Subject: DWH-Early Restoration- Essential Fish Habitat Consultation Initiation-Florida Artificial Reef Project
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Date: 2/26/2014 3:22 PM
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Mr. Thompson,
Attached is the Essential Fish Habitat Assessment for the **Florida Artificial Reef Project** . This project is being proposed in the Deepwater Horizon Draft Phase III Early Restoration plan and Programmatic Environmental Impact Statement. Please consider this our initiation of our Essential Fish Habitat consultation. If you anticipate this consultation requiring more than 30 days (March 28, 2014) please let me know.

If you have any questions or require additional information, please contact me at 409-621-1248 or at jamie.schubert@noaa.gov.
Thanks,

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Attachments:

DWH-ER-FINAL_EFH-Florida Artificial Reef-2014-02-13.docx 1.0 MB

Determination of Effect on Essential Fish Habitat from Florida Artificial Reef project

EFH overview from Magnuson Stevens Act

The 1996 Magnuson-Stevens Act requires cooperation among the National Marine Fisheries Service (NMFS), anglers, and federal and state agencies to protect, conserve, and enhance Essential Fish Habitat (EFH). EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The designation and conservation of EFH seek to minimize adverse effects on habitat caused by fishing and non-fishing activities.

Project description

Artificial Reef Construction Material Type and Amount by County

Construction of artificial reefs is proposed in deepwater habitats of the Gulf of Mexico and in shallower water near the shorelines of Escambia, Santa Rosa, Okaloosa, Walton, and Bay Counties, Florida. Potential locations for reef emplacements are indicated in Figure 1. Construction activities would include placement of linear structures consisting of concrete and stone rubble and pre-fabricated artificial reef modules. Deeper water "nearshore" reefs would have a single prefabricated, modular design (see Figure 2 for an example). Shallower "snorkeling" reefs would have a layered, piling-mounted design with spacers between the disk shaped layers (see Figure 3 for an example). No material would exceed 8 feet in height, and a minimum clearance of 26 feet from the top of the employed material relative to Mean Lower Low Water (MLLW) shall be maintained at all times.

Artificial reefs would be constructed on several sites using a similar process; however, the average water depth and substrate composition of the water bottom at each reef site may differ. A survey would be conducted to determine the placement, alignment, and boundaries of the artificial reefs. All artificial reef installation measures have yet to be finalized, but the following installation process would likely be used during construction.

Modules would be fabricated and staged at the reef manufacturer's location and then transported to a contractor's staging area. At this location, the reef modules for each deployment would be loaded onto a deployment vessel equipped with a crane for loading/offloading the prefabricated and disk modules. Deployment vessels would travel to the reef locations where boundaries would be marked by the county or their designee using a sub-meter accurate global positioning system. Disk modules would be assembled on the ship immediately prior to deployment. Each reef module would be lifted separately, by crane, from the barge deck using a pelican hook and then lowered to the seafloor. Modules would be deployed on either side of the vessel in a specific

order and adjusted so each successive drop would be far enough from the previous drop to prevent any two modules from touching.

Escambia County

Although solicitation regulations would apply, Escambia County's Marine Resources Division (MRD) would likely use a concrete, prefabricated tetrahedral artificial reef module commonly deployed in the northeastern Gulf of Mexico, like Florida Limestone or EcoSystem Reef modules from Walter Marine. The "Florida Limestone" module measures 10 feet along each base and is 8 feet in height, yielding a total volume (per module) of approximately 116 cubic feet. Each module covers approximately 43.3 square feet of seafloor area. Alternatively, Walter Marine EcoSystem Reef modules consist of discs made of concrete and limestone rock with a hole formed in the center to fit over a composite Pearson piling. The conceptual proposal suggests various sizes of patch reefs, designed according to the ratio of potential open seafloor forage space Escambia County would likely require 1,333 modules for the 43.31-square-foot footprint of Escambia Nearshore East sites and the 57,732-square-foot footprint of the West sites. Additional module numbers would be determined for other sites depending on the funding available to Escambia County.

Santa Rosa County

Artificial reef modules, such as Florida Limestone discussed above, would be deployed at two existing reef sites in Santa Rosa County, the SR-26 Reef Site and the SR-27 Reef Site. At the SR-26 Reef Site, 60 pole mounted circular disk EcoSystem Reef snorkel modules would be placed, with 19.6 square feet for each module and a total footprint for all modules of 1,177 square feet. At the SR-27 Reef Site, 703 Walter Marine Florida Limestone–type modules, with 43.3 square feet for each module, would be emplaced, creating a 30,448-square-foot total footprint for all modules combined. The total footprint for both SR-26 and SR-27 Reef Sites would be 31,625 square feet.

Okaloosa County

The current plan is that each pre-fabricated piling set in the project area would have three circular disks per piling, though the number of disks per piling could be doubled depending on further funding. The circular base footprint would be 19.62 square feet for each EcoSystem Reef snorkel module proposed to be used. The total footprint for snorkel reef modules could range from 1,020 square feet to roughly 36,000 square feet depending on the eventual level of deployment. The county has also proposed using re-purposed concrete military targets and concrete culverts.

Walton County

An estimated 840 prefabricated concrete modules made with natural limestone, similar to Florida Limestone modules, each having a 43.3-square-foot base footprint, would be distributed among three existing artificial reef locations for an approximate total footprint of 36,372 square feet.

Bay County

Artificial reef installation sites within the waters of this county would likely require one of the following material types and amounts: (1) 260 Florida Limestone modules at 43.3 square feet per module, for a total footprint of 11,261 square feet; (2) 206 EcoSystem modules at 19.62 square feet for each circular EcoSystem snorkel reef module with a total footprint of 4,041 square feet; (3) 182 Grouper modules at 50 square feet for each circular EcoSystem snorkel reef module, with a resulting 9,100-square-foot total footprint; (4) 30 sculptures or alternative modules at 44.3 square feet for each unit, with a resulting 1,299-square-foot total footprint of all sculptures or alternative prefabricated units combined. These proposed reef structures would have a total estimated footprint of 30,296 square feet in Bay County.

Artificial reef installation is expected to take 1 to 2 years once design plans are finalized. Estimates of in-water work are difficult to project as they would reflect conditions at the time of the successful bid (e.g., local conditions, available equipment, and nature of materials to be placed). Depending on module design/size or use of secondary-use concrete precast material, project placement could take a single day or take multiple days. Typically, a barge would carry one load of materials per day, return to the shore/staging area, reload (which might take a day), and then be deployed the next day. Cumulatively, the in-water work time is likely to be best measured in terms of weeks of effort. A general timeline would be as follows:

- Permitting Complete: Fall 2014
- Contract Bid: post Final ERP, Spring 2014
- Construction Start: Summer 2014
- Construction Complete: Sumer 2016, for final reef placement activity

Monitoring activities would be performed at various times, beginning before construction and continuing after construction. Monitoring would ensure project designs are correctly implemented during construction and in a subsequent period, defined by contract, where corrective actions could be taken. Monitoring activities would include the following:

- Topographic/bathymetric surveys

- Public use monitoring

Pre-restoration deployment would be conducted to confirm that no hard substrate is already present in areas where artificial reef structures would be placed. Construction-related monitoring would consist of having divers observe the placement of the modules and record exact coordinates of placed materials so that existing state-maintained artificial reef databases can be updated for the new placements.

Post-construction monitoring would be conducted to evaluate the project's performance over time with respect to the agreed-upon offsets, goals, and objectives. In general, monitoring would evaluate the production and support of organisms on the living shoreline structure (e.g., secondary production), document and measure physical changes to the reef over time, and possibly provide observations of public use. Components of this monitoring would include collecting information with respect to reef height and structural integrity, water quality parameters (e.g., salinity, dissolved oxygen), bivalve and algal presence, coverage, and composition on the reef.

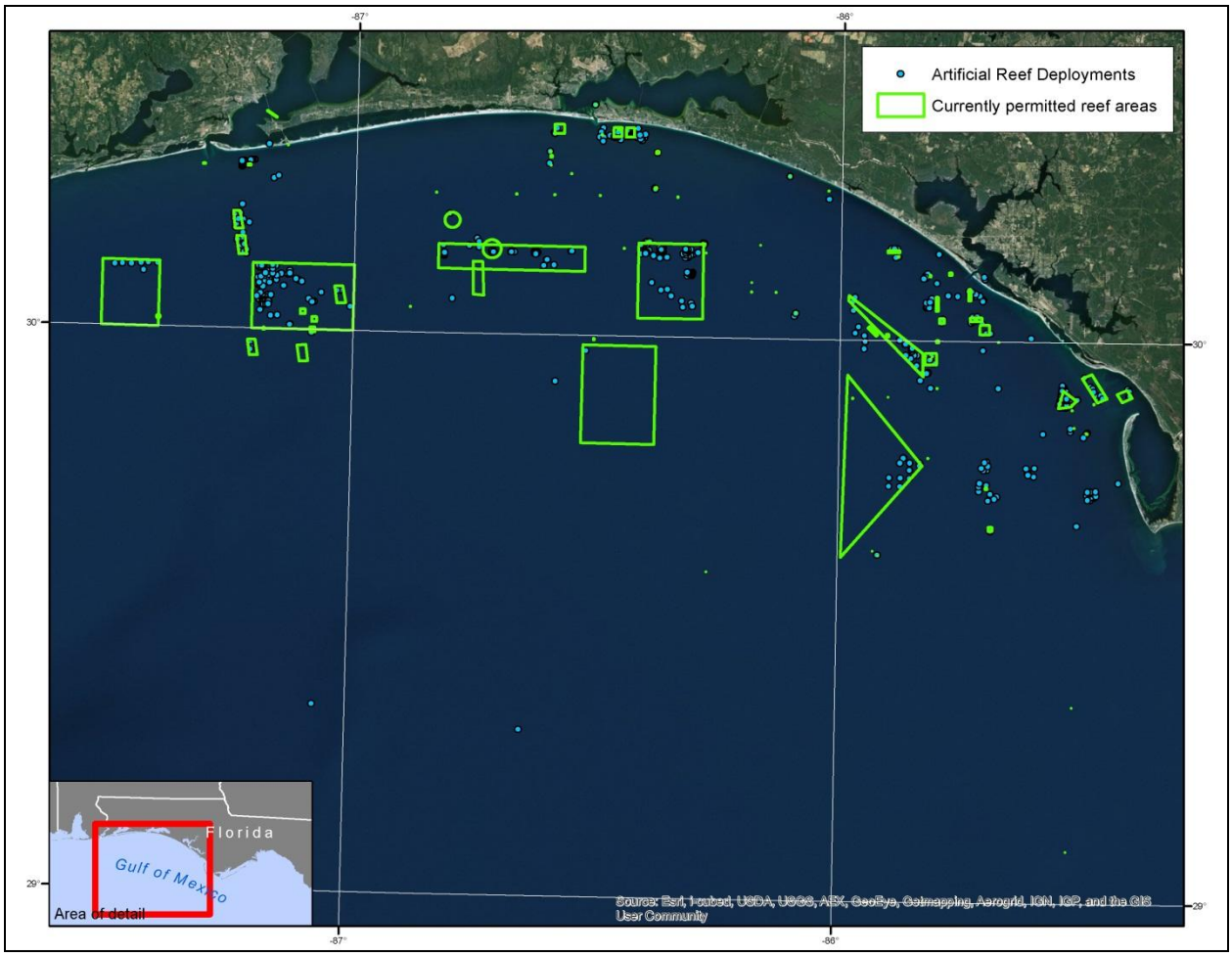

Figure 1. Map illustrating the potential locations for artificial reef structures (blue dots) and areas where artificial reef creation permits have already been approved (green outlined areas).

Figure 2. Example of a modular artificial reef unit that would likely be placed in deeper water.

Figure 3. Example of a layered artificial reef unit that would likely be placed in shallower water.

Federally managed fisheries and EFH (develop table from

Information on designated EFH in the Gulf of Mexico was obtained in September, 2013 from the NMFS' EFH web site at *http://www.habitat.noaa.gov/protection/efh/newInv/index.html*. Table 1 provides a summary of the species identified as having designated EFH for one or more life stages within the potential project implementation areas.

Table 1. Federally managed highly migratory species (HMS) with designated Essential Fish Habitat (EFH) in the proposed project area.

EFH Category	**Species**
Atlantic Highly Migratory Species	Angel Shark Adult and Juvenile
	Atlantic Sharpnose Shark Adult
	Atlantic Sharpnose Shark Juvenile
	Atlantic Sharpnose Shark Neonate
	Bignose Shark Adult and Juvenile
	Blacknose Shark Adult
	Blacknose Shark Juvenile
	Blacknose Shark Neonate
	Blacktip Shark Adult
	Blacktip Shark Juvenile
	Blacktip Shark Neonate
	Blue Marlin Adult
	Blue Marlin Juvenile
	Bluefin Tuna HAPC area
	Bluefin Tuna Spawning, Eggs, and Larvae
	Bonnethead Shark Adult
	Bonnethead Shark Juvenile
	Bonnethead Shark Neonate
	Bull Shark Adult
	Bull Shark Juvenile
	Dusky Shark Adult Juvenile
	Finetooth Shark Adult and Juvenile
	Finetooth Shark Neonate
	Great Hammerhead Shark All
	Lemon Shark Adult

EFH Category	Species
	Lemon Shark Juvenile
	Longbill Spearfish Adult and Juvenile
	Longfin Mako Shark All
	Nurse Shark Adult
	Nurse Shark Juvenile
	Oceanic Whitetip Shark All
	Sailfish Juvenile
	Sandbar Shark Adult
	Sandbar Shark Neonate
	Scalloped Hammerhead Shark Adult
	Scalloped Hammerhead Shark Juvenile
	Scalloped Hammerhead Shark Neonate
	Silky Shark All
	Smooth Dogfish
	Spinner Shark Adult
	Spinner Shark Juvenile
	Spinner Shark Neonate
	Tiger Shark Juvenile
	Tiger Shark Neonate
	Whale Shark All
	White Marlin Adult
	White Marlin Juvenile
Gulf of Mexico Red Drum	Red Drum
Gulf of Mexico Shrimp	Brown Shrimp
	Pink Shrimp
	Rock Shrimp
	Seabob Shrimp
	White Shrimp
Reef Fish Resources of the Gulf of Mexico	Almaco Jack
	Banded Rudderfish
	Black Grouper
	Blackfin Snapper

EFH Category	Species
	Blueline Tilefish
	Cubera Snapper
	Gag
	Goldface Tilefish
	Gray (Mangrove) Snapper
	Gray Triggerfish
	Greater Amberjack
	Hogfish
	Lane Snapper
	Lesser Amberjack
	Mutton Snapper
	Nassau Grouper
	Queen Snapper
	Red Grouper
	Red Snapper
	Scamp
	Silk Snapper
	Snowy Grouper
	Speckled Hind
	Tilefish
	Vermilion Snapper
	Warsaw Grouper
	Wenchman
	Yellowedge Grouper
	Yellowfin Grouper
	Yellowmouth Grouper

Assessment of effects to EFH

It is unlikely that the placement and use of artificial reef modules/materials in permitted areas would have any adverse effect to federally managed species or designated EFH. Any initial disturbance would be very brief in duration, would not interfere with EFH used for migration because of the depth, spawning or refuge areas, and would eventually be likely to benefit many federally managed species with the enhancement of habitat diversity supporting a wider variety of fish.

The proposed project would likely result in short-term, minor adverse impacts to fish that may be present during the in-water construction as a result of turbidity and noise disturbance during construction of the artificial reefs. Benthic organisms present in the soft substrate may also be adversely affected during reef construction. However, the proposed project is intended to increase available reef habitat by providing appropriate habitat for species that inhabit reef ecosystems, as well as surface for attachment of sessile organisms. Therefore, reef construction effects would be short-term and minor, while benefits to the ecosystem would endure long-term.

Short-term disturbances from noise and turbidity would occur, which may affect sea turtles, manatees, or dolphins that could be present in the in-water work area. However, these are highly mobile species and would be able to move away during in-water activities. Additionally, should a sea turtle or manatee be encountered during installation of the project, the crews would allow these species to exit from the project vicinity before commencing the artificial reef expansion activities, consistent with adherence to BMPs such as the NOAA conditions for in-water work for sea turtles and smalltooth sawfish (NOAA, 2006). Therefore, potential impacts or disturbances to listed species would be short-term and minor. Additionally, the artificial reef project would adhere to all applicable federal, state, and local permit conditions for the protection of marine mammals and other listed species (e.g., FWC, 2011; NOAA, 2006).

Impacts to EFH or the natural processes sustaining them may be detectable, but would be localized and would not measurably alter natural conditions. Small changes to local population numbers, population structure, and other demographic factors would be unlikely to occur given the relatively small footprint of the reef placements relative to nearby similar habitat. Specifically, sufficient habitat would remain functional at both the local and range-wide scales to maintain the viability of the species. Therefore, adverse effects to EFH would be short-term and minor.

Finally, the lack of adverse effects is a reflection of the *net* impact of the project which is focused on restoring a habitat critical to native species. It is anticipated that the proposed project would provide a net benefit to the communities present, to the habitat services they provide, and to biological resources that depend on them.

Conclusion

Potential impacts to EFH in the proposed locations for the Artificial Reef restoration project have been assessed and it has been determined that the restoration is not likely to adversely affect EFH. Although implementing the project would result in a small amount of habitat conversion of one EFH habitat type to another, adjacent habitat would remain unchanged and would be available use. Additionally, the habitat conversion would be expected to provide a more diverse habitat, which would benefit some species. Disturbance to any EFH and species using the habitat

in areas adjacent to artificial reef placement would be brief and insignificant, with risks further mitigated by following identified best management practices during construction. No adverse impacts to other EFH types would result from the proposed restoration techniques.

References

Florida Fish and Wildlife Conservation Commission (FWC), 2011. Standard Manatee Conditions for In-Water Work. http://myfwc.com/media/415448/Manatee_StdCondIn_waterWork.pdf Accessed August 13, 2013.

NOAA. 2006. Sea Turtle and Smalltooth Sawfish Construction Conditions. http://sero.nmfs.noaa.gov/pr/endangered%20species/Sea%20Turtle%20and%20Smalltooth%20Sawfish%20Construction%20Conditions%203-23-06.pdf Accessed July 16, 2013.