Chapter 9: Proposed Osprey Restoration in Coastal Alabama

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9.1 Osprey Restoration in Coastal Alabama: Project Description

9.1.1 Project Summary

The proposed restoration project would install five osprey nesting platforms along the coast in Mobile and Baldwin Counties, Alabama in order to provide enhanced nesting opportunities for piscivorous raptors, including osprey.

9.1.2 Background and Project Description

This project seeks to compensate the losses to natural resources resulting from the Spill by establishing five osprey nesting platforms in Mobile and Baldwin Counties in coastal Alabama. The specific locations and design of these nesting platforms would be developed to maximize project success and meet regulatory requirements. Five general areas have been identified for the location of these platforms (Figure 9-1) (from west to east): the vicinity of Portersville Bay, the vicinity of Dauphin Island, the vicinity of Fort Morgan, the vicinity of the Little Lagoon in Gulf Shores, and in Gulf State Park (Figures 9-2 through 9-6).

Osprey (Pandion haliaetus) occur in the southeastern and western coastal areas, the northern states, and the Pacific Northwest. Some osprey migrate to winter in Central and South America, while others spend their winters in Florida and southern California (University of Georgia, 2008). In Alabama, osprey can be found in the spring, summer, and fall, and are uncommon in winter. This species is typically found on lakes, rivers, and bays (ADCNR, 2014). Osprey require nest sites in open surroundings for easy approach, with a wide, sturdy base and safety from ground predators (such as raccoons). Nests are usually built on snags, treetops, or at the junction of large branches and trunks, on cliffs, or human-built platforms. The osprey readily builds its nest on manmade structures in suitable habitat areas, such as telephone poles, channel markers, duck blinds, and nest platforms designed especially for it (Figures 9-6 and 9-7). In some areas, nests are placed almost exclusively on artificial structures (Cornell, 2015).
Figure 9-1. Potential Platform Location Overview
Figure 9-2. Potential Osprey Restoration Target Platform Areas in the Vicinity of Portersville Bay
Figure 9-3. Potential Osprey Restoration Target Platform Areas in the Vicinity of Dauphin Island
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AL Osprey Project
Potential Platform Locations
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Figure 9-5. Potential Osprey Restoration Target Platform Areas in the Vicinity of Little Lagoon, Gulf Shores
Figure 9-6. Potential Osprey Restoration Target Platform Areas in Gulf State Park
Figure 9-7. View of Typical Osprey Nesting Platform
9.1.3 Evaluation Criteria

This proposed project meets the evaluation criteria established by OPA regulations and the Framework Agreement. The project would enhance piscivorous raptor nesting habitat along coastal Alabama, resulting in increased nesting success and helping to offset adverse impacts to piscivorous raptors caused by the Spill. Thus, the nexus to resources injured by the Spill is clear (see 15 C.F.R. § 990.54(a)(2) and Sections 6a-6c of the Early Restoration Framework Agreement).

The project is technically feasible, utilizes commonly used restoration techniques, and can be implemented with minimal delay. This project would use nesting platforms similar to those already used in coastal Alabama. For these reasons, the project has a high likelihood of success (see 15 C.F.R. § 990.54(a)(3) and Section 6e of the Early Restoration Framework Agreement).

A thorough environmental assessment, including review under applicable environmental statutes and regulations, is described in Section 9.2. That preliminary review indicates that adverse effects from the project would largely be minor, localized, and of short duration. In addition, the best management
practices and measures to avoid or minimize adverse effects described in each section in the environmental assessment would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (15 C.F.R. § 990.54(a)(4)).

Cost estimates are based on similar past projects, and adjusted based on-site specific considerations for this project. Based on these estimates and best professional judgment the project can be conducted at a reasonable cost. (See 15 C.F.R. § 990.54(a)(1)). As a result, the project is considered feasible and cost effective. The project is not inconsistent with long-term restoration needs (see 15 C.F.R. § 990.54(a)(1),(3), and Sections 6d-6e of the Early Restoration Framework Agreement).

9.1.4 Performance Criteria and Monitoring

The restoration goal of this project is to enhance osprey nesting habitat in coastal Alabama. This would be accomplished by the establishment of five nesting platforms. The project would be deemed successful when the goal of installing five platforms to provide additional habitat is accomplished. Nests would be monitored after construction according to the monitoring plan in Appendix B.

9.1.5 Maintenance

There would be no anticipated long-term maintenance activities required due to the simple nature of these structures. In the event that the structures are damaged from a severe weather event, they may be replaced, contingent on available funding. However, based on experience with similar structures along the gulf coast, these structures have been able to withstand severe weather events.

9.1.6 Offsets

For purposes of negotiating Offsets with BP in accordance with the Framework Agreement, the Trustees used a Resource Equivalency Analysis to estimate bird Offsets. The Trustees and BP agreed that if this restoration project is selected for implementation, BP would receive Offsets of 168 discounted bird years for piscivorous raptors, applicable only to piscivorous raptor injuries, as determined by the Trustees’ total assessment of injury for the Spill. Piscivorous raptor(s) means osprey (Pandion haliaetus) and bald eagle (Haliaeetus leucocephalus) for purposes of this Offset.

9.1.7 Estimated Cost

The estimated cost for this project is $45,000. This cost reflects cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, design, implementation, and monitoring.
9.2 Osprey Restoration in Coastal Alabama: Environmental Assessment

The proposed restoration project would install five osprey nesting platforms along the coast in Mobile and Baldwin Counties, Alabama to provide enhanced nesting opportunities for osprey.

9.2.1 Introduction, Background, Purpose and Need

The CEQ encourages federal agencies to “tier” their NEPA analyses from other applicable NEPA documents to create efficiency and reduce redundancy, and has issued new guidance on the use of programmatic NEPA documents for tiering (CEQ, 2014).

Tiering has the advantage of not repeating information that has already been considered at the programmatic level so as to focus and expedite the preparation of the tiered NEPA review(s). When a programmatic environmental assessment (PEA) or PEIS has been prepared and an action is one anticipated in, consistent with, and sufficiently explored within the programmatic NEPA review, the agency need only summarize the issues discussed in the broader statement and incorporate discussion from the broader statement by reference and concentrate on the issues specific to the subsequent tiered proposal (CEQ, 2014).

A federal agency may prepare a PEIS to evaluate broad actions (40 C.F.R. § 1502.4(b); see Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18026 (1981)). When a federal agency prepares a PEIS, the agency may “tier” subsequent narrower environmental analyses on site-specific plans or projects from the PEIS (40 C.F.R. § 1502.4(b); 40 C.F.R. §1508.28). Federal agencies are encouraged to tier subsequent narrower analyses from a PEIS to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review (40 C.F.R. § 1502.20). The 2014 Final Programmatic and Phase III Early Restoration Plan and Programmatic Environmental Impact Statement (Final Phase III ERP/PEIS) was prepared for use in tiering subsequent early restoration plans and projects, such as Phase IV.

This project is proposed as part of Phase IV of the Early Restoration program. This EA tiers from the Final Phase III ERP/PEIS. This EA qualifies for tiering from the Final Phase III ERP/PEIS in accordance with Department of the Interior regulations (43 C.F.R. § 46.140, Using Tiered Documents, b and c).

This project is consistent with the Final Phase III ERP/PEIS’ Preferred Alternative as described in the 2014 Record of Decision (79 FR 64831-64832 (October 31, 2014)) and the Trustees find that the conditions and environmental effects described in the broader NEPA document (with updates as described in Chapter 2 of this Draft Phase IV DERP/EA) are valid. Specifically, this project tiers from the analyses found in sections of the PEIS that describe:

- Alternative 4 (Preferred Alternative: Contribute to Restoring Habitats, Living Coastal and Marine Resources and Recreational Opportunities)
- Early Restoration Programmatic Plan - Development and Evaluation of Alternatives
- Section 5.3.5.1, and
• Environmental Consequences, Section 6.3.8, and Project Type 8: Restore and Protect Birds, Create/Enhance Bird Nesting and/or Foraging Habitat.

This EA incorporates by reference the analysis found in the PEIS in those sections. This EA also incorporates by reference all Early Restoration introductory, process, background, and affected environment information and discussion provided in the PEIS (Chapters 1 through 6).

9.2.1.1 Background

As natural nesting sites, (i.e., tree snags) are removed along developed coastlines, nesting platforms such as the structures proposed in this project provide important alternative nesting structures. When platforms are placed within view of suitable fishing habitat for the osprey and predator guards are placed on the poles to limit access to the nest by predators, the species benefits.

This project seeks to partially compensate for piscivorous raptor losses resulting from the Spill by establishing five osprey nesting platforms in Mobile and Baldwin Counties in coastal Alabama. The specific locations and design of these nesting platforms would be developed to maximize project success and meet regulatory requirements.

9.2.1.2 Purpose and Need

The purpose and need for this action falls within the scope of the purpose and need of the programmatic portions of the Final Phase III ERP/PEIS because it would accelerate meaningful restoration of injured natural resources and their services resulting from the Spill. The proposed project’s purpose is to partially restore piscivorous raptors injured as a result of the Deepwater Horizon incident. The proposed project’s purpose is to enhance osprey nesting in coastal Alabama. The proposed project is needed to provide enhanced nesting opportunities with reduced likelihood of nest predation for osprey in coastal areas.

9.2.2 Scope of the EA

This project is proposed as part of Phase IV of Early Restoration. This EA tiers from the programmatic portions of the Final Phase III ERP/PEIS. The broader environmental analyses of these types of actions as a whole are discussed in the Final Phase III ERP/PEIS from which this EA is tiered. The information and analyses in this document supplements the programmatic analyses with site-specific information. This EA provides NEPA analysis for potential impacts for site specific issues and concerns anticipated from implementation of the proposed action and the No Action Alternative.

The Trustees’ Early Restoration project selection process is described in Section 2.1 of the Final Phase III ERP/PEIS. As described there, potential projects evolve from public scoping, ongoing public input through internet-accessible databases, review of current Federal and State management plans and programs, and Trustee expertise and experience. From this broad list of project ideas, the Trustee’s Early Restoration project selection process initially results in a set of proposed projects that, consistent
with the Framework Agreement, are submitted to BP for review and consideration. One project type considered for Early Restoration includes restoration benefiting bird resources impacted by the Spill.

9.2.3 Project Alternatives – No Action Alternative

Both OPA and NEPA require consideration of the No Action alternative. For this section, there are two alternatives, the No Action Alternative and the Proposed Action, Osprey Restoration in Coastal Alabama.

Under the No Action Alternative the Trustees would not pursue Osprey Restoration in Coastal Alabama as part of Phase IV Early Restoration. Under the No Action Alternative, the existing conditions described in Chapter 3 of the Final Phase III ERP/PEIS would prevail. Restoration benefits associated with this project would not be achieved at this time.

9.2.4 Project Alternatives – Proposed Action

9.2.4.1 Project Location

The project proposes installation of five osprey nesting platforms along the coast in Mobile and Baldwin Counties, Alabama. Five general areas have been identified for the location of these platforms (from west to east): the vicinity of Portersville Bay, the vicinity of Dauphin Island, the vicinity of Fort Morgan, the vicinity of the Little Lagoon in Gulf Shores, and in Gulf State Park (Figures 9-2 through 9-6).

9.2.4.2 Project Scope

Figure 9-7 and Figure 9-8 illustrate typical osprey nesting platforms. A typical design for such structures is a 3 foot by 3 foot nesting platform atop a pole approximately 10 to 20 feet high. Poles are typically placed 3 to 6 feet deep in the ground. Sheet metal would be attached to the pole approximately 3 to 6 feet above the ground to prevent predators such as raccoons from climbing the pole to access the nests.

While the exact locations for siting the nesting platforms in the above areas have not yet been determined, the following areas would be avoided:

- Any area with cultural resource artifacts determined significant in coordination with the Alabama Historic Commission (AHC).
- While wetland habitats could be utilized (with proper regulatory compliance), open water siting would be avoided.
- Areas in proximity to bald eagle (Haliaeetus leucocephalus) nests (the guidance of the Bald and Golden Eagle Protection Act would be followed).
- Areas used by listed species or designated as critical habitat would be avoided.
- Any other areas that are identified as unsuitable during the compliance process.

Installation of the proposed project is estimated to take approximately 6 months and would include the following activities:
• Planning, site investigations, and design for the installation of the platforms - approximately 2 months, concurrently it would take approximately 3 months to complete the contracting for this effort.

• Obtain any required permits and consultations (concurrent with planning and design) – 3-4 months

• Construction – Over a 3 month period, with construction at individual sites lasting less than a day.

Construction would likely occur using a standard power pole placement truck, with auger and boom. A second truck would be utilized to transport the poles. Construction activity at each site is expected to last less than one day, approximately two hours.

Existing roads and/or uplands would be used to access the sites, to the maximum extent practicable. A long-arm bucket truck and/or similar equipment would be used to place the nesting platform support pole in the ground. Poles may be placed in either uplands or wetlands; however the only disturbance to the site would be an approximately 3 foot by 3 foot area where the hole for the support pole would be augured. If a platform is placed in wetlands, no vehicles would be operated in or through wetlands. The platform would be placed within reach of the vehicle boom.

No permanent impacts other than the footprint of the pole would occur. Any soil remaining from the auguring of the hole would be spread in a thin layer around the pole or, in the case of poles placed in wetlands, remaining soil would be removed and placed in adjacent uplands.

The total estimated project cost is $45,000. No regular maintenance activities would be anticipated due to the simple nature of these structures. Should they be damaged by a storm event, the ADCNR would look into replacing the structures, contingent upon available funding.

9.2.5 Affected Environment and Environmental Consequences

Under the NEPA, federal agencies must consider environmental effects of their actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected resources and environmental consequences of the project.

In order to determine whether an action has the potential to result in significant impacts, the context and intensity of the action must be considered. Context refers to area of impacts (local, state-wide, etc.) and their duration (e.g., whether they are short- or long-term impacts). Intensity refers to the severity of impact and could include the timing of the action (e.g., more intense impacts would occur during critical periods like high visitation or wildlife breeding/rearing, etc.). Intensity is also described in terms of whether the impact would be beneficial or adverse.

For purposes of this document, impacts are characterized as minor, moderate or major, and temporary or long-term. The analysis of beneficial impacts focuses on the duration (short- or long-term), without
attempts to specify the intensity of the benefit. The definition of these characterizations is consistent with that used in the Final Phase III ERP/PEIS, and can be found in Appendix D.

According to the CEQ Regulations for Implementing NEPA (Section 1502.1 and 1502.2) agencies should “focus on significant environmental issues” and for other than significant issues there should be “only enough discussion to show why more study is not warranted.” After preliminary investigation, some resource areas were determined to be either unaffected or minimally affected by the proposed action. These resources are discussed briefly below. Only those resource areas with potential, adverse impacts are discussed in detail in this EA.

The programmatic analysis looked at a series of resources as part of the biological, physical, and socioeconomic environment. As appropriate in a tiered analysis, the evaluation of each project focuses on the specific resources with a potential to be affected by the proposed project. To avoid redundant or unnecessary information, resources that are not expected to be affected are simply not evaluated further under a given project. Resource areas not analyzed in detail here along with a brief rationale for non-inclusion are:

- **Coastal Waters and Water Quality:** Siting of the osprey nesting platforms would not occur in coastal waters, therefore, there would be no impacts to this resource. In regards to water quality, states are required to establish and adhere to water quality standards, per the Clean Water Act (CWA). In Alabama, the Alabama Department of Environmental Management (ADEM) is responsible for establishing water quality standards, controlling discharges into surface and subsurface waters, developing waste treatment management plans and practices, and issuing permits for discharges of dredge and fill material into the waters of the United States. The ADEM routinely collects water samples from 25 potentially high risk public recreational sites from Perdido Bay to Dauphin Island (ADEM 2015). As of February 2015, all sites are considered acceptable. Because construction and operation activities are not expected to result in increased sedimentation or other runoff, impacts to water quality would either not occur or be short-term, localized, and negligible, and so this resource area was not carried forward for detailed analysis. Potential impacts to inland waters and wetlands are discussed below under Hydrology.

- **Air Quality and Green House Gas Emissions (GHGs):** The Mobile Bay area, including both Mobile and Baldwin counties, is currently in attainment with National Ambient Air Quality Standards required by the U.S. EPA. While construction activities associated with the proposed project have the potential to produce dust, and would result in short-term increases in vehicle emissions along the travel routes to the proposed platform sites, these emissions would be minimal and last only during the less than one day construction period at each of the sites.

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There would be no emissions as a result of operation. GHG emissions would result from the construction of the proposed platforms due to the use of materials transport and installation equipment. On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance that describes how federal departments and agencies should consider the effects of greenhouse gas emissions and climate change in their NEPA reviews. This guidance recommends that agencies consider 25,000 metric tons of carbon dioxide equivalent emissions on an annual basis as a reference point below which a quantitative analysis of greenhouse gas is not recommended. Because of the scale of the proposed project and the limited construction equipment requirements, construction of the project is expected to generate far less GHG than the 25,000 metric tons of carbon dioxide equivalent emission suggested by CEQ for quantitative analysis. Because these impacts are expected to be negligible, this topic is not carried forward for detailed analysis in this assessment.

• **Submerged Aquatic Vegetation (SAV):** SAV consists of submerged rooted vascular plants that grow in fresh, brackish, and saltwater habitats. SAV beds provide important foraging grounds and nursery habitat for many species in the Gulf of Mexico including nearly all managed fisheries (Thayer, et al. 2003). The platforms would not be installed in open water environments, or any environment where SAV is present. Further, access to the sites would not be provided through any areas with SAV. Because these impacts would not be impacted by the construction or operation of this action, this topic is not carried forward for detailed analysis in this assessment.

• **Essential Fish Habitat (EFH):** Amendments to the Magnuson-Stevens Act in 1996 set forth a mandate for the National Marine Fisheries Service, regional Fishery Management Councils (FMC), and other federal agencies to identify and protect EFH of economically important marine and estuarine fisheries. To achieve this goal, suitable fishery habitats need to be maintained. EFH in the project’s area of effect is identified and described for various life stages of 55 managed fish and shellfish (GMFMC 1998). A provision of the Magnuson-Stevens Act requires that FMC's identify and protect EFH for every species managed by a Fishery Management Plan (FMP) (U.S.C. 1853(a)(7)). There are FMP’s in the Gulf region for shrimp, red drum, reef fishes, coastal migratory pelagics, and highly migratory species (e.g., sharks). The proposed platforms would not be installed in any environment including EFH. Further, access to the sites would not be provided through any areas with EFH. Because these impacts would not be impacted by the construction or operation of this action, this topic is not carried forward for detailed analysis in this assessment.

• **Socioeconomics/Environmental Justice:** The socioeconomic environment consists of demographics, the local and regional economy, and environmental justice. Executive Order

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12898 (General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) requires all agencies to incorporate these topics into their environmental assessments by identifying and addressing disproportionately high and adverse human health or environmental effects of their proposed actions on minorities and low-income populations or communities. Neither alternative would result in a net change of the current racial and ethnic composition, existing industries, or employment in Mobile and Baldwin counties. Furthermore, no environmental effects on minorities or low-income populations—as defined in the Environmental Protection Agency’s Draft Environmental Justice Guidance (July 1996)—are expected. Therefore, the socioeconomic environment is not carried forward for detailed analysis in this assessment.

- **Public Health and Safety and Shoreline Protection:** The proposed platforms would be sited near Alabama shorelines. These shorelines contain a number of boat launch areas, and adjacent lands have existing road networks. Any disturbances from this project would occur within the established road network, with limited potential for the public to encounter hazardous material. No chemical waste would be created during construction. Any hazardous material from machinery would be contained through appropriate barriers to prevent potential spills and leaks. Because health and safety measures would be followed during construction, this impact topic is not carried forward for detailed analysis in this assessment.

- **Infrastructure:** Construction of the proposed platforms would generate very little demand on utilities for all project elements. Demand on electricity would be limited to small power tools which would not exceed existing capacity. Power for machinery would be supplied by burning readily available fossil fuel. Water needed for construction processes and for workers’ needs would be minimal and would be well within the capacity of existing supplies. Though the presence of two haul trucks on affected roadways could slow the movement of other users, disruption to their travel patterns is unlikely. Once in operation, there would be no demand on local utilities or interference with utilities. Adverse effects to existing infrastructure would be negligible, and is therefore not carried forward for detailed analysis in this assessment.

- **Land and Marine Management:** Installation of each tower would take less than one day. While very short-term impacts to accessing adjacent land uses could occur during that time, they would be considered minimal. The operation of the nesting platforms would not change existing or adjacent land uses and therefore this topic is not carried forward for detailed analysis in this assessment.

- **Tourism and Recreation:** The proposed project areas along the coast and the surrounding towns host numerous tourist and recreational activities. These include, but are not limited to, wildlife viewing, biking, birding, boating, camping, cruises, fishing, hiking, hunting, and swimming. Installation of each tower would take less than one day. While very short-term impacts to accessing adjacent land uses could occur during that time, they would be considered minimal. Once constructed, sites would remain accessible, and over the long term, in addition to the ecological benefits provided, the proposed action would enhance opportunities for people to
view osprey resulting in beneficial impacts to recreation and tourism. Because access would still be provided to the sites and the recreational benefits of the site enhanced, this topic is not carried forward for detailed analysis in this assessment.

For those resources carried forward for detailed analysis, the analysis first considers if the impacts of the proposed project are within the impacts evaluated for the project type within the Final Phase III ERP/PEIS. After consideration of the projects potential impacts against the programmatic document, site specific impacts are evaluated.

9.2.5.1 Physical Environment

Geology and Substrates

Affected Environment

Mobile and Baldwin Counties fall within the Southern Pine Hills division of the East Gulf Coastal Plain. This plain is underlain by Mesozoic and Cenozoic sedimentary rocks consisting of sand, gravel, silt, chalk, limestone, and sandstone (Davis 1987). The area is considered low risk for seismic activity (USGS 2012). Each target platform area contains a number of soil series, commonly defined as a group of polypedons that have horizons similar in arrangement and in differentiating characteristics (Soil Survey Division Staff 1993). For each area below, the dominant soil series are described in detail (Soil Survey Division Staff 2008).

Portersville Bay

Axis mucky sandy clay loam, 0 to 1 percent slopes. The Axis series consists of deep, very poorly drained, moderately permeable soils that formed in thick loamy marine sediments. These soils are on narrow to broad, level coastal marshes. The water table fluctuates with the tide.

Bayou-Escambia association, gently undulating. This association consists of moderately to poorly drained soils found on broad flats adjacent to drainage ways and undulating ridges.

Dauphin Island

Osier loamy sand, 0 to 2 percent slopes. Osier series consists of very deep, poorly drained, rapidly permeable soils on flood plains or low stream terraces. They formed in sandy alluvium. Osier soils are on flood plains, depressions, or rarely on stream terraces of the Coastal Plain.

Pactolus loamy sand, 0 to 2 percent slopes. The Pactolus series consists of moderately well drained soils with rapid permeability and low water capacity. They are rarely subject to flooding. Pactolus soils are found on broad, smooth flats of uplands and on terraces of small streams.

Fripp sand, rolling. The Fripp series consists of very deep, excessively drained, rapidly permeable soils that formed in thick sandy sediments adjoining beaches and waterways along the coast. They are rarely subject to flooding. The soils are in undulating to steep topography near the seacoast.
Fort Morgan

**St. Lucie sand, 0 to 5 percent slopes.** The St. Lucie series consists of very deep, excessively drained, very rapidly permeable soils on dune-like ridges and on isolated knolls. They formed in marine or eolian sand.

**St. Lucie-Leon-Muck complex.** This complex consists of areas in which the St. Lucie, Leon, and Muck soils are intricately associated. St. Lucie and Leon soils tend to make up 80 percent of this complex, with Muck constituting the remaining 20 percent. This series is often poorly drained, and is found on stabilized sand ridges that have low, wet areas in between.

**Coastal beaches.** These soils are ridges formed from wind and water deposited sands of sedimentary origin. These beaches can be either excessively well drained or poorly drained and thus flooding varies.

Little Lagoon

**Lakewood sand, 0 to 5 percent slopes.** The Lakewood series consists of excessively well-drained soils, with small pockets of poorly drained soils, and have no frequency of flooding or ponding except in the minor, poorly drained components. These soils exist mostly on hill slopes and were formed from sandy marine deposits derived from sedimentary rock.

**Leon sand.** The Leon series consists of very deep, very poorly and poorly drained, moderately rapid to moderately slowly permeable soils on upland flats, depressions, stream terraces and tidal areas. They formed in sandy marine sediments.

**St. Lucie-Leon-Muck complex.** This complex consists of areas in which the St. Lucie, Leon, and Muck soils are intricately associated. St. Lucie and Leon soils tend to make up 80 percent of this complex, with Muck constituting the remaining 20 percent. This series is often poorly drained, and is found on stabilized sand ridge that have low, wet areas in between.

Gulf State Park

**Tidal marshes.** These soils are found in tidal flats and are composed primarily of herbaceous detritus and loamy marine material over sedimentary deposits. They are very poorly drained and are prone to frequent ponding and flooding.

**Leon sand.** The Leon series consists of very deep, very poorly and poorly drained, moderately rapid to moderately slowly permeable soils on upland flats, depressions, stream terraces and tidal areas. They formed in sandy marine sediments.

**Coastal beaches.** These soils are ridges formed from wind and water deposited sands of sedimentary origin. These beaches can be either excessively well drained or poorly drained and thus flooding varies.
Environmental Consequences

No Action

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts to geology and substrates would occur.

Proposed Action

Sections 6.3.8.1 and 6.7.1.1 of the Final Phase III ERP/PEIS describe the impacts to geology and substrates from early restoration projects to restore and protect birds. The Final Phase III ERP/PEIS found that short-term minor impacts could occur from ground disturbance from these restoration activities. For this project, impacts to geology and substrates were analyzed adequately within the PEIS as the site-specific impacts discussed below fall within the range of impacts for this project type in the Final Phase III ERP/PEIS.

Osprey Restoration in Coastal Alabama would have a short-term minor impact on soils and no impact on geology as there would be no change in grade or other geological alterations. No major alterations to the landscape are necessary under the proposed action. Soil disturbance would be limited to a depth of 3 to 6 feet, with each bored hole less than 2 feet in diameter. This would result in a long term net soil loss of approximately 2.5 to 4.5 cubic feet at each site. In the short term, some compaction could occur during the construction phase (less than one day at each site), primarily from vehicular traffic accessing the platform sites. Platform installation would permanently remove soil during earth-moving activities. These activities are not expected to result in more than short-term minor impacts from erosion in the area of each platform due to the very small area of disturbance, and the nature of the soils around each project area. Adverse impacts would be short-term, localized and minor.

Potential mitigation measures for impacts to geology and substrates are found in Appendix 6A of the Final Phase III ERP/PEIS. BMPs that would be implemented under this action include:

- Employment of standard BMPs for construction to reduce erosion.
- Soil disturbance would be to the minimum area and minimum length of time necessary to complete the action.
- Use of existing access ways whenever possible. Temporary access roads would not be built in locations that would suggest a likelihood of excessive erosion (e.g., large slopes, erosive soils, proximity to water body). All temporary access roads would be restored when the action is completed, the soil would be stabilized, and the site would be re-vegetated.
9.2.5.1.1 Water Resources

Affected Environment

Inland Waters

Inland water features are found primarily within the Gulf State Park project area. Four lakes are prominent at the Little Lagoon and Gulf State Park sites. These lakes include:

- Gator Lake – approximately 40 acres located west of Little Lagoon; separated by Pine Beach Trail.
- Little Lake – approximately 40 acres located in the northeast portion of the park;
- Middle Lake – approximately 216 acres located in the central portion of the park, immediately south of the recreational vehicle (RV) parking area; and
- Lake Shelby – approximately 563 acres located in the western portion of the park.

Each lake is primarily brackish freshwater (USFWS 2010). A weir was constructed in 1991 in the drainage canal between Lake Shelby and Little Lagoon. The weir is designed to allow fresh water from Lake Shelby to drain into Little Lagoon. The weir also prevents brackish water from Little Lagoon flowing back into Lake Shelby. During extreme high tides brackish water still flows to Lake Shelby, and during storm surges, Gulf water can enter into both Lake Shelby and Middle Lake. Despite storm and tide events, the weir allows Lake Shelby to remain primarily as a freshwater ecosystem.

Wetlands

The five platforms would be located within the Mobile Bay and Perdido Bay watersheds. These watersheds contain numerous wetlands, or areas that are inundated by water at a frequency and duration sufficient to support vegetation adapted for life in saturated soil. Each platform could be sited in or near three primary types of wetlands: estuarine and marine wetland, freshwater emergent wetland, and freshwater forested/shrub wetland. Estuarine and marine wetlands contain mostly vegetated and non-vegetated brackish saltwater marsh, with characteristics varying based on tides and levels of salinity. Salt-tolerant plants, called halophytes, are often dominant. Freshwater emergent wetlands consist of herbaceous marsh, fen, swale, and meadow. Plants often found in these wetlands are cattails, sedges, and various grasses. Freshwater forested wetlands are vegetated communities of trees and shrubs such as bald cypress (*Taxodium distichum*) (Burns and Honkala 1990).

Environmental Consequences

No Action

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts to water resources would occur.
Proposed Action

Sections 6.3.8.2 and 6.7.2 of the Final Phase III ERP/PEIS describe the impacts to water resources from early restoration projects to restore and protect birds. The Final Phase III ERP/PEIS found that there could be short-term minor adverse impacts from the use of heavy equipment to remove existing vegetation that could leave soils vulnerable to erosion if replacement vegetative cover is not provided. Protecting nesting and foraging habitat for birds would have long-term benefits by preventing development and disturbances, which can reduce runoff and benefit water quality. For this project, impacts to water resources were analyzed adequately within the PEIS as the site-specific impacts discussed below fall within the range of impacts for this project type in the Final Phase III ERP/PEIS.

Osprey Restoration in Coastal Alabama would have a short-term minor impact on water resources. Platforms could be constructed near inland waters and wetlands in some of the five proposed sites. However, no platforms are expected to be constructed in any freshwater lake found within the project area. Further, no construction would occur in tidal or brackish water bodies. If an osprey platform is sited in or near a wetland, construction-related impacts would likely be minimal since disturbance would be limited to bore holes. Any proposed activities in wetlands or other waters would be coordinated in advance with the USACE. When accessing the project sites, no construction equipment would be operated in a wetland, with access to the sites being provided in uplands. In summary, impacts during construction operation to inland waters and wetlands would be adverse but short-term, localized, and minor.

Potential mitigation measures for impacts to water quality are found in Appendix 6A of the Final Phase III ERP/PEIS. BMPs that would be implemented under this action include:

- Placement of structures would not occur in open water areas.
- Use of existing access ways whenever possible. Temporary access roads would not be built in locations that would suggest a likelihood of excessive erosion (e.g., large slopes, erosive soils, proximity to water body). All temporary access roads would be restored when the action is completed, the soil would be stabilized, and the site would be re-vegetated.
- Maintenance of generators, cranes, and any other stationary equipment operated within 150 feet of any natural or wetland area as necessary to prevent leaks and spills from entering the water.
- Employment of standard BMPs for construction to reduce erosion.
- Soil disturbance would be to the minimum area and minimum length of time necessary to complete the action.
- Selection and operation of heavy equipment to minimize adverse effects to the environment (e.g., minimally-sized, low-pressure tires, minimal hard turn paths for tracked vehicles, temporary mats or plates within wet areas or sensitive soils).
- Any construction in close proximity to and/or in tidal wetlands will be closely monitored by the ADCNR or its agent. Vehicles will be restricted to adjacent uplands and no vehicles will be allowed to enter any wetlands. All construction activities other than foot traffic, the auguring holes and the actual insertion of the platform into the augured hole will be restricted to
adjacent uplands. Any sediments remaining from hole excavation will be manually removed from wetlands and placed on adjacent wetlands.

9.2.5.1.2 Noise

Affected Environment

Many mammals, insects, and birds decipher sounds to find desirable habitat and mates, avoid predators, protect their young, establish territories, and to meet other survival needs. Noise can interfere with these processes by changing an animal’s behavior and affecting their hearing organs (National Research Council 2005). The source and degree of adverse effects would be dependent on the type, magnitude, and frequency of the noise, as well as the proximity of a given species to the source of the noise. The American National Standards Institute, World Health Organization, and EPA recommend a criterion of 55 dBA or greater—over a 24-hour period—as a level of significance when assessing noise impacts to humans (Berglund and Lindvall, Community Noise 1995). Noise levels above 55 dBA may cause annoyance and interference with outdoor activities.

Environmental Consequences

No Action

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts from noise disturbance would occur.

Proposed Action

Sections 6.3.8.4 and 6.7.4 of the Final Phase III ERP/PEIS describe the impacts from noise from early restoration projects to restore and protect birds. The Final Phase III ERP/PEIS found that during the construction period to create or enhance bird habitat, minor to major short-term adverse impacts to ambient noise levels may occur. The severity of impacts would depend to a large degree on the location of the project, type of equipment, the amount of noise that these activities would generate, and the distance to sensitive receptors such as recreational users or wildlife. Impacts on noise would be short-term during the construction period. For this project, impacts from noise were analyzed adequately within the PEIS as the site-specific impacts discussed below fall within the range of impacts for this project type in the Final Phase III ERP/PEIS.

Potential sources of noise from siting osprey platforms include construction equipment and vehicular traffic. Equipment would likely consist of a pole placement truck, with auger and boom, and a second truck to transport the platforms and poles.

Noise from diesel engines and machinery would have the potential to impact wildlife and humans in the area. For example, an auger drill rig emits approximately 85 dBA when an individual stands at a distance of 50 feet from the machine (USDOT 2011). As mentioned in the affected environment, dBA levels above 55 may cause annoyance and interference for those outdoors. Individuals and wildlife within 1500 feet (i.e. approx. 1/4 mile) could potentially be disturbed, but the contribution to the soundscape would be
minor. Individuals beyond 1500 feet from the noise source are not expected to be impacted (see Table 9-1). Due to the nature of noise impacts and their limited duration, impacts during construction and operation would be adverse but short-term, localized, and minor.

Table 9-1. Decibel Levels by Distance from Auger Drill Rig

<table>
<thead>
<tr>
<th>DISTANCE (ft)</th>
<th>dBA</th>
<th>dBA REDUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>85.0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>79.0</td>
<td>6</td>
</tr>
<tr>
<td>300</td>
<td>69.4</td>
<td>15.6</td>
</tr>
<tr>
<td>600</td>
<td>63.4</td>
<td>21.6</td>
</tr>
<tr>
<td>1200</td>
<td>57.4</td>
<td>27.6</td>
</tr>
<tr>
<td>2400</td>
<td>51.4</td>
<td>33.6</td>
</tr>
</tbody>
</table>

Potential mitigation measures for impacts from noise are found in Appendix 6A of the Final Phase III ERP/PEIS. Any of these measures that would apply to Osprey Restoration in Coastal Alabama may be used to minimize adverse impacts.

9.2.5.1.3 Summary of Impacts to the Physical Environment

Impacts to the physical environment from implementation of Osprey Restoration in Coastal Alabama would include:

- Geology and Substrates: There would be short-term minor impact on soils and no impact on geology from the soil disturbance during platform installation. No long-term impacts would occur.
- Water Quality: There would be short-term minor impacts on water resources, including wetlands during construction from soil disturbance and erosion. No long-term impacts would occur.
- Noise: Due to the nature of noise impacts and their limited duration, impacts during construction and operation would be adverse but short-term, localized, and minor. No long-term impacts would occur.

9.2.5.2 Biological Environment

9.2.5.2.1 Living Coastal and Marine Resources

Affected Environment - General

Living coastal and marine resources include coastal and near-shore vegetative and aquatic communities of Mobile and Baldwin counties that occur in or near Mobile Bay and the Gulf of Mexico. The biological resources in this area consist of a diverse group of marine and benthic species and ecologically valuable habitats including reefs. The reefs are subtidal in nature, and form aggregates that are common in Mobile Bay (Gregalis, Powers and Heck, Jr. 2008).
Benthic invertebrate communities include infauna (aquatic animals that live in the substrate of the sea bottom) and epifauna (animals that live on the surface of the sea floor). Nearshore benthic communities in the Gulf are largely composed of macroinvertebrate groups such as mollusks, sponges, polychaetes, corals, and crustaceans. These groups are diverse and are found in Gulf habitats spanning from the intertidal zone to the soft sediments on the continental shelf. Benthic communities perform important ecological functions in the nearshore food web; several groups (e.g., oysters, shrimp, and crabs) are also commercially important. Sponges, mollusks, arthropods (including crustaceans) and polychaetes are all important taxa and contribute substantially to benthic biomass. These taxa include many species, such as oysters, that are filter feeders. Filter feeders remove and digest phytoplankton and particulate organic matter, and deposit processed materials to the substrate (Felder and Camp 2009).

Environmental Consequences - General

Living coastal and marine resources with the potential to be affected by the proposed action include: benthos, invertebrates and fish, wildlife and habitats, and threatened and endangered species. The affected environment and impacts under the proposed action for each of these resources is discussed individually below. Overall impacts to living coastal and marine resources are summarized here for the No Action and Proposed Action.

No Action

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts to living coastal and marine resources would occur. Long-term benefits from the construction of the platforms and the habitats they provide would not be realized.

Proposed Action

Sections 6.3.8.5, 6.3.8.6, and 6.7.6 of the Final Phase III ERP/PEIS describe the impacts to living coastal and marine resources from early restoration projects to restore and protect birds. The Final Phase III ERP/PEIS found that there would be short-term minor adverse impacts from increased soil erosion, vegetation trampling, vegetation removal, or other human activity from project staging or construction, or implementation of restoration activities on adjacent uplands, coastal transition zones, barrier flats, dunes and beaches. There would also be long-term beneficial impacts from protecting bird habitat from disturbance or development. For this project, impacts to living coastal and marine resources were analyzed adequately within the PEIS as the site-specific impacts discussed below fall within the range of impacts for this project type in the Final Phase III ERP/PEIS.

Osprey Restoration in Coastal Alabama would have a short-term minor impact on the living coastal and marine resources evaluated in detail (wildlife and wildlife habitat and threatened and endangered species). The majority of living coastal and marine resources are not expected to be affected by the proposed action because the platforms would not be placed in open water. Some invertebrates may be impacted by the placement of the platforms and disturbed during the establishment of the holes for the platforms. This disturbance would be limited to a depth of 3 to 6 feet, with each bored hole less than 2 feet in diameter. This would result in a long-term net soil loss of approximately 2.5 to 4.5 cubic feet at
each site. Disturbance around the bored hole would occur for only the less than one day construction period at each site. The bore hole would be filled with the platforms, and would no longer be available for benthic invertebrate habitat. Indirect impacts to living coastal and marine resources could include impacts to from changes in water quality. Vehicular chemicals such as oil and gasoline have potential to leach into the soil during platform transport and construction. However, due to the limited amount of construction vehicles and very short construction duration at each site (less than one day) these potential impacts are expected to occur. Therefore, impacts during construction would be adverse but short-term, localized, and minor. No long-term impacts are expected.

Potential mitigation measures for impacts to each of the living and coastal marine resource categories discussed below are in Appendix 6A of the Final Phase III ERP/PEIS. BMPs that would be implemented as part of this action include:

- Employment of standard BMPs for construction to reduce erosion.
- Soil disturbance would be kept to the minimum area and minimum length of time necessary to complete the action.
- Use of existing access ways whenever possible. Temporary access roads would not be built in locations that would suggest a likelihood of excessive erosion (e.g., large slopes, erosive soils, proximity to water body). All temporary access roads would be restored when the action is completed, the soil would be stabilized, and the site would be re-vegetated.
- Qualified ADCNR staff would be on site, as needed, where sensitive species are likely to be encountered and would be onsite and would monitor for the presence of sensitive species.
- Provide individuals working on site general awareness to the sensitive species that could be encountered.
- Any construction in close proximity to and/or in tidal wetlands will be closely monitored by the ADCNR or its agent. Vehicles will be restricted to adjacent uplands and no vehicles will be allowed to enter any wetlands. All construction activities other than foot traffic, the auguring holes and the actual insertion of the platform into the augured hole will be restricted to adjacent uplands. Any sediments remaining from hole excavation will be manually removed from wetlands and placed on adjacent wetlands.

9.2.5.2.2 Wildlife and Habitats

Affected Environment

Wildlife includes all native and naturalized vertebrate and invertebrate species of animals. This section focuses on common and typical species that have the potential to occur or are known to occur near the proposed project area, as well as those of general interest and importance to the ecosystem. Bird species protected under the Migratory Bird Treaty Act (MBTA) are found in coastal Alabama, and are also given special consideration under Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds.

Coastal Alabama provides habitat that supports a variety of wildlife species, including mammals, reptiles, amphibians, birds, fish, and invertebrates. Mammals that would likely be present include
species such as Virginia opossum (*Didelphis virginiana*), white-tailed deer (*Odocoileus virginianus*), squirrels (*Sciurus niger; Sciurus carolinensis*), beaver (*Castor Canadensis*), and bobcat (*Lynx rufus*) (Mirarchi 2004). Commonly observed reptiles and amphibians include various types of turtles, skinks, snakes, and frogs (Mirarchi 2004). Birds include passerines (songbirds), hawks, and shorebirds (ADCNR 2015). Several species of fish such as minnows and sunfish likely inhabit the inland aquatic areas. Invertebrates would include worms, snails, insects, and crustaceans.

Migratory birds include neo-tropical (long-distance) migrants, temperate (short-distance) migrants, and resident species. Neo-tropical migratory birds are Western Hemisphere species in which the majority of individuals breed in areas north of the Tropic of Cancer in the spring/early summer and spend the winter in areas south of the Tropic of Cancer. Approximately 200 species of neo-tropical migratory birds are known in the Western Hemisphere. The majority are passerines (songbirds) such as the red-eyed vireo (*Vireo olivaceus*), hooded warbler (*Setophaga citrine*), American redstart (*Setophaga ruticilla*), and common yellowthroat (*Geothlypis trichas*) (USFWS 2004).

The MBTA of 1918 is the primary legislation in the United States protecting migratory birds. The MBTA prohibits taking, killing, or possessing migratory birds unless permitted by regulation. Species protected by the MBTA appear in Title 50, Section 10.13 of the Code of Federal Regulations (50 C.F.R. § 10.13). Most bird species found GSP are covered under the MBTA; species such as European starlings and house sparrows (both invasive species) are not covered.

Neo-tropical migratory birds in particular, such as the warblers, use scrub dune habitats and pine woodlands as stopover habitats during spring and fall migrations across the Gulf of Mexico. Up to 48 species may occur in the project area, mostly in undeveloped tracts, though the relative abundance of these migrants at individual sites can vary from year to year (USFWS 2004).

**Environmental Consequences**

**No Action**

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts to wildlife and wildlife habitat would occur. Long-term benefits from the construction of the platforms and the habitats they provide would not be realized.

**Proposed Action**

Osprey Restoration in Coastal Alabama would have a short-term minor impact on wildlife and wildlife habitats. Mammals, amphibians, reptiles, birds or fish residing near the proposed construction areas may be displaced because of noise from construction activities; however, these species would likely temporarily relocate to other areas for the less than one day construction period at each site. The auger, boom, and vehicles used for construction would be at each platform site for less than one day, thereby reducing the potential for impacts to terrestrial species. Any construction occurring near aquatic habitat would be conducted using BMPs to reduce erosion and sedimentation, both of which can have a negative impact on aquatic species. However, no platforms are expected to be constructed in any freshwater lake found within the project area. No trees or shrubs would be removed to access the sites
or to complete construction. Should any removal be required, qualified ADCNR staff would be on site to conduct surveys of trees or shrubs for nesting activity before they are removed. Therefore, impacts to wildlife during construction would be adverse but short-term, localized, and minor. No long-term impacts are expected as there would be no maintenance activities that would cause disturbance to wildlife and wildlife habitats. Once in operation, the placement of the platforms would not result in habitat fragmentation and would not result in adverse impacts. In addition, the platforms would provide additional nesting habitat for osprey and opportunistically for other species such as bald eagle, resulting in long-term beneficial impacts to that species.

The potential introduction of terrestrial and aquatic non-native invasive species of plants, animals, and microbes is a concern for any proposed project. Non-native invasive species could alter existing terrestrial or aquatic ecosystems, may cause economic damages and losses, and are the second most common reason for protecting species under the Endangered Species Act. The species that are or may become introduced, established, and invasive are difficult to identify. The analysis focuses on pathway control or actions/mechanisms that may be taken or implemented to prevent the spread of invasive species on site or introduction of species to the site. Surveys have not been conducted to determine if invasive species are present.

This project involves the installation of nesting platforms. Each of these actions and pieces of equipment serve as a potential pathway to introduce or spread invasive species. BMPs would be implemented to ensure these pathways are “broken” and do not spread or introduce species (see BMPs listed below). The implementation of these BMPs meets the spirit and intent of EO 13112. Due to the implementation of BMPs, the Trustees expect risk from invasive species introduction and spread to be short-term and minor.

The Phase III ERP/PEIS provided mitigation measures in Appendix 6A. The following mitigation measures and environmental review would result in the avoidance and minimization of the introduction and spread of invasive species:

- All equipment to be used during the project, including personal gear, would be inspected and cleaned such that there is no observable presence of mud, seeds, vegetation, insects and other species.
- Material used to construct the platforms would be treated or inspected to remove “non-target” species.

9.2.5.2.3 Threatened and Endangered Species

Affected Environment

The Endangered Species Act (ESA) was passed in 1973 to protect threatened or endangered species from further harm. The U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Services (NMFS) enforce the ESA. Under the ESA, FWS and NMFS identify the listed species and habitats, and work through consultations and permit actions to protect those species and their critical habitat.
While the areas surrounding the proposed project sites harbor a number of federally-listed threatened, endangered, proposed or candidate species, not all of these species occur in the potential project areas. For the species that do occur in or near the proposed project areas, their occurrence is considered to be transient in nature. For these reasons, this section focuses on the species that are most likely to occur in or around the proposed project areas, including the Alabama beach mouse (*Peromyscus polionotus ammobates*), sea turtles, piping plover (*Charadrius melodus*), red knot (*Calidris canutus*), wood stork (*Mycteria americana*), gopher tortoise (*Gopherus polyphemus*), and the black pine snake (*Pituophis melanoleucus lodingi*). A complete list of threatened and endangered species potentially occurring in one of more of the proposed project areas is provided in Table 9-2.

**Alabama Beach Mouse**

The Alabama beach mouse is a federally listed endangered species known to occupy sparsely vegetated areas on the Fort Morgan Peninsula and suitable habitat of Gulf State Park. This small gray and white mouse with a dark stripe running down the upper surface of its tail is a nocturnal rodent inhabiting burrows in frontal, secondary, and scrub dunes along the Alabama Gulf coast.

In frontal dune areas, Alabama beach mice feed on seeds of sea oats, beach grass, evening primrose (*Oenothera* spp.), ground cherry (*Physalis* sp.), saltmeadow cordgrass (*Spartina patens*), bluestem (*Schizachrium maritimum*), and panic grass (*Panicum amarum*). Plant species foraged by Alabama beach mice in scrub areas include sand live oak (*Quercus geminate*), bluestem, greenbrier (*Smilax rotundifolia*), gopher apple (*Licania michauxii*), and jointweed (*Polygonella* spp.) (USFWS 2004).

The Alabama beach mouse was listed as an endangered species by the USFWS in 1985. The mice historically occurred in frontal, secondary, and scrub dunes from Fort Morgan eastward about 32 miles to Ono Island in Perdido Bay. At its time of listing in 1985, the Alabama beach mouse was considered extirpated on Ono Island, but present elsewhere throughout its original range. After several hurricanes that reduced beach mouse populations, the USFWS reintroduced Alabama beach mouse to Gulf State Park in 2010, and since that time their population numbers have increased considerably (USFWS 2013).

Numerous surveys have documented the presence and relative abundance of Alabama beach mice on the Fort Morgan Peninsula (USFWS 2004). Relative abundance of the species as surveyed throughout its geographic range, using live trap/capture and release methods, has varied from 1.69 to 61.0 mice per 100 trap-nights. However, relative abundance has typically ranged from 3 to 10 mice per 100 trap-nights.

Alabama beach mice populations fluctuate within and among sites on a monthly, seasonal, and annual basis. These spatial and temporal differences have been attributed to habitat type, food availability, recruitment following peak reproductive periods, temperature, predation, and storms. Scrub dunes occupied by the mice can function as crucial refuge during severe hurricanes that overwash, flood, and destroy most of the lower frontal and secondary dunes.

Relative abundance of Alabama beach mice in certain types of scrub dunes can be comparable to that within primary and secondary dunes (USFWS 2004). In coastal environments, the term “scrub dune”
refers to habitat or vegetation types where scrub oaks dominate a community adjacent to and landward of secondary/primary dunes. There is substantial variation in scrub oak density and coverage within and among scrub dunes throughout the geographic range of Alabama beach mice. Such variation, resembling an ecological gradient, is represented by scrub oak woodland with a relatively closed canopy at one end of the continuum and relatively open scrub dunes with patchy scrub ridges and intervening swales or inter-dunal flats dominated by herbaceous plants at the other end of the gradient. The relative abundance of Alabama beach mice in this open, patchy scrub environment is comparable to that in primary and secondary dunes.

Alabama beach mouse critical habitat is also present within the proposed site locations.

The FWS identified the following PCEs in the revised critical habitat for the Alabama beach mouse:

1. Continuous mosaic of primary, secondary and scrub (i.e., interconnected frontal and tertiary dunes, and interior scrub) vegetation and dune structure, with a balanced level of competition and few or no competitive or predaceous nonnative species present, that collectively provide foraging opportunities, cover and burrow sites;

2. Frontal dunes, generally dominated by sea oats, that, despite occasional temporary impacts and reconfiguration from tropical storms and hurricanes, provide abundant food resources, burrow sites, and protection from predators;

3. Scrub (i.e., tertiary dune/suitable interior scrub) dunes, generally dominated by scrub oaks (*Quercus* spp.), that provide food resources and burrow sites, and provide elevated refugia during and after intense flooding due to rainfall and/or hurricane-induced storm surge;

4. Unobstructed habitat connections that facilitate genetic exchange, dispersal, natural exploratory movements, and recolonization of locally extirpated areas;

5. Natural light regime within the coastal dune ecosystem, compatible with the nocturnal activity of beach mice, necessary for normal behavior, growth and viability of all life stages.

*Sea Turtles*

Sea turtles that occur in the United States are federally listed as either threatened or endangered. Critical habitat has been designated for Loggerhead sea turtles (see below). In general, sea turtles can be found in the nearshore waters and in some of the estuaries in Alabama. While four species (loggerhead, green, Kemp’s ridley, and leatherback) of sea turtles have been documented in Alabama waters, only loggerhead, green, and Kemp’s Ridley sea turtles have been documented to nest on Alabama’s Gulf side beaches.

*Green Sea Turtles:* The green turtle (*Chelonia mydas*) is circumglobal in tropical and sub-tropical waters. In the continental United States, green turtles occur from Texas to Massachusetts. The Florida breeding population is federally listed as endangered, and elsewhere the species is listed as threatened. Primary nesting beaches in the southeastern United States occur in a six-county area of east-central and
southeast Florida where nesting activity ranges from approximately 350 to 2,300 nests annually (USFWS 2004). Green sea turtles have been observed on Alabama’s coastal beaches, but only one nest has been recorded between 2003 and 2012 (Ingram 2013).

Loggerhead Sea Turtles: The loggerhead turtle (Caretta caretta) is listed as a threatened species throughout its range. This species is circumglobal, preferring temperate and tropical waters. In the southeastern United States, 50,000 to 70,000 nests are deposited annually, about 90 percent of which occur in Florida. Most nesting in the Gulf outside of Florida appears to be along the Alabama Gulf coast. Although loggerhead sea turtles are observed offshore the Chandeleur Islands of Louisiana, there has been little documentation of nesting. The loggerhead turtle (northwest Atlantic distinct population segment) is by far the most common sea turtle found along beaches in coastal Alabama (USFWS 2004). Loggerhead sea turtles have been observed on Alabama’s coastal beaches, with an average of five nests a year between 2008 and 2012 (USFWS 2013).

The USFWS designated critical habitat for the Northwest Atlantic Ocean Distinct Population Segment of the loggerhead sea turtle. Critical habitat was designated for the loggerhead on July 10, 2014 for both the marine and terrestrial environments (79 FR 39756; 79 FR 51264). In total, 739.3 miles of loggerhead sea turtle nesting beaches are proposed for designation as critical habitat in North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi. Many of Alabama’s coastal beaches are within the Northern Gulf of Mexico Recovery Unit, which consists of 135.5 miles of shoreline in the Florida panhandle, Alabama, and Mississippi. The proposed terrestrial critical habitat includes the areas that are extra-tidal or dry sandy beaches from the mean high water line to the toe of the secondary dune that are capable of supporting a high density of nests or serving as an expansion area for beaches with a high density of nests and that are well distributed with each State or region within a State and representative of total nesting to be a physical or biological feature for the species. Additionally, the natural coastal processes or activities that mimic these processes (particularly the dynamic process of erosion and accretion) are also identified as a physical or biological feature for this species. The Primary Constituent Elements are the specific elements of the physical or biological features that provide for a species’ life history processes and are essential to the conservation of the species. PCEs for loggerhead critical habitat include (USFWS 2014):

- **PCE 1 - Suitable nesting beach habitat that:**
  - has relatively unimpeded nearshore access from the ocean to the beach for nesting females and from the beach to the ocean for both post-nesting females and hatchlings, and
  - is located above mean high water to avoid being inundated frequently by high tides.

- **PCE 2 - Sand that:**
  - allows for suitable nest construction,
  - is suitable for facilitating gas diffusion conducive to embryo development, and
  - is able to develop and maintain temperatures and moisture content conducive to embryo development.
• PCE 3 - Suitable nesting beach habitat with sufficient darkness to ensure that nesting turtles are not deterred from emerging onto the beach and hatchlings and post-nesting females orient to the sea.

• PCE 4 - Natural coastal processes or artificially created or maintained habitat mimicking natural conditions. This includes artificial habitat types that mimic the natural conditions described in PCEs 1 to 3 above for beach access, nest site selection, nest construction, egg deposition and incubation, and hatchling emergence and movement to the sea. Habitat modification and loss occurs with beach stabilization activities that prevent the natural transfer and erosion and accretion of sediments along the ocean shoreline. Beach stabilization efforts that may impact loggerhead nesting include beach nourishment, beach maintenance, sediment dredging and disposal, inlet channelization, and construction of jetties and other hard structures. However, when sand placement activities result in beach habitat that mimics the natural beach habitat conditions, impacts to sea turtle nesting habitat are minimized.

Kemp’s Ridley Sea Turtles: The Kemp’s ridley sea turtle (Lepidochelys kempii) is listed as an endangered species throughout its range. Adults are found mainly in the Gulf of Mexico. Immature turtles can be found along the Atlantic coast as far north as Massachusetts and Canada. The species’ historic range is tropical and temperate seas in the Atlantic Basin and in the Gulf of Mexico. Nesting occurs primarily in Tamaulipas, Mexico, where virtually the entire population of these turtles nests along about 10 miles of beach. Recent observations at this nesting beach indicate that there was a substantial increase in the number of nesting females using that site during the 2000 nesting season compared to nesting records from 1999. The species occasionally nests in Texas and other southern states, including an occasional nest in North Carolina and Alabama. Kemp’s ridley sea turtles have been observed on Alabama’s coastal beaches. From 2006 to 2010 there were seven confirmed Kemp’s Ridley nests along the Alabama coast (Reetz 2013).

Leatherback Sea Turtles: Leatherback sea turtles (Dermochelys coriacea) are the largest sea turtles. They are listed as endangered throughout the range. Unlike other sea turtles, leatherbacks are more dependent on prey and reproductive requirements than temperature when it comes to their distribution. Leatherbacks are able to regulate their internal temperature more than the other turtles discussed here; therefore, leatherbacks range from the tropics into cool temperate waters. (USFWS 2008).

Piping plover

Piping plover (Charadrius melodus) in Alabama are found on coastal beaches that present optimal foraging conditions, with birds possibly present from August to May and peak numbers in winter. Most of these sites are in Mobile County. Little Dauphin Island, Pelican Island, and parts of Dauphin Island are traditional wintering sites. Occasionally plovers are seen in Baldwin County on the western tip of Fort Morgan Peninsula around washover pools along the shoreline. In 2001, wintering critical habitat was designated in Alabama that encompassed the tidal zones, flats, and associated dune systems of Dauphin Island, Little Dauphin Island, Pelican Island, Isle Aux Herbes, and the western tip of the Fort Morgan Peninsula (USFWS 2001).
The PCEs for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the natural processes that support these habitat components. The PCEs are found in geologically dynamic coastal areas that support intertidal beaches and flats (between annual low tide and annual high tide) and associated dune systems and flats above annual high tide. Additional information on each specific unit included in the designation can be found at 66 FR 36038. PCEs of wintering piping plover critical habitat include:

1) Intertidal flats with sand or mud flats (or both) with no or sparse emergent vegetation.

2) Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting piping plovers. Such sites may have debris, detritus, or microtopographic relief (less than 50 cm above substrate surface) offering refuge from high winds and cold weather.

3) Important components of the beach/dune ecosystem include surf-cast algae, sparsely vegetated back beach and salterns, spits, and washover areas.

4) Washover areas are broad, unvegetated zones, with little or no topographic relief, that are formed and maintained by the action of hurricanes, storm surge, or other extreme wave action.

Activities that affect PCEs include those that directly or indirectly alter, modify, or destroy the processes that are associated with the formation and movement of barrier islands, inlets, and other coastal landforms. Those processes include erosion, accretion, succession, and sea-level change. The integrity of the habitat components also depends upon daily tidal events and regular sediment transport processes, as well as episodic, high-magnitude storm events (Service 2001b).

Between 1981 and 2014, piping plover sightings in Mobile and Baldwin counties indicate that there is an average high count of approximately 8 individuals occurring in March and an average low count of less than 1 individual occurring in June (eBird 2015).

**Red Knot**

The red knot (*Calidris canutus rufa*), was listed as a threatened species in December 2014. This medium-sized bird species is a migratory species that uses coastal beaches and marine intertidal areas as stopover feeding locations or staging areas on the way to and from theirwintering grounds in South America and breeding areas in the Arctic. Foraging on ocean beaches, mud and sand flats, and salt marshes occurs from March to April during the northward spring migration and September to October during the southward autumn migration (USFWS 2013). Roosting and resting habitat includes areas above the high tide line such as reefs and high sand flats (USFWS 2013). Between 1981 and 2014, red knot sightings in Mobile and Baldwin counties indicate that there is an average high count of approximately 12 individuals occurring in December and an average low count of less than 1 individual in February (eBird 2015).
Wood stork

The wood stork (Mycteria americana) is a threatened species originally listed by USFWS in 1984. This large wading bird is typically associated with freshwater habitats and prefers swamps, coastal shallows, ponds, and flooded pastures (Stokes 1996). The wood stork nests in colonies often in cypress stands or mangroves. This species does not have a breeding population within the state of Alabama, but non-breeding transient individuals may be present on occasion (USFWS 2007). No known wood stork foraging or roosting sites are located in the direct vicinity of any proposed platform locations.

Gopher Tortoise

The gopher tortoise (Gopherus polyphemus) is a large (shell is 5.9 to 14.6 inches long), dark-brown to grayish-black terrestrial turtle with elephantine hind feet, shovel-like forefeet, and a gular projection beneath the head on the yellowish, hingeless plastron or undershell (Ernst and Barbour 1972). The species is listed as threatened wherever found west of Mobile and Tombigbee Rivers in Alabama, Mississippi, and Louisiana. The gopher tortoise is a candidate species in Baldwin County, Alabama. Gopher tortoises occur north of Highway 182 within Gulf State Park near existing trails in the park.

Black Pine Snake

The black pine snake (Pituophis melanoleucus lodingi) is a large (48 to 64 inches long) stocky snake and is only proposed for threatened status by the US Fish and Wildlife Service. Its back and belly are uniformly black or dark brown. Faint blotches may be seen on the hindbody or tail (USFWS 2015). The snake has a range that extends from southwestern Alabama, through southern Mississippi, and into southeastern Louisiana. In each of these states it is considered imperiled or critically imperiled, and the U.S. Fish and Wildlife Service proposed the snake for federal listing under the Endangered Species Act on October 10, 2014. The snake is known to occur in Mobile County, largely in upland, open longleaf pine forests with dense herbaceous groundcover (USFWS 2015). The distribution of remaining populations has become highly restricted due to the destruction and fragmentation of the longleaf pine habitat, which has become one the most critically endangered ecosystems in the United States (USFWS 2013). In Alabama, populations occurring on properties managed as gopher tortoise habitat are likely the best opportunities for long-term survival of the black pine snake (USFWS 2013).

Eastern Indigo Snake

The eastern indigo snake (Drymarchon corais couperi) is a large (60 to 74 inches) snake with a black and iridescent blue body (USFWS 2015). The chin and throat are reddish or white, and the color may extend down the body (USFWS 2015). The belly is cloudy orange and blue-gray (USFWS 2015). Historically, the eastern indigo snake lived throughout Florida, the coastal plain of southern Georgia, extreme south Alabama, and extreme southeast Mississippi (USFWS 2015). Today the indigo snake survives in Florida and southeast Georgia, and has been extirpated from Alabama and Mississippi (USFWS 2015); therefore, it is extremely unlikely to exist in the project area. The Indigo Snake is often dependent upon the deep burrows dug by the gopher tortoise and uses them as a refuge from extreme temperatures (ADCNR 2015). This restricted habitat is even more isolated by the snake’s preference for the interspersion of
wet lowlands like cypress ponds (ADCNR 2015). These preferred areas are usually found where rivers and creeks run thru sand hills habitat (ADCNR 2015).

**Environmental Consequences**

**No Action**

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts to threatened and endangered species would occur. Long-term benefits from the construction of the platforms and the habitats they provide would not be realized.

**Proposed Action**

Osprey Restoration in Coastal Alabama would have a short-term minor impact on threatened and endangered species. However, the proposed action is expected to have no effect on all listed species potentially occurring within the project area, with the exception of the Alabama beach mouse which could, but is not likely to be adversely impacted. Table 9-2 shows the species that have the potential to be affected by the proposed project. The proposed project consists of the installation of five poles, with a total footprint of less than 10 square feet across two Alabama counties.

ADCNR is currently coordinating with the USFWS and NOAA on the proposed project.

**Table 9-2. Threatened and Endangered Species Potentially Affected by the Proposed Project**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>Trustees’ Affect Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama beach mouse</td>
<td>Peromyscus polionotus ammobates</td>
<td>Endangered</td>
<td>NLAA</td>
</tr>
<tr>
<td>Loggerhead sea turtle</td>
<td>Caretta caretta</td>
<td>Threatened</td>
<td>No Effect</td>
</tr>
<tr>
<td>Kemp’s ridley sea turtle</td>
<td>Lepidochelys kempii</td>
<td>Endangered</td>
<td>No Effect</td>
</tr>
<tr>
<td>Green sea turtle</td>
<td>Chelonia mydas (P)</td>
<td>Threatened</td>
<td>No Effect</td>
</tr>
<tr>
<td>Leatherback sea turtle</td>
<td>Dermochelys coriacea</td>
<td>Endangered</td>
<td>No Effect</td>
</tr>
<tr>
<td>Gopher tortoise</td>
<td>Gopherus polyphemus</td>
<td>Threatened (Mobile County)/Candidate Species (Baldwin County)</td>
<td>No Effect</td>
</tr>
<tr>
<td>Black pine snake</td>
<td>Pituophis melanoleucus lodingi</td>
<td>Proposed Threatened</td>
<td>No Effect</td>
</tr>
<tr>
<td>Eastern indigo snake</td>
<td>Drymarchon corais couperi</td>
<td>Threatened</td>
<td>No Effect</td>
</tr>
<tr>
<td>Piping plover</td>
<td>Charadrius melodus</td>
<td>Threatened</td>
<td>No Effect</td>
</tr>
<tr>
<td>Red knot</td>
<td>Calidris canutus rufa</td>
<td>Threatened</td>
<td>No Effect</td>
</tr>
<tr>
<td>Wood stork</td>
<td>Mycteria americana</td>
<td>Threatened</td>
<td>No Effect</td>
</tr>
</tbody>
</table>

Impacts to protected species would largely be avoided as locations where the platforms would actually be installed would be selected to be outside of endangered, threatened, proposed, or candidate species
habitat and would not be placed in critical habitat. Transient individuals using the area could be impacted by construction noise and potentially slight changes in water quality, though best management practices would be used to minimize noise and turbidity as much as practicable. If protected species would enter the project area, all project activities (including driving to/from the project site) would halt until the species move of their own volition. Potential impacts are expected to be short-term (less than one day per site for construction), localized and minor, and would not measurably alter natural conditions. For these reasons the Trustees have determined the proposed project, if implemented, may affect but is not likely to adversely affect protected species and no critical habitat will be adversely modified or destroyed.

Implementation of the following BMPs would effectively reduce or eliminate the potential for impacts to threatened or endangered species and provide rationale for the affect determinations presented in Table 9-2:

- The construction period at each site is less than one day and is expected to last approximately two hours, during which time ACDNR staff would be on site to monitor for ESA listed species.
- No platforms would be placed in open water.
- No platforms would be placed in any designated critical habitat.
- Platforms would not be placed on Gulf-fronting beaches and dunes, effectively avoiding impacts to piping plover, red knot, and the five listed sea turtle species potentially occurring in or near the project area.
- No platforms would be placed in locations in Mobile County known to have gopher tortoises. In Baldwin County, platforms would be placed below elevations where gopher tortoises are expected to occur, where elevation is defined as ground height above mean sea level. Platforms would be placed adjacent to tidal waterbodies, which are generally below the elevation where gopher tortoises are known to dig their burrows. This is because the water table is 1-2 feet below ground surface elevation and gopher tortoises do not utilize flooded burrows. In the event that a platform is placed at a higher elevation, the vehicle access route and the area within a 100 foot radius of the platform location would be thoroughly visually inspected to ensure that there are no tortoise burrows present prior to and during construction.
- Platforms would not be placed in upland pine forest where black pine snakes are expected to occur.
- If a platform is placed in wetlands, no vehicles or construction equipment would be placed or operated in wetlands during any portion of project implementation. The platform would be placed within reach of the vehicle boom and any soil augured out of the placement hole would be removed from wetlands once the pole is set.
- No project activities would take place in ABM critical habitat. In general, the location of the proposed platform on Fort Morgan would be sited to avoid dune habitats used by the beach mouse, specifically avoiding designating critical habitat. Because beach mouse can occur in a wide variety of sandy dune habitats (primary, secondary, and scrub dunes) and because the Ft Morgan peninsula consists mostly of these habitat types, the ABM could be present. However, to minimize impacts to ABM, the site selected would not be on primary or secondary dunes and...
will be accessible via existing access roads. Prior to installing the platform, the area would be searched for evidence of beach mouse use and areas of use would be avoided to minimize noise and overall disturbance for the duration of the pole installation. It is extremely unlikely that the placement of one platform pole would hit a burrow.

9.2.5.3 Human Uses

9.2.5.3.1 Cultural Resources

Affected Environment

For the purposes of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended and its implementing regulations, the Area of Potential Effect (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 C.F.R. § 800.16 (d)). The APE of the proposed project consists of the area where each platform would be placed, as well as the access road to each site. General project areas shown in figures 9-1 to 9-5 were considered for potential cultural resources.

Three historic sites listed on the National Register of Historic Places (NRHP) exist within the general areas proposed for placement of osprey towers. Fort Morgan is located at the western tip of the Fort Morgan Peninsula in Baldwin County, Alabama. Fort Gaines and Indian Mound Park (also known as Shell Mound Park) are located on the eastern end of Dauphin Island in Mobile County, Alabama. Fort Morgan and Fort Gaines were constructed in 1834 and 1821, respectively, and were intended to guard the entrance to Mobile Bay against ships attempting to enter from the Gulf of Mexico. Both forts are best known for their utilization during the American Civil War. Fort Morgan was added to the NRHP in 1966 and Fort Gaines was listed in 1976. Indian Mound Park is the site of prehistoric Native American shell middens near the northern shore of Dauphin Island. It was officially listed in the NRHP in 1973.

Environmental Consequences

No Action

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts to cultural resources would occur.

Proposed Action

Chapter 6, Section 6.6.2, Tables 6-3, 6-4 and Tables 6A-1, 6A-2, found in Chapter 6, Appendix A of the Final Phase III ERP/PEIS describe potential impacts and mitigation measures for cultural resources. Those that could apply to Osprey Restoration in Coastal Alabama include conducting preconstruction surveys for the presence of sensitive natural and cultural resources.

The project area has not been surveyed for cultural resources. A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse effects on historic properties located within the project area. Measures to avoid impacts would include not siting
platforms in areas with sensitive cultural resources. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

9.2.5.3.2 Aesthetics and Visual Resources

Affected Environment

Aesthetics and visual resources that may be affected by the proposed project include areas that fall within the viewshed of the proposed platforms and construction activities. This includes the land around Mobile Bay and its associated residential communities. The platform locations would be located along the coast and within view of water.

Environmental Consequences

No Action

Under the No Action Alternative, the proposed osprey nesting platforms would not be constructed in coastal Alabama and no impacts to aesthetics and visual resources would occur.

Proposed Action

Sections 6.4.8 and 6.7.10.1 of the Final Phase III ERP/PEIS describe the impacts to aesthetics and visual resources from early restoration projects to enhance nesting habitat. The Final Phase III ERP/PEIS found that project types involving the use of construction equipment, including equipment used for the movement and placement of materials would result in some minor to moderate short-term adverse impacts on aesthetics and visual quality. During the construction period, visible impedances would detract from the natural landscape and create visual contrast for observers visiting the project areas. The severity of impacts would depend to a large degree on the location of the proposed projects, the degree to which these activities would be visible, the duration of the construction activities and how commonplace these activities and equipment are in certain areas. Impacts would likely be greatest in areas frequented by large groups of visitors and in areas where more natural viewsheds exist. Projects resulting in the long-term placement of structures and signage could result in long-term minor adverse impacts to aesthetics, though these types of objects are often commonplace and would become less intrusive over time. For this project, impacts to aesthetics and visual resources were analyzed adequately within the PEIS as the site-specific impacts discussed below fall within the range of impacts for this project type in the Final Phase III ERP/PEIS.

The transport and storage of platform materials associated with the proposed action would minimally impact visual resources. The platform installation process, which would likely include pouring a concrete footing into an excavation location, would be localized and short-term and result in minor adverse impacts. Once installed, there would be a change in the viewshed as a result of these platforms, but this would not dramatically alter aesthetics in a way that would detract from other activities in the area. Typical design for such structures is 3 feet by 3 feet nesting platform atop a pole approximately 10 to 20 feet high. Poles are typically placed 3 to 6 feet deep in the ground. Sheet metal would be attached to the pole approximately 3 to 6 feet above the ground to protect eggs and fledglings from predators.
While changing the viewshed, these platforms would not be out of context with their surroundings and would not detract from use of the area. Therefore, impacts during construction (short-term) and operation (long-term) would be adverse but localized, and minor.

### 9.2.5.3.3 Summary of Impacts to Human Uses

Impacts to human uses from implementation of Osprey Restoration in Coastal Alabama would include:

- **Cultural Resources**: A complete review of this project under Section 106 is ongoing. That review would be completed prior to undertaking any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse effects on historic properties located within the project area.
- **Aesthetics and Visual Resources**: The proposed action would result in minor, short term visual impacts while construction equipment is used at the project site. The placement of the osprey platforms would result in a direct, long term, minor adverse impact on the aesthetics and visual resources of the area and these platforms would become less intrusive over time.

### 9.2.6 Cumulative Impacts

As discussed in Chapter 4, the CEQ regulations to implement NEPA require the assessment of cumulative impacts in the decision-making process for federal projects, plans, and programs. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 C.F.R. § 1508.7).

The Osprey Restoration in Coastal Alabama cumulative impacts analysis tiers from the Final Phase III ERP/PEIS analysis of Alternative 4 (Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities), which evaluated the type of restoration activity proposed for Osprey Restoration in Coastal Alabama. The Final Phase III ERP/PEIS analysis of cumulative impacts relevant to the proposed Osprey Restoration in Coastal Alabama is incorporated by reference into the following cumulative impacts analysis. The following analysis focuses on the potential additive effects of the proposed Osprey Restoration in Coastal Alabama to the effects of past actions evaluated in the Final Phase III ERP/PEIS cumulative impacts analysis and the effects of some past, present, and reasonably foreseeable future actions not analyzed in the Final Phase III ERP/PEIS.

#### 9.2.6.1 Site Specific Review and Analysis of Cumulative Impacts to Relevant Resources

This section describes past, present, and reasonably foreseeable future actions that were not discussed in the Final Phase III ERP/PEIS, but which are relevant to identifying any cumulative impacts the proposed Osprey Restoration in Coastal Alabama may have on a local scale. Context and intensity, defined in Section 9.2.5, are used to determine whether a potential significant cumulative impact from the Osprey Restoration in Coastal Alabama exists.
For the Osprey Restoration in Coastal Alabama, specifically, the relevant affected resources analyzed in this EA are:

- Geology and Substrates
- Noise
- Wildlife and Wildlife Habitat, including Threatened and Endangered Species
- Aesthetics and Visual Resources

Those resources described in section 9.2.5 as considered but not carried forward for further analysis would not have impacts and therefore, would not have cumulative impacts. Local and site-specific past, present and reasonably foreseeable future actions not analyzed in the Final Phase III ERP/PEIS were identified through conversations with ALDCNR staff and searching websites relevant to Osprey Restoration in Coastal Alabama. The local action area is defined as the five proposed platform locations and immediate surroundings of those areas. Actions that would be relevant to the cumulative impacts analysis for Osprey Restoration in Coastal Alabama are defined here as those with similar scope, timing, impacts or location. Websites searched include:

- [http://www.nfwf.org/whoweare/mediacenter/pr/Pages/gulf-main-pr-14-1117.aspx](http://www.nfwf.org/whoweare/mediacenter/pr/Pages/gulf-main-pr-14-1117.aspx)

This search provided no additional information on actions that are relevant to Osprey Restoration in Coastal Alabama cumulative impacts analysis. The potential for cumulative impacts is further limited due to the small and localized nature of the Osprey Restoration in Coastal Alabama.

### 9.2.6.2 Phase III or Proposed Phase IV Projects

Due to the small scale, minor, local and temporary impacts from the project, Osprey Restoration in Coastal Alabama is not anticipated to contribute to potential adverse cumulative impacts in combination with other Phase III or IV projects. In terms of location, the closest Phase IV proposed project to Osprey Restoration in Coastal Alabama is the Trail Enhancement at Bon Scour NWR project. That project consists of trail enhancements and a construction of a view platform at Bon Secour NWR, which is in the vicinity of the Little Lagoon proposed platform. Cumulatively, these two projects would not produce adverse environmental impacts because of their distance, timing, and small scale. One nesting platform target area is also located in the vicinity of the Gulf State Park Enhancement Project (trails component). Due to the short nature of construction (less than one day), construction of both projects is not expected to occur at the same time and operation of the projects would not be expected to cumulative contribute to any adverse impacts due to the small and localized nature of the proposed nesting platforms.
Osprey Restoration in Coastal Alabama would be expected to contribute long term beneficial impacts to wildlife and wildlife habitat. Accordingly, Osprey Restoration in Coastal Alabama would not contribute adverse cumulative impacts when added to past, present or reasonably foreseeable future actions.

9.2.7 Summary

The proposed Osprey Restoration in Coastal Alabama would include establishment of five osprey nesting platform which would provide additional nesting habitat. The project is consistent with Alternative 4 (Preferred Alternative) of the Final Phase III ERP/EIS. Draft NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would provide long-term benefits by creating habitat. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery and Conservation Act, the National Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The final determination on this project will be included in the final Phase IV ERP/EA and Finding of No Significant Impact, if applicable.

9.3 References

ADCNR, 2014. Outdoor Alabama. Osprey, Hawks, and Falcons. Accessible at:
http://www.outdooralabama.com/osprey-hawks-and-falcons

ADCNR. "Birds." Alabama Department of Conservation and Natural Resources. 2015.


EPA. "Currently Designated Nonattainment Areas for All Criteria Pollutants – Listed by State, County then Pollutant." *U.S. Environmental Protection Agency.* 2015.  


