UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
National Centers for Coastal Ocean Science
Silver Spring, Maryland 20910

MEMORANDUM FOR: The Record

FROM: Margo Schulze-Haugen
Deputy Director

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SUBJECT: Categorical Exclusion for RESTORE Science Program Project NA19NOS4510194, "Building Resilience for Oysters, Blue Crabs, and Spotted Seatrout to Environmental Trends and Variability in the Gulf of Mexico"

ENCLOSURES
(1) ESA Section 7 LOC request
(2) NMFS ESA LOC
(3) EFH LOC request memorandum
(4) EFH General Concurrence

NOAA Administrative Order (NAO) 216-6A, Environmental Review Procedures, requires all proposed projects be reviewed with respect to environmental consequences on the human environment. This memorandum addresses the determination that the activities described below for award #NA19NOS4510194, "Building Resilience for Oysters, Blue Crabs, and Spotted Seatrout to Environmental Trends and Variability in the Gulf of Mexico" qualifies to be categorically excluded from further National Environmental Policy Act review.

Categorical Exclusion Determination
NCCOS has determined that this project falls within the scope of E5 Categorical Exclusion. As Defined in the NAO 216-6A Companion Manual, E5 includes activities involving invasive techniques or methods that are conducted for scientific purposes, when such activities are conducted in accordance with all applicable provisions of the Endangered Species Act, Marine Mammal Protection Act, Migratory Bird Treaty Act, and Magnuson-Stevens Fishery Conservation and Management Act. Such activities will be limited to impacting living resources on a small scale relative to the size of their populations, and limited to methodologies and locations to ensure that there are no long-term adverse ecosystem impacts.

Project Purpose and Need
The RESTORE Science Program is funding a five-year project to University of South Alabama Dauphin Island Sea Lab researchers to examine the resilience of oysters, blue crabs and spotted seatrout to anthropogenic stressors and weather and climate events in Mobile Bay, Alabama.

The abundance of oyster, blue crab, and spotted seatrout (OyBcSt) is rapidly declining in the Gulf of Mexico. Since human settlement in the Gulf, the OyBcSt species have provided humans

valuable food, raw material, recreation, and cultural resources. Today, the provisioning of ecosystem services by the OyBcSt community is threatened, or near collapse in Gulf estuaries. This is due in part to anthropogenic activities and environmental trends such as fisheries harvest and changes in water or habitat quality. While it is known that some of the environmental trends are correlated with OyBcSt populations, many of the underlying mechanisms that relate long-term trends and short-term variability in the environment to changing OyBcSt populations are unquantified or unknown. Concerted resource management actions at the ecosystem level, such as managing water quality in combination with habitat restoration and fishery stock management requires identification and quantification of these mechanisms and are necessary to build resilience to change.

This project has four objectives: (1) to evaluate how sensitive the resilience of OyBcSt is to environmental variability and trends as a function of ecosystem state, and identify optimal adaptive management strategies based on known and predicted environmental change; (2) to identify reproduction, growth, and mortality thresholds at which individual or combinations of environmental stressors manifest and affect OyBcSt populations, and potential early warning indicators of impending rapid population or habitat quantity/quality decline in time for management actions to occur; (3) to identify the OyBcSt ecosystem services and natural capital that are affected most by anthropogenic changes and weather and climate changes, assess how changes in economic systems and resource management responses feedback to oyster, blue crab and spotted sea trout populations, and identify the cost-benefit ratio calculation for concerted management actions and predicted outcomes; and (4) to identify the predicted impacts to OyBcSt populations and their supported bio-economic systems based on trends and potential management scenarios, and assess whether optimal resource management strategies exist for building resilience to present and future conditions.

The following activities are proposed to meet the above project objectives:

- Hydrographic monitoring station maintenance and improvements (field activity)
    - Add pH sensors to the Alabama Real-Time Coastal Observing System (ARCOS)
    - Maintain offshore ARCOS station
- Monthly Trawling and Sampling (field activity)
    - Seine Trawls – to assess larval and juvenile specimens using shoreline habitats
    - Beam Plankton Trawls (BPL) – to assess early life stages of specimens using nearshore habitats
    - Otter Trawls – to assess juvenile and adult specimens using deeper water habitats
    - Water quality synoptic – to gather water quality data concurrently with trawling activities
- Laboratory Experiments (field and laboratory activity)
    - Experiments to determine individual stressor (temperature, pH, salinity, dissolved oxygen, and pCO2) limits for each of the species of interest (Oyster, Blue Crab, Spotted Seatrout).
- Economic ecosystem services (office and workshop activity)
    - Stakeholder assessment and bio-economic modeling of management responses to fishing behavior
- Numerical modeling (office and workshop activity)

Action Area

Research activities will be conducted within Alabama state waters in the Mobile Bay estuary ranging from 30ºN to 31ºN and 87.7ºW to 88.4ºW (Figure 1). Continuous hydrographic monitoring stations are shown in Figure 1; solid red triangles depict existing stations and open red triangles depict proposed stations specific to this project. Monthly spatially synoptic surveys will fill in and overlap with the hydrography time-series stations, and will occur within the Mobile Bay estuary. Proposed monthly trawling sites (blue circles) expand the existing monthly trawling sites (black circles) of the Alabama Department of Conservation and Natural Resources (ADCNR) Marine Resources Division Fisheries Assessment and Monitoring Program (FAMP).

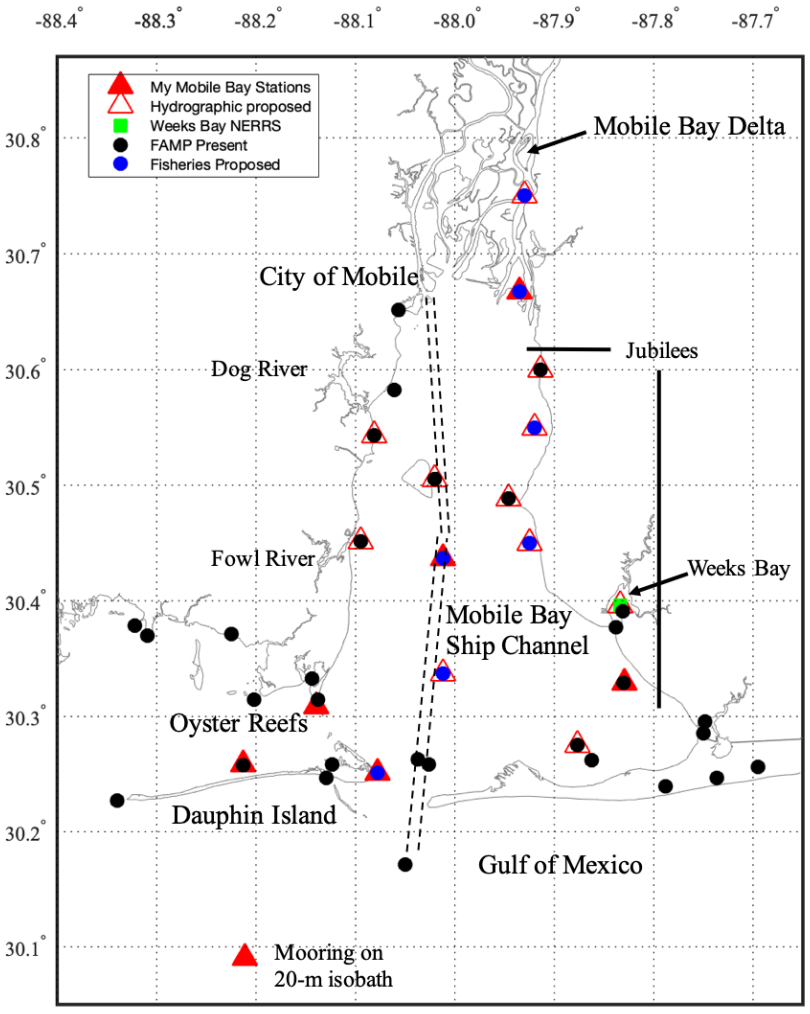


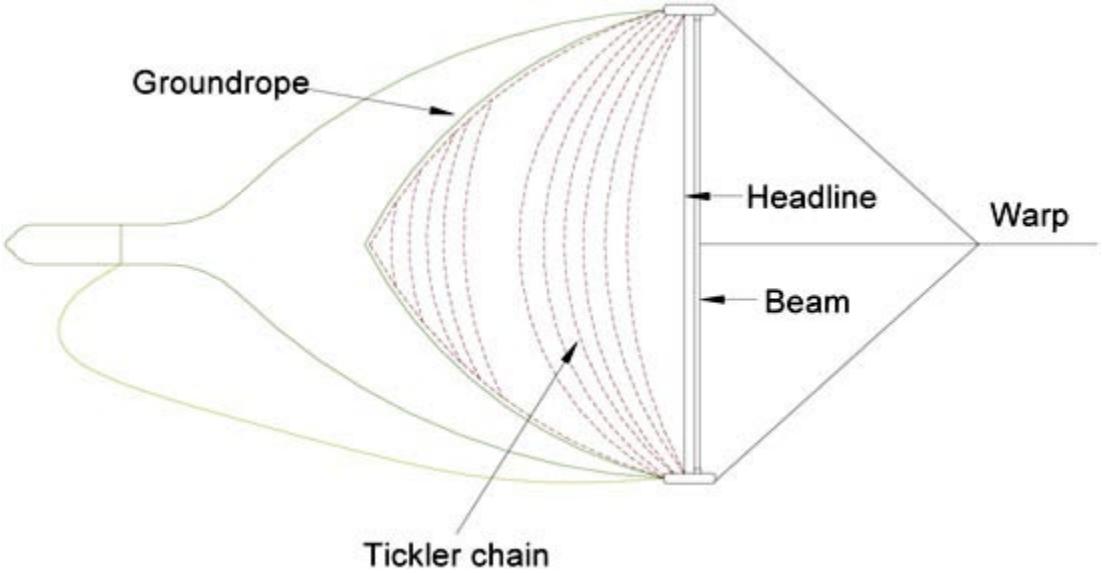
Figure 1 Map of Mobile Bay, the proposed Action Area and sampling location for hydrography and fisheries. Existing (solid red triangles) and proposed (open red triangles) continuous hydrographic monitoring stations are shown. Spatially synoptic water quality survey stations (not shown) will fill in and overlap the hydrography time-series stations. Proposed monthly fish sampling (blue circles) expands the monthly FAMP monitoring (black circles).

Proposed Activities:

1. Hydrographic monitoring station maintenance and improvements (field activity)
    a. Continuous hydrographic time-series data have been collected at sites in Mobile Bay from 2005 – present as part of the Alabama Real-Time Coastal Observing System (ARCOS) also known as the mymobilebay.com network. As part of this proposed research action, investigators will add pH sensors to existing ARCOS stations and install three (3) additional ARCOS stations to expand the hydrographic monitoring to the eastern portion of Mobile Bay (Figure 1, open red triangles). Researchers will utilize small boats owned by Dauphin Island Sea Lab to access the existing and proposed hydrographic monitoring sites. Researchers will launch small boats from either public docks or from DISL owned docks.
    b. Maintain offshore ARCOS station – Researchers will maintain and upgrade the ARCOS station that is moored on the 20m isobaths offshore of Mobile Bay, in the Gulf of Mexico (see Figure 1). Researchers will launch small boats from DISL and public docks to access the station during upgrades and maintenance activities.
2. Monthly Trawling and Sampling (field activity) - The following trawl and water quality collection procedures will be performed monthly at sites indicated in Figure 1 (blue dots). The procedures outlined below are standardized to mimic procedures used by the ADCNR FAMP sampling.
    a. Seine Trawls – researchers will use seine trawls to target juvenile specimens which utilize shoreline and nearshore habitats. The Seine is 50 ft long, 4 ft high and has a 3/16" mesh bag that is 4ft x 4ft x 4ft (lxhxd). One side has floats and the other side has lead to keep the seine on the substrate during operation. Seine trawls are 50ft long and manually operated by field personnel walking in shallow waters. Seine trawling is performed by two field personnel, with one standing near the water line while the other sampler carries the seine into deeper water to the full length of the 60 foot tether. The travel path should minimize perturbation of the intended sampling area. Once in place, the field workers unfurl and untwist the seine, ensuring that the lead line touches the bottom sediment and floats remain on top. The bottom of the poles remains in contact with the substrate during the entire haul, and the offshore worker walks shoreward until both workers are again onshore. The wings of the seine are then shaken down so that all specimens reach the seine bag, which is then carefully lifted up and gently shaken into a large bucket. All specimens are then moved to a Ziploc bag and labeled to indicate the date and sample site. The labeled bag is placed in an ice chest until it is frozen in the lab for processing at a later date.
    b. Beam Plankton Trawls (BPL) – researchers will use BPL to assess early life stages of specimens using nearshore habitats. The BPL has a 1.8m long aluminum beam, a trawl opening (front) of 150cmx84cm and a bottom (back) of 40cm diameter. The net depth is 100cm at the center, 116cm on the sides with a mesh of 0.5mm (figure 2, top). A small boat is used to transport field workers and equipment to the selected sample station. Upon arriving at each station, the trawl is examined for twists and other fouling problems. At stations over 30 ft in depth, extra line will be added to the trawl to ensure proper sampling. With the boat at idle speed, the trawl is set out cod end first, followed by the net being fed out to the beam with constant, light tension until all line is out and boat speed can increase to 1.5 – 2.0 knots. This is considered the start of trawling and the time is

recorded. After 10 minutes the trawl is retrieved. Researchers will observe the beam, trawl front and back, and cod-end during retrieval to assess if the gear is fouled. In the event of fouled gear, the catch will be discarded and additional trawls will be conducted until a correct sampling event is achieved. Once a 'good' trawl is back on board, the cod end will is emptied onto the sorting table or tub. Samples are placed into a ziploc bags and labeled to indicate the date and sample site. All sample bags are placed in an ice chest until transported to the lab and frozen.

c. Otter Trawls – researchers will use Otter Trawls to assess juveniles and adults that utilize deeper water habitats. Researchers will use a 16 ft otter trawl with a 2 seam net with a 3/16" mesh (figure 2, bottom). The otter trawl is transported to the selected sampling station by small vessel. With the boat at idle speed, the trawl is set out cod end first, followed by the net being fed out to the doors with constant, light tension until all line is out and boat speed can increase to 2.0 to 2.5 knots for a trawl duration of 10 minutes. Researchers will observe the doors, head rope, bottom rope, and cod-end during retrieval to assess if the gear is fouled. In the event of fouled gear, the catch will be discarded and additional trawls will be conducted until a correct sampling event is achieved. Once a 'good' trawl is back on board, the cod end will is emptied onto the sorting table or tub. Samples are placed into a ziploc bags and labeled to indicate the date and sample site. All sample bags are placed in an ice chest until transported to the lab and frozen.
d. Water sampling - Water sampling will occur at all trawl sites and other locations where no biological data is gathered. At these sites, only hydrologic data (salinity, dissolved oxygen, pH and temperature) are taken. All water sampling follows the same procedures: upon arrival at the sampling site, all appropriate hydrologic data (salinity, dissolved oxygen and temperature) will be collected using a YSI 85 data logger or YSI Pro 2030. At extremely shallow sites, water may be collected in the sampling bucket for accurate hydrologic information.



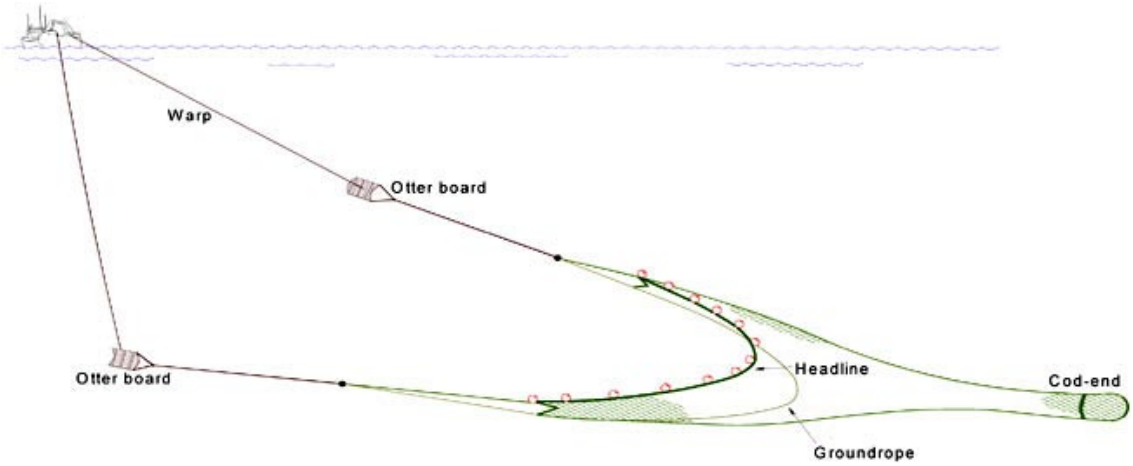


Figure 2 – Beam Plankton Trawl (top) and Otter Trawl (bottom) which will be used as part of monthly sampling for the proposed action. Images courtesy of UN Food and Agriculture Organization (http://www.fao.org/3/y7135e/y7135e06.htm)

3. Laboratory Experiments (field and laboratory activity) - Researchers propose two types of activities; 1) laboratory analysis of field collected samples and 2) stressor experiments.
    a. Laboratory analysis of field collected samples – Researchers will taxonomically identify specimens collected during seine, BPL and otter trawling. Researchers will thaw previously frozen samples, sort them into selected categories and analyze for abundance. In the event that a specimen cannot be identified, it will be held for examination by the appropriate biologist. No hazardous waste will be produced during any of the laboratory operations.
    b. Individual stressor experiments – Researchers will use live collected species to perform stressor experiments. Stressors of interest include temperature, pH, salinity, dissolved oxygen, and pCO2. Experiments will use a ramped design whereby the stressor of interest is gradually changed from the acclimated ambient condition to the extremes. Thresholds will be defined as the loss of equilibrium in fish and mortality rates for invertebrates. The results will then determine the treatment levels for multi-stressor experiments.
        i. For example, for oysters, researchers propose experiments focused on pre-settlement and post-settlement functional oyster traits as influenced by T, S, O2, and *p*CO2. In this example, researchers would consider a gradient from high to low pH/*p*CO2 conditions (referred to as high, mid, and low pH) crossed with high and low O2 saturation (referred to as normoxic and hypoxic) and crossed with high and high extreme temperature, for a total of 12 combinations. Functional trait metrics that may be measured through time for pre-settlement and post-settlement oysters include: percent survival, larval growth, calcification, settlement success, growth (size and biomass), gonad biomass as an indication of production, metabolic and filtration rates as a sign of health, and vulnerability to predation (calcification rates, predation rates, shell thickness, and fracture hardness and toughness).
4. Economic ecosystem services (office and workshop activity)

a. Stakeholder assessment and bio-economic modeling of management responses to fishing behavior – This activity is desktop based and therefore will not be further analyzed in this memo.

5. Numerical modeling (office and workshop activity) - This activity is desktop based and therefore will not be further analyzed in this memo.

Vessel Transit Operations – Due to the shallow nature of Mobile Bay, which has a maximum depth of 75ft in the shipping channel and an average depth of 10ft, researchers will use small boats less than 24ft in length for the proposed activities. Vessels will launch from either the Dauphin Island Sea Lab, ADCNR boat launches or a public boat launch, depending on the intended sample station. Vessel transit paths will change depending on the vessel platform and will be subject to prevailing wind, currents and sea conditions and the available platform.

Anchoring - While anchoring is not anticipated for the proposed trawling activities, anchoring may be required for other reasons, such as avoidance of adverse weather conditions or in the unlikely event of an engine malfunction. While the choice of anchoring location is at the discretion of the ship's crew, if anchoring were necessary, vessel operators would select the anchor location based on depth, protection from seas and wind, and bottom type. Preferred bottom types include sticky mud or sand.

Permits

Researchers will obtain the required permits prior to commencing the proposed research activities. Researchers currently have an IACUC from the University of South Alabama that covers all proposed trawling and seining activities. In addition, researchers have a State of Alabama collections permit that they will renew annually. Finally, researchers will obtain a Highly Migratory Species permit for this work, which will be renewed annually.

Biological Resources and Environmental Statutes

Endangered Species Act (ESA) Section 7 (a)(2) requires that each federal agency, in consultation with NMFS and/or the U.S. Fish and Wildlife Service (USFWS), ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. No cruise activities would be in areas with resources under USFWS jurisdiction, so no consultations with USFWS will be sought.

On August 12, 2019 NCCOS initiated consultation with National Marine Fisheries Service (NMFS) (Encl 1) that activities may but are not likely to adversely affect ESA-listed species (determinations are below). On October 16, 2019, NMFS requested additional information and NCCOS responded the same day. On December 12, 2019 NCCOS received concurrence from NMFS (Encl 2).

The field research activities potentially occur in the range of one ESA listed species under the authority of USFWS. That species is the West Indian manatee (*Trichechus manatus*). The West Indian manatee is currently listed as threatened. West Indian Manatees are rarely sighted in the

environs of Mobile Bay, but there is the potential for them to be present in the action area. Researchers will maintain slow speeds during vessel transit to sampling stations. Researchers will report any manatee sightings to USFWS authorities. *Therefore, NCCOS determines that research activities and vessel transit may affect but are not likely to adversely affect West Indian manatees.*

Within the GoM, there are seven (7) species of corals, nine (9) fish species, five (5) turtle species and five (5) marine mammal species that are listed as either endangered, threatened or proposed endangered or threatened species under the ESA (Table 1). The distribution of corals is not expected to overlap with the research action area and vessel transit will have no adverse impacts on these species. Therefore, corals will not be analyzed further in this memorandum. None of the five marine mammal species has suitable habitat in the Mobile Bay action area, therefore NCCOS determines that project activities will have no effect on marine mammals.

Turtles

Research activities are not expected to have adverse impacts on turtles. Seine net activities are done at a slow walking speed, therefore researchers would avoid capturing any turtles. Otter and BPL trawls are done at slow speeds (1.5-2.0 knots) and researchers would have monitors onboard to ensure no capture of turtles. Finally, there is the potential for boat strike of a turtle during transit between stations and to the various ports. To avoid this, researchers would follow Best Management Practices (BMPs) including avoiding transiting through loggerhead sea turtle critical habitat, maintaining slow speeds and employing monitors on vessels (see BMPs below).

Loggerhead sea turtles (*Caretta caretta*) have critical habitat designated throughout the Gulf and at the mouth of Mobile Bay (see here). The only component of critical habitat that overlaps the research area is the nearshore reproductive habitat. The physical and biological features of nearshore reproductive habitat is "a portion of the nearshore waters adjacent to nesting beaches that are used by hatchlings to egress to the open-water environment as well as by nesting females to transit between beach and open water during the nesting season." Primary Constituent Elements that support this habitat are "the following:

> (1) Nearshore waters directly off the highest density nesting beaches and their adjacent beaches as identified in 50 CFR 17.95(c) to 1.6 km (1 mile) offshore;
> (2) Waters sufficiently free of obstructions or artificial lighting to allow transit through the surf zone and outward toward open water; and
> (3) Waters with minimal manmade structures that could promote predators (i.e., nearshore predator concentration caused by submerged and emergent offshore structures), disrupt wave patterns necessary for orientation, and/or create excessive longshore currents.

The proposed research activities would not affect any of the PCEs and would involve no intrusions into the critical habitat areas. Researchers would avoid all beaches used for nesting and would avoid transit through these areas for site access. *Therefore, NCCOS determines that research activities and vessel transit may affect but are not likely to adversely affect sea turtles or destroy or adversely modify designated critical habitat for loggerhead sea turtles.*

Fish

Of the nine ESA listed fish species in the GOM, only one the Gulf Sturgeon has the potential to be in the action area. The remaining eight fish are oceanic and will not be in the action area, therefore NCCOS determines that research activities will have no effect on those fish species.

Gulf sturgeon (*Acipenser oxyrinchus desotoi*) do not have critical habitat designated within the Mobile Bay estuary, but they could overlap with the project area. Primary constituent elements (PCEs) essential for the conservation of the Gulf sturgeon include the following: (1) Abundant food items, (2) Riverine spawning sites, (3) Riverine aggregation areas, (4) Adequate riverine flow regime, (5) Adequate water quality, (6) Adequate sediment quality, and (7) Safe and unobstructed migratory pathways. The proposed research activities of seining and trawling will only occur monthly at offshore stations and therefore will not impact any of the 7 PCE components within designated critical habitat. In the unlikely situation that a Gulf sturgeon is captured during Otter Trawl or BPL activities, they will be returned to the water as soon as possible. Therefore, NCCOS determines that research activities and vessel transit would not destroy or adversely modify designated critical habitat for Gulf sturgeon. Therefore NCCOS determines that research activities may but *are not likely to adversely affect gulf sturgeon.*

Table 1. Gulf of Mexico's threatened and endangered marine species. Received from NMFS OPR 4/28/2017.

Species	ESA Status	Critical Habitat	Recovery Plan
Marine Mammals – Cetaceans			
Blue Whale (*Balaenoptera musculus)*	**E – 35 FR 18319**	-- --	**07/1998**
Fin Whale (*Balaenoptera physalus)*	**E – 35 FR 18319**	-- --	**75 FR 47538**
Sei Whale (*Balaenoptera borealis*)	**E – 35 FR 18319**	-- --	**76 FR 43985**
Sperm Whale (*Physeter macrocephalus*)	**E – 35 FR 18319**	-- --	**75 FR 81584**
Bryde's Whale (*Balaenoptera brydei)*	**E - 84 FR 15446**	-- --	-- --
Marine Reptiles			
Green Turtle, (*Chelonia mydas*) – North Atlantic DPS	**T – 81 FR 20057**	**63 FR 46693**	**63 FR 28359**
Hawksbill Turtle (*Eretmochelys imbricata)*	**E – 35 FR 8491**	**63 FR 46693**	**57 FR 38818**
Kemp's Ridley Turtle (*Lepidochelys kempii*)	**E – 35 FR 18319**	-- --	**75 FR 12496**

Leatherback Turtle (*Dermochelys coriacea*)	E – 35 FR 8491	44 FR 17710 and 77 FR 4170	63 FR 28359
Loggerhead Turtle, (*Caretta caretta*) – Northwest Atlantic Ocean DPS	T – 76 FR 58868	79 FR 39856	63 FR 28359 74 FR 2995
Fishes			
Gulf sturgeon (*Acipenser oxyrinchus desotoi*)	T – 56 FR 49653	68 FR 13370	Recovery Plan
Smalltooth Sawfish (*Pristis pectinata*) – U.S. portion of range DPS	E – 68 FR 15674	74 FR 45353	74 FR 3566
Nassau grouper (*Epinephelus striatus*)	T – 81 FR 42268	-- --	-- --
Oceanic whitetip shark (*Carcharhinus longimanus*)	T -- 81 FR 96304 (Proposed)	-- --	-- --
Giant manta ray (*Manta birostris*)	T -- 82 FR 3694 (Proposed)	-- --	-- --
Marine Invertebrates			
Elkhorn Coral (*Acropora palmata*)	T – 71 FR 26852	73 FR 72210	80 FR 12146
Staghorn Coral (*Acropora cervicornis*)	T – 71 FR 26852	73 FR 72210	80 FR 12146
Rough Cactus Coral (*Mycetophyllia ferox*)	T – 79 FR 54122	-- --	-- --
Pillar Coral (*Dendrogyra cylindrus*)	T – 79 FR 54122	-- --	-- --
Mountainous Star Coral (*Orbicella faveolata*)	T – 79 FR 54122	-- --	-- --
Boulder Star Coral (*Orbicella franksi*)	T – 79 FR 54122	-- --	-- --
Lobed Star Coral (*Orbicella annularis*)	T – 79 FR 54122	-- --	-- --

Marine Mammal Protection Act (MMPA) - All marine mammals are protected under the MMPA. Sections 101 (a)(5)(A) and (D) allow the incidental take of marine mammals only under special circumstances, where "take is defined as " … "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. §§ 1361-1421h). Harassment includes any annoyance which has the potential to injure a marine mammal or stock (Level A) or disrupt its behavioral patterns (Level B). The use of active acoustic sources in the water have the potential to result in Level B harassment and are a potential concern along with accidental vessel strikes. Similar to the risk of vessel strike for turtles, research activities are not expected to have

adverse impacts on any marine mammal species. The primary concern is for a vessel strike during transit between stations or to and from the various ports.

There are five (5) total species of threatened and endangered marine mammals whose potential ranges overlap with the action area of the research activities (Table 1). These include, Humpback Whale *(Megaptera novaeangliae),* Fin Whale (*Balaenoptera physalus*)*,* Sei Whale (*Balaenoptera borealis*), Sperm Whale (*Physeter microcephalus*), and Bryde's Whale (*Balaenoptera edenii*). The proposed research activities do not overlap with the typical habitat of these species. Protective measures incorporated into this project include maintaining safe distances from marine mammals spotted during the course of research, maintaining safe speeds and avoiding entanglement risks (see below). *Therefore NCCOS determines that project activities will have no effect on marine mammals.*

Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires that federal agencies consult with the National Marine Fisheries Service on actions that "may adversely affect" essential fish habitat (EFH) *(16 U.S.C. § 1855(b)(2)).*

According to the NOAA Habitat Conservation EFH mapper, the following species groups/taxa have essential fish habitat designated within the project action area (ROV operations or transit):

1. Coastal Migratory Pelagics
2. Red Drum
3. Reef Fish
4. Shrimp
5. Atlantic Sharpnose Shark
6. Blacktip Shark
7. Bull Shark
8. Finetooth Shark
9. Spinner shark

On August 8, 2019, NCCOS initiated consultation with NMFS SERO for project activities that may overlap with EFH (ENCL 3). On September 4, 2019 the RESTORE Science Program received EFH general concurrence with NCCOS determinations, and that the proposed research activities may be included under the general concurrence (ENCL 4).

In addition, no Habitat Areas of Particular Concern (HAPC) overlap with the area of research activities (Figure 1). No EFH areas closed to fishing overlap with vessel transit or research activity areas.

Based on research activities and the potential EFH that could be encountered, NCCOS determines that no adverse effects to EFH, either direct or indirect, would occur within the proposed research action or transit area as the work is of short duration, will not affect the substrate and will cover a limited area of habitat. If anchoring is required, NCCOS would use BMPs (last section) to avoid potential impact to EFH.

National Marine Sanctuaries Act (NMSA) - Section 304(d) of the National Marine Sanctuaries Act requires the "action agency" to consult with the Office of National Marine Sanctuaries if the action is "likely to destroy, cause the loss of, or injure a sanctuary resource" (16 U.S.C. §§ 1431

et seq.). No National Marine Sanctuary areas overlap with the action area of the proposed research activities. Therefore, NCCOS determines there will be no effect on National Marine Sanctuaries.

National Historic Preservation Act (NHPA) - Section 106 requires federal agencies to take into account the effects of their actions on historic resources (16 U.S.C. §§ 470 et seq). Known Historic resources are in the action area of project activities, however no adverse effect is anticipated from any project activities. If such an unlikely encounter with known or uncharted/unknown shipwrecks occurred as a result of project activities, the location and survey data would be made available to the Alabama State Preservation Officer. In addition to prevent misuse of the historic resource by the public, the NCCOS would not disclose information, prior to consultation with the State Preservation Officer.

Extraordinary Circumstances

Project activities described above would be temporally (once per month) and spatially small in scale (small footprint of trawl and seines, and short tow times). Researchers have received collecting permits from the state of Alabama, which will be maintained throughout the course of the project field work. Sampling protocols are routine and have occurred hundreds of times in the past by the ADCNR FAMP researchers. It is not likely that any listed species will be collected because of the habitat being sampled and the spatially small scale of the activities, and if they are collected they will be returned to the water as soon as practicable and NMFS OPR would be immediately notified. No activities will be conducted in areas where children may congregate. The proposed activities are not the subject of controversy based on potential environmental consequences and do not establish a precedent or decision in principle about future proposals. There are no uncertain environmental impacts or unknown risks as project activities are routine and non-intrusive there will be negligible impact on geographically or ecologically critical areas, including sanctuaries, wetlands, National Historic Sites and no adverse impacts to marine mammals, essential fish habitat, threatened or endangered species or their critical habitat. In addition, activities do not include bird nesting areas, marine mammal nursery or feeding areas. The proposed project activity does not involve air, noise, or water quality impacts; and does not otherwise have significant impact on the human environment.

No adverse environmental impacts are anticipated from laboratory activities. Laboratory activities will follow all appropriate safety and disposal regulations. Waste from chemicals from this project will be disposed of through a licensed hazardous waste treatment, storage and disposal facility, transported by a licensed transportation contractor. The proposed project has no potential to generate, use, store, transport or dispose of hazardous toxic substances in a manner that may have a significant effect on the environment. The proposed project does not have a disproportionately high and adverse effect on the health or the environment of minority or low-income communities, compared to the impacts on other communities (EO 12898). The project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or involve actions that may promote the introduction, growth, or expansion of the range of the species. The applicants will have approval for all activities regarding vertebrate animals from their Institutional Animal Care and Use Committee(s) under the Animal Welfare Act and related policies and regulations. Thus, there is no potential to violate Federal, State, or local law or requirements imposed for protection of the

environment. There are no highly controversial environmental effects. Thus, there are no extraordinary circumstances present that may require further analysis in an EA or EIS.

Protective Measures and Best Management Practices (BMPs) Incorporated into the Action

In the event of unauthorized incidental take, the RESTORE Science Program would suspend all activities causing such take and immediately contact NMFS Office of Protected Resources (see contact below). The RESTORE Science Program would request ESA Section 7 initiation in the event of unauthorized take, systematic noncompliance, unanticipated adverse effects, or modification of the action.

NMFS POC – Michael Tucker, michael.tucker@noaa.gov, 727-209-5981, NMFS SERO

BMPs are required to be incorporated within project instructions, cruise plans and NEPA documentation including financial assistance awards and environmental review memoranda. All applicable BMPs must be communicated to the principal investigators, boat operators and field staff, and as necessary between ship's crew (Commanding Officer/master or designee(s), as appropriate) and scientific party in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.

1. Minimize vessel disturbance and ship strike potential
    a. Reduced speeds (<13 knots) when ESA-listed cetaceans are observed (unless otherwise required, e.g., NOAA Sanctuaries)
    b. Reduced speeds (<13 knots) while transiting through designated critical habitat (unless slower speeds are required, e.g., < 10 knots in Right Whale critical habitat and management areas)
    c. Trained observers aboard all vessels; 100% observer coverage
    d. Species identification keys (for marine mammals, sea turtles,– as applicable) will be available on all vessels

2. Minimize noise
    a. Reduced speed (see above)

3. Minimize vessel discharges (including aquatic nuisance species)
    a. Meet all EPA Vessel General Permits and Coast Guard requirements.
    b. Avoid discharge of ballast water in designated critical habitat.
    c. Use anti-fouling coatings.
    d. Clean hull regularly to remove aquatic nuisance species (but avoid doing so in critical habitat)
    e. Avoid cleaning of hull in critical habitat
    f. Avoid cleaners with nonylphenols
    g. Rinse anchor with high-powered hose after retrieval.

4. Minimize anchor impact to corals, seagrass or other EFH
    a. Use designated anchorage area when available
    b. Use mapping data to anchor in mud or sand, to avoid anchoring on corals
    c. Avoid anchoring in seagrass critical habitat
    d. Minimize anchor drag

5. Avoid collecting bottom samples in seagrass critical habitat
    a. There will be no bottom sample collections of any kind conducted during this project

6. Cetaceans
    a. Avoid approaching within 200 yards (182.9 m), 500 yards for Right Whales.
    b. Avoid critical habitat, when possible.

7. Sea Turtles and Manatees
    a. Avoid approaching within 50 yards.
    b. Avoid sampling within designated critical habitat for loggerhead sea turtles.

8. Entanglement Protective Measures
    a. Use stiffer line materials for towing and keep taut during operations to reduce potential for entanglement
    b. Reduce knots in the line as much as possible
    c. Clearly mark lines in the event an animal does become entangled so that NMFS experts can identify the gear.

9. Habitat Protection
    a. Avoid unnecessary contact of gear, towed or lowered, with the sensitive bottom habitat (e.g. submerged aquatic vegetation (SAV) and hard bottom)

10. Protected Area and State Collecting Permits
    a. Required state collecting permits will be maintained and provided to the Federal Program Officer before field work starts and annually thereafter (as needed) before out-year funds are released.