: N. Gordon, Kyanna Tamborini

LOCATION INFORMATION: **State**: **County**: Volusia **Waterway**: Tomoka River
Latitude: N 29.306420 **Longitude**: W -81.093511
Locality description: Ormond Beach; 100 m NE of 1001 N US 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: Green string in GI. Lesions from HI present in stomach, duodenum and small intestine. Duodenum, cecum and part of proximal colon relatively empty. Hard, very dry feces in distal colon. Heart was completely encased in a thick blood clot; right atria had an opening.

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 #: **MNE19035**
Date of Report: 2019-Nov-29
Filed By: FWC NE Field Station

FWC Case # 20892 **FWC Region:** NE

Sex: Female **Length:** 171 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-29 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Nov-30 **By:** FWC-NJG

DATE NECROPSIED: 2019-Nov-30 **By:** FWC-NJG

LOCATION: **State:** FL **Latitude:** 29.31118 **N**
County: Volusia **Longitude:** -81.078 **W**
Waterway: Strickland Creek
Locality description: Ormond Beach, beached approximately 220 m WSW of 1116 Northside Drive.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Bleached epidermis; Thickened epidermis; Cobblestone-like epidermis; Depleted fat(s); Dry, hard feces; Wet lung(s); Heavy lungs; Cobblestone-like dermis; Lesions in cecum, colon wall; Relatively empty upper GI tract; Congested colon wall, urinary bladder mucosa; Fluid in pleural cavities, abdominal cavity.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, 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.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MNE19035

MORPHOMETRICS:

Total length:	171 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. MNE19035
RECOVERY DATE 30 November 2019
GENDER Female **TL** 171 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 30 November 2019
CONDITION Badly Decomposed

HISTORY 29 November 2019, at 1056 hrs, FWC on-call biologist-William D. Greer (WDG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Strickland Creek, Ormond Beach, Volusia County. FWC case number 20892 was assigned. The complainant, Jillian (631-488-8829), shared a photo of the manatee and a pin drop of the location. WDG requested officer assistance. At 1136 hrs, FWC biologist-Nadia J. Gordon (NJG) received a text alert from Dispatch regarding the carcass. Officer Jessica Pelzel stated that Scott (386-673-0022) had secured the carcass at the Tomoka Outpost located at 2099 N. Beach Street at Tomoka State Park. A photo was provided by Scott, along with an estimate of size. **30 November**, NJG arrived at the Tomoka Outpost at 1025 hrs, loaded the carcass at 1035 hrs, and transported it to Buck Island in Jacksonville. NJG met FWC Volunteers-Ashlen Ward and John Walters at 1253 hrs. A field necropsy was completed at 1430 hrs.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. The carcass was distended with gas. Red-tinged fluid exuded from the nares. Patches of dorsal epidermis and dorsal dermis were cobblestone-like. The ventral epidermis was bleached, thickened, and cobblestone-like. No watercraft-related scars or wounds were observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate, gassy abdominal fat. There was a small amount of mesenteric and omental fat. There was approximately 575 mL of red fluid in the abdominal cavity.

STOMACH The stomach contained 250 mL of viscous, tan to brown fluid. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 60 mL of viscous, gray to brown fluid. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained a small amount of viscous, gray fluid. The distal small intestine contained a small amount of thick, orange ingesta. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 300 mL of moist, fibrous, yellow to green digesta mixed with brown seed-like pieces. The mucosa was sloughing. There were numerous raised, circular, white lesions with purple to red margins in the cecum wall. No parasites were observed.

COLON The colon contained dry, hard, well-formed, yellow to green feces. The mucosa was sloughing throughout. There were regions of congestion in the colon wall. There were numerous raised, circular, white lesions with purple to red margins in the proximal colon wall (see photo). No parasites were observed.

PANCREAS The pancreas was gassy. Serosal and cut surfaces were tan to pink.

SPLEEN The spleen was firm. Serosal surfaces were mottled gray and black and cut surfaces were dark red to dark purple.

LIVER The liver was soft, friable, and autolyzed.

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

REPRODUCTIVE There was no reproductive fat. The uterine horns were small in diameter.

KIDNEYS There was no perirenal fat. The kidneys were gray-brown on serosal surfaces. On cut surfaces, the cortices were gray and the medullae were red.

URINARY BLADDER The urinary bladder contained approximately 60 mL of cloudy, red-tinged urine. The mucosa was moderately congested.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The left pleural cavity contained approximately 100 mL of red fluid. The right pleural cavity contained approximately 60 mL of red fluid. The lungs were heavy. Serosal surfaces were pink and cut surfaces were red and slightly wet. The primary airways contained a small amount of thick, gelatinous, red fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-30_FWC026_5202 through 5215, 5217, 5218, 5220, 5222, 5224, 5225, 5228 through 5237.

COMMENTS The weather in the second half of November 2019 was suddenly unseasonably cold.

SIGNIFICANT FINDINGS

- Bleached, thickened, cobblestone-like epidermis
- Cobblestone-like dermis
- Depleted fat
- Small abscesses in cecum, colon wall
- Relatively empty upper GI tract
- Dry, hard feces
- Congested colon wall, urinary bladder mucosa
- Fluid in pleural cavities, abdominal cavity
- Heavy, slightly wet lungs
- Autolyzed internal organs

PROBABLE CAUSE OF DEATH Natural; Cold Stress

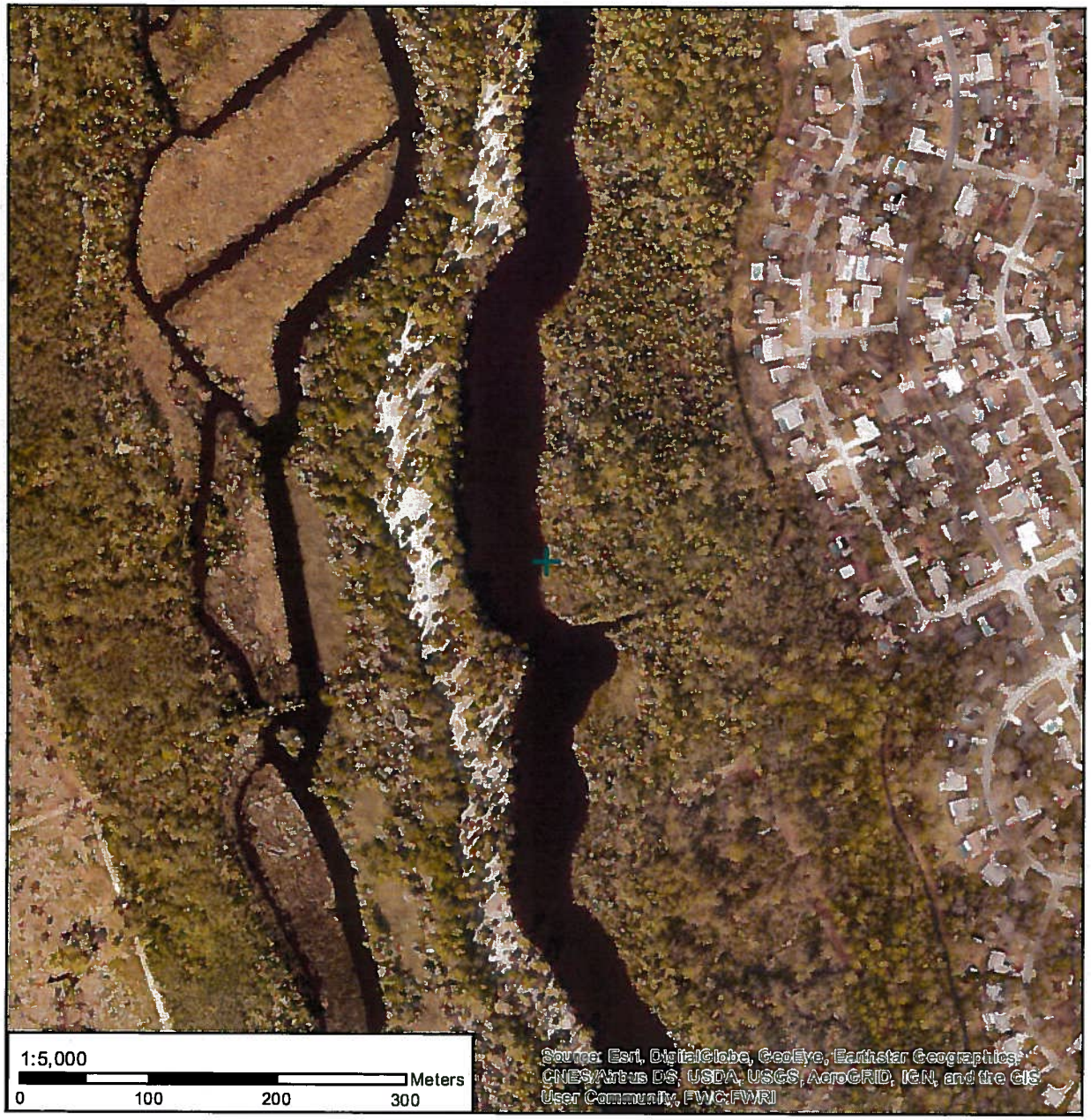
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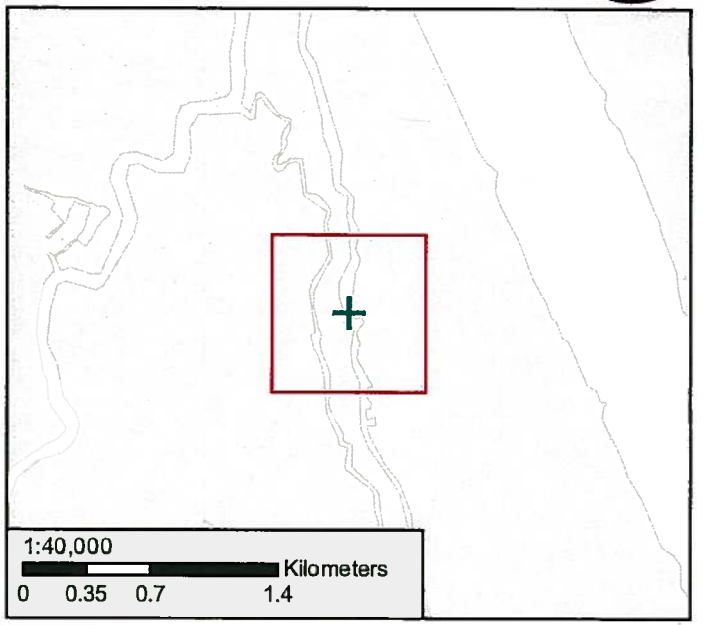
Nadia J. Gordon
Ashlen Ward (FWC Volunteer)
John Walters (FWC Volunteer)

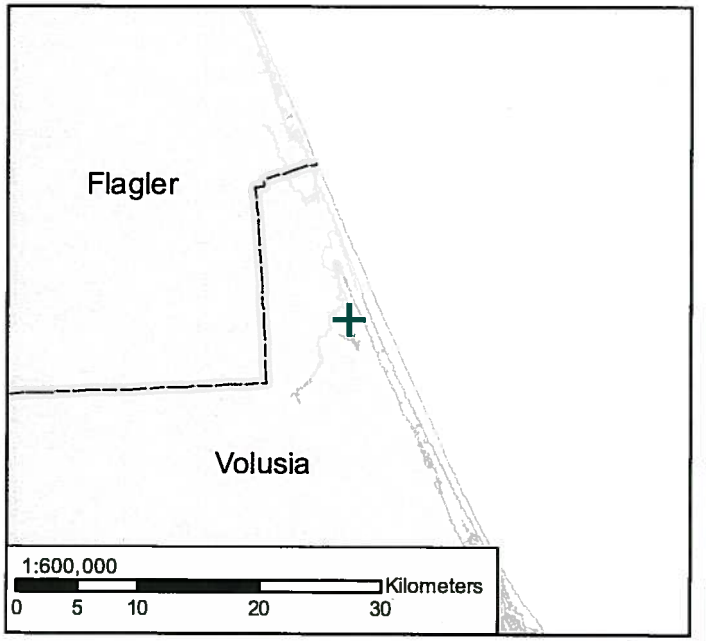
REPORT FILED BY Gordon

Verified Recovery Location of Manatee Carcass MNE19035

Report Date: 11/29/2019 **Received Date:** 11/30/2019 **Received By:** FWC-NJG Map Created: 1/14/2021







Locality Description:
Ormond Beach, Volusia
Beached, approximately 220 m WSW of 1116 Northside Drive.

Latitude: 29.31118°N **Longitude:** -81.078°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19035
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 20892 **FWC District**: Northeast
Sex: Female **Length (cm)**: 171 **Estimated** _____ **Weight (kg)** N/T
Date reported: 29 Nov. 2019 **By**: Jillian (631-488-8829)
Date collected: 30 Nov. 2019 **By**: Nadia J. Gordon
Date necropsied: 30 Nov. 2019 **By**: Nadia J. Gordon, FWC VOL: John Walters, Ashlen Ward

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Strickland Creek
Latitude: N 29.311190 **Longitude**: W -81.078006
Locality description: Ormond Beach; ~220 m WSW of 1116 Northside Drive

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: Thickened, cobblestone-like, bleached epidermis. Empty stomachs. Dry, hard, feces. Slightly 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 _____

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 #: **MNE19040**
Date of Report: 2019-Dec-09
Filed By: FWC NE Field Station

FWC Case # 22289 **FWC Region:** NE

Sex: Male **Length:** 235 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-09 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-26 **By:** FWC-KAT

DATE NECROPSIED: 2019-Dec-26 **By:** FWC-KAT

LOCATION: **State:** FL **Latitude:** 29.04194 **N**
County: Volusia **Longitude:** -80.95831 **W**
Waterway: Turnbull Creek
Locality description: New Smyrna, floating approximately 55 m NE of 1049 Dillon Circle.

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).

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. Also FWC case number 21428. Actual length of the remains was 232 cm.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MNE19040

MORPHOMETRICS:

Total length:	235 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. MNE19040
RECOVERY DATE 26 December 2019
GENDER Male **TL** 235 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 26 December 2019
CONDITION Badly Decomposed

HISTORY 09 December 2019, at 1335 hrs, FWC biologist-Nadia J. Gordon (NJG) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in Turnbull Creek, just south of the railroad bridge in New Smyrna Beach, Volusia County. FWC case number 21428 was assigned. NJG left a message for the complainant, Denise Morissette (386-383-1108). NJG requested assistance from Dispatch, but no officers were available. NJG notified Volusia County Marine Mammal Stranding-Debbie Wright who stated their volunteer-Michelle Orr was available to respond. At 1445 hrs, Michelle arrived at the reported location by land and searched the banks, which were partially blocked by a fence. At 1501 hrs, she reported that she was unable to locate the carcass, but FWC LE had arrived and would search by vessel. At 1528 hrs, she reported that LE was unable to locate the carcass. While on the phone with Michelle, the complainant sent NJG a text with a photo and coordinates where the carcass had been sighted floating earlier. **26 December**, at 1215 hrs, FWC biologist-Kyanna A. Tamborini (KAT) received a text alert from Dispatch regarding a dead manatee in Turnbull Creek. FWC case number 22289 was assigned. The complainant, Nolan Barry (904-415-5903), sent coordinates and a photo. KAT arrived at the complainant's address at 1446 hrs, where she boarded his Gheenoe. At 1515 hrs, the carcass was located. A field necropsy was completed at 1538 hrs.

EXTERNAL Almost all the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. The eyes were missing. Portions of the dorsal and lateral dermis were eroded due to decomposition. There were rents on the caudal and cranial ventrum. The face and fluke margin were eroded due to decomposition. There was an eroded hole through the fluke near the 3 o'clock position. A minimum of two well-healed watercraft-related scar patterns was observed. Actual length of the remaining carcass was 232 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal fat was rendered. The omental and mesenteric fat was missing. There was approximately 300 mL of wet, fibrous, green vegetation floating in the body cavity. Internal organs were missing unless mentioned below.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was not examined.

REPRODUCTIVE Most of the reproductive tract was missing.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. The caudal one-third of both lungs were missing, and the remaining portions were soft, friable, and autolyzed. Cut surfaces were wet. The primary airways contained a small amount of watery, red fluid.

HEAD & NECK REGIONS The jaw was disarticulated due to decomposition. Otherwise, NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-12-26_FWC026_5735 through 5737, 5739, 5741 through 5743, 5747, 5749 through 5754, 5757, 5759 through 5763.

COMMENTS

SIGNIFICANT FINDINGS

- Missing, autolyzed internal organs
- Wet lungs

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

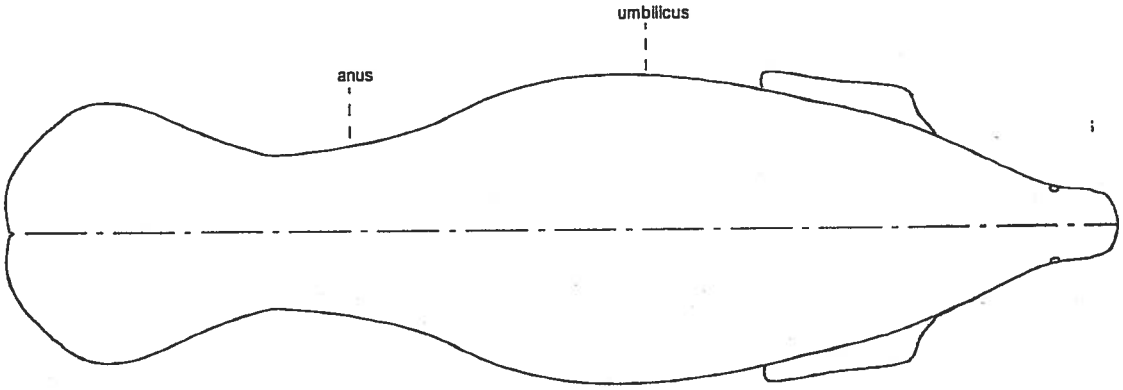
NECROPSY CONDUCTED BY

Kyanna Tamborini

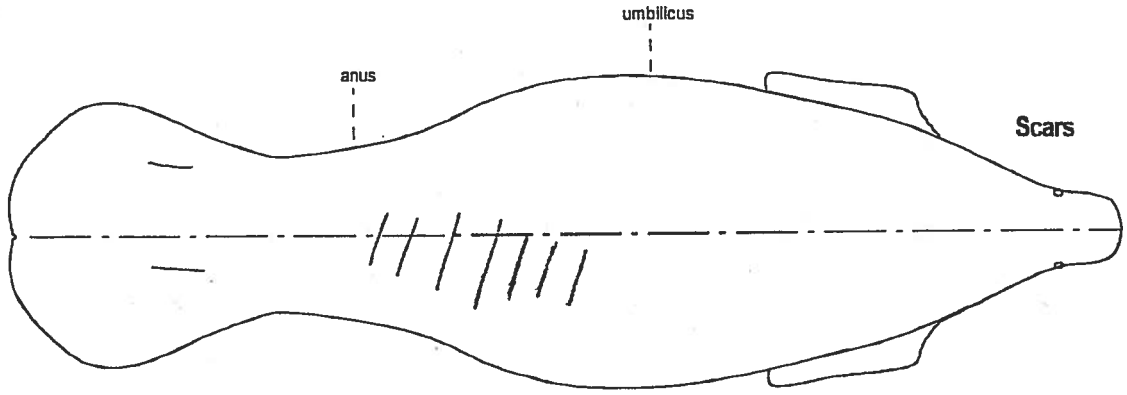
REPORT FILED BY Tamborini / Gordon

Date 26 Dec. 2019 Field I.D. MNE19040

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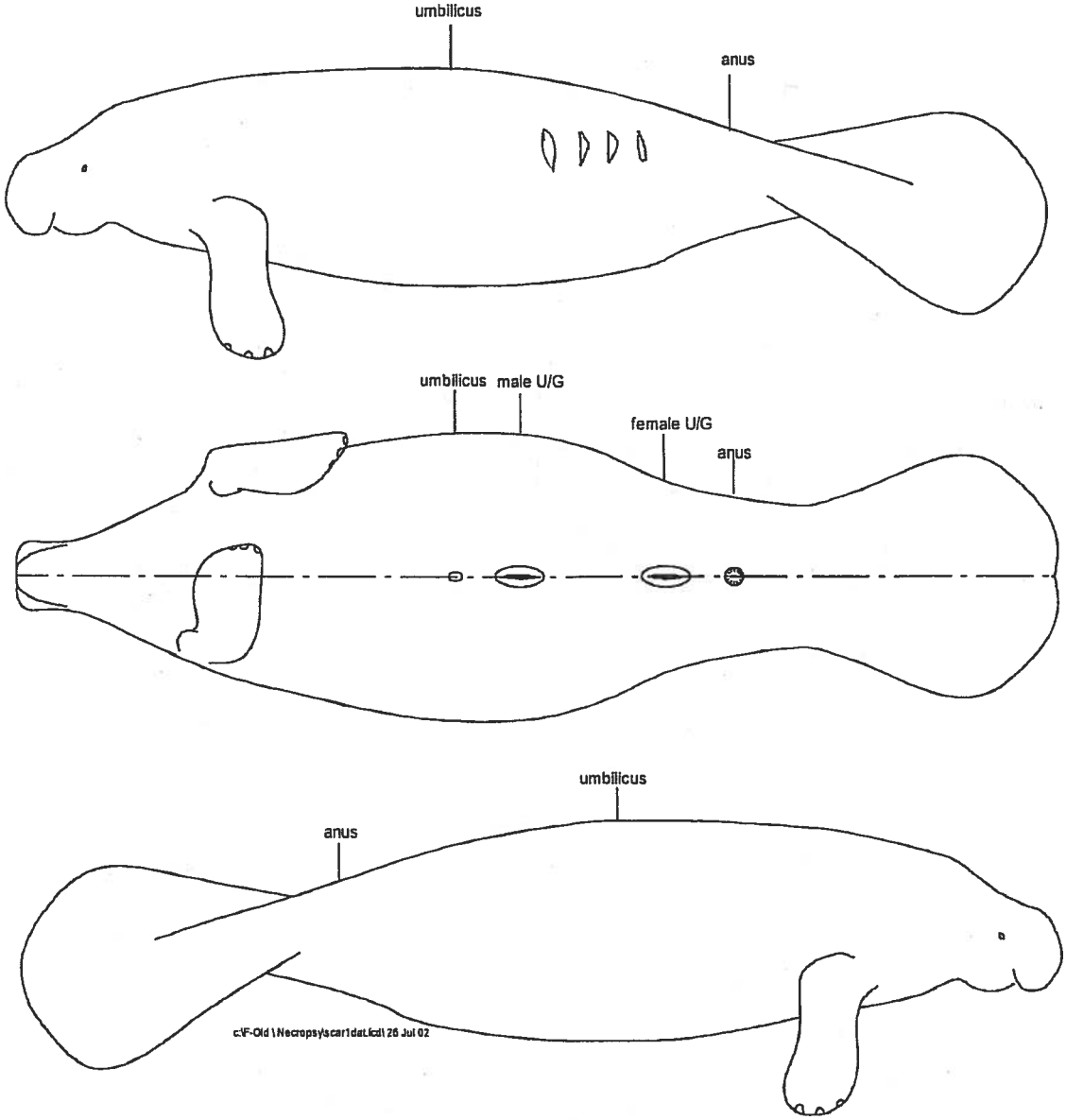


Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length																				
Width																				
Depth																				
Distance																				



FIELD I.D. MNE19040

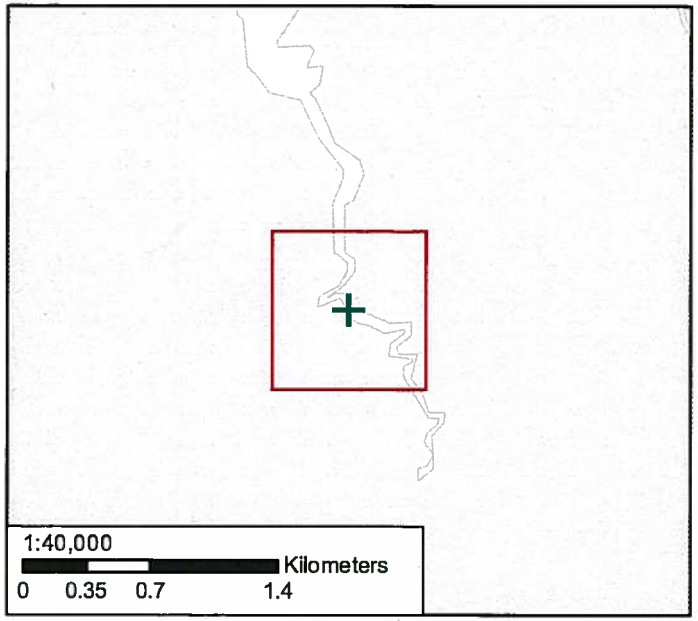
26 Dec. 2019
Male

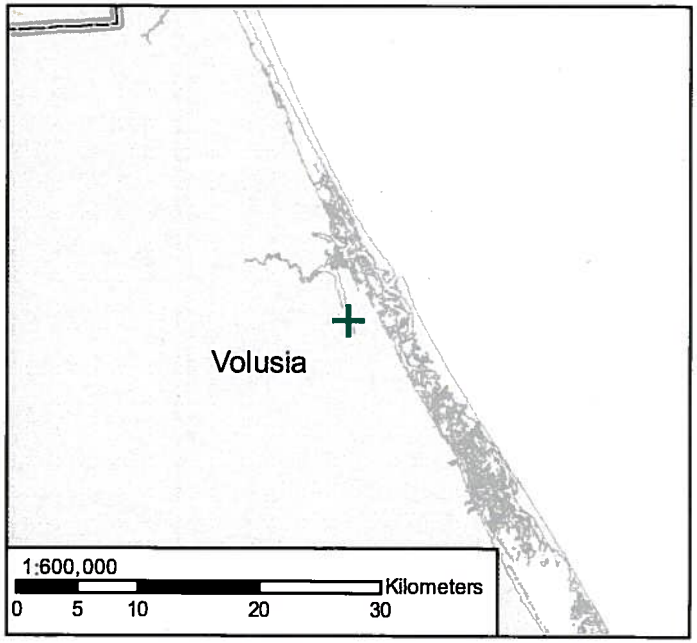


Verified Recovery Location of Manatee Carcass MNE19040

Report Date: 12/9/2019 **Received Date:** 12/26/2019 **Received By:** FWC-KAT Map Created: 1/20/2021







Locality Description:
New Smyrna, Volusia
Floating, approximately 55 m NE of 1049 Dillon Circle.

Latitude: 29.04194°N **Longitude:** -80.95831°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19040
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 21428, 22289 **FWC District**: Northeast
Sex: Male **Length (cm)**: 232 **Estimated** 235 **Weight (kg)** N/T
Date reported: 09 Dec. 2019 **By**: Denise Morrissette (386-383-1108)
Date collected: 26 Dec. 2019 **By**: Kyanna A. Tamborini
Date necropsied: 26 Dec. 2019 **By**: Kyanna A. Tamborini

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Turnbull Creek
Latitude: N 29.041944 **Longitude**: W -80.958333
Locality description: New Smyrna; 55 m NE of 1049 Dillon 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. Fats rendered. Exposed and disarticulated jaw. Muzzle and tail paddle margins eroded. Scavenged pectoral flippers. Several rents on the ventrum.

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 #: **MNE19044**
Date of Report: 2019-Dec-19
Filed By: FWC NE Field Station

FWC Case # 21977 **FWC Region:** NE

Sex: Female **Length:** 184 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-19 **By:** Citizen to FWC NE Dispatch

DATE COLLECTED: 2019-Dec-20 **By:** FWC-KAT

DATE NECROPSIED: 2019-Dec-20 **By:** FWC-KAT

LOCATION: **State:** FL **Latitude:** 29.37415 **N**
County: Volusia **Longitude:** -81.08447 **W**
Waterway: Halifax River
Locality description: Ormond Beach, floating behind 3324 John Anderson Drive.

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; Bloody lung(s); Empty upper GI tract, cecum; Sand in feces.

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. Actual length of the remains was 182 cm.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MNE19044

MORPHOMETRICS:

Total length:	184 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. MNE19044
RECOVERY DATE 20 December 2019
GENDER Female **TL** 184 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 20 December 2019
CONDITION Badly Decomposed

HISTORY 19 December 2019, at 1830 hrs, FWC on-call biologist-Denise M. Boyd (DMB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee in the Halifax River, Ormond Beach, Volusia County. FWC case number 21977 was assigned. The complainant, Bruce Hurt (386-212-6231), advised that the small manatee was floating behind the residence. DMB passed the information to FWC biologist-Kyanna A. Tamborini (KAT). **20 December**, KAT arrived at the reported location at 1049 hrs. A field necropsy was completed at 1250 hrs. KAT towed the carcass via kayak to a remote location to decompose.

EXTERNAL Almost all the epidermis was missing. The carcass was dorsoventrally flattened due to decomposition. Portions of the dorsal dermis were eroded. There were bird droppings on the dorsum. Both eyes were missing due to decomposition. The muzzle, fluke margin, and ventrum were severely eroded due to decomposition. There was a rent on the cranial ventrum. No watercraft-related scars or wounds were grossly observed. Actual length of the remains was 182 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL The abdominal, mesenteric, and omental fat was rendered. There was approximately 600 mL of dark brown decompositional fluid in the abdominal cavity.

STOMACH The stomach contained approximately 35 mL of dark gray fluid. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained a scant amount of gray fluid. The mucosa was stained gray. No parasites were observed.

JEJUNUM & ILEUM The proximal small intestine contained dark gray fluid. The mid small intestine contained viscous, grey ingesta. The distal small intestine contained a scant amount of viscous, dark green and orange fluid. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained a scant amount of viscous, dark green to black digesta mixed with several long pieces of fibrous, dark green vegetation. The mucosa was autolyzed. There was a mild infection of dead trematodes.

COLON The colon contained dry, hard, well-formed, fibrous feces mixed with sand. The mucosa was autolyzed. There was a moderate infection of dead trematodes.

PANCREAS The pancreas was soft, friable, and autolyzed.

SPLEEN The spleen was soft. Serosal surfaces were mottled light gray and black, and cut surfaces were grey.

LIVER The liver was soft, friable, and autolyzed.

GALLBLADDER The gallbladder was soft, friable, and autolyzed.

REPRODUCTIVE The uterine horns were small in diameter.

KIDNEYS The kidneys were soft, friable, and autolyzed.

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

HEART The heart was unremarkable.

RESPIRATORY SYSTEM The left hemidiaphragm was intact. The right hemidiaphragm was torn due to decomposition. The lungs were dark red on serosal surfaces and red and slightly bloody on cut surfaces. The primary airways contained a scant amount of red tinged fluid.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-12-20_FWC026_5531 through 5536, 5538, 5540, 5541, 5543, 5545 through 5558.

COMMENTS

SIGNIFICANT FINDINGS

- Autolyzed internal organs
- Dry, hard feces
- Sand in feces
- Empty upper GI tract, cecum
- Slightly bloody lungs

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

NECROPSY CONDUCTED BY

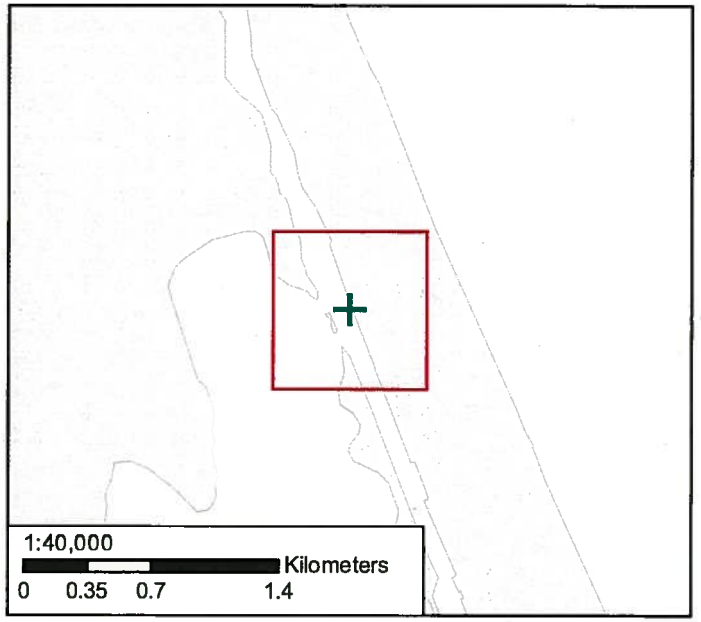
Kyanna Tamborini

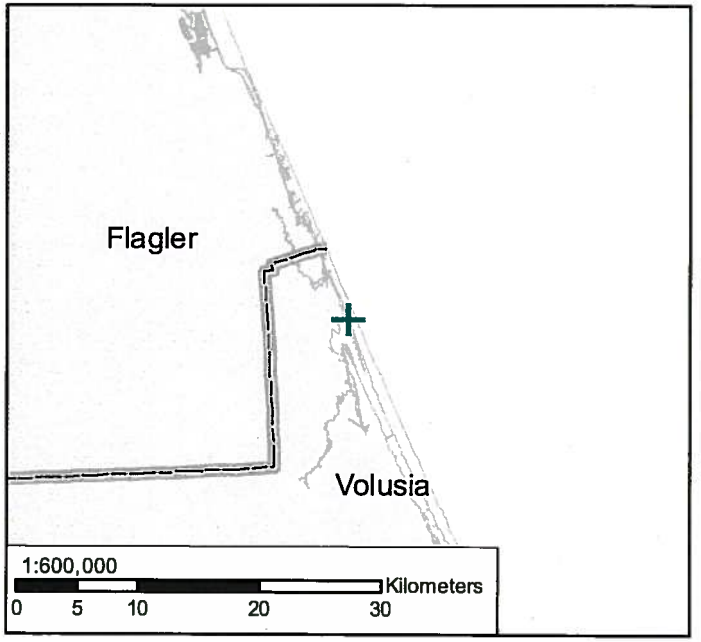
REPORT FILED BY Gordon / Tamborini

Verified Recovery Location of Manatee Carcass MNE19044

Report Date: 12/19/2019 **Received Date:** 12/20/2019 **Received By:** FWC-KAT Map Created: 1/20/2021







Locality Description:
Ormond Beach, Volusia
Floating, behind 3324 John Anderson Drive.

Latitude: 29.37415°N **Longitude:** -81.08447°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MNE19044
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 21977 **FWC District**: Northeast
Sex: Female **Length (cm)**: 182 **Estimated** 184 **Weight (kg)** N/T
Date reported: 19 Dec. 2019 **By**: Bruce Hurt (386-212-6231)
Date collected: 20 Dec. 2019 **By**: Kyanna A. Tamborini
Date necropsied: 20 Dec. 2019 **By**: Kyanna A. Tamborini

LOCATION INFORMATION: State: **County**: Volusia **Waterway**: Halifax River
Latitude: N 29.374156 **Longitude**: W -81.084488
Locality description: Ormond Beach; behind house at 3324 John Anderson Dr.

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: 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 #: **MSE19048**
Date of Report: 2019-Jun-24
Filed By: FWC SE Field Station

FWC Case # 7807 **FWC Region:** SO-A

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

DATE REPORTED: 2019-Jun-24 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2019-Jun-24 **By:** FWC-ARH,SCS

DATE NECROPSIED: 2019-Jun-24 **By:** FWC-ARH,SCS

LOCATION: **State:** FL **Latitude:** 27.54666 **N**
County: St. Lucie **Longitude:** -80.33637 **W**
Waterway: Indian River
Locality description: Ft. Pierce, grounded approximately 555 m NE of Spoil Island SL2 and 1.35 km SW of 172 Ocean Estates Drive.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Undetermined: Other

EXPLAIN: Metal wire in colon. Organ pallor; Wet lung(s); Hemoabdomen of undetermined origin; Thick algal mat; Bloody nares; Swollen, heavy lungs; Distended vein/artery; Fluid, froth in airways; Hematoma in cecum connective tissue associated with caudal mesenteric lymph nodes; Congested mesenteries, urinary bladder mucosa; Nodule small intestine wall associated with fibrin-like material on serosa.

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.

Page 1&2	06 NOV 2020
Necropsy Report	06 NOV 2020
Lat/Long	06 NOV 2020

Field ID #: MSE19048

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:

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. MSE19048
RECOVERY DATE 24 June 2019
GENDER Male **TL** 284 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 24 June 2019
CONDITION Fresh

HISTORY 24 June 2019, at 1017 hrs, FWC intern-Lorenn Taylor received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee outside of Harbor Branch in Ft Pierce, St. Lucie County. FWC case number 7807 was assigned. The complainant, Madelyn (772-538-3265), stated that the manatee was grounded in shallow water near the mangroves. No photo confirmation was available. Lorenn contacted Harbor Branch-Steve Burton for assistance. At 1138 hrs, Steve sent photo confirmation and coordinates to FWC biologist-Amber Howell (ARH). ARH requested FWC LE assistance. FWC-Officer Randy Irwin met staff at a nearby location at 1345 hrs and transported them to the carcass. A field necropsy was completed by 1535 hrs. The remains were left on site to decompose.

EXTERNAL Almost all of the epidermis was present. Copious blood-tinged fluid and live trematodes exuded from the nares. There were thick patches of brown algal mat on the dorsal and lateral aspects. A minimum of three well-healed watercraft-related scar patterns was observed. There was a small mutilation at the 9 o'clock position of the fluke margin. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant abdominal, mesenteric, and omental fat. There was 1 L of watery, light red fluid and 4 L of loose, well-formed blood clots in the abdomen (see photos). Some blood clots were fresh and others were more chronic and resolving, associated with strings of fibrin. The mesenteries were moderately congested with regions of severe congestion (see photo).

STOMACH The stomach contained 7 L of moist, fibrous, leafy, well-chewed, green to brown ingesta. The ingesta were coated in a thin layer of tan mucus. The mucosa was sloughing. No parasites were observed.

DUODENUM The duodenum contained 1.5 L of moist, fibrous, leafy, well-chewed, green to brown ingesta. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine contained dark gray to green fluid mixed with a small amount of fibrous, leafy, green to brown ingesta throughout. The proximal small intestine mucosa was severely rugose and had distinct Peyer's patches. There was one 1.3 cm smooth, raised, round, light pink mass in the wall of the mid small intestine (see photo). The serosa associated with this mass was thickened with fibrin-like material firmly adhered (see photo). The distal small intestine mucosa was unremarkable. No parasites were grossly observed.

CECUM There was a large hematoma in the connective tissue of the cecum surrounding the caudal mesenteric lymph nodes. A vessel dorsal to the cecum was distended (4.2 cm diameter versus 1.9 cm diameter cranial and caudal to the cecum). The cecum contained 2 L of moist, fibrous, leafy, well-digested, green to brown digesta. The mucosa was sloughing. No parasites were observed.

COLON The proximal colon contained moist, fibrous, leafy, well-digested, poorly formed, green to brown feces. The distal colon contained moist, fibrous, leafy, well-digested, well-formed, brown feces. There was a 9.7 cm long metal wire in the distal colon contents. The mucosa was sloughing throughout. No parasites were observed throughout.

PANCREAS The pancreas was firm. Serosal surfaces were light pink and cut surfaces were tan.

SPLEEN The spleen was firm. Serosal surfaces were dark purple and cut surfaces were dark red.

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

GALLBLADDER The gallbladder contained 5 mL of viscous, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The reproductive organs were moderate in size. No fluid was expressed on cut surfaces of the epididymides or seminal vesicles.

KIDNEYS There was abundant perirenal fat. The kidneys were pale purple on serosal surfaces (pallor). On cut surfaces, the cortices were tan and the medullae were pink. The corticomedullary boundaries were distinct.

URINARY BLADDER The urinary bladder was distended and contained 300 mL of watery, light-yellow urine. The mucosa was moderately congested.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. The lungs were very swollen, heavy, and wet (see photos). Serosal surfaces were light purple and cut surfaces were pink and very wet. The airways contained an abundant amount of watery, red-tinged fluid and white froth. The mucosa was light pink. No parasites were observed.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-06-24_FWC044_0671 through 0707.

COMMENTS There was chronic hemorrhage in the abdomen. The cause was not determined, but it could not be ruled out that this was from trauma by the metal wire or other human-related cause.

SIGNIFICANT FINDINGS

- Bloody nares
- Thick algal mat
- Hemoabdomen
- Distended vessel dorsal to cecum
- Hematoma at cecum in connective tissue of caudal mesenteric lymph nodes
- Congested mesenteries, urinary bladder mucosa
- Swollen, heavy, wet lungs
- Fluid, froth in lung airways
- Kidney pallor
- Small mass in small intestine associated with fibrin-like material on serosa
- Metal wire in colon

PROBABLE CAUSE OF DEATH Natural; Other

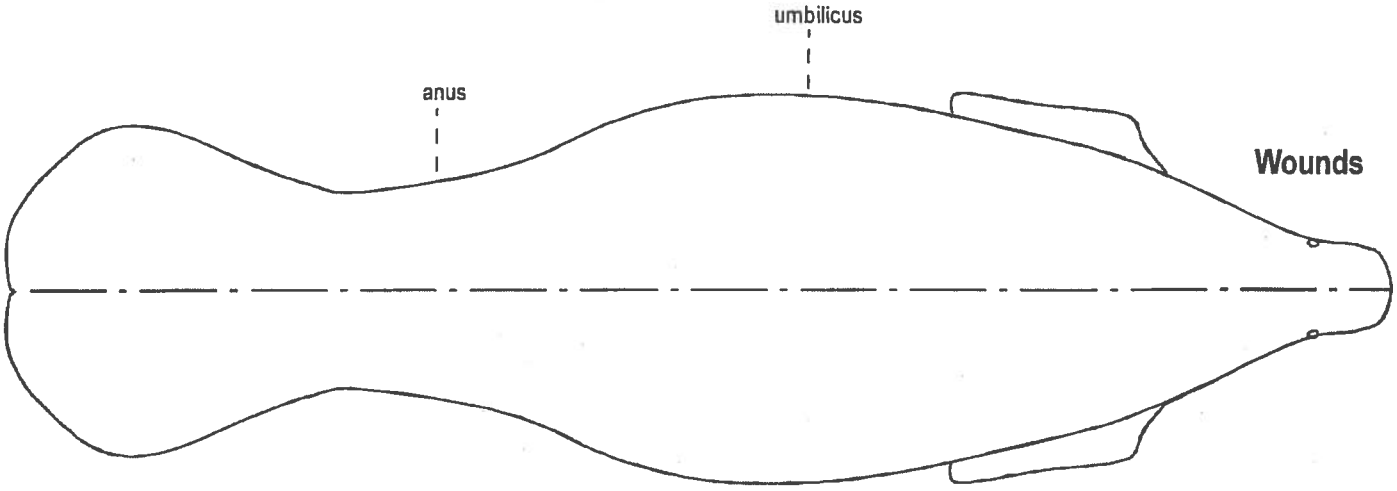
NECROPSY CONDUCTED BY

Amber R. Howell
Samantha C. Smith
Lorenn M. Taylor (FWC intern)

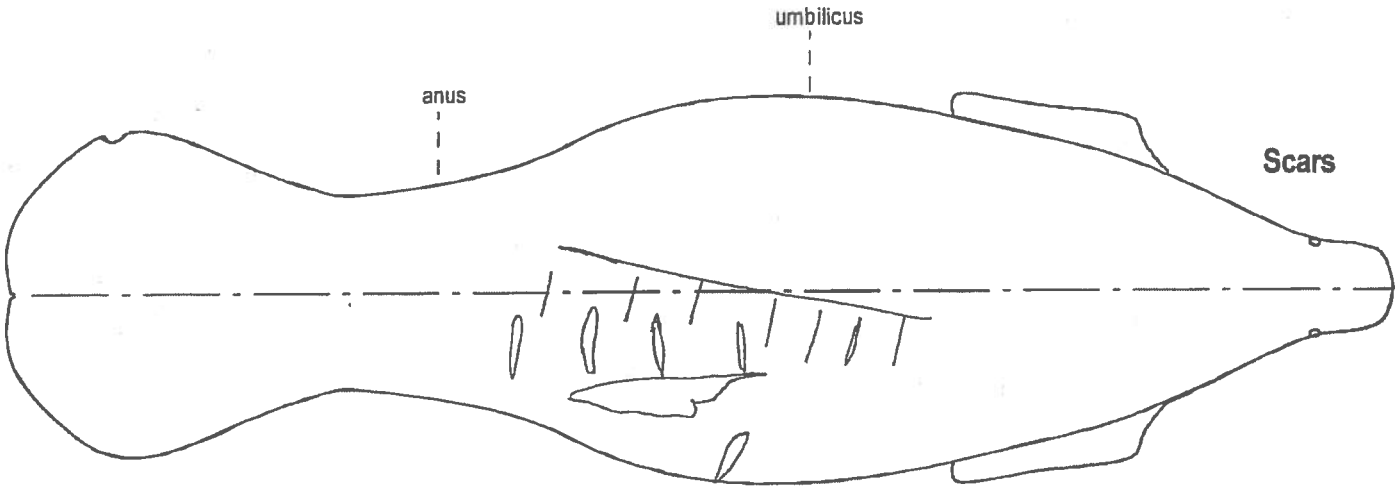
REPORT FILED BY Beard / Howell

Date 24 June 2019 Field I.D. MSE19048

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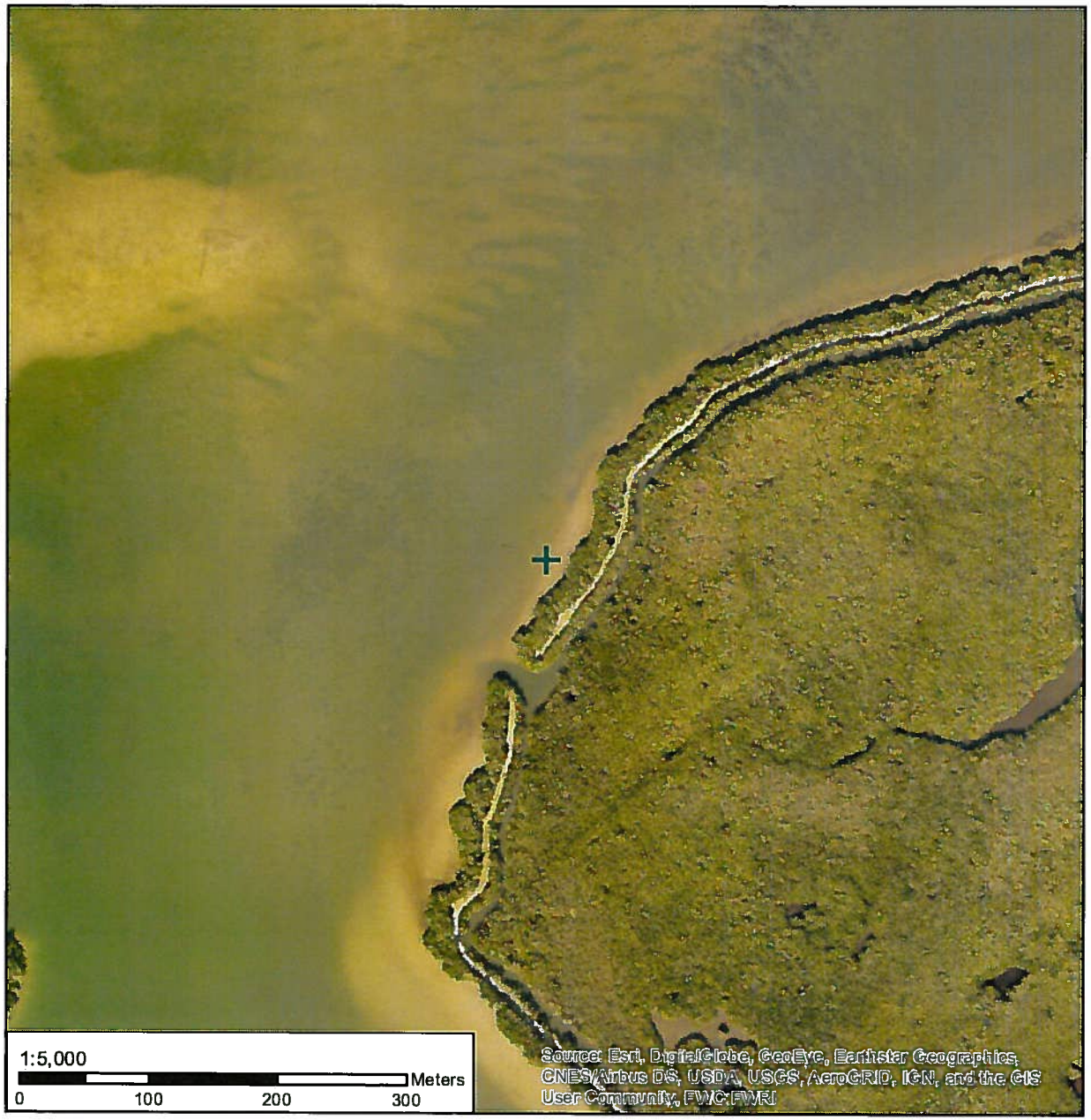
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Width																				
Depth																				
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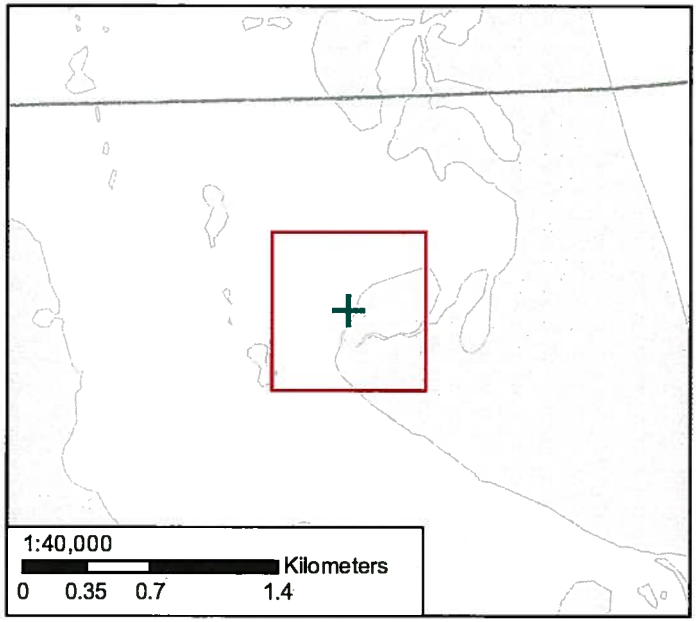


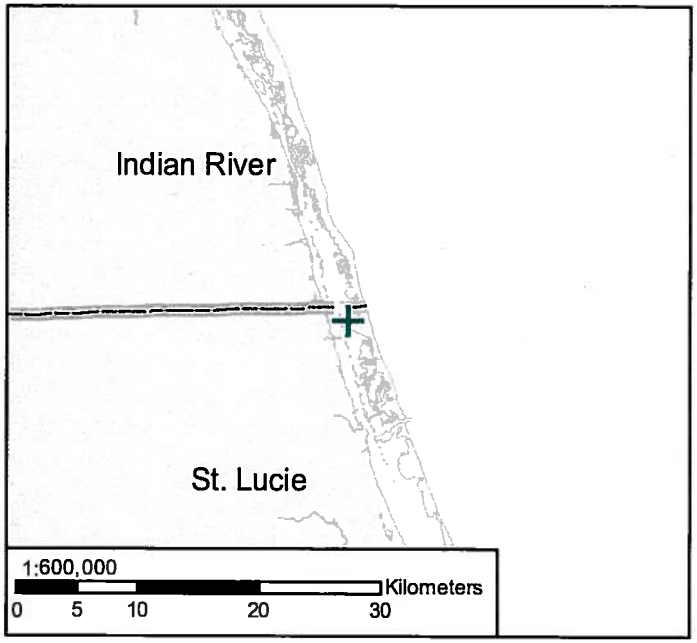
ARH

Verified Recovery Location of Manatee Carcass MSE19048

Report Date: 6/24/2019 **Received Date:** 6/24/2019 **Received By:** FWC-ARH,SCS Map Created: 11/2/2020







Locality Description:
Ft. Pierce, St. Lucie
Grounded, approximately 555 m NE of Spoil Island SL2 and 1.35 km SW of 172 Ocean Estates Drive.

Latitude: 27.54666°N **Longitude:** -80.33637°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE19048
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 7807 **FWC District**: South A
Sex: Male **Length (cm)**: 284 **Estimated** _____ **Weight (kg)** N/T
Date reported: 24 June 2019 **By**: Citizen to FWC SO-A Dispatch
Date collected: 24 June 2019 **By**: FWC- ARH, SCS, FWC Intern- Lorenn Taylor
Date necropsied: 24 June 2019 **By**: FWC- ARH, SCS, FWC Intern- Lorenn Taylor

LOCATION INFORMATION: State FL **County**: St. Lucie **Waterway**: Big Starvation Cove
Latitude: N 27.546667 **Longitude**: W -80.336389
Locality description: 555m NE of Spoil Island SL2 and 1.35 km SW from 172 Ocean Estates Dr. Fort Pierce, FL 34949
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: aneurysm, hemoabdomen, bloody fluid nares, swollen, very wet lungs, fluid and froth in lung airways, enlarged pulmonary artery near cecum, hematoma on cecum lymph nodes, pale kidneys, congested mesenteries, bladder mucosa

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 #: **MSE19051**
Date of Report: 2019-Jul-02
Filed By: FWC SE Field Station

FWC Case #
FWC Region: SO-A

Sex: Female
Length: 132 **cm**
Weight: Not Taken **kg**

DATE REPORTED: 2019-Jul-02 **By:** Citizen to St. Lucie Sheriff's Office to FWC-ARH
DATE COLLECTED: 2019-Jul-02 **By:** FWC-ARH
DATE NECROPSIED: 2019-Jul-02 **By:** FWC-ARH

LOCATION:
State: FL
County: St. Lucie
Waterway: Indian River
Latitude: 27.49839 **N**
Longitude: -80.30299 **W**
Locality description: Ft. Pierce, beached approximately 55 m SE of 931 Jackson Way.

CONDITION: Badly Decomposed

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

EXPLAIN: Natural: Stillborn; Fetal folds; Consolidated lungs; Meconium.

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.

Page 1&2	04 Dec 2020
Necropsy Report	04 Dec 2020
Lat/Long	04 Dec 2020

Field ID #: MSE19051

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. MSE19051
RECOVERY DATE 02 July 2019
GENDER Female **TL** 132 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 02 July 2019
CONDITION Badly Decomposed

HISTORY 02 July 2019, at 0828 hrs, FWC biologist-Amber Howell (ARH) received a call from St. Lucie Sheriff's-Deputy Sean Kane regarding third party information about a small dead manatee beached on a boat ramp in Ft. Pierce, St. Lucie County. Deputy Kane verified the carcass at 0845 hrs. ARH arrived at the carcass at 0950 hrs, loaded the carcass via body bag by 0953 hrs, and transported it to the SE Field Station by 1100 hrs. A field necropsy was completed by 1125 hrs. The remains were disposed of at the Martin County Landfill.

EXTERNAL Almost all of the epidermis was missing. The remaining epidermis was smooth, dark grey, and had no epibiota present. The fluke was scalloped. A few transverse folds were present on the ventrum. There was a large rent on the mid ventrum at the umbilicus due to scavenging. No watercraft-related wounds or scars were present. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL Internal organs were missing unless mentioned below. All fat was rendered.

COLON Only the distal-most 15 cm of colon was present which contained moist, sticky, homogeneous, brown meconium. The mucosa was autolyzed. No parasites were observed.

LIVER Only a small portion of the liver remained which was liquified.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. Only the cranial portions of the lungs remained which were consolidated. The airways were clear. The mucosa was red. No parasites were observed.

HEAD & NECK REGIONS The skull bones were loose at the sutures due to decomposition and/or young age. Otherwise, NVL.

SKELETON Both left and right ribs 1 - 11 were luxated due to decomposition.

OTHER

PHOTOGRAPHS 2019-07-02_FWC044_0898 through 0905.

COMMENTS

SIGNIFICANT FINDINGS

- Fetal folds
- Consolidated lungs
- Meconium
- Missing, autolyzed internal organs
- Scavenging

PROBABLE CAUSE OF DEATH Perinatal; Natural (Stillborn)

NECROPSY CONDUCTED BY

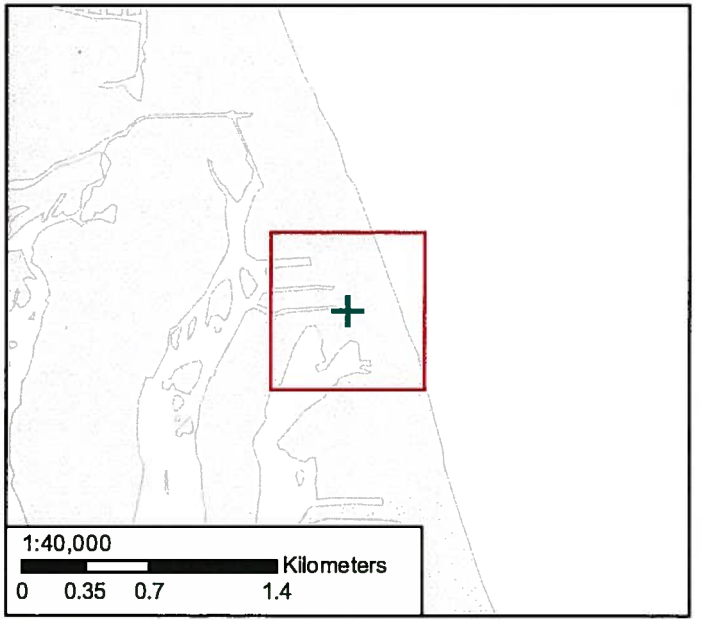
Amber R. Howell

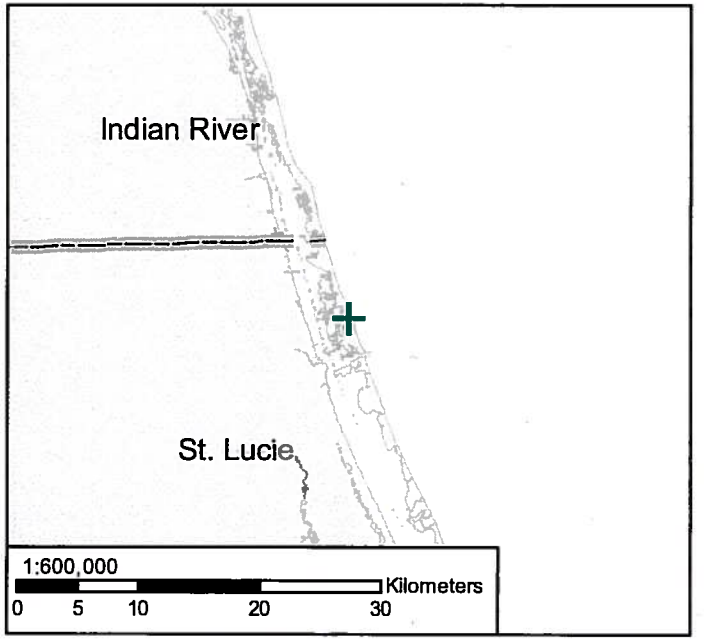
REPORT FILED BY Howell

Verified Recovery Location of Manatee Carcass MSE19051

Report Date: 7/2/2019 **Received Date:** 7/2/2019 **Received By:** FWC-ARH Map Created: 12/2/2020







Locality Description:
Ft. Pierce, St. Lucie
Beached, approximately 55 m SE of 931 Jackson Way.

Latitude: 27.49839°N **Longitude:** -80.30299°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE19051
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # N/A **FWC District**: South A
Sex: Female **Length (cm)**: 132 **Estimated** _____ **Weight (kg)** N/T
Date reported: 02 July 2019 **By**: Citizen to St Lucie Sheriff Department to FWC-ARH
Date collected: 02 July 2019 **By**: FWC-ARH
Date necropsied: 02 July 2019 **By**: FWC-ARH

LOCATION INFORMATION: **State** FL **County**: St. Lucie **Waterway**: Indian River
Latitude: N 27.498400 **Longitude**: W -80.303000
Locality description: 55m SE from 931 Jackson Way 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: Too decomposed. Consolidated lungs, no epibiota, scalloped fluke, meconium.

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 #: **MSE19054**
Date of Report: 2019-Jul-17
Filed By: FWC SE Field Station

FWC Case # 8910 **FWC Region:** SO-A

Sex: Male **Length:** 289 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Jul-17 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2019-Jul-17 **By:** FWC-SMW,LRB

DATE NECROPSIED: 2019-Jul-17 **By:** FWC-SMW,LRB

LOCATION: **State:** FL **Latitude:** 27.55517 **N**
County: St. Lucie **Longitude:** -80.34994 **W**
Waterway: Indian River
Locality description: Vero Beach, grounded at the S tip of a small island, approximately 1.28 km SE of 680 23rd Street SE.

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Acute; Watercraft wound(s); Fractured rib(s); Shredded muscle; Hemorrhagic muscle; Blood clots; Torn lung (s); Hemorrhagic lung parenchyma; Seagrass in mouth.

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

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 NE Dispatch case number 12271.

Page 1&2	04 Dec 2020
Necropsy Report	04 Dec 2020
Lat/Long	04 Dec 2020

Field ID #: MSE19054

MORPHOMETRICS:

Total length:	289 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. MSE19054
RECOVERY DATE 17 July 2019
GENDER Male **TL** 289 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 17 July 2019
CONDITION Badly Decomposed

HISTORY 17 July 2019, at 1116 hrs, FWC biologist-Lucy R. Bukowski (LRB) received a text alert from FWC NE Dispatch-Orlando regarding a dead manatee near Round Island State Park in Vero Beach, Indian River County. FWC case number 12271 was assigned. The complainant, Kelly Hall (772-696-2700), stated that the carcass was bloated, back-up, and had the GI tract expelled. At 1125 hrs, LRB received a verification photo and GPS coordinates from the complainant indicating that the carcass was in SE Field Station territory. At 1131 hrs, LRB passed the information to SE Field Station staff. It was decided to have the EC Field Station recover and necropsy the carcass. At 1237 hrs, FWC biologist-Amber Howell (ARH) received a text alert from FWC SO-A Dispatch-Palm Beach regarding the same carcass in St. Lucie County. FWC case number 8910 was assigned. The complainant, David Branson (989-948-4141), stated that the carcass was floating near channel marker 168a in Ft. Pierce. ARH passed the information to EC Field Station staff. LRB and FWC biologist-Sara M. Wappes arrived at the Round Island boat ramp at 1300 hrs, launched the Key West boat, and located the carcass at 1345 hrs. A field necropsy was completed by 1523 hrs. The remains were left onsite to decompose.

EXTERNAL Approximately 70% of the epidermis was present but sloughing. There was one large, eroded linear wound on the right lateral and dorsal aspect. Most of the GI tract, the distal half of right rib 12, and the caudal tip of the left lung protruded out of the wound. There was a thick green and brown algal mat on the lateral aspects. A few healing linear lesions were present on the cranial dorsum. A minimum of two well-healed watercraft-related scar patterns was observed on the dorsal aspect. The fluke margin had two large well-healed circular mutilations between the 4 and 6 o'clock positions and two small well-healed mutilations at the 8 o'clock position. There was a moderate infestation of small barnacles on the ventrum. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All fat was rendered.

STOMACH The stomach was torn and contained at least 8 L of moist, well-chewed, fibrous, yellow to brown ingesta (see photo). The ingesta near the tear were stained dark red to dark brown (see photo). The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 2.5 L of moist, well-chewed, fibrous, stringy, yellow to brown ingesta mixed with a small amount of sand (see photo). Part of the mucosa was stained black but was otherwise unremarkable. No parasites were observed.

JEJUNUM & ILEUM The small intestine was presented outside of the body and friable when handled. The small intestine contained wet, moderately chewed, fibrous, light brown ingesta. The mucosa was autolyzed throughout. No parasites were grossly observed.

CECUM The cecum contained 1.2 L of moist, moderately digested, fibrous, stringy, yellow to brown digesta. The mucosa was black and sloughing (see photo). No parasites were observed.

COLON The colon was mostly presented outside of the body and friable when handled. The proximal and mid colon contained wet, moderately digested, poorly formed, fibrous, brown feces. The distal colon contained moist, well-digested, moderately formed, slightly fibrous, brown feces. The mucosa was autolyzed throughout. There was a mild infection of dead trematodes.

PANCREAS The pancreas was missing.

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 orange.

REPRODUCTIVE The reproductive organs were soft, friable, and autolyzed.

KIDNEYS The left kidney was missing. The right kidney was soft, friable, and autolyzed.

URINARY BLADDER The urinary bladder was soft, friable, torn, and empty of contents. The mucosa was autolyzed.

HEART The heart was soft, friable, and autolyzed.

RESPIRATORY SYSTEM Both hemidiaphragms were torn due to decomposition. There were a few small well-formed blood clots in the right pleural cavity. The lungs were soft, friable, and autolyzed. The caudal tip of the right lung was torn, hemorrhagic, and protruded out of the dorsal wound (see photo).

HEAD & NECK REGIONS There was a small thatch of poorly chewed seagrass in the mouth (see photo).

SKELETON Right rib 12 had an oblique fracture at the proximal one-third and an oblique comminuted fracture at the proximal one-quarter. The distal half of rib 12 was exposed in the wound. Right rib 13 had an oblique fracture at the proximal one-third. Right ribs 14 and 15 had oblique fractures at the proximal one-quarter. Right ribs 16 and 17 had oblique fractures at the proximal one-third. The fractures were surrounded by a large region of shredded, hemorrhagic tissue which was associated with the watercraft wound (see photo).

OTHER

PHOTOGRAPHS 2019-07-17_FWC025_9140 through 9166, 9169 through 9178.

COMMENTS

SIGNIFICANT FINDINGS

- Watercraft wound
- Fractured ribs
- Shredded, hemorrhagic tissue
- Blood clots
- Torn, hemorrhagic lung
- Seagrass in mouth
- Healing skin lesions
- Autolyzed, missing internal organs

PROBABLE CAUSE OF DEATH Watercraft (Acute)

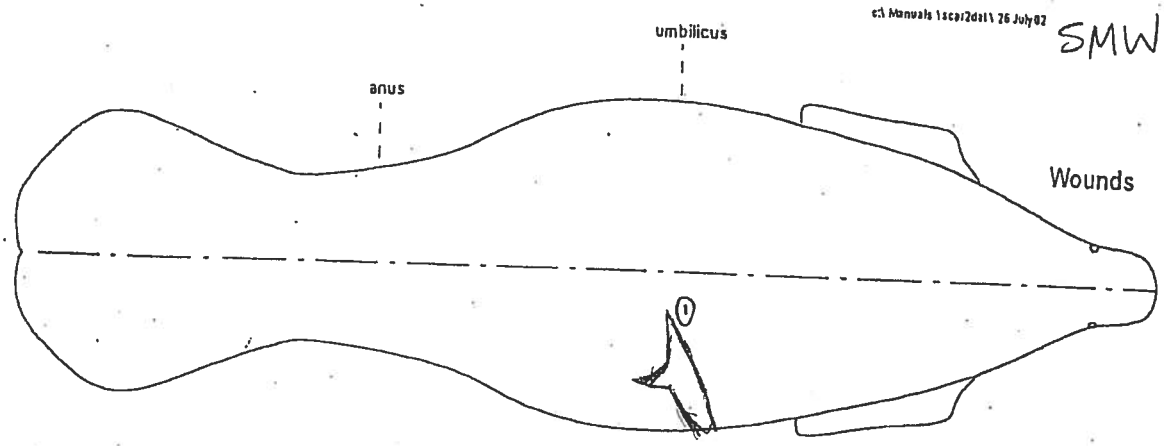
NECROPSY CONDUCTED BY

Sara M. Wappes
Lucy R. Bukowski

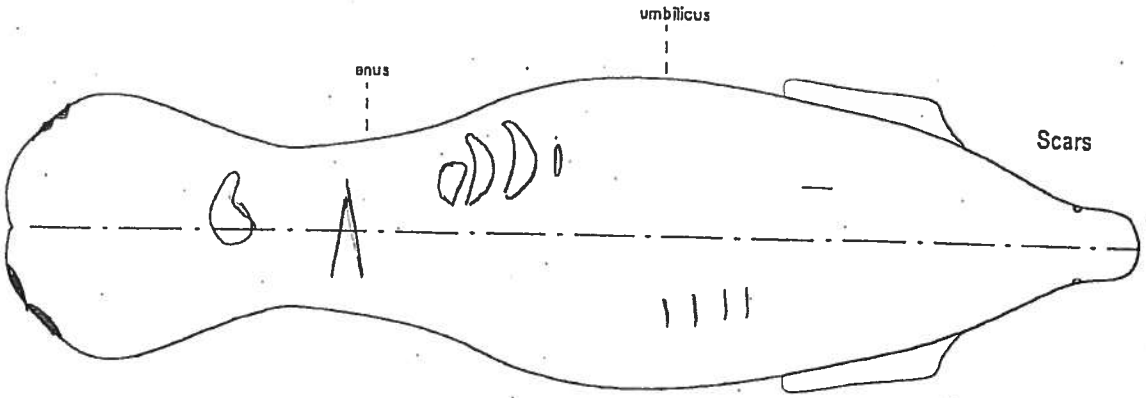
REPORT FILED BY Wappes

Date 17 JULY 2019 Field I.D. MSE19054

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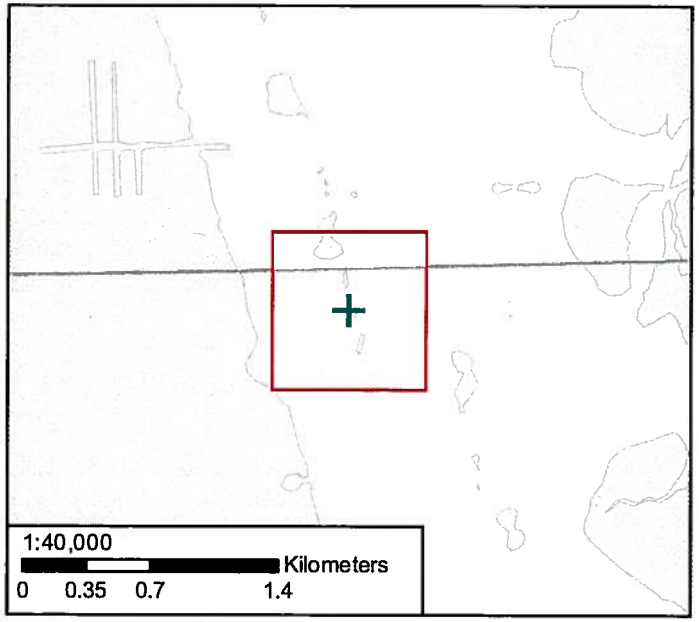
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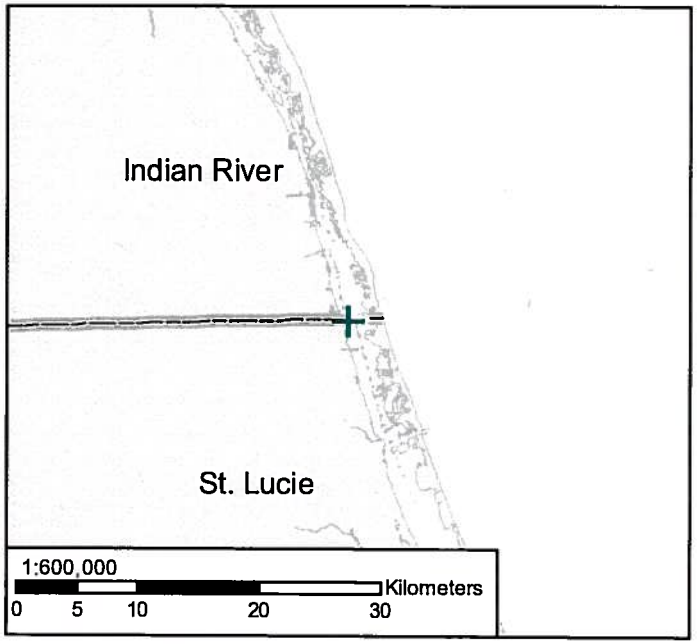


Verified Recovery Location of Manatee Carcass MSE19054

Report Date: 7/17/2019 **Received Date:** 7/17/2019 **Received By:** FWC-SMW,LRB Map Created: 12/2/2020







Locality Description:
Vero Beach, St. Lucie
Grounded, at the S tip of a small island, approximately 1.28 km SE of 680 23rd Street SE.

Latitude: 27.55517°N **Longitude:** -80.34994°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE19054
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12271, 8910 **FWC District**: South A
Sex: Male **Length (cm)**: 289 **Estimated** _____ **Weight (kg)** N/T
Date reported: 17 July 2019 **By**: Citizen to FWC Dispatch
Date collected: 17 July 2019 **By**: FWC ECFL- SMW, LRB
Date necropsied: 17 July 2019 **By**: FWC ECFL-SMW, LRB

LOCATION INFORMATION: State FL **County**: St. Lucie **Waterway**: Indian River
Latitude: N 27.555096 **Longitude**: W -80.350073
Locality description: 1.28km SE of 680 23rd street SE, Vero Beach, FL 32962

Carcass Orientation: Grounded

CONDITION: Badly Decomposed

PROBABLE CAUSE OF DEATH:

Human related: ☑ Watercraft Collision: Both; 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: Large, eroded external wound, 6 fractured ribs, punctured lung, shredded hemorrhagic tissue.

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 #: **MSE19064**
Date of Report: 2019-Nov-29
Filed By: FWC SE Field Station

FWC Case # 13809 **FWC Region:** SO-A

Sex: Unknown **Length:** 235 **cm** (estimated) **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Nov-29 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2019-Nov-30 **By:** FWC-BMF

DATE NECROPSIED: 2019-Nov-30 **By:** FWC-BMF,AP

LOCATION: **State:** FL **Latitude:** 27.28504 **N**
County: St. Lucie **Longitude:** -80.22531 **W**
Waterway: Indian River
Locality description: Hutchinson Island, floating approximately 15 m N of 1052 Nettles Boulevard.

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; Shark scavenging; Missing most soft tissue, flippers.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, 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. Actual length of the remains was 225 cm.

Page 1&2	18 Jan 2021
Necropsy Report	18 Jan 2021
Lat/Long	18 Jan 2021

Field ID #: MSE19064

MORPHOMETRICS:

Total length:	235 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. MSE19064
RECOVERY DATE 30 November 2019
GENDER Undetermined **TL** 235 **cm** (est) **WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 30 November 2019
CONDITION Badly Decomposed

HISTORY 29 November 2019, at 1526 hrs, FWC on-call biologist-William Greer (WDG) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Jensen Beach, St. Lucie County. FWC case number 13809 was assigned. The complainant, Jim (772-229-0988), stated that the carcass was floating in the main canal of Nettles Island. The complainant was unable to take photos. WDG requested FWC LE assistance. At 1640 hrs, Officer James Payne arrived at the carcass, sent photo verification, and towed it to a nearby boat ramp by 1715 hrs. WDG passed the information to the SE Field Station at 1720 hrs. **30 November**, FWC biologist-Blake Faucett (BMF) arrived at the boat ramp at 1025 hrs and loaded the carcass by 1040 hrs. A field necropsy was completed by 1250 hrs. The remains were disposed of at the Martin County Landfill.

EXTERNAL Approximately 10% of the epidermis was present but sloughing. Only the dorsal soft tissue and fluke remained. Almost all of the ventral tissue, lateral tissue, and peduncle tissue was missing due to severe shark scavenging, which exposed ribs, vertebrae, and the skull. The flippers were missing. The remaining epidermis had a thin brown algal mat. There were numerous barnacles on the remaining epidermis of the ventral fluke. Linear cold stress lesions were observed on the ventral fluke. A few short well-healed linear scars were observed. No watercraft-related wounds or scars were grossly observed. Actual length of the remains was 225 cm. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL All internal organs were missing.

HEAD & NECK REGIONS NVL.

SKELETON NVL.

OTHER

PHOTOGRAPHS 2019-11-30_FWC044_0613, 0614, 0616, 0617, 0619 through 0631.

COMMENTS

SIGNIFICANT FINDINGS

- Missing internal organs, most soft tissue, flippers
- Shark scavenging
- Cold stress lesions fluke

PROBABLE CAUSE OF DEATH Undetermined; Too Decomposed

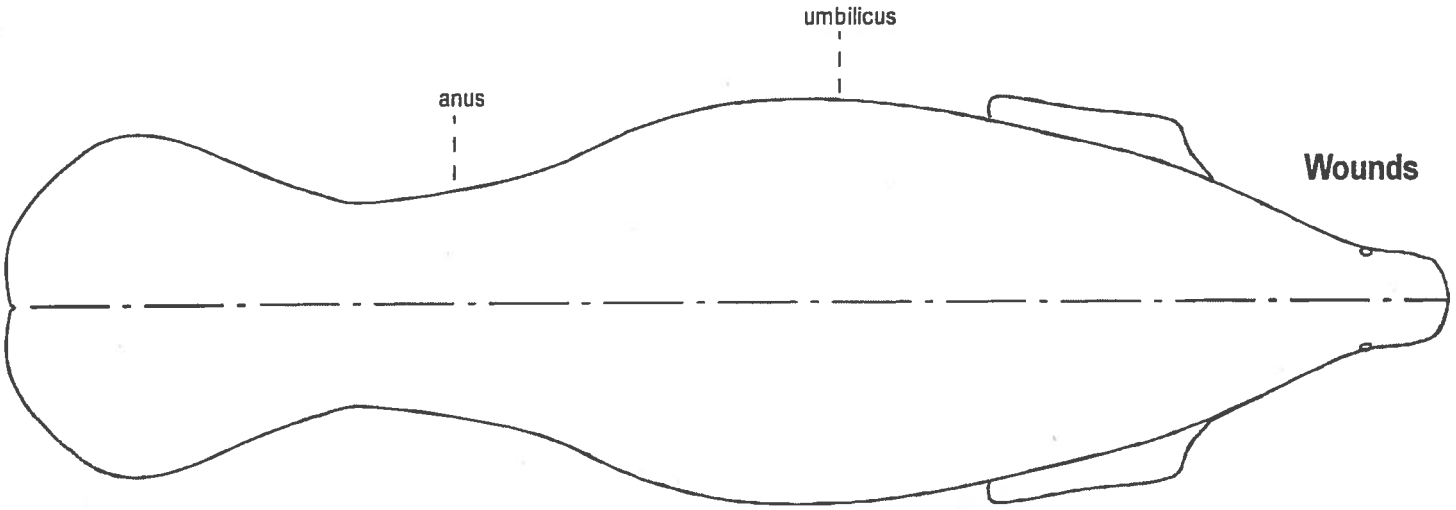
NECROPSY CONDUCTED BY

Blake M. Faucett
Austin L. Peek

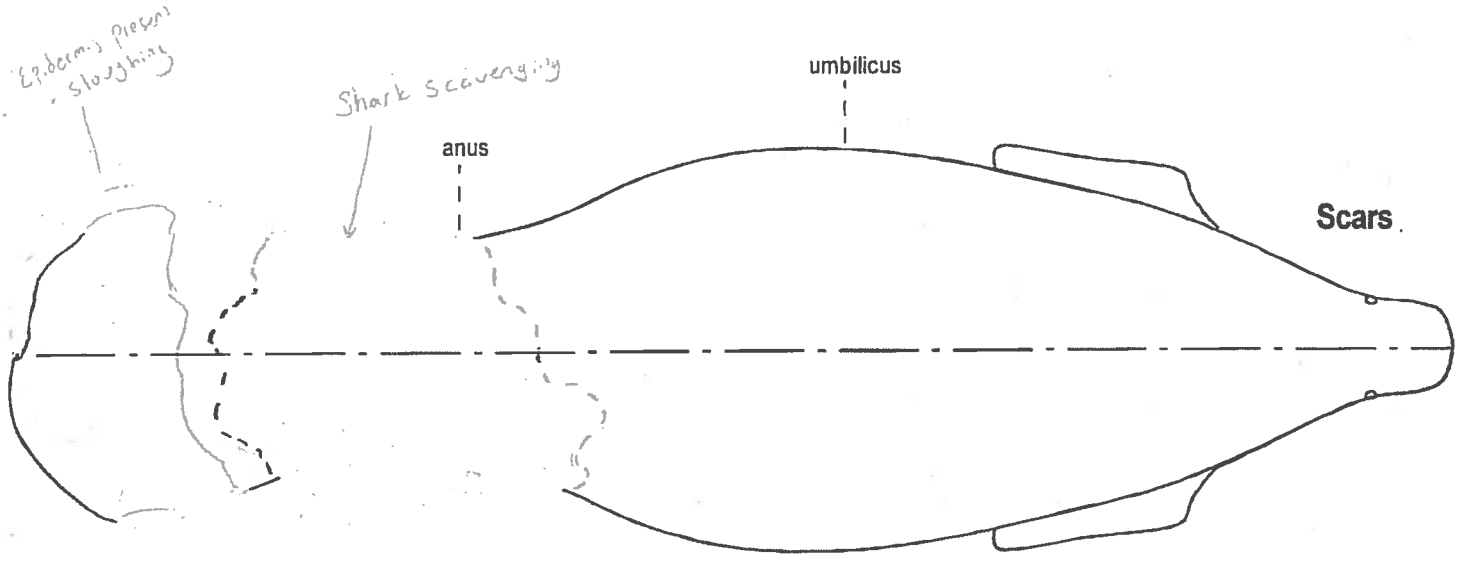
REPORT FILED BY Peek

Date 30 Nov 2019 Field I.D. MSE190641

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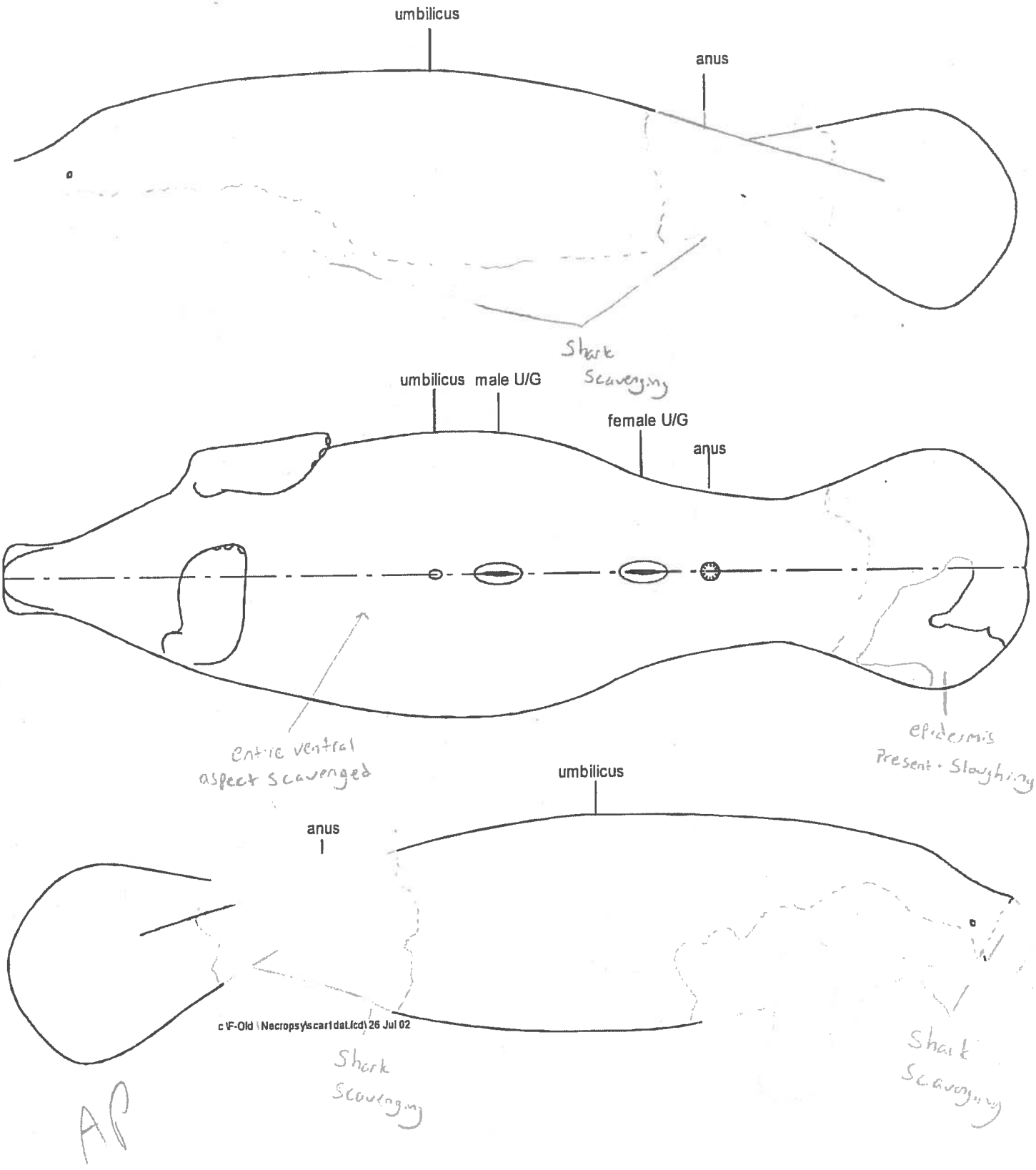


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AP

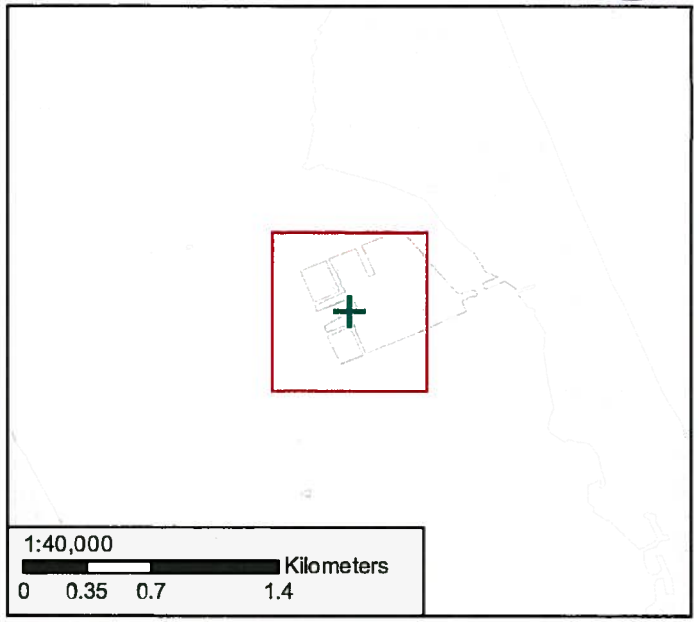
FIELD I.D. MSE19064

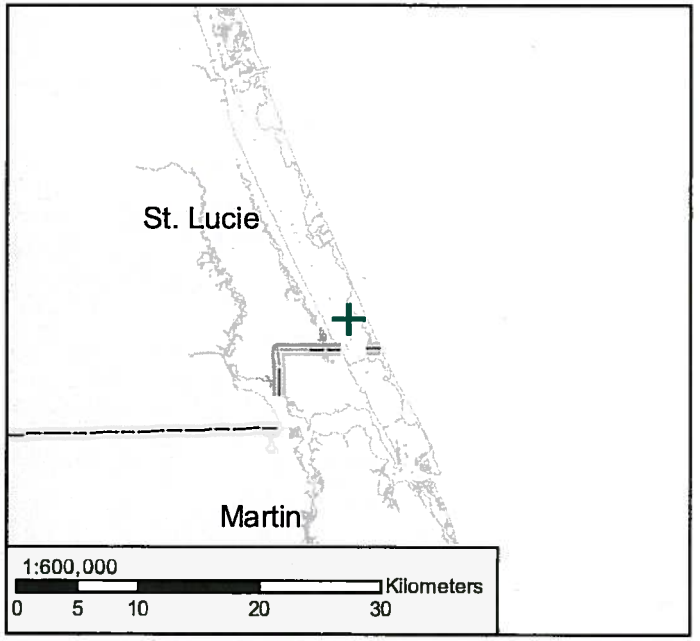


Verified Recovery Location of Manatee Carcass MSE19064

Report Date: 11/29/2019 **Received Date:** 11/30/2019 **Received By:** FWC-BMF Map Created: 1/14/2021







Locality Description:
Hutchinson Island, St. Lucie
Floating, approximately 15 m N of 1052 Nettles Boulevard.

Latitude: 27.28504°N **Longitude:** -80.22531°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE19064
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 13809 **FWC District**: South A
Sex: Undetermined **Length (cm)**: 225 **Estimated** 235 **Weight (kg)** N/T
Date reported: 29 Nov 2019 **By**: Citizen to FWC Dispatch
Date collected: 30 Nov 2019 **By**: FWC-BMF
Date necropsied: 30 Nov 2019 **By**: FWC- BMF, AP

LOCATION INFORMATION: **State** FL **County**: ~~Martin~~ St. Lucie **Waterway**: Indian River
Latitude: N 27.285041 **Longitude**: W -80.225316
Locality description: 15m N of 1052 Nettles Blvd, 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: No organs present.

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 #: **MSE19068**
Date of Report: 2019-Dec-11
Filed By: FWC SE Field Station

FWC Case # 14195 **FWC Region:** SO-A

Sex: Male **Length:** 262 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-11 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2019-Dec-11 **By:** FWC intern-Laura Cassetty

DATE NECROPSIED: 2019-Dec-12 **By:** FWC-ARH,BMF

LOCATION: **State:** FL **Latitude:** 27.19238 **N**
County: Martin **Longitude:** -80.26186 **W**
Waterway: St. Lucie River
Locality description: Stuart, floating approximately 70 m SW 800 SW St Lucie Crescent.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Undetermined: Other

EXPLAIN: Cobblestone-like epidermis; Thickened epidermis; Watercraft wound(s); Wet lung(s); Crumbly feces; Hemorrhagic muscle; Dry feces; Bloody nares; Relatively empty, mucus-filled upper GI tract; Mucus in airways; Congested airway mucosa; Discolored colon and small intestine serosa, muscle, skin; Relatively empty lower GI tract; Fluid in pleural cavities.

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

MATERIALS COLLECTED:

Genetics.

DISPOSITION OF MATERIAL: FWC SE Field Station pending distribution.

ADDITIONAL DATA:

REMARKS:

PIT tag scan negative. A field necropsy was performed.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MSE19068

MORPHOMETRICS:

Total length:	262 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 (Small amount of white 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. MSE19068
RECOVERY DATE 11 December 2019
GENDER Male **TL** 262 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 12 December 2019
CONDITION Moderately Decomposed

HISTORY 11 December 2019, at 1304 hrs, FWC biologist-Amber Howell (ARH) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee behind 800 SW St Lucie Crescent in Stuart, Martin County. FWC case number 14195 was assigned. At 1304 hrs, ARH left a voicemail with the complainant, Terry (772-285-1702). ARH called the complainant again at 1357 hrs, and was told that the carcass was drifting north. ARH received photo verification at 1400 hrs and requested FWC LE assistance. FWC Officer-Mike Carroll arrived at the carcass at 1710 hrs and towed it to a nearby boat ramp by 1730 hrs. ARH passed the information to FWC intern-Laura Cassetty for recovery. Laura arrived at the carcass by 1808 hrs. The carcass was loaded by 1825 hrs and transported to the SE Field Station by 1900 hrs where it was stored overnight. **12 December**, a field necropsy was completed by 0915 hrs. The remains were disposed of at the Martin County Landfill.

EXTERNAL Approximately 60% of the epidermis was present but sloughing. Bloody fluid exuded from the nares. There was thickened, cobblestone-like epidermis on the dorsum. One fresh, short, superficial linear wound was observed on the right mid dorsal aspect. There was red discoloration in the dermis of the left lateral aspect. A minimum of one well-healed watercraft-related scar pattern was observed on the dorsum. There was a small well-healed mutilation at the 6 o'clock position of the fluke. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was abundant, gassy abdominal, mesenteric, and omental fat.

STOMACH The stomach contained 1 L of thick, viscous, white mucus. The mucosa was pink, light brown and blue and had a small brown ulcer (see photo). No parasites were observed.

DUODENUM The duodenum contained 0.5 L of thick, viscous, yellow mucus. The mucosa was rugose due to contraction and stained yellow (see photo). No parasites were observed.

JEJUNUM & ILEUM The small intestine serosa had patches of red discoloration throughout (see photos). The proximal small intestine contained viscous, yellow and white mucus. The distal small intestine contained a small amount of viscous, tan fluid. There were numerous prominent Peyer's patches throughout. No parasites were grossly observed.

CECUM The cecum contained 0.5 L of moist, fibrous, leafy, moderately digested, green to dark green digesta. The mucosa was sloughing. A moderate infection of dead trematodes was observed.

COLON The colon serosa had patches of red discoloration throughout (see photos). The proximal colon contained a small amount of dry, crumbly, fibrous, stringy, moderately digested, poorly formed, light green feces. The mucosa was stained green and brown (see photo). A severe infection of dead trematodes was observed. The mid colon contained moist, stringy, fibrous, moderately digested, moderately formed, light green feces. A portion of the mucosa was mildly thickened and rugose due to contraction. The distal colon contained dry, fibrous, stringy, moderately digested, well-formed, green feces. The mucosa was sloughing. A small infection of dead trematodes was observed in the mid and distal colon.

PANCREAS The pancreas was soft. Serosal and cut surfaces were tan.

SPLEEN The spleen was soft and slightly enlarged. Serosal surfaces were mottled purple and dark red, and cut

surfaces were dark red and bloody.

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

GALLBLADDER The gallbladder contained 50 mL of viscous, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The reproductive organs were moderate in size. There was a small amount of white fluid on cut surfaces of the epididymides and seminal vesicles.

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

URINARY BLADDER The urinary bladder contained 300 mL of watery, light yellow urine. The mucosa was unremarkable.

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

RESPIRATORY SYSTEM Both hemidiaphragms were intact. Each pleural cavity contained 100 mL of watery, red-tinged fluid. The lungs were light pink to light purple on serosal surfaces, and dark red and wet on cut surfaces. The right lung had a red discolored region on the mid ventral aspect (see photo). There was a moderate amount of viscous, red mucus in the airways of the left lung. There was an abundant amount of viscous, red mucus in the airways of the right lung. A scant infection of dead trematodes was observed in both lung airways. The mucosa was dark red and moderately congested.

HEAD & NECK REGIONS The trachea contained a moderate amount of thick, viscous, red mucus. The mucosa was moderately congested.

SKELETON NVL.

OTHER The muscle and tissue on the left lateral aspect was discolored red (see photos) and had one focal region of dark red hemorrhage at the cranial left lateral aspect just caudal to the left flipper (see photo).

PHOTOGRAPHS 2019-12-12_FWC043_0705 through 0739.

COMMENTS There was no trauma deep to the superficial wound. There were no specific findings to indicate a cause of death.

SIGNIFICANT FINDINGS

- Bloody nares
- Fresh superficial wound
- Thickened, cobblestone-like epidermis
- Hemorrhage in muscle
- Relatively empty, mucus-filled upper GI tract
- Relatively empty lower GI tract
- Dry, crumbly feces
- Wet lungs
- Mucus in airways
- Congested airway mucosa

- Discolored colon and small intestine serosa, muscle, and skin
- Fluid in pleural cavities

PROBABLE CAUSE OF DEATH Undetermined; Other

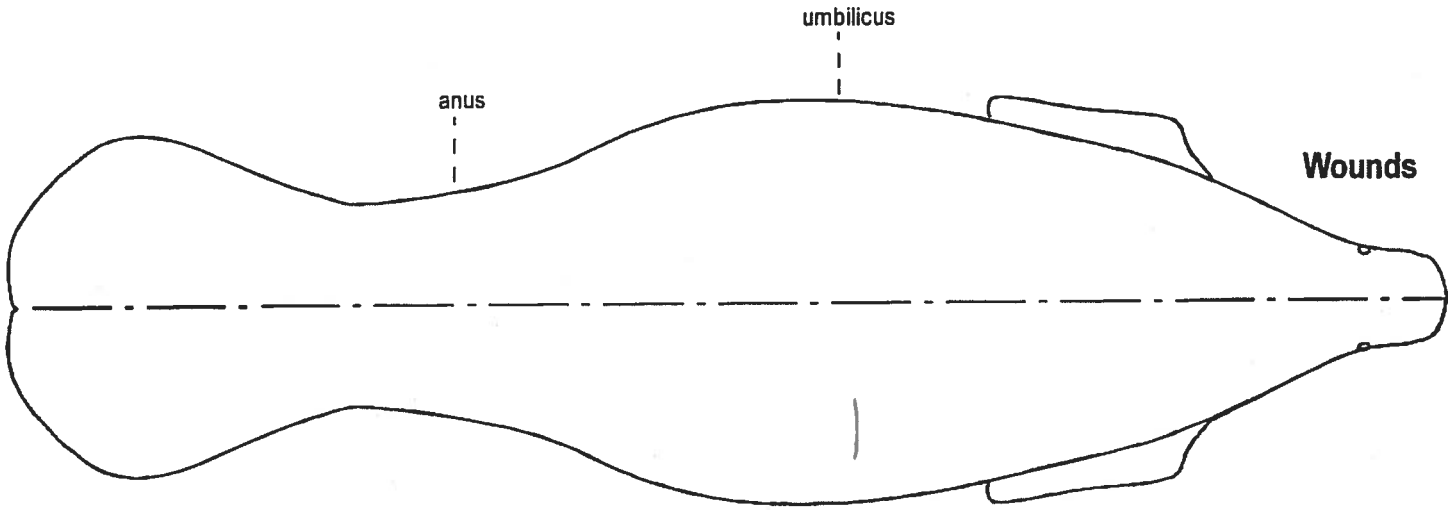
NECROPSY CONDUCTED BY

Amber R. Howell
Blake M. Faucett
Laura S. Cassetty (FWC intern)

REPORT FILED BY Howell

Date 12 Dec 2019 Field I.D. MSE19068

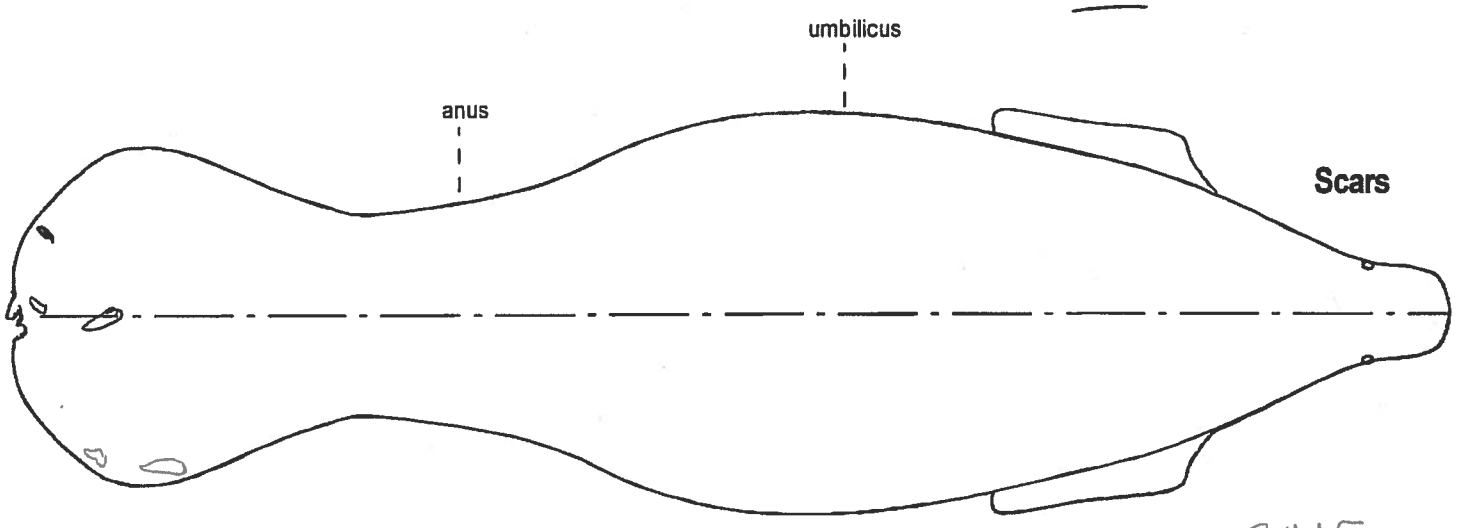
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fresh

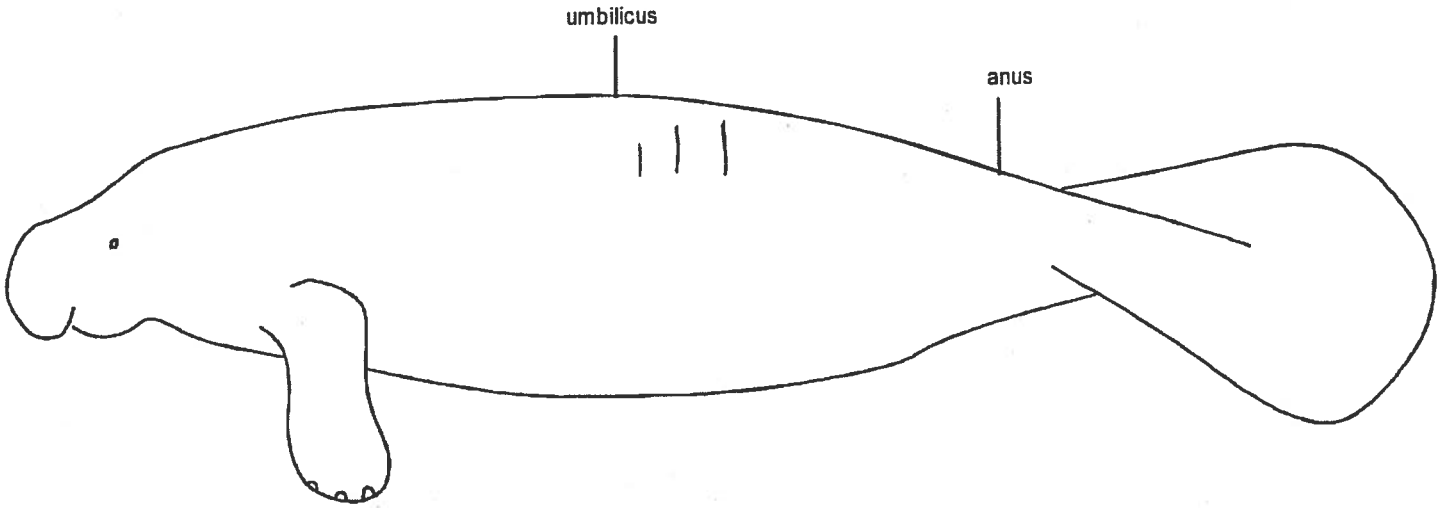
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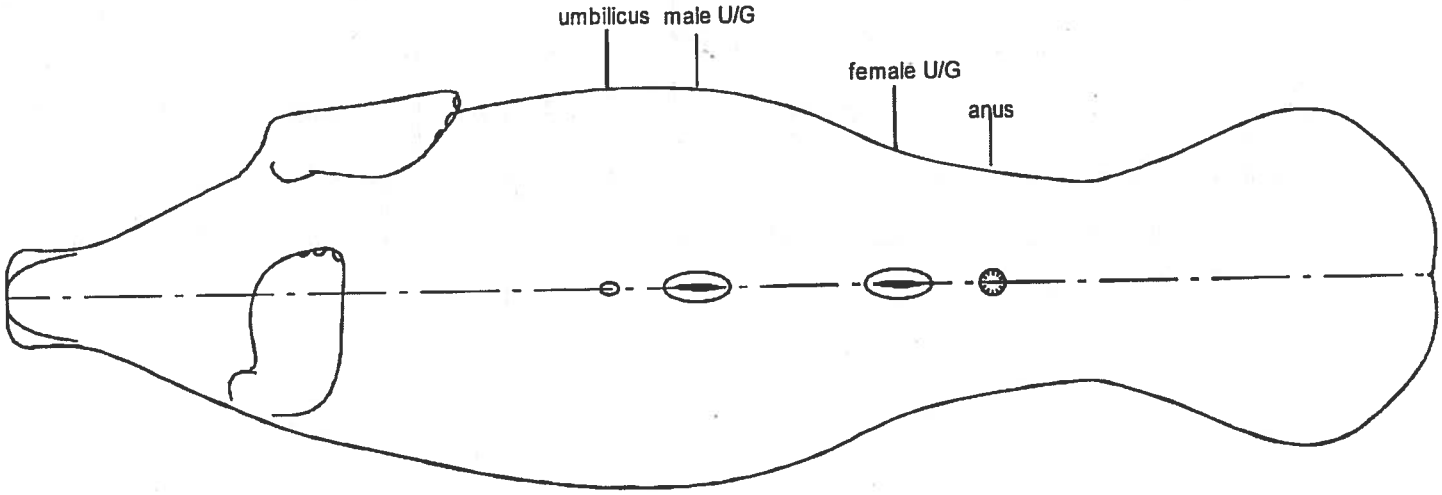
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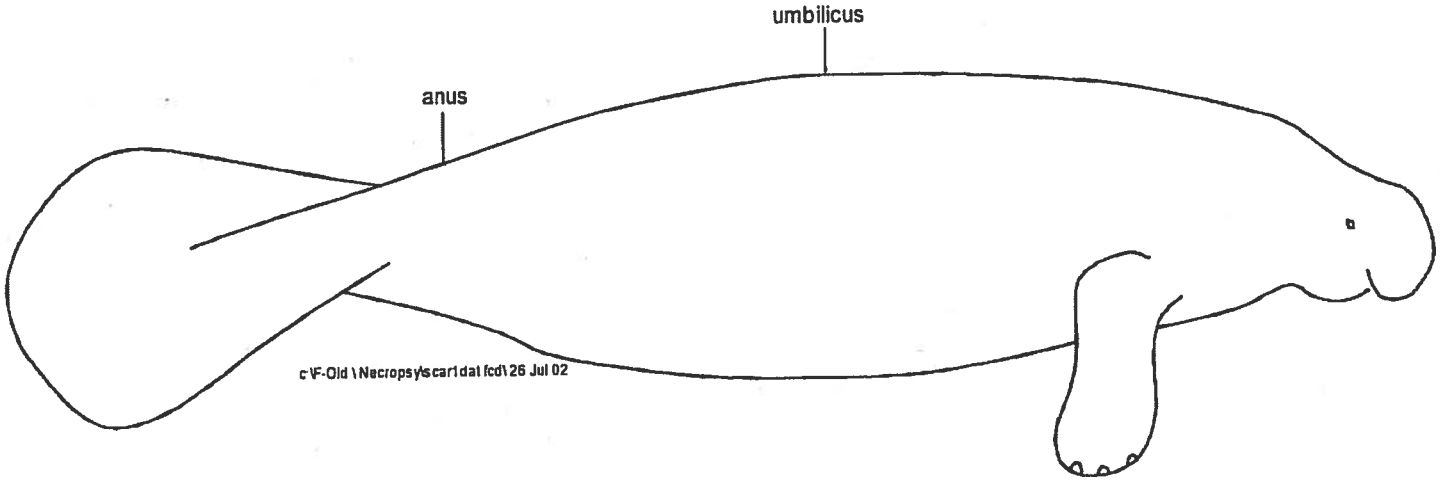


BMF

FIELD I.D. MSE19068

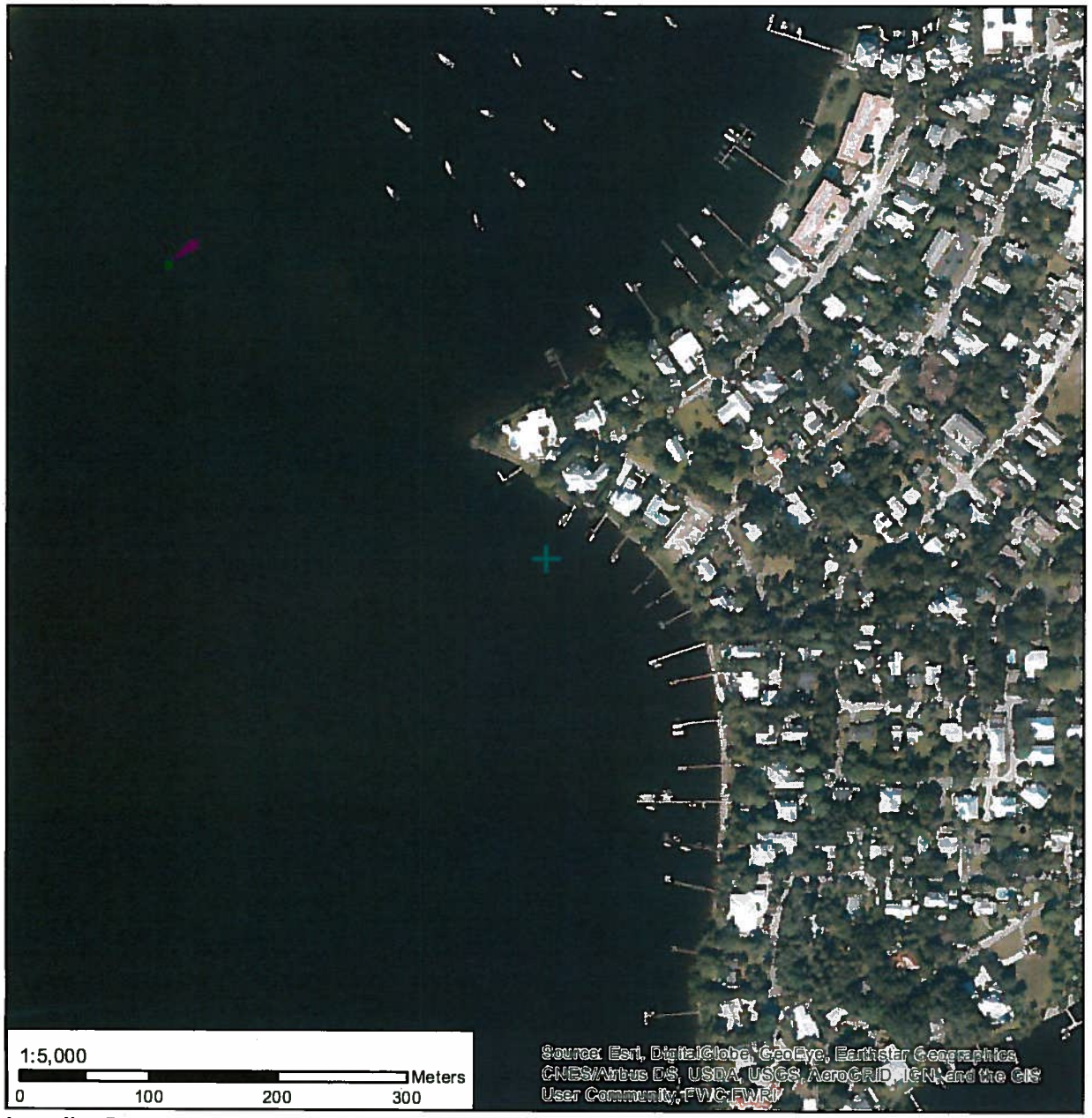


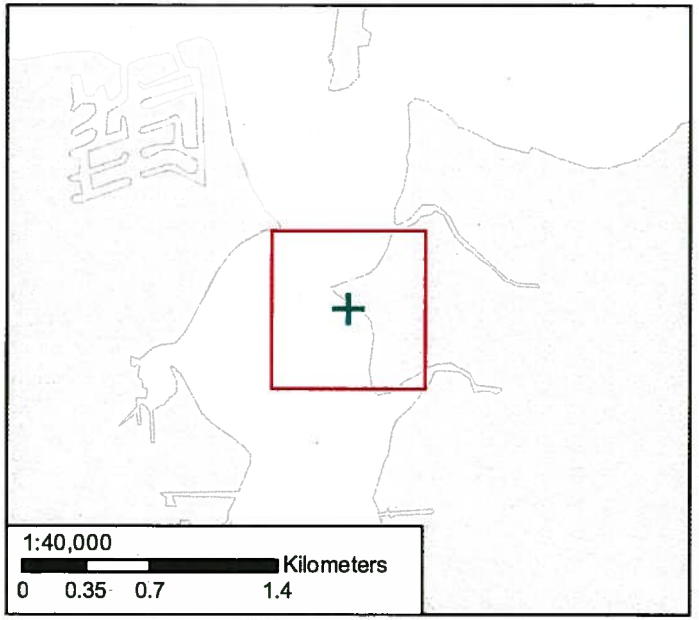


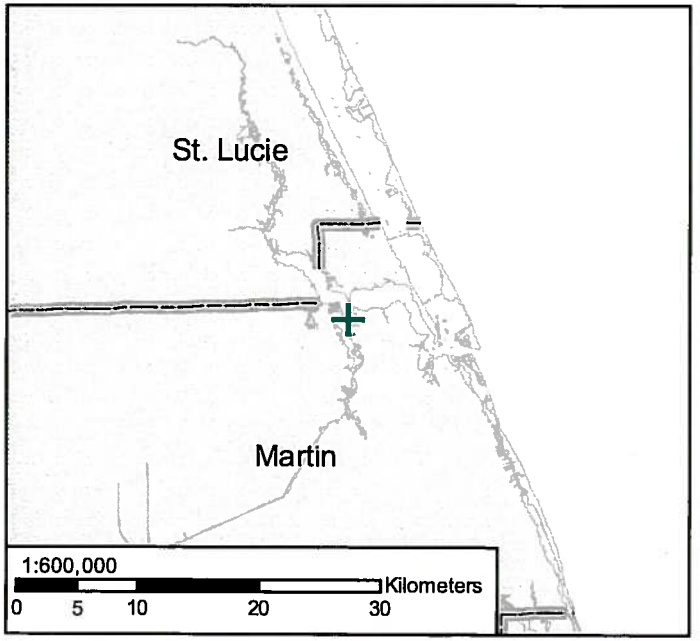


Verified Recovery Location of Manatee Carcass MSE19068

Report Date: 12/11/2019 **Received Date:** 12/11/2019 **Received By:** FWC intern-Laura Cassetty Map Created: 1/20/2021







Locality Description:
Stuart, Martin
Floating, approximately 70 m SW 800 SW St Lucie Crescent.

Latitude: 27.19238°N **Longitude:** -80.26186°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE19068
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14195 **FWC District:** South A
Sex: Male **Length (cm):** 262 **Estimated** _____ **Weight (kg)** N/T
Date reported: 11 Dec 2019 **By:** Citizen to FWC Dispatch
Date collected: 11 Dec 2019 **By:** FWC Intern-Laura Cassetty
Date necropsied: 12 Dec 2019 **By:** FWC-ARH, BMF, FWC Intern- Laura Cassetty

LOCATION INFORMATION: State FL **County:** Martin **Waterway:** St Lucie River
Latitude: N 27.1923818 **Longitude:** W -80.2618546
Locality description:

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: bloody fluid nares, cobblestone-like epidermis, relatively empty upper GI tract, dry crumbly feces, rugose, thickened colon mucosa, mucus in lung airways, trachea, congested trachea, lung airway, discolored colon and small intestine serosa, muscle and skin, superficial wound

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

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 #: **MSE19071**
Date of Report: 2019-Dec-17
Filed By: FWC SE Field Station

FWC Case # 14406 **FWC Region:** SO-A

Sex: Male **Length:** 260 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-17 **By:** Citizen to Sewalls Point PD to FWC SO-A Dispatch

DATE COLLECTED: 2019-Dec-17 **By:** FWC-ARH

DATE NECROPSIED: 2019-Dec-17 **By:** FWC-ARH

LOCATION: **State:** FL **Latitude:** 27.20328 **N**
County: Martin **Longitude:** -80.19895 **W**
Waterway: Indian River
Locality description: Sewall's Point, beached approximately 135 m ESE of 2 N Sewalls Point Road.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Acute; Fractured rib(s); Torn parietal pleura; Blood clots; Hemothorax; Torn hemidiaphragm(s); Torn lung(s); Wet lung(s); Shredded muscle; Hemorrhagic muscle; Luxated rib(s); Fractured kidney(s); Watercraft wound(s); Bloody eyes; Mucus, froth in airways; Torn airway; Congested urinary bladder-, airway mucosa; Seagrass in mouth.

PHOTOGRAPHS TAKEN: Dorsal, Ventral, Lateral, Scar, Fluke, Cranial, Internal, Other (Wounds, Seagrass in mouth).

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.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MSE19071

MORPHOMETRICS:

Total length:	260 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. MSE19071
RECOVERY DATE 17 December 2019
GENDER Male **TL** 260 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 17 December 2019
CONDITION Fresh

HISTORY 17 December 2019, at 0756 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 14406 was assigned. Sewall's Point Police Department (772-781-3378) had received a call from a citizen that the carcass had washed up at Sewall's Point Town Park. One of their officer's responded to verify the carcass. Verification photos were received at 0802 hrs. A field necropsy was completed by 1115 hrs. The remains were scattered on site to decompose.

EXTERNAL All of the epidermis was present but sloughing. The eyes were bloody. There was one fresh, superficial linear watercraft-related wound on the right mid dorsal aspect (wound #1). Numerous fresh, large, superficial scrapes were observed on the left lateral and ventral aspect. There were numerous barnacle scars on the dorsal fluke, and ventral and lateral aspects. A small infestation of small barnacles was present on the dorsal aspect. The carcass had a thin brown algal mat. A minimum of one well-healed watercraft-related scar pattern was observed. PIT tag scan was negative. A genetics sample was collected.

ABDOMINAL There was moderate abdominal and omental fat. There was abundant mesenteric fat.

STOMACH The stomach contained 3.2 L of moist, fibrous, well-chewed, light green to green ingesta. No parasites were observed. The mucosa was unremarkable.

DUODENUM The duodenum contained 2.0 L of wet, fibrous, well-chewed, light green to green ingesta. No parasites were observed. The mucosa was unremarkable.

JEJUNUM & ILEUM The small intestine contained wet, fibrous, well-chewed, light green ingesta. No parasites were grossly observed. The mucosa was unremarkable.

CECUM The cecum contained 1.5 L of moist, fibrous, well-digested, green to dark green digesta. No parasites were observed. The mucosa was unremarkable.

COLON The proximal colon contained wet, fibrous, well-digested, poorly formed, green feces. The distal colon contained moist, fibrous, stringy, leafy, moderately digested, well-formed, dark green to brown feces. No parasites were observed throughout. The mucosa was unremarkable throughout.

PANCREAS The pancreas was firm. Serosal and cut surfaces were light pink.

SPLEEN The spleen was firm. Serosal surfaces were mottled purple and light red, and cut surfaces were red.

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

GALLBLADDER The gallbladder contained 50 mL of watery, golden yellow bile. The mucosa was bile-stained.

REPRODUCTIVE There was abundant reproductive fat. The testes were moderate in size. No fluid was expressed on cut surfaces of the epididymides or seminal vesicles.

KIDNEYS There was moderate perirenal fat. The right kidney had several fractures at the cranial dorsal and ventral aspect due to fractured right rib 15, which were surrounded by loose, well-formed blood clots (see photo). The right kidney was light red to purple on serosal surfaces. On cut surfaces, the cortices were light red and the medullae were red. The left kidney was tan to light red on serosal surfaces. On cut surfaces, the cortices were tan and the medullae were red. The corticomedullary boundaries were indistinct in both kidneys.

URINARY BLADDER The urinary bladder contained 40 mL of watery, light yellow urine. The mucosa was slightly congested.

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

RESPIRATORY SYSTEM The left hemidiaphragm was intact. There were two tears in the right hemidiaphragm (cranial: 12.1 x 6.6 cm, caudal: 9.2 x 2.7 cm). There were 4.7 L of loose, well-formed blood clots and frank blood in the right pleural cavity (see photo). The right lung had two tears on the ventral caudal aspect and four tears on the dorsal caudal aspect (see photos) due to fractured ribs 12 - 15. The caudal tip of the right lung airway was torn, and the tear was associated with blood clots and hemorrhagic tissue (see photo). Both lungs were light pink to light purple on serosal surfaces. The left lung was light pink, wet, and frothy on cut surfaces. The right lung was dark pink and slightly wet on cut surfaces. Both lung airways contained an abundant amount of viscous, yellow and red mucus (see photos). No parasites were observed. The mucosa was red and moderately congested.

HEAD & NECK REGIONS There was a thatch of poorly chewed *Halodule* in the mouth (see photo). There was a moderate amount of white froth in the trachea. The mucosa was moderately congested.

SKELETON Right ribs 11 - 15 had transverse fractures at the proximal one-third. The fractures of right ribs 12 - 15 perforated the parietal pleura, right lung, and right hemidiaphragm. Right rib 15 also fractured the right kidney. Right rib 13 also had closed transverse fractures at the mid one-third and distal one-third and was separated into four pieces. Right ribs 14 and 15 also had closed oblique fractures at mid-shaft and were separated into three pieces. Right rib 16 had a closed transverse fracture at the mid one-third. Right rib 17 was luxated but the head did not perforate the parietal pleura. All fractures were surrounded by loose, well-formed blood clots and shredded, hemorrhagic tissue (see photos).

OTHER

PHOTOGRAPHS 2019-12-17_FWC044_2844 through 2890.

COMMENTS

SIGNIFICANT FINDINGS

- Fresh, superficial watercraft wound and scrapes
- Bloody eyes
- Fractured, luxated ribs
- Shredded, hemorrhagic tissue
- Blood clots
- Hemothorax
- Torn lung, airway, hemidiaphragm, parietal pleura, kidney
- Mucus, froth in airways
- Wet lungs
- Congested urinary bladder-, airway mucosa
- Seagrass in mouth

PROBABLE CAUSE OF DEATH Watercraft; Impact (Acute)

NECROPSY CONDUCTED BY

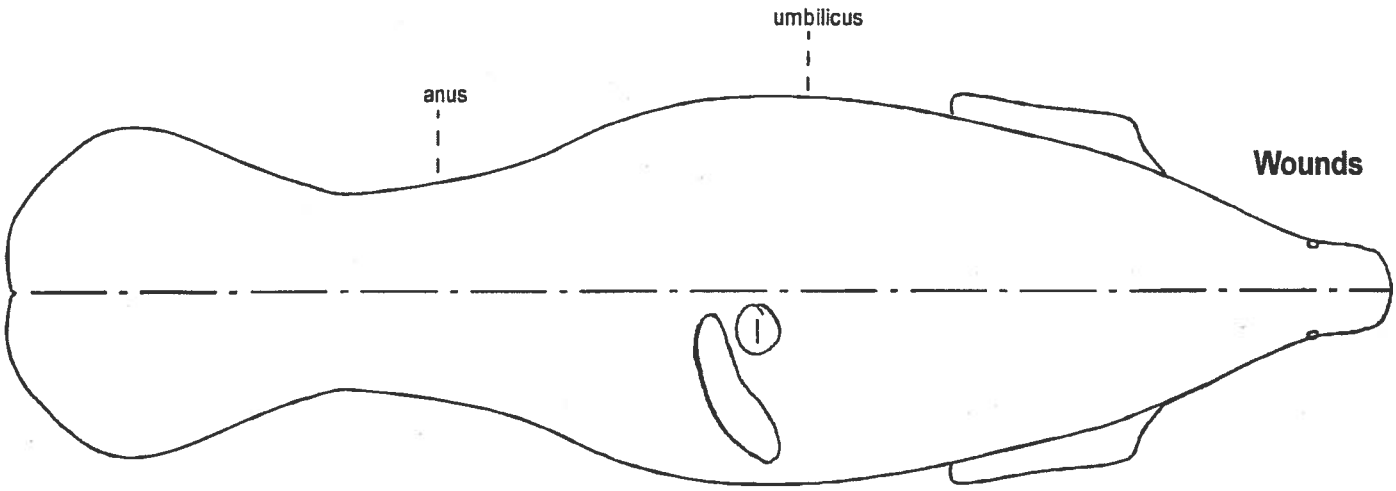
Amber R. Howell

REPORT FILED BY Howell

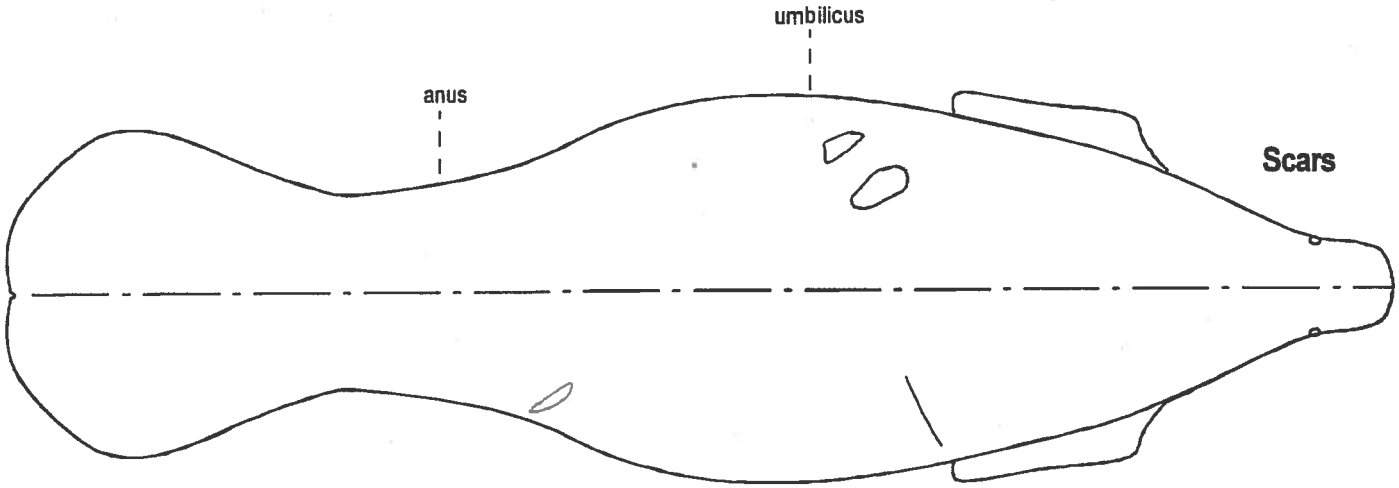
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Field I.D. MSE 19071

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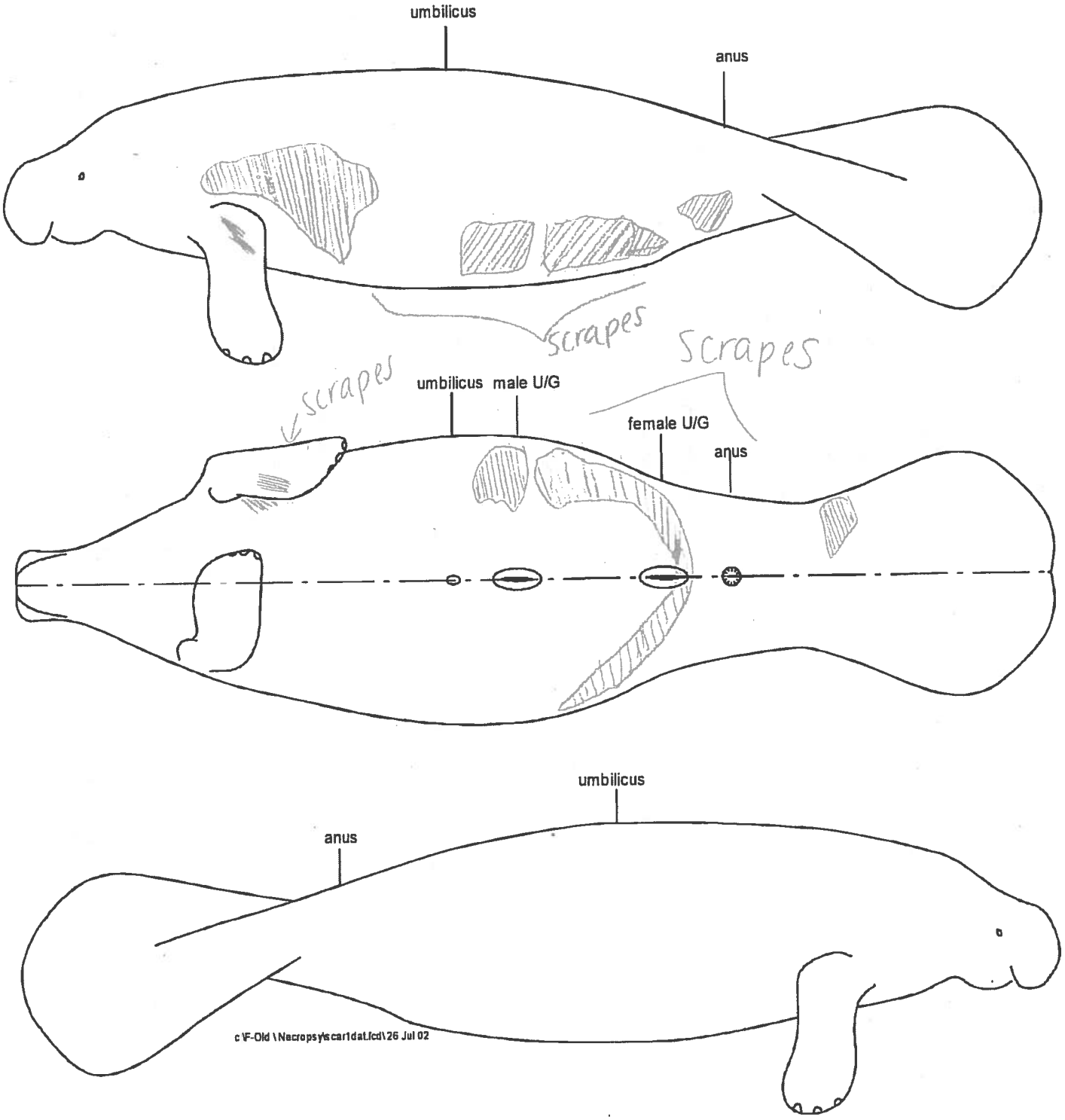
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ARH

FIELD I.D. MSE 19071

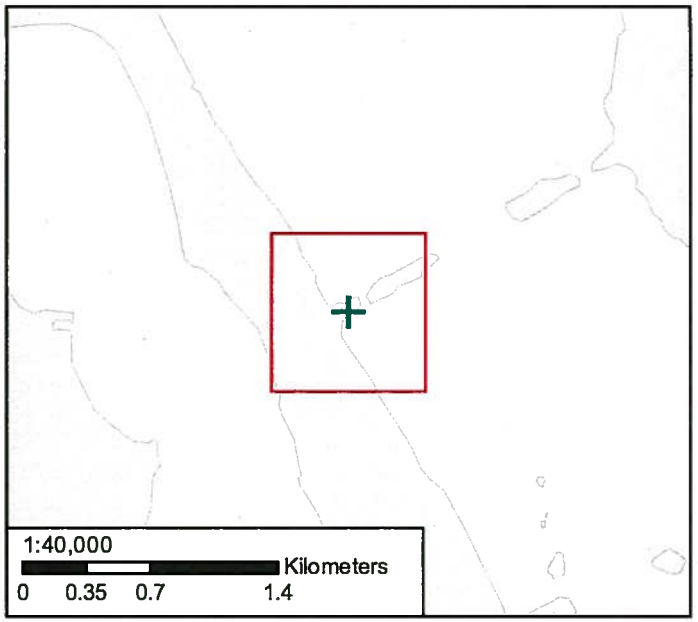


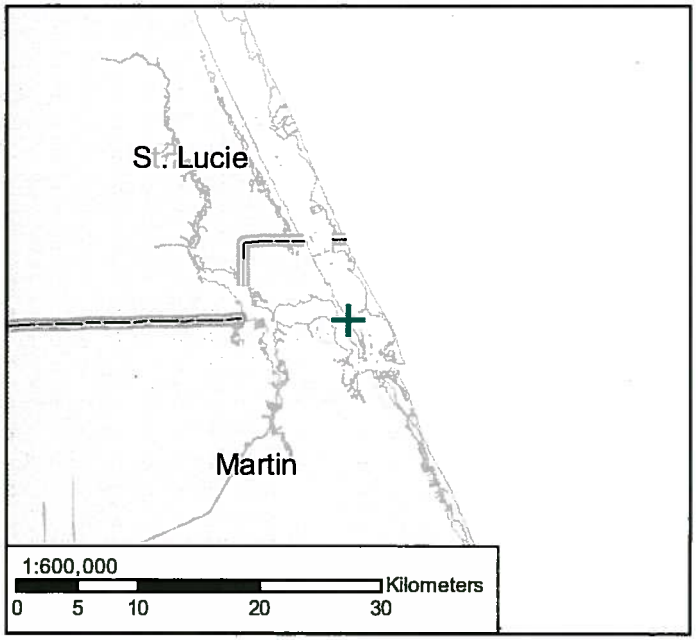
ARH

Verified Recovery Location of Manatee Carcass MSE19071

Report Date: 12/17/2019 **Received Date**: 12/17/2019 **Received By**: FWC-ARH Map Created: 1/20/2021







Locality Description:
Sewall's Point, Martin
Beached, approximately 135 m ESE of 2 N Sewalls Point Road.

Latitude: 27.20328°N **Longitude**: -80.19895°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE19071
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14406 **FWC District**: South A
Sex: Male **Length (cm)**: 260 **Estimated** _____ **Weight (kg)** N/T
Date reported: 17 Dec 2019 **By**: Citizen to Sewalls Point PD to FWC Dispatch
Date collected: 17 Dec 2019 **By**: FWC-ARH
Date necropsied: 17 Dec 2019 **By**: FWC-ARH

LOCATION INFORMATION: **State** FL **County**: Martin **Waterway**: Indian River
Latitude: N 27.203288 **Longitude**: W -80.198951
Locality description: 135 m ESE of 2 N Sewalls Point Rd. Stuart, FL 34996

Carcass Orientation: Beached

CONDITION: Fresh

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: fresh superficial wound, bloody eyes, hemothorax, seagrass in mouth, torn lung, airway, hemidiaphragm, fractured kidney, fractured and luxated ribs, shredded, hemorrhagic tissue, mucus in lung airways, wet lungs, froth in trachea, congestion

PHOTOGRAPHS:
☑ Dorsal ☑ Ventral ☑ R. Lateral ☑ L. Lateral ☑ Scars ☑ Fluke ☑ Cranial ☑ Internal ☑ Site
☑ Other Wound, scrapes, 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: - **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 #: **MSE19076**
Date of Report: 2019-Dec-24
Filed By: FWC SE Field Station

FWC Case # 14681 **FWC Region:** SO-A

Sex: Female **Length:** 189 **cm** **Weight:** Not Taken **kg**

DATE REPORTED: 2019-Dec-24 **By:** Citizen to FWC SO-A Dispatch

DATE COLLECTED: 2019-Dec-25 **By:** FWC-ARH,AP

DATE NECROPSIED: 2019-Dec-25 **By:** FWC-ARH,AP

LOCATION: **State:** FL **Latitude:** 27.47621 **N**
County: St. Lucie **Longitude:** -80.33241 **W**
Waterway: Indian River
Locality description: Ft. Pierce, beached approximately 160 m SE of 2300 Old Dixie Highway.

CONDITION: Moderately Decomposed

PROBABLE CAUSE OF DEATH: Natural: Cold Stress

EXPLAIN: Parasitic enteritis; Depleted fat(s); Cold stress lesions; Wet lung(s); Abscess(es); Sand in airways; Fluid in pleural cavities; Congested urinary bladder mucosa; Black specks parietal pleura.

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 stomach.

Page 1&2	1 Feb 2021
Necropsy Report	1 Feb 2021
Lat/Long	1 Feb 2021

Field ID #: MSE19076

MORPHOMETRICS:

Total length:	189 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. MSE19076
RECOVERY DATE 25 December 2019
GENDER Female **TL** 189 **cm WT** N/T **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 25 December 2019
CONDITION Moderately Decomposed

HISTORY 24 December 2019, at 1455 hrs, FWC on-call biologist-Anna Panike (ALP) received a text alert from FWC SO-A Dispatch-Palm Beach regarding a dead manatee in Ft Pierce, St Lucie County. FWC case number 14681 was assigned. The complainant, Tiffany (561-633-0101), stated that the carcass was beached behind her house. Photo verification was received at 1500 hrs and the information was passed to SE Field Station staff. Since staff were conducting a field necropsy on MSE19075, FWC biologist-Blake Faucett (BMF) asked the complainant if she would be ok with staff doing a field necropsy the following day, which she agreed to. **25 December**, FWC biologists-Amber Howell and Austin Peek arrived at the carcass by 0945 hrs. A field necropsy was completed by 1100 hrs. The remains were scattered on site to decompose.

EXTERNAL Approximately 50% of the epidermis was present but sloughing. The carcass had a thin, brown algal mat. There were small, circular cold stress lesions on all aspects. Barnacles were present on the dorsal fluke and ventral aspect. 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 abdominal, omental, and mesenteric fat.

STOMACH The stomach contained 1 L of moist, fibrous, well-chewed, light green ingesta. There was one 12 cm long piece of 20 lb test diameter clear monofilament line in the contents. No parasites were observed. The mucosa was discolored brown.

DUODENUM The duodenum contained 0.5 L of wet, fibrous, well-chewed, light green to brown ingesta. No parasites were observed. The mucosa was unremarkable.

JEJUNUM & ILEUM The small intestine contained a scant amount of wet, fibrous, well-chewed, light green to brown ingesta throughout. There was a severe infection of pinpoint trematodes throughout (see photos). The mucosa was rugose, red, and had regions that contained raised, dark blue nodules (see photo).

CECUM The cecum contained 0.5 L of wet, fibrous, woody, moderately digested, brown to green digesta. No parasites were observed. The mucosa was sloughing.

COLON The proximal colon contained wet, fibrous, woody, moderately digested, poorly formed, brown to green feces. The distal colon contained moist, firm, fibrous, well-digested, well-formed, dark green feces. No parasites were observed throughout. The mucosa was sloughing throughout.

PANCREAS The pancreas was soft. Serosal and cut surfaces were pink.

SPLEEN The spleen was soft. Serosal surfaces were mottled blue and red, and cut surfaces were red.

LIVER The margins of the liver were rounded. The liver was soft. Serosal surfaces were purple and cut surfaces were red.

GALLBLADDER The gallbladder contained 3 mL of clear, yellow 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. No follicles were observed on the ovaries.

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

URINARY BLADDER The urinary bladder contained 25 mL of watery, light yellow urine. The mucosa was slightly congested.

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). Each pleural cavity contained 250 mL of watery, light red fluid. The lungs were pink to purple on serosal surfaces and red and wet on cut surfaces. The airways contained coarse, tan and black sand. No parasites were observed. The mucosa was light red.

HEAD & NECK REGIONS The trachea contained a moderate amount of coarse, tan sand. The mucosa was light red.

SKELETON NVL.

OTHER There was an abscess in the muscle on the right lateral aspect (see photo).

PHOTOGRAPHS 2019-12-25_FWC043_1028 through 1052.

COMMENTS

SIGNIFICANT FINDINGS

- Cold stress lesions
- Depleted fat
- Parasitic enteritis
- Sand in airways
- Wet lungs
- Fluid in pleural cavities
- Abscess in muscle
- Congested urinary bladder mucosa
- Black specks parietal pleura
- Monofilament in stomach

PROBABLE CAUSE OF DEATH Natural; Cold Stress

NECROPSY CONDUCTED BY

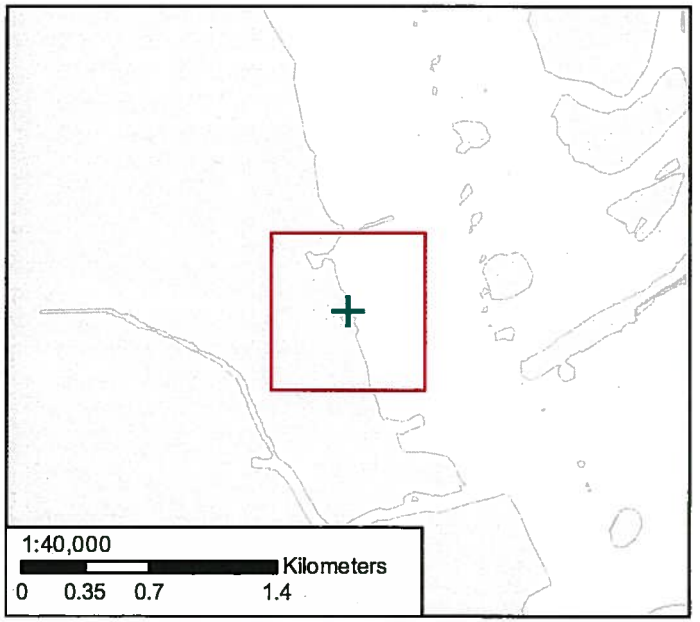
Amber R. Howell
Austin L. Peek

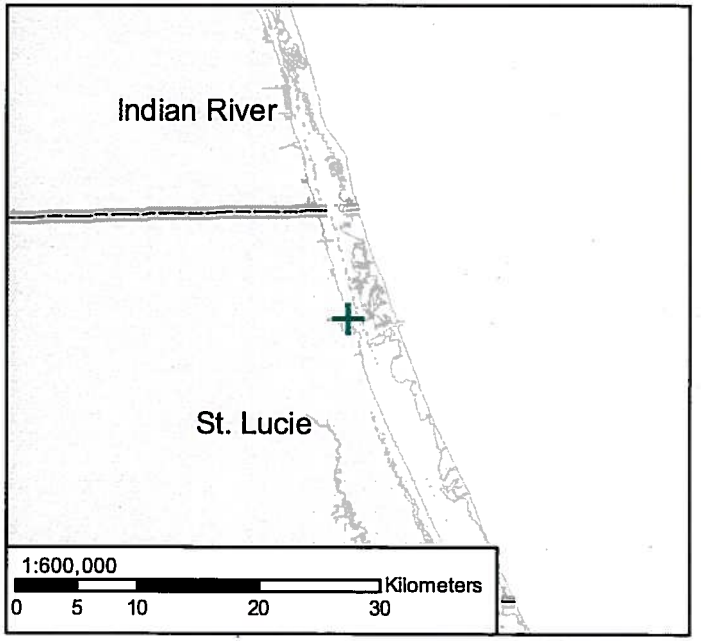
REPORT FILED BY Howell

Verified Recovery Location of Manatee Carcass MSE19076

Report Date: 12/24/2019 **Received Date:** 12/25/2019 **Received By:** FWC-ARH,AP Map Created: 1/20/2021







Locality Description:
Ft. Pierce, St. Lucie
Beached, approximately 160 m SE of 2300 Old Dixie Highway.

Latitude: 27.47621°N **Longitude:** -80.33241°W

MMPL, FWRI, Florida Fish and Wildlife Conservation Commission **Field ID #** MSE19076
3700 54th Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 14681 **FWC District**: South A
Sex: Female **Length (cm)**: 189 **Estimated** _____ **Weight (kg)** N/T
Date reported: 24 Dec 2019 **By**: Citizen to FWC Dispatch
Date collected: 25 Dec 2019 **By**: FWC- ARH, AP
Date necropsied: 25 Dec 2019 **By**: FWC-ARH, AP

LOCATION INFORMATION: **State** FL **County**: St. Lucie **Waterway**: Indian River
Latitude: N 27.476213 **Longitude**: W -80.332413
Locality description: Approximately 300m NE of 2202 Old Dixie Hwy, Fort Pierce, FL 34946

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, pin point trematodes, rugose discolored small intestine mucosa with raised nodules, wet lungs, sand in trachea, airways, abscess in muscle, black specks parietal pleura, monofilament in stomach

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 #: **SWFTm1916b**
Date of Report: 2019-Aug-17
Filed By: FWC MMPL

FWC Case # 12116 **FWC Region:** NE

Sex: Male **Length:** 257 **cm** **Weight:** 272.0 **kg**

DATE REPORTED: 2019-Aug-17 **By:** SeaWorld-L Brasso to MMPL-AJG

DATE COLLECTED: 2019-Aug-17 **By:** MMPL-SMT

DATE NECROPSIED: 2019-Aug-19 **By:** MMPL-MdW,BLB,BDB,SMT,TDW

LOCATION: **State:** FL **Latitude:** 27.92523 **N**
County: Brevard **Longitude:** -80.49963 **W**
Waterway: Indian River
Locality description: Melbourne Beach, approximately 390 m SW of 401 Beverly Court.

CONDITION: Fresh

PROBABLE CAUSE OF DEATH: Human Related: Watercraft Collision

EXPLAIN: Impact; Chronic; Healing watercraft wound(s); Emaciated; Hemothorax; Wet lung(s); Dark line kidney(s); Organ pallor; Abscess in dorsal muscle associated with wounds; Chronic subluxation of ribs; Fibrin, necrotic material; Consolidated, adhered right lung; Foam, mucus, fibrin in airways; Congested mesenteries, abdominal fat, peritoneum, parietal pleura, colon wall, small intestine serosa, urinary bladder mucosa; Lettuce in mouth; Swellings dorsal peduncle; Pressure lesions flippers.

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

MATERIALS COLLECTED:

Genetics, ELISA toxicology samples, Archive toxicology samples.

DISPOSITION OF MATERIAL: FWC MMPL.

ADDITIONAL DATA:

Rescue report.

REMARKS:

PIT tag scan negative. Died on 17 Aug 2019. Died at 0800 hrs. Euthanized. Died in facility. See rescue report REC1905, rescued on 15 July 2019. Remains disposed of at the Pinellas County Landfill on 30 August 2019.

Page 1&2	17 Dec 2020
Necropsy Report	17 Dec 2020
Lat/Long	17 Dec 2020

Field ID #: SWFTm1916b

MORPHOMETRICS:

Total length:	257 cm	**Fluke base:**	80 cm	**Girth at axillae:**	125 **cm**
Snout to anus:	171 cm	**Fluke width:**	64 cm		
Snout to U/G:	107 cm	**Girth at fluke base:**	92 cm		
Snout to umbilicus:	93 cm	**Girth at anus:**	110 cm		
Flipper width:	16 cm	**Girth at umbilicus:**	172 cm	**Nail count: R:** 3	**L:** 3

	Ventral	**Lateral**		
Skin Thickness:	0.8 cm	2.1 cm		
Outer Blubber Thickness:	0.4 cm	0.1 cm	**Abdominal Fat Thickness:**	0.2 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:

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. SWFTm1916b
RECOVERY DATE 17 August 2019
GENDER Male **TL** 257 **cm WT** 272 **kg**

SPECIES *T. manatus latirostris*
NECROPSY DATE 19 August 2019
CONDITION Fresh

HISTORY See Rescue Report REC1905. 16 August 2019, at 1612 hrs, FWC biologist-Andy Garrett received a text from US Fish and Wildlife Service biologist-Terri Calleson stating that she had approved a request to euthanize SWFTm1916b. At 1636 hrs, AJG received a phone call from SeaWorld Orlando-Jon Peterson confirming that the euthanasia procedure was scheduled for 0800 hrs the next day. **17 August**, FWC biologist-Sean Tennant departed from the MMPL at 0800 hrs and arrived at SeaWorld Orlando at 0950 hrs. The carcass was loaded by 1010 hrs and transported to the MMPL arriving at 1205 hrs.

EXTERNAL All of the epidermis was present. The carcass had a peanut-shaped head. There was a healing watercraft wound series associated with a swelling on the mid right dorsum. The series consisted of two short almost healed linear wounds in the length of each other, and three parallel propeller wounds caudal and perpendicular to the linear wounds. There was granulation tissue in the center of the propeller wounds. There was a healing linear incision in the center of the swelling between two of the propeller wounds. The peduncle had bilateral swellings from injections. The ventrum was flat and coated with a thin green and brown algal mat. The medial aspect of the distal flippers had superficial pressure point lesions. There was a minimum of five well-healed watercraft-related scar patterns on the dorsal aspect. The fluke margin had two small well-healed mutilations between the 4 and 5 o'clock positions. 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 were severely congested.

- The manatee was fed a captive diet -

STOMACH The stomach contained 3.75 L of moist, well-chewed, leafy, green ingesta. The ingesta were coated with a thick layer of viscous tan mucus. The mucosa was unremarkable. No parasites were observed.

DUODENUM The duodenum contained 2.5 L of wet, well-chewed, leafy, green ingesta. The mucosa was unremarkable. No parasites were observed.

JEJUNUM & ILEUM The mesentery was severely congested. The serosa was mildly congested. The proximal small intestine contained a scant amount of viscous, tan mucus. The mid small intestine contained a small amount of viscous, bright yellow mucus and well-chewed, leafy, green vegetation. The distal small intestine contained a moderate amount of moist, well-chewed, leafy, poorly formed, green vegetation. The mucosa was unremarkable throughout. No parasites were grossly observed.

CECUM The cecum contained 1.25 L of moist, well-digested, leafy, dark green digesta. The mucosa was sloughing. No parasites were observed.

COLON The mesentery was severely congested. The distal colon contained an abundant amount of moist, well-digested, slightly stringy, well-formed, dark green feces. The mid colon contained an abundant amount of moist, sticky, well-digested, pasty, poorly formed, dark green feces. Portions of the mid colon were contracted. There was one region of mild congestion in the wall. The proximal colon contained an abundant amount of wet, well-digested, leafy, slightly stringy, green to dark green feces. One region of the wall was moderately congested and had distinct lymph nodules. The mucosa was sloughing throughout. No parasites were observed.

PANCREAS The pancreas was surrounded by serous tissue. The serosal and cut surfaces were pink.

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

LIVER The liver was slightly displaced to the left due to distension of the right hemidiaphragm. The liver was firm. The margins were rounded. The serosal surfaces were pink, light purple, and blue. The cut surfaces were red. An ELISA toxicology sample was collected.

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

REPRODUCTIVE There was a small amount of reproductive fat. The testes were moderate in size. There was no fluid on cut surfaces of the epididymides and deferent ducts. The seminal vesicles were moderate in size and contained a moderate amount of flocculent colorless fluid.

KIDNEYS There was a small amount of perirenal fat. The kidneys were light pink on serosal surfaces. On cut surfaces, the cortices were tan and the medullae were light pink. There was kidney pallor. There was a dark red line at the corticomedullary boundaries which were distinct.

URINARY BLADDER The bladder contained 25 mL of clear light yellow 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 right hemidiaphragm was severely distended. Both hemidiaphragms had patches of moderate congestion. The right pleural cavity contained 11.5 L of watery, flocculent, bloody, dark red fluid, 2 L of tan to dark pink fibrin, and a few resolving blood clots. The pleural aspect of the right hemidiaphragm and the right parietal pleura were coated with a very thick layer of pink to tan fibrin. The right lung was consolidated and coated with a thick layer of dark pink to yellow fibrin. The cranial-medial aspect was strongly adhered to the right hemidiaphragm. The caudal tip was curled dorsally. The cut surfaces were dark pink to red. The airways contained an abundant amount of viscous, tan mucus and flocculent light yellow material. There was a moderate infection of live and dead trematodes. The mucosa was dark pink to dark red. The left parietal pleura was severely congested. The left lung was mottled pink and purple on serosal surfaces, and dark red and wet on cut surfaces. The airways contained a small amount of white foam and tan mucus and a scant amount of flocculent, stringy, light tan fibrin-like material. There was a moderate infection of live and dead trematodes. The mucosa was pink to light purple. An ELISA toxicology sample was collected.

HEAD & NECK REGIONS The trachea contained a large amount of dead trematodes. There was a small amount of bloody fluid in the periotic cavities. There were two leaves of poorly chewed lettuce in the mouth.

SKELETON Right ribs 8 and 9 were subluxated and the heads protruded slightly into the pleural cavity. There were fibrin and necrotic material surrounding the rib heads. The trauma was deep to the healing watercraft wounds and swelling on the mid right dorsum.

OTHER There was a capsulated abscess containing 250 mL of tan to light brown caseous material in the dorsal muscle dorsal to right ribs 8-11. The wall of the abscess was thick and black. This was deep to the swelling associated with the watercraft wounds on the mid right dorsum. There were small spots with thick cloudy tan fluid in the dorsal peduncle muscle deep to the dorsal peduncle swellings.

PHOTOGRAPHS 2019-08-18_FWC047_2097 through 2103, 2105 through 2112, 2114 through 2117; 2019-

08-19_FWC047_2133 through 2138, 2142 through 2166.

COMMENTS

SIGNIFICANT FINDINGS

- Healing watercraft wounds associated with abscess in dorsal muscle
- Emaciated
- Chronic subluxations of ribs
- Fibrin, necrotic material
- Chronic hemothorax with large amount of fibrin
- Consolidated, adhered right lung
- Wet left lung
- Foam, mucus, fibrin in airways
- Dark line kidneys
- Kidney pallor
- Congested mesenteries, abdominal fat, peritoneum, parietal pleura, colon wall, small intestine serosa, urinary bladder mucosa
- Lettuce in mouth
- Swellings dorsal peduncle
- Pressure lesions flippers

PROBABLE CAUSE OF DEATH Watercraft; Impact (Chronic)

NECROPSY CONDUCTED BY

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

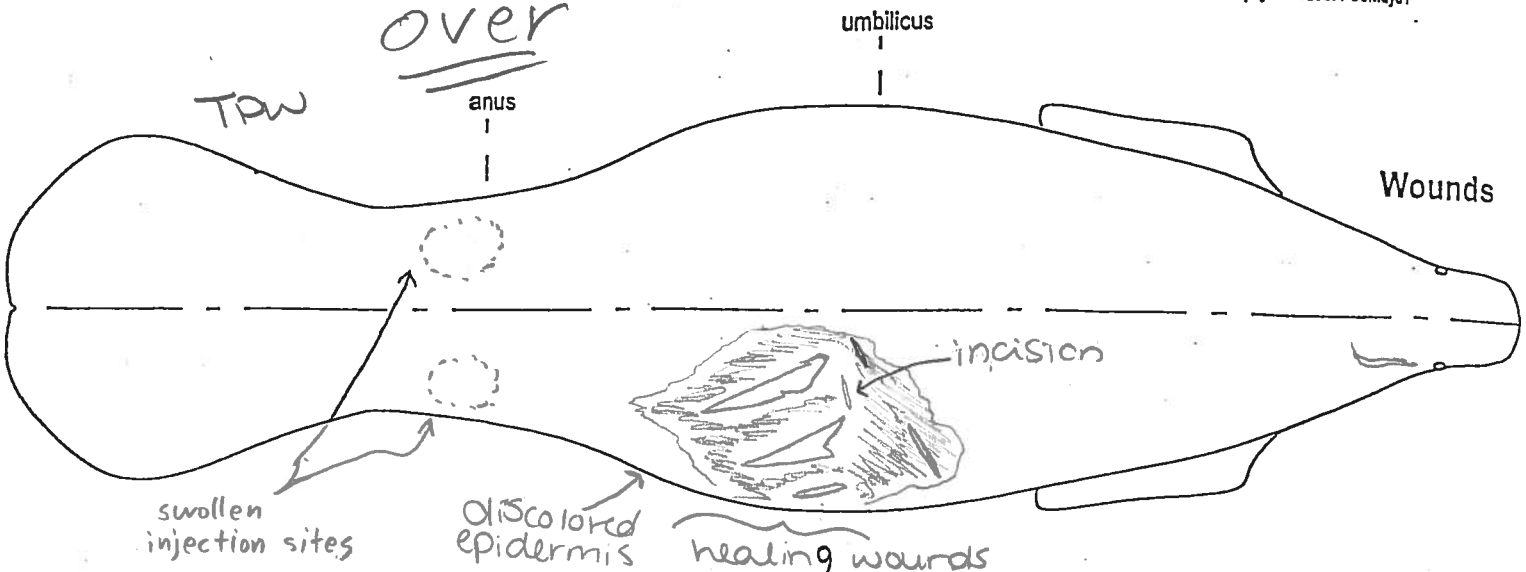
REPORT FILED BY de Wit

Date 18 Aug 2019 Field I.D. SWFTm1916b

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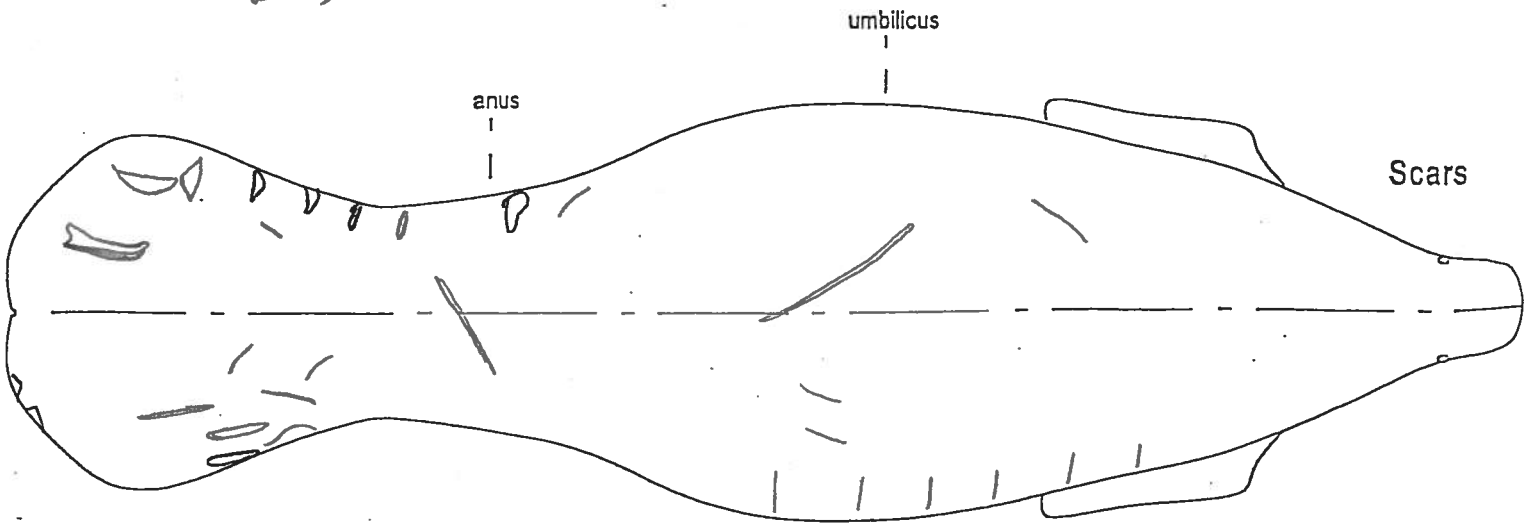
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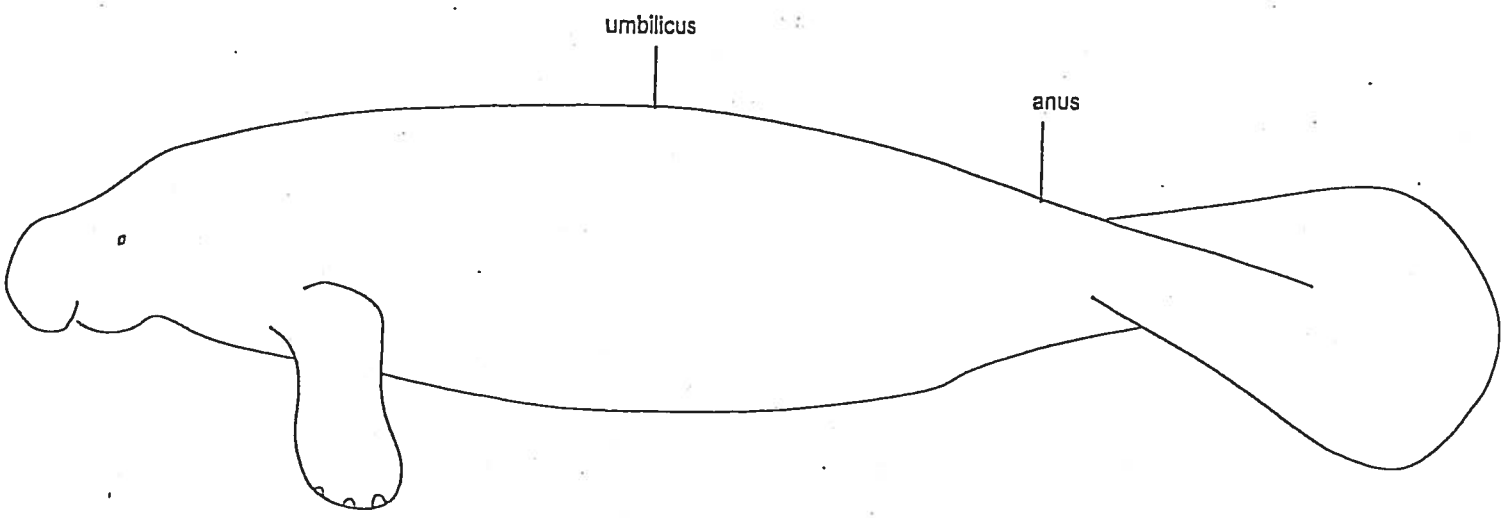


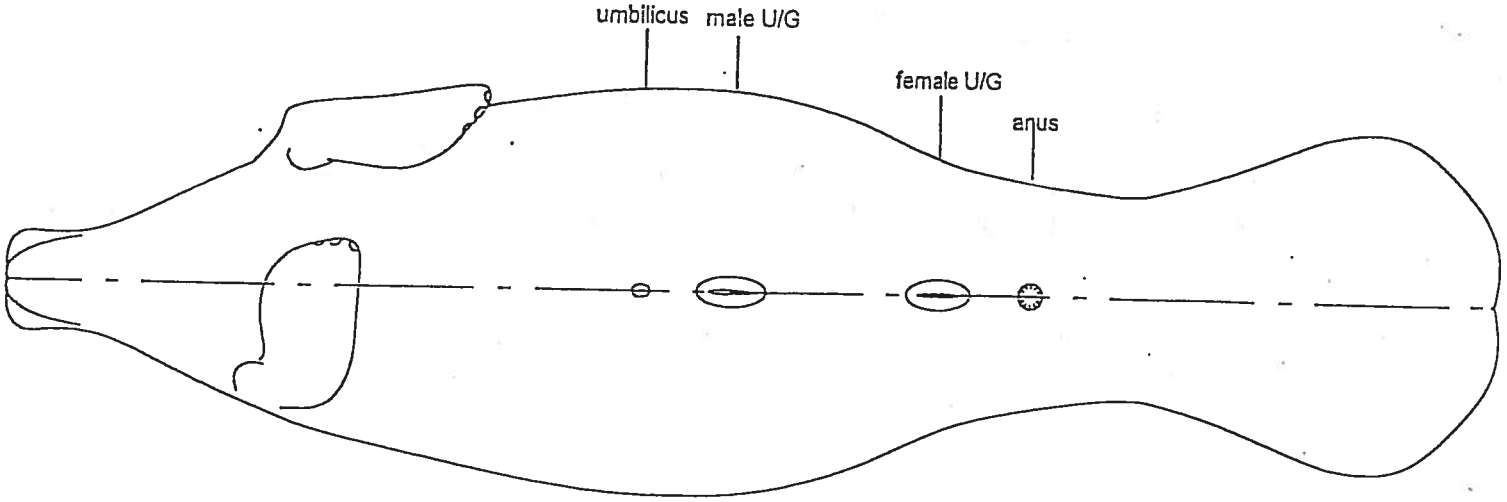
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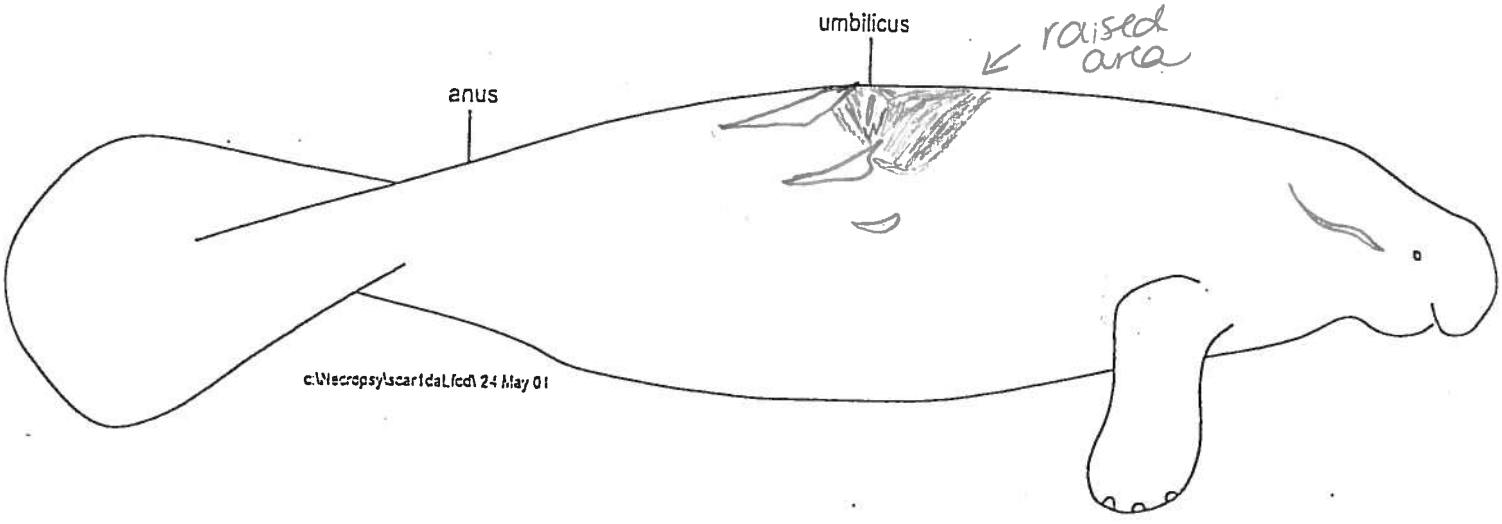
BLB



FIELD I.D. SWFTm1916b



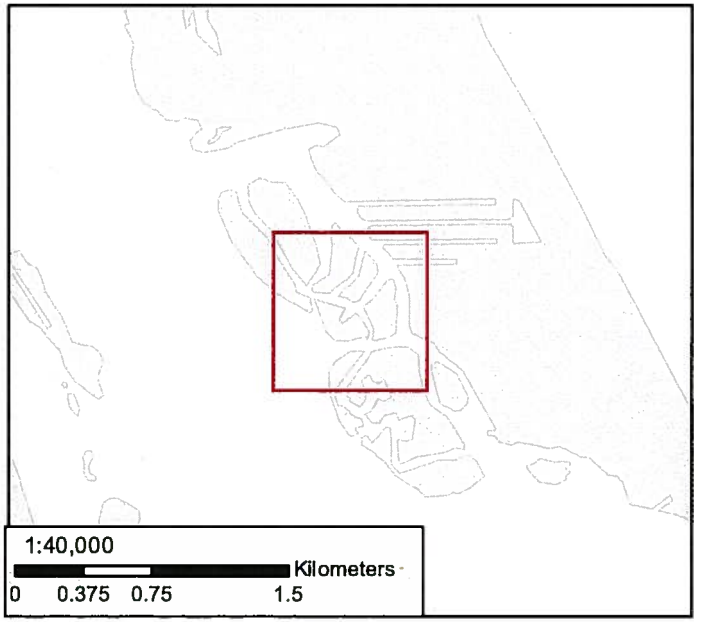


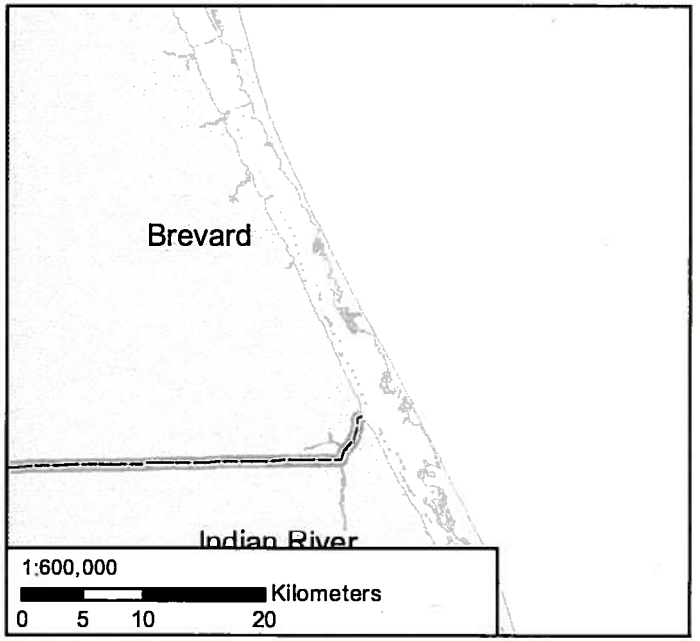


Verified Location of Manatee SWFTm1916b

Rescue ID: REC1905 **Report Date:** 8/17/2019 **Received Date:** 8/17/2019 **Received By:** MMPL-SMT







Locality Description:
Melbourne Beach, Brevard
, approximately 390 m SW of 401 Beverly Court.

Latitude: 27.92523°N **Longitude:** -80.49963°W

Map Created: 12/7/2020

Rescue Report REC1905

General

Date of Rescue: 15 July 2019 Date of Initial Call: 15 July 2019 Filed by: S. Wappes

Rescue ID: REC1905 Facility ID: SWFTm1916b Other ID:

FWC Case Number: 12116 FWC Region: NE

Sex: Male Length: 263 cm Estimated: No Weight: 269 kg Estimated: No

PIT Tag Present: No PIT Tag Applied: No R: L:

State: FL County: Brevard City: Melbourne Beach Waterway: Indian River

Latitude (Decimal Degrees): 27.9251361° N Longitude (Decimal Degrees): -80.4996167° W

Locality Description: approximately 390 m SW of 401 Beverly Court

Method of Capture or Assistance: Boat Based: Net Set (Other: _____)

Reason for Rescue

Check one of the following:

☒ Watercraft ☐ Entanglement ☐ Entrapment (Human)

☐ Cold Stress ☐ Red Tide ☐ Tidally Stranded

☐ Calf by itself ☐ Other: (Specify): _____

Watercraft

Check all that apply:

☐ Penetrating Cuts ☒ Impact ☐ Other

Describe: The manatee had an external wound series consisting of two linear superficial wounds across the body and 3 parallel superficial propeller wounds perpendicular to the linear wounds. The manatee was positively buoyant on right side.

Visual Record

	Photo - Digital	Video
Rescue Location	☐	☐
Animal Before Rescue	☒	☐
Actual Rescue	☐	☒
Animal After Rescue	☒	☐
Wounds	☒	☐
Scars	☒	☐
Gear Alone (if entangled)	☐	☐
Photographs file name	2019-07-15_FWC025_9084 through 9095; 2019-07-15_PUBLIC_ECFL_123_1; 2019-07-15_ECFL_SMW_0650; 2019-07-15_FWC041_0084	

HISTORY

Date	Narrative
15 July 2019	At 0951 hrs, FWC biologist-Sara M. Wappes (SMW) received a text alert from FWC NE Dispatch-Orlando regarding an injured manatee in the Indian River in Melbourne Beach, Brevard County. FWC case number 12116 was assigned. The complainant, Dina Ruoli (321-507-6058), described a small adult manatee with a white scar that was not submerging. At 1117 hrs, SMW received verification photos, videos, and an updated location from the complainant. Since SMW was in Titusville recovering a carcass (MEC19070), SMW requested FWC LE assistance to stay with the animal until a rescue team arrived, but no officers were available. SMW notified co-workers and partners, and after collecting the carcass arrived at Honest John's Fish Camp at 1310 hrs, launched a kayak, and located the injured manatee at 1324 hrs. FWC biologist-Lucy R. Bukowski, FWC intern-Mary Buford Turnage and the rescue crew from SeaWorld Orlando arrived at Christenson's Landing boat ramp at 1400 hrs and the rescue crew from SEFL arrived with the rescue boat at 1430 hrs. The rescue boat was launched at 1454 hrs and arrived at the manatee's location at 1512 hrs. The manatee was captured on the first boat-based net set, brought on board at 1536 hrs, and transported to Christenson's Landing boat ramp. The manatee was loaded into the SeaWorld Orlando transport truck at 1616 hrs and transported to SeaWorld.

PARTICIPANTS

FWC ECFL: Sara Wappes, Lucy Bukowski
FWC ECFL Intern: Mary Buford Turnage
FWC SEFL: Amber Howell, Sam Smith
FWC SEFL Intern: Lorenn Taylor
FWC Fisheries: Sarah Webb
SeaWorld Orlando: Nik Ricci, Jenn Parnell, Louise Manhl

Edited by:
NJG
DJS
AJG

(Rev: 06/11/2019)

PHOTOS





MMPL, FMRI, Florida Fish and Wildlife Conservation Commission **Field ID #** SWFTn 19166
3700 54" Ave. South, St. Petersburg, Fl, 33711; (727) 893-2904

FWC Case # 12116 FWC District: NE-Jacksonville
Sex: M / F / Undetermined Length: 257 cm (estimated _____) Weight 272 kg.
Date reported: 17 Aug 2019 By: SeaWorld - Lora Brasso → ATG
Date collected: 17 Aug 2019 By: SMT
Date necropsied: 19 Aug 2019 By: MMPL - TDW, MdW, BLB, SMT, BDB

LOCATION: State: FL (___) County: Brevard Waterway: Indian River
Latitude: 27.925 1361° N Longitude: -80.4996167° W
Locality description: Melbourne Beach, ~390m SW of 401 Beverly Court

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 – healing wounds
Histology - Other_____
Archive Tox: Stomach – Liver – Kidney – Fat – Lower Jaw – Other_____
ELISA Tox: Stomach – Liver – Lung – Urine – Kidney (if no urine) – Other_____
Genetics Box # 93
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

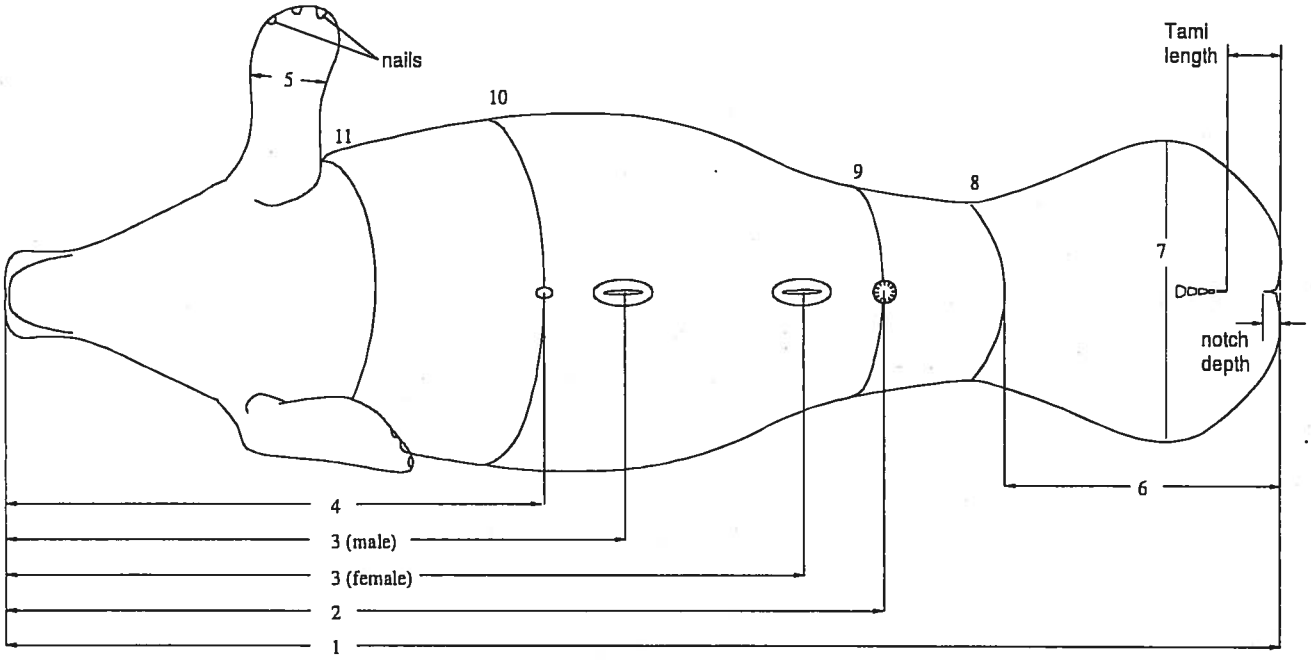
REMARKS: _____

Field ID # SWFTm1916b

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 257 cm
2. Snout to anus -C 171 cm
3. Snout to U/G -C 107 cm
4. Snout to umbilicus -C 93 cm
5. Flipper width 16 cm
6. Fluke base 80 cm
7. Fluke width 64 cm
8. *Girth at fluke base 92 cm
9. * Girth at anus 110 cm
10. *Girth at umbilicus 172 cm
11. *Girth at axillae 125 cm

(Nail count: L 3 R 3.)



Skin and Blubber (cm).	Ventral	Lateral	
Skin	0.8 cm	2.1 cm	(Epidermis 0.1 cm)
Outer fat	0.4 cm	0.1 cm	(Abdominal fat 0.2 cm)
Inner fat	0.1 cm	0.3 cm	

