



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

May 22, 2023

To: Memorandum To File

From: Michael Barron, Deepwater Horizon Gulf Restoration Office

Subject: No Further Consultation Required for Louisiana Trustee Implementation Group's Louisiana's Coastwide Reference Monitoring System (CRMS) Project

Under the Endangered Species Act (ESA) Section 7(a)(2), each Federal agency shall ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species, or destroy/adversely modify designated critical habitat. If a Federal agency determines that a Federal action will have no effect on ESA-listed species or designated critical habitat, then the Federal agency is not required to consult with the US Fish and Wildlife Service (Service) for purposes of ESA. This memo does not include any information or effects determinations for protected species under the jurisdiction of the National Marine Fisheries Service.

We have reviewed the project materials provided (see attached Biological Evaluation Form – Attachment 1), for the proposed project titled “Louisiana’s Coastwide Reference Monitoring System (CRMS)”. This project is already covered by existing consultation (Attachment 2). Thus, this activity does not require further ESA evaluation on our part. Should the project be modified in a way that could adversely impact ESA-listed species or habitats, this determination will be reevaluated as appropriate.

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) and impacts to migratory birds in accordance with the Migratory Bird Treaty Act of 1918 as amended (16 U.S.C. 703-712 and determined that take would be avoided, and best management practices will be followed. In accordance with the Marine Mammal Protection Act of 1972 as amended (16 U.S.C. 1361-1383b, 1401-1406, 1411-1421h), no marine mammals under the jurisdiction of the USFWS will be impacted.

If you have questions or concerns regarding this action, please contact Michael Barron, Fish and Wildlife Biologist, at 251-421-7030 or michael_barron@fws.gov.

Attachments (2)

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): CPRA

Contact Name: Leigh Anne Sharp Phone: 337-482-0659 Email: leighanne.sharp@la.gov

Project Name: Louisiana's Coastwide Reference Monitoring System (CRMS)

DIVER ID# 249 TIG: Louisiana TIG Restoration Plan # Louisiana's Coastwide Reference Monitoring System (CRMS) MAIP

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

Ascension, Assumption, Calcasieu, Cameron, Iberia, Jefferson, Lafourche, Livingston, Orleans, Plaquemines, St.

Bernard, St. Charles, St. James, St. John the Baptist, St. Martin, St. Mary, St. Tammany, Tangipahoa, Terrebonne, and Vermilion Parishes in the state of Louisiana.

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>] 29.5012°N; -91.6214°W NAD83

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

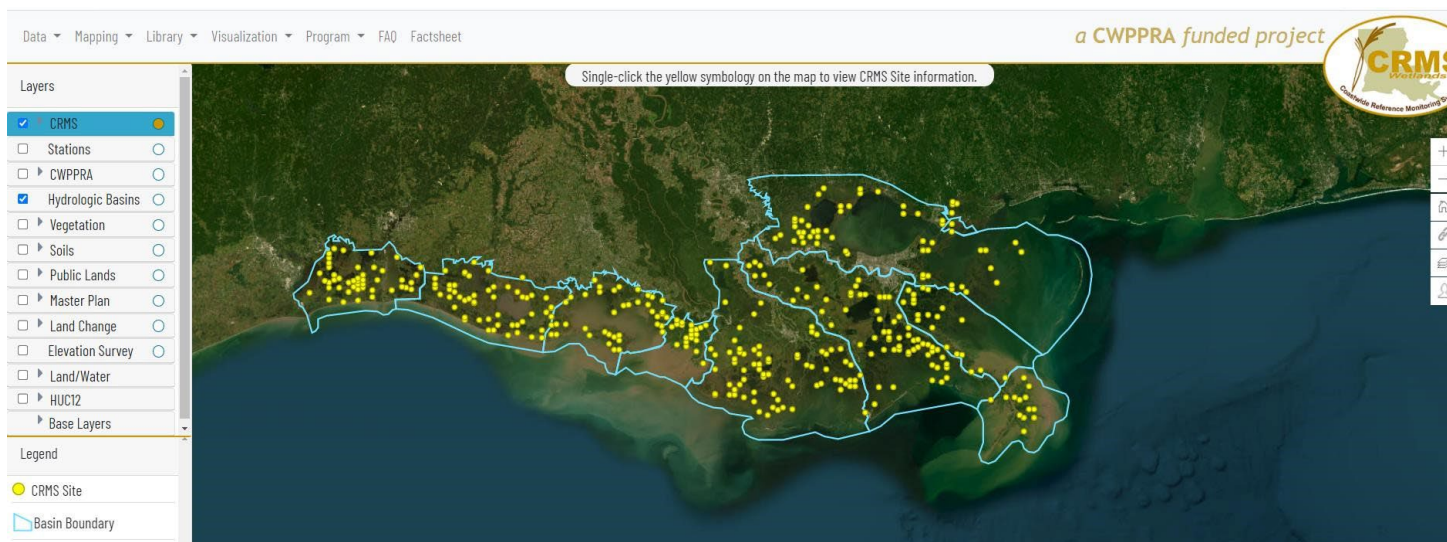
- Aerial images of project action area and surrounding area, showing state or regional scale

- 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

Figure 1. Map of CRMS site locations and Louisiana’s coastal basins.



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: MVN-2004-04612-MM - USACE

Programmatic

General Permit

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: Renewal of MVN-2004-04612-MM

- USACE

Programmatic General Permit

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.

A NEPA analysis is included in the MAIP for this project, currently in progress.

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

Name of Person Completing this Form: Leigh Anne Sharp

Name of Project Lead: Leigh Anne Sharp

Date Form Completed: 1/25/2023

Date Form Updated: 2/15/2023

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.

CRMS sites are located in every coastal basin within Louisiana's Coastal Zone. Sites are proportionally distributed across marsh types and basins and capture the entire range of hydrologic conditions in coastal Louisiana from non-tidal freshwater marshes and swamps to tidal deltaic plain saline wetlands. There are sites in both active river deltas (Mississippi and Atchafalaya) and in impounded and unimpounded areas of the Chenier Plain.

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.

There are CRMS sites in proximity to every major river and bayou in Louisiana's coastal zone at varying distances from the Gulf of Mexico.

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.

Structures at CRMS sites are limited to wooden boardwalks for accessing the marsh surface and wooden posts that support hydrologic recorders and staff gauges.

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.

CRMS does not collect SAV or FAV data types though some aquatic species are included in emergent vegetation data collected each fall.

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.

There are black mangroves present at 19 CRMS sites coastwide. Mangrove sites are located in the Terrebonne (11), Barataria (7), and Breton Sound (1) basins.

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.

There have not been corals found at CRMS sites to date.

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.).

CRMS sites are all in wetlands.

g. Soils and Sediments

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

CRMS does not collect soil type data. Bulk soil characteristics like Organic Matter % and Bulk Density are collected every 6 to 10 years. Data are available in CIMS.

h. Land Use

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

CRMS sites are all in coastal wetlands, some of which are under management (impounded) and some of which are in created marshes (dredge disposal).

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>

All conservation measures in the existing USFWS consultation will be followed.

F. Project Description

*I. 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.*

The CRMS Program is a coastwide reference monitoring network intended to help identify coastal trends and to facilitate assessment of coastal restoration projects constructed in Louisiana's coastal zone (see fact sheet below). The program has been collection water, vegetation, soils and land change data continuously since 2006. Interactive charts, maps and derived data downloads are available through the [CRMS website](#). Raw data are available in [CIMS](#).

CRMS monitoring is implemented by CPRA and USGS on behalf of the CWPPRA program. Data collection is primarily performed by contractors selected through the state's RFP process ([link to last RFP](#)). Monitoring is continuous and ongoing coastwide. Each hydrology station is serviced approximately every 60 days. Elevation change and accretion data are collected coastwide between January 1 and April 30 each year. Vegetation data are collected between June 1 and September 30 annually. Porewater samples are taken during vegetation data collection and when hydrology stations are serviced. Trees are measured in swamp habitats every three years (next, 2024). Soil cores are taken every 10 years (next, 2028).



Coastwide Reference Monitoring System (CRMS)

funded by CWPPRA - the Coastal Wetlands Planning, Protection, and Restoration Act



Overview

In 1990, the U.S. Congress enacted the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) in response to Louisiana's land loss crisis. CWPPRA is a joint federal/state effort that has provided a stable and recurring funding stream to restore Louisiana's wetlands. From 1990 to 2018, the CWPPRA program has authorized 218 coastal restoration and protection projects. The restoration techniques used include: freshwater and sediment diversion, dredged material placement for marsh creation, shoreline protection, terracing, hydrologic restoration, barrier island restoration, and vegetative planting.

The Coastwide Reference Monitoring System (CRMS) was designed to monitor the effectiveness of restoration actions at multiple spatial scales from individual projects to the influence of projects on the entire coastal landscape.

Essential Monitoring of Louisiana's Vanishing Coastal Wetlands

- CRMS monitors the effectiveness of restoration actions at individual sites throughout the Louisiana coastal zone.
- As the world's largest coastal monitoring program with publically available data, CRMS is a model for reference monitoring networks and was commended by the National Academy of Sciences¹.
- CRMS data feed into interpretable tools that can be used by natural resource managers for project planning and evaluation.
- Scientists and engineers use CRMS data for all stages of CWPPRA project planning and implementation.



Figure 1. Many stations exist within each CRMS site. Multiple methods are used to record hydrologic, soils, and vegetation (not pictured) data in the field (image credit: LSU Coastal Sustainability Studio)

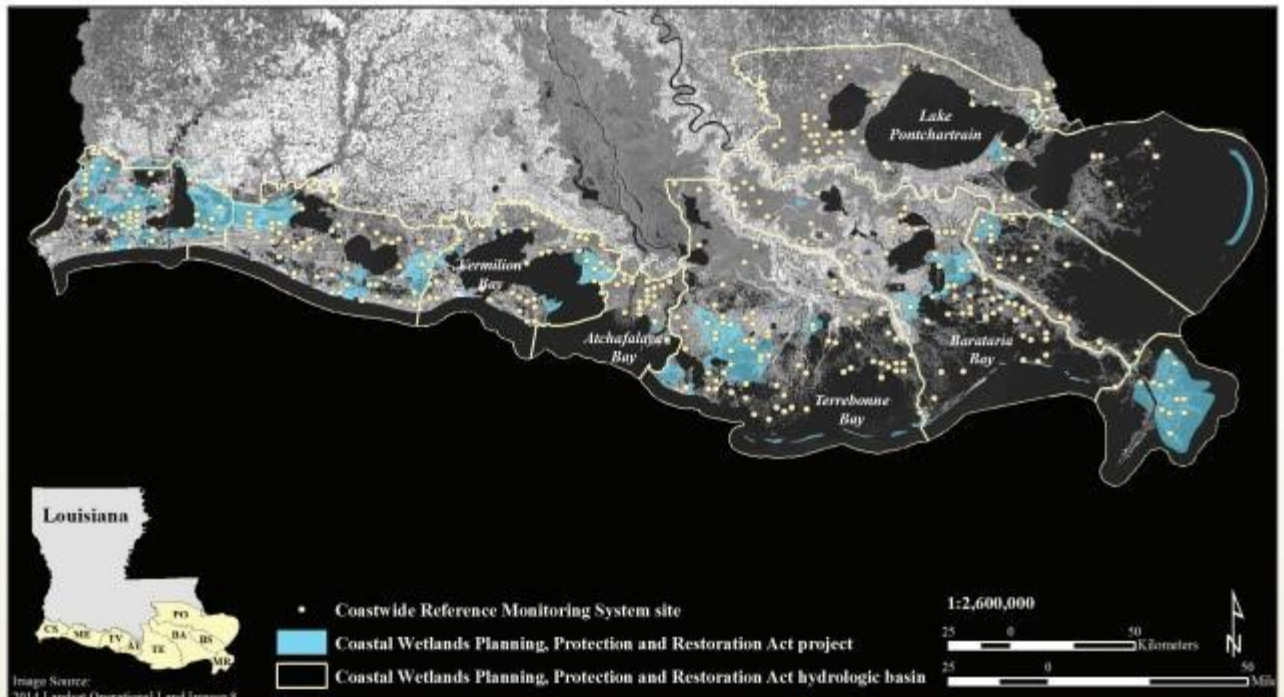


Figure 2. Approximately 390 sites across south Louisiana are part of the CRMS network.

CRMS Design & Data Collection

The CRMS design includes a suite of sites encompassing a range of ecological conditions of swamp habitats and fresh, intermediate, brackish, and salt marshes. Approximately 390 sites are monitored using standardized data collection techniques (Figure 1) and fixed sampling schedules. The CRMS sites are located within nine coastal basins and four CWPPRA regions, covering the entire Louisiana coast (Figure 2). Sites can be found within and outside of CWPPRA coastal restoration and protection projects. Comparisons of changing conditions are not limited to project influences, but are possible throughout the coastal zone because CRMS was designed as a reference network. The reference network approach

enables assessment of ecological conditions at multiple scales.

Within a CRMS site, there are many CRMS stations or plots. At each site, data are collected at a broader 1 km² and a finer 200 m² scale (Figure 3). At the 1 km² scale, high resolution aerial photography is used to calculate the ratio of land to water to investigate land change trends through time. Within the 200 m² area, data are collected in the field using standardized protocols and consistent sampling intervals. CRMS data include water level, salinity, sediment accretion, surface elevation change, composition and abundance of vegetation, ratio of land to water, and soil characteristics (Table 1). The ten vegetation stations are in a diagonal transect across the 200 m² area. The rod surface and accretion stations are nested around a boardwalk. The hydrologic station is generally in a bayou or water body near the boardwalk.

Key Questions Answered by CRMS

- Did the restoration program reduce coastal wetland loss?
- Did the restoration program sustain a diversity of vegetation types within basins?
- Is the restoration program effective in reducing major stressors (e.g., flooding regime, salinity, elevation change)?

Data Access

After the data undergo quality assurance and control procedures, data are approved and accepted into the Louisiana Coastal Protection and Restoration Authority's (CPRA) Coastal Information Management System (CIMS) database. Full data sets can be downloaded from CIMS at (<https://cims.coastal.louisiana.gov/>).

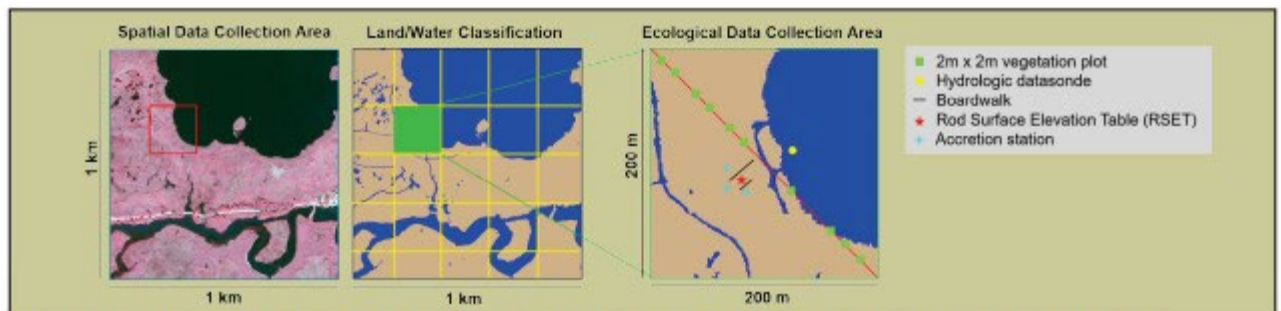


Figure 3. Spatial data, including remotely sensed imagery, are analyzed in a 1 km x 1 km area at each CRMS site. Ecological data collection occurs within a 200 m x 200 m area. In this smaller area there are accretion, RSET, vegetation, and hydrologic data collection stations.

Calculated or derived data (e.g., averages, marsh classification, elevations, elevation change rates, and CRMS indices) are hosted on the CRMS website (<https://www.lacoast.gov/crms2>). Information is analyzed and summarized in maps, charts, tables, graphs, and indices, and finally incorporated into interactive report cards that are available for free online.

CRMS Report Card

CRMS data feed into interpretable tools that can be used to assess the condition of individual CRMS sites, restoration projects, hydrologic basins, and the entire Louisiana coast. Analytical teams, made up of agency and academic personnel, use CRMS data to

develop indices for ecological assessment. These data are summarized for each year (2006 to present) in a “Report Card,” which creates charts and graphs for these indices as the data become available.

Each index helps assess a particular aspect of the coastal wetlands ecosystem:

1. **Floristic Quality Index (FQI):** Used to determine wetland quality based on plant species composition.
2. **Vegetation Volume Index (VVI):** Quantifies the 3 dimensional vegetative structure irrespective of vegetation species.
3. **Hydrologic Index (HI):** Assesses the suitability

Available Data Types

Table 1. Description of the data types collected at each CRMS site.

Data Type	Parameter	Method	Scale	Frequency
Land Change	Land:Water Ratio	Satellite Imagery	Hydrologic Basin	3 years
	Land:Water Ratio	Digital Aerial Photography	CRMS Site (1 km ²)	3 years
Vegetation	Emergent Vegetation	Braun Blanquet: % Cover, Species Richness, Height of Dominant Species	Ten 2m x 2m plots per marsh site or nine plots per swamp site	Annually during peak biomass
	Forested Vegetation	DBH, Canopy Cover, Understory Vegetation	Three 20m x 20m forested plots and nine 6m x 6m understory plots per site	3 years during peak biomass
Soils	Soil Characteristics	Core samples, Bulk Density, % Organic Matter, Soil Salinity, pH, and Moisture	3 cores, 18 archived samples per site	6 to 10 years
	Vertical Accretion	Feldspar Plots/Cryogenic Cores	3 plots per site	Twice per year
	Marsh Elevation Change	Rod Surface Elevation Table (RSET)	4 directions per site	Twice per year
Hydrology	Soil Porewater	10 cm and 30 cm syringe sippers	3 samples per depth per site and at vegetation plots	Variable and annually
	Surface Water Salinity, Temp, and Water Level	Submersible Data Logger	In available water within 200m of CRMS site or in a well	Hourly

1. of average salinity and percent time flooded in maximizing vegetation primary productivity.
2. **Submergence Vulnerability Index (SVI):** Assesses the vulnerability of a site to submergence based on its elevation relative to eustatic sea-level rise.
3. **Landscape Index (LI):** Uses variability and patterns of past landscape configuration to assess future wetland change.

By comparing indices at various times and spatial scales, managers can understand the overall condition of coastal wetlands at an individual site or for the entire coastal zone (Figure 4). For detailed descriptions of each data type, indices, reports, and data descriptions, visit the CRMS website (<https://www.lacoast.gov/crms2>).

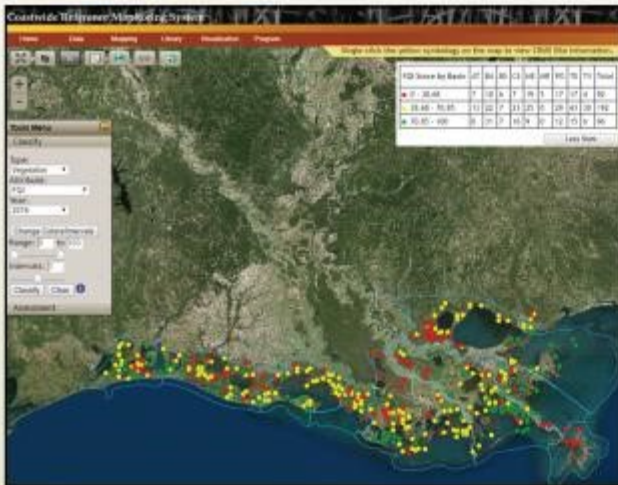


Figure 4. The CRMS website contains useful data visualization tools, including the ability to map Floristic Quality Index (FQI) scores at CRMS sites across the coast.

Future of CRMS

With over 11 years of long-term data collection, CRMS data are crucial for evaluation and assessment of CWPPRA's restoration and protection efforts. CRMS data are also used to determine the ecological condition of coastal wetlands in support of Louisiana's Comprehensive Master Plan for a Sustainable Coast. CRMS will become an important element of the System-Wide Assessment and Monitoring Program (SWAMP), a comprehensive network of coastal data-collection activities designed to integrate protection and restoration monitoring for the human and natural systems of Louisiana (Figure 5). SWAMP will support Louisiana's Coastal Master Plan tools, inform adaptive management, and evaluate project effectiveness, socio-



Figure 5. The SWAMP data network will leverage data from a variety of sources, including the CRMS program.

economics, and risk reduction. The Natural Resource Damage Assessment (NRDA) and RESTORE Act councils also plan to use CRMS data for their monitoring and adaptive management plans.

The CRMS program is as dynamic as the coastal habitats it monitors. Continuously evolving, the program continues to develop new products and analysis tools to improve project planning and implementation, and to support the evaluation of restoration actions. In addition to the integral role CRMS data play for CWPPRA project planning and evaluation, CRMS data are leveraged to support adaptive management, future scenario modeling, and scientific research.

References

1. National Academies of Sciences, Engineering, and Medicine. 2017. Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico. Washington, DC: The National Academies Press. <https://doi.org/10.17226/23476>.

For more information, please contact:

U.S. Geological Survey
Wetland and Aquatic Research Center
700 Cajundome Boulevard
Lafayette, LA 70506
(337) 266-8500



Coastal Protection and Restoration Authority of Louisiana
150 Terrace Avenue
Baton Rouge, LA 70802
(225) 342-7308



II. Construction Schedule (What is the anticipated schedule for major phases of work? Include duration of in-water work.)

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

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

The only CRMS structures include boardwalks and hydrologic recorder posts. The structures are already built and are being maintained by the program. No new structures will be built.

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> N/A

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 checked="" 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"/>
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Effects to EFH

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.	

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:	

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

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 or is covered by an existing consultation, 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.

- 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.
- 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 <u>only</u>)	Determinations (see definitions below)	For "No Effect", please select justification.
Gulf Sturgeon (T)		Marine	No Effect	Covered by existing ESA consultation
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.		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.
Choose an item.		Choose an item.	Select Most Appropriate	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.
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

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.

CRMS data collection includes observation of vegetation, soil measurements, and hydrology station servicing. The only potential impact to any species is associated with boating. No animals are collected. Wildlife is generally avoided. All conservation measures in the existing consultation will be followed.

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)

Manatee measures are included in the existing consultation from section I.

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).

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

Click here to enter text.

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.

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

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 type="checkbox"/>	<input type="checkbox"/>	<i>a) Use of active acoustic equipment (e.g., echosounder) producing sound below 200 kHz</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>b) In-water construction or demolition</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>c) Temporary or fixed use of active or passive sampling gear (e.g., nets, lines, traps; turtle relocation trawls)</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>d) In-water Explosive detonation</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>e) Aquaculture</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>f) Restoration of barrier islands, levee construction or similar projects</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>g) Fresh-water river diversions</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>h) Building or enhancing areas for water-related recreational use or fishing opportunities (e.g. fishing piers, bridges, boat ramps, marinas)</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>i) Dredging or in-water construction activities to change hydrologic conditions or connectivity, create breakwaters and living shorelines, etc.</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>j) Conducting driving of sheet piles or pilings</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>k) Use of floating pipeline during dredging activities</i>

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>

N/A

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 checked="" type="checkbox"/>	NMFS Southeast U.S. Marine Mammal and Sea Turtle Viewing Guidelines ²
<input 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 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

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>

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:

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



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVE
NEW ORLEANS, LA 70118-3651

15 June 2018

Operations Division
Eastern Evaluation Section

SUBJECT: MVN-2004-04612-MM

Coastal Protection and Restoration Authority of Louisiana
Attention: Mr. Bill Boshart
2045 Lakeshore Drive
New Orleans, Louisiana 70122

Dear Mr. Boshart:

The proposed work, to install and maintain 390 Coastwide Reference Monitoring Systems (CRMS) stations for the purpose of assessing the ecological condition of coastal wetlands located throughout the Louisiana Coastal Zone, as shown on the enclosed drawings, is authorized under **Category 1** of the **Programmatic General Permit** provided that all conditions of the permit are met.

In addition, you must comply with the enclosed "Standard Manatee Conditions for In-water Activities".

The permittee is advised that a portion of the work will take place over Governmentowned easement areas. Because the activities proposed in this permit application are temporary in nature, they do not interfere with the rights of the Government at this time. As such, no real estate documentation is necessary. However, the permittee is advised that the United States shall in no case be liable for any damage or injury to persons performing the activities in those areas over which the Government owns easements. Furthermore, the Government shall not be liable for any damages to property caused by the permittee in its performance of the proposed activities.

This authorization has a blanket water quality certification from the Louisiana Department of Environmental Quality; therefore, no additional authorization from DEQ is required.

However, prior to commencing work on your project, you must obtain approvals from state and local agencies as required by law and by terms of this permit. These approvals include, but are not limited to, a permit, consistency determination or determination of "no direct or significant impact (NDSI) on coastal waters" from the Louisiana Department of Natural Resources, Office of Coastal Management.

This approval to perform work is valid for 5 years from the date of this letter. Permittee is aware that this office may reevaluate its decision on this permit at any time the circumstances warrant.

Should you have any further questions concerning this matter, please contact Melissa Marino at (504) 862-2637 or melissa.l.marino@usace.army.mil.

Sincerely,

for
Martin S. Mayer
Chief, Regulatory Branch

Enclosures

Copies furnished:

Ms. Sarai Piazza, USGS
CEMVN-PGP

SPECIAL CONDITIONS

16 May 2017

1. Activities authorized under this general permit shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single and complete project shall be treated together as constituting one single and complete project. All planned phases of multi-phased projects shall be treated together as constituting one single and complete project. This general permit shall not be used for any activity that is part of an overall project for which an individual permit is required.
2. No activity is authorized under this general permit which may adversely affect significant cultural resources listed or eligible for listing in the National Register of Historic Places until the requirements for Section 106 of the National Historic Preservation Act are met. Upon discovery of the presence of previously unknown historic and/or prehistoric cultural resources, all work must cease and the permittee must notify the State Historic Preservation Office and the Corps of Engineers. The authorization is suspended until it is determined whether or not the activity will have an adverse effect on cultural resources. The authorization may be reactivated or modified through specific conditions if necessary, if it is determined that the activity will have no adverse effect on cultural resources. The PGP authorization will be revoked if it is determined that cultural resources would be adversely affected, and an individual permit may be necessary.
3. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein. The permittee will, at his or her expense, install and maintain any safety lights, signals, and signs prescribed by the United States Coast Guard, through

regulations or otherwise, on authorized facilities or on equipment used in performing work under the authorization.

4. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the water body, including those species which normally migrate through the area, unless the activity's primary purpose is to block or impound water.
5. If the **authorized** activity involves the installation of aerial transmission lines, submerged cable, or submerged pipelines across navigable waters of the United States the following is applicable:

The National Ocean Service (NOS) has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. Your notification of completion must include a drawing which certifies the location and configuration of the completed activity (a certified permit drawing may be used). Notification to NOS will be sent to the following address: National Ocean Service, Office of Coast Survey, N/CS261, 1315 East West Highway, Silver Spring, Maryland 20910-3282.

6. For pipelines under an anchorage or a designated fairway in the Gulf of Mexico, the following is applicable: The NOS has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. Within 30 days of completion of the pipeline, 'as built' drawings certified by a professional engineer registered in Louisiana or by a registered surveyor shall be furnished to this office, the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, and to the Director, National Ocean Service, Office of Coast Survey, N/CS261, 1315 East West Highway, Silver Spring, Maryland 20910-3282. The plans must include the location, configuration and actual burial depth of the completed pipeline project.
7. If the **authorized** project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in the waterway, you are advised to notify the Eighth Coast Guard District so that a Notice to Mariners, if required, may be prepared. Notification with a copy of your permit approval and drawings should be mailed to the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, about 1 month before you plan to start work. Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2107.
8. All activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Clean Water Act (PL 92-500: 86 Stat 816), or pursuant to applicable state and local laws.
9. Substantive changes to the Louisiana Coastal Resources Program may require immediate suspension and revocation of this permit in accordance with 33 CFR 325.7.
10. Irrespective of whether a project meets the other conditions of this permit, the Corps of

Engineers retains discretionary authority to require an individual Department of the Army permit when circumstances of the proposal warrant this requirement.

11. Any individual authorization granted under this permit may be modified, suspended, or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest.
12. The Corps of Engineers may suspend, modify, or revoke this general permit if it is found in the public interest to do so.
13. Activities proposed for authorization under the PGP must comply with all other necessary federal, state, and/or local permits, licenses, or approvals. Failure to do so would result in a violation of the terms and conditions of PGP.
14. The permittee shall permit the District Commander or his authorized representative(s) or designee(s) to make periodic inspections of the project site(s) and disposal site(s) if different from the project site(s) at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.
15. This general permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and it does not authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations nor does it obviate the requirements to obtain state or local assent required by law for the activity authorized herein.
16. In issuing authorizations under this permit, the federal government will rely upon information and data supplied by the applicant. If, subsequent to the issuance of an authorization, such information and data prove to be false, incomplete, or inaccurate, the authorization may be modified, suspended, or revoked, in whole or in part.
17. For activities resulting in sewage generation at the project site, such sewage shall be processed through a municipal sewage treatment system or, in areas where tie-in to a municipal system is not practical, the on-site sewerage system must be approved by the local parish sanitarian before construction.
18. Any modification, suspension, or revocation of the PGP, or any individual authorization granted under this permit, will not be the basis for any claim for damages against the United States.
19. Additional conditions deemed necessary to protect the public interest may be added to the general permit by the District Commander at any time. If additional conditions are added, the public will be advised by public notice. Individual authorizations under the PGP may include special conditions deemed necessary to ensure minimal impact and compliance with the PGP.
20. The PGP is subject to periodic formal review by MVN and OCM in coordination with the Environmental Protection Agency, US Fish and Wildlife Service, the National Marine Fisheries Service, and the Louisiana Department of Wildlife and Fisheries. Comments from reviewing agencies will be considered in determination as to whether modifications to the

general permit are needed. Should the District Commander make a determination not to incorporate a change proposed by a reviewing agency, after normal negotiations between the respective agencies, the District Commander will explain in writing to the reviewing agency the basis and rationale for his decision.

21. CEMVN retains discretion to review the PGP, its terms, conditions, and processing procedures, and decide whether to modify, reissue, or revoke the permit. If the PGP is not modified or reissued within 5 years of its effective date, it automatically expires and becomes null and void.
22. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
23. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party as described in Special Condition 25 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
24. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
25. If you sell the property associated with this permit, you must provide this office with a copy of the permit and a letter noting your agreement to transfer the permit to the new owner and the new owner's agreement to accept the permit and abide by all conditions of the permit. This letter must be signed by both parties.
26. Many local governing bodies have instituted laws and/or ordinances in order to regulate dredge and/or fill activities in floodplains to assure maintenance of floodwater storage capacity and avoid disruption of drainage patterns that may affect surrounding properties. Your project involves dredging and/or placement of fill; therefore, you must contact the local municipal and/or parish governing body regarding potential impacts to floodplains and compliance of your proposed activities with local floodplain ordinances, regulations or permits.
27. In issuing authorizations under this permit, the federal government does not assume any liability for: damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest; damages to persons, property, or to other permitted or

unpermitted activities or structures caused by the activity authorized by this permit, and; design or construction deficiencies associated with the permitted work.

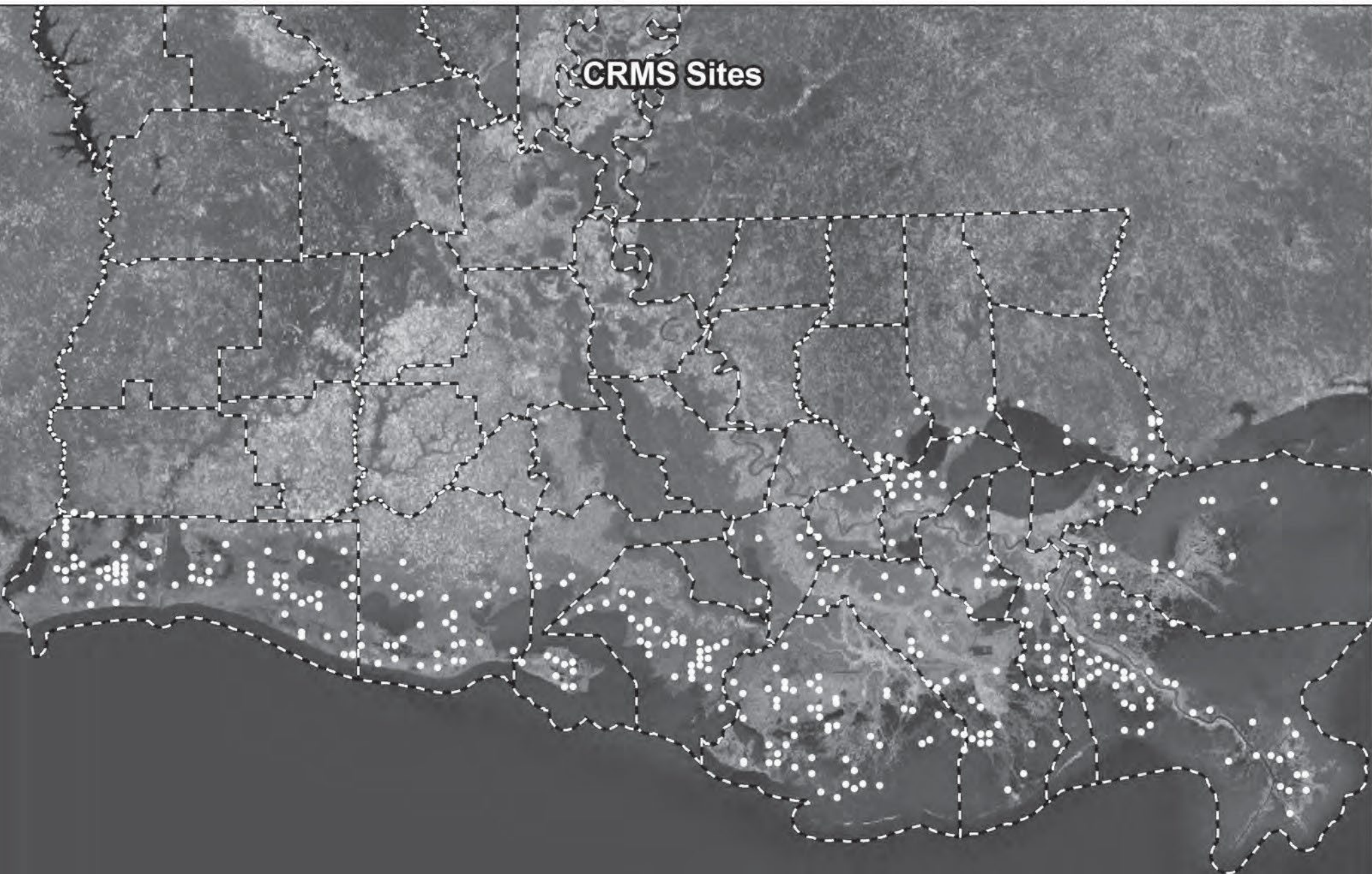
STANDARD MANATEE CONDITIONS FOR IN-WATER ACTIVITIES

During in-water work in areas that potentially support manatees, all personnel associated with the project shall be instructed and aware of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with, and injury to, manatee. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel shall be instructed not to attempt to feed or otherwise interact with the animal.

All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). To minimize potential impacts to manatees in areas of their potential presence, the permittee shall insure the following are adhered to:

- x All work, equipment, and vessel operation shall cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work can resume under careful observation for manatee(s).
- x If a manatee(s) is sighted in or near the project area, all vessels associated with the project shall operate at "no wake/idle" speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels shall follow routes of deep water whenever possible.
- x If used, siltation or turbidity barriers shall be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.
- x Temporary signs concerning manatees shall be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½" X 11" reading language similar to the following: "CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN MANATEE IS PRESENT". A second temporary sign measuring 8½" X 11" shall be posted at a location prominently visible to all personnel engaged in water-related activities and shall read language similar to the following: "CAUTION: MANATEE AREA/ EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION".
- x Collisions with, injury to, or sightings of manatees shall be immediately reported to the U.S. Fish and Wildlife Service's, Louisiana Ecological Services Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Please provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

CRMS Sites

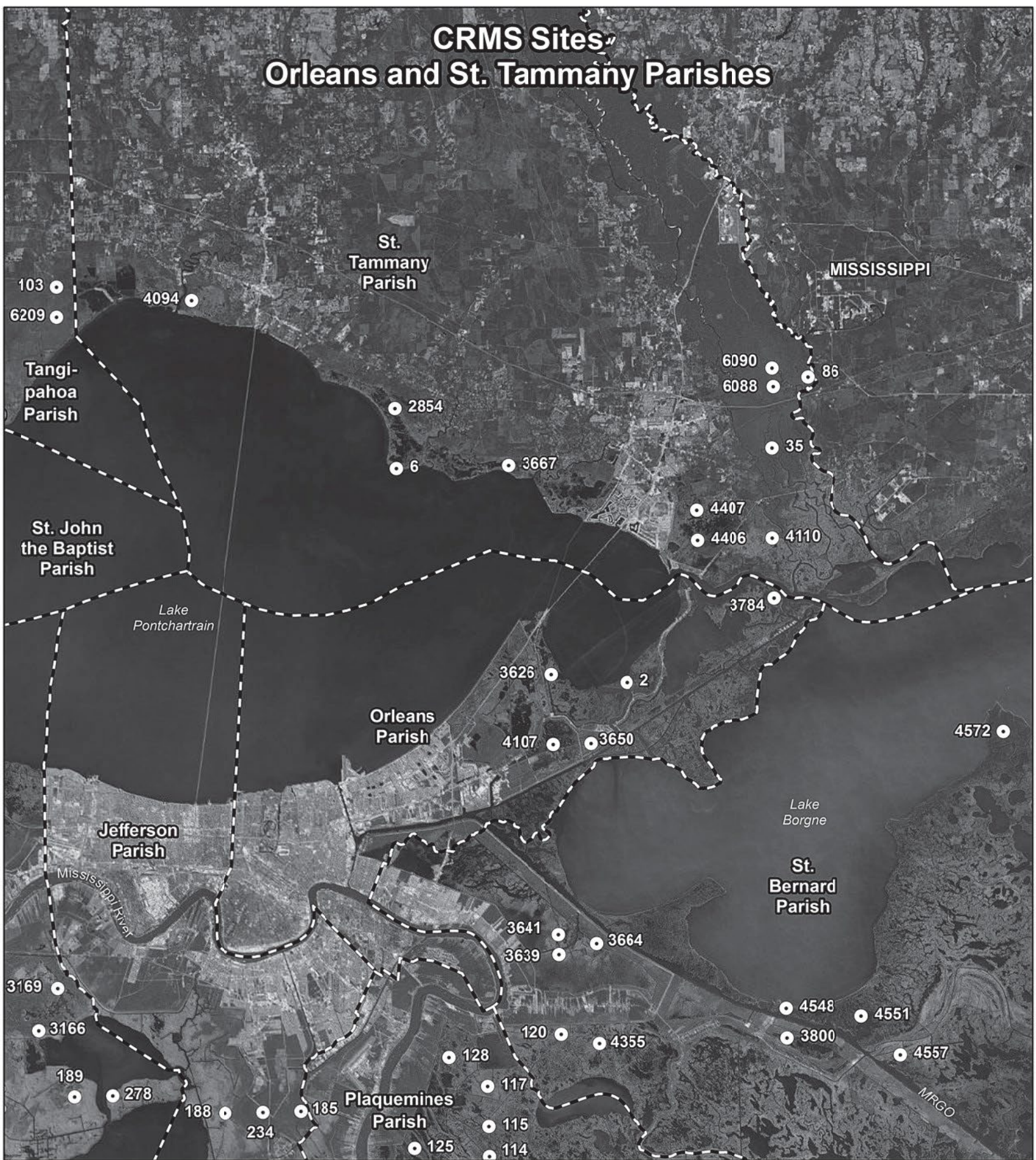


- CRMS Site
- ▭ Parish Boundary



Map Date: 8/16/2017
Path: //2017040339/
Service Layer Credits: Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CRMS Sites Orleans and St. Tammany Parishes

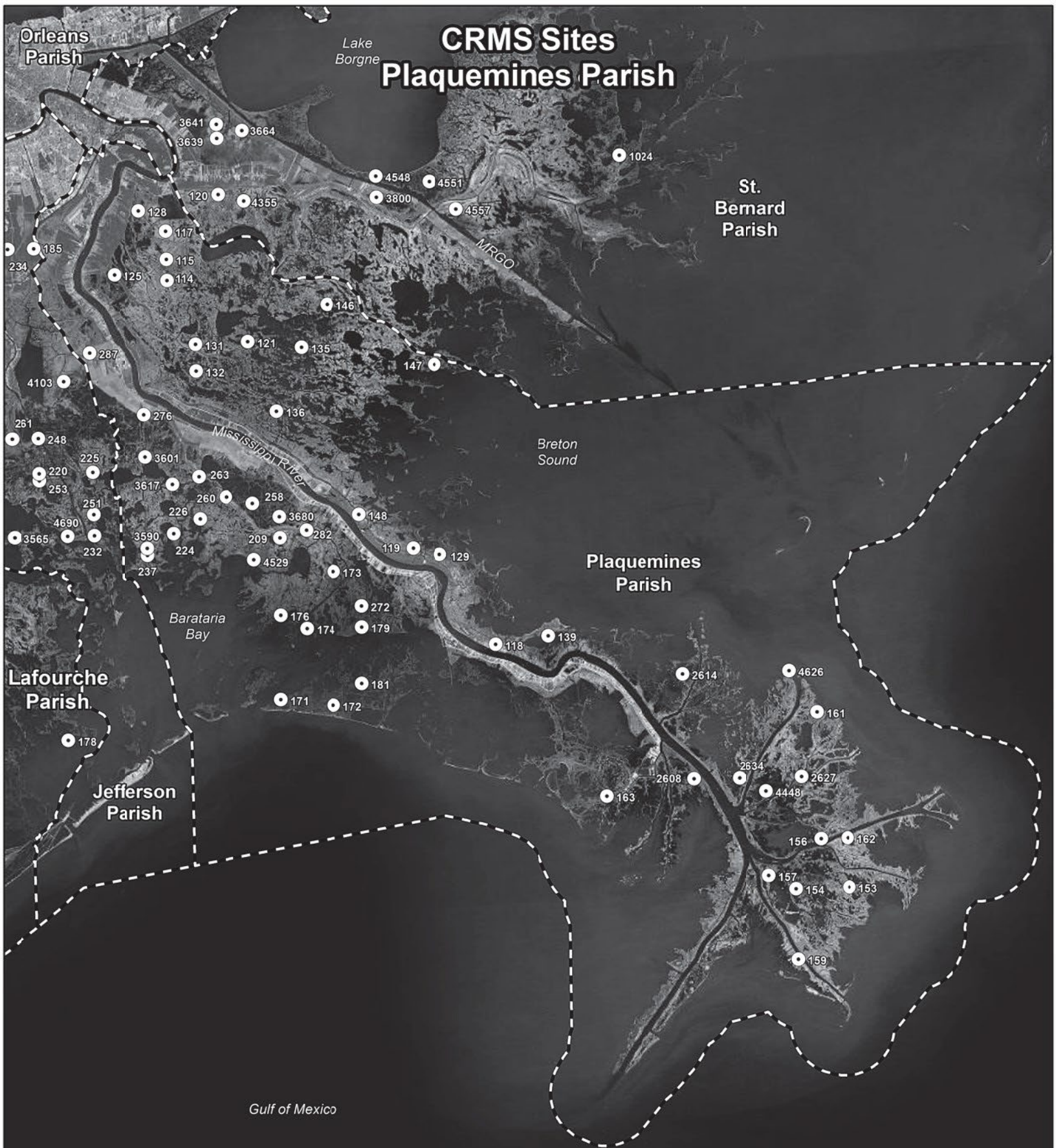


- 103
- 6209
- 4094
- 2854
- 6
- 3667
- 6090
- 6088
- 86
- 35
- 4407
- 4406
- 4110
- 3784
- 3626
- 2
- 4107
- 3650
- 4572
- 3641
- 3639
- 3664
- 4548
- 4551
- 3800
- 4557
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- 3166
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- 234
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- 120
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- 114
- 125



Map Date: 8/7/2017
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 Service Layer Credits: Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

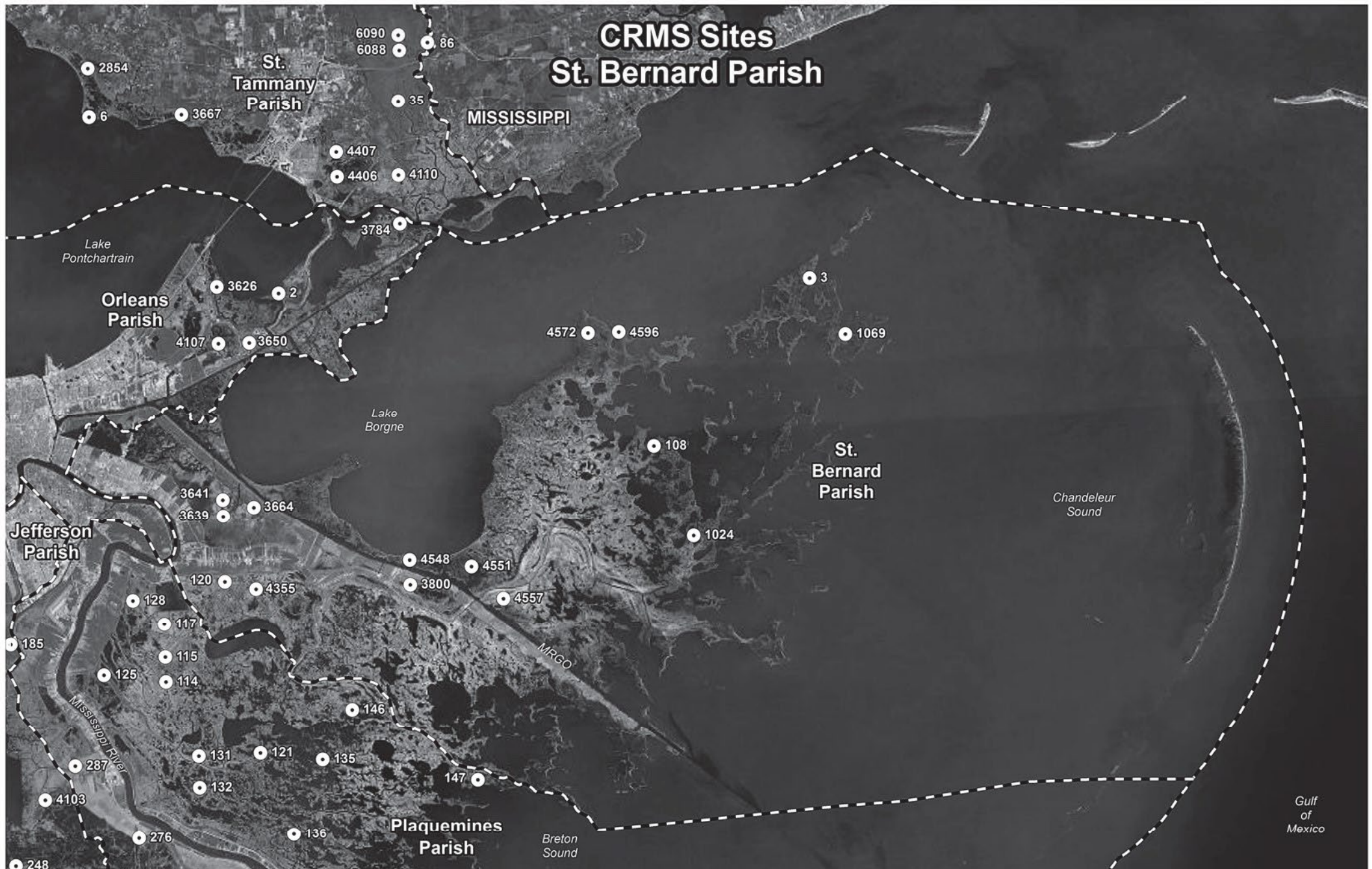
CRMS Sites Plaquemines Parish



● CRMS Site
- - - Parish Boundary



CRMS Sites St. Bernard Parish



● CRMS Site
- - - Parish Boundary



Map Date: 8/7/2017
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Service Layer Credits: Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CRMS Sites Vermilion Parish

Jefferson
Davis
Parish

Lafayette
Parish

Acadia
Parish

Vermilion
Parish

Cameron
Parish

Iberia
Parish



● CRMS Site

--- Parish Boundary



Map Date: 8/7/2017
Path: //2017040339/

Service Layer Credits: Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

CRMS Sites Ascension, Assumption, and St. James Parishes



● CRMS Site
 - - - Parish Boundary



Map Date: 8/7/2017
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CRMS Sites Calcasieu and Cameron Parishes

TEXAS

Calcasieu Parish

Jefferson Davis Parish

Acadia Parish

Vermilion Parish

Sabine Lake

Calcasieu Lake

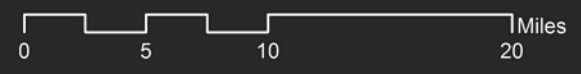
Grand Lake

Cameron Parish

Gulf of Mexico



● CRMS Site
- - - Parish Boundary



Map Date: 8/7/2017
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Service Layer Credits: Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CRMS Sites Iberia, St. Martin, and St. Mary Parishes



Lafayette Parish

St. Martin Parish

Iberville Parish

Iberia Parish

Assumption Parish

Vermilion Parish

St. Martin Parish

St. Mary Parish

Terrebonne Parish

Vermilion Bay

West Cote Blanche Bay

East Cote Blanche Bay

Atchafalaya Bay

Gulf of Mexico

Mississippi River

Lake Verret

Lake Fausse Pointe

● CRMS Site

⋯ Parish Boundary

Map Date: 8/7/2017

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● CRMS Site

--- Parish Boundary

CRMS Sites

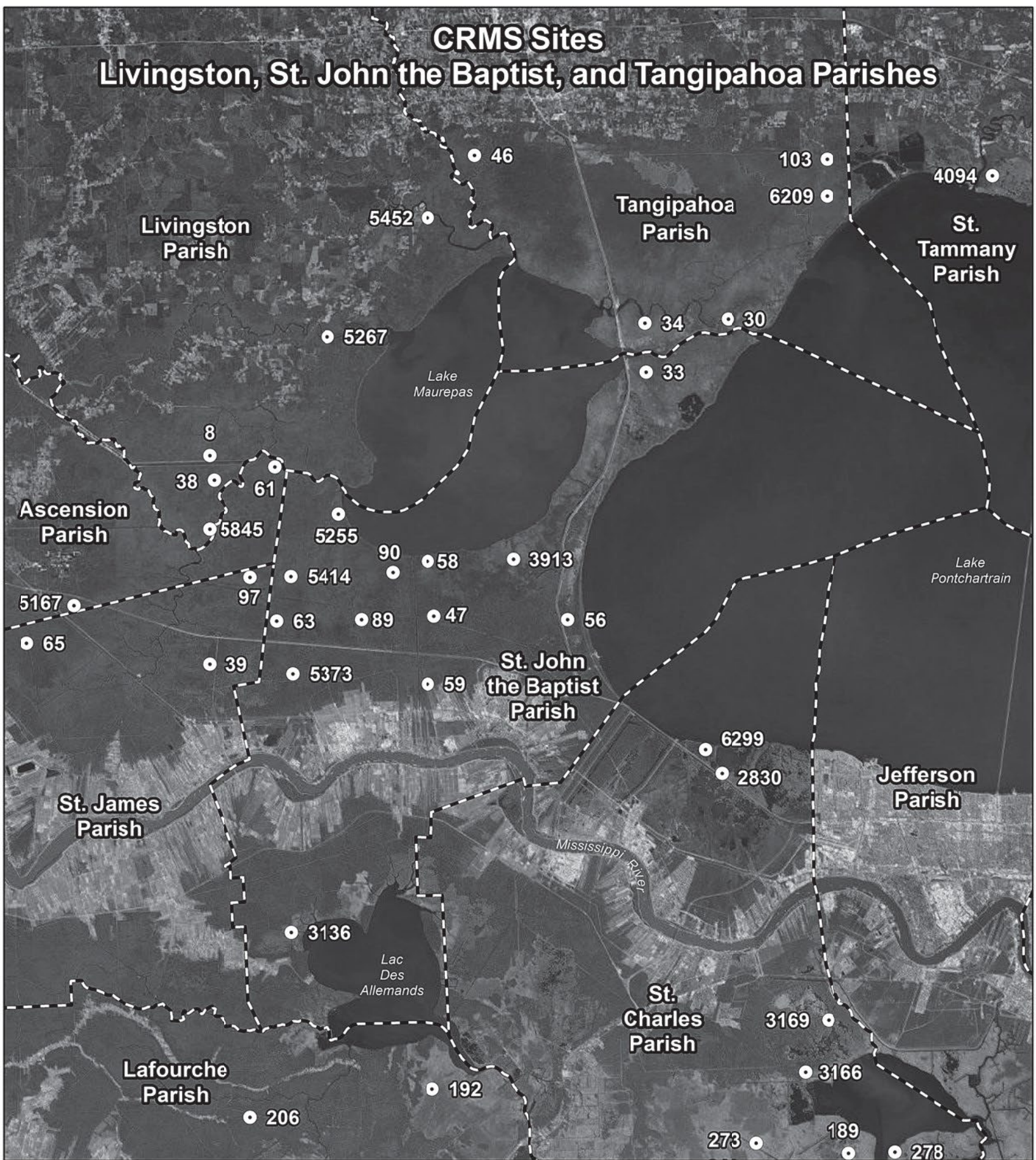
Jefferson, Lafourche, and St. Charles Parishes

Gulf of Mexico

Map Date: 8/7/2017
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 Service Layer Credits: Sources: Esri, DigitalGlobe,
 GeoEye, Earthstar Geographics, CNES/Airbus



CRMS Sites Livingston, St. John the Baptist, and Tangipahoa Parishes

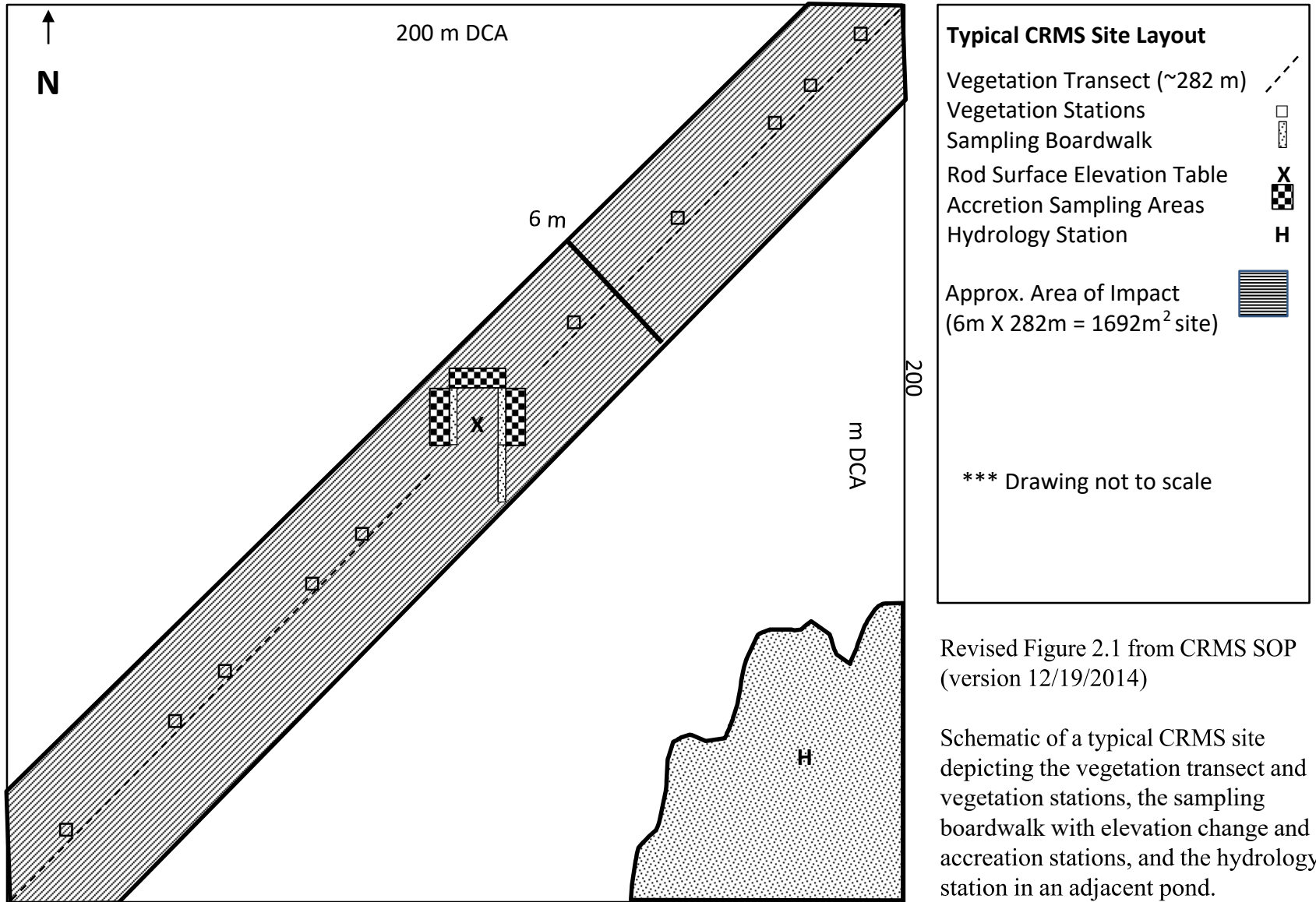


● CRMS Site
 - - - Parish Boundary



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 Service Layer Credits: Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

Permit Application Revised Figure 1



Revised Figure 2.1 from CRMS SOP (version 12/19/2014)

Schematic of a typical CRMS site depicting the vegetation transect and vegetation stations, the sampling boardwalk with elevation change and accretion stations, and the hydrology station in an adjacent pond.

Approximate area of impact
includes access to stations along
length of vegetation transect

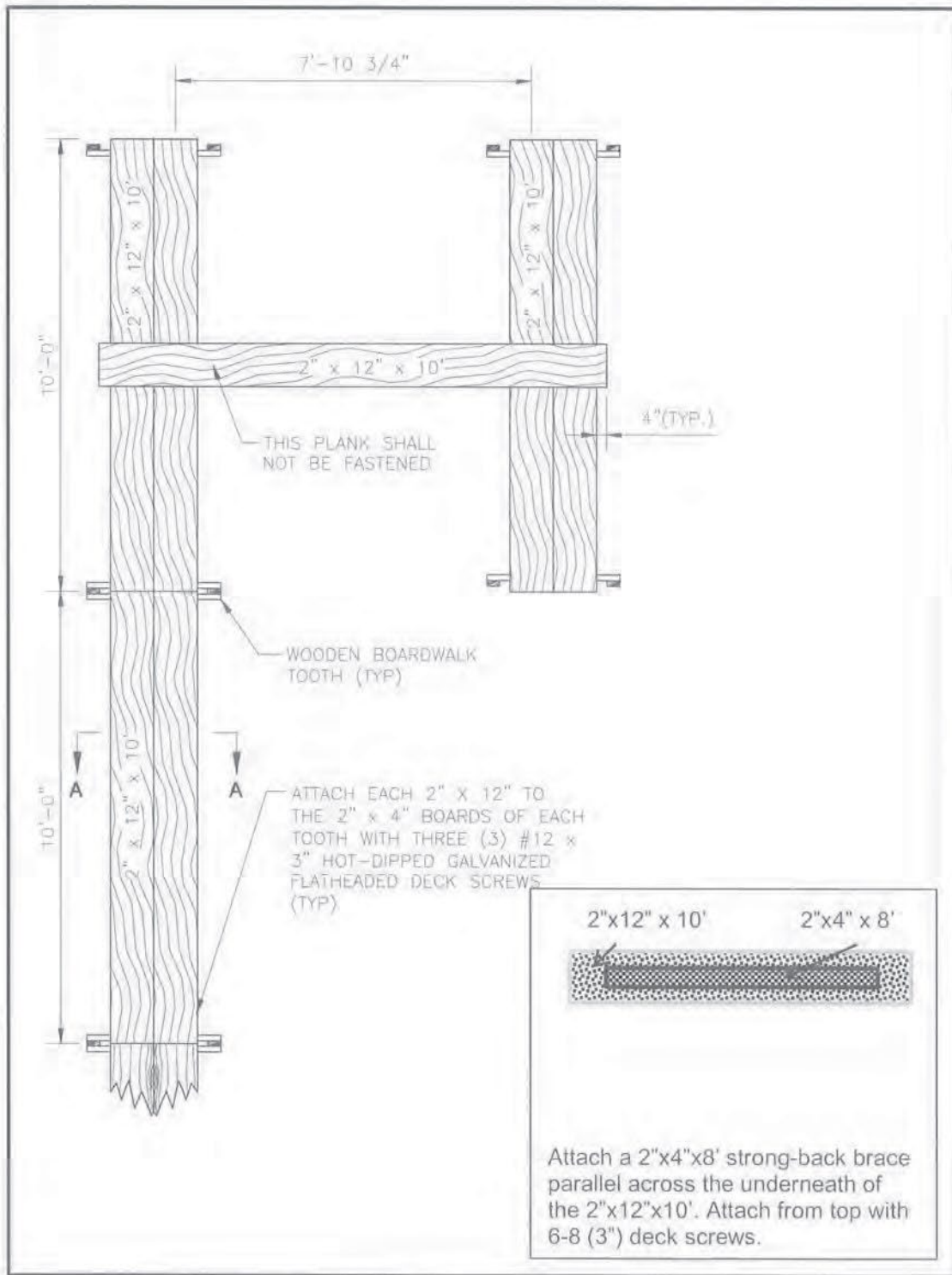


Figure 2.5a. Typical schematic of a base boardwalk in an attached marsh.

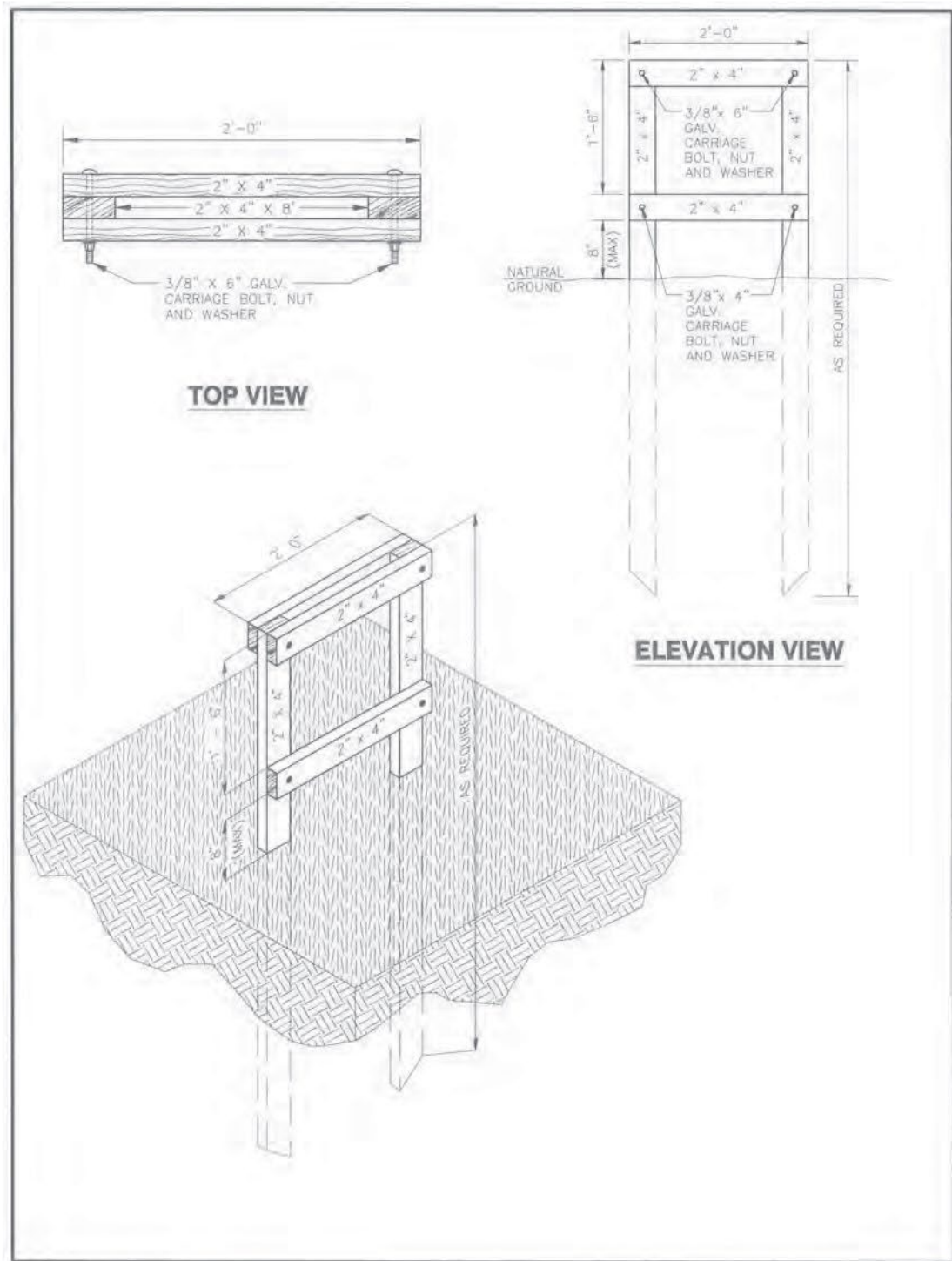


Figure 2.6a. Tooth construction diagram used to support the boardwalk for access to the data collection stations.

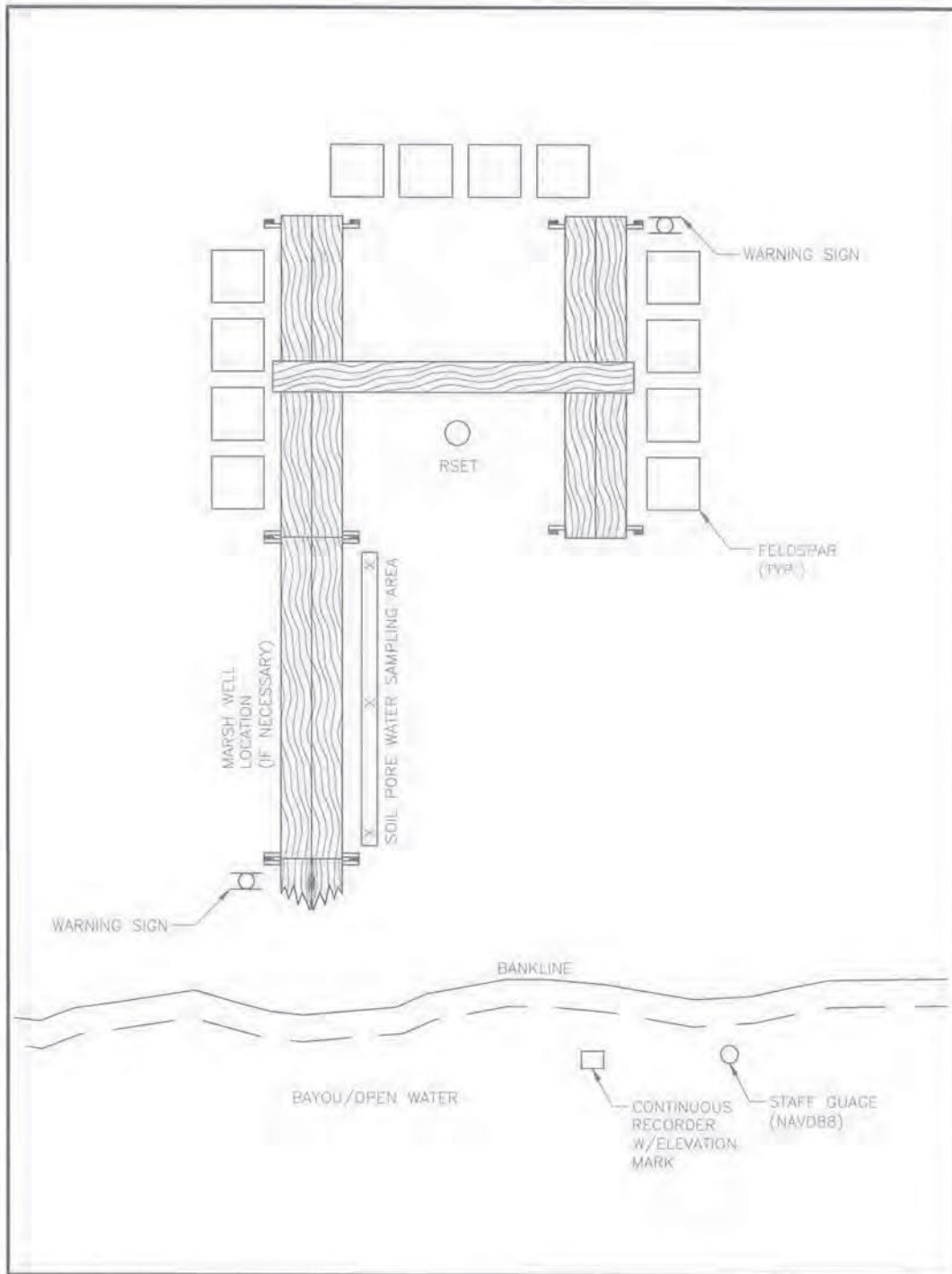


Figure 2.7. Typical layout schematic of the constructed site features at an attached marsh site.

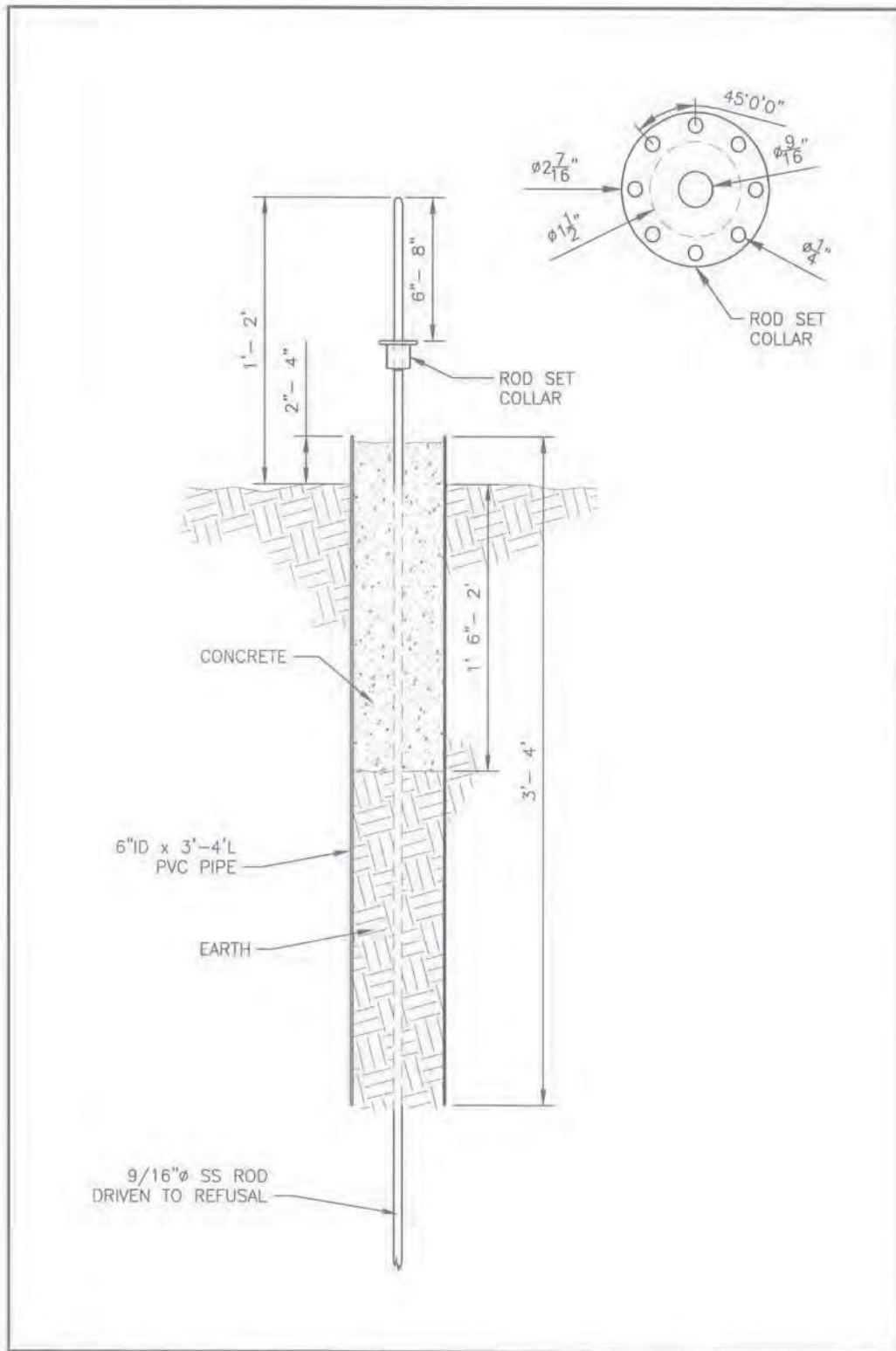


Figure 4.3a. Detailed construction drawing of a typical RSET station with collar. Inset: Collar detail.

