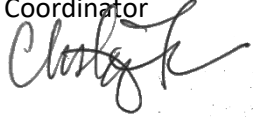




MEMORANDUM FOR: FILE

FROM: Christy Fellas, DWH Environmental Compliance Coordinator
NOAA Restoration Center, Southeast Region 

DATE: July 15, 2019

SUBJECT: No Additional ESA or EFH Consultation Needed for Design Refinements
to the Graveline Bay Intertidal and Subtidal Reef Components, Restoring
Living Shorelines, Phase IV Early Restoration, Mississippi

Based on my review of project materials including design updates (see attached) and in coordination with representatives from NOAA's Protected Resource Division and Habitat Conservation Division in the South East Regional Office, the NOAA Restoration Center determined that design updates do not require re-initiation of consultation with NOAA.

Project elements have been refined and overall acreage has been reduced within the previously considered action area and will not result in any discernible changes to the effects of the project to designated Essential Fish Habitat or species protected under the Endangered Species Act. The EFH and ESA consultations with NMFS were concluded in 2015 and 2016 and can be found in the DWH administrative record. All BMPs and minimization measures in these consultations remain in effect for implementation.

Restoring Living Shorelines and Reefs in Mississippi Estuaries

Graveline Bay Intertidal and Subtidal Reef Component

June 11, 2019

Memo to: Christy Fellas, NOAA Restoration Center, Deepwater Horizon NRDA Program
Erin Chandler, Environmental Compliance Coordinator, Deepwater Horizon Gulf Restoration Office, USFWS
David Felder, Mississippi Field Office, USFWS

The Restoring Living Shorelines and Reefs in Mississippi Estuaries project includes the restoration of secondary productivity through the placement of intertidal and subtidal reefs and the use of living shoreline techniques to reduce shoreline erosion. The project was proposed, evaluated and selected in the *Deepwater Horizon Oil Spill: Final Phase IV Early Restoration Plan and Environmental Assessments* (DOI 2015) referred to hereafter as the Phase IV RP/EA. As the designated Mississippi State Trustee under the Oil Pollution Act, the Mississippi Department of Environmental Quality (MDEQ) is responsible for implementing this project. Eight components were originally identified in the RP/EA as part of the project; three have been eliminated and five components are now in the permitting phase. The project goal is to restore secondary productivity.

ESA consultations for the Graveline Bay Subtidal Reefs and Graveline Bay Intertidal Reefs were previously coordinated with NOAA NMFS (SER-2015-16960 and SER-2015-16959) and USFWS (2015-I-793) in 2015 and 2016. EFH consultations were coordinated with NOAA NMFS in 2015. In 2016, additional design refinements resulted in the anticipated locations of reef locations in Graveline Bayou. Since that time, due to various constraints, the reef locations have shifted back to locations entirely within Graveline Bay, and geotechnical and bathymetric studies and subsequent engineering design has been conducted for the project. The Final Basis of Design Report includes the placement of a minimum of 2 acres of intertidal reef in southern Graveline Bay and approximately 10 acres subtidal reef in southern Graveline Bay, in an integrated subtidal/intertidal reef design. Please note that the new final design reduces the subtidal reef acreage from 70 acres to a maximum of 10 acres, while the intertidal acreage remains at 2 acres.

The project is moving into the permitting phase, and a pre-application meeting will soon be scheduled with the USACE, MDMR and your agency representatives. The following is provided as a brief summary of the relevant refinements to the project design since your agency's review. For the purposes of your review, Table 1 summarizes the engineering design and compares the current design to the data previously presented in the 2015 and 2016 Final Biological Evaluations. The Conceptual Project Design that was analyzed in the 2015 Biological Evaluation is shown in Figure 1 and the design analyzed in the 2016 Biological Evaluation is shown in Figure 2. The new project location area is depicted in Figure 3, and the final engineering design is depicted in Figures 4-5. We do not anticipate that the current design refinements would change your EFH and ESA findings, and are requesting confirmation by email that your agency's project concurrence remains in effect.

Table 1. Graveline Bay Subtidal Reefs in Mississippi Estuaries-Design Refinements post ESA and EFH consultation

Project Element	Parameters	2015 BE	2016 BE	Current Design-Integrated Subtidal/Intertidal Reef
Subtidal Reef	Acreage	Up to 70 acres in Graveline Bay	up to 70 acres in Graveline Bay and Graveline Bayou	12 acres (maximum) (estimated 10 acres subtidal, minimum 2 acres intertidal)
	Construction materials	Approved cultch material (limestone, crushed concrete, oyster shells or combination thereof)	Limestone, crushed concrete, oyster shells or a combination thereof	Aggregate (stone or processed concrete and native or fossilized oyster shell. Other materials may be found or developed (could include concrete components with additives to enhance spat set or shell fish growth).
	Thickness	1 – 12 inches	1 – 12 inches	0.2 foot to 1.0 feet in undulating ridges
	Volume of materials	56,490 cubic yards	56,490 cubic yards	Up to 9,500 cubic yards
	Substrate	Unconsolidated soft bottom and mud	Unconsolidated soft and hard bottom (sand, muddy sand, mud bottom and remnant reef)	4 to 7 feet of soft sediment, underlain by a firm marine clay bearing layer.
	Water depth	0 – 10 feet MLLW	No greater than 0-10 feet MLLW	0 ft to – 1.5 ft MLLW

Table 2. Graveline Bay Intertidal Reefs in Mississippi Estuaries-Design Refinements post ESA and EFH consultation

Project Element	Parameters	2015 BE	2016 BE	
Intertidal Reef	Acreage	Up to 2 acres in Graveline Bay	Up to 2 acres in Graveline Bay and Graveline Bayou	
	Construction materials	Loose or bagged oyster shells	Loose or bagged oyster shells	
	Volume of materials	1,614 cubic yards	not specified	
	Substrate	Soft bottom sand and mud	Unconsolidated soft and hard bottom (sand, muddy sand, and mud bottom)	
	Water depth	Between MLLW and MHHW	Between MLLW and MHHW	

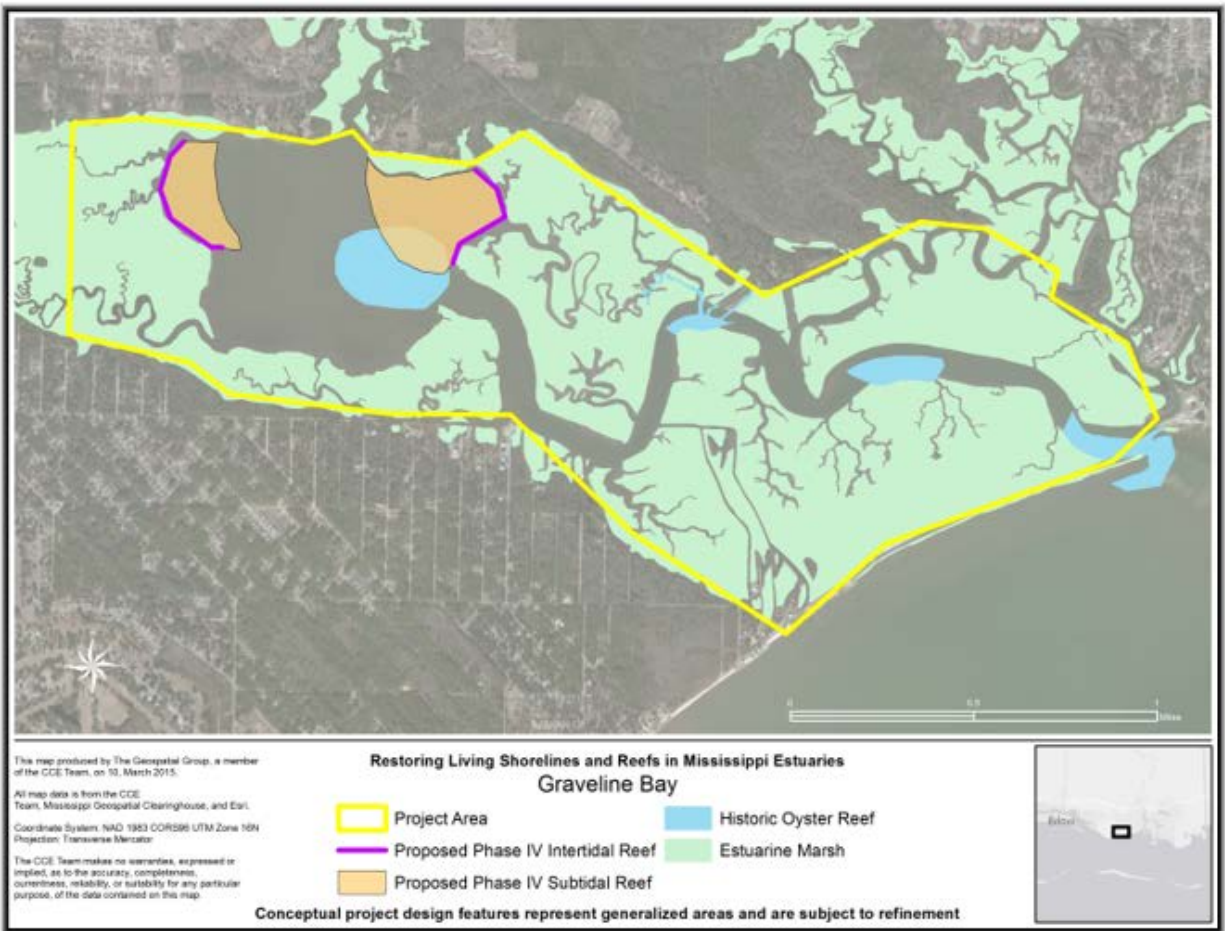


Figure 1: Conceptual project design proposed in the 2015 Final Biological Evaluation, Proposed Intertidal and Subtidal Reefs

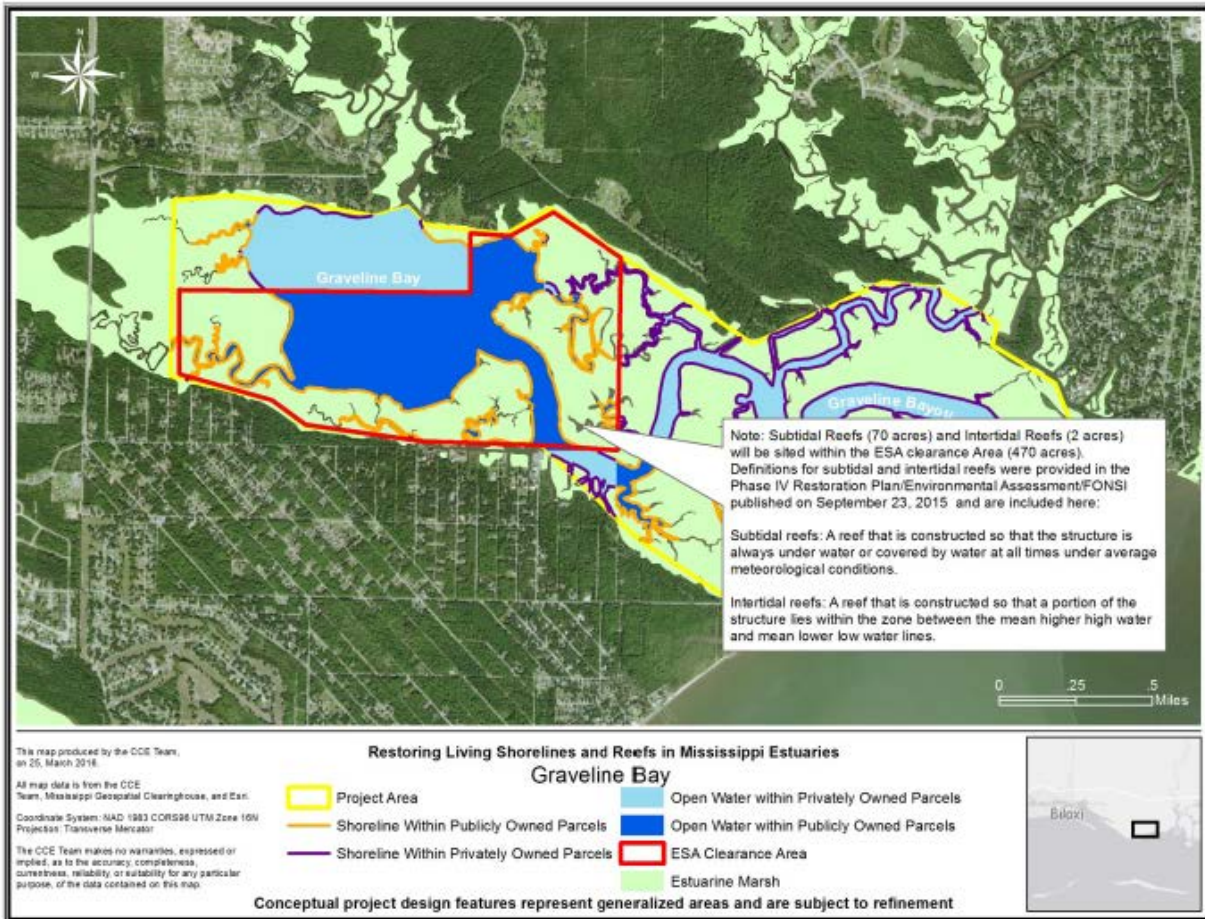


Figure 2: Conceptual project design proposed in the 2016 Final Biological Evaluation

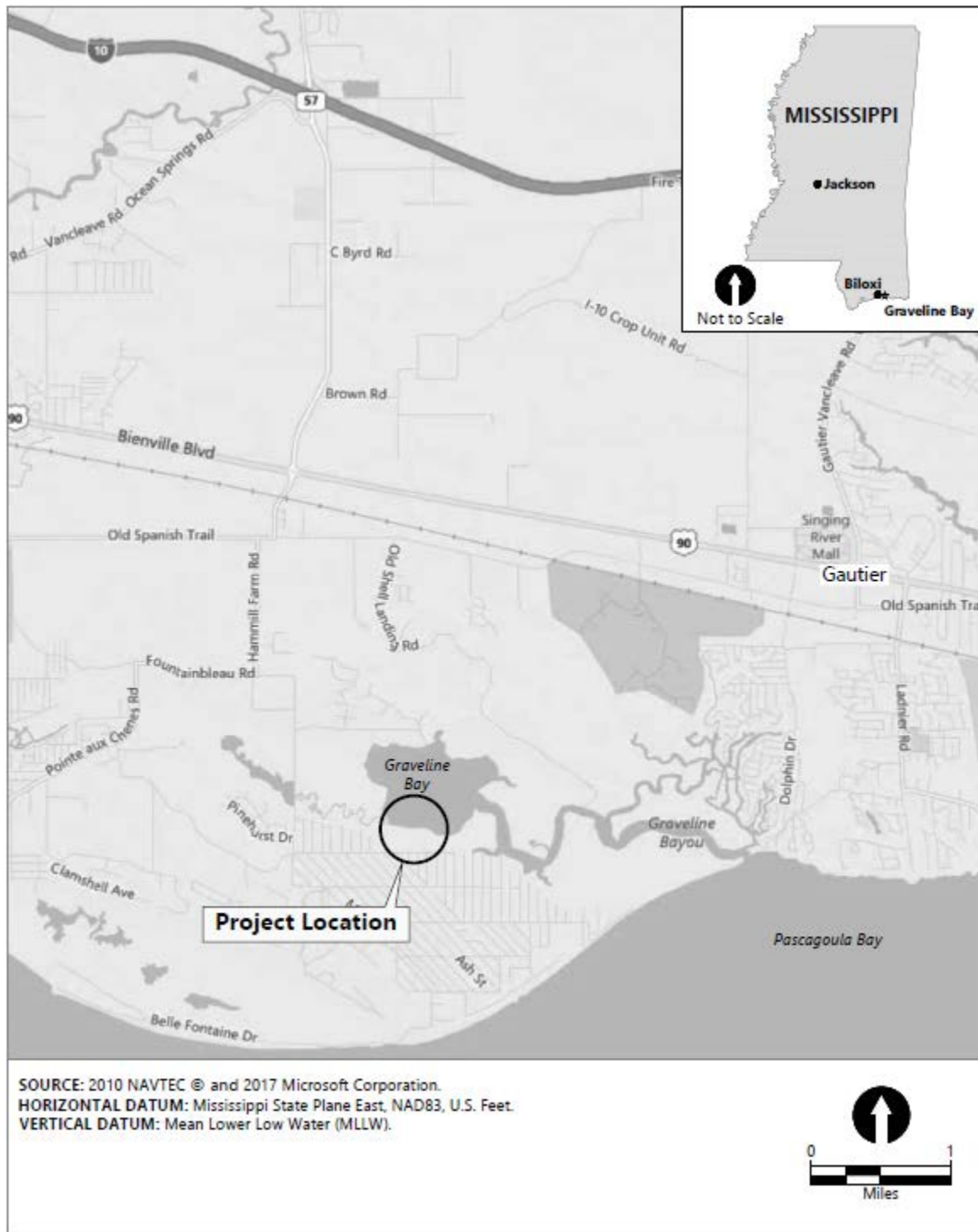


Figure 3: Current Graveline Bay Project Location

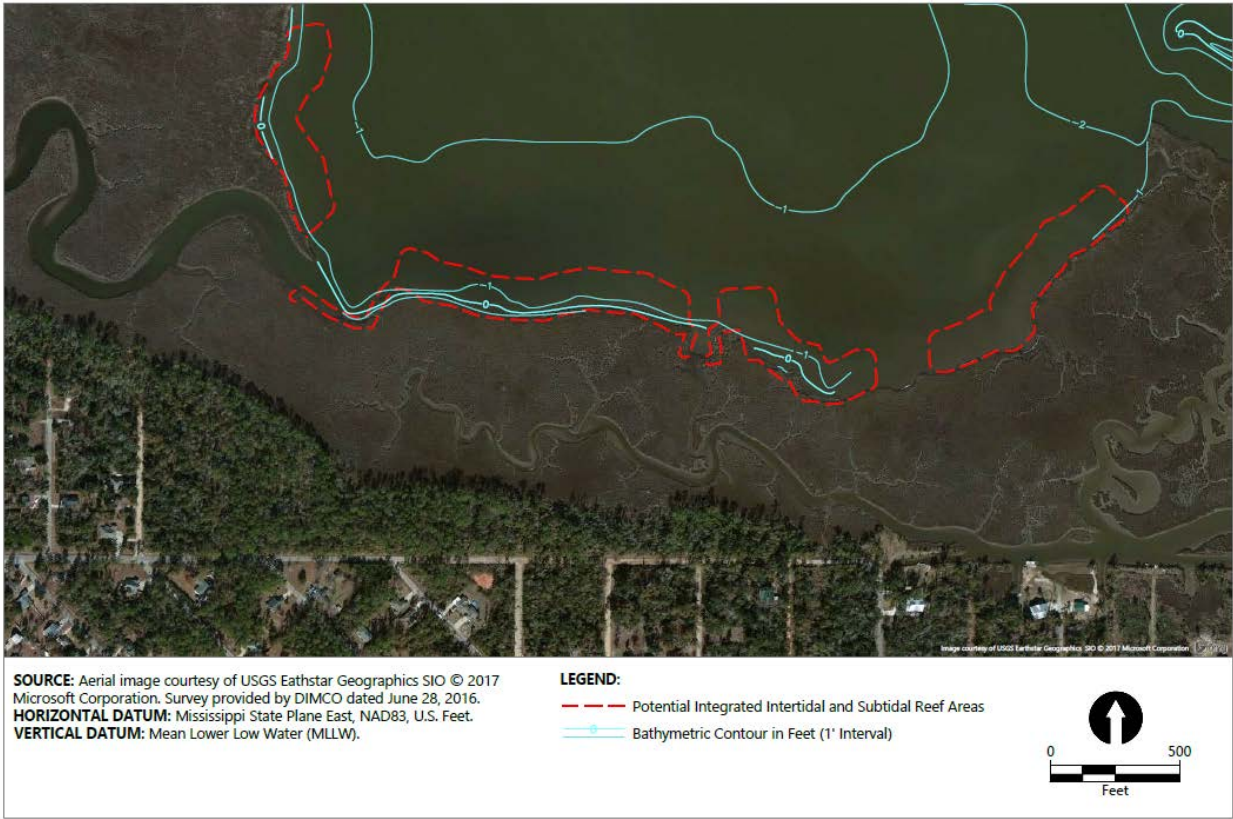
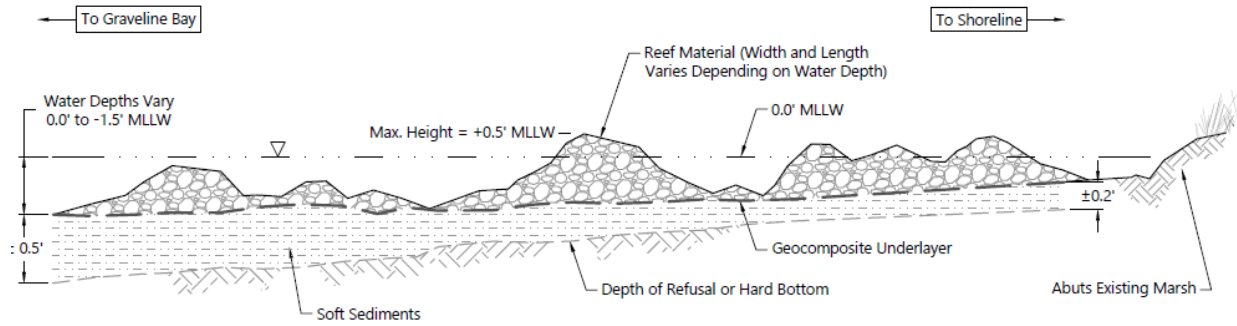


Figure 4: Current Design Graveline Bay Subtidal Reef in Plan View



Typical Intertidal and Subtidal Reef Detail

Not to Scale

NOTE: Soft sediments will be compressed, displaced, or partially compressed by reef materials, leaving aggregate on the surface for shellfish habitat. Minimal material thickness between ridges.

Figure 5: Current Design Graveline Bay Subtidal/Intertidal Reef in Profile View

References:

DOI (Department of the Interior), 2015. *Deepwater Horizon Oil Spill: Final Phase IV Early Restoration Plan and Environmental Assessments*. September 2015.