

In Reply Refer To:

Quantifying Restoration Impacts on Wetland Ecosystem Health and Carbon Export

April 25, 2023

Memorandum

To: Chief, Planning and Consultation Branch, Gulf Restoration Office, Fairhope, AL
From: Field Supervisor, Louisiana Ecological Services Office, Lafayette, LA *Brigitte A. Firmin*
Subject: Informal Consultation Request for Implementation of the Louisiana Trustee Implementation Group Project Quantifying Restoration Impacts on Wetland Ecosystem Health and Carbon Export in Plaquemines and St. Charles Parishes, Louisiana

This memorandum acknowledges our receipt of your memorandum on April 4, 2023. This response is in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (ESA). We have reviewed your proposed project(s) and concur with your April 5, 2023, determinations for endangered and threatened species, their critical habitat, and at-risk species (should they become listed). We based our concurrence on the justification below. Where more than one justification was applicable, multiple boxes are checked and additional comments are added.

Species-specific surveys were conducted and there are no endangered, threatened, or at-risk species or designated critical habitat on site. Comments:

Endangered, threatened, and at-risk species are not known from and are not expected to occur within the vicinity of the proposed project. Comments:

Appropriate avoidance and minimization measures have been included within the project description to ensure that any effects to listed species (or at-risk species should they become listed) are insignificant or discountable. Comments:

Critical habitat is not present on site and does not occur within the vicinity of the proposed project. Comments:

Appropriate avoidance and minimization measures have been included within the project description to ensure PCEs and/or critical habitat will not be adversely modified or destroyed. Comments:

The proposed project is completely beneficial to the listed or at-risk species and/or critical habitat considered. Comments:

Unless the project description changes, or new information reveals that the effects of the proposed action may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the ESA is necessary.

If you have questions, please contact Amy Trahan at 337-291-3126 or email amy_trahan@fws.gov.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Deepwater Horizon Gulf Restoration Office
341 Greeno Road North, Suite A
Fairhope, Alabama 36532

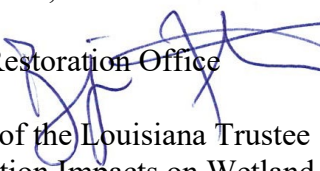


In Reply Refer To:
FWS/R4/DH NRDAR

Memorandum

April 4, 2023

To: Field Supervisor, Ecological Services Office, Lafayette, LA

From: Compliance Supervisor, Deepwater Horizon Gulf Restoration Office 

Subject: Informal Consultation Request for Implementation of the Louisiana Trustee Implementation Group Project Quantifying Restoration Impacts on Wetland Ecosystem Health and Carbon Export

After the Deepwater Horizon (DWH) oil spill, federal and state natural resource trustee agencies (Trustees) came together to assess the effects of the spill and plan for the restoration of injured natural resources. As part of the legal settlement reached with BP in 2016, the Trustees prepared a Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (Final PDARP/PEIS), to provide the framework for DWH oil spill restoration across the Gulf. The Final PDARP/PEIS established Trustee Implementation Groups (TIGs) that develop specific plans for, developing, selecting, and implementing specific restoration actions under the Final PDARP/PEIS.

The Louisiana TIG includes five Louisiana state trustee agencies and four federal trustee agencies: the Louisiana Coastal Protection and Restoration Authority; the Louisiana Department of Natural Resources; the Louisiana Department of Environmental Quality; the Louisiana Oil Spill Coordinator's Office; the Louisiana Department of Wildlife and Fisheries; the United States Department of Commerce, represented by the National Oceanic and Atmospheric Administration; the United States Department of the Interior, represented by the United States Fish and Wildlife Service and National Park Service; the United States Department of Agriculture; and the United States Environmental Protection Agency.

The Louisiana TIG has developed the following project: *Quantifying Restoration Impacts on Wetland Ecosystem Health and Carbon Export*. We have reviewed this project in accordance with Section 7 of the Endangered Species Act (ESA) of 1973 as amended (16 U.S.S 1531-1544) and have made a May Affect, Not Likely to Adversely Affect determination for select species. For your information, a brief description of the project and species determinations are provided below in Tables 1 and 2. A project specific description is contained in the attached Biological Evaluation (BE) (Attachment 1). We have also entered this project in the Information for Planning and Consultation system and generated a Consistency Letter (Attachment 2). This memo requests your concurrence with our determinations for the proposed project.

Within the BE form, we have also reviewed the proposed projects for impacts to bald eagles (*Haliaeetus leucocephalus*) in accordance with the Bald and Golden Eagle Protection Act of 1940 as amended (16 U.S.C. 668-668c), impacts to migratory birds in accordance with the Migratory Bird Treaty Act of 1918 as amended (16 U.S.C. 703-712), and impacts to West Indian manatee (*Trichechus manatus*) in accordance with the Marine Mammal Protection Act of 1972 as amended (16 U.S.C. 1361-1383b, 1401-1406, 1411-1421h) and we determined that take would be avoided.

We have also reviewed this project for compliance with the Coastal Barrier Resources Act of 1982 (CBRA) and determined that the project is not within any CBRA units. Therefore, no further action is required.

To facilitate your response, should you concur with our determination, we have attached a template response letter. If you have questions or concerns regarding this request, please contact Michael Barron, Fish and Wildlife Biologist, at 251-421-7030 or michael_barron@fws.gov.

Attachments (3)

- BE form including project maps
- Consistency letter
- Template response letter

Table 1. Brief description of the project

<p>Proposed Project</p>	<p>Brief Description</p>
<p>Quantifying Restoration Impacts on Wetland Ecosystem Health and Carbon Export</p>	<p>The objective of this activity will be to provide trustees with a decision support tool that will assess the impact of various restoration types and approaches on coastal wetland ecosystem health, as indicated by net ecosystem carbon balance (NECB). The decision support tool will provide spatially explicit assessments of NECB for all coastal ecosystems in Louisiana, allowing trustees to see where the oil spill and restoration activities affect ecosystem health. The desktop component of this activity will focus on developing and refining the decision support tool.</p> <p>The field component of this project will include a continuation of existing data collection for vertical gas flux at CRMS0224 and CRMS3166 that is supplemental to the CRMS data collections but co-located near the existing CRMS infrastructure. These data collections will measure high frequency vertical greenhouse gas flux (CO₂ and CH₄) with the atmosphere using eddy covariance towers which are already in place. Additionally, data collection at CRMS3166 will include continuous measure of water velocity, dissolved organic carbon, dissolved inorganic carbon, and particulate organic carbon, with hydrologic instrumentation and soil carbon accumulation rates through extraction of three 10cm diameter soil cores to a depth of 150 cm. This effort is beyond the normal data collection that happens at each CRMS site by the state of Louisiana.</p> <p>Only minimal in-water construction activities are included in this project. At CRMS3166, two 4”by 4” posts with hydrologic recorders attached to them will be driven by hand into the tidal creek bottom.</p> <p>Sites will be accessed by small watercraft or airboat within established canals and bayous approximately every two weeks.</p>

Table 2. Summary of ESA determinations for proposed project.
 (NLAA = May Affect, Not Likely to Adversely Affect; NE = No Effect)

ESA Species Under USFWS Jurisdiction	Status	Quantifying Restoration Impacts on Wetland Ecosystem Health and Carbon Export
West Indian Manatee <i>(Trichechus manatus)</i>	Threatened	NLAA
Green Sea Turtle <i>(Chelonia mydas)</i>	Endangered	NE
Kemp's Ridley Sea Turtle <i>(Lepidochelys kempii)</i>	Endangered	NE
Loggerhead Sea Turtle <i>(Caretta caretta)</i>	Threatened	NE
Monarch Butterfly <i>(Danaus plexippus)</i>	Candidate	NLAA
Alligator Snapping Turtle <i>(Macrochelys temminckii)</i>	Proposed Threatened	NLAA
Eastern Black Rail <i>(Laterallus jamaicensis ssp. Jamaicensis)</i>	Threatened	NLAA

Attachment 1

Biological Evaluation Form

Deepwater Horizon Oil Spill Restoration

U.S. Fish and Wildlife Service & National Marine Fisheries Service

This form will be filled out by the Implementing Trustee and used by the regulatory agencies. The form will provide information to initiate informal Section 7 consultations under the Endangered Species Act (ESA) and may be used to document a No Effect determination or to initiate pre-consultation technical assistance.

It is recommended that this form also be completed to inform and evaluate additional needs for compliance with the following authorities: Migratory Bird Treaty Act (MBTA), Marine Mammal Protection Act (MMPA), Coastal Barrier Resources Act (CBRA), Bald and Golden Eagle Protection Act (BGEPA) and Section 106 of the National Historic Preservation Act (NHPA).

Further information may be required beyond what is captured on this form. Note: if you need additional space for writing, please attach pages as needed.

For assistance, please contact the compliance liaisons
USFWS: Michael Barron at michael_barron@fws.gov
NMFS: Christy Fellas at christina.fellas@noaa.gov

A. Project Identification

Federal Action Agency(one or more):USFWS NOAA EPA USDA

Implementing Trustee(s): DOI USGS

Contact Name: Camille Stagg Phone: 337-266-8537 Email: staggc@usgs.gov

Project Name: Quantifying restoration impacts on wetland ecosystem health and carbon export

DIVER ID# not yet assigned TIG: Louisiana TIG Restoration Plan # n/a

B. Project Phase

Please choose the box which best describes the project status, as proposed in this BE form, check ALL that apply:

Construction/Implementation Planning/Conceptual Engineering & Design

If "Engineering & Design" was selected, please describe the level of design that has been

completed and is available for review:

[Click here to enter text.](#)

C. Project Location

I. State and County/Parish of action area

There are field and desktop components for this activity. The generalized study area for the desktop modeling component is represented in the map below and includes the entire coastal zone as described in Louisiana's

Master Plan 2023. The field component will take place at CRMS0224 (Plaquemines Parish, LA) and CRMS3166 (St.

Charles Parish, LA).

II. Latitude/Longitude for action area (Decimal degrees and datum [e.g., 27.71622°N, 80.25174°W NAD83])

[online conversion: <https://www.fcc.gov/encyclopedia/degrees-minutes-seconds-tofrom-decimal-degrees>]

CRMS0224: 29.4978237°N, -89.91673°W WGS84 and CRMS3166: 29.8585°N, -90.28868°W WGS84

III. Maps, Drawings, and GIS Data

Please insert any maps, aerial photographs, or design drawings here or attach to the end of this BE form. GIS files may be added to the same folder location as where this BE is filed on Sharepoint . Examples of such supporting documentation include, but are not limited to:

- Plan view of design drawings

- Aerial images of project action area and surrounding area, showing state or regional scale

- Map of project area with elements proposed (polygons showing proposed construction elements)

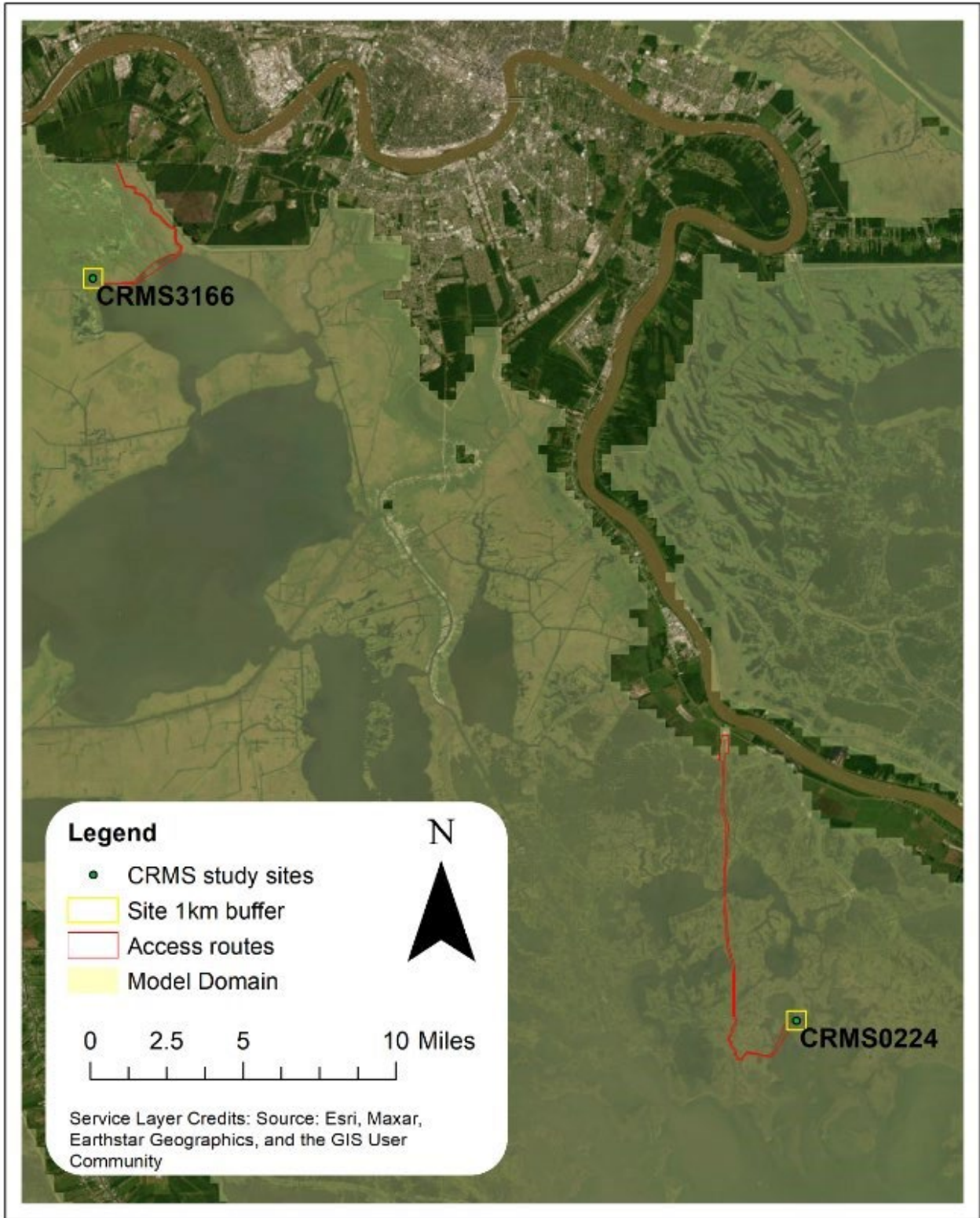
- Map of action area with critical habitat units or sensitive habitats overlaid

- GIS Files to include ARCGIS, KMZ, CAD, or other GIS files are required (WGS 84) for projects with a field component

Study Area



Study Sites



D. Existing Compliance Documentation

NEPA Documents

Are there any **existing** draft or final NEPA analyses (not PDARP/PEIS) that cover all or part of this project?

YES

NO

Examples:

- TIG Restoration Plan/EA or EIS (draft or final)
- USACE programmatic NEPA analysis
- USACE Clean Water Act individual permit for the project
- NEPA analysis provided by a federal agency that gave approval, funding or authorization

Permits

Have any federal permits been obtained for this project, if so which ones and what is the permit number(s)?

YES

NO Permit Number and Type: Field activities will be conducted on

CRMS

sites, but are not included in standard CRMS field activities. Field activities for CRMS are authorized separately.

Have any federal permits been applied for but not yet obtained, if so which ones and what is the permit number(s)?

YES

NO Permit Number and Type: Click or tap here to enter text.

If yes to any question above, please provide details in the text box (i.e. link to the NEPA document, or name of the document, year, lead federal agency, POC, copy of the permit or permit application, etc.). This is needed to check for consistency of the project scope across different sources and to facilitate the NEPA analysis. If you do not have a link, email the documents to the TIG representative for the Trustee designated as lead federal agency for the restoration plan.

NEPA analysis for the MAIP, Quantifying restoration impacts of wetland ecosystem health and carbon export, in progress.

Any documentation or information provided will be very helpful in moving your project forward.

Name of Person Completing this Form: Sarai Piazza

Name of Project Lead: Camille Stagg
Date Form Completed: 2/8/2023
Date Form Updated: [Click here to enter text.](#)

E. Description of Action Area

Provide a description of the existing environment (e.g., topography, vegetation type, soil type, substrate type, water quality, water depth, tidal/riverine/estuarine, hydrology and drainage patterns, current flow and direction), and land uses (e.g., public, residential, commercial, industrial, agricultural). Describe all areas that may be directly or indirectly affected by the action. If critical habitat (CH) is not designated in the area, then describe any suitable habitat in the area.

a. Waterbody & Wetlands

If applicable. Name the body of water, including wetlands (freshwater or estuarine), on which the project is located. If applicable, please describe water quality, depth, hydrology, current flow, and direction of flow.

Field activities will be associated with existing long-term Coastwide Reference Monitoring System monitoring sites CRMS3166 (freshwater herbaceous marsh) and CRMS0224 (saline herbaceous marsh). Sites are in undeveloped coastal marshes within the Barataria Basin estuary. Navigation from the launches to the monitoring sites will be in a small watercraft or airboat. All activities will be on the marsh surface at the monitoring site locations and through continuous hydrologic recorders in nearby water.

Site conditions since 2006 are well documented through the CRMS program.

CRMS0224: mean salinity 9ppt, dominant vegetation: smooth

cordgrass CRMS3166: mean salinity 0.2ppt, dominant vegetation:

spikerush

Does the project area include a river or estuary?

YES NO

If yes, please approximate the navigable distance from the project location to the marine environment.

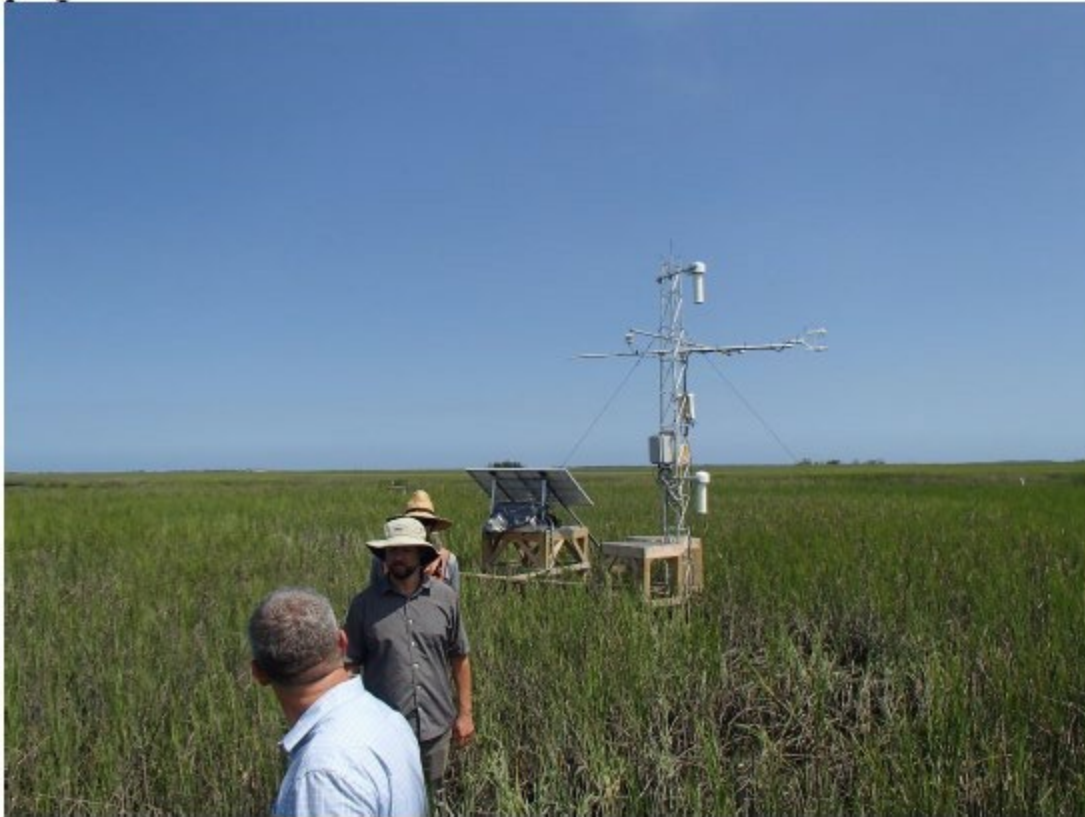
From CRMS0224 to GOM is approximately 25km.

From CRMS3166 to GOM is approximately 80km.

b. Existing Structures

If applicable. Describe the current and historical structures found in the action area (e.g., buildings, parking lots, docks, seawalls, groynes, jetties, marina). If known, please provide the years of construction.

Existing structures to support the carbon work include a temporary data collection platform on the marsh surface at both CRMS0224 and CRMS3166, and a temporary data collection pole with attached sondes in the tidal creek at CRMS0224. Example of temporary data collection structure below.



c. Seagrasses & Other Marine Vegetation

If applicable. Describe seagrasses found in action area. If a benthic survey was done, provide the date it was completed and a copy of the report. Estimate the species area of coverage and density. Attach a separate map showing the location of the seagrasses in the action area.

Submerged aquatic vegetation is present in Lake Cataouatche. The north edge of Lake Cataouatche, which will be traversed to access CRMS3166, includes beds of *Hydrilla verticillata*. Marsh ponds and interior bayous near CRMS0224 include *Ruppia maritima*.

d. Mangroves

If applicable. Describe the mangroves found in action area. Indicate the species found (red, black, white), the species area of coverage in square footage and linear footage along project shoreline. Attach a separate map showing the location of the mangroves in the action area.

n/a no *Avicennia* observed at either applicable CRMS site since 2006

e. Corals

If applicable. Describe the corals found in action area. If a benthic survey was done, provide the date it was completed and a copy of the report. Estimate the species area of coverage and density. Attach a separate map showing the location of the corals in the action area. Click here to enter text.

n/a

f. Uplands

If applicable. Describe the current terrestrial habitat in which the project is located (e.g. pasture, forest, meadows, beach and dune habitats, etc.).

n/a

g. Soils and Sediments

If applicable. Indicate topography, soil type, substrate type.

CRMS0224: NRCS Soil Type Timbalier Muck, bulk density 0.24g cm⁻³, Percent Organic Matter about 20% from 0-4cm CRMS3166: NRCS Soil Type Kenner Muck, bulk density 0.10g cm⁻³, Percent Organic Matter about 60% from 0-4cm

h. Land Use

If applicable. Indicate existing or previous land use activities (agriculture, dredge disposal, etc).

Herbaceous marshes within Barataria Basin, Louisiana. Data collection to occur on the marsh surface and a continuous water loggers in nearby waterbodies.

i. Marine Mammals

Please select the following marine mammals that could be present within the project area:

- Dolphins YES NO
- Whales YES NO
- Manatees YES NO

If applicable. Indicate and describe the species found in the action area. Use NMFS' Stock Assessment Reports (SARs) for more information, see <http://www.nmfs.noaa.gov/pr/sars/region.htm>

Common bottlenose dolphins, Barataria Bay Estuarine System Stock (BBES) and West Indian Manatee (*Trichechus manatus*). Proposed in water work only includes a continuous hydrologic recorder and navigation to and from the CRMS sites with a small watercraft or airboat.

F. Project Description

1. Describe the Proposed Action/Project Objectives: What are you trying to accomplish and how with this project? Describe in detail the construction equipment and methods** needed; long term vs. short term impacts; duration of short term impacts; dust, erosion, and sedimentation controls; restoration areas; if the project is growth-inducing or facilitates growth; whether the project is part of a larger project or plan; and what permits will need to be obtained.

Attach a separate map showing project footprint, avoidance areas, construction accesses, staging/laydown areas.

***If construction involves overwater structures, pilings and sheetpiles, boat slips, boat ramps, shoreline armoring, dredging, blasting, artificial reefs or fishery activities, list the method here, but complete the next section(s) in detail.*

Only minimal in-water construction activities are included in this project. At CRMS3166, two 4”by 4” posts with hydrologic recorders attached to them will be driven by hand into the tidal creek bottom. Data collection field work is described below.

The objective of this activity will be to provide trustees with a decision support tool that will assess the impact of various restoration types and approaches on coastal wetland ecosystem health, as indicated by net ecosystem carbon balance (NECB). The decision support tool will provide spatially explicit assessments of NECB for all coastal ecosystems in Louisiana, allowing trustees to see where the oil spill and restoration activities affect ecosystem health. The desktop component of this activity will focus on developing and refining the decision support tool.

The field component of this project will include a continuation of existing data collection for vertical gas flux at CRMS0224 and CRMS3166 that is supplemental to the CRMS data collections but co-located near the existing CRMS infrastructure. These data collections will measure high frequency vertical greenhouse gas flux (CO₂ and CH₄) with the atmosphere using eddy covariance towers which are already in place. Additionally, data collection at CRMS3166 will include continuous measure of water velocity, dissolved organic carbon, dissolved inorganic carbon, and particulate organic carbon, with hydrologic instrumentation and soil carbon accumulation rates through extraction of three 10cm diameter soil cores to a depth of 150 cm. This effort is beyond the normal data collection that happens at each CRMS site by the state of Louisiana.

Sites will be accessed by small watercraft or airboat within established canals and bayous approximately every two weeks.

II. *Construction Schedule (What is the anticipated schedule for major phases of work? Include duration of in-water work.)* Click here to enter text.

III. *Specific In-Water and/or Terrestrial Construction Methods*

Please check yes or no for the following questions related to in-water work and overwater structures

<i>Does this project include in-water work?</i>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<i>Does this project include terrestrial construction?</i>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<i>Does this project include construction of an overwater structure?</i>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<i>Will fishing be allowed from this overwater structure?</i>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<i>Will wildlife observation be allowed from this overwater structure?</i>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<i>Will boat docking be allowed from this overwater structure?</i>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

If this is a fishing pier, please provide the following information: public or private access to pier, estimated number

of people fishing per day, plan to address hook and line captures of protected species, specific operating hours/open 24 hours, artificial lighting of pier (if any), number of fish cleaning stations, and number of pier attendants (if any).

n/a

Construction: Provide a detailed account of construction methods. It is important to include step-by-step descriptions of how demolition or removal of structures is conducted and if any debris will be moved and how. Describe how construction will be implemented, what type and size of materials will be used and if machines will be used, manual labor, or both. Indicate if work will be done from upland, barge, or both.)

- iii. Use of "Dock Construction Guidelines"? <https://media.fisheries.noaa.gov/dam-migration/dockkey2002.pdf>
- iv. Type of decking: Grated – 43% open space; Wooden planks or composite planks – proposed spacing?
- v. Height above Mean High Water (MHW) elevation?
- vi. Directional orientation of main axis of dock?
- vii. Overwater area (sq ft)?

n/a

b. *Pilings & Sheetpiles: If this project includes installation of pilings or sheets, please provide answers to questions 1-11 listed below*

1. Method of pile installation	
2. Material type of piles used	
3. Size (width) of piles/sheets	
4. Total number of piles/sheets	
5. Number of strikes for each single pile	
6. Number of strikes per hour (for a single pile)	
7. Expected number of piles to be driven each day	
8. Expected amount of time needed to drive each pile (minutes of driving activities)	
9. Expected number of sequential days spent pile driving	
10. Whether pile driving occurring in-water or on land	
11. Depth of water where piles will be driven	

c. *Marinas and Boat Slips (Describe the number and size of slips and if the number of new slips changes from what is currently available at the project. Indicate how many are wet slips and how many are dry slips. Estimate the shadow effect of the boats - the area (sqft) beneath the boats that will be shaded.)*

n/a

d. *Boat Ramp (Describe the number and size of boat ramps, the number of vessels that can be moored at the site (e.g., staging area) and if this is a public or private ramp. Indicate the boat trailer parking lot capacity, and if this number changes from what is currently available at the project.)*

n/a

e. *Shoreline Armoring (This includes all manner of shoreline armoring (e.g., riprap, seawalls, jetties, groins, breakwaters, etc.). Provide specific information on material and construction methodology used to install the shoreline armoring materials. Include linear footage and square footage. Attach a separate map showing the location of the shoreline armoring in the action area.*

n/a

f. *Dredging or digging (Provide details about dredge type (hopper, cutterhead, clamshell, etc.), maximum depth of dredging, area (ft²) to be dredged, volume of material (yd³) to be produced, grain size of material, sediment testing for contamination, spoil disposition plans, and hydrodynamic description (average current speed/direction)). If digging in the terrestrial environment, please describe fully with details about possible water jetting, vibration methods to install pilings for dune walk-over structure, or other methods. If using devices/methods/turtle relocation dredging to relocate sea turtles, then describe the methods here.*

n/a

g. *Blasting (Projects that use blasting might not qualify as “minor projects,” and a Biological Assessment (BA) may need to be prepared for the project. Arrange a technical consultation meeting with NMFS Protected Resources Division to determine if a BA is necessary. Please include explosive weights and blasting plan.)*

n/a

h. *Artificial Reefs (Provide a detailed account of the artificial reef site selection and reef establishment decisions [i.e., management and siting considerations, stakeholder considerations, environmental considerations, long term maintenance plan (periodic clean-up of lost fishing gear/debris)], deployment schedule, materials used, deployment methods, as well as final depth profile and overhead clearance for vessel traffic. For additional information and detailed guidance on artificial reefs, please refer to the artificial reef program websites for the particular state the project will occur in.*

n/a

i. *Fishery Activities (Describe any use of gear that could entangle or capture protected species. This includes activities that may enhance fishing opportunities (e.g. fishing piers) or be fishery/gear research related (e.g. involve trawl gear, gillnets, hook and line gear, crab pots etc)).*

n/a

G. NOAA Essential Fish Habitat (EFH)

If applicable, describe any designated Essential Fish Habitat within the project area in the text box and answer the questions below about habitat effects, conversions or benefits. If there is no EFH in your project area, enter N/A in the box below and move to section F.

Depending on the effects of your project, EFH consultation with NMFS may be required:

<https://www.fisheries.noaa.gov/southeast/consultations/essential-fish-habitat-consultations-southeast>

The only new in water work associated with this project are two 4X4 posts with continuous hydrologic recorders fastened to them and navigation to the sites. The hydrologic recorder posts will be installed in the tidal creek adjacent to the marsh at CRMS3166 within the 1-km CRMS site boundary (outlined in map and KMZ). This minimal installation of two posts is not expected to have any effects on EFH.

In this table, please use checkboxes to indicate which EFH eco-region(s) and habitat zone(s) in which the project is located. For more information about EFH Eco Regions see the references here:

<https://noaasdd.sharepoint.com/:f:/s/tcover/Euupi2PMtXdEqQtJSdKyq-wBdyb42ubMUUbMy7QsijqK7A?e=oYqSsb>

<https://portal.gulfcouncil.org/EFHreview.html>

<u>Gulf of Mexico EFH Eco-Region</u>	<u>Estuarine</u>	<u>Nearshore</u>	<u>Offshore</u>
Eco-Region 1: South Florida (Florida Keys north to Tarpon Springs, Florida)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eco-Region 2: North Florida (Tarpon Springs, Florida, north and west to Pensacola Bay, Florida)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eco-Region 3: East Louisiana, Mississippi, and Alabama (Pensacola Bay, Florida, west to the Mississippi River Delta)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eco-Region 4: East Texas and West Louisiana (Mississippi River Delta west and south to Freeport, Texas)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eco-Region 5: West Texas (Freeport, Texas south to the U.S./Mexico border)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In this section, please indicate if your project has effects on EFH, either beneficial or adverse. For example, whether the project creates, improves, removes or converts habitat. Please describe the types of habitats that will be affected by the project, including number of acres.

Will this project affect EFH?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If no, please proceed to section X. (For example, your project is wholly upland or includes only desktop analysis tasks) If yes, please proceed to additional boxes below.	

Click here to enter text.

Will this project have beneficial effects to EFH?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If yes, please describe how your project will have beneficial effects the text box below:	

Click here to enter text.

<i>Will this project have adverse effects on EFH?</i>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<i>If yes, please describe what type of adverse effects your project will cause to EFH in the text bow below:</i>	

Click here to enter text.

H. NOAA ESA Species and Critical Habitat and Effects Determination Requested

If your project occurs in a location that does not contain any listed NOAA species or designated Critical Habitats, please check the box below. If this box is checked, you may skip Section H. and proceed to Section I.

This project occurs in a location that does not contain any listed NOAA species or designated Critical Habitats.

ESA effects have been accounted for under an existing consultation.

1. List all species, critical habitat, proposed species and proposed critical habitat that may be found in the action area. Species that do not currently occur in the action area (but are listed on county species lists) do not need to be listed in drop downs. For species not included in the drop down menu please add manually to the table.

2. Attach a separate map identifying species/critical habitat locations within the action area. For information on species and critical habitat under NMFS jurisdiction, visit: http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/Documents/gulf_of_mexico.pdf.

If Gulf sturgeon in marine waters may be affected, include them in the table here. If Gulf Sturgeon in riverine/freshwater may be affected include them in the USFWS table below in Section H. If sea turtles in water may be affected include them in the table here. If sea turtles on land may be affected include them in the USFWS table below in Section H.

Species and/or Critical Habitat	CH Unit (if applicable)	Location (Sea turtles and Gulf Sturgeon only)	Determinations (see definitions below)	For "No Effect", please select justification.
Loggerhead Sea Turtle (T)		Marine	No Effect	No suitable habitat action area
Kemp's Ridley Sea Turtle (E)		Marine	No Effect	No suitable habitat action area
Green Sea Turtle (T)		Marine	No Effect	No suitable habitat action area
Giant Manta Ray (T)		Choose an item.	No Effect	No suitable habitat action area
Choose an item.		Choose an item.	Choose an item.	Choose an item.
Choose an item.		Choose an item.	Choose an item.	Choose an item.
Choose an item.		Choose an item.	Choose an item.	Choose an item.
Choose an item.		Choose an item.	Choose an item.	Choose an item.
		Choose an item.	Choose an item.	Choose an item.
		Choose an item.	Choose an item.	Choose an item.
		Choose an item.	Choose an item.	Choose an item.

Determination Definitions

Please make the appropriate choice in the drop down menus for both species and designated critical habitat listed in the first column.

NE = no effect. This determination is appropriate when the proposed action will not directly, indirectly, or cumulatively impact, either positively or negatively, any listed, proposed, candidate species or designated/proposed critical habitat.

NLAA = may affect, not likely to adversely affect. This determination is appropriate when the proposed action is not likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat or there may be beneficial effects to these resources. Response requested is concurrence with the not likely to affect determination. This conclusion is appropriate when effects to the species or critical habitat will be wholly beneficial, discountable, or insignificant. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact, while discountable effects are those that are extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur. If the Services concur in writing with the Action Agency's determination of "is not likely to adversely affect" listed species or critical habitat, the section 7 consultation process is completed.

LAA = may affect, likely to adversely affect. This determination is appropriate when the proposed action is likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat. Response requested for listed species is formal consultation for action with a likely to adversely affect determination, with a biological opinion as the concluding document. This conclusion is reached if any adverse effect to listed species or critical habitat may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable or insignificant. In the event the overall effect of the proposed action is beneficial to the listed species or critical habitat, but may also cause some adverse effect on individuals of the listed species or segments of the critical habitat, then the determination is "likely to adversely affect." Any LAA determination requires formal section 7 consultation and will require additional information.

I. USFWS Species and Critical Habitat and Effects Determination Requested

If your project occurs in a location that does not contain any listed USFWS species or designated Critical Habitats, please check the box below. If this box is checked, you may skip Section I and proceed to Section J.

This project occurs in a location that does not contain any listed USFWS species or designated Critical Habitats.

ESA effects have been accounted for under an existing consultation.

1. List all species, critical habitat, proposed species and proposed critical habitat **generated by IPaC** that may be found in the action area. For species not included in the drop down menu please add manually to the table. The IPaC website can be found here: <https://ipac.ecosphere.fws.gov/>.

2. Attach a separate map identifying species/critical habitat locations within the action area. For information on species and critical habitat under NMFS jurisdiction, visit: http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/Documents/gulf_of_mexico.pdf.

If Gulf sturgeon in riverine/freshwater waters may be affected, include them in the table here. If Gulf Sturgeon in marine waters may be affected include them in the NMFS table above in Section G. If sea turtles on land may be affected include them in the table here. If sea turtles in water may be affected include them in the NMFS table above in Section G.

Species and/or Critical Habitat	CH Unit (if applicable)	Location (Sea turtles and Gulf Sturgeon <u>only</u>)	Determinations (see definitions below)	For "No Effect", please select justification.
West Indian Manatee		Choose an item.	May Affect, Not Likely to Adversely Affect	Choose an Item.
Loggerhead Sea Turtle		Terrestrial	No Effect	No suitable habitat in action area
Kemp's Ridley		Terrestrial	No Effect	No suitable habitat in action area
Green Sea Turtle		Terrestrial	No Effect	No suitable habitat in action area
Choose an item.		Choose an item.	Choose an item.	Choose an item.
Choose an item.		Choose an item.	Choose an item.	Choose an item.
Choose an item.		Choose an item.	Choose an item.	Choose an item.
Choose an item.		Choose an item.	Choose an item.	Choose an item.
Monarch Butterfly		Choose an item.	May Affect, Not Likely to Adversely Affect	Choose an item.
Alligator Snapping Turtle		Choose an item.	May Affect, Not Likely to Adversely Affect	Choose an item.
Eastern Black Rail		Choose an item.	May Affect, Not Likely to Adversely Affect	Choose an item.

Determination Definitions

Please make the appropriate choice in the drop down menus for both species and designated critical habitat

NE = no effect. This determination is appropriate when the proposed action will not directly, indirectly, or cumulatively impact, either positively or negatively, any listed, proposed, candidate species or designated/proposed critical habitat.

NLAA = may affect, not likely to adversely affect. This determination is appropriate when the proposed action is not likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat or there may be beneficial effects to these resources. Response requested is concurrence with the not likely to affect determination. This conclusion is appropriate when effects to the species or critical habitat will be wholly beneficial, discountable, or insignificant. Beneficial effects are contemporaneous positive effects without any

adverse effects to the species or habitat. Insignificant effects relate to the size of the impact, while discountable effects are those that are extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur. If the Services concur in writing with the Action Agency's determination of "is not likely to adversely affect" listed species or critical habitat, the section 7 consultation process is completed.

LAA = may affect, likely to adversely affect. This determination is appropriate when the proposed action is likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat. Response requested for listed species is formal consultation for action with a likely to adversely affect determination, with a biological opinion as the concluding document. This conclusion is reached if any adverse effect to listed species or critical habitat may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable or insignificant. In the event the overall effect of the proposed action is beneficial to the listed species or critical habitat, but may also cause some adverse effect on individuals of the listed species or segments of the critical habitat, then the determination is "likely to adversely affect." Any LAA determination requires formal section 7 consultation and will require additional information.

J. Effects of the Proposed Project to the Species and Actions to Reduce Impacts

NOTE: Species selected as "No Effect" with justification in tables above do not need to be addressed in Section I or J.

I. Explain the potential beneficial and adverse effects to each species listed above. Describe what, when, and how the species will be impacted and the likely response to the impact. Be sure to include direct, indirect, and cumulative impacts and where possible, quantify effects.

If species are present (or potentially present) and will not be adversely affected describe your rationale. If species are unlikely to be present in the general area or action area, explain why. This justification provides documentation for your administrative record, avoids the need for additional correspondence regarding the species, and helps expedite review.

West Indian manatee: This species may be present where vessels are operating for this activity. Water depth at both field locations is not conducive to support manatee as typical water depths range between 0 and 4 feet in the bayous and marsh canals; however manatee may be present in the canals leading from the boat launches to the site locations. The USFWS Standard Manatee in water conditions would be employed. As such, the activity may affect but is not likely to adversely affect West Indian manatees.

Monarch Butterfly: This species may be in the area but project activities are not likely to adversely affect the species as data collection is non-destructive in nature. If the species is observed field personnel will stop activities until the butterflies leave the area on their own volition.

Alligator Snapping Turtle: This species may be in the area but encountering one is extremely rare. Impacts will be short term and temporary. All field personnel will be educated that AST may be in the area and if encountered all actions would immediately cease until the animal has

moved away from the project area on its own volition.

Eastern Black Rail: This secretive marsh bird may be in the area but project activities are not likely to adversely affect the species as data collection is non-destructive in nature. If the species is observed field personnel will stop activities until the individual birds leave the area on their own volition.

No vegetation will be removed as part of the platform installation.

II. *Explain the actions to reduce adverse effects to each species listed above. For each species for which impacts were identified, describe any Conservation Measures and/or BMPs that will be implemented to avoid or minimize the impacts. Conservation Measures and/or BMPs are designed to avoid or minimize effects to listed species and critical habitats or further the recovery of the species under review. Conservation Measures and/or BMPs are considered part of the proposed action and their implementation is required. Any changes to, modifications of, or failure to implement these conservation measures may result in a need to reinitiate this consultation.*

Frequently Recommended Conservation Measures and BMPs: This checklist provides standard practices recommended by NMFS and USFWS. Please select any BMPs that will be implemented:

<input checked="" type="checkbox"/>	USFWS Standard Manatee In Water Conditions
<input type="checkbox"/>	NMFS Protected Species Construction Conditions (2021)¹
<input type="checkbox"/>	NMFS Measures for Reducing the Entrapment Risk to Protected Species¹
<input type="checkbox"/>	NMFS Vessel Strike Avoidance Measures (2021)¹

Additional BMPs or Conservation Measures

Chapter 6 of the PDARP included an important appendix (6.A) of best practices, see information starting on page 6-173. http://www.gulfspillrestoration.noaa.gov/sites/default/files/wp-content/uploads/Chapter-6_Environmental-Consequences_508.pdf

Use the box below to indicate which best management practices or conservation measures you'll be using in your project (that were not listed in Section I above)

n/a. Applicable measures are selected in the box above.

K. Effects to Critical Habitats and Actions to Reduce Impacts

NOTE: Species selected as "No Effect" with justification in table do not need to be addressed in Section I or J.

I. *Explain the potential beneficial and adverse effects to critical habitat listed above. Describe what, when, and how the critical habitat will be impacted and the likely response to the impact. Be sure to include direct, indirect, and cumulative impacts to physical and biological features, and where possible, quantify effects (e.g. acres of habitat, miles of habitat).*

¹ <https://www.fisheries.noaa.gov/southeast/consultations/regulations-policies-and-guidance>

Describe your rationale if designated or proposed critical habitats are present and will not be adversely affected.

This project is not removing habitat or building any permanent structures in the marsh and therefore is not likely to impact any critical habitat associated with the species listed above.

II. Explain the actions to reduce adverse effects to critical habitat listed above. For critical habitat for which impacts were identified, describe any conservation measures (e.g. BMPs) that will be implemented to avoid or minimize the impacts. Conservation measures are designed to avoid or minimize effects to listed species and critical habitats or further the recovery of the species under review. Conservation measures are considered part of the proposed action and their implementation is required. Any changes to, modifications of, or failure to implement these conservation measures may result in a need to reinitiate this consultation.

[Click here to enter text.](#)

L. Marine Mammals

I. The Marine Mammal Protection Act prohibits the taking (including disruption of behavior, entrapment, injury, or death) of all marine mammals (e.g., whales, dolphins, manatees). However, the MMPA allows limited exceptions to the take prohibition if authorized, such as the incidental (i.e., unintentional but not unexpected) take of marine mammals. The following questions are designed to allow the Agencies to quickly determine if your action has the potential to take marine mammals. If the information provided indicates that incidental take is possible, further discussion with the Agencies is required.

Is your activity occurring in or on marine or estuarine waters? NO YES

If yes, is your activity likely to cause large-scale, ecosystem level impacts to the quality (e.g. salinity, temperature) of marine or estuarine waters? NO YES

II. If Yes, describe activities further using checkboxes. Does your activity involve any of the following:

NO	YES	ACTIVITY
<input checked="" type="checkbox"/>	<input type="checkbox"/>	a) Use of active acoustic equipment (e.g., echosounder) producing sound below 200 kHz
<input type="checkbox"/>	<input checked="" type="checkbox"/>	b) In-water construction or demolition
<input checked="" type="checkbox"/>	<input type="checkbox"/>	c) Temporary or fixed use of active or passive sampling gear (e.g., nets, lines, traps; turtle relocation trawls)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	d) In-water Explosive detonation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	e) Aquaculture
<input checked="" type="checkbox"/>	<input type="checkbox"/>	f) Restoration of barrier islands, levee construction or similar projects
<input checked="" type="checkbox"/>	<input type="checkbox"/>	g) Fresh-water river diversions

- h) Building or enhancing areas for water-related recreational use or fishing opportunities (e.g. fishing piers, bridges, boat ramps, marinas)
- i) Dredging or in-water construction activities to change hydrologic conditions or connectivity, create breakwaters and living shorelines, etc.
- j) Conducting driving of sheet piles or pilings
- k) Use of floating pipeline during dredging activities

III. If you checked “Yes” to any of the activities immediately above or the activity could impact the quality of marine or estuarine waters, please describe the nature of the activities in more detail or indicate which section of the form already includes these descriptions. See the NOAA Acoustic Guidance for more information: <http://www.nmfs.noaa.gov/pr/acoustics/faq.htm>

The only in estuarine waters associated with this project is navigating from the boat launch to the marsh monitoring locations. Small watercraft and airboats may be used to access the sites through navigable canals and bayous.

IV. *Frequently Recommended BMPs for marine mammals (manatees are covered in Section I above): This checklist provides standard BMPs recommended by NOAA. Please select any BMPs that will be implemented:*

<input type="checkbox"/>	NMFS Southeast U.S. Marine Mammal and Sea Turtle Viewing Guidelines ²
<input checked="" type="checkbox"/>	NMFS Protected Species Construction Conditions (2021) ³
<input type="checkbox"/>	NMFS Measures for Reducing the Entrapment Risk to Protected Species (2012) ³
<input checked="" type="checkbox"/>	NMFS Vessel Strike Avoidance Measures and Reporting for Mariners (2021) ³
<input type="checkbox"/>	NMFS Reproducing and posting outreach signs: Dolphin Friendly Fishing Tips sign, Don’t Feed Wild Dolphins sign ⁴

If not listed above, please describe any additional BMPs or conservation measures that may be implemented for marine mammals. [Click here to enter text.](#)

M. Bald Eagles

Are bald eagles present in the action area? NO YES

If YES, the following conservation measures should be implemented:

1. If bald eagle breeding or nesting behaviors are observed or a nest is discovered or known, all activities (e.g., walking, camping, clean-up, use of a UTV, ATV, or boat) should avoid the nest by a minimum of 660 feet. If the nest is protected by a vegetated buffer where there is *no* line of sight to the nest, then the minimum avoidance distance is 330 feet. This avoidance distance shall be maintained from the onset of

² <https://www.fisheries.noaa.gov/topic/marine-life-viewing-guidelines>

³ <https://www.fisheries.noaa.gov/southeast/consultations/regulations-policies-and-guidance>

⁴ <https://www.fisheries.noaa.gov/southeast/consultations/protected-species-educational-signs>

breeding/courtship behaviors until any eggs have hatched and eaglets have fledged (approximately 6 months).

2. If a similar activity (e.g., driving on a roadway) is closer than 660 feet to a nest, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
3. If a vegetated buffer is present and there is no line of sight to the nest and a similar activity is closer than 330 feet to a nest, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
4. In some instances, activities conducted at a distance greater than 660 feet of a nest may result in disturbance. If an activity appears to cause initial disturbance, the activity shall stop and all individuals and equipment will be moved away until the eagles are no longer displaying disturbance behaviors.

Will you implement the above measures? NO YES

If these measures cannot be implemented, then you must contact the Service's Migratory Bird Permit Office.

Texas – (505) 248-7882 or by email: permitsR2MB@fws.gov

Louisiana, Mississippi, Alabama, Florida – (404) 679-7070 or by email: permitsR4MB@fws.gov

N. Migratory Bird Treaty Act

In accordance with the Migratory Bird Treaty Act of 1918 as amended (16 U.S.C. 703-712), will this project cause the take of any birds covered under this act? NO YES

If YES, please explain and indicate if the pertinent permits will be or have been obtained:

Project proponent will review the appropriate BMPs and CMs found at this website and implement the appropriate measures to the extent practicable:

<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>

NO YES

If NO, please explain: Not relevant as Migratory Birds will not be 'taken' for this activity.

O. Request Approval for Use of NMFS PDCs for This Project

Complete this section only if your project qualifies for streamlined ESA consultation under the ESA Framework Programmatic Biological Opinion completed by NMFS on February 10, 2016.

To be eligible for streamlined ESA consultation with NMFS, you must implement all Project Design Criteria (PDCs) applicable to your project. Check "yes" for PDC categories that apply to the proposed project, and [request PDC checklist from NMFS](#).

NO	YES	ACTIVITY
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oyster Reef Creation and Enhancement

- | | | |
|-------------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Marine Debris Removal |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Construction of Living Shorelines |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Marsh Creation and Enhancement |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Construction of Non-Fishing Piers |

P. Submitting the BE Form

We request that all BE forms and consultation materials be placed on Sharepoint for review.

Upon receipt, we will conduct a preliminary review and provide any comments and feedback, including any requests for modifications or additional information.

If modifications or additional information is necessary, we will work with you until the Biological Evaluation form is considered complete. Once complete, we will use the Biological Evaluation form to initiate appropriate consultations.

Questions may be directed to:

NMFS ESA § 7 Consultation

Christy Fellas, National Oceanic Atmospheric Administration

Email: Christina.Fellas@noaa.gov

Phone: 727-551-5714

USFWS ESA § 7 Consultation

Michael Barron, Department of the Interior

Email: michael_barron@fws.gov

Phone: 251-421-7030



Attachment 2

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139



In Reply Refer To:

April 03, 2023

Project code: 2023-0063686

Project Name: Quantifying restoration impacts on wetland ecosystem health and carbon export

Subject: Consistency letter for the project named 'Quantifying restoration impacts on wetland ecosystem health and carbon export' for specified threatened and endangered species that may occur in your proposed project location pursuant to the Louisiana Endangered Species Act project review and guidance for other federal trust resources determination key (Louisiana DKey).

Dear Michael Barron:

The U.S. Fish and Wildlife Service (Service) received on April 03, 2023 your effects determination(s) for the 'Quantifying restoration impacts on wetland ecosystem health and carbon export' (the Action) using the Louisiana DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers, and the assistance in the Service's Louisiana DKey, you made the following effect determination(s) for the proposed Action:

Table with 3 columns: Species, Listing Status, Determination. Rows include Eastern Black Rail (Laterallus jamaicensis ssp. jamaicensis) and West Indian Manatee (Trichechus manatus), both listed as Threatened with NLAA determination.

Consultation with the Service is not complete. The "may affect - not likely to adversely affect" determination(s) becomes effective when the lead Federal action agency or designated non-federal representative uses it to ask the Service to rely on the Louisiana Endangered Species Act project review and guidance for other federal trust resources key to satisfy the agency's consultation requirements for this project.

Please sign below verifying your species determination(s) listed above and submit your project to the Louisiana Field Office for concurrence.

Project Representative

Date

Based on the information provided in this report, as well as any pertinent correspondence and documentation saved to the project file at our office (if applicable), the Service agrees with your determination(s) for the species listed above for the proposed Federal Action:

Louisiana Ecological Services Office

Date

U.S. Fish and Wildlife Service

Consultation on the proposed action is concluded when you receive signature from this office.

The Service recommends that your agency contact the Louisiana Ecological Services Field Office or re-evaluate the project in IPAC if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Louisiana Ecological Services Field Office should take place before project changes are final or resources committed.

Please Note: If the Federal Action may impact bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) may be required. Please contact Ulgonda Kirkpatrick (phone: 321/972-9089, e-mail: ulgonda_kirkpatrick@fws.gov) with any questions regarding potential impacts to bald or golden eagles.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Quantifying restoration impacts on wetland ecosystem health and carbon export

2. Description

The following description was provided for the project 'Quantifying restoration impacts on wetland ecosystem health and carbon export':

Project will occur in coastal Louisiana as per the project map/GIS provided. Field activities will be associated with existing long-term Coastwide Reference Monitoring System monitoring sites CRMS3166 (freshwater herbaceous marsh) and CRMS0224 (saline herbaceous marsh). Sites are in undeveloped coastal marshes within the Barataria Basin estuary. Navigation from the launches to the monitoring sites will be in a small watercraft or airboat. All activities will be on the marsh surface at the monitoring site locations and through continuous hydrologic recorders in nearby water.

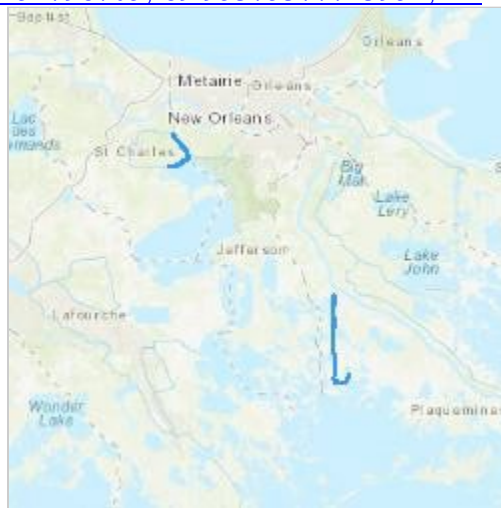
Only minimal in-water construction activities are included in this project. At CRMS3166, two 4" by 4" posts with hydrologic recorders attached to them will be driven by hand into the tidal creek bottom. Data collection field work is described below.

The objective of this activity will be to provide trustees with a decision support tool that will assess the impact of various restoration types and approaches on coastal wetland ecosystem health, as indicated by net ecosystem carbon balance (NECB). The decision support tool will provide spatially explicit assessments of NECB for all coastal ecosystems in Louisiana, allowing trustees to see where the oil spill and restoration activities affect ecosystem health. The desktop component of this activity will focus on developing and refining the decision support tool.

The field component of this project will include a continuation of existing data collection for vertical gas flux at CRMS0224 and CRMS3166 that is supplemental to the CRMS data collections but co-located near the existing CRMS infrastructure. These data collections will measure high frequency vertical greenhouse gas flux (CO₂ and CH₄) with the atmosphere using eddy covariance towers which are already in place. Additionally, data collection at CRMS3166 will include continuous measure of water velocity, dissolved organic carbon, dissolved inorganic carbon, and particulate organic carbon, with hydrologic instrumentation and soil carbon accumulation rates through extraction of three 10cm diameter soil cores to a depth of 150 cm. This effort is beyond the normal data collection that happens at each CRMS site by the state of Louisiana.

Sites will be accessed by small watercraft or airboat within established canals and bayous approximately every two weeks.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@29.54798705,-89.95375377743954,14z>



QUALIFICATION INTERVIEW

1. Is the action authorized, funded, or being carried out by a Federal agency? Yes
2. Is the action authorized, funded, or being carried out by the:
 - d. Other
3. Please identify your agency or organization type:
 - a. Federal agency
4. Have you determined that the project will have "no effect" on federally listed species? (If unsure select "No")
No
5. [Hidden Semantic] Does the project intersect the eastern black rail AOI? Automatically answered
Yes
6. Will the proposed project involve human disturbance or ground disturbance (such as foot traffic, vehicles, tracked equipment, excavating, grading, placing fill material, etc.)?
No
7. [Hidden Semantic] Does the project intersect the west indian manatee AOI?
Automatically answered
Yes
8. (Semantic) Is the project located within the manatee consultation zone, excluding the Mississippi River? Automatically answered
Yes
9. Is the project footprint entirely on land?
No
10. Is the water depth within the project greater than 2 feet (at mean high tide)? Yes
11. Will the project occur during the months of June through November? Yes
12. Will the following Standard Manatee [Conditions](#) for in-Water Activities be included within the project design? Yes
13. [Hidden Semantic] Does the project intersect the pink mucket mussel AOI ?
Automatically answered
No
14. [Semantic] Does the project intersect the Northern Long-eared bat AOI? Automatically answered
No
15. (Semantic) Does the project intersect the Louisiana black bear Range? Automatically answered

No