United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

JAN 13 2014

In Reply Refer To:
FWS/R4/DH NRDAR

Memorandum

To: Field Supervisor, Panama City Ecological Services Office

From: Deputy Deepwater Horizon, Department of the Interior Natural Resource Damage Assessment and Restoration (NRDAR), Case Manager Deborah L. McCay

Subject: Informal Consultation Request for the Proposed Oyster Cultch Project, Florida

As you are no doubt aware, on or about April 20, 2010, the mobile offshore drilling unit *Deepwater Horizon* experienced an explosion, leading to a fire and its subsequent sinking in the Gulf of Mexico (the Gulf). These events resulted in the discharge of millions of barrels of oil into the Gulf over a period of 87 days. In addition, various response actions were undertaken in an attempt to minimize impacts from spilled oil. These events are hereafter collectively referred to as the Oil Spill.

The Department of the Interior (DOI), acting through the U.S. Fish and Wildlife Service (the Service) and other Bureaus, is a designated natural resource trustee agency authorized by the Oil Pollution Act of 1990 (OPA) and other applicable federal laws to assess and assert a natural resource damages claim for this Oil Spill. DOI is only one of several Trustees, including agencies of the state of Florida, so authorized. Consistent with their federal and state authorities, the Trustees are investigating the resource injuries and losses that occurred as a result of the Oil Spill and have initiated restoration planning to identify the actions that will be needed or appropriate to restore injured resources and to make the public whole for the injuries and losses that occurred. This process is known as a Natural Resource Damage Assessment (NRDA).

On April 20, 2011, DOI, the National Oceanic and Atmospheric Administration and the Trustees for the five Gulf states affected by the Oil Spill entered into an agreement with BP, a responsible party for the Oil Spill, under which BP agreed to provide $1 billion for early restoration projects in the Gulf to address injuries to natural resources caused by the Oil Spill. The subject project is being evaluated by the Trustees as a potential early restoration project. The early restoration project has been proposed in a draft early restoration plan that was released for public comment and review on December 6, 2013. If the Trustees select the project after consideration of public comment, and a stipulated agreement is reached with BP, the early restoration project will be implemented by the state of Florida. DOI, acting through the Service, will be a co-Trustee for the project, if it is selected and implemented.

The above facts lead us to the conclusion that consultation under Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), is required for the proposed project and we wish to engage in such consultation (and conference). Accordingly, we have reviewed the proposed Oyster Cultch Project, Florida, for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with section 7 of the ESA. We determined the proposed project may affect, but is not likely to adversely affect West Indian manatee, piping plover, and red knot and have provided our analysis in the attached Biological Evaluation. We have also reviewed the proposed project for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Consultation will also be initiated with National Marine Fisheries Service for species where ESA regulatory authority is shared and in regards to Marine Mammal Protection Act (MMPA) of 1972, as amended (16 U.S.C. 1461 *et seq.*).

We request your review of and concurrence/conference with the attached intra-Service Section 7 Biological Evaluation form describing the proposed project, potential effects, conservation measures and justifications for our determinations. If you have questions or concerns regarding this request for consultation, please contact Holly Herod, Fish and Wildlife Biologist, at 404-679-7089 or holly_herod@fws.gov.

Attachment

SOUTHEAST REGION
INTRA-SERVICE SECTION 7
BIOLOGICAL EVALUATION FORM

Originating Person: Holly Herod; prepared by David Mills (representing the State of Florida Natural Resource Trustees – The Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission)
Telephone Number: Holly Herod: 404-679-7089; Dave Mills 303-381-8248
E-Mail: holly_herod@fws.gov;_dmills@stratusconsulting.com
Date: December 26, 2013

PROJECT NAME (Grant Title/Number): Florida Oyster Cultch Project

I. **Service Program:**
- _X__ **NRDAR**
- ___ **Ecological Services**
- ___ **Federal Aid**
  - ___ **Clean Vessel Act**
  - ___ **Coastal Wetlands**
  - ___ **Endangered Species Section 6**
  - ___ **Partners for Fish and Wildlife**
  - ___ **Sport Fish Restoration**
  - ___ **Wildlife Restoration**
- ___ **Fisheries**
- ___ **Migratory Birds**
- ___ **Refuges/Wildlife**

II. **State/Agency:** Florida Department of Environmental Protection (DEP) and Florida Fish and Wildlife Conservation Commission (FWC)

III. **Station Name:** DOI Deepwater Horizon Case Management Team, USFWS Southeast Regional Office, Atlanta, Georgia 30345

IV. **Location (attach map):** See Figure A at the end of this document for a map indicating all the potential areas of activity for the project. Because the proposed project would involve activity in three distinct bays separate figures are also shown for each of the Bays (figures B, C, and D for Pensacola Bay, St. Andrews Bay, and Apalachicola Bay respectively).

A. **Ecoregion Number and Name:** Southeast Region

B. **County and State:** The project involves activity in the waters of the following counties: Escambia County (Pensacola Bay), Santa Rosa County (Pensacola Bay), Franklin County (Apalachicola Bay), and Bay County (St. Andrew Bay system)

C. **Section, township, and range (or latitude and longitude):** n/a

D. **Distance (miles) and direction to nearest town:** See map (Figures B, C, and D for detail by bay)

V. Description of Proposed Action and Habitats in the Project Area (attach additional pages as needed):

The proposed Florida Oyster Cultch project would place a total of 42,000 cubic yards of suitable cultch material over 210 acres of previously constructed, commercially-harvested oyster bars for the settling of native oyster larvae and oyster colonization in three Florida Bays (Pensacola Bay, St. Andrews Bay and Apalachicola Bay).

The proposed effort includes:

- Placing 12,000 cubic yards of shell on debilitated oyster reefs over a 60 acre area in the Pensacola Bay system in Escambia and Santa Rosa Counties.
- Placing 12,000 cubic yards of shell on debilitated oyster reefs over a 60 acre area in the St. Andrews Bay system in Bay County.
- Placing 18,000 cubic yards of shell on debilitated oyster reefs over a 90 acre area in the Apalachicola Bay system in Franklin County.

Cultch material will consist of combinations of oyster shells, either mined from existing, permitted, sources or from active oyster shell collection sources, and/or limestone approved for use in these projects by Florida's Department of Agriculture and Consumer Services (DACS). Fossil shell and lime rock are products commonly mined from quarries in the Gulf Coast region and may be used if oyster shell is not available. Processed oyster shell is preferred for cultch material to restore oyster reefs where the shell is available and can be efficiently transported to reef sites. Processed shell is purchased by DACS from local processors through a shell buying program. The DACS schedules shell collections, and then collects shell using dump trucks and front-end loaders, transports and stockpiles shell at a location in Apalachicola for oyster restoration projects, such as the proposed project. Processed shell is collected from 2-5 days per week, depending upon the availability of shell and the time of year.

Oyster shell is stored for at least two weeks to allow for a process called "seasoning." Seasoning removes bacterial film from the shell with the outdoor exposure (there is no chemical treatment) and provides a cleaner substrate for larval attachment. Seasoned shell is removed from the stockpile, placed on deck barges using front end loaders and dump trucks, and transported to oyster reefs sites. Once at the site, oyster cultch locations and specific deposition sites are delineated and marked by staff prior to depositing cultch materials as specific substrate types are necessary to support the cultch. However, all potential action areas have been depicted in Figures B, C, and D for Pensacola Bay, St. Andrews Bay, and Apalachicola Bay respectively.

Once the specific cultch location has been determined, the cultch is washed overboard using high pressure water jets (See Figures E1-E6 for images from this sequence of events). Similarly, fossil shell or lime rock cultch material is transported by deck barge to the reef sites, where it is washed overboard using a high pressure water stream, or deposited using a crane and bucket. The method for deposition is determined by the material used and the configuration and elevation of the reef to be restored. Cultch is deposited at a rate of 100 - 300 cubic yards per acre; the amount of material deposited is determined by the condition of the reef to be restored.

In cases where the physical integrity of the reef has been severely damaged, up to 300 cubic yards per acre may be required.

For Apalachicola Bay cultch deposition projects, loading is completed in one day (one barge) and based on the proximity to the in-water staging area, planting is accomplished on the following day. For all areas west of Apalachicola Bay, loading is accomplished in 2 or 3 days (two barges) and travel time to and from a given estuary (2 to 9 days) would yield a maximum project duration of 12 days to accomplish the restoration work.

Cultching activities may be conducted during much of the year (February – November). Ideally, cultching activities are conducted prior to a fall spat event. However, cultching activities are similar to crop rotation, in that all oyster reef complexes require routine maintenance in the form of cultching and DACS rotates which reefs receive the required attention based on commercial harvesting seasons, availability of material, and severity of reef conditions following assessments. The project envisions one cultch material placement at the selected project site within each bay. The overall timing for the placements will reflect the availability of the necessary equipment at the time the project is ready for implementation, but all placements should be completed within a year of the first placement.

Post construction performance monitoring will focus on the recruitment and growth of oysters on the new cultch placements. Restored reefs may become productive in as few as 3 to 6 months under optimal conditions, with oyster reaching market size in 12 to 18 months. However, since recruitment and survival can be highly variable, some reefs may not become productive for 2 to 5 years. It has been shown that restored reefs can remain productive for more than 10 years with little additional maintenance. Based on the expected longevity of the restored reefs, a monitoring program will assess oyster population parameters for ten years.

DACS will be responsible for effectively assessing the status of oyster resources on reefs that are restored during this project and will collect information on a number of metrics in order to delineate reef locations and reef area, measure population parameters, and estimate production potential. The monitoring will include collecting oyster samples (per standard protocol) following project completion on all restored reefs and establishing a sampling schedule based on expected recruitments cycles. All restored reefs will be sampled twice a year from year-one through year-five and once a year from year-six through year-ten. Sampling intervals may be modified to assess significant events which may affect oyster population dynamics.

VI. Description of the Project Area (attach additional pages as needed):

The general project area is identified in Figure A with additional detail for each of the three bays provided in Figures B, C, and D. The potential project area includes approximately 210 in-water acres within the three main bodies of water that have been identified for this project: Pensacola Bay, Andrews Bay, and Apalachicola Bay. Oyster cultch placement is proposed for 60 acres in both Pensacola Bay and Andrews Bay and 90 acres in Apalachicola Bay. The cultch material will be placed on top of existing, degraded oyster beds, close to shorelines (1/2 to 1 mile from shore). As a result, there is no conversion of habitat as a result of the placement. As described above cultch materials are collected from oyster processing houses (oyster shells) and then seasoned for a period at an outdoor staging facility (effectively a commercial storage lot lacking habitat) or mined from approved, permitted sources. Stockpiling occurs at a DACS outdoor staging facility which is effectively a commercial shell storage lot.

In each of the targeted bays, the selected oyster reef locations will be at least a half mile from shore and most are likely to be more than a mile from shore.

VII. Species and Critical Habitat:

A. Complete the following table:

Table 1, provided at the end of this document, provides a summary of the different species that were identified and initially considered for the project's potential impacts. This table reflects the information available from the U.S. Fish and Wildlife, Panama City office website: http://www.fws.gov/panamacity/specieslist.html which provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle.

VIII. Determination of Effects:

A. Explanation of effects of the action on species and critical habitats in item VII.A (attach additional pages as needed):

Table 2 presents a summary of the potential species/critical habitat that could be impacted from the proposed oyster cultch project. The species/critical habitat in Table 2 were identified after considering where there was potential overlap from information on identified natural communities in Table 1 with the potential locations where the project could be implemented and areas adjacent to the immediate project locations.

Table 2. Potential Impacts to Species/Critical Habitats

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle[a], Hawksbill turtle[a], Kemp's ridley turtle; Leatherback turtle[a], Loggerhead turtle	No work will occur in terrestrial environments used by sea turtles; therefore no impacts will occur to sea turtle species in the terrestrial environment. Consultation will be initiated with NMFS, as this agency has jurisdiction to review impacts to sea turtles in the estuarine and marine environments. The main risk to sea turtles during implementation of this project would come from boat collisions which could result in harm or mortality.

SPECIES/CRITICAL	SPECIES/CRITICAL HABITAT IMPACTS
	Critical habitat for the green sea turtle has been designated for the waters surrounding Culebra Island, Puerto Rico, and its outlying keys (63 FR 46693). Marine and terrestrial critical habitat for the leatherback sea turtle has been designated at Sandy Point on the western end of the island of St. Croix, U.S. Virgin Islands (44 FR 17710) and critical habitat will be reassessed during the future planned status review (76 FR 47133). Critical habitat for the hawksbill sea turtle has been designated for selected beaches and/or waters of Mona, Monito, Culebrita, and Culebra Islands, Puerto Rico (63 FR 46693). No designated critical habitat for the green, leatherback, or hawksbill sea turtles occurs within the action area. No critical habitat has been designated for the Kemp's ridley sea turtle; therefore, none will be adversely affected or modified. The project area is all in-water and does not overlap with the currently proposed critical habitat areas in Florida for Northwest Atlantic Distinct Population Segment of the loggerhead sea turtle as these habitats are terrestrial (i.e., beaches and shorelines (78 FR 18000) Department of the Interior, 2013). The proposed project will not result in any changes to shoreline habitats, which could alter adjacent beaches with proposed critical habitat; therefore no effects are expected.
West Indian manatee	The counties in the project area are not part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the project waters. The main risk to manatees during implementation of this project would come from boat collisions which could result in harm or mortality. These risks will be minimized to an insignificant or discountable level or avoided through the implementation of conservation measures.
Piping plover	The main risk to Piping plovers is from human disturbance while resting and foraging in habitats adjacent to marine work areas. The proposed project implementation including, eventual harvest, could result in short term increases in noise which could startle individuals, though due to the distance from the shore, startling seems unlikely. In the event of startling, we would expect normal activity to resume within minutes and do not expect any temporary displacement. We consider these effects insignificant and discountable. The proposed project will not result in any changes to shoreline habitats where piping plover could be feeding or resting and is not expected to increase visitor use; therefore, no indirect effects are expected. The proposed project will not result in any changes to shoreline habitats, including nearby critical habitat where piping plover could be feeding or resting therefore, no effects are expected.
Red knot	The main risk to Red knots is from human disturbance while resting and foraging in habitats adjacent to marine work areas. The proposed project implementation including, eventual harvest, could result in short term increases in noise which could startle individuals, though due to the distance from the shore, startling seems unlikely. In the event of startling, we would expect normal activity to resume within minutes and do not expect any temporary displacement. We consider these effects insignificant and discountable. The proposed project will not result in any changes to shoreline habitats where red knot could be feeding or resting and is not expected to increase visitor use; therefore, no indirect effects are expected.

SPECIES/CRITICAL	SPECIES/CRITICAL HABITAT IMPACTS
Gulf sturgeon	NMFS is providing consultation for Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon will not be considered in the consultation with the USFWS.

[a] Critical habitat areas for these species are identified at http://sero.nmfs.noaa.gov/pr/GISDataandMaps.htm

Explanation of actions (Conservation Measures) to be implemented to reduce adverse effects:

SPECIES	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Green turtle, Hawksbill turtle, Kemp's ridley turtle, Leatherback turtle, Loggerhead turtle	No actions needed to minimize impacts in the terrestrial environment. All construction conditions identified in the *Sea Turtle and Smalltooth Construction Conditions* (NOAA, 2006) would be implemented and adhered to during project construction to minimize the risk of collisions.
West Indian manatee	All construction conditions identified in the *Standard Manatee Conditions for In-water Work* (FWS 2011) would be implemented and adhered to during project construction. Commercial harvesters are generally aware that marine mammals could be present and avoid them, though manatees would not commonly be using habitats around oyster reefs. We anticipate these conservation measures will avoid any risk of adverse effects to manatees from implementation proposed project and common boating safety practices will reduce any risk to manatees during oyster harvest.
Piping plover	The infrequent nature of the project noise from workers and equipment and the distance of the project from suitable foraging/resting habitats will minimize project risks to an insignificant and discountable level.
Red knot	The infrequent nature of the project noise from workers and equipment and the distance of the project from suitable foraging/resting habitats will minimize project risks to an insignificant and discountable level.
Gulf sturgeon	See note in above table about the review of potential Gulf sturgeon impacts being coordinated through NMFS.

B.

VIIII. Effect Determination and Response Requested:

[1]DETERMINATION/ RESPONSE REQUESTED:

Species	Species Impacts					Response Requested*
	NE	NLAA	MAA	JP	JC	
Green turtle	X					Concurrence - Terrestrial Habitats Only; Consultation with NMFS for Estuarine/Marine habitats

Species	Species Impacts					Response Requested*
	NE	NLAA	MAA	JP	JC	
Hawksbill turtle	X					Concurrence – Terrestrial Habitats Only; Consultation with NMFS for Estuarine/Marine habitats
Kemp's ridley turtle	X					Concurrence – Terrestrial Habitats Only; Consultation with NMFS for Estuarine/Marine habitats
Leatherback turtle	X					Concurrence – Terrestrial Habitats Only; Consultation with NMFS for Estuarine/Marine habitats
Loggerhead turtle	X					Concurrence – Terrestrial Habitats Only; Consultation with NMFS for Estuarine/Marine habitats
West Indian manatee		X				Concurrence
Piping plover		X				Concurrence
Red knot		X				Conference
Gulf sturgeon[a]	---	---	---	---	---	Consultation with NMFS

*Concurrence, Formal Consultation, Formal Conference

[a] NMFS is providing consultation for Gulf sturgeon and its CH in the estuarine environment so this species will not be considered in the consultation with the USFWS.

X. Bald Eagles

Are bald eagles present in the action area? __X__No ____Yes

If "Yes," can you implement the conservation measures below? ____Yes ____No

1. If bald eagle breeding or nesting behaviors are observed or a nest is discovered or known, all activities (walking, camping, cleanup, 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 (like 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 within 660 feet of a nest may result in disturbance, particularly for the eagles occupying the Mississippi barrier islands. 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.

If not, contact the Service's Migratory Bird Permit Office to determine how to avoid impacts or if a permit may be needed.

XI. Migratory Birds

A. Identify the species anticipated in the project area and behaviors (breeding, roosting, foraging) anticipated during project implementation.

Variety could be present –

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Foraging, feeding, resting, roosting, nesting	While seabirds forage, rest, or nest in the general vicinity of the project area, the project will take place at least a half mile offshore and most roosting/nesting occurs in the dune habitat. The level of project activity in open water could startle birds; however, is not expected to disrupt feeding, resting, or nesting.

B. If species or habitat impacts could occur, identify avoidance and minimization measures to prevent incidental take. Incidental take of Migratory Birds cannot be authorized.

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Care will be taken to minimize noise and vibration near areas where foraging or resting birds are encountered. All disturbance will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity. Roosting should not be impacted because the project will occur during daylight hours only. Nesting should not be impacted because the project will not occur in nesting habitats and activity is limited to open water areas.

XII. Signatures from the station preparing the Intra-Service Biological Evaluation:

/s/ Holly N. Blalock-Herod 12/26/2013
Signature (originating station - preparer) **date**

DOI Case Management Team, ESA Coordinator
Title

Signature (originating station) **date**

Deputy Case Manager

This analysis resulted in a determination that no "take" of a federally listed species would occur. If any of the following occur, then there must be reinitiation on this action:

(1) any unforeseen circumstances arise or incidental take occurs
(2) new information reveals effects of the Service's action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion;
(3) the Service's action is later modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or
(4) a new species is listed or critical habitat designated that may be affected by the action.

In instances where any incidental take occurs, the operations causing such take must cease until reinitiation.

If reinitiation is required, contact the Panama City Ecological Services Field Office **about the action.**
US Fish and Wildlife Service
1601 Balboa Avenue
Panama City, FL 32405
Tel: 850-769-0552

XIII. Reviewing Ecological Services Office Evaluation:

A. Concurrence ✓ **Nonconcurrence** _____

B. Formal consultation required _____

C. Conference required _____

D. Informal conference required _____

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E. Remarks (attach additional pages as needed):

Donald Cox 11/23/20 M

Signature **date**

DONALD IMM PCFO

Field Supervisor **office**

References

Berrigan, M.E. 1990. Biological and Economical Assessment of an Oyster Resource Development Project in Apalachicola Bay, Florida. *Journal of Shellfish Research* 9(1):149-158.

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.

U.S. Department of the Interior. 2011. Biological Opinion: Permitted actions for watercraft access facilities. FWS Log No. 41910-2-11-FC-0195. March, 21.

U.S. Department of the Interior. 2013. 50 CFR Part 17: Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Northwest Atlantic Ocean District Population Segment of the Loggerhead Sea Turtle (*Caretta caretta*). Proposed Rule. Federal Register p. 18000-18082. March 25.

Figure A. Locations of potential activity for the Florida Oyster Cultch Restoration Project.

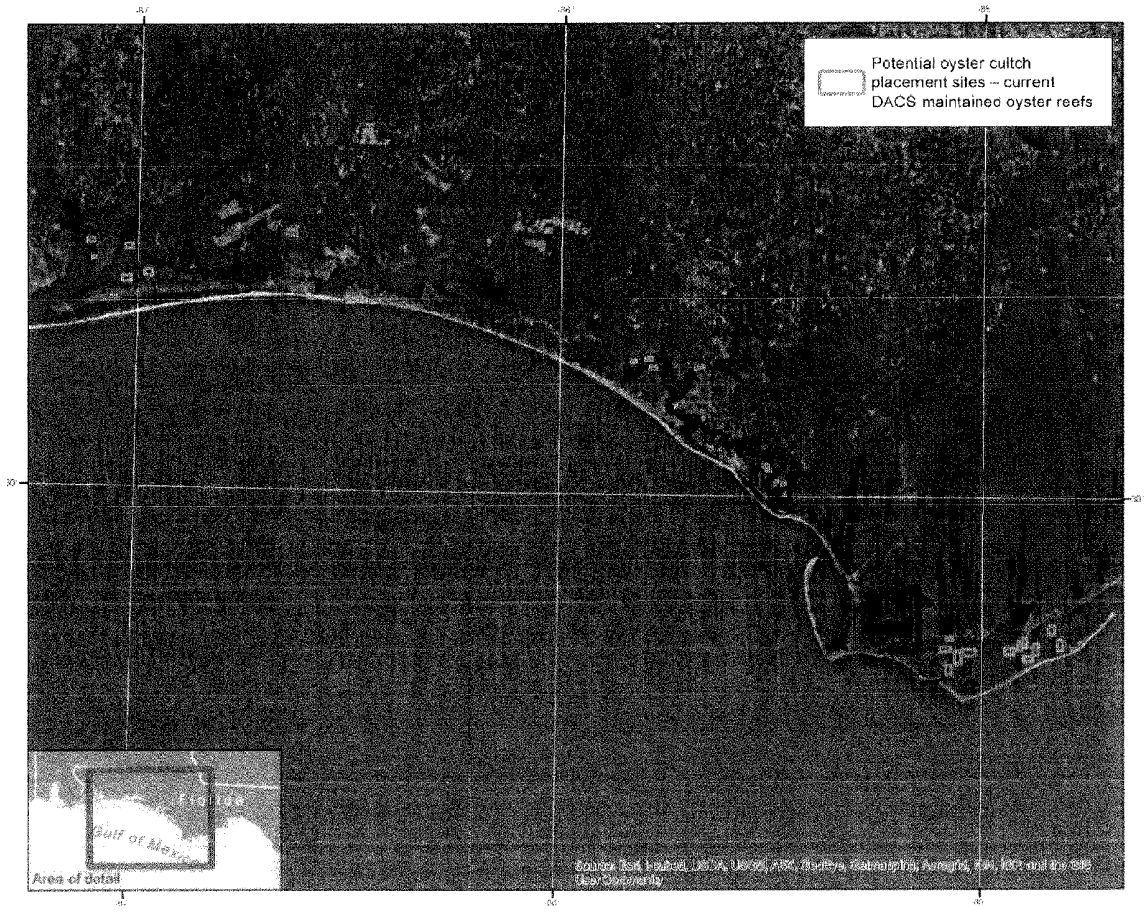


Figure B. Locations of potential activity for the Florida Oyster Cultch Restoration Project within Pensacola Bay.

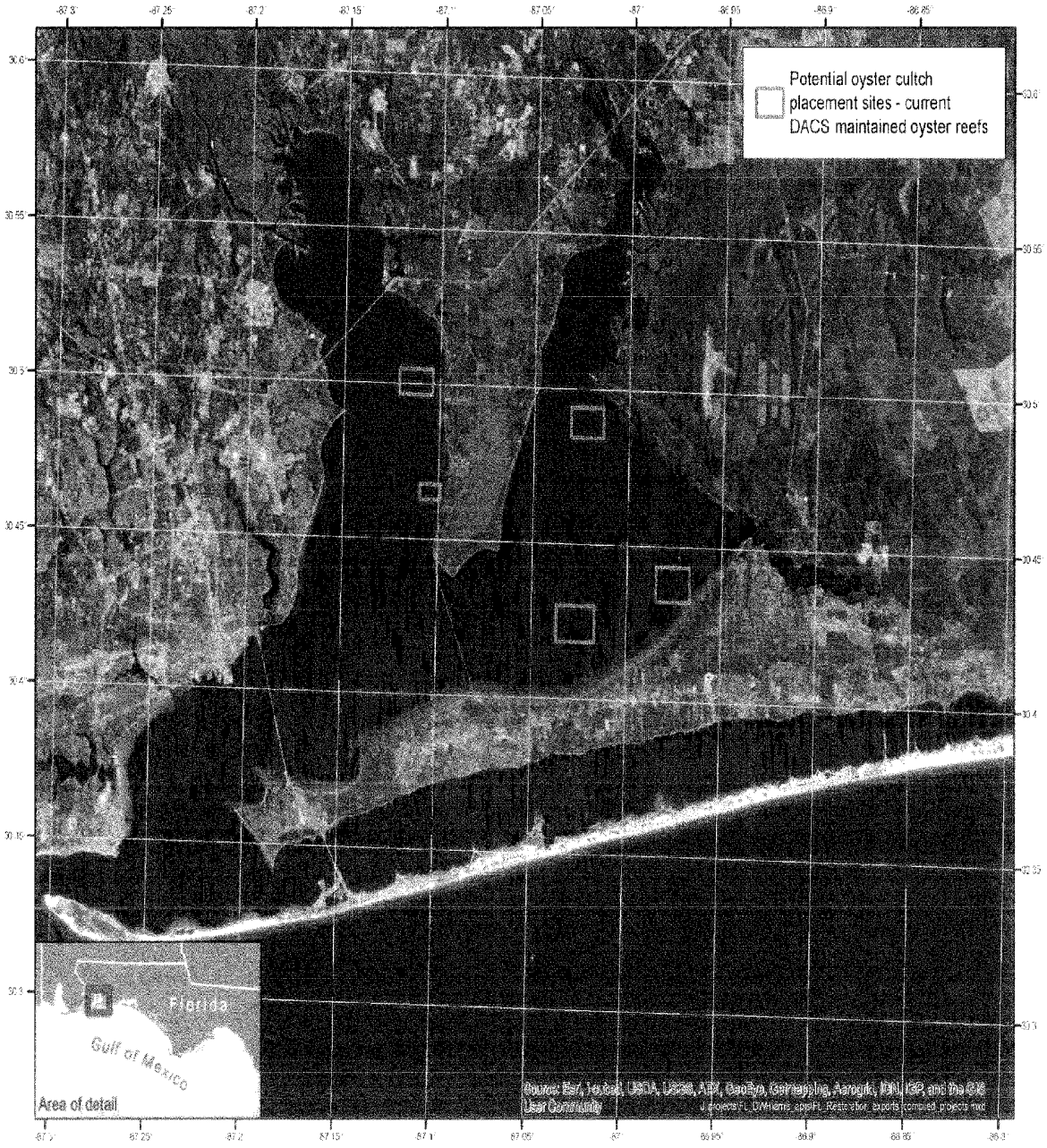


Figure C. Locations of potential activity for the Florida Oyster Cultch Restoration Project within St. Andrews Bay.

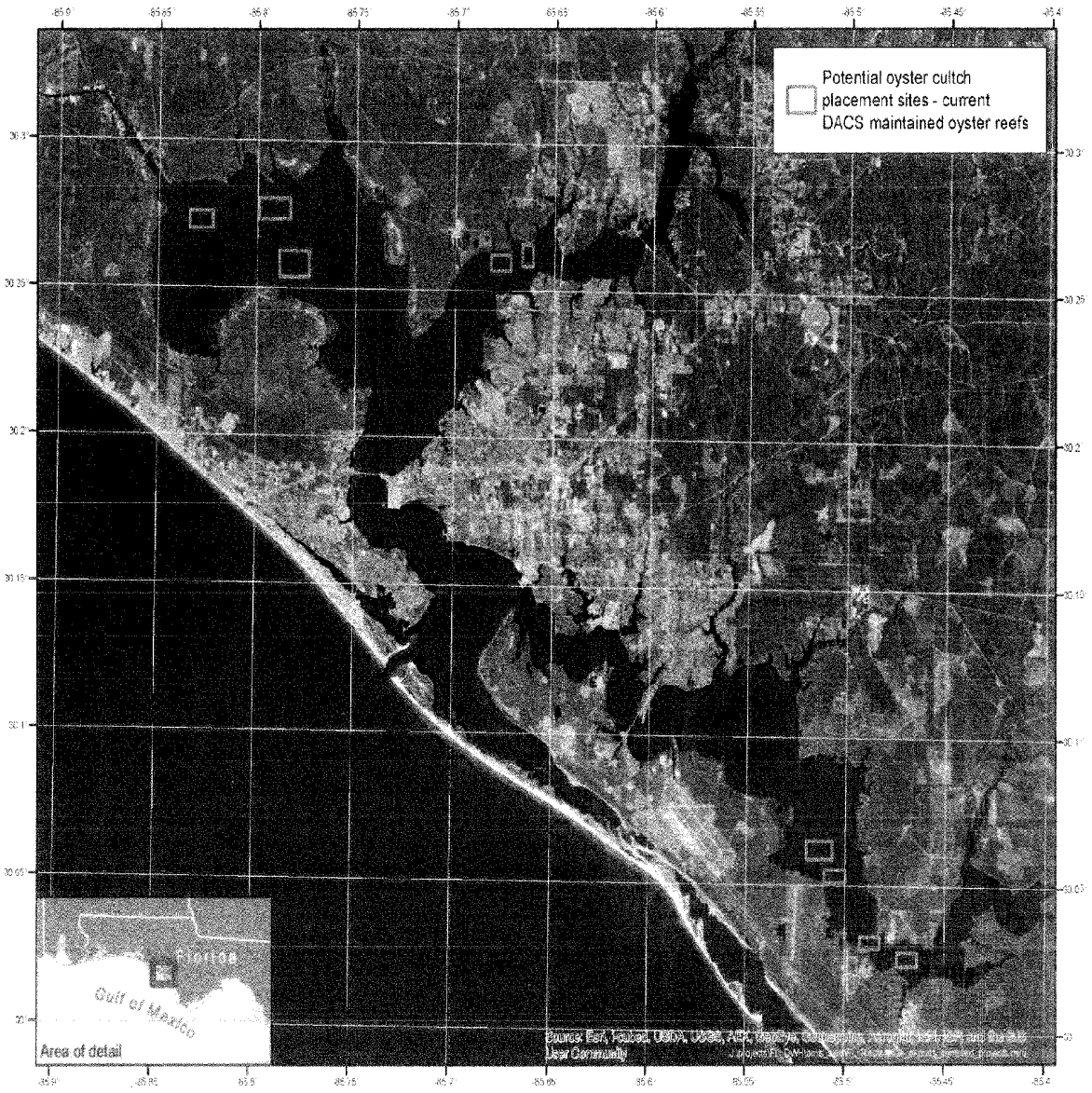


Figure D. Locations of potential activity for the Florida Oyster Cultch Restoration Project within Apalachicola Bay.

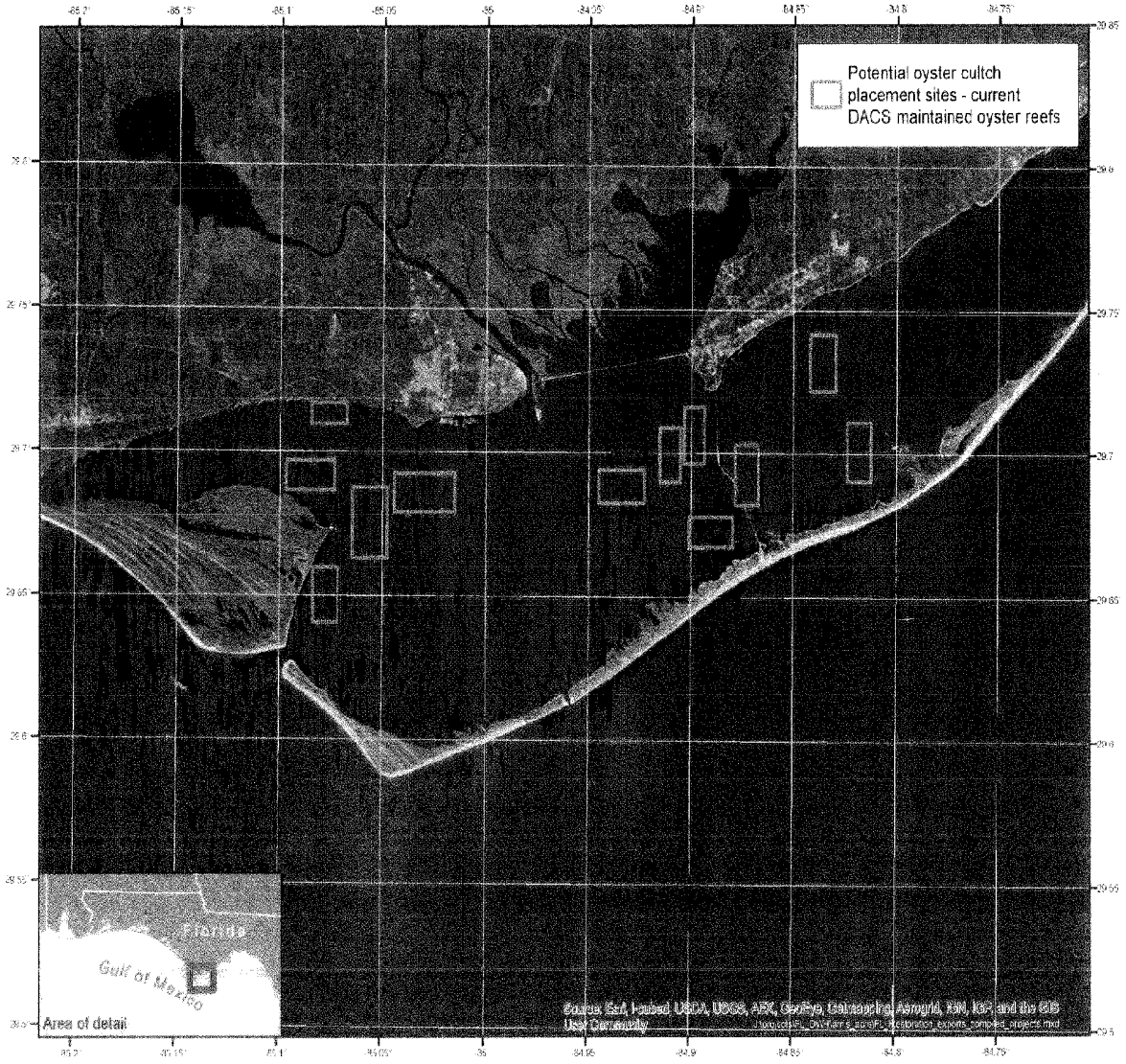
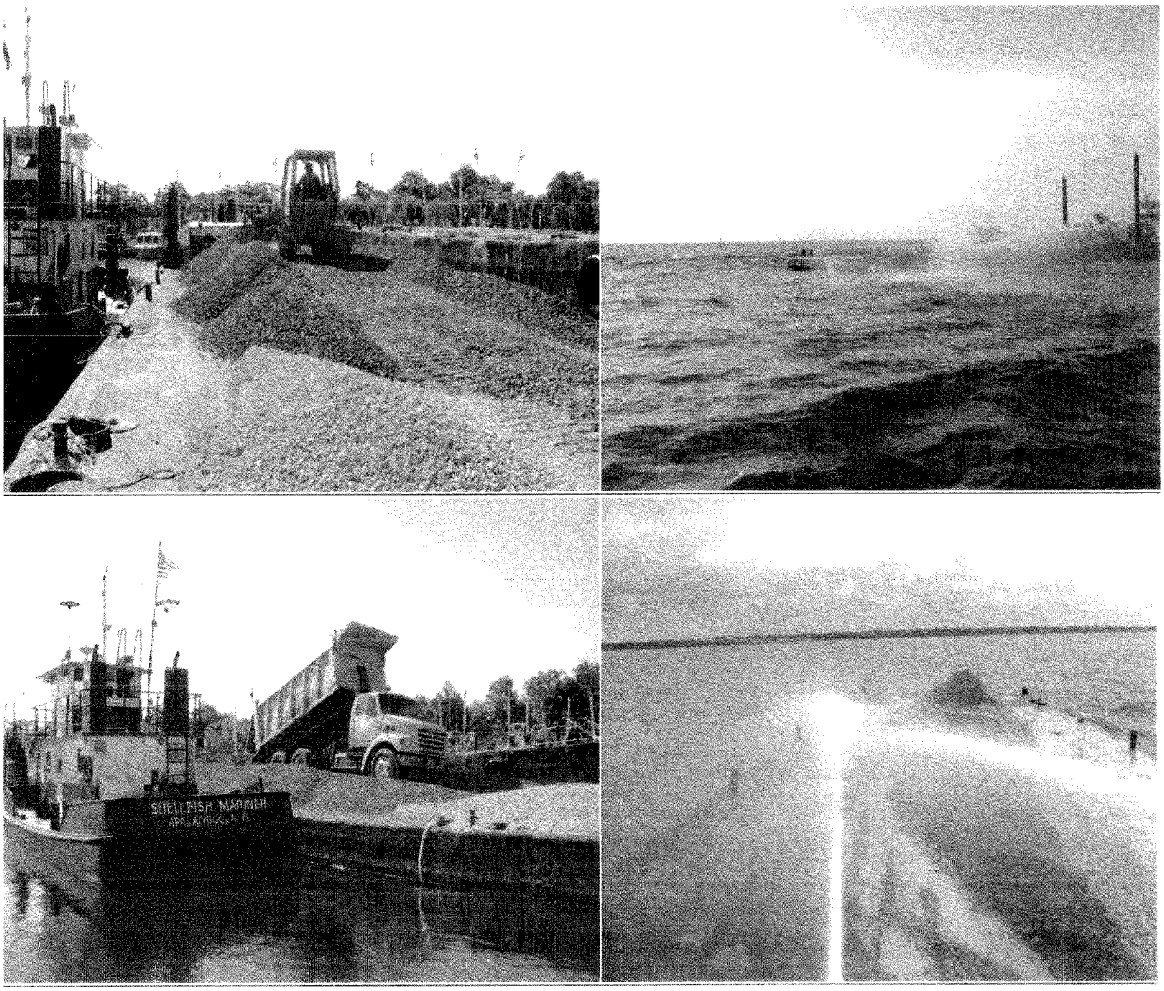


Figure E1-E6. Examples of cultch loading on a barge and transport to a restoration site (left side) and offloading at restoration site using a water cannon (right side)



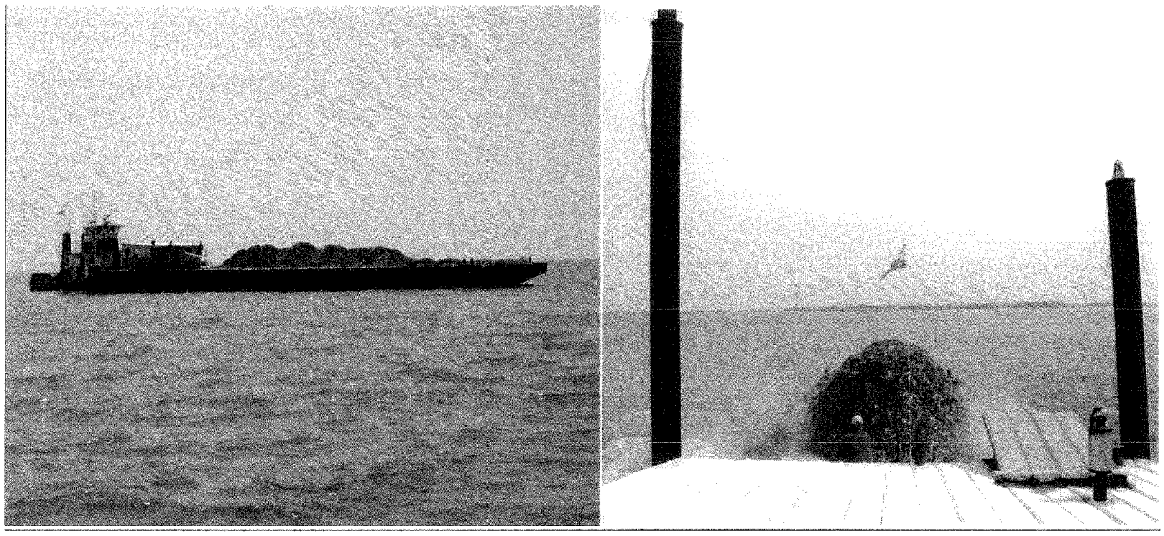


Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Amphibians	Florida bog frog	SSC	ce	Palustrine: seepage slope, baygall Riverine: seepage slope, seepage stream.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Amphibians	Frosted flatwoods salamander	T (CH)		Palustrine: wet Flatwoods, dome swamp, basin swamp, Terrestrial: mesic flatwoods (reproduces in ephemeral wetlands within this community).	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Amphibians	Gopher frog	SSC	ce	Terrestrial: sandhill, scrub, scrubby flatwoods, xeric hammock (reproduces in ephemeral wetlands within these communities).	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Amphibians	Reticulated flatwoods salamander	E (CH)		Palustrine: wet Flatwoods, dome swamp, basin swamp, Terrestrial: mesic flatwoods (reproduces in ephemeral wetlands within this community).	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Arctic peregrine falcon	ce	E	Estuarine: winters along coasts Lacustrine: various Palustrine: various Terrestrial: various, ruderal.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Bachman's sparrow	ce		Terrestrial: various, ruderal.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Bald eagle	BGEPA		Estuarine: marsh edges, tidal swamp, open water Lacustrine: swamp lakes, edges Palustrine: swamp, floodplain Riverine: shoreline, open water Terrestrial: pine and hardwood forests, clearings.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Least tern		T	Estuarine: various Lacustrine: various Riverine: various Terrestrial: beach dune, ruderal. Nests common on rooftops.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Piping plover	T	T	Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants.	NLAA	See Table 2, 3, and 4

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Birds	Red knot	P		Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants.	NLAA	See Table 2, 3, and 4
Birds	Red-cockaded woodpecker	E		Terrestrial: mature pine forests.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Reddish egret	ce	SSC	Estuarine: tidal swamp, depression marsh, bog, marl prairie, wet prairie Lacustrine: flatwoods/prairie lake, marsh lake Marine: tidal swamp.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Southeastern kestrel	ce	T	Estuarine: various habitats Palustrine: various habitats Terrestrial: open pine forests, clearings, ruderal, various.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Southeastern snowy plover	ce	T	Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Stoddard's yellow-throated warbler	ce		Terrestrial: wooded habitats with Spanish moss, various.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Wakulla seaside sparrow	ce	SSC	Estuarine: tidal marsh Marine: tidal marsh.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Birds	Wood stork	E	E	Estuarine: marshes Lacustrine: floodplain lakes, marshes (feeding), various Palustrine: marshes, swamps, various.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Crustaceans	Panama City Crayfish (Econfina crayfish)	ce	SSC	Palustrine: wet flatwoods; temporary or fluctuating ponds or semipermanently inundated ditches, also ruderal, roadside ditches and utility easements. Associated soil types: Pamlico-Dorovan Complex, Rutlege sand, Osier fine sand, Plummer sand, Pelham sand; some Leon sands.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Fish	Crystal darter	ce	T	Riverine: alluvial stream.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Fish	Gulf sturgeon	T (CH)	SSC	Estuarine: various Marine: various habitats Riverine: alluvial and blackwater streams.	---	See Table 2, 3, and 4
Mammals	Choctawhatchee beach mouse	E (CH)	E	Terrestrial: beach dune, coastal scrub.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mammals	Florida black bear	ce	T	Palustrine: titi swamps, floodplains Terrestrial: pine and hardwood forests.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mammals	Florida mouse	ce	SSC	Terrestrial: scrub, sandhill, scrubby flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mammals	Round-tailed muskrat	ce		Estuarine: tidal marsh Lacustrine: marsh lake, flatwoods/prairie lake Palustrine: floodplain marsh, swale, depression marsh, basin marsh.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mammals	Santa Rosa beach mouse	ce		Terrestrial: beach dune, coastal scrub.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mammals	Southeastern big-eared bat	ce		Palustrine: various, floodplains Terrestrial: pine and hardwood forests, ruderal, various.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mammals	St. Andrew beach mouse	E (CH)	E	Terrestrial: beach dune, coastal scrub.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mammals	West Indian manatee	E	E	Estuarine: submerged vegetation, open water Marine: open water, submerged vegetation Riverine: alluvial stream, blackwater stream, spring-run stream.	NLAA	See Table 2, 3, and 4
Mussels	Choctaw bean	E (CH)		Riverine: Small to large creeks and rivers in sand to silty-sand substrates with moderate current. Panhandle drainages: Escambia, Yellow, and Choctawhatchee Rivers.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Mussels	Fat threeridge	E (CH)		Riverine: main channels of small to large rivers in slow to moderate currents; fine to medium silty sand, also mixtures of sand, clay, and gravel. Panhandle drainages: Chipola and Apalachicola Rivers.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Fuzzy pigtoe	T (CH)		Riverine: small to medium-sized creeks and rivers with slow to moderate currents in sand and sand with some silt. Panhandle drainages: Escambia, Yellow, and Choctawhatchee Rivers.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Gulf moccasinshell	E (CH)		Riverine: medium-sized creeks to large rivers with sand and gravel substrates in slow to moderate currents. Panhandle drainages: Econfina Creek and Chipola River.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Narrow pigtoe	T (CH)		Riverine: small to medium-sized creeks and rivers in stable substrates of sand, sand and gravel, or silty sand, with slow to moderate current. Panhandle drainages: Escambia and Yellow Rivers.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Oval pigtoe	E (CH)		Riverine: medium-sized creeks to small rivers; various substrates; slow to moderate currents.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Purple bank climber	T (CH)		Riverine: small to large rivers in sand, sand mixed with mud, or gravel substrates with slow to moderate currents. Panhandle drainages: Chipola, Apalachicola, and Ochlockonee Rivers.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Round ebonyshell	E (CH)		Riverine: medium-size drivers in stable substrates of sand, small gravel, or sandy mud in slow to moderate current. Panhandle drainages: restricted to the main channel of the Escambia River.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Mussels	Shinyrayed pocketbook	E (CH)		Riverine: medium-sized creeks to mainstem rivers in a range of substrates including sand, clay, and gravel with slow to moderate current. Panhandle drainages: Econfina (Creek),Chipola, and Ochlockonee (upstream of Lake Talquin) Rivers.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Southern sandshell	T (CH)		Riverine: found in small to medium-sized creeks and rivers in sandy substrates sometimes with some silt in slow to moderate current. Panhandle drainages: Escambia, Yellow, and Choctawhatchee Rivers.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Mussels	Tapered pigtoe	T (CH)		Riverine: Small to medium-sized creeks to large rivers in stable substrates of sand, small gravel, or sandy mud, with slow to moderate current. Panhandle drainages: Choctawhatchee River.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Reptiles	Alligator snapping turtle	ce	SSC	Estuarine: tidal marsh Lacustrine: river floodplain lake, swamp lake Riverine: alluvial stream, blackwater stream.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Reptiles	Barbour's map turtle	ce	SSC	Palustrine: floodplain stream, floodplain swamp Riverine: alluvial stream.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Reptiles	Eastern indigo snake	T	T	Estuarine: tidal swamp Palustrine: hydric hammock, wet Flatwoods Terrestrial: mesic flatwoods, upland pine forest, sand hills, scrub, scrubby flatwoods, rockland hammock, ruderal.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Reptiles	Florida pine snake	ce	SSC	Lacustrine: ruderal, sandhill upland lake Terrestrial: flatwoods, xeric hammock, ruderal.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Reptiles	Gopher tortoise	C	SSC	Terrestrial: sandhills, scrub, scrubby flatwoods, xeric hammocks, coastal strand, ruderal.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Reptiles	Green turtle	E	E	Terrestrial: sandy beaches; nesting.	NE	See Table 2, 3, and 4

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Reptiles	Hawksbill turtle	E	E	Marine: open water; no nesting.	NE	See Table 2, 3, and 4
Reptiles	Kemp's ridley turtle	E	E	Terrestrial: sandy beaches; nesting.	NE	See Table 2, 3, and 4
Reptiles	Leatherback turtle	E	E	Terrestrial: sandy beaches; nesting.	NE	See Table 2, 3, and 4
Reptiles	Loggerhead turtle	T	T	Terrestrial: sandy beaches; nesting.	NE	See Table 2, 3, and 4
Plants	Alternate-leaf or pagoda dogwood		E	Palustrine: creek swamps Terrestrial: slope forest, upland hardwood forest, bluffs.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Apalachicola dolls daisy	ce		Palustrine: Floodplain Forest.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Apalachicola wild indigo		E	Palustrine: floodplain forest Terrestrial: upland mixed forest, slope forest.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Ashe's magnolia		E	Terrestrial: slope and upland hardwood forest, ravines.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Baltzell's sedge	ce	T	Terrestrial: slope forest, moist sandy loam; moist sandy loam.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Bent golden aster	ce	E	Terrestrial: pine forest, ruderal.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Buckthorn	ce	E	Palustrine: hydric hammock, floodplain swamp.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Carolina grass-of-parnassus	ce	E	Palustrine: seepage slope Terrestrial: mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Chapman's butterwort	ce	T	Palustrine: wet flatwoods, seepage slopes, bog, dome swamp, ditches; in water.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Plants	Chapman's crownbeard	ce	T	Palustrine: seepage slope Terrestrial: mesic flatwoods with wiregrass (Aristida stricta).	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Corkwood		T	Estuarine: tidal marsh Palustrine: freshwater tidal swamp, hydric hammock.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Cruise's golden-aster	ce	E	Terrestrial: coastal dunes, coastal strand, coastal grassland; openings and blowouts.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Curtiss' loosestrife	ce	E	Palustrine: wet Flatwoods edges, floodplain swamp, seepage slope, dome swamp edges Terrestrial: seepage slope.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Curtiss' sandgrass	ce	T	Palustrine: mesic and wet flatwoods, wet prairie, depression marsh Terrestrial: mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Dark-headed hatpin	ce		Palustrine: Wet Boggy Seepage slopes, mucky soils.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Decumbant pitcher plant		T	Palustrine: Bogs.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Dew-thread		E	Lacustrine: exposed lake bottoms.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Florida anise		T	Palustrine: floodplain forest, baygall Riverine: seepage stream bank Terrestrial: slope forest, seepage slope.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Florida bear-grass	ce	T	Terrestrial: mesic flatwoods grassy areas.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Florida pondweed	ce		Riverine: blackwater stream.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	Common name	FWS status	State status	Natural communities	Species impacts (NE, NLAA, MAA)	Justification
Plants	Florida skullcap	T	E	Palustrine: seepage slope, wet flatwoods, grassy openings Terrestrial: mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Giant water-dropwort		E	Palustrine: dome swamp, wet flatwoods, ditches; in water.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Godfrey's (violet) butterwort	T	E	Palustrine: wet flatwoods, wet prairie, bog; in shallow water Riverine: seepage slope; in shallow water. Also, roadside ditches and similar habitat.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Godfrey's blazing star	ce	E	Terrestrial: sandhill, scrub, coastal grassland; disturbed areas.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Gulf coast lupine	ce	T	Terrestrial: beach dune, scrub, disturbed areas, roadsides, blowouts in dunes.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Hairy fever tree		T	Palustrine: creek swamps, titi swamps, bogs.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Harper's beauty	E	E	Palustrine: wet prairie, seepage slope, roadsides, edges of titi swamps.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Harper's grooved yellow flax	ce		Palustrine: wet Flatwoods Terrestrial: mesic flatwoods; in site-prepped areas.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Harper's yellow-eyed grass	ce	T	Palustrine: seepage slope, wet prairie, bogs.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Heartleaf		T	Riverine: seepage stream bank Terrestrial: slope forest.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Hooded pitcher plant		T	Palustrine: wet flatwoods, wet prairie, seepage slope.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

Table 1. Listed species of concern in the counties where activity for the oyster reef restoration project could occur						
Resource category	Common name	FWS status	State status	Natural communities	Species impacts (NE, NLAA, MAA)	Justification
Plants	Hummingbird flower		E	Palustrine: seepage slope, dome swamp edges, floodplain swamps Riverine: seepage stream banks Terrestrial: seepage slopes.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Indian cucumber-root		E	Palustrine: bottomland forest Terrestrial: bottomland forest.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Karst pond xyris		E	Lacustrine: sandhill upland lake margins.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Lace-lip		T	Palustrine: wet flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Large-flowered-grass-of-parnassus		E	Palustrine: dome swamp margins, seepage slope Riverine: spring-run stream edge Terrestrial: mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Large-leaved jointweed	ce	T	Terrestrial: scrub, sandpine/oak scrub ridges.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Meadow beauty	ce	E	Palustrine: dome swamp margin, seepage slope, depression marsh; on slopes; with hypericum.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Mountain laurel		T	Riverine: seepage stream bank Terrestrial: slope forest, seepage stream banks.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Orange azalea		E	Palustrine: bottomland forest Riverine: seepage stream bank Terrestrial: slope forest, upland mixed forest.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Panhandle lily	ce	E	Palustrine: baygall, dome swamp edges, mucky soil, seepage slope, edges of titi bogs, Riverine: banks.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Panhandle Meadow-beauty	ce		Palustrine: Wetland obligate with moist sandy or peaty soils in full sunlight .	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

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Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Plants	Panhandle spiderlily	ce	E	Palustrine: dome swamp edges, wet prairie, wet flatwoods, baygall edges, swamp edges Terrestrial: wet prairies and flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Papery whitlow-wort	T	E	Terrestrial: Karst sandhill lake margins.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Parrot pitcher plant		T	Palustrine: wet flatwoods, wet prairie, seepage slope.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Perforate reindeer lichen	E	E	Terrestrial: coastal strand, rosemary scrub; full sun. Sites: Eglin AFB Santa Rosa/Okaloosa Island.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Pine-woods aster	ce	E	Palustrine: seepage slope Terrestrial: sandhill, scrubby and mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Primrose-flower butterwort		E	Palustrine: bogs, pond margins, margins of spring runs.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Pyramid magnolia		E	Terrestrial: slope forest.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Quillwort yellow-eyed grass	ce		Lacustrine: lake margins Palustrine: wet flatwoods, wet prairie.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Red-flowered pitcher plant		T	Palustrine: bog, wet prairie, seepage slope, wet flatwoods Riverine: seepage stream banks.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Rosebud orchid or spreading pagonia		T	Palustrine: wet flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Scare-weed	ce	T	Terrestrial: mesic flatwoods, sand hill; on disturbed sites.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

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Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Plants	Silky camellia		E	Palustrine: baygall Palustrine: slope forest, upland mixed forest, Terrestrial: slope forest, upland mixed forest; acid soils.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Smooth-barked St. John's wort	ce	E	Lacustrine: lake margins Terrestrial: lake margins.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Snowy orchid		T	Palustrine: bogs.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Southern milkweed	ce	T	Palustrine: wet prairie, seepage slope edges Riverine: seepage stream banks Terrestrial: mesic flatwoods, drainage ditches.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Southern red lily		T	Palustrine: wet prairie, wet flatwoods, seepage slope Terrestrial: mesic flatwoods, seepage slope; usually with grasses.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Spoon-leaved sundew		T	Lacustrine: sinkhole lake edges Palustrine: seepage slope, wet flatwoods, depression marsh Riverine: seepage stream banks, drainage ditches.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	St. John's-susan	ce	E	Palustrine: wet flatwoods and prairies, roadside ditches.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Sweet shrub		E	Terrestrial: upland hardwood forest, slope forest, bluffs Palustrine: bottomland forest, stream banks, floodplains.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Telephus spurge	T	E	Terrestrial: mesic flatwoods; disturbed wiregrass (Aristida stricta) areas, coastal scrub. All known sites are within 4 miles of Gulf of Mexico.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Thick-leaved water willow	ce	E	Palustrine: dome swamp, seepage slope Terrestrial: mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

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Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Plants	Trailing arbutus		E	Terrestrial: bluff, slope forest, mixed hardwood forest.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Tropical waxweed	ce		Palustrine: wet prairie, seepage slope Terrestrial: mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	West Florida cow-lily	ce		Riverine: shallow, clear, or tannic-acid tinted waters, often rooted in sandy substrate	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	West's flax	ce	E	Palustrine: dome swamp, depression marsh, wet flatwoods, wet prairie, pond margins.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	White birds-in-a-nest	T	E	Palustrine: seepage slope Terrestrial: grassy mesic pine flatwoods, savannahs, roadsides, and similar habitat.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	White Indian Plantain	ce		Palustrine: wet flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	White-top pitcher plant	ce	E	Palustrine: wet prairie, seepage slope, baygall edges, ditches.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Wiregrass gentian	ce	E	Palustrine: seepage slope, wet prairie, roadside ditches Terrestrial: mesic flatwoods, planted slash pine.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Yellow butterwort		T	Palustrine: flatwoods, bogs.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Yellow fringed orchid		T	Palustrine: bogs, wet flatwoods Terrestrial: Bluff.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)
Plants	Yellow fringeless orchid	ce	E	Palustrine: wet prairie, seepage slope Terrestrial: mesic flatwoods.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

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Resource category	**Common name**	**FWS status**	**State status**	**Natural communities**	**Species impacts (NE, NLAA, MAA)**	**Justification**
Plants	Yellow-root		E	Riverine: seepage stream; sandy banks.	NE	Listed natural community is inconsistent with the project habitat (marine: open water)

BGEPA = Bald and Golden Eagle Protection Act, C = candidate, ce = consideration encouraged, CH = critical habitat, E = endangered, SSC = species of special concern, T = threatened.

Source: This table reflects the information available from the U.S. Fish and Wildlife, Panama City office website: http://www.fws.gov/panamacity/specieslist.html which provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

Oyster clutch
Cultch

NRDA ROUTING SLIP

Comments: NONE

Date:

	Received	Due	
Imm, Don			
Phillips, Catherine			
Ambrose, Lydia VA	1-23-14		Concur
Kelly, Patty 1.15.14	~~1-15-14~~	No Comment	
Lehnhoff, Lisa	1-15-14	NO comment	
Mitchell, Harold	1-15-15	No comment	
Negron-Ortiz, Vivian	1-15-14	No comment	
Pursifull, Sandy	1-16-14	NC	
Yanchis, Kristi	1-15-14	no comment	