



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
Southeast Regional Office  
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F/SER31:DPO  
SERO-2021-02759

Christina Fellas, DWH Environmental Compliance Coordinator  
NOAA Restoration Center  
Department of Commerce  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701

Dear Ms. Fellas:

This letter responds to your request for consultation with us, the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act (ESA) for the following action.

<b>Applicant</b>	<b>SERO Number</b>	<b>Project Type</b>	<b>Water Body</b>
Florida Trustee Implementation Group, Florida Fish and Wildlife Conservation Commission (FWC)	SERO-2021-02759	Artificial reef creation and restoration	Northern Gulf of Mexico, along Florida Panhandle

### **Consultation History**

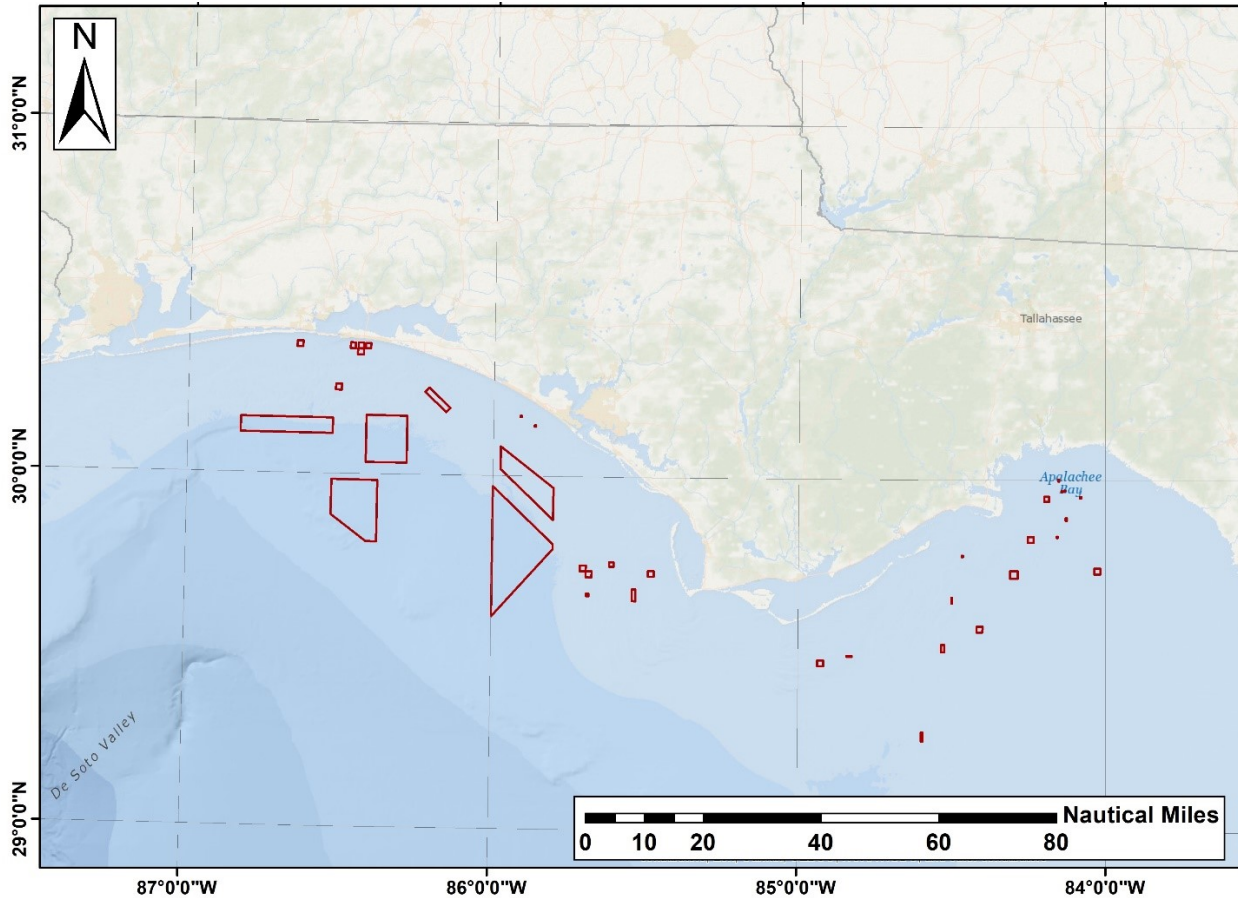
We received your letter requesting consultation on February 3, 2021. We requested additional information on October 20, 2021. We received a final response on November 3, 2021, and initiated consultation that day. The project has been assigned a tracking number in our NMFS Environmental Consultation Organizer, SERO-2021-02759. Please refer to this number in any future inquiries regarding this project.



**Project Locations for Phase II (not previously included in the Phase I consultation).**

<b>Permit Name</b>	<b>Permit Number</b>	<b>County</b>	<b>Latitude/Longitude (Center Point, North American Datum 1983 )</b>	<b>Center Point Distance from Shore (nmi)</b>	<b>Depth (feet [ft])</b>
Bay Site B (LAARS B)	SAJ-1993-00660 (SP-LSL)	Bay	29.79214°N, 85.93166°W	25.20	114-126
SAARS D	SAJ-2011-03042 (IP-LSL)	Bay	30.16986°N, 85.91042°W	3.69	65-70
Bay Site A (LAARS A)	SAJ-1993-00660 (SP-LSL)	Bay	29.98373°N, 85.88413°W	12.97	91-105
SAARS C	SAJ-2011-03041 (IP-LSL)	Bay	30.14319°N, 85.86375°W	3.67	60-64
Bridge Span 11 Site	SAJ-2006-01340 (IP- MMW)	Bay	29.74167°N, 85.70292°W	17.94	95-105
South Site	SAJ-2006-01340 (IP- MMW)	Bay	29.72500°N, 85.68371°W	17.20	95-105
Tower Site	SAJ-2006-01340 (IP- MMW)	Bay	29.72833°N, 85.48083°W	5.02	65-75
Buddy Ward	SAJ-2018-02268 (SP-LSL)	Franklin	29.47986°N, 84.92713°W	9.01	40-45
St. George Island Bridge	SAJ-2003-08709 (IP-TLZ)	Franklin	29.49995°N, 84.83330°W	10.47	60-70
AARA Deep Site	tbd	Franklin	29.27251°N, 84.59574°W	31.12	100-120
Carrabelle 10- Mile	SAJ-2001-00310 (SP-JML)	Franklin	29.65948°N, 84.50000°W	11.08	50-60
St. Teresa Reef Site	SAJ-2015-0966 (SP-SWA)	Franklin	29.78500°N, 84.46659°W	6.73	30-35
Carrabelle 20- Mile	SAJ-2021-01595	Franklin	29.57727°N, 84.40922°W	18.89	80-90
Franklin Inshore NRDA	tbd	Franklin	29.83170°N, 84.24332°W	1.30	25-35
Franklin South NRDA	tbd	Franklin	29.52317°N, 84.52898°W	0.94	60-70
Sandy Reef	SAJ-1995-07320	Gulf	29.66667°N, 85.68750°W	18.23	95-105
Gulf Offshore NRDA	tbd	Gulf	29.75387°N, 85.61000°W	0.74	85-95

<b>Permit Name</b>	<b>Permit Number</b>	<b>County</b>	<b>Latitude/Longitude (Center Point, North American Datum 1983 )</b>	<b>Center Point Distance from Shore (nmi)</b>	<b>Depth (feet [ft])</b>
Gulf South NRDA	tbd	Gulf	29.66713°N, 85.53674°W	1.58	75-85
Okaloosa C	SAJ-1996-03565 (SP-SWA)	Okaloosa	30.13637°N, 86.67739°W	17.84	90-160
Okaloosa Fish Haven 20	SAJ-2021-01854	Okaloosa	30.36645°N, 86.63775°W	2.07	70-75
Okaloosa Fish Haven 21	SAJ-2021-01854	Okaloosa	30.24555°N, 86.50890°W	9.38	90-110
Okaloosa Fish Haven 11	SAJ-20002-04996 (IP-TLZ)	Okaloosa	30.36350°N, 86.46425°W	1.35	55-65
Okaloosa B	SAJ-1996-03565 (SP-SWA)	Okaloosa	29.89600°N, 86.45303°W	33.54	180-300
Okaloosa Fish Haven 22	SAJ-2021-01854	Okaloosa	30.34640°N, 86.43915°W	2.55	65-70
Okaloosa Fish Haven 12	SAJ-20002-04996 (IP-TLZ)	Okaloosa	30.36350°N, 86.43833°W	1.38	55-65
Okaloosa Reef #3	87GP60142	Okaloosa	30.36276°N, 86.41457°W	1.24	55-70
Okaloosa A	SAJ-1996-03565 (SP-SWA)	Okaloosa	30.10000°N, 86.35000°W	18.75	100-166
DZ	SAJ-1993-01951	Wakulla	29.73278°N, 84.29726°W	11.86	70-75
Marker 24 Barge	SAJ-1997-02451(SP-LSL)	Wakulla	29.83937°N, 84.15678°W	11.81	26-28
St. Marks Artificial Reef	SAJ-1987-60014(IP-JML)	Wakulla	30.00088°N, 84.15187°W	4.91	18-21
Wakulla Site #2	SAJ-1995-00772 (GP-RH)	Wakulla	29.96898°N, 84.14146°W	7.19	20-25
Wakulla Site #1	SAJ-1995-00772 (GP-RH)	Wakulla	29.97052°N, 84.13242°W	7.28	18-22
OAR2K	SAJ-2000-00947 (IP-TZ)	Wakulla	29.89014°N, 84.12722°W	13.56	50-60
Dog Ballard	SAJ-1993-01520 (SP-LSL)	Wakulla	29.95209°N, 84.08053°W	9.53	25-30
Wakulla Offshore NRDA	tbd	Wakulla	29.74287°N, 84.02593°W	1.34	35-40
Apalachee Bay Site	tbd	Wakulla	29.94746°N, 84.19127°W	0.99	18-22
LAARS A	SAJ-2016-00696 (SP-SWA)	Walton	30.21290°N, 86.18454°W	8.34	75-85



**Image of the reef deployment of Phase II project locations and surrounding area (2021 Keith Mille, FWC Artificial Reef Program)**

**Existing Site Conditions**

All the proposed artificial reef sites are located within open water in coastal waters along the Florida Panhandle, in the northern Gulf of Mexico, ranging from ~ 0.7 - 34 nautical miles (nmi) from coast. The westernmost reef would be located near the Florida/Alabama border, off the coast of Escambia County, Florida. The easternmost reef would be located off the coast of Wakulla County, Florida. Project areas are proposed in water depths ranging from 18 to 300 feet (ft) depth.

No shipwrecks or known historic or cultural resources are present within any of the permitted areas. All sites have been reviewed with the Master Site File. Side scan and magnetometer surveys are completed as required during permitting, and all permitted areas have been reviewed and approved by the Florida Department of State. Some of the permitted areas contain existing permitted artificial reef structures within the boundaries of the permitted area.

Proposed project areas are located only in areas with unconsolidated, soft, sand. The applicant states that no corals or seagrasses are present in the proposed deployment areas.

## **Project Description**

The project would be implemented by FWC, in coordination with Escambia County, Santa Rosa County, Okaloosa County, Walton County, Bay County, City of Mexico Beach, Gulf County, Franklin County, and Wakulla County. Building upon the inter-agency partnerships developed during the Early Restoration Florida Artificial Reef Creation and Restoration project (Phase 1), the project would implement the second phase of artificial reef development across Northwest Florida, creating additional marine recreational fishing and diving opportunities for residents and visitors across the region. See the table above for the information on the proposed site locations, permit details, water depths, and distances from shore.

No demolition, excavation, dredging, or debris removal is anticipated. Artificial reefs would be constructed by placing rock boulders, prefabricated concrete, designed modules, or other approved materials at a depth in compliance with state and federal permits and U.S. Coast Guard navigational clearance and marking requirements. Materials transported to the artificial reef locations would be barged in via specific access routes. Reef material would be clean and free of loose material or contaminants (i.e., free of pollutants, toxins, debris, trash, or other material that could cause entanglement or entrapment of aquatic species) in accordance with permit conditions. Reef material would be deployed using heavy equipment (backhoe, front-end loader, or crane) mounted on a stable vessel or barge. All designed modules would be slowly lowered to the seafloor. Any boulders and secondary-use concrete materials deployed off the contracted vessel or barge are not expected to generate turbidity during construction. The reefs would be designed and constructed with the primary objective to minimize in-water disturbance.

FWC would adhere to the guidelines and specifications described in the NMFS National Artificial Reef Plan (NMFS 2007), the State of Florida Artificial Reef Strategic Plan (FWC 2003), and the Southeast Florida Coral Reef Initiative's Guidelines and Management Practices for Artificial Reef Siting, Use, Construction, and Anchoring in Southeast Florida (2011). Artificial reefs would be sited, constructed, and subsequently maintained, monitored, and managed based on best available science. The artificial reef site selection was based upon guidance from FWC Artificial Reef Program. Reef materials would be selected as part of the final design process, and would be either rock boulders, prefabricated concrete, designed modules, or a combination thereof. Reef materials would be deployed in a manner that maximizes the three-dimensional complexity of the reef, while still maintaining clearance for navigation, as permitted.

Seagrasses and corals are not known or anticipated to occur in any of the project areas; however, pre-construction surveys would be conducted to confirm these resources are not present within any of the artificial reef sites. If seagrasses or corals are identified in or near any of the reef sites, a minimum 200-ft buffer would be maintained between identified seagrass or coral areas and any new artificial reef material placement locations to protect the natural resources from potential adverse impacts. Side scan surveys and/or dive assessments of all potential deployment areas ensure that there is only sandy bottom and no natural hardbottom, submerged aquatic vegetation (SAV), or coral within 200 ft of the reef deployment location. When possible, sandy areas are further prioritized to select areas with a shallow hardbottom layer underneath the sand to minimize subsidence of artificial reef materials into unconsolidated sediments over time.

The permittee is required to perform pre- and post-construction monitoring. Pre-construction monitoring involves side scan surveying, drop camera and/or and SCUBA dive surveys, primarily related to micro-siting to verify that conditions have not changed since issuance of the permit and to re-confirm the absence of exposed natural hardbottom, corals, and SAV habitat prior to deployment at all sites. FWC also performs independent side scan and dive assessments to validate the county's findings to ensure compliance with the FWC grant/contract scope of work.

Artificial reef material will remain durable and stable within the boundaries of the permitted area, not exceed the authorized navigational clearance, and be clean and free of any hazardous substances. Reef materials include modules that are specifically designed and constructed for a given reef purpose using concrete and limestone, secondary-use concrete material (e.g. bridge spans or pilings, culverts), and limestone boulders, and pass a stability analysis. Criteria for secondary use material typically also include a minimum weight of 500 pounds per piece, no features that may lead to entrapment of marine life, no exposed material such as rebar that may cause entanglement of derelict fishing gear, and no presence of any hazardous materials.

Individual reef height varies based on the reef design objectives. High-relief, complex metal artificial reef material (which includes any vessel, aircraft, military equipment, decommissioned oil rig, bridge span, and metal tower that extends 7 ft or more and has a horizontal footprint of greater than 200 ft<sup>2</sup>) will not be deployed. Low-relief artificial reefs are any reef less than 7 ft in height, horizontal footprint less than 200 ft<sup>2</sup>, or reefs constructed of natural rock, concrete rubble, and prefabricated artificial reef modules, regardless of the dimensions. For example, if stakeholders are primarily interested in creating habitat for gag grouper, grey triggerfish, and red snapper fishing opportunities, more low-profile modules or secondary-use concrete and boulders may be proposed. Seafloor depth is also a determining factor to ensure stability during storm events in accordance with stability analysis. Also, sites designed with a component for diving are placed within recreational diving limits, typically 130-ft depth or less. If a reef is designed for a given species, it needs to be placed in the preferred depth range for that species. All individual reef designs are driven by the objectives of the specific reef. The only permitted maximum height requirement is what is required for navigational clearance in the permit as determined by the US Coast Guard based on Coast Guard review of commercial vessel operations in the region. All open-bottom pre-fabricated structures will be designed with proper openings to allow sea turtle egress.

Buoys and/or signage may be used temporarily to designate the deployment locations to the marine contractors performing the artificial reef deployment. Temporary marker buoys are typically deployed within a few hours/minutes prior to deployment and removed immediately following the deployment. Fishing would be allowed on all artificial reefs following construction.

The Applicants state that the project would be completed in approximately five years. Year 1 would include planning, selection, design, and permitting of sites that are not already permitted, and/or reauthorize permitted areas to be re-activated. Years 2 and 3 would include construction activities (artificial reef deployment). Years 4 and 5 would include post-construction monitoring of the recreational use by FWC.

Since the permitted areas are issued with a ten-year permit duration, the applicant states that the boundaries are large enough to accommodate many separate artificial reef deployments during the life of each permit. As such, only those areas with available open sandy bottom and sufficient buffer from existing artificial reefs will be planned to accommodate additional deployments.

### **Construction Conditions**

To reduce the potential for adverse effects to listed species as a result of the proposed actions, the applicant has agreed to adhere to the following Project Design Criteria (PDCs) during project activities at each reef site:

1. Most deployments will take place while positioning the vessel above the reef site. Barge and support vessel transport may occur 24 hours a day and throughout the year, but deployment of reef materials will only occur during daylight hours only, and all deployment events will be intermittent and short-term (typically 1 day). Deployment for specific materials will include the following:
  - a. Fabricated reef modules, such as pyramids, may be installed at reef sites with adequate water depth and will be lowered onto the seabed using a crane. Any ropes used for rigging will be removed once the module is placed on the seabed.
  - b. The applicant agrees that all modular reef materials will only be deployed by lowering with a crane or other mechanical equipment during deployment. The applicant acknowledges that aggregate reef materials may be deployed by pushing or raking off the side of the barge with mechanical or heavy equipment.
2. Reef structures, materials, and installation methods shall be designed and deployed to prevent entanglement and entrapment of listed species. Fabricated reef modules will be designed to prevent entrapment of sea turtles by incorporating large openings into the structure or by designing reef modules that do not have interior void spaces.
3. Open-bottom fabricated artificial reef modules may not include any additional sub-components or other material within the interior or obstructing the top opening that could impair the egress of a sea turtle.
4. The use of tires, Fish Aggregating Devices, post-use sanitary sewer materials, aircraft, vessels, automobiles and other civilian vehicles, white goods (refrigerators, washers, etc.) boat molds, floatables, loose organic material and general demolition debris, other than clean concrete units to form reefs, are not authorized and will not be used.
5. All reef materials must be clean and free from asphalt, petroleum, other hydrocarbons and toxic residues, plastics, Styrofoam, and other loose free-floating material, or other deleterious substances.
6. High-relief, complex metal artificial reef material which includes any vessel, aircraft, military equipment, decommissioned oil rig, bridge span, and metal tower that extends 7 ft will not be deployed. Pre-fabricated/modular concrete reef structures may be used and over 7 ft, but they will be designed with proper openings to allow sea turtle egress. Additionally, secondary-use concrete and limestone boulders with no exposed rebar may be allowed to be stacked in piles greater than 7 ft. All individual artificial reef components (i.e., prefabricated module or concrete piece) will weigh more than 500. All materials shall be of sufficient weight in-water to not move from the site post-deployment.
7. The permittee shall not deploy artificial reef materials until an assessment of the bottom conditions has been accomplished. According to the permittee, side scan surveys, drop

camera and/or dive assessments have been completed. The inspection of the deployment area may occur at the time of deployment but no more than 1 year prior to deployment.

8. The permittee shall maintain a deployment buffer of at least 200 ft from any other submerged aquatic resources, including seagrasses and corals, when placed in areas of sand. If materials are off-loaded from a barge or placed in areas that may generate turbidity (e.g., areas with fines or muck), a 500 ft buffer is required.
9. Deployments will be conducted during daylight hours when lighting, weather, and sea conditions allow for visual monitoring of the project area.
10. Deployment of materials will avoid natural oil/gas infrastructure. There no oil/gas pipelines that occur within close proximity.
11. The applicant will ensure that substrate in which material will be deployed is suitable for the reef type utilized to limit subsidence as much as possible.
12. The deployment of artificial reef material incorporating any mid-water floating structure (i.e., any distance above artificial reef structure) is not authorized and will not be used.
13. All buoys, ropes, lines, etc. will be removed from reef structures immediately after reef deployment is completed.
14. Only materials intended to be utilized for reef construction will remain at the reef sites (e.g., no wooden components, unneeded chain, cable, etc.).

The applicant has also agreed to adhere to NMFS Southeast Region’s *Protected Species Construction Conditions* (NMFS 2021), NMFS’ *Measures for Reducing Entrapment Risk to Protected Species* (2012), and NMFS’ *Vessel Strike Avoidance Measures and Reporting for Mariners* (2021).

**Effects Determinations for Species the Action Agency or NMFS Believes May Be Affected by the Proposed Action. Please note abbreviations used in the table below: E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect.**

Species	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination
<b>Sea Turtles</b>			
Green (North Atlantic distinct population segment [DPS])	T	NLAA	NLAA
Green (South Atlantic DPS)	T	NLAA	NLAA
Kemp’s ridley	E	NLAA	NLAA
Leatherback	E	NLAA	NLAA
Loggerhead (Northwest Atlantic DPS)	T	NLAA	NLAA
Hawksbill	E	NLAA	NLAA
<b>Fish</b>			
Smalltooth sawfish (United States DPS)	E	NLAA	NLAA
Gulf sturgeon (Atlantic sturgeon, Gulf subspecies)	T	NLAA	NLAA
Giant manta ray	T	NLAA	NLAA
Oceanic whitetip shark	T	NLAA	NLAA
<b>Marine Mammals</b>			
Rice’s whale	E	NLAA	NLAA



## **Critical Habitat**

The project is not located in designated critical habitat, and there are no potential routes of effect to any designated critical habitat.

## **Analysis of Potential Routes of Effects to Species**

ESA-listed sea turtles, fish, and mammals, if present in the project area, may be physically injured if struck by construction equipment, support vessels, or materials. We believe this is extremely unlikely to occur due to the species ability to move away from the project site if disturbed, deployment of reefs during daylight hours only, and agreement by the applicant to adhere to the PDCs for deployment and vessel movement stated above. Artificial reef material is typically barged to the site when wave action is minimal and will be deployed via excavator or lowered with a crane. Mobile species are able to avoid interaction with this type of equipment and placement. Additionally, the applicant's implementation of NMFS's *Protected Species Construction Conditions* will further reduce the risk by requiring all construction workers to watch for ESA-listed species. Operation of any equipment will cease immediately if a protected species is seen within a 50-ft radius of the equipment. Activities will not resume until the protected species has departed the project area of its own volition.

ESA-listed sea turtles and fishes could be injured or killed as a result of hooking or other interactions incidental to fishing activities in the vicinity of artificial reef. We believe the potential for artificial reef projects to result in increased interactions is extremely unlikely to occur. Artificial reefs may serve to aggregate both fish and fishers. However, there is no evidence that establishment of artificial reefs increases the numbers of fishers or boats participating in a given fishery. Therefore, the relocation of fishing effort to new artificial reefs necessarily reduces fishing pressure at other locations, and may lessen the concentration of fishers by providing more locations at which to fish. Similarly, the structure and fishing activity at artificial reefs are attractive to some species of sea turtles (green, hawksbill, leatherback, and loggerhead); but, a review of current scientific literature found no evidence that the establishment of artificial reefs increases sea turtle abundance or density at the spatial scale on which the fishery operates. This is likely due to the fact that sea turtle populations are currently limited by loss of nesting habitat, poaching, and incidental capture in commercial fishing gear, but they are not limited by the availability of foraging habitat.

ESA-listed sea turtles and fish may be physically injured or killed if they become entangled in abandoned fishing gear or other debris that may accumulate on artificial reefs. We believe that this is extremely unlikely to as a result of the proposed action. Low-relief and/or solid concrete material, rock rubble, and individual artificial reef modules present less complicated vertical relief that is not as likely to accumulate monofilament as larger, higher-relief materials. The implementation of the PDCs for material design listed above would further reduce the likelihood of entanglement, and would require that all reef material shall have all steel reinforcement rods, rebar, and other protrusions cut off and level with the surface of the concrete to minimize the snagging of fishing gear. If these PDCs are implemented, gear and animal entanglement on low-relief material is extremely unlikely.

ESA-listed species may use the action area for resting, foraging, mating, and migration. We believe that any effect caused by the permanent loss of open, sandy bottom will be insignificant

given the mobility of the species and available space around the artificial reefs in which these species can swim and utilize for feeding. Gulf sturgeon are described as opportunistic benthic feeders and are highly mobile. Giant manta rays are filter feeders and primarily feed on surface zooplankton. The establishment of complex structures on the sea floor may affect sea turtles foraging behavior in other ways. The addition of hard bottom substrate extending vertically higher into the water column will facilitate biological productivity that would not be possible without construction of the reefs. We believe that these types of structures can accumulate encrusting organisms such as sponges, tunicates, corals, sea-whips gorgonians, and algae, on which sea turtles feed. Thus, the proposed actions may provide higher quality foraging habitat for turtle species compared to open sand.

ESA-listed species might be adversely affected by their inability to access the project areas for foraging, refuge, and/or nursery habitat due to their avoidance of construction activities and related noise. We have determined these effects to be insignificant. Seagrasses and other marine vegetation occur within northern the Gulf of Mexico, Florida panhandle area. Species may forage in the area but the size of the area from which animals will be excluded is relatively small in comparison to the available sandy habitat nearby. In addition, any disturbances to listed species would be temporary, where construction will be limited to mostly daylight hours only, and given all deployment events will be intermittent and short-term (typically 1 day), the species will be able to move around the project site when construction is inactive.

ESA-listed sea turtles may become entrapped in an artificial reef structure. However, with the applicants' implementation of the PDCs for material design listed above, we believe this is extremely unlikely to occur. Reef structures, materials, and installation methods will be designed and deployed to prevent entrapment of listed species. The applicant has stated that Pre-fabricated/modular reef structures used in artificial reef deployment will be designed with proper openings to allow sea turtle egress.

### **Conclusion**

Because all potential project effects to listed species were found to be extremely unlikely to occur, insignificant, or beneficial, we conclude that the proposed action is not likely to adversely affect listed species under NMFS's purview. This concludes your consultation responsibilities under the ESA for species under NMFS's purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. NMFS's findings on the project's potential effects are based on the project description in this response. Any changes to the proposed action may negate the findings of this consultation and may require reinitiation of consultation with NMFS.

We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions on this consultation, please contact Daniel Owen, Consultation Biologist, at (727) 209-5961, or by email at [daniel.owen@noaa.gov](mailto:daniel.owen@noaa.gov).

Sincerely,

David Bernhart  
Assistant Regional Administrator  
for Protected Resources

File: 1514-22.c  
Enclosures:  
Literature cited

## Literature Cited

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