Chapter 13: Proposed Sea Turtle Early Restoration Project

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13.1 Sea Turtle Early Restoration Project: Project Description

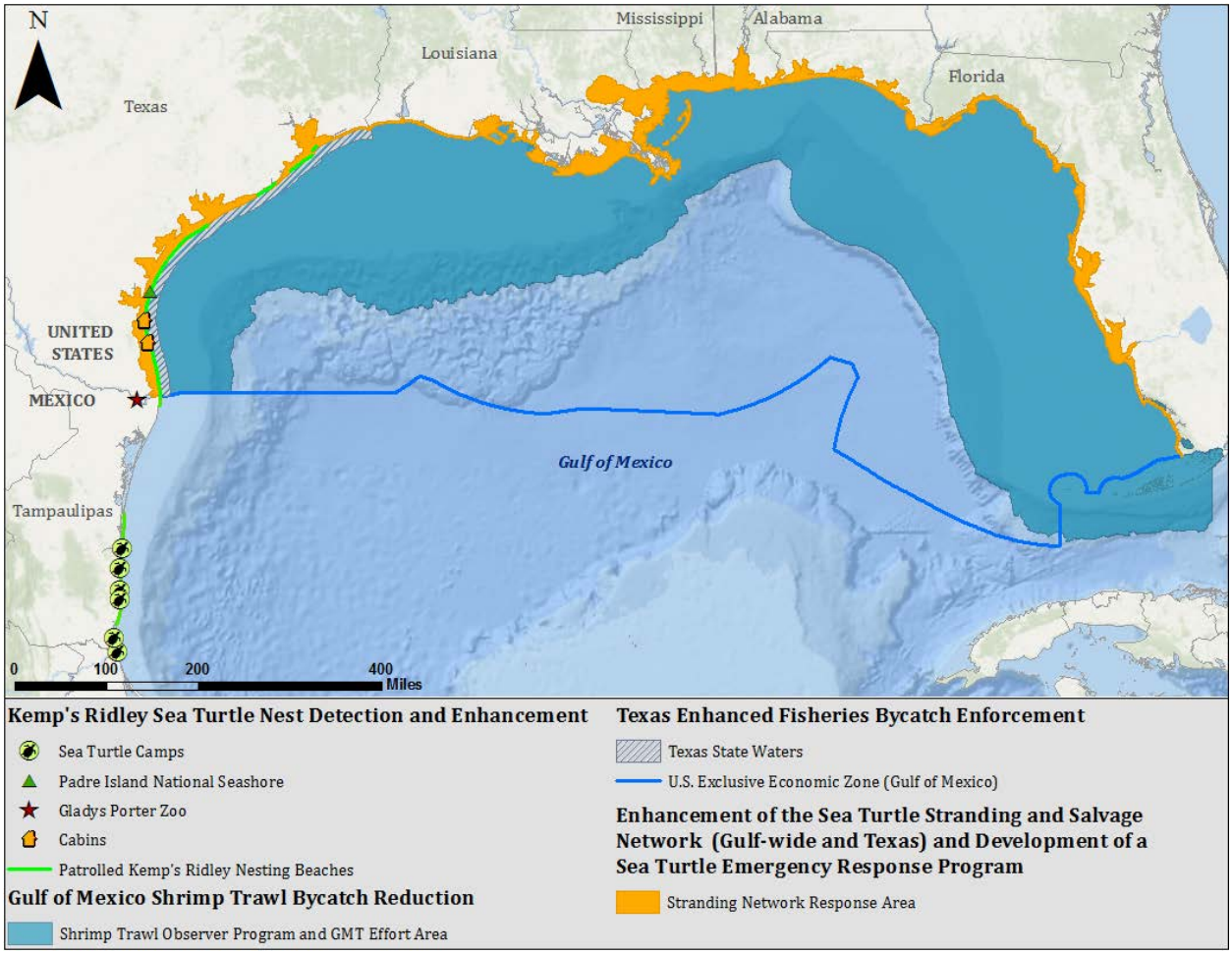
This chapter provides an introduction and project summary for the Sea Turtle Early Restoration project; a general description of each of the project's four components with relevant background information; a discussion of the sea turtle project's consistency with project evaluation criteria; a description of planned performance criteria, monitoring and maintenance for all project components; a description of the type and quantity of Offsets BP would receive for funding the sea turtle project; the total estimated cost of the sea turtle project; and the environmental assessment for the project.

13.1.1 Introduction

The Sea Turtle Early Restoration project consists of four complementary project components: (1) Kemp's Ridley Sea Turtle Nest Detection and Enhancement; (2) Enhancement of the Sea Turtle Stranding and Salvage Network (STSSN) and Development of an Emergency Response Program; (3) Gulf of Mexico Shrimp Trawl Bycatch Reduction; and (4) Texas Enhanced Fisheries Bycatch Enforcement, which would aid in the recovery of sea turtles. In combination, these components are a multi-faceted approach to sea turtle restoration that addresses threats to sea turtles on their nesting beaches and in the marine environment.

The Kemp's Ridley Sea Turtle Nest Detection and Enhancement project component would provide needed additional staff, training, education activities, equipment, supplies, and vehicles over a 10-year period in both Texas and Mexico for Kemp's ridley sea turtle nest detection and protection. It would also provide for the addition of two cabins and two nesting corrals on the southern end of the Padre Island National Seashore (PAIS). The Enhancement of the STSSN and Development of an Emergency Response Program component would enhance the existing STSSN beyond current capacities for 10 years in Texas and across the Gulf as well as develop a formal Emergency Response Program within the Gulf of Mexico to increase the survival of sea turtles during cold stun and other emergency stranding events. The Gulf of Mexico Shrimp Trawl Bycatch Reduction component would enhance two existing NOAA programs which work to reduce the bycatch of sea turtles in the Gulf of Mexico. The two programs are the Gear Monitoring Team (GMT) and the Southeast Shrimp Trawl Fisheries Observer Program (Observer Program). The existing GMT program would be expanded to include additional staff to provide a greater capacity for education and outreach to the shrimp fishing community to improve compliance with federal Turtle Excluder Device (TED) regulations. The existing Observer Program would be expanded to include an additional 300 observer sea days annually for a 10-year period. The Texas Enhanced Fisheries Bycatch Enforcement component would enhance TPWD enforcement activities for fisheries that incidentally catch sea turtles while they operate primarily in Texas State waters (approximately 367 miles of coast line out to 9 nautical miles) within the Gulf of Mexico for a 10-year period. These increased enforcement operations would focus on compliance with TED regulations during the Gulf of Mexico shrimp fishery season (primarily February through mid-May).

Figure 13-1. Geographic area of the proposed Phase IV Sea Turtle Early Restoration project



13.1.2 Project Summary

The Trustees are proposing a Phase IV Early Restoration project for sea turtles, comprised of the following four components[1]:

1. Kemp's Ridley Sea Turtle Nest Detection and Enhancement;
2. Enhancement of the STSSN and Development of a Sea Turtle Emergency Response Program;
3. Gulf of Mexico Shrimp Trawl Bycatch Reduction; and
4. Texas Enhanced Fisheries Bycatch Enforcement.

[1] The project components may have been titled or referred to differently in prior documents.

Figure 13-1 provides a map of the geographic areas where the proposed sea turtle project components would occur. This project is consistent with the goal of compensating the public for natural resource injuries resulting from the Spill.

Section 13.1 includes a general description of the sea turtle project's consistency with project evaluation criteria; the planned performance criteria, monitoring and maintenance for all project components; the type and quantity of Offsets BP would receive for funding the sea turtle project; and the total estimated cost of the sea turtle project. Only the Background and Project Description subsections are organized by individual project component.

Section 13.2 includes the Environmental Assessment (EA) for the proposed project. The project is analyzed and described as one EA comprised of three sections, based on observed similarities among the four project components that make it possible to analyze the four components in three sections. Each of the three sections includes resource specific discussions on the affected environment and an analysis of the anticipated environmental consequences involved with the proposed project. After the three sections, there is a synopsis that summarizes the overall impacts of the proposed project. The proposed project falls within the Trustees' preferred Programmatic Alternative identified in the Final Phase III ERP/PEIS.

13.1.3 Background and Project Component Descriptions

13.1.3.1 Kemp's Ridley Sea Turtle Nest Detection and Enhancement

The Kemp's Ridley Sea Turtle Nest Detection and Enhancement project component would provide funding to support ongoing conservation efforts for the Kemp's ridley sea turtle. The Bi-National Recovery Plan for the Kemp's Ridley Sea Turtle (*Lepidochelys kempii*) (NMFS and USFWS, and Secretary of Environment and Natural Resources, Mexico [SEMARNAT] 2011) outlines a recovery strategy that includes nest detection and protection. The primary goal of this project component is to reduce sea turtle hatchling mortalities through continued support for nest detection and protection activities in Texas and Mexico as part of the ongoing Kemp's ridley recovery efforts. Funding for this proposed project component would provide needed support for additional staff, training, equipment, supplies and vehicles over a 10-year period in both Texas and Mexico. The project component would also provide for the construction of two cabins and two nesting corrals on the southern end of the PAIS.

The Kemp's ridley is the smallest of the seven species of sea turtles and the only species that nests primarily during the daytime (Figure 13-2); it is also one of the most vulnerable sea turtle species in the world. The Kemp's ridley sea turtle was listed as endangered throughout its range on December 2, 1970 (USFWS 1970), and has received federal protection under the ESA and preceding law since that time. Kemp's ridleys are distributed throughout the Gulf of Mexico and along the U.S. Atlantic coast, from Florida to New England. Most Kemp's ridley turtles nest on the Gulf of Mexico coastal beaches between Playa de Tepehuajes to Barra del Tordo/Playa Dos in the state of Tamaulipas, Mexico. Although the majority of Kemp's ridley nesting occurs in Mexico (USFWS 1970), some nesting also occurs along the Texas Gulf coast. Kemp's ridley sea turtle nests have been recorded on the Texas coast since 1948 (Shaver and Caillouet 1998 and Shaver 2005). In 1978, a collaborative bi-national program between

Mexico and the United States was developed to recover the species and began with a strategy to protect nests and nesters.

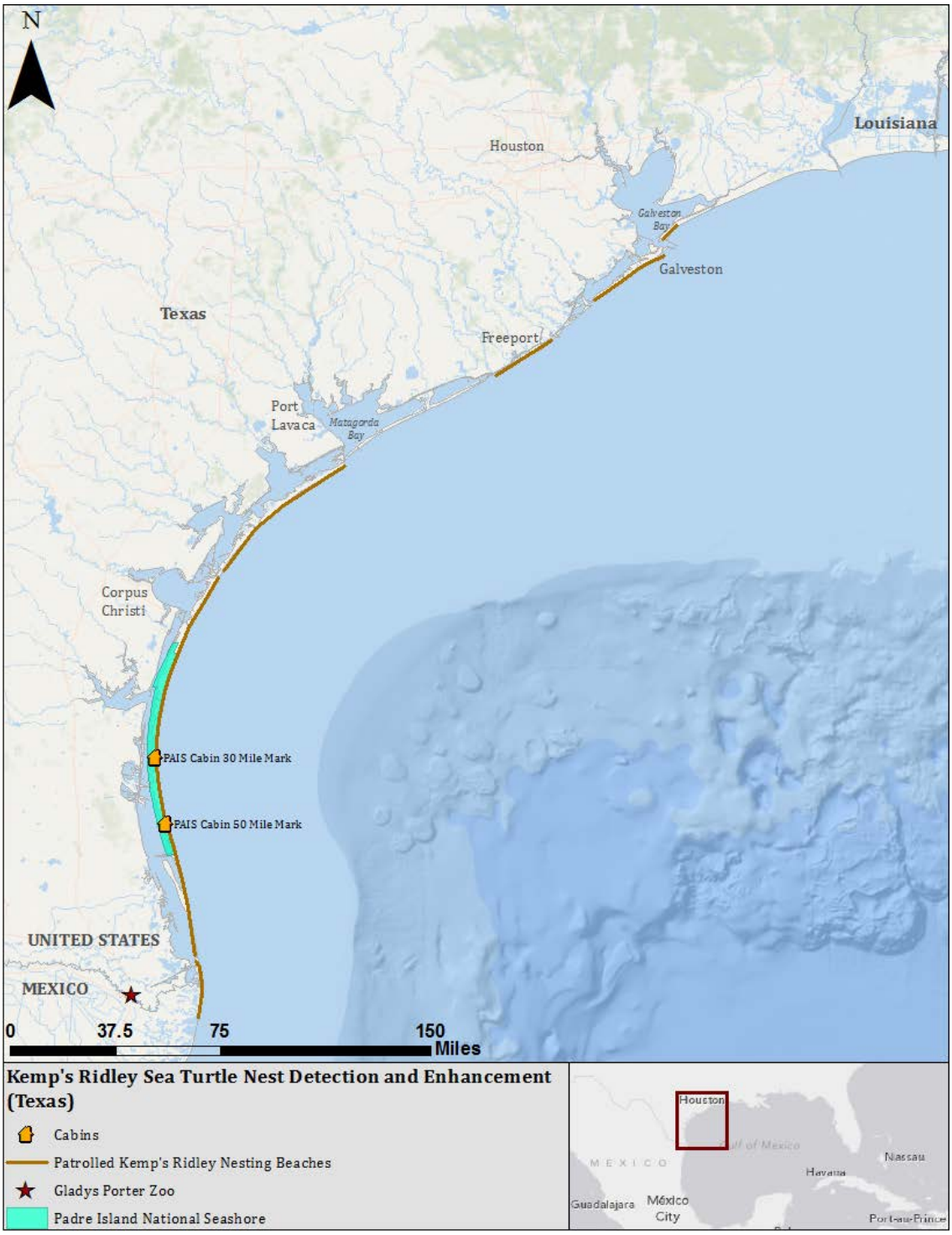
Figure 13-2. Kemp's ridley sea turtle nesting at PAIS. Photo credit: National Park Service

The nest detection efforts in Texas for the Kemp's ridley are coordinated by DOI and include partnerships between federal and state agencies, non-governmental organizations (NGOs), and universities. Additionally, the U.S. supports ongoing nest detection and protection efforts in Mexico through the Gladys Porter Zoo.

13.1.3.1.1 Texas Activities

Efforts to locate, document, study, and protect nesting Kemp's ridley turtles and their nests in Texas began at PAIS in 1986 and continue today, however nesting patrols were not comprehensive until 1998 (Shaver 2005). In cooperation with several partners, the NPS conducts an extensive program to detect, document, and protect nesting Kemp's ridley sea turtles and their nests in Texas. Today, nest detection patrols occur to some extent from the Bolivar Peninsula on the north Texas Gulf Coast to Boca Chica Beach at the Texas/Mexico border. Kemp's ridley nest primarily during the day in Texas and patrols are generally conducted daily from April through mid-July (Figure 13-3).

Figure 13-3. Patrols conducted on the Texas coast



Eggs from Kemp's ridley nests found during patrols from North Padre Island northward on the Texas coast are excavated and brought to the incubation facility at PAIS for protected care. Eggs from some of the nests found at the southern end of the PAIS are placed into a large screened enclosure called a corral. The eggs placed in the corral are monitored and protected from predation until they hatch. Similarly, eggs from nests found on South Padre Island and Boca Chica beaches are placed in a corral on South Padre Island. Hatchlings from protected nests in Texas are then released into the Gulf of Mexico at PAIS and South Padre Island (Figure 13-4).

Figure 13-4. Kemp's ridley hatchling release at South Padre Island, Texas. Photo credit: Texas Parks and Wildlife Department

Nests found along the Texas coast north of PAIS are brought to the incubation and corralling facilities at PAIS to protect them from a variety of human related and natural threats. However, these generally account for less than 20 percent of the total nests detected in Texas each year. The hatchlings are released on the National Seashore in an effort to re-establish a secondary nesting colony on the federally protected lands at PAIS, as part of the overall Kemp's ridley recovery strategy. The few nests that are not found during patrols of the Texas coast incubate naturally in the sands at the nest site (*in situ*). Since these nests are not subject to additional protection, they typically have a lower survival rate than protected nests. Nests from the four other sea turtle species that occur in the Gulf of Mexico have also been documented on Texas shores. Nest patrols in Texas generally do not encompass the entire nesting seasons for these other species. However, if encountered during the nest patrols they are relocated to incubation/corral facilities at PAIS or the corral on South Padre Island.

The detection of nests, relocation of eggs and release of hatchlings is a labor and equipment intensive process conducted in remote and harsh environments of the Texas coast. This portion of the proposed restoration project component would maintain, improve and/or enhance current nest detection, collection and transport of, and protected incubation and care of Kemp's ridley sea turtles eggs and hatchlings in Texas. Project funding would enable activities to be more comprehensive and effective, leading to reduced sea turtle hatchling mortality. The proposed project component, implemented by the Texas Trustees[2] and DOI, would provide funding to NPS, TPWD, USFWS, and other partner NGOs and universities to support ongoing nest detection patrols and protection for the next 10 years. The funding would support personnel expenses, supplies, construction of facilities, equipment, fuel, vehicle purchases and maintenance as part of the current nest detection program.

NPS is responsible for detecting and protecting nesting turtles and their nests on North Padre Island, including PAIS. The patrol route on PAIS is nearly 80 miles of sand beach with no infrastructure for the southernmost 60 miles. The difficult driving conditions and limited communications over these 60 miles require the use of four-wheel drive vehicles and require staff to be self-sufficient in a coastal wilderness area. Rapidly changing weather and tidal conditions can also pose significant safety threats to staff and equipment. The proposed Kemp's ridley sea turtle nest detection and enhancement restoration project component would include funding from DOI for the construction of two base camp cabins in the remote southern end of PAIS. In order to reduce risks associated with transporting eggs long distances over rough terrain, a nesting corral would be constructed near each base camp.

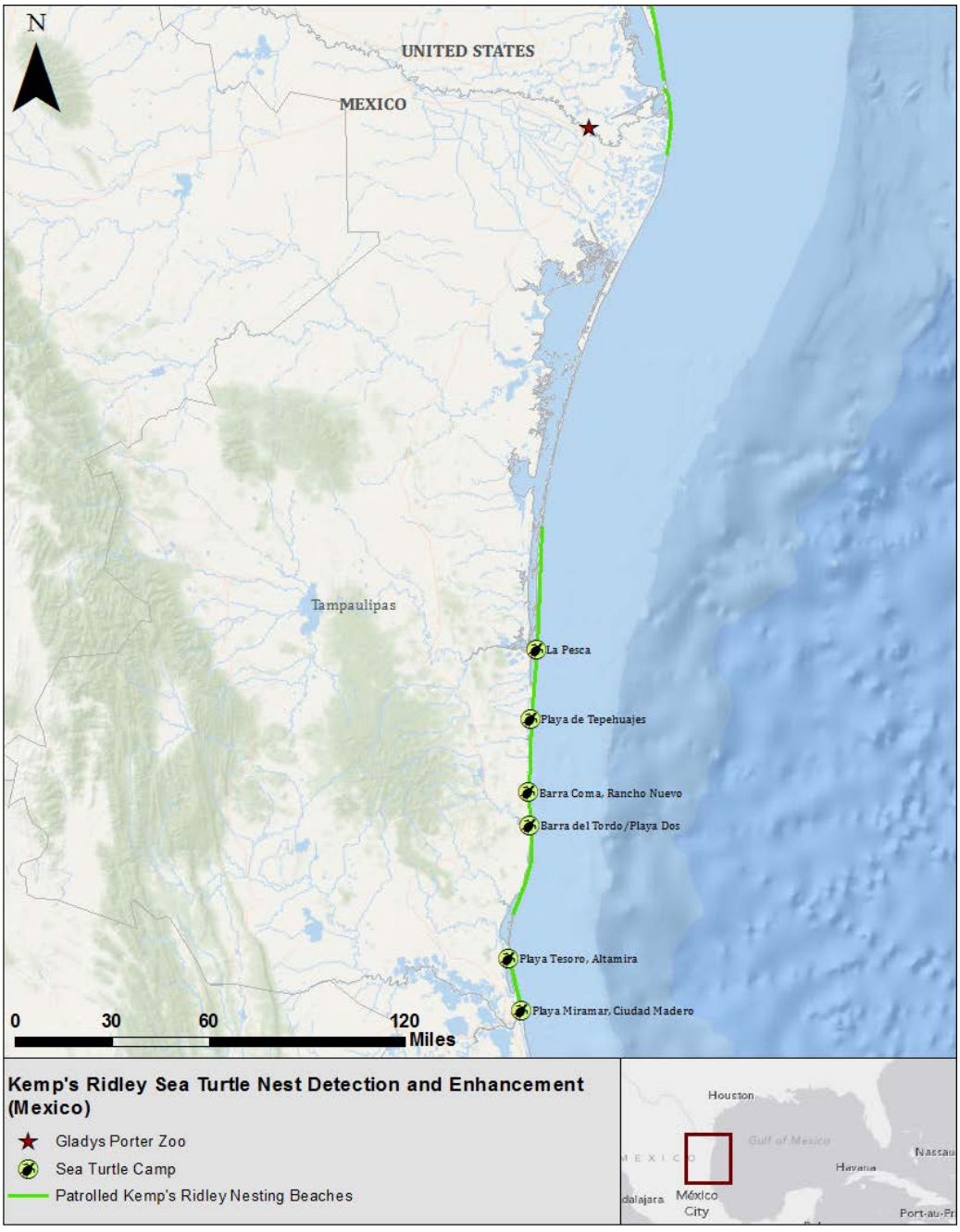
The proposed cabin construction would improve detection and protection efforts on PAIS beaches, thereby decreasing response time, increasing corral capacity and shortening the travel distance from nest to corral, with the goal of thereby increasing hatchling survival. The constructed cabins would replace the original two cabins that were lost in 1999 to Hurricane Bret. Construction of these two cabins would provide better distribution of park staff to begin and end their patrols each day, allowing for more work hours applied towards monitoring. Construction of the cabins would also be used to mitigate or reduce employee safety risks while working in the remote areas of the seashore. During times of inclement weather and emergency situations, the new cabins would allow for additional locations where park staff could find refuge or shelter. This project component would also include sea turtle egg corrals, at each of the proposed cabins. Situating these corrals near the cabins provides overnight observation and safety for the eggs. Having the corral locations centralized relative to the patrol routes (near the National Seashore's 30 and 50-mile marks) would optimize park staff efforts to relocate eggs to one of these corrals shortly after being excavated from their nest. This action would reduce the transport time of eggs lessening the potential for egg embryo injury. Once hatchlings emerge, they would be released near the various corrals which are closer to where the nests were found and would further disperse the hatchlings along Gulf of Mexico beaches.

[2] The Texas Trustees include the Texas Commission on Environmental Quality, Texas General Land Office, and Texas Parks and Wildlife Department (TPWD).

13.1.3.1.2 Mexico Activities

Over 90% of the Kemp's ridley population nests along 78-miles of beach that stretches from Playa de Tepehuajes to Barra del Tordo/Playa Dos in the state of Tamaulipas, Mexico (Figure 13-5, Gladys Porter Zoo 2013). Should any disaster, manmade or natural, befall that reproductive epicenter, recovery of the species could be set back years. Since 1981, the Gladys Porter Zoo has administered the United States' portion of funds for the joint U.S./Mexico effort to protect and increase the production of Kemp's ridley sea turtles at their natal beaches located in the state of Tamaulipas, Mexico.

Figure 13-5. Location of Kemp's ridley sea turtle nesting beaches in Mexico



From 1966 to 1987, conservation efforts focused on the area of Rancho Nuevo with the camp currently located at Barra Coma. In 1978, the U.S. joined with Mexico to undertake nest protection activities at Rancho Nuevo. The bi-national program expanded in 1988 to the south to Barra Del Tordo with a camp at Playa Dos. A third camp was established to the north a year later. This camp has been relocated several times and since 1996 has been located near the beach of Playa de Tepehuajes. In that same year and in coordination with partner agencies in Mexico, three new camps were established, one near the town of La Pesca and two near the cities of Ciudad Madero and Altamira at the beaches of Playa Miramar and Playa Tesoro, respectively.

The nesting season efforts in Mexico generally begin in March with the preparation of the camps and building of protective corrals. Patrols in Mexico begin in earnest in April and continue through the end of August, sometimes continuing into the middle of September. On average, there are three patrols per day from March through August. Counting the patrols, efforts during massive synchronous nesting events (i.e., arribadas), the hatchling releases, and other activities, an estimated 134,000 miles are patrolled during the six-month nesting season, requiring approximately 108,000 man-hours. Current efforts record relevant data and relocate many of the egg clutches to protective corrals. After the incubation period, hatchlings from the protected nests are counted and released into the Gulf of Mexico.

Project funds for the Kemp's Ridley Sea Turtle Nest Detection and Enhancement project component would be used to maintain, improve and/or enhance long-term nest detection, egg relocation, and protection of nests in Mexico. Texas Trustees would provide funding to the Gladys Porter Zoo over a 10-year period to support nesting patrols, nest protection, and local education efforts. These activities are part of the long-term efforts identified in The Recovery Plan (NMFS and USFWS, and SEMARNAT 2011). For the Mexico activities of this project component, a bi-national field crew, including staff from the Gladys Porter Zoo and Mexico, would work under the supervision of trained sea turtle biologists to conduct beach patrols looking for sea turtles, sea turtle tracks, and their nests.

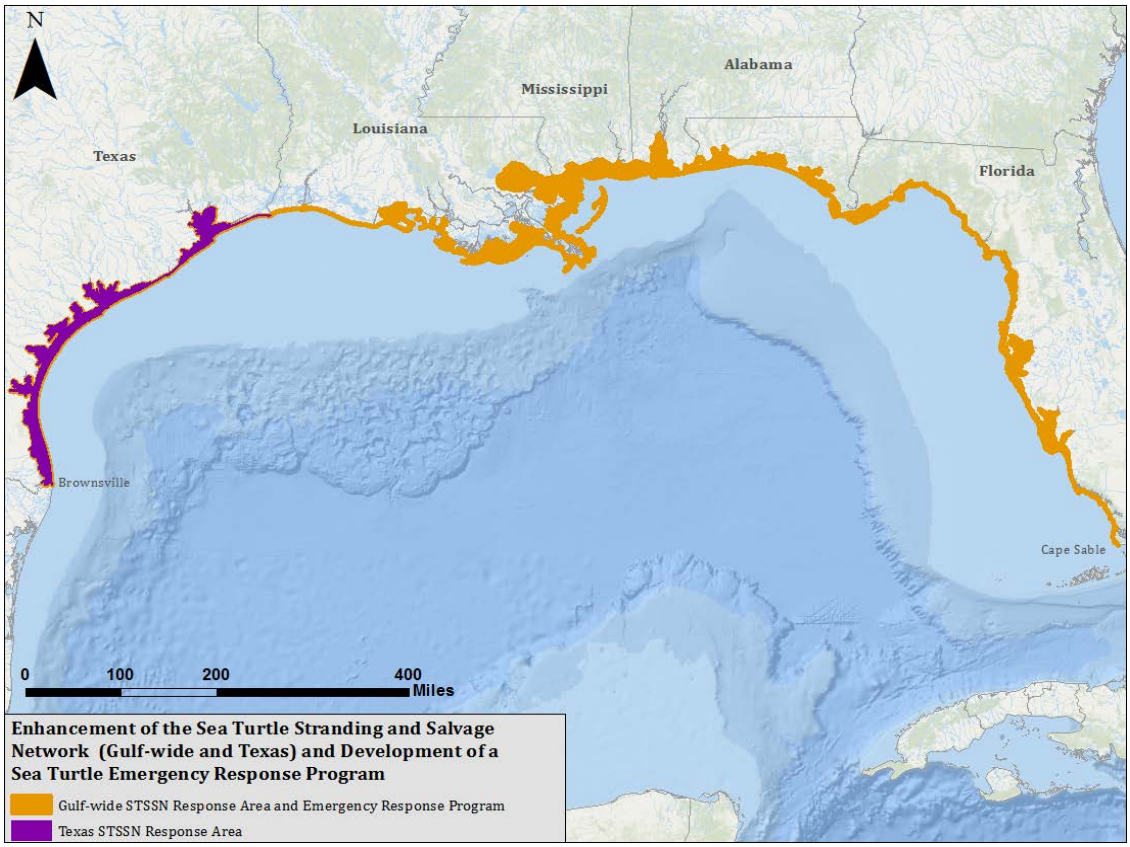
Relocating eggs into corrals is currently the most efficient and effective way of protecting nests from predation in this region. In the late 1970's and early 1980's at the inception of the bi-national program, low nesting numbers and heavy predation threatened nests left *in situ*. Nesting success was extremely low and led to the use of relocation and corralling techniques. Through these efforts, the number of hatchlings released back into the Gulf can be maximized. The majority of this project component funding is intended to increase the level of protection for *in situ* nests, through increased predation prevention and patrolling efforts. After the incubation period, which, depending on the temperature can be anywhere from 45 to 60 days, hatchlings from the protected nests are counted and released into the Gulf of Mexico.

13.1.3.2 Enhancement of the Sea Turtle Stranding and Salvage Network and Development of a Sea Turtle Emergency Response Program

This project component would include 1) NOAA's enhancement of the Gulf of Mexico STSSN beyond current capacities for 10 years, 2) Texas Trustees' enhancement of the STSSN within Texas beyond

current capacities for 10 years, and 3) NOAA's establishment of a formal Sea Turtle Emergency Response Program within the Gulf of Mexico. This project component has the goal of improving response capabilities to recover dead and injured sea turtles. The three elements of this project component are described below and their geographic scope is illustrated in Figure 13-6.

Figure 13-6. Geographic scope of the Sea Turtle Stranding and Salvage Network (Gulf-wide and Texas) and Development of a Sea Turtle Emergency Response Program



13.1.3.2.1 Enhancement of the Sea Turtle Stranding and Salvage Network

The STSSN was formally established in 1980 to collect information on and document strandings of sea turtles along the U.S. Gulf of Mexico and Atlantic coasts. Sea turtle strandings are defined as animals that either wash ashore or are found floating, dead or alive, and if alive, generally in a weakened condition. The STSSN includes federal, state and private partners, and is coordinated by NOAA. Each state has a STSSN coordinator, who coordinates stranding response within their state. The agencies that host the state coordinator for each state are; NPS for the Texas STSSN, Louisiana Department of Wildlife and Fisheries for the Louisiana STSSN, NOAA for the Mississippi STSSN, USFWS for the Alabama STSSN, and Florida Fish and Wildlife Conservation Commission for the Florida STSSN.

Stranded turtles are documented on a standardized STSSN stranding form. Depending on species, size, location and carcass condition, dead stranded sea turtles are necropsied in the field, buried on the beach, or transported to freezer storage for later necropsy and sample collection. Live stranded turtles

are transported to rehabilitation facilities or triaged in Mobile Aquatic Sea Turtle Holding (MASH) units during cold stun events or emergency response incidents.

NOAA's Enhancement of the Gulf-Wide Sea Turtle Stranding and Salvage Network

NOAA would implement enhancements to the infrastructure of the Gulf of Mexico STSSN across all five states to enhance the capability for response, enhanced coordination, data handling and reporting, and streamlined data dissemination for use in conservation management programs. Participants in the Gulf-wide STSSN enhancement would include NOAA and the state STSSN coordinators for each of the five Gulf states. The enhancement would provide STSSN staffing positions across the Gulf-wide STSSN to improve response capabilities to recover dead or injured sea turtles and to handle and disseminate data for improved conservation management. The project would include funding for positions in each of the five states, and three new positions hired by NOAA to focus on Gulf-wide STSSN coordination. The intent of the enhanced STSSN is to provide a more rapid response to unusual stranding events, allowing mortality sources to be identified and addressed more rapidly and solutions to be implemented where possible. For example, if unusual strandings or increased stranding levels are observed in a particular area, and necropsies of those animals indicate forced submergence or fishery interactions to be the likely cause, then that information would be shared with the GMT and federal and state law enforcement agencies (i.e. TPWD Law Enforcement) to better direct where outreach and education and enforcement efforts could be focused.

Enhancement of the Sea Turtle Stranding and Salvage Network and Rehabilitation Efforts in Texas

DOI and the Texas Trustees would provide additional enhancement of the STSSN within Texas by providing funding to STSSN partner NGOs, universities, and rehabilitation providers to expand the capacity of the network. Stranded sea turtles in Texas are generally located during directed searches and as a result of reports from the public. Because much of the Texas coast is remote, difficult to access, and often requires a four-wheel drive vehicle or boat to retrieve stranded turtles, response times to stranded sea turtles can be lengthy. This proposed component would replace lost funding and expand the STSSN's capacity to find and rehabilitate injured and cold stunned turtles, with the goal of increasing the number of live sea turtles being returned to the Gulf, see Figure 13-7. Funding would go towards staffing, equipment, vehicles, and supplies. Participants supporting the proposed enhancement of the STSSN and rehabilitation efforts in Texas include NOAA, DOI, and TPWD as well as various partner NGOs, universities and rehabilitation providers. NPS serves as the Texas state coordinator for the STSSN, with both state-wide and local responsibilities regarding sea turtle strandings on the Texas coast. NPS staff members from PAIS provide training and technical assistance to STSSN participants in Texas and maintain the records of Texas sea turtle strandings.

Figure 13-7. Green sea turtles on their way to a release site in the Lower Laguna Madre, Texas, after being rescued and rehabilitated due to a cold stun event. Photo Credit: Texas Parks and Wildlife Department

13.1.3.2.2 Development of a Sea Turtle Emergency Response Program

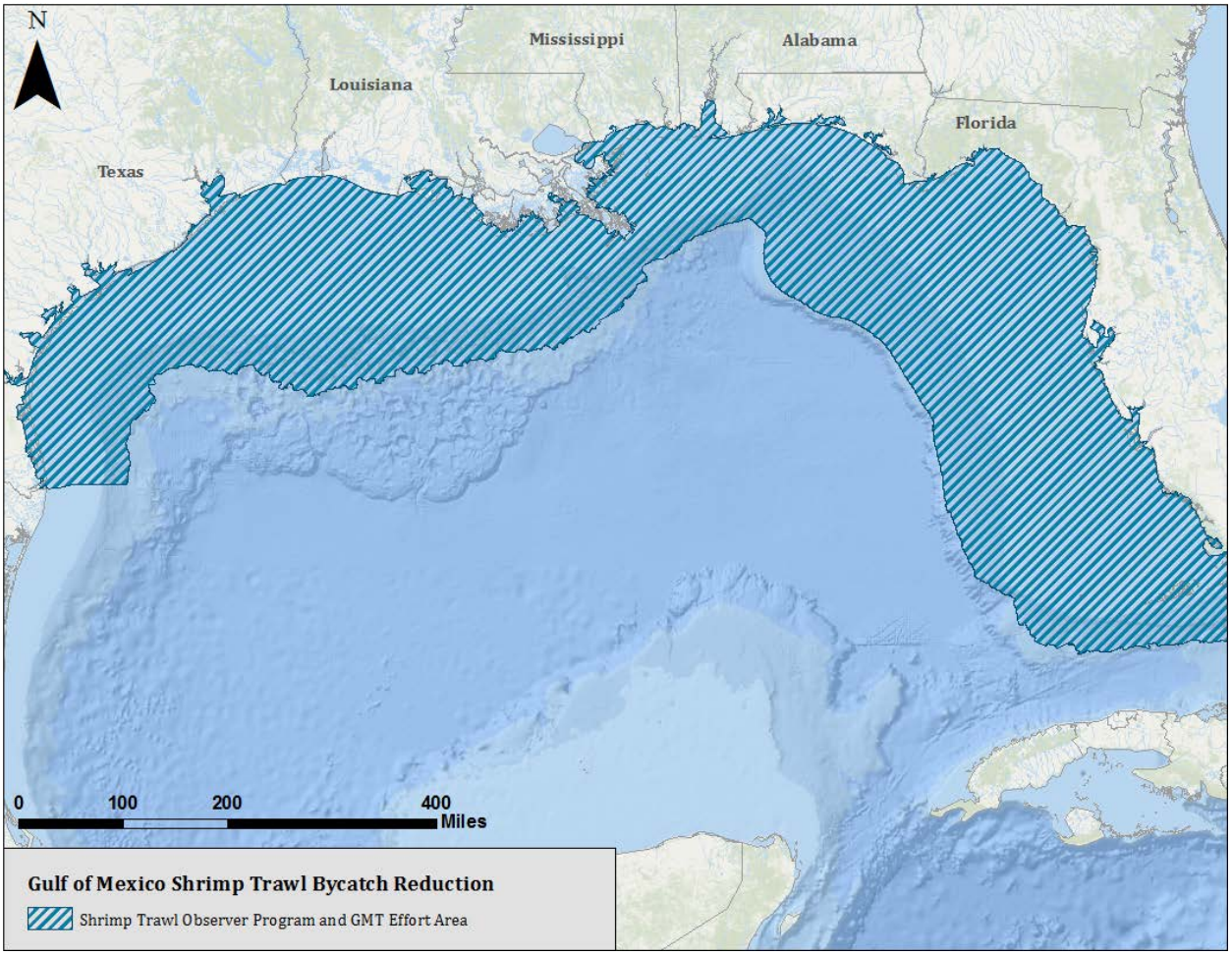
This project component would provide funding for NOAA to develop and implement a comprehensive Sea Turtle Emergency Response Program in the Gulf of Mexico to increase the STSSN's capacity for response during emergency events, with the objective of increasing the survival of sea turtles during emergency events. A significant gap exists in STSSN preparedness for response to emergency events that could potentially kill and/or injure large numbers of sea turtles. This project component would have a primary focus of creating a formal plan and necessary infrastructure (i.e. supplies and equipment) and a robust training program to allow for rapid response to cold stun events that may kill or injure large numbers of sea turtles. These events require search and rescue operations, triage, treatment, temporary holding, and eventual release of turtles, see Figure 13-7. Secondarily, the program would enhance capacity to respond to other emergency events such as hazardous weather events, oil spills,

and harmful algal blooms. The program would work to increase response capacity by decreasing response times and increasing search areas during emergency events. Five MASH units and trailers would be purchased. Each contains twelve 500-gal tanks with filtration, UV filters, tents and setup equipment. This component would also include the use of contracts for vessel support during emergency events.

13.1.3.3 Gulf of Mexico Shrimp Trawl Bycatch Reduction

The Gulf of Mexico Shrimp Trawl Bycatch Reduction project component would be implemented by NOAA and would enhance two existing NOAA programs, the Gear Monitoring Team (GMT) program and the Observer Program, described below (Figure 13-8).

Figure 13-8. Geographic Scope of the Gulf of Mexico Shrimp Trawl Bycatch Reduction project components

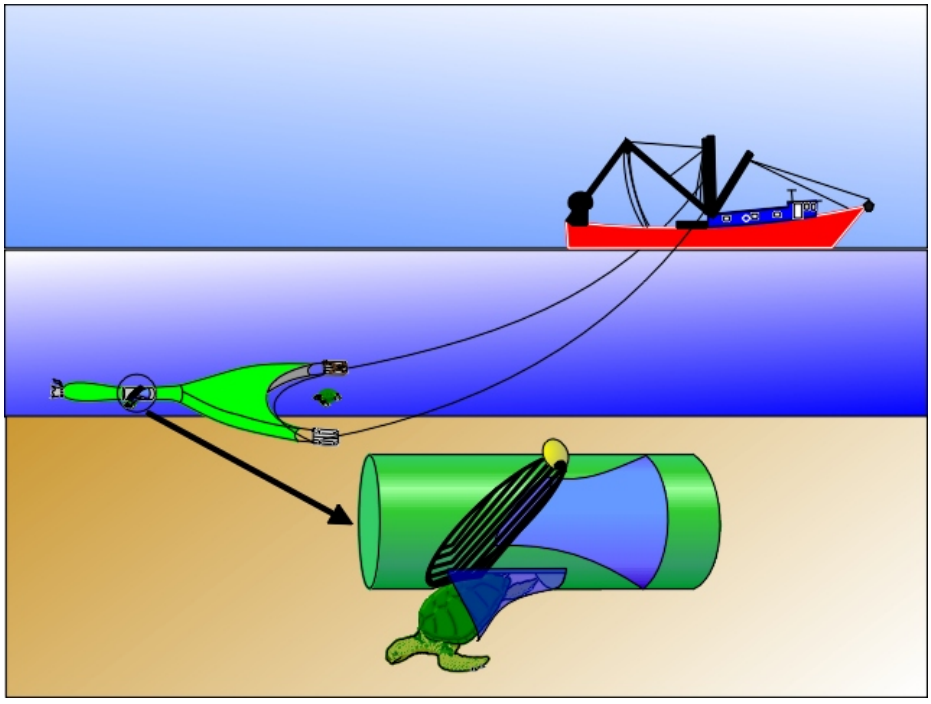


13.1.3.3.1 Gulf of Mexico Gear Monitoring Team Enhancement

This project component would expand NOAA's GMT program within the Gulf of Mexico. The primary goal of the proposed expanded GMT program is to increase capacity for education and outreach to the shrimp fishing community to improve compliance with existing federal TED regulations. The expanded GMT is intended to provide direct benefits to sea turtles by decreasing the likelihood of capture mortality through greater use of properly built, installed, and maintained TEDs.

A TED is a grid that fits into the cod end of the trawl, with a top or bottom escape opening covered with a flap (Figure 13-9). Sea turtles, and other animals such as sharks, encounter the TED grid when they pass through the trawl and are able to escape through the adjacent opening. Small animals, such as shrimp, pass through the bars of the TED and are caught in the cod end of the trawl. When installed properly, TEDs are expected to be 97% effective at releasing sea turtles from trawl gear.

Figure 13-9. Drawing depicting the placement of a TED in a trawl net. Credit NOAA-NMFS, Southeast Fisheries Science Center



NOAA's GMT program operates out of the Southeast Fisheries Science Center, Pascagoula Lab, and currently consists of one mobile team comprised of two individuals. This project component would add two new teams (each consisting of 2 staff), increasing the program to three teams total. The two new teams would be deployed throughout the Gulf of Mexico. The GMT would improve TED compliance by working closely with TED manufacturers and net shops to assist and ensure that TEDs are properly built and installed to the required standards. The GMT would work with the fishing industry to improve their

knowledge and understanding of how to effectively build, use, and maintain TEDs. This would be achieved through offering workshops and courtesy dock-side and at-sea TED inspections.

The GMT would also work closely with the Observer Program and the STSSN to identify specific areas of bycatch concern within the Gulf. Through working with state agencies, the Observer Program, and the STSSN, the GMT would target under-represented areas in the Gulf and areas identified as potentially problematic for sea turtle bycatch. The project component is designed to enhance coordination with other State and Federal agencies, fishing industry and fishery associations (State and National). The proposed actions would provide additional support and resources that are needed to increase compliance with TED regulations.

13.1.3.3.2 Southeast Shrimp Trawl Fisheries Observer Program Enhancement

This project component would expand the capacity of NOAA's Observer Program to place trained observers on shrimping vessels in the Gulf of Mexico to monitor sea turtle bycatch. The Observer Program is operated out of the NOAA National Marine Fisheries Service (NMFS), Southeast Fisheries Science Center, Galveston Lab. The primary goal of the expanded Observer Program would be to improve capacity to collect data on bycatch of sea turtles in the shrimp trawl fishery in the Gulf. The funding for this project component would add 300 observer sea days annually for a 10-year period. This additional coverage would focus on specific times and areas identified as priorities for monitoring sea turtle bycatch to allow for better characterization and assessment of bycatch. Information on sea turtle interactions with fishing activities would help target, refine, and improve conservation management and potential recovery of sea turtles in the Gulf.

NOAA's Observer Program currently observes approximately 2% of the commercial shrimp trawl fleet in the Gulf of Mexico and Southeast U.S. Atlantic (approximately 1,500 sea days annually), at an annual cost of approximately $2 million (NMFS 2013, NMFS 2012). The additional information gained through this expansion would also be used to better inform the target areas for GMT efforts and the STSSN to improve conservation management and recovery of sea turtles in the Gulf of Mexico. The intent of the expansion of the Observer Program monitoring is to ultimately decrease the number of bycatch mortalities of Kemp's ridley, loggerhead, and green sea turtles in the shrimp trawl fishery in the Gulf of Mexico. The placement of observers would be reviewed by NOAA to ensure that observations are occurring at the correct times and/or locations where sea turtles are likely to be present and where bycatch concerns are greatest.

Figure 13-10. Loggerhead sea turtle escaping from a TED. Photo credit: Credit NOAA-NMFS, Southeast Fisheries Science Center

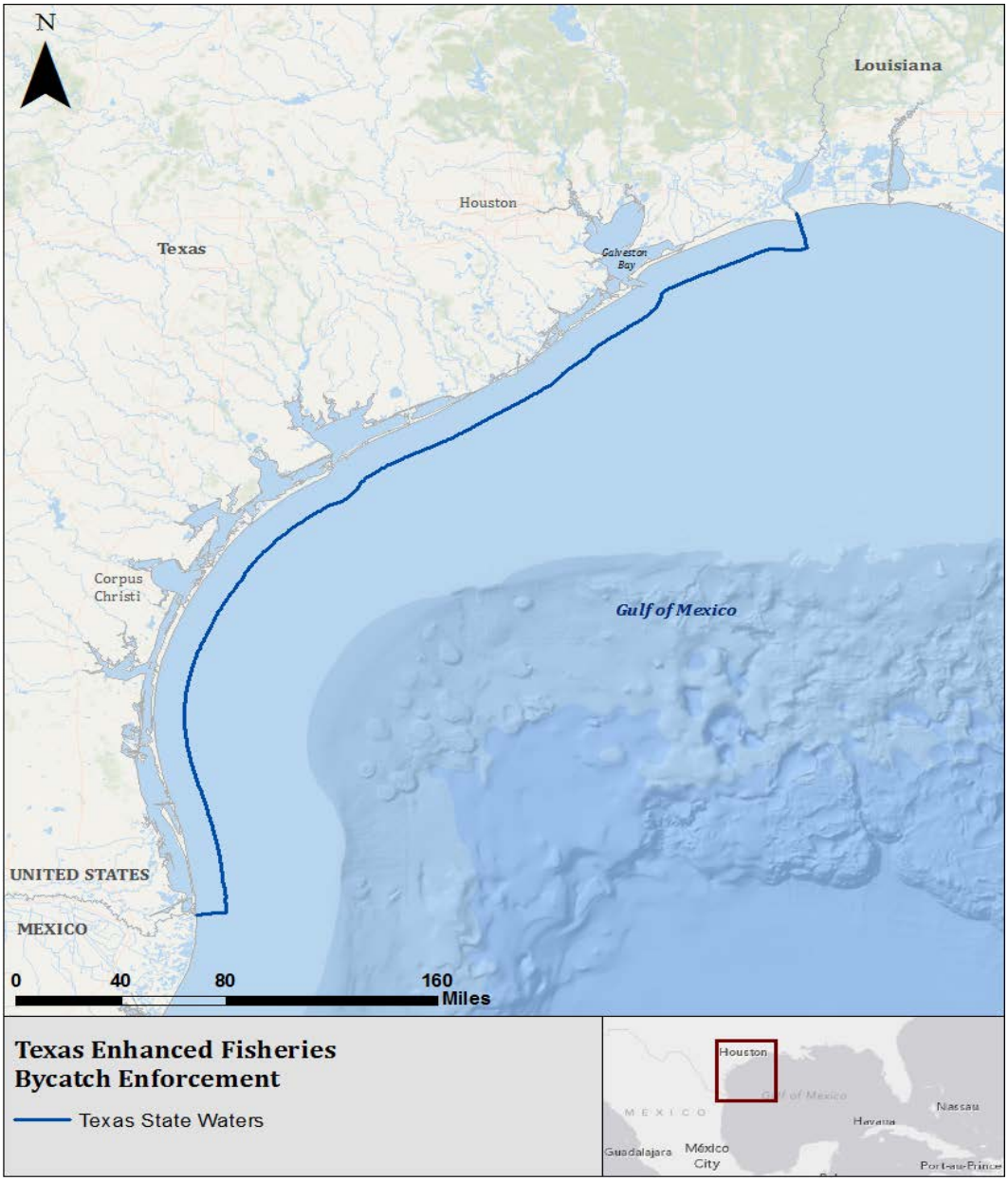
13.1.3.4 Texas Enhanced Fisheries Bycatch Enforcement

Funds for the Texas Enhanced Fisheries Bycatch Enforcement project component would be used to enhance TPWD enforcement activities for fisheries that incidentally catch sea turtles while they operate primarily in Texas State waters (approximately 367 miles of coast line out to 9 nautical miles) and the exclusive economic zone (EEZ) off Texas within the Gulf of Mexico for a 10-year period (Figure 13-11). These increased enforcement operations would focus on compliance with TED regulations during the Gulf shrimp fishery season (primarily February through mid-May) right before the Gulf closes to shrimping in May. Patrols would be targeted during this timeframe because it is the beginning of the nesting season and an active time for shrimp fishing. Previous efforts to increase enforcement activities during this time period have had a positive impact on compliance rates, reducing the number of observed strandings during this time period. The primary goal of this project component is to reduce sea turtle mortalities through increased compliance with TED regulations as a result of increased enforcement actions.

The project component would include a series of patrols focusing on the enforcement of TED regulations in the Gulf of Mexico along the entire Texas coast ensuring compliance aboard commercial shrimp vessels (Figure 13-12). Targeted patrols would primarily occur during the period of the year when sea

turtle strandings have historically been the highest. These patrols would be over and above the current patrol frequency in the Texas state waters of the Gulf of Mexico.

Figure 13-11. Texas Enhanced Fisheries Bycatch Enforcement geographic scope



The vessels associated with this type of open sea enforcement activities are mid-range patrol vessels with a crew of three Game Wardens and long-range patrol vessels with a crew of four Game Wardens. There are thirteen mid-range patrol vessels and two long-range patrol vessels along the coast. TPWD expects to provide about 200 boat hours of mid-range patrol and boat 80 hours of long-range patrol to

enhance enforcement of TEDs. Hours may be shifted between the types of vessel as weather or patrols demand.

Figure 13-12. TPWD law enforcement wardens taking a course on TED compliance inspections

Photo credit: Texas Parks and Widlife Department

13.1.4 Evaluation Criteria

The proposed Sea Turtle Early Restoration project meets the evaluation criteria established by OPA and the Framework Agreement. The project would restore and protect sea turtles, helping to offset adverse impacts to these resources caused by the Spill. The proposed project has a nexus to the *Deepwater Horizon* oil spill (Spill) (see 15 C.F.R. § 990.54(a)(2) and is consistent with Sections 6a-6e of the Framework Agreement). Sea turtles were exposed to oil in open water and in *Sargassum* habitat, through ingestion, direct contact, and inhalation of volatile oil and dispersant-related compounds. In addition, response activities, such as collecting and burning oil at sea, skimmer operations, boom deployment, berm construction, increased lighting and activity at night on and near nesting beaches, beach cleanup operations and boat traffic may have injured sea turtles directly or by blocking access to turtle nesting beaches and changing their reproductive behavior.

The project is technically feasible; it uses proven techniques with established methods and documented results, and can be implemented with minimal delay. 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 Framework Agreement). Cost estimates are based on known program operational costs, and demonstrate that the project can be conducted at a reasonable cost (see 15 C.F.R. § 990.54(a)(1) and Section 6e of the Framework Agreement). As a result, the proposed project is considered feasible and cost effective (see 15 C.F.R. § 990.54(a)(1) and (3)).

Collateral injury would be avoided and minimized during project implementation (construction, operations, and maintenance) (15 C.F.R. § 990.54(a)(4)). A thorough environmental assessment, including review under applicable environmental regulations, is described in Sections 13.2.4, 13.2.5 and 13.2.6. The environmental assessment indicates that adverse effects from the project would largely be minor, localized, and often of short duration.

13.1.5 Performance Criteria and Monitoring

The proposed Sea Turtle Early Restoration project builds on several existing and well established programs for the protection and recovery of sea turtles that are operated by federal and state agencies. If the proposed project is implemented, specific monitoring plans would be in place to ensure that these programs, as enhanced, are accomplishing the project's restoration objectives and reaching established milestones. The monitoring would be designed to assess the effectiveness of the project's components at achieving reductions in sea turtle mortalities, through confirmation of their effectiveness at achieving enhancements of the ability to respond to and rehabilitate injured sea turtles, increased nest detection and protections, and improvements in compliance with existing TED regulations. Monitoring for these objectives would include tracking the number of surveys completed, inspections completed, trainings offered, and the improvements to response during emergency events. A full monitoring plan for the proposed project is found in Appendix B[3].

13.1.6 Project Management/Maintenance

The proposed Sea Turtle Early Restoration project builds on several existing and well-established programs that are operated by federal and state agencies. NOAA, DOI and the Texas Trustees would be developing contracts and agreements with organizations that would implement portions of the project, and the Trustees would establish program management processes to help evaluate and enforce contract/agreement compliance by program participants.

The project would use and expand existing resources and programs (i.e. NOAA's oversight of the STSSN, DOI's oversight of nesting programs), which would provide the Sea Turtle Early Restoration Project managers with the ability to monitor program activities.

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[3] BP and the Trustees agreed to work together to develop the monitoring plans for this project. The monitoring plan included in Appendix B could change as a result of further discussions with BP.

Vehicles and equipment would be purchased and maintained for the serviceable life of the equipment during the life of the project (10 years). In addition, cabins and sea turtle nesting corrals would be built and used. For specifics about what would be purchased and where it would be located, see Sections 13.2.4 – 13.2.8 as well as the monitoring plans (Section 13.1.5 and Appendix B).

13.1.7 Offsets

The Sea Turtle Early Restoration project is a multi-faceted approach to sea turtle restoration that addresses a variety of species and life stages in order to begin restoring for injuries that occurred throughout the Gulf as a result of the Spill. All sea turtle species are listed as either threatened or endangered under the Endangered Species Act. Sea turtles face numerous threats throughout their life histories. Many factors were considered when developing the Offsets for this restoration project. The Offsets for this project are dependent upon concurrent implementation of all four project components proposed in this chapter.

For purposes of negotiating Offsets with BP in accordance with the Framework Agreement, the Trustees used a Resource Equivalency Analysis to estimate sea turtle Offsets. Sea turtle Offsets (expressed in discounted adult reproductive equivalents) were estimated by calculating either reduced mortality or increased survival of sea turtles by life stage for the proposed restoration components that would be expected to occur over the duration of project implementation compared to a no-action scenario. The proposed project is expected to: reduce sea turtle hatchling mortalities through continued support for nest detection and protection activities in Texas and Mexico; increase the likelihood that juvenile and adult sea turtles would be located, triaged, successfully rehabilitated and released through improvements to the STSSN and development and implementation of a Gulf of Mexico Emergency Response Program; and reduce juvenile and adult sea turtle bycatch mortalities through increased compliance with federal TED regulations as a result of increased education, outreach, and enforcement actions. If this restoration project is selected for implementation and funding, the Trustees and BP agreed that BP would receive the following Offsets:

- For Kemp's ridley sea turtles, NRD Offsets are 1309 discounted adult reproductive equivalents in the Gulf of Mexico. These Offsets are only applicable to Kemp's ridley sea turtle injuries in the Gulf of Mexico (aquatic and terrestrial) as determined by the Trustees' total assessment of injury for the Spill.

- For green sea turtles, NRD Offsets are 215 discounted adult reproductive equivalents in the Gulf of Mexico (aquatic and terrestrial). These Offsets are only applicable to green sea turtle injuries in the Gulf of Mexico, as determined by the Trustees' total assessment of injury for the Spill.

- For loggerhead sea turtles, NRD Offsets are 40 discounted adult reproductive equivalents in the Gulf of Mexico. These Offsets are only applicable to loggerhead sea turtle injuries in the Gulf of Mexico (aquatic and terrestrial), as determined by the Trustees' total assessment of injury for the Spill.

The unit of "discounted adult reproductive equivalents" uses a discounting rate to convert the number of adult reproductive equivalents to a common base year for comparison. Discounted Kemp's ridley, green, and loggerhead sea turtle Offsets were estimated because these species, in particular, are expected to benefit from the proposed restoration actions. Several life history, project, and local stochastic factors were used to develop sea turtle Offsets, including nest densities, eggs per nest, influence of storms on hatching success, the spatial extent expected to be used for nesting, age-based survival rates, and the longevity of the project. If the Sea Turtle Early Restoration project is selected for implementation, these Offsets would, in the future, be credited against the Trustees' assessment of total injury to these sea turtle species resulting from the Spill.

13.1.8 Estimated Costs

The total estimated cost to implement this Project is $45,000,000. This estimate uses the most current cost information available to the Trustees at the time of the project negotiation. The estimated costs include provisions for personnel, supplies, equipment, fuel, education activities, equipment maintenance, engineering and design, construction of the cabins, monitoring, and contingencies. The following table shows this estimate by component.

Table 13-1. Sea Turtle Early Restoration Project Estimated Costs

Sea Turtle Early Restoration Project Components	**Total***
Kemp's Ridley Sea Turtle Nest Detection and Enhancement	**$11.6 M**
Texas Activities	*$6.74 M*
Mexico Activities	*$4.88 M*
Enhancement of the Sea Turtle Stranding and Salvage Network (STSSN) and Development of an Emergency Response Program	**$19.7 M**
NOAA's Enhancement of the Gulf-Wide Sea Turtle Stranding and Salvage Network and Salvage Network and Development of a Sea Turtle Emergency Response Program	$13.14 M
Enhancement of the Sea Turtle Stranding and Salvage Network and Rehabilitation Efforts in Texas	$6.54 M
Gulf of Mexico Shrimp Trawl Bycatch Reduction	**$11.9 M**
Gulf of Mexico Gear Monitoring Team Enhancement	$7.75 M
Southeast Shrimp Trawl Fisheries Observer Program Enhancement	$4.15 M
Texas Enhanced Fisheries Bycatch Enforcement	**$1.8 M**
Sea Turtle Early Restoration Project TOTAL	**$45 M**

*Base Project, Contingency, Trustee Oversight and Monitoring. Figures are necessarily approximate, as they include portions of estimated general project costs that would be used for multiple components (e.g., Trustee oversight costs).

13.2 Sea Turtle Early Restoration Project: Environmental Assessment

The Sea Turtle Early Restoration project involves a suite of actions to restore and protect sea turtles in the Gulf of Mexico. The Sea Turtle Early Restoration project consists of four project components: (1) Kemp's Ridley Sea Turtle Nest Detection and Enhancement; (2) Enhancement of the Sea Turtle Stranding and Salvage Network and Development of an Emergency Response Program; (3) Gulf of Mexico Shrimp Trawl Bycatch Reduction; and (4) Texas Enhanced Fisheries Bycatch Enforcement. The proposed project components would build on existing and well-established programs that are operated by federal and state agencies within the Gulf of Mexico, and would work to increase the survival of hatchling Kemp's ridley sea turtles, and reduce mortality of Kemp's ridley, loggerhead, and green sea turtles.

13.2.1 Introduction and Background, Purpose and Need

13.2.1.1 Introduction

This project is proposed as part of Phase IV of the Early Restoration program. This Environmental Assessment (EA) tiers from the 2014 Final Phase III ERP/PEIS which provides broad, programmatic environmental analyses of project types for Final Phase III and future phases of Early Restoration. This EA qualifies for tiering from the Final Phase III ERP/PEIS in accordance with Department of the Interior regulations (43 CFR 46.140, Using tiered documents) under "b" and "c" (Section 1.6.2, Basis for Tiering). This tiering is also consistent with NOAA Administrative Order 216-6, "Environmental Review Procedures for Implementing the National Environmental Policy Act" (Section 5.09c). This project is consistent with the project type, "Restore and Protect Sea Turtles", which was included in the Preferred Alternative "Contribute to Restoring Habitats and Living Coastal and Marine Resources". By tiering, this EA provides the requisite additional detail for a project-level NEPA analysis that considers potential site specific impacts anticipated from implementation of the proposed action and the no action alternative. See Chapter 1.3 for information on the Final Phase III ERP/PEIS and tiering of the Phase IV proposed projects.

This project is consistent with the Final Phase III ERP/PEIS Preferred Alternative as described and selected 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 that broader NEPA document (with updates as described in Chapter 2 of this document) are still valid. Specifically, the EA for the proposed Sea Turtle Project tiers from the analyses found in the following sections of the PEIS:

- Chapter 5: Proposed Early Restoration Programmatic Plan: Development and Evaluation of Alternatives: Descriptions of Alternatives 2 (Section 5.5.3 Contribute to Restoring Habitats and Living Coastal and Marine Resources) and 4 (Section 5.3.7 Preferred Alternative: Contribute to Restoring Habitats, Living Coastal and Marine Resources and Recreational Opportunities), Section 5.3.3.9 Restore and Protect Sea Turtles.
- Chapter 6: Environmental Consequences, Section 6.3.9, Project Type 9: Restore and Protect Sea Turtles, and 6.4, Alternatives 2 (and 4): Human Uses and Socioeconomics.
- Chapter 6.8: Potential Cumulative Impacts

This EA incorporates by reference the analysis found in those sections of the Final Phase III PEIS. This EA also incorporates by reference all introductory, process, background, and Affected Environment information and discussion related to Early Restoration provided in the PEIS (Chapters 1 through 6).

The proposed Sea Turtle Early Restoration project is analyzed and described in subsequent sections as one Environmental Assessment composed of three sections, based on observed similarities between the four components that comprise the project. Furthermore, subsections within components are, in many cases, very similar in regards to the potential impact to physical, biological, and socioeconomic resources. These similarities make it possible to analyze the four components of the proposed project in three sections. Each of the three sections includes detailed discussion of resources potentially involved with the proposed project. The three sections of the proposed project EA are:

1) Kemp's ridley Sea Turtle Nest Detection and Enhancement (Section 13.2.4).

2) Enhancement of the Sea Turtle Stranding and Salvage Network and Development of a Sea Turtle Emergency Response Program (Section 13.2.6).

3) Gulf of Mexico Shrimp Trawl Bycatch Reduction and Texas Enhanced Fisheries Bycatch Enforcement (this section combines two project components) (Section 13.2.8).

13.2.1.2 Background

The Gulf of Mexico provides important habitat for multiple life stages of four species of hardshell sea turtles and the leatherback turtle. Turtles nest and eggs incubate on sandy beaches and newly emerged hatchlings make their way offshore, taking up residence in S*argassum* habitat in open ocean areas (i.e., continental shelf). Eventually, juvenile turtles recruit to coastal areas and juveniles and adults are most often found on the continental shelf, including shallow nearshore and inshore habitats. Less is known about the Gulf of Mexico distribution of leatherback turtles but they have a more pelagic existence, feeding on soft bodied organisms, including jellyfish and salps. They may also feed nearshore depending on the distribution of their prey. The presence of sea turtles in various Gulf of Mexico habitats increases nutrient cycling, balances the food web, and is critical to maintaining the health, function, and resiliency of the Gulf ecosystem as a whole.

Primary threats to sea turtle populations include bycatch in fishing gear, loss and degradation of marine and estuarine habitats (e.g., shallow coral and seagrass), destruction and degradation of nesting beaches (including artificial lighting), loss and degradation of foraging areas, and nest predation (NOAA 2011b).

As a result of the Spill, sea turtles were exposed to oil in open water, in *Sargassum* habitat, or on nesting beaches, either through ingestion of oil, direct contact with oil, and/or inhalation of volatile oil and dispersant-related compounds. In addition, response activities, such as collecting and burning oil at sea, skimmer operations, boom deployment, berm construction, increased lighting and activity at night near and on nesting beaches, beach cleanup operations and boat traffic may have injured sea turtles directly or by blocking access to turtle nesting beaches and changing their reproductive behavior.

The 1996 Magnuson-Stevens Fishery and Conservation Act requires cooperation among NOAA Fisheries, the fishing community, and federal and state agencies to protect, conserve, and enhance Essential Fish Habitat (EFH). EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The designation and conservation of EFH seek to minimize adverse effects on habitat caused by fishing and non-fishing activities. NOAA's Estuarine Living Marine Resources Program developed a database on the distribution, relative abundance, and life history characteristics of ecologically and economically important fishes and invertebrates in the nation's estuaries. NOAA has designated EFH for more than 30 estuaries in the northern Gulf of Mexico for a number of species of finfish and shellfish. A detailed description of EFH in the Gulf of Mexico can be found in Appendix A-2 of the Final Phase III ERP/PEIS.

USFWS and NMFS lists species as threatened or endangered when they meet criteria detailed under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. §1531 et seq.). Section 7(a)(2) of the ESA requires that each federal agency ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of those species. When the action of a federal agency may affect a protected species or its critical habitat, that agency is required to consult with either the NMFS or the USFWS, depending upon the protected species that may be affected. For the proposed project components, ESA Section 7 consultations would be conducted and the appropriate recommendations incorporated into the proposed project. A discussion of listed sea turtle species is provided below and is intended to cover all four project components and environmental assessments.

13.2.1.2.1 Sea Turtle Species

As described in Section 3.3.2.6 of the Final Phase III ERP PEIS, there are five species of sea turtles found within the Gulf of Mexico, all of which are listed under the ESA. All five species are highly migratory with a wide geographic range, which includes the entire Gulf of Mexico. All of these sea turtle species could potentially occur in the project areas for the proposed Sea Turtle Early Restoration project. To limit redundancy, Table 13-2 summarizes the status of these five sea turtles, with additional information provided following the table. A more detailed discussion of these five sea turtle species can be found in Appendix A.5 of the Final Phase III ERP PEIS.

Table 13-2. Threatened and endangered sea turtles of the Gulf of Mexico

COMMON NAME	FEDERAL STATUS	USE OF GULF OF MEXICO
Loggerhead sea turtle	9 Distinct Population Segments (DPSs) – 4 listed as threatened (Northwest Atlantic Ocean, South Atlantic Ocean, Southwest Indian Ocean, and Southeast Indo-Pacific Ocean DPSs) and 5 listed as endangered (Northeast Atlantic Ocean, Mediterranean Sea, North Pacific Ocean, South Pacific Ocean, and North Indian Ocean DPSs).	The Northwest Atlantic Ocean DPS uses oceanic and continental shelf waters (including shallow inshore habitats) of the Gulf of Mexico from Mexico to Florida; nesting occurs on Gulf Coast beaches primarily in Florida and Alabama, with limited nesting in Mississippi, Louisiana, and Texas. Critical habitat has been designated and includes certain habitats in the Gulf of Mexico.

COMMON NAME	FEDERAL STATUS	USE OF GULF OF MEXICO
Green sea turtle	Breeding populations in Florida and on the Pacific Coast of Mexico are listed as Endangered; all others are listed as Threatened. The green turtle listing is currently proposed for revision: twelve DPSs have been proposed (3 endangered and 8 threatened).	The oceanic and continental shelf waters (including shallow inshore habitats) of the Gulf of Mexico from Mexico to Florida; nesting occurs primarily in Florida, with limited nesting in Texas.
Hawksbill sea turtle	Endangered	The oceanic and continental shelf waters (including nearshore habitats) of the Gulf of Mexico from Mexico to Florida; limited nesting occurs in Florida.
Kemp's ridley sea turtle	Endangered	The oceanic and continental shelf waters (including shallow inshore habitats) of the Gulf of Mexico from Mexico to Florida; nesting occurs primarily in Mexico, with some nesting in Texas.
Leatherback sea turtle	Endangered	The oceanic and continental shelf waters of the Gulf of Mexico from Mexico to Florida; limited nesting occurs in Florida and Texas.

Loggerhead Sea Turtle (*Caretta caretta*): Loggerhead sea turtles nest on ocean beaches, generally preferring high energy, relatively narrow, steeply sloped, coarse-grained beaches. Immediately after hatchlings emerge from the nest they begin a period of frenzied activity and travel to areas where surface waters converge to form local down-wellings in oceanic waters. They are most often associated with *Sargassum* habitats where they find food and shelter. At approximately 7-12 years, juvenile loggerheads migrate to coastal and inshore waters on the continental shelf where they mature. Adult loggerheads are generally found on the continental shelf including shallow nearshore areas as well as deeper shelf waters. Loggerheads primarily forage on mollusks, crustaceans, sponge, and other marine organisms. Major nesting concentrations in the U.S. are found from North Carolina through southwest Florida. Adult loggerheads are known to make extensive migrations between foraging areas and nesting beaches. During non-nesting years, adult females from U.S. beaches are distributed in waters off the eastern U.S. and throughout the Gulf of Mexico, Bahamas, Greater Antilles, and Yucatán (http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm).

Green Sea Turtle (*Chelonia mydas*): In the Gulf of Mexico green turtles nest primarily in Mexico and along the southwest Florida coast beginning in late May and continuing into September. Newly emerged hatchlings migrate offshore and migrate to areas where surface waters converge to form local down-wellings in oceanic waters, where they live for several years, feeding close to the surface on a variety of pelagic plants and animals. Once the juveniles reach a certain age/size range, they leave the pelagic habitat and migrate to nearshore foraging grounds. Once they move to these nearshore benthic habitats, green turtles are almost exclusively herbivores, feeding on sea grasses and algae (http://www.nmfs.noaa.gov/pr/species/turtles/green.htm).

Hawksbill Sea Turtle (*Eretmochelys imbricata*): In the Gulf of Mexico, hawksbill sea turtles nest along the Gulf coast of Mexico. Hawksbill sea turtles use various habitats such as the open ocean, bays, and estuaries throughout different life stages, but are mainly associated with coral reefs. Within the continental U.S., nesting is restricted to the southeast coast of Florida and the Florida Keys, but nesting is rare in these areas. The main dietary items of this species are sponges and other invertebrates (http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.htm).

Kemp's Ridley Sea Turtle (*Lepidochelys kempii*): Adult and juvenile Kemp's ridley turtles primarily occupy neritic habitats, which typically contain muddy or sandy bottoms where preferred prey, typically crabs, can be found. The nesting season occurs from April through July and nesting is concentrated in the state of Tamaulipas, Mexico. Although the majority of Kemp's ridley nesting occurs in Mexico (USFWS 1970), some nesting also occurs along the Texas Gulf coast. Male Kemp's ridleys appear to occupy many different areas within the Gulf of Mexico. Some males migrate annually between feeding and breeding grounds, yet others may not migrate at all, mating with females opportunistically encountered. Immediately after hatchlings emerge from the nest they begin a period of frenzied activity and travel to areas where surface waters converge to form local down-wellings in oceanic waters, where they live for several years, feeding close to the surface on a variety of pelagic plants and animals. Once the juveniles reach a certain age/size range, they leave the pelagic habitat and migrate to nearshore foraging grounds on the continental shelf. Their diet consists mainly of swimming crabs, but may also include fish, jellyfish, and an array of mollusks (http://www.nmfs.noaa.gov/pr/species/turtles/kempsridley.htm).

Leatherback Sea Turtle (*Dermochelys coriacea*): Leatherback sea turtles are the most pelagic of the sea turtle species, spending considerable time in deep ocean waters, but also regularly occur on the continental shelf and often in close proximity to shore depending on prey distribution. The species feeds almost exclusively on jellyfish and salps. Nesting for this species occurs from April through November with significant nesting in southeast Florida. Leatherback nesting is sparse along the Gulf of Mexico U.S. coast (http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.htm).

13.2.1.3 Purpose and Need

The proposed action falls within the scope of the programmatic purpose and need for early restoration as described in the Final Phase III ERP/PEIS because it will accelerate meaningful restoration of injured natural resources and their services resulting from the Spill. The proposed project's purpose is to begin to restore and protect sea turtles injured as a result of the Spill. The project is a multi-faceted approach to such restoration that collectively addresses identified needs for a variety of species and life stages of sea turtles, consistent with long-term recovery plans and plan objectives for sea turtles in the Gulf of Mexico. The project is needed to enhance and facilitate the recovery of sea turtles in the Gulf of Mexico by increasing the number of hatchlings and decreasing juvenile and adult mortality through reducing bycatch and improved response to sea turtle strandings. Without this suite of actions, the existing programs would continue with limited funding and ability to maintain the long-term goals for these protected species.

13.2.2 Scope of the EA

This project is proposed as part of the Phase IV Early Restoration Plan. 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 actions and the no action alternative.

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 definition of these characterizations is consistent with that used in the Final Phase III ERP/PEIS, and can be found in Appendix D. As discussed above, the proposed project was divided into three sections within the EA based on similar activities within project components and level of potential involvement with physical, biological, and socioeconomic resources (i.e. the Gulf of Mexico Shrimp Trawl Bycatch Reduction and Texas Enhanced Fisheries Bycatch Enforcement project components both involve similar activities that would be primarily water based with minimal land based activities and neither involves new construction of any kind).

13.2.3 Project Alternatives

Both OPA and NEPA require consideration of the No Action alternative. For this section, there are two alternatives, No Action and Proposed Actions of the Sea Turtle Early Restoration project.

13.2.3.1 No Action

Both OPA and NEPA require consideration of the No Action alternative. For this Phase IV DERP proposed project, the No Action alternative assumes that the Trustees would not pursue the actions comprising the Sea Turtle Early Restoration project as part of Phase IV Early Restoration.

Under No Action, the existing conditions described for sea turtle resources in the affected environment subsections would prevail. Restoration benefits associated with this project would not be achieved at this time.

Section 1502.14(d) of the CEQ Regulations requires the alternatives analysis to "include the alternative of no action." CEQ states that in some cases "no action" is "no change" from current management direction or level of management intensity. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed. Projected impacts of proposed actions would be compared to those impacts projected for the existing actions. In this case, all components of the Sea Turtle Early Restoration project are currently being conducted under existing programs and policies, some of which have been in existence for many years. Therefore, the No Action alternative is a continuation of these existing programs and policies, without the additional funding, staffing, infrastructure and enhancements of the proposed action. However, funding support for each of the programs is highly variable and the level of effort may not remain constant year to year.

13.2.3.2 Proposed Actions

Implement the Sea Turtle Early Restoration project through a suite of proposed actions:

- Kemp's Ridley Sea Turtle Nest Detection and Enhancement
- Enhancement of the Sea Turtle Stranding and Salvage Network and Development of an Emergency Response Program
- Gulf of Mexico Shrimp Trawl Bycatch Reduction
- Texas Enhanced Fisheries Bycatch Enforcement

13.2.3.3 Other Alternatives Considered but Not Analyzed

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 resulted in a set of proposed projects that, consistent with the Framework Agreement, were submitted to BP for review and consideration. One area considered for Early Restoration included restoration for injured sea turtles, and in particular, focused on bycatch reduction and enhancements to observer programs and gear monitoring, the sea turtle stranding and salvage network, and Kemp's ridley nest detection as approaches to restore and protect lost sea turtles. The restoration and recovery efforts associated with each project component are recommended recovery actions in established recovery plans for Kemp's ridley, green, and loggerhead sea turtles. The Trustees used these recovery plans and developed project components for early restoration that met the recommendations of the recovery plans and that were feasible within the context of the Framework Agreement.

During the Phase IV Early Restoration project development process, the Trustees considered alternatives for sea turtle early restoration that reflected variations to the project scope and duration of each component, as well as different arrangements of components. When considering the project component Enhancement of the Sea Turtle Stranding and Salvage Network and Development of the Emergency Response Program, the Trustees considered an alternative that did not include the

Emergency Response portion. Ultimately, the Trustees included the Emergency Response Program because it was found to be an effective addition to the early restoration project that would create the greatest benefit to the resource when combined with actions to enhance the STSSN. When considering the duration of this project component, as well as the Kemp's Ridley Sea Turtle Nest Detection and Enhancement, Shrimp Trawl Bycatch Reduction and the Texas Enhanced Fisheries Bycatch Enforcement project components, the Trustees initially considered alternatives that defined the project durations as 5 or 6 years depending on the project component, instead of 10 years. These shorter duration alternatives proved to be infeasible in the context of the Framework Agreement.

While these alternatives were initially considered by the Trustees, it was determined that the alternative resulting from inclusion of the Emergency Response Program and setting the duration of the various project components at 10 years was the most appropriate alternative. Therefore, the proposed alternative provides the greatest benefit for sea turtle restoration over all other early options considered.

13.2.4 Kemp's Ridley Sea Turtle Nest Detection and Enhancement

The location, scope, operations and maintenance, as well as affected environment and environmental consequences for the Kemp's Ridley Sea Turtle Nest Detection and Enhancement project component are discussed in the following subsections.

Any required consultations and coordination under the Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, National Historic Preservation Act, and Coastal Zone Management Act would be completed for this project component.

Funding for this proposed project component would provide needed support for additional staff, training, equipment, supplies and vehicles over a 10-year period in both Texas and Mexico. The project component would also provide for the addition of two cabins and two nesting corrals on the southern end of the PAIS. The primary goal of this project component is to reduce sea turtle hatchling mortalities through continued support for nest detection and protection activities in Texas and Mexico as part of the ongoing Kemp's ridley recovery efforts.

13.2.4.1 Project Component Location

The enhanced nest detection activities of this project component could be implemented anywhere along the coastal beaches of Texas and along the coast of Tamaulipas, Mexico where Kemp's ridley sea turtles nest. The cabin and corral construction would be located in the southern end of PAIS. The two new cabins would be located on the beach near the 30-mile mark and the 50-mile mark (See Section 13.1.3.11, Figure 13-3).

13.2.4.2 Project Component Scope

This project component would provide funding to support ongoing conservation efforts for the Kemp's ridley sea turtle. The Recovery Plan for the Kemp's ridley outlines a recovery strategy that includes nest

detection and protection (SEMARNAT 2011). The primary goal of this project component is to reduce sea turtle hatchling mortalities through continued support for nest detection and protection activities in Texas and Mexico as part of the ongoing Kemp's ridley recovery efforts. This portion of the proposed restoration project component would maintain, improve, and/or enhance current nest detection, egg relocation, and nest protection efforts in Texas and Mexico. Funding for this proposed project component would provide needed support for additional staff, training, equipment, supplies and vehicles over a 10-year period in both Texas and Mexico. The project component would also provide for the construction of two cabins and two nesting corrals on the southern end of the PAIS. See Section 13.1.3.1 for additional details about the Kemp's ridley sea turtle nest detection and enhancement project component.

13.2.4.3 Construction and Installation

The only construction element of this project component is construction of the two cabins and installation of associated corrals on PAIS.

The new sea turtle patrol cabins would be wood frame construction, elevated on pilings, each approximately 2,500 square feet in size. Rough dimensions for the new cabin design are 50 feet wide by 40 feet long, with a 10 feet deep deck, making the total footprint for the building to be 50 feet by 50 feet. The interior of the building would include sleeping quarters for up to 23 people, two full bathrooms, a kitchen, office and living space, storage area, and basic operational space to support the program. With the remote backcountry location for the cabins, they would be equipped with solar powered photovoltaic cells to provide a small amount of electricity for lighting and communications. Propane gas would power the stove and cool the refrigerator. A fire protection system for the cabins would consist of smoke alarms, with fire exits in the building. The cabins would not be equipped with modern climate control systems, i.e., there would be no heating, ventilation, or air conditioning included. Since the cabins are for a specialized use and are not open to the public, they would not be Americans with Disabilities Act compliant.

The National Seashore allows for beach driving; therefore, access to the new sea turtle patrol cabins would be via the Gulf of Mexico shoreline. An area near each of the proposed sites for the new sea turtle patrol cabins would be designated for construction staging, material stockpiling, and equipment storage. These areas would likely be sited in areas somewhere along the Gulf of Mexico beach, where disturbances from beach driving and tidal flows already occur. The staging areas would be designated in areas that would neither impede beach vehicle traffic nor pose a collision safety risk to visitors', contractors', and park staff's vehicles. A temporary housing facility (travel trailer) would be located at the project areas during construction. This would allow for all eight to ten hours of work time to be applied to construction of the cabins, rather than time being spent commuting to the project areas. After completion of the cabins, the travel trailer would be removed from each of the project areas. Currently, the areas where the temporary housing facility would be are sites available to visitors for backcountry camping. The existing forbs and grasses in the project area would be preserved to the extent possible. All areas disturbed by construction of the new sea turtle patrol cabins would be revegetated and recontoured to the style of the native landscape. Native vegetation, topography, or

other natural features would be used, as appropriate. The area disturbed by construction of incubation facility expansion would be leveled and reseeded with native grasses.

An area near the cabins would be designated to contain a corral for sea turtle eggs, which would be collected for incubation, hatching, and release. Having the corrals in the proposed areas would reduce transport time of the sea turtle eggs that were collected in the southern part of the park; therefore reducing the risk of injury or damage to the viable eggs. The corral would be fenced and locked.

See the Expansion of Facilities Supporting Sea Turtle Science and Recovery, Construction of Patrol Cabins and Expansion of Incubation Laboratory, 2011 Environmental Assessment from the National Park Service (hereinafter referred to as NPS EA) in Appendix F for more information. As the title suggests, the NPS EA also analyzes impacts from construction of an addition to the incubation laboratory, which is not part of the proposed Phase IV NRDA Sea Turtle Early Restoration Project.

13.2.4.4 Operations and Maintenance

The proposed Kemp's ridley sea turtle nest detection and enhancement project component builds on existing and well established programs that are operated by federal and state agencies in coordination with universities and NGOs. Operational protocols, training and permitting have been established over the last two decades. The proposed Kemp's ridley nest detection activities would operate under the same set of management plans currently existing for these programs. There would be no change to operations. The cabins would be maintained as part of normal NPS maintenance and upkeep polices for PAIS and operated under the same operational protocols previously developed by the program.

13.2.4.5 Previous Environmental Analysis for Cabin and Corral Construction

The construction of the cabins and associated corrals was previously evaluated under NEPA by the NPS. DOI regulations for implementing NEPA provide that a DOI bureau may adopt an EA prepared by another agency [see 43 C.F.R. § 46.320]. To complete partial NEPA analysis for this component of the proposed action, DOI is adopting the NPS EA entitled "Expansion of Facilities Supporting Sea Turtle Science and Recovery, Construction of Patrol Cabins and Expansion of Incubation Laboratory, 2011." (See Chapter 4, Section 4.13 for information regarding adopting NEPA documents).

The NPS EA was prepared in compliance with NEPA to provide the decision-making framework that 1) analyzed a reasonable range of alternatives to meet objectives of the proposal, 2) evaluated potential issues and impacts to PAIS's resources and values, and 3) identified mitigation measures to lessen the degree or extent of these impacts.

DOI has independently evaluated the NPS EA and determined that it meets the standards for adequate NEPA analysis under the CEQ NEPA regulations, and that it adequately assesses the environmental effects of the cabin and corral construction. DOI intends to meet its public involvement requirements as discussed in Section 4.13 through circulation of this Draft Phase IV ERP/PEIS for public comment. Accordingly, DOI adopts the NPS EA. The entire NPS EA can be found in Appendix F.

13.2.4.6 Additional Environmental Analysis Included to Augment and Supplement the Adopted NPS EA

The DOI regulations provide that, when a bureau's proposed action differs from the proposed action contained in the adopted EA, the bureau may augment the adopted EA to make it consistent with the bureau's proposed action (see 43 C.F.R. § 46.320). The analysis presented below for this project component summarizes the relevant sections of the adopted NPS EA, and augments and supplements it. The analysis presented below considers all additional environmental consequences not analyzed in the adopted NPS EA that would result from the other elements of the presently proposed action. These other elements of the presently proposed action (those not already analyzed in the NPS EA) are referred to in this document as "enhanced nest detection activities," and include: increasing existing beach patrols, egg relocation and incubation under controlled conditions, and release of hatchlings to the Gulf of Mexico.

As stated above under "Construction and Installation", the expansion of the existing incubation facility at PAIS was also analyzed in the adopted NPS EA; however, expansion of that facility is not part of this proposed project component, and is not included in the analysis below.

In summary, DOI adopts the 2011 NPS EA for the cabin and corral construction. DOI is also providing supplemental analysis for the addition of the enhanced nest detection activities proposed in this project component.

13.2.5 Kemp's Ridley Sea Turtle Nest Detection and Enhancement Affected Environment and Environmental Consequences

The following sections describe the affected environment for each resource area or issue analyzed. The environmental consequences discussions summarize the NPS EA findings and analyze the potential impacts from the enhanced nest detection activities. The environmental consequences impacts of the nest detection activities alone and in combination with the cabin and corral construction are described, using the intensity level definitions for minor, moderate and major found in each section of resources and issues analyzed in the NPS EA (Appendix F).

13.2.5.1 Introduction and Background

The existing Program in Texas and Mexico has been reviewed and has been authorized under Section 10(a)(1)(A) of the ESA via Permits for Scientific Purposes, Enhancement of Propagation or Survival. Permits and agreements between the U.S. and Mexico have been in place for more than 20 years allowing nest detection activities there. The nest detection activities in Mexico are similar to those in Texas and would cause similar impacts as described below for relevant resource areas.

This section tiers from and incorporates by reference the relevant parts of Chapters 1, 2, 3 and 4 of the Final Phase III ERP/PEIS for background and information. The programmatic analysis in the Final Phase III ERP/PEIS 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 component. To avoid redundant or unnecessary information, resource areas that are not expected to be impacted are not evaluated further.

In cases where the resource area or issue is analyzed in the Final Phase III ERP/PEIS adequately without need for further analysis, the discussion from the Final Phase III ERP/PEIS is referenced and summarized.

Each element of the proposed project component, “cabin and corral construction” and “enhanced nest detection activities”, is discussed separately, and in combination in each section.

13.2.5.2 Resources and Issues Considered and Not Analyzed in Detail

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 not discussed in further detail below. Only those resource areas with potential, adverse impacts are discussed in detail below.

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 the 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 are listed below with a brief rationale for non-inclusion:

- Socioeconomics - Project spending for construction could benefit the local economy, but would be temporary, and the contribution to the local economy, overall, would be very small. The NPS EA states “Implementation of the proposed action could provide a negligible beneficial impact to the economies of nearby Corpus Christi, Texas, as well Nueces County due to minimal increases in employment opportunities for sea turtle patrollers and revenues for local businesses and governments generated from these additional construction activities and materials obtained. Any increase in workforce and revenue, however, would be temporary and negligible, lasting only as long as construction”. Because the impacts to the socioeconomic environment would be negligible as described by NPS, the topic was dismissed from the NPS EA. This would hold true even in combination with the enhanced nest detection activities.

- Environmental Justice - The NPS EA states “Executive Order 12898 *General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the new patrol cabins would be available for use by all staff of the park’s Division of Sea Turtle Science

and Recovery regardless of race or income, and the construction material would not be purchased based on the suppliers race or income, the proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities. Because there would be no disproportionate effects, this topic is dismissed from further analysis in this document". This would hold true even in combination with the enhanced nest detection activities.

Impact topics (resource areas/issues) that were analyzed in detail in the adopted NPS EA for construction of the two cabins and corrals are: topography, geology and soils; special status species; visitor use and experience; park operations and floodplains. Other impact topics were dismissed from further detailed analysis because "they were not affected at all, or the effects were minor or less in degree, and would not result in any unacceptable impacts" (NPS EA).

13.2.5.3 Physical Environment

This section includes geology and substrates, air quality and greenhouse gas emissions, and noise. See Chapter 3 of the Final Phase III ERP/PEIS for detailed information on the physical environment of the region.

13.2.5.3.1 Geology and Substrates

Affected Environment

The proposed construction of the two new sea turtle patrol cabins would be on the Gulf of Mexico beachfront, set within its fore-dune ridge. The dunes of the National Seashore are significant topographic/geologic features. The enhanced nest detection activities could take place anywhere along the beaches where sea turtles nest in Texas and the state of Tamaulipas, Mexico.

Environmental Consequences

No Action

Under the no action alternative there would be no increased impacts to geology and substrates. Cabin construction would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

- Cabin and corral construction
  The NPS EA states "Minor modifications of the topography would be required to provide a level surface on which to construct the cabins, which would have a negligible to minor effect to the topography of this area. The construction for the cabins would also require excavation, which would displace and disturb soils, primarily in the footprint of the new cabins. Soils may also be disturbed and compacted on a temporary basis in the locations were the park would stage construction materials. There are significant topographic or geologic features in the project

areas, and the proposed actions would result in negligible to minor, and temporary and permanent adverse effects to topography, geology, and soils."

Placement and construction of new cabins would require access through dunes, which could result in minor, direct, adverse effects. Any impacts or loss of dune features would be reestablished by re-contouring and through natural processes.

- Enhanced nest detection activities
  Section 6.3.9.1 of the Final Phase III ERP/PEIS states "Nest relocations could have a short-term minor impact to affected substrates but excavated sites would be backfilled immediately after the removal of turtle eggs." The use of Utility Terrain Vehicles (UTVs) on the beach and in the dune areas to transport staff during patrols could have short-term minor impacts on dunes. Staff are educated and trained to minimize damage to dunes as much as possible through avoidance of vegetated areas.

In combination, these two elements would have minor temporary and minor long-term impacts to geology and substrates. Best Management Practices (BMPs) such as avoidance of vegetated areas would minimize impacts.

13.2.5.3.2 Hydrology and Water Resources

Affected Environment

The proposed turtle patrol cabin project areas are located along the Gulf of Mexico shoreline; therefore, navigable waters and floodplains are present.

Environmental Consequences

No Action

Under the No Action alternative there would be no increased impacts to hydrology or water resources in the project area. Cabin construction would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

- Cabin and corral construction
  The project is not expected to significantly affect water quality in the vicinity of the project area. The size of the two new patrol cabins' footprints (approximately 2,500 square feet each) would increase the amount of impervious surface in the area, which could possibly increase the erosion potential of the areas; however, the building would be elevated on piers and run off from the roofs would be able to infiltrate under the buildings and as these areas occur within the intertidal zone, these effects are thought to be minimal. To further minimize water quality impacts resulting from erosion caused by construction-related activities, disturbed areas would be re-vegetated and re-contoured following construction. There is no septic system planned for

the cabins, sewage would be collected using composting toilets. All waste and trash would be trucked away and disposed of in accordance with all local, state and federal laws and regulations.

Although the proposed project would occur on coastal beaches and intertidal areas, cabins and corrals would not be sited in vegetated wetlands. Any potential impacts to vegetated wetlands resulting from construction-related activities would be avoided and minimized to the maximum extent practicable.

Most of PAIS and all of the cabin construction area lie within the 100-year floodplain for the Gulf of Mexico and the Laguna Madre. The exception is the higher fore-dune areas located along the Gulf beach shoreline. The park provided a draft floodplains statement of findings to the various state and federal agencies required by the NPS's Director's Order and Procedural Manual #77-2: Floodplain Management. See page 48 of the NPS EA (Appendix F) for more information on impacts to floodplains.

- Enhanced nest detection activities
  The use of UTVs on the beach to transport staff during patrols could have short-term minor impacts on water resources depending on the areas traversed.

In combination, these two elements would not impact hydrology or water resources more than minimally; therefore the proposed project component would not adversely impact hydrology or water resources.

13.2.5.3.3 Air Quality and Greenhouse Gas Emissions

Affected Environment

The Clean Air Act (CAA) has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare, including ecosystems, from air pollution. The NAAQS establish threshold concentrations for six 'criteria pollutants': nitrogen dioxide, sulfur dioxide, particulate matter (PM_{10} & $PM_{2.5}$), carbon monoxide, surficial ozone (O_3), and lead. The Gulf of Mexico air quality can be described by comparing measured, ambient air concentrations of these criteria pollutants for each of the Gulf States to the NAAQS. The proposed project component includes the beaches in Texas and Mexico. All of the Texas Gulf Coast counties meet the NAAQS for nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter, and lead. However, the Houston-Galveston-Brazoria area has been listed by EPA as nonattainment for existing ozone standards (EPA 2013).

Environmental Consequences

No Action

Under the No Action alternative there would be no increased impacts to air quality or GHG levels in the project area. Cabin construction would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

- Cabin and corral construction
  Section 6.3.9.3 of the Final Phase III ERP/PEIS states "During restoration activities, there could be short-term minor to moderate adverse impacts to air quality from emissions generated by construction equipment and vehicles." The NPS EA concluded that air quality and GHG effects would be minor or less in degree, and would not result in any unacceptable impacts. Rationale included the following: Constructing the new patrol cabins would require vehicles to deliver construction materials, and transport construction personnel to the proposed construction sites. These activities could result in temporary increases in air quality emissions whenever construction vehicles are operated. However, vehicle emissions would dissipate quickly due to prevailing southeast winds from March through September and north-northeasterly winds from October through February (PAIS 2000b as cited in NPS 2011). To reduce emissions, construction equipment would not be permitted to idle for long periods of time. Transport emissions would also be mitigated by providing temporary housing at the construction location, minimizing the number of trips to and from the job sites. Based on the estimated emissions per vehicle from Table 1 in the NPS EA, the number of vehicles operating in the park yearly, and the dominant daily winds, impacts to air quality would be negligible and within state and federal standards. The Class II air quality designation for Padre Island National Seashore would not be affected by the proposal. Further, because the Class II air quality would not be affected, there would be no unacceptable impacts; the proposed actions are consistent with §1.4.7.1 of NPS *Management Policies* 2006.

- Enhanced nest detection activities
  Use of UTVs to transport staff along the beaches during their patrol activities would not substantially create fugitive dust or increase regional levels of GHG. This project component element would potentially only minimally affect air quality and GHG emissions along the coastline of Texas and the state of Tamaulipas, Mexico.

In combination, qualitative analysis suggests these two elements would not impact air quality or GHGs more than minimally; therefore the proposed project component would not adversely impact air quality or GHG emissions. The use of gasoline and diesel-powered construction vehicles and equipment, including trucks, dozers etc., would contribute to an increase in GHG emissions. Although it is difficult to develop an accurate estimation of total fuel consumption associated with construction vehicle and equipment operation, the assumptions presented in Final Phase III ERP/PEIS project Chapters 8 through 12 for air emissions from construction activities serve as useful guidelines for estimating the levels of GHG emissions for the Kemp's ridley Nest Detection and Enhancement project component. The same types of equipment and length of use for similar analyses in the Final Phase III ERP/PEIS did not come close to the reference point of 25,000 metric tons of CO_2 emissions requiring a quantitative analysis.

13.2.5.3.4 Noise

Affected Environment

Section 3.2.4 of the Final Phase III ERP/PEIS states the primary sources of terrestrial noise in the coastal environment are transportation and construction-related activities. The primary sources of ambient (background) noise in the project area are humans and natural sounds such as wind and wildlife. The levels of noise in the project area varies, depending on the season, and/or the time of day, the number and types of sources of noise, and distance from the sources of noise. Noise-sensitive land users in the project area include visitors to the beaches. The NPS EA states that the proposed location for the two new patrol cabins and all construction activity would occur in a zone of the park that is currently accessible by park visitors and their vehicles. The dominant sound source is the crashing of the surf, other sounds in this area are most often generated from vehicular traffic (visitors and employees entering/leaving the National Seashore), people, boats, nonfederal oil and gas exploration and development, grounds-keeping equipment, climate controls equipment on the buildings, some wildlife such as birds, and wind. Sound generated by the long-term operation of the patrol cabins may include people using the building and vehicles coming and going.

Environmental Consequences

No Action

Under the No Action alternative there would be no increase to current noise levels in the project area. Cabin construction activities would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

- Cabin and corral construction
  Noise effects would be minor or less in degree, and would not result in any unacceptable impacts, so were not analyzed in detail in the 2011 NPS EA. The NPS EA states "During construction, human-caused sounds would likely increase due to construction activities, equipment, vehicular traffic, and construction crews. Any sounds generated from construction would be temporary, lasting only as long as the construction activity is generating the sounds, and would have a negligible to minor adverse impact on visitors and employees. Further, such negligible or minor impacts would not result in any unacceptable impacts; the proposed actions are consistent with §1.4.7.1 of NPS *Management Policies* 2006."

- Enhanced nest detection activities
  This project component element would minimally affect the noise levels in the project area. Noise from the use of UTVs and other vehicles would be short-term and temporary and would not significantly add to the ambient noise.

In combination, these two elements would not impact noise levels more than minimally; therefore the proposed project component would not adversely impact noise levels.

13.2.5.4 Biological Environment

The northern Gulf of Mexico contains a range of habitats that support diverse and productive ecosystems with both nursery and feeding grounds for ecologically and economically important species (GCERTF 2011). These habitats and species are connected through the movement of organisms (population and genetic connectivity) and the exchange of nutrients and organic matter (horizontally from nearshore to offshore, and vertically from the surface waters to the ocean floor). These habitats shelter 97% of all fish and shellfish harvested from the region during spawning or other parts of their life cycle (NOAA 2010). Habitats, resources, and their ecological connection are all part of the biological environment of the northern Gulf of Mexico. See Chapter 3 of the Final Phase III ERP/PEIS for detailed information on the biological environment of the region. The biological environment is divided into two main sections: living coastal and marine resources, and protected species.

13.2.5.4.1 Living Coastal and Marine Resources

Affected Environment

Wildlife

Mammals commonly found along the Texas coast, include white-tailed deer, coyote, bobcat, badger, black-tailed jackrabbit, pocket gopher, raccoon, ground squirrel, kangaroo rat, mice, and bats. There have been 385 species of birds documented within PAIS alone. Many of these birds are found at the proposed locations for this project component; however, there are no known nesting sites or vital foraging and roosting grounds within the proposed locations, see attached NPS EA and Final Phase III ERP/PEIS Chapter 3 for more detail.

Vegetation

The project areas are located on the Gulf of Mexico, Texas shoreline within the Gulf dunes. These areas are made up of two rows of fore-dunes adjacent to the Gulf beach and high dune fields with scattered upland swales. The two rows of fore-dunes are typically dominated by silver-leaf croton (*Croton punctatus*), beach morning-glory (*Ipomoea pescaprae*), camphorweed (*Heterotheca subaxillaris*), prairie clover (*Dalea* sp.), western ragweed (*Ambrosia psilostachya*), and sea oats (*Uniola paniculata*). The high dune fields are generally dominated by camphorweed, Prairie clover, sea oats, seacoast bluestem (*Schizachyrium scoparium*), western ragweed (*Ambrosia psilostachya*), and some tropic croton (*Croton glandulosus* var. *lindheimeri*), see attached NPS EA and Final Phase III ERP/PEIS Chapter 3 for more detail.

Environmental Consequences

No Action

Under the No Action alternative there would be no increased impacts to living coastal and marine resources. Cabin construction would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

- Cabin and corral construction
  - Wildlife

  Construction-related noise and vehicles accessing the sites could potentially disturb migratory bird species, but these adverse impacts would be 1) temporary, lasting only as long as construction, and 2) negligible, because suitable habitat for migratory birds is found throughout the region.

  If this proposed project is carried forward, smaller wildlife such as rodents, reptiles, and amphibians and their habitat would be displaced or eliminated during construction of the new cabins. Disturbed areas would be re-vegetated and restored following construction, which would result in a negligible to minor adverse impact to the wildlife and wildlife habitat in the immediate area of construction. During construction noise would also increase, which may disturb wildlife in the general area. Construction-related noise would be temporary, and existing sound conditions would resume following construction activities. Therefore, the temporary noise from construction would have a negligible to minor adverse effect on wildlife.

  - Vegetation

  In the areas of construction where the proposed footprints of the new cabins are, vegetation would be displaced, disturbed, and/or compacted. Any disturbance, where appropriate, would involve re-contouring and restoring of dunes, which includes replanting of disturbed vegetation. Because the proposed construction would consist of being elevated on stilts, it is thought that disturbance to vegetation would be minor or negligible. In addition, a monitor would be onsite to identify any rare, protected species, i.e., Roughseed sea-purslane (*Sesuvium trianthemoides*).

- Enhanced nest detection activities

  The project component element could potentially only minimally affect wildlife and vegetation of the proposed project component area. Patrol personnel do not drive through sensitive vegetated areas or near sensitive wildlife when present.

In combination, these two elements would not impact land resources more than minimally, therefore the proposed project component would not adversely impact living coastal and marine resources.

13.2.5.4.2 Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by the USFWS, the NMFS, or both. Protected species and habitat also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act and eagles protected under the Bald and Golden Eagle Protection Act. The Kemp's ridley nesting project component would occur approximately 200 feet inland from the Gulf shoreline (mean high water), therefore no marine mammals or EFH as described by the Magnuson-

Stevens Fishery Conservation and Management Act occur in the project area. Only those protected species (Endangered Species Act and Migratory Bird Treaty Act) with the potential to be impacted by the proposed project component are discussed below.

Affected Environment

Threatened and Endangered Species

Sea Turtles

As described in Section 3.3.2.6 of the Final Phase III ERP PEIS, there are five species of sea turtles found within the Gulf of Mexico, all of which are listed under the ESA. All five species are migratory with a wide geographic range which includes the northern Gulf of Mexico and nesting can occur on sandy beaches with suitable habitat conditions. Within the Gulf of Mexico, Kemp's ridley nesting primarily occurs along the southern Texas coast extending south along the coast of Tamaulipas, Mexico. Section 13.2.1.2 of this document summarizes the status of these five sea turtles in the Gulf of Mexico and a more detailed discussion of these five sea turtle species can be found in Appendix A.5 of the Final Phase III ERP/PEIS.

Birds

Whooping Crane, Piping Plover and Red Knot

Within the project area, the whooping crane (*Grus Americana*) winters in coastal marshes in Texas at Aransas; while the piping plover (*Charadrius melodus*) and red knot (*Calidris canutus rufa*) winter along the Gulf coast beaches. Whooping cranes were listed as endangered in 1967 and currently exist in the wild at 3 locations and in captivity at 12 sites (http://ecos.fws.gov/speciesProfile/profile/speciesProfile?spcode=B003). There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park and adjacent areas in Canada, and winters in coastal marshes in Texas at Aransas. The July 2010 total wild population was estimated at 383. There is a small captive-raised, non-migratory population in central Florida, and a small, introduced (starting in 2001) migratory population of individuals that migrate between Wisconsin and Florida. Critical habitat was designated for the Whooping crane in 1978 and along the Gulf Coast includes the wintering grounds on Aransas National Wildlife Refuge and vicinity, Texas. The following are the equivalent of PCEs for the wintering habitat: areas that provide (1) food (insects, crayfish, frogs, small fish, other small animals, some aquatic vegetation and some cereal crops in adjacent croplands) and water resources; (2) an open expanse for nightly roosting including sand and gravel bars, shallow water in rivers and lakes; (3) little human interaction as "a human on foot can quickly put a crane to flight at distances over one-quarter of a mile" (USFWS 1978 a, b).

On January 10, 1986, the piping plover was listed as endangered in the Great Lakes watershed and threatened elsewhere within its range, including migratory routes outside of the Great Lakes watershed and wintering grounds (USFWS 1985). The Piping Plover is a migratory shorebird that breeds from Nova Scotia south to North Carolina and winters along the Gulf Coast from Florida to Mexico, along the

Atlantic Coast from Florida to North Carolina, and in the Caribbean. They are found on sandy beaches, lakeshores, dunes, and often well above the water line (USFWS 1985).

Piping plover Critical Habitat (units TX 1-28) is found along the Texas coast where the nest detection surveys could occur. The cabin/corral construction is located near Critical Habitat Unit TX-3: Padre Island, subunit 3.

Primary Constituent Elements (PCEs) for piping plover critical habitat are: 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.

The red knot was listed as threatened throughout its range in 2014; however critical habitat has not been proposed or designated (USFWS 2014). The red knot is a migratory shore bird whose migration route extends from the Canadian arctic to the southernmost extent of South America. Breeding occurs within the central Canadian high arctic. Southward migration from arctic breeding areas begins in mid-July. The Gulf Coast is used as a wintering ground and as a stopover area for individuals migrating to South America to winter. Red knots are currently known to winter in four distinct coastal areas of the Western Hemisphere: the southeastern United States (mainly Florida and Georgia, with smaller numbers in South Carolina); the Gulf of Mexico coast of Texas; Maranhão in northern Brazil; and Tierra del Fuego (mainly Bahía Lomas in Chile and Bahía San Sebastián and Río Grande in Argentina with smaller numbers northwards along the coast of Patagonia). Habitats for the red knot vary across their vast migratory range (USFWS 2014). In the United States, the red knot is found principally in intertidal marine habitats, especially near coastal inlets, estuaries, and bays, or along restinga formations[4]. Wintering and migration habitats within the United States are used for resting and foraging.

Northern Aplomado Falcon

Northern aplomado falcon (*Falco femoralis septentrionalis*) was listed as endangered in 1986. This falcon is being re-introduced to the coastal savannahs along the Gulf of Mexico on the Coastal Bend and Lower Coast of Texas as well as in west Texas. This species breeds from Cameron to Calhoun County in the extreme southern portion of the Texas Gulf Coast; birds outside of this area are rare. The northern aplomado falcon is one of three subspecies of the aplomado falcon and the only subspecies recorded in the United States. The No critical habitat has been proposed or designated for this species.

[4] A restinga formation is an intertidal shelf typically formed of densely-packed dirt blown by strong, offshore winds.

Migratory Birds

Many species of birds spend all or a portion of their life cycle along the Gulf of Mexico using a variety of habitats at different stages. Major groups of birds that inhabit the northern Gulf of Mexico include waterfowl and other water-dependent species, pelagic seabirds, raptors, colonial waterbirds, marsh-dwelling birds, and passerines. These groups are discussed in Chapter 3 of the Final Phase IIIPEIS.

Additionally, shorebirds are generally restricted to coastline and inland water margins (e.g. beaches, mudflats, and shallow wetlands). The Gulf Coast contains some of the most important shorebird habitat in North America. Many of these species stop to rest and forage during migration flights or spend the winter in nearshore habitat along the Gulf Coast.

The northern Gulf Coast provides habitat for colonial ground- or beach-nesting shorebird species that breed on beaches, flats, dunes, bars, barrier islands, and similar nearshore habitats. Shorebirds that breed along the Gulf Coast include plovers, oystercatchers, willets, avocets, and stilts. The Kemp's ridley nest detection and enhancement project would be active during the breeding seasons of these species, to the extent that they overlap the nesting season of the Kemp's ridley sea turtle.

Environmental Consequences

No Action

No action would maintain the existing Kemp's ridley nest detection and protection framework, however support for the program is highly variable and the level of effort may not remain constant. Under the No Action alternative, the benefits to sea turtle restoration provided by the proposed action component would not occur. For other protected species, cabin construction would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

Threatened and Endangered Species

See the NPS EA, Appendix F, for a more detailed analysis of the potential impacts to threatened and endangered species from the cabin construction element.

- Cabin and corral construction (Sea Turtles and Birds)
  The new cabins would provide many beneficial effects for each sea turtle species occurring within the PAIS. The cabin and corral construction was the subject of a January 19, 2011, Biological Opinion completed by the Corpus Christi, Texas Ecological Services Field Office (Service). In this consultation, the Service authorized take of Kemp's ridley (3 adults and 3 nests with eggs or hatchlings), loggerhead (1 adult and 1 nest with eggs or hatchlings), and green sea turtles (1 adult and 1 nest with eggs or hatchlings). On March 30, 2015 the Service issued an amendment to the January 19, 2011 Biological Opinion. This amendment: extended the construction timeline for the proposed project; reaffirmed the take authorized for Kemp's, loggerhead, and green sea turtles; reaffirmed the Service's concurrence that hawksbill,

leatherback, Northern aplomado falcon, and piping plovers are not likely to be adversely affected by the proposed construction project; reaffirmed that no critical habitat would be adversely modified or destroyed by the proposed construction project because none is present; and provided concurrence that the proposed project is not likely to adversely affect the red knot.

Although the proposed cabin and corral construction activities are not located directly within piping plover Critical Habitat, CH Unit TX-3 is near where construction would take place. Project activities would be conducted such that the PCEs of the unit would not be impacted and the Service concurred that no adverse modification or destruction of critical habitat would occur.

Conservation measures for the sea turtles and piping plover are outlined in the NPS EA, Biological Opinion, and are summarized below. The amendment indicates the conservation measures for piping plover would avoid or minimize impacts to the red knot. Because the PAIS cabin and corrals element of the proposed project component is valid and current, consultation will only occur if re-initiation triggers outlined in the Biological Opinion are met.

Mitigation (conservation) measures for the proposed cabin construction to offset adverse effects would be simple, including measures to ensure that (1) fewer miles are driven along the Gulf beach, by placing a travel trailer or tents on the construction site, thereby reducing access miles driven on the Gulf beach; (2) using trained sea turtle monitoring escorts to lead convoys for any large trucks or heavy equipment traversing the Gulf beach, (3) controlling noise and light, with construction activities to occur only between the time of 30 minutes prior to dawn and 30 minutes after dusk; and (4) stockpiling construction materials up and off the beach, thereby allowing for nesting sea turtles uninhibited access to the Gulf beach and dunes.

- Enhanced nest detection activities
  - Sea turtles: This element of the proposed action component would have minor to moderate beneficial effects for establishment of the Kemp's ridley sea turtle, as well as all five of the nesting sea turtle species on the National Seashore. This project component would include: sea turtle handling, data collection, and release of adult Kemp's ridley sea turtles; collection, transport, and incubation of Kemp's ridley eggs; and release of Kemp's ridley hatchlings.

    Workers would follow existing procedures and would be utilizing their existing authorities to handle sea turtles for this project component. The movement and care of Kemp's and other sea turtle eggs and hatchlings is considered purposeful "take" under the ESA. As such, the existing program has been reviewed and has been authorized under Section 10(a)(1)(A) of the ESA via Permits for Scientific Purposes, Enhancement of Propagation or Survival. The proposed project will enhance the existing program by providing increased personnel for conducting training and educational activities, providing new equipment (including vehicles) and supplies to replace old or inadequate equipment and supplies. The additional personnel, equipment and supplies, and funding to Gladys Porter Zoo are expected to help increase the number of nests detected, eggs successfully transported and hatched. Though

an increase in capture and handling of eggs (i.e., increased “take”) is anticipated due to the proposed project, we do not anticipate that the authorized take of the Existing Program will be exceeded. However, if necessary, Section 10(a)(1)(A) permits may be amended through standard USFWS procedures to increase authorized “take” to allow for handling and capture of increased nests and eggs.

- Whooping crane, piping plover and red knot: Sea turtle nest detection could occur in critical habitat for piping plover or whooping crane. No critical habitat has been designated for red knot. As a permit condition, "All sea turtle nest detection and relocation methodologies and activities must be coordinated with and approved by the USFWS..." If necessary, the USFWS would provide avoidance and minimization measures for critical habitat during the required coordination to ensure no critical habitat would be adversely modified or destroyed by the proposed project component.

  Whooping cranes are not expected to be present during nest detection activities as they do not generally use the beach front habitats where the surveys occur. In addition, whooping cranes typically leave Aransas NWR by April and are generally not expected on the Gulf coast during the time period for the nest detection activities. Red knot and piping plover are also not expected to be present during nest detection activities as they would generally be migrating to or nesting on their breeding grounds between April and mid-July. If still present, individuals of these species would be foraging and resting. If any whooping cranes, piping plover, or red knots would still be in the area, staff would avoid them until they left the area of their own volition. If present, negligible effects could occur to these species while foraging or resting due to disturbance from vehicles while beach driving. Disturbance will be minimized because participants in the nest detection program drive carefully to avoid birds, sea turtles, and other wildlife on the beaches.

Migratory Birds

Impacts from both elements of the proposed project component, cabin and corral construction and nest detection activities are combined here for ease of reading as potential impacts are basically the same or are not applicable to one of the elements.

Activities would follow standard protocols to avoid take of migratory birds. Cabin and corral locations would be located in disturbed areas of the park such that known nesting sites and vital foraging and roosting grounds are avoided. Nearby foraging and roosting birds would mediate their own exposure (i.e., move to suitable habitats within normal daily behavior patterns) to construction noise and use of the cabins and corrals for sea turtle recovery actions. Participants in the nest detection program drive carefully to avoid birds, sea turtles, and other wildlife on the beaches and do not approach nesting birds. Foraging or roosting birds would mediate their own exposure (i.e., move to suitable habitats within normal daily behavior patterns) to human and vehicle presence. Effects on migratory birds would be transitory and minor.

In combination, the project component could have minor, temporary impacts on some protected species such as piping plover and red knot. The proposed project component would increase the ability for personnel to detect and relocate Kemp's ridley nests, incubate and hatch the eggs, and release hatchlings back into the Gulf of Mexico. This would increase their likelihood of growing to maturity and contribute to the propagation of future breeding years. Moderate long-term benefits are anticipated because of the future generation of living marine resources (i.e. sea turtles) and population growth that could occur as a result of increased survival of hatchlings and reproductive success of adult breeders. Project implementation is based on the enhancement of existing programs that are well established in the Gulf of Mexico.

Other protected species such as marine mammals, and terrestrial mammals are not expected to be impacted by this project component as personnel would be working on shore and handling Kemp's ridley sea turtles only; however, minor disturbances of other turtle species, nesting shorebirds or critical habitat for piping plover and red knot are possible.

Consultation and permitting under the ESA with USFWS has been completed for this project component. Appropriate recommendations have been incorporated into the proposed project.

13.2.5.5 Human Uses and Socioeconomics

In addition to the ecological significance of its natural resources, and the diversity of its habitats, the Gulf of Mexico ecosystem is also culturally and socioeconomically important to the people of the Gulf coast and the United States. This section includes discussions cultural resources, land and marine management, aesthetic and visual resources, tourism and recreation, infrastructure, and public health and safety concerns that are pertinent to Early Restoration.

13.2.5.5.1 Cultural Resources

Affected Resources

As described in the Chapter 3 of the Final Phase III ERP/PEIS, cultural resources refer to a range of traditional, archeological, and built assets. This may include historical properties in coastal communities or resources that are offshore including shipwrecks, archeological sites, structures, or districts. The proposed locations for the two new sea turtle patrol cabins were surveyed by a NPS archeologist on April 8, 2010, and no archeological sites were identified in the immediate project area, further, the National Seashore consulted with the park's state historical preservation office (SHPO), Texas Historical Commission (THC), for concurrence with the park's negative findings for the NPS archeological survey included in the NPS EA (THC 2010 as cited in NPS 2011).

Environmental Consequences

No Action

Under the No Action alternative, there would be no adverse impact to cultural resources in the project area. Cabin construction and other ground disturbing activities would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

- Cabin and corral construction
  The NPS EA concluded that no adverse impacts to cultural resources are expected from this element of the proposed action component. The NPS EA states "While the proposed project areas are not expected to contain archeological deposits, appropriate steps would be taken to protect any archeological resources that are inadvertently discovered during construction. Because the project would not disturb any known archeological sites, the effect of the project on archeological resources is expected to be negligible. Further, such negligible impacts would not result in any unacceptable impacts; the proposed actions are consistent with §1.4.7.1 of NPS *Management Policies* 2006."

  Because the effects are minor or less in degree and would not result in any unacceptable impacts, the topic was dismissed from further analysis in the NPS EA. The NPS EA has provisions for inadvertent discoveries and states "In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed. Should construction unearth previously undiscovered cultural resources, work would be stopped in the area of any discovery and the National Seashore would consult with the state historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR 800.13, *Post Review Discoveries*."

  The National Park Service would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties. Contractors and subcontractors would also be instructed on procedures to follow in case previously unknown paleontological or archeological resources are uncovered during construction.

- Enhanced nest detection activities
  Because the nest detection activities only involve driving UTVs and other vehicles in areas that have no restricted access to these types of vehicles, the nest detection activity element of the proposed action component would have no adverse impact on cultural resources.

In combination, these two elements would have no adverse impact on cultural resources. The National Historic Preservation Act of 1966 (NHPA) charges the federal government with protecting the cultural

heritage and resources of the nation. A complete review of this project under Section 106 of the NHPA would be completed before this proposed project component would be implemented. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

13.2.5.5.2 Land and Marine Management

Affected Resources

Land and marine areas may be set aside for a variety of active and passive recreational purposes. Land may be managed for wildlife and habitat protection and conservation, and/or scenic, cultural, and historical values. Land management may be at the Federal, State, or local levels by private organizations. The Final Phase III ERP/PEIS, Figure 13-12, provides a map of public lands in the Gulf of Mexico Coastal States, including those in Texas.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

Environmental Consequences

No Action

Under the No Action alternative the benefits to land use management that the proposed action would provide would not be realized. No Action would have a minor to moderate, direct, adverse effect on park operations at PAIS. The existing sea turtle patrol cabin would continue to be used; therefore, the expansion of facilities, providing overnight accommodations for additional staff, would not occur. Backcountry patrollers would continue to work out of the current patrol cabin, located approximately at the park's 39-mile mark. This location poses the inability to monitor for sea turtle nest efficiently by having the starting and ending points for the daily surveys in non-optimum locations, resulting in lost time, unnecessary fuel and maintenance expenses, and additional carbon emissions.

Proposed Actions

- Cabin and corral construction
  Section 6.4.4 of the Final Phase III ERP/PEIS states that these project types would have varying impacts on land and marine management, depending on the type of management or land ownership applicable to the project site. Most of these project types that would be implemented would have no impact to land and marine management, since projects would generally be consistent with the prevailing management plans and direction governing the use of the land and marine areas where the projects would take place.

  The Final Phase III ERP/PEIS also states that projects implemented at national, state and local parks, wildlife refuges, and wildlife management areas could have short-term minor to

moderate adverse impacts to land and marine management. These impacts would be temporary, and would occur if activities such as creation or restoration of wetlands; beach re-nourishment; placement of erosion control and shoreline protection; or other projects requiring construction activities result in partial or full closure of these areas during construction. Impacts could include the interruption of park operations; furlough of park staff; assignment of staff to duties not normally associated with their jobs; interruption of interpretive programs; and similar impacts. In the long-term, projects implemented under the project type "Restore and Protect Sea Turtles" would have beneficial impacts on land and marine management at parks, wildlife refuges and wildlife management areas because these restoration activities would help park management, and staff, fulfill their obligations to manage these properties for the benefit of the environment and human enjoyment.

- Enhanced nest detection activities
  This element of the proposed project component would provide beneficial impacts to land management by helping managers and staff to fulfill the goals of sea turtle protection.

In combination, these two elements would not adversely impact land management, but rather enhance it through sea turtle protection.

Both the cabin and corral construction and the nest detection activities would take place within the Texas coastal zones. Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

13.2.5.5.3 Aesthetic and Visual Resources

Affected Environment

The NPS EA states "According to 2006 *Management Policies*, the enjoyment of park resources and values by people is part of the fundamental purpose of all park units" (NPS 2006). The National Park Service is committed to providing appropriate, high quality opportunities for visitors to enjoy the parks, and would maintain within the parks an atmosphere that is open, inviting, and accessible to every segment of society. Further, the National Park Service would provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks. The NPS Service 2006 *Management Policies* also state that scenic views and visual resources are considered highly valued associated characteristics that the National Park Service should strive to protect (NPS 2006).

As also stated in the NPS EA "The primary visitor activity is recreating on the beach, which may include beachcombing, fishing, bird watching, relaxing, and windsurfing; however, due to the extreme difficulty of access, only a few of the National Seashore's 600,000+ annual visitors travel into the park's backcountry beach, found along the Gulf of Mexico at the south end of the park."

Aesthetics and visual resources in the rest of the project component area are very similar to those in the PAIS.

The proposed patrol cabins would be located near the 30-mile mark and 50-mile mark locations; areas that are frequented by our down-island, backcountry beach visitors. The turtle patrol cabins would be set back into the dune line and only visible to visitors while passing directly in front the buildings. Because the proposed project would visually reconfigure the area in the two proposed places on the beach, the topic of visitor use and experience has been carried forward for further analysis (NPS 2011).

Environmental Consequences

No Action

Under the No Action alternative there would be no increased impacts to aesthetic and visual in the project area. Cabin construction would not occur therefore no structures would be located on the beach. Current nest detection activities have no impact on aesthetic and visual resources as the use of UTVs and other vehicles in the area is common.

Proposed Actions

- Cabin and corral construction
  Although this project is consistent with the Protect Type “Restore and Protect Sea Turtles” in the Final Phase III ERP/PEIS, the impacts from construction of new facilities are better described under project type "Improve access to natural resources for recreational use through the construction or enhancement of infrastructure" which describes impacts from construction infrastructure, for example "enhancing or constructing infrastructure (e.g., boat ramps, piers, boardwalks, dune crossovers, camp sites or other lodging)."

  The Final Phase III ERP/PEIS states that the project type “would have minor to moderate short-term adverse impacts from the temporary landscape during the construction period from the presence of bulldozers, front-loaders and other large earth moving equipment required for upgrades or new facilities.” These impacts would constitute a change in the viewshed that is readily apparent and which would attract attention in the short-term. Although such changes would not dominate the viewscape, they could detract from the current user activities or experiences. Over the long-term, the addition of infrastructure and facilities into the existing setting would present some degree of visual contrast. Long-term adverse effects of these enhancements would range from minor to moderate, depending on the existing aesthetic character of the surrounding landscape. Where the addition of these facility enhancements into the existing setting would present a large degree of visual contrast, impacts would be moderate because they would detract from the current user activities or experiences”.

  The proposed patrol cabins would be located near the 30-mile mark and 50-mile mark locations; areas that are frequented by our down-island, backcountry beach visitors. The turtle patrol cabins would be set back into the dune line and only visible to visitors while passing directly in

front the buildings. The proposed project would visually reconfigure the area in the two proposed places on the beach.

The NPS EA concludes that minor, direct, adverse effects resulting from changes to the view shed, would occur. The impact to the viewshed is expected to be long-term, lasting the duration of the cabins' presence.

- Enhanced nest detection activities
  This element of the proposed project component would have no effect on the viewshed or aesthetics of the project area as only enhanced patrols would take place.

In combination, the proposed project elements impacts would be the same as for the cabin and corral construction element.

13.2.5.5.4 Tourism and Recreation

Affected Environment

Many tourism and recreational opportunities are centered on or around the northern Gulf of Mexico, and are therefore dependent on a clean, healthy Gulf ecosystem. Outdoor recreation, broadly defined, is any leisure time activity conducted outdoors for pleasure or sport, including activities from wilderness camping to watching outdoor performances. The Final Phase III ERP/PEIS, Section 3.4, describes examples of recreational pursuits in the region, including onshore and offshore wildlife observation, hunting, beach and other waterfront use, boating, and recreational fishing.

Environmental Consequences

No Action

Under the No Action alternative, no impacts to tourism and recreation would occur. Cabin construction would not occur and nest detection activities would remain the same as currently conducted, therefore no new impacts would occur.

Proposed Actions

- Cabin and corral construction
  Minor, short-term adverse impacts to tourism and recreation could occur during the construction phase of the cabins. Construction activities would be scheduled to minimize construction-related impacts upon visitors. Areas not under construction would remain accessible to visitors as much as is safely possible. Employees and construction crews would be required to park their vehicles on the beach, away from the flow of beach driving traffic to ensure enough capacity and access to the National Seashore for visitors.

- Enhanced nest detection activities
  This element of the proposed action component would have no impact on tourism and recreation as only enhanced patrols would take place and no new infrastructure would be built on the beach.

In combination, the impacts would be the same as for cabin construction alone.

13.2.5.5.5 Infrastructure

Affected Environment

This proposed action would restore the sea turtle program's original two cabins, which were destroyed by Hurricane Bret in 1999 and meet the needs created by the success of the Turtle protection and restoration program (NPS EA Appendix F, page 22).

Environmental Consequences

No Action

Under the No Action alternative, the two new sea turtle patrol cabins and corrals would not be constructed. The existing sea turtle patrol cabin at the park's 39-mile mark would continue to provide biological technicians overnight accommodations and other support functions. The current cabin with accommodations for six would remain in its present condition, and the PAIS Division of Sea Turtle Science and Recovery would not expand their backcountry patrol operations. The operation facilities would not be relocated and the efficiency and safety of the sea turtle recovery program would not be improved. The National Park Service would respond to future needs and conditions of the sea turtle recovery program as it does now, without major actions or changes than the present course of action (NPS EA Appendix F, page 22).

Proposed Actions

- Cabin and corral construction
  Two new sea turtle patrol cabins and corrals would be constructed, enhancing the infrastructure for the seat turtle nest detection and enhancement activities and providing benefits to the NPS sea turtle nest detection program.

- Enhanced nest detection activities
  No impacts to infrastructure would occur under this element of the proposed action component as only enhanced patrols would take place and no new infrastructure would be built.

In combination, these two elements would not adversely impact infrastructure and would have a minor, beneficial effect through the construction of safe, strategically located cabins and corrals.

13.2.5.5.6 Public Health and Safety

Affected Resources

Public health and safety issues relate to the short-term construction of projects and long-term operations and maintenance.

Environmental Consequences

No Action

As identified by a NPS advisory board, patrolling the backcountry beach for sea turtles carries risk for the sea turtle patroller. Accidents do occur when driving in the deep sand and uneven terrain of the Gulf beach at the National Seashore. Heat and fatigue are factors of working during the summer months in south Texas, and border related issues and criminal behavior can all pose threats to the backcountry sea turtle patrollers. Under the No Action alternative, the existing patrol cabin would continue to provide shelter and refuge from a dangerous event; however, this would be isolated to the current location of the cabin. In time, this could have a minor to moderate, direct, adverse effect on the employees and operations.

Proposed Actions

- Cabin and corral construction
  The proposed project would be conducted following all applicable occupational (OSHA) regulations and laws to ensure the safety of all workers, and protect members of the general public. Construction zones would be identified and fenced with construction tape, silt fencing, or some similar material prior to any construction activity. The fencing would define the construction zone and confine activity to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities beyond the construction zone as defined by the construction zone fencing.
- Enhanced nest detection activities
  This element of the proposed project component would ensure that proper safety measures are followed when conducting beach patrols and translocating Kemp's ridley nests for incubation. No hazardous waste would be created due to the proposed action. In the event of a discharge of oil or release of hazardous substances, the release would be reported to the National Response Center (800-424-8802) and appropriate state agency as required. BMPs in accordance with Occupational Safety and Health Administration and state and local requirements would be incorporated into all activities. Personal protective equipment would be required for proper handling of sea turtles. The project component would not affect public health and safety in the Gulf of Mexico.

In combination these two elements could have short term minor adverse impacts to public safety during construction of the cabins. However, safety measures would be implemented to protect workers and the general public. Staff would be instructed to adhere to proper safety measures during beach patrols,

especially for the operation of UTVs. Long-term minor to moderate beneficial impacts would occur from the cabin construction by providing shelter and security for the patrollers.

13.2.6 Enhancement of the Sea Turtle Stranding and Salvage Network and Development of a Sea Turtle Emergency Response Program

The location, scope, operations and maintenance, as well as affected environment and environmental consequences for Enhancement of the STSSN and Development of an Emergency Response Program project component are discussed in the following subsections.

Consultations and environmental reviews under the Endangered Species Act, Magnuson-Stevens Fishery and Conservation Act, Marine Mammal Protection Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, National Historic Preservation Act, and Coastal Zone Management Act may be required for this project component.

13.2.6.1 Project Component Location

The proposed project component would be implemented throughout the Gulf of Mexico on land and in the nearshore coastal waters of each of the five states, Texas, Louisiana, Mississippi, Alabama, and Florida.

13.2.6.2 Project Component Scope

This project component would include 1) NOAA's enhancement of the Gulf of Mexico STSSN beyond current capacities for 10 years, 2) Texas Trustees' enhancement of the STSSN within Texas beyond current capacities for 10 years, and 3) NOAA's establishment a formal Sea Turtle Emergency Response Program within the Gulf of Mexico. This project component has the goal of improving response capabilities to quickly recover dead and injured sea turtles. The three elements of this project component are described below.

13.2.6.2.1 Enhancement of the Sea Turtle Stranding and Salvage Network

The STSSN was formally established in 1980 to collect information on and document strandings of sea turtles along the U.S. Gulf of Mexico and Atlantic coasts. Sea turtle strandings are defined as animals that either wash ashore or are found floating, dead or alive, and if alive, generally in a weakened condition. The STSSN includes federal, state and private partners, and is coordinated by NOAA. Each state has a STSSN coordinator, who coordinates stranding response within their state. The agencies that host the state coordinator for each state are; NPS for the Texas STSSN, Louisiana Department of Wildlife and Fisheries for the Louisiana STSSN, NOAA for the Mississippi STSSN, USFWS for the Alabama STSSN, and Florida Fish and Wildlife Conservation Commission for the Florida STSSN.

Stranded turtles are documented on a standardized STSSN stranding form. Depending on species, size, location and carcass condition, dead stranded sea turtles are necropsied in the field, buried on the beach, or transported to freezer storage for later necropsy and sample collection. Live stranded turtles

are transported to rehabilitation facilities or triaged in MASH units during cold stun events or emergency response incidents.

NOAA's Enhancement of the Gulf-Wide Sea Turtle Stranding and Salvage Network

NOAA would implement enhancements to the infrastructure of the Gulf of Mexico STSSN across all five states to enhance the capability for response, enhanced coordination, data handling and reporting, and streamlined data dissemination for use in conservation management programs. Participants in the Gulf-wide STSSN enhancement would include NOAA and the state STSSN coordinators for each of the five Gulf states. The enhancement would provide STSSN staffing positions across the Gulf-wide STSSN to improve response capabilities to recover dead or injured sea turtles and to handle and disseminate data for improved conservation management. The project would include funding for positions in each of the five states, and three new positions hired by NOAA to focus on Gulf-wide STSSN coordination. The intent of the enhanced STSSN is to provide a more rapid response to unusual stranding events, allowing mortality sources to be identified and addressed more rapidly and solutions to be implemented where possible. For example, if unusual strandings or increased stranding levels are observed in a particular area, and necropsies of those animals indicate forced submergence or fishery interactions to be the likely cause, then that information would be shared with the GMT and federal and state law enforcement agencies (i.e. TPWD Law Enforcement) to better direct where outreach and education and enforcement efforts could be focused.

Enhancement of the Sea Turtle Stranding and Salvage Network and Rehabilitation Efforts in Texas

DOI and the Texas Trustees would provide additional enhancement of the STSSN within Texas by providing funding to STSSN partner NGOs, universities, and rehabilitation providers to expand the capacity of the network. Stranded sea turtles in Texas are generally located during directed searches and as a result of reports from the public. Because much of the Texas coast is remote, difficult to access, and often requires a four-wheel drive vehicle or boat to retrieve stranded turtles, response times to stranded sea turtles can be lengthy. This proposed component would replace lost funding and expand the STSSN's capacity to find and rehabilitate injured and cold stunned turtles, with the goal of increasing the number of live sea turtles being returned to the Gulf, see Figure 13-7. Funding would go towards staffing, equipment, vehicles, and supplies. Participants supporting the proposed enhancement of the STSSN and rehabilitation efforts in Texas include NOAA, DOI, and TPWD as well as various NGOs, universities, and rehabilitation providers. NPS serves as the Texas state coordinator for the STSSN, with both state-wide and local responsibilities regarding sea turtle strandings on the Texas coast. NPS staff members from PAIS provide training and technical assistance to STSSN participants in Texas and maintain the records of Texas sea turtle strandings.

13.2.6.2.2 Development of a Sea Turtle Emergency Response Program

This project component would provide funding for NOAA to develop and implement a comprehensive Sea Turtle Emergency Response Program in the Gulf of Mexico to increase the STSSN's capacity for response during emergency events, with the objective of increasing the survival of sea turtles during

emergency events. A significant gap exists in STSSN preparedness for response to emergency events that could potentially kill and/or injure large numbers of sea turtles. This project component would have a primary focus of creating a formal plan and necessary infrastructure (i.e. supplies and equipment) and a robust training program to allow for rapid response to cold stun events that may kill or injure large numbers of sea turtles. These events require search and rescue operations, triage, treatment, temporary holding, and eventual release of turtles. Secondarily, the program would enhance capacity to respond to other emergency events such as hazardous weather events, oil spills, and harmful algal blooms. The program would work to increase response capacity by decreasing response times and increasing search areas during emergency events. Five MASH units and trailers would be purchased. Each contains twelve 500-gal tanks with filtration, UV filters, tents and setup equipment. This component would also include the use of contracts for vessel support during emergency events.

13.2.6.3 Construction and Installation

The project component does not require or include the construction of new facilities or infrastructure.

13.2.6.4 Operations, Maintenance, and Permitting/Authorization

The proposed project component would improve the infrastructure of the STSSN in the Gulf of Mexico, in all five states. The STSSN would operate under existing permit authorities (described below), using established protocols. STSSN Enhancement would be ongoing for 10 years. The project component would involve the purchase of MASH units and trailers, as well as vehicles, which would require maintenance. Equipment and vehicles would be used throughout the Gulf of Mexico to achieve the program goals.

The NMFS and USFWS share federal jurisdiction for the conservation and recovery of sea turtles. In accordance with the 1977 Memorandum of Understanding between NMFS and USFWS regarding roles and responsibilities for sea turtle conservation, protection and recovery, USFWS has lead responsibility on the nesting beaches and NMFS has lead responsibility in the marine environment. Sea turtle stranding response and rehabilitation has traditionally operated with a shared jurisdictional responsibility between the two agencies. NMFS has the primary coordination role to ensure that data are collected in a manner sufficient for management, monitoring, and research purposes and to facilitate its use to meet recovery objectives.

USFWS authorizes the state wildlife agencies of Texas, Louisiana, Mississippi, and Florida, to conduct on-land stranding response. The authorization is made under the Endangered Species Act Section 6 delegation authority. These agencies subsequently authorize stranding responders, working under the State Coordinator, to respond to and document stranded turtles. In Alabama, USFWS issues ESA Section 10(a)(1)(A) permits directly to stranding responders. USFWS also codified regulations (found at 50 C.F.R. §17.21 and 17.31) authorizing USFWS and NMFS personnel to respond to strandings on land. NMFS has codified regulations authorizing the STSSN (federal and state agencies, and their agents) to aid sick, injured, or dead sea turtles in the marine environment, found at 50 C.F.R. §222.310 (for endangered turtles) and 50 C.F.R. §223.206 (for threatened turtles).

The STSSN currently responds to and documents sick, injured and dead sea turtles that are found in coastal areas under U.S. jurisdiction. The project component would not change the types of activities the STSSN is conducting, but would provide additional resources to enhance the capacity of the program.

13.2.7 Enhancement of the Sea Turtle Stranding and Salvage Network and Development of a Sea Turtle Emergency Response Program Affected Environment and Environmental Consequences

The programmatic analysis in the Final Phase III ERP/PEIS 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 component 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 not evaluated further under a given project component. After preliminary investigation, some resource areas were determined to be either unaffected or minimally affected by the proposed STSSN and Emergency Response Program actions. These resources are not discussed in further detail below. Only those resource areas with potential, adverse impacts are discussed in detail below.

Resource areas not analyzed in detail here for this project component include; geology and substrates, hydrology and water quality, aesthetics and visual resources, tourism and recreation, infrastructure, socioeconomics and environmental justice, land and marine management and shoreline protection. These resource areas are not expected to be affected by the STSSN or Emergency Response Program as they are either not connected or are very minimally connected physically, and/or are unrelated due to the nature of the project (i.e., program implementation versus a construction-related activity) and its two integrated actions.

13.2.7.1 Physical Environment

The Gulf of Mexico is the ninth largest body of water in the world and consists of the intertidal zone, continental shelf, continental slope, and abyssal plain. The nearshore coastal environment extends from estuarine waters seaward to the continental shelf edge of the Gulf of Mexico, including the coastline and the inner continental shelf at depths from 0 to 600 feet. The northern Gulf of Mexico is dominated by inputs from the Mississippi River Basin, which drains 41% of the contiguous United States and contributes 90% of the freshwater entering the Gulf (EPA 2011). Freshwater inflows to the Gulf provide nutrients and create hydrological conditions that create a wide range of ecosystems with unique features and habitats. The description of the physical environment of the Gulf of Mexico is divided into geology and substrates, hydrology and water quality, air quality and greenhouse gas emissions, as well as noise characteristics of the area.

13.2.7.1.1 Air Quality and Greenhouse Gas Emissions

Affected Resources

The project area consists of the entire Gulf of Mexico, a maritime subtropical climate, as described in Chapter 3.2.3 of the Final Phase III ERP/PEIS and in Chapters 8-12 of the same document.

Environmental Consequences

No Action

No action would maintain the existing STSSN framework and would not develop an Emergency Response program. This alternative would not increase or decrease the quantity of stranding events that the existing STSSN would respond to.

Proposed Actions

Section 6.3.9.3 of the Final Phase III ERP/PEIS describes the impacts to air quality and greenhouse gas emissions from early restoration projects intended to restore and protect sea turtles including expansion of the sea turtle stranding network.

An expanded STSSN and developed Emergency Response program would increase the ability of personnel to respond to sea turtle stranding events and/or emergencies on water or land. A slight increase in the use of vessels and/or vehicles to respond to marine-based stranding events (e.g. cold stun event) or land based strandings may result in small, localized emission release as a result of vessel and/or vehicular use. The result of responding to an increased amount of stranding events may or may not result in minor, local, temporary air quality impacts. Any impact would only occur when vessels and/or vehicles are in use and existing conditions would prevail in the absence of their use.

13.2.7.1.2 Noise

Affected Resources

The project area consists of nearshore environments in the Gulf of Mexico as described in Chapter 3.2.4 of the Final Phase III ERP/PEIS. The primary sources of ambient (background) noise in the project area are natural sounds such as wind, wave action and wildlife. Very limited ambient noise is sources from humans or human activities. Those noises derived from humans include commercial and recreational vessels, marine transportation vessels or commercial platforms such as oil and gas rigs.

Environmental Consequences

No Action

No action would maintain the existing STSSN framework and would not develop an Emergency Response program. This alternative would not increase or decrease the quantity of stranding events that the existing STSSN would respond to and would have no effect on noise.

Proposed Actions

Section 6.3.9.4 of the Final Phase III ERP/PEIS describes the impacts to noise from early restoration projects intended to restore and protect sea turtles. Section 6.3.9.4 primarily discusses impacts based on construction activities. This project component would not include construction of new facilities or infrastructure of any kind.

An expanded STSSN and developed Emergency Response program would increase the ability for personnel to respond to sea turtle stranding events and/or emergencies on water or land. A slight increase in the use of vessels and/or vehicles to respond to marine-based stranding events (e.g. cold stun, oil spill, harmful algal bloom) or land based strandings may result. The minimal increase in vessel and vehicular use would have minor, short-term impacts on noise. Any impact would be minor, local and temporary, and only occur when vessels and/or vehicles are in use and existing conditions would prevail in the absence of their use.

13.2.7.2 Biological Environment

The northern Gulf of Mexico contains a range of habitats that support diverse and productive ecosystems with both nursery and feeding grounds for ecologically and economically important species (GCERTF 2011). These habitats and species are connected through the movement of organisms (population and genetic connectivity) and the exchange of nutrients and organic matter (horizontally from nearshore to offshore, and vertically from the surface waters to the ocean floor). These habitats shelter 97% of all fish and shellfish harvested from the region during spawning or other parts of their life cycle (NOAA 2010). Habitats, resources, and their ecological connection are all part of the biological environment of the Gulf of Mexico. The biological environment is divided into two sections: living coastal and marine resources and protected species. Protected species and their habitats include ESA-listed species and designated critical habitats, marine mammals, migratory birds, and EFH.

13.2.7.2.1 Living Coastal and Marine Resources

Affected Resources

This project component would be implemented on coastal areas including beaches and other shoreline habitats. As described in Chapter 3.3 of the Final Phase III ERP/PEIS, the Gulf of Mexico supports more than 15,000 combined marine and terrestrial species and includes many threatened and endangered species (NOAA 2011a). Detailed descriptions of the habitats and ecological communities found throughout the Gulf of Mexico can be found in Chapters 3.3.1 and 3.3.2 of the Final Phase III ERP/PEIS.

Environmental Consequences

No Action

No action would maintain the existing STSSN framework, however financial support for the program is highly variable and the level of effort might not remain constant. This alternative would not increase or decrease the quantity of stranding events that the existing STSSN would respond to and would have no additional effect on living coastal and marine resources.

Proposed Actions

Section 6.3.9.6 of the Final Phase III ERP/PEIS describes the impacts to living coastal and marine resources from early restoration projects intended to restore and protect sea turtle populations.

Human activity and/or the use of equipment, vessels, or vehicles could result in short-term minor adverse effects to beach habitats and coastal organisms.

13.2.7.2.2 Protected Species

Affected Resources

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species and habitat also include marine mammals protected under the Marine Mammal Protection Act, EFH protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act, and eagles protected under the Bald and Golden Eagle Protection Act.

Endangered Species

As described in Section 3.3.2.6 of the Final Phase III ERP PEIS, there are five species of sea turtles found within the Gulf of Mexico, all of which are listed under the ESA. All five species are migratory with a wide geographic range which includes the northern Gulf of Mexico and nesting can occur on any beach with suitable conditions. Section 13.2.1.2 summarizes the status of these five sea turtles in the Gulf of Mexico and a more detailed discussion of these five sea turtle species can be found in Appendix A.5 of the Final Phase III ERP/PEIS.

The proposed project component would include handling of sea turtles, data collection including measurements, tagging, transport, rehabilitation and release of live stranded sea turtles, or necropsy and sampling of dead stranded sea turtles. Responders would follow existing protocols for response to live and dead sea turtles, including transport, collection and necropsy protocols. The STSSN is currently authorized to handle sick, injured and dead sea turtles, and would be using their existing authorities to handle sea turtles for this project component.

Sections 3.3.2.8 (birds) and 3.3.2.9 (terrestrial wildlife) of the Final Phase III ERP/PEIS describe other species protected under the ESA that could occur in the project component area including terrestrial mammals. Further details can be found in Appendix 6 and Appendix 7 in the Final Phase III ERP/PEIS.

Essential Fish Habitat

The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. The habitat in the project component area includes the Gulf of Mexico waters and consists primarily of soft bottom and sandy substrate consistent with sediment along the northern Gulf of Mexico.

Marine Mammals

Marine mammals found within the Gulf of Mexico include 21 species of cetaceans (whales and dolphins) and the West Indian manatee. Six species of marine mammals in the Gulf are listed as threatened or endangered under the ESA, including the West Indian manatee, blue whale, finback whale, humpback whale, sei whale, and sperm whales.

A detailed discussion of protected marine mammals can be found in Section 3.3.2.7 of the Final Phase III ERP/PEIS.

Bald and Golden Eagles

Bald and golden eagles potentially forage within the project component location. A detailed discussion of protected Bald and Golden Eagles can be found in Section 3.3.2.7 of the Final Phase III ERP/PEIS.

Migratory Birds

Many species of birds spend all or a portion of their life cycle along the Gulf of Mexico using a variety of habitats at different stages. Major groups of birds that inhabit the northern Gulf of Mexico include waterfowl and other water-dependent species, pelagic seabirds, raptors, colonial waterbirds, marsh-dwelling birds, and passerines. These groups are discussed in Chapter 3 of the Final Phase III ERP/PEIS. A detailed discussion of protected Migratory birds can be found in Section 3.3.2.7 of the Final Phase III ERP/PEIS.

Environmental Consequences

No Action

No action would maintain the existing STSSN framework and would not develop an Emergency Response program. This alternative would not increase or decrease the quantity of stranding events that the existing STSSN would respond to and would have no additional effect on protected species.

Proposed Actions

Section 6.3.9.6, 6.7.6.1 and 6.7.6.2 of the Final Phase III ERP/PEIS describes the impacts to living coastal and marine resources from early restoration projects intended to restore and protect sea turtle populations.

An expanded STSSN and developed Emergency Response program would increase the ability of personnel to respond to sea turtle stranding events and/or emergencies on water or land. As described in Section 6.3.9.6, 6.7.6.1 and 6.7.9.2 of the Final Phase III ERP/PEIS long-term benefits to sea turtles include increased response time, additional funding, responder training, and improved stranding response. The project component would work to aid stranded sea turtles but would not directly impact any threats to sea turtles in the marine environment. Faster response times and holding facilities (e.g. MASH units) would result in quicker responses with the goal of reducing the number of dead or euthanized sea turtles while providing additional data to improve future management decisions. The additional data obtained by the expanded STSSN and Emergency Response program would facilitate additional coordination not only throughout the STSSN network but also with NOAA's Gear Monitoring Teams, NOAA's Observer Program, and TPWD law enforcement. Moderate short-term benefits for sea turtles are anticipated due to increased survival or stranded turtles.

Negligible to minor, direct, adverse effects could occur to migratory birds, eagles, or marine mammals by disturbance from vehicles while beach driving or vessels on water; however, mitigation measures

currently in place under the existing programs, such as providing information to workers on general awareness and means to avoid impacts to protected species and their habitats would minimize any potential impacts. In addition, activities would be conducted under the provisions of existing permits and authorities issued by the USFWS and NMFS. Effects on these species would be temporary, local, and minor.

13.2.7.3 Human Uses and Socioeconomics

In addition to the ecological significance of its natural resources, and the diversity of its habitats, the Gulf of Mexico ecosystem is also culturally and socioeconomically important to the people of the Gulf coast and the United States. This section includes discussions cultural resources, land and marine management, and public health and safety concerns that are pertinent to Early Restoration.

13.2.7.3.1 Cultural Resources

Affected Resources

As described in the Chapter 3.4.2 of the Final Phase III ERP/PEIS, cultural resources refer to a range of traditional, archeological, and built assets. This may include historical properties in coastal communities or resources that are offshore including shipwrecks, archeological sites, structures, districts or Native American resources protected by a U.S. laws and regulations. Land resources are included in this category because of the level of protection granted by federal, state, and/or local governments. The following are included in the project area: National Wildlife Refuges, National Parks, State Parks, State Wildlife Management Areas, City/County parks, land trusts and/or Marine Protected Resources, National Estuarine Research Reserve System, National Marine Sanctuaries.

Environmental Consequences

No Action

No action would maintain the existing STSSN framework and would not develop an Emergency Response program. This alternative would not increase or decrease the quantity of stranding events that the existing STSSN would respond to and would have no additional effect on cultural resources.

Proposed Actions

This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources. An expanded STSSN and developed Emergency Response program would increase the ability for personnel to respond to sea turtle stranding events and/or emergencies on water or land. A slight increase in the use of vessels and/or vehicles to respond to marine-based stranding events (e.g. cold stun events) or land based strandings may result due to implementation of the proposed project component. Proposed actions are expected to adhere to all federal, states, and local regulations concerning the implementation of activities within or near cultural sensitive areas. A review of this project under Section 106 of the NHPA would be completed prior to project implementation.

13.2.7.3.2 Public Health and Safety

Affected Resources

Public health and safety issues relate to long-term program operations and maintenance of vehicles and equipment. This project component does not include construction.

The proposed project component would be conducted following all applicable occupational OSHA safety regulations and laws to ensure the safety for all workers, and protect members of the general public. Vehicles have regulations and laws that are enforced to ensure that proper mechanical and operational hazards are minimized to the extent practicable.

Environmental Consequences

No Action

No action would maintain the existing STSSN framework and would not develop an Emergency Response program. This alternative would have no effect on public health and safety.

Proposed Actions

The proposed action would ensure that proper safety measures are followed when responding to sea turtle strandings. No hazardous waste would be created due to the proposed action. In the event of a discharge of oil or release of hazardous substances, the release would be reported to the National Response Center (800-424-8802) and appropriate state agency as required. BMPs in accordance with OSHA, state, and local requirements would be incorporated into all activities. Personal protective equipment would be required for proper handling of sea turtles. Any impact would be minor, local and temporary, and only occur when vessels and/or vehicles are in use.

13.2.8 Gulf of Mexico Shrimp Trawl Bycatch Reduction and Texas Enhanced Fisheries Bycatch Enforcement

The location, scope, operations and maintenance, as well as affected environment and environmental consequences for Gulf of Mexico Bycatch Reduction and Texas Enforcement proposed actions are discussed in the following subsections. Due to the expected overlap in the affected environment and environmental consequences, the following two project components were combined for this environmental assessment:

1. Gulf of Mexico Shrimp Trawl Bycatch Reduction
2. Texas Enhanced Fisheries Bycatch Enforcement

NOAA's Gulf of Mexico Shrimp Trawl Bycatch Reduction project component would include enhancement of two existing NOAA programs: the GMT program and the Observer Program.

Consultations and reviews under the Endangered Species Act, Magnuson-Stevens Fishery and Conservation Act, Marine Mammal Protection Act, Migratory Bird Treaty Act, Bald and Golden Eagle

Protection Act, National Historic Preservation Act, and Coastal Zone Management Act may be required for these project components.

13.2.8.1 Project Component Locations

The proposed Gulf of Mexico Bycatch Reduction project component would be implemented throughout the Gulf of Mexico in both state and federal waters within areas or regions associated with shrimp trawl fisheries. The U.S. portion of the Gulf of Mexico extends from the southern tip of Texas eastward to the Florida Keys, following the coastline of five states including Texas, Louisiana, Mississippi, Alabama, and Florida. NOAA's enhanced GMT program would include marine-based activities associated with courtesy at-sea TED inspections and would also conduct minimal land-based activities such as conducting fisher education workshops, training events, and courtesy dock-side TED inspections. No environmental impacts are expected from these land-based activities and therefore they are not addressed in the environmental consequences. The Observer Program would include marine-based activities associated with conducting observations aboard existing active shrimp fishing vessels. Observers would be placed on randomly selected state-licensed and federally-licensed shrimp vessels to monitor for sea turtle bycatch.

The Texas Enhanced Fisheries Bycatch Enforcement component activities would occur in Texas State waters (approximately 367 miles of coast line out to 9 nautical miles) and the EEZ off Texas within the Gulf of Mexico.

13.2.8.2 Project Component Scope

The following subsections describe the scope of each project component.

13.2.8.2.1 Gulf of Mexico Shrimp Trawl Bycatch Reduction

The Gulf of Mexico Shrimp Trawl Bycatch Reduction project component would enhance two existing NOAA programs, the GMT and the Observer Program, described further below.

Gulf of Mexico Gear Monitoring Team Enhancement

This project component would expand NOAA's GMT program within the Gulf of Mexico. The primary goal of the proposed expanded GMT program is to increase capacity for education and outreach to the shrimp fishing community to improve compliance with existing federal TED regulations. The expanded GMT is intended to provide direct benefits to sea turtles by decreasing the likelihood of capture mortality through greater use of properly built, installed, and maintained TEDs.

A TED is a grid that fits into the cod end of the trawl, with a top or bottom escape opening covered with a flap. Sea turtles, and other animals such as sharks, encounter the TED grid when they pass through the trawl and are able to escape through the adjacent opening. Small animals, such as shrimp, pass through the bars of the TED and are caught in the cod end of the trawl. When installed properly, TEDs are expected to be 97% effective at releasing sea turtles from trawl gear.

NOAA's GMT program operates out of the Southeast Fisheries Science Center, Pascagoula Lab, and currently consists of one mobile team comprised of two individuals. This project component would add two new teams (each consisting of 2 staff), increasing the program to three teams total. The two new teams would be deployed throughout the Gulf of Mexico. The GMT would improve TED compliance by working closely with TED manufacturers and net shops to assist and ensure that TEDs are properly built and installed to the required standards. The GMT would work with the fishing industry to improve their knowledge and understanding of how to effectively build, use, and maintain TEDs. This would be achieved through offering workshops and courtesy dock-side and at-sea TED inspections.

The GMT would also work closely with the Observer Program and the STSSN to identify specific areas of bycatch concern within the Gulf. Through working with state agencies, the Observer Program, and the STSSN, the GMT would target under-represented areas in the Gulf and areas identified as potentially problematic for sea turtle bycatch. The project component is designed to enhance coordination with other State and Federal agencies, fishing industry and fishery associations (State and National). The proposed actions would provide additional support and resources that are needed to increase compliance with TED regulations.

Southeast Shrimp Trawl Fisheries Observer Program Enhancement

This project component would expand the capacity of NOAA's Observer Program to place trained observers on shrimping vessels in the Gulf of Mexico to monitor sea turtle bycatch. The Observer Program is operated out of the NMFS, Southeast Fisheries Science Center, Galveston Lab. The primary goal of the expanded Observer Program would be to improve capacity to collect data on bycatch of sea turtles in the shrimp trawl fishery in the Gulf. The funding for this project component would add 300 observer sea days annually for a 10-year period. This additional coverage would focus on specific times and areas identified as priorities for monitoring sea turtle bycatch to allow for better characterization and assessment of bycatch. Information on sea turtle interactions with fishing activities would help target, refine, and improve conservation management and potential recovery of sea turtles in the Gulf.

NOAA's Observer Program currently observes approximately 2% of the commercial shrimp trawl fleet in the Gulf of Mexico and Southeast U.S. Atlantic (approximately 1,500 sea days annually), at an annual cost of approximately $2 million (NMFS 2013, NMFS 2012). The additional information gained through this expansion would also be used to better inform the target areas for GMT efforts and the STSSN to improve conservation management and recovery of sea turtles in the Gulf of Mexico. The intent of the expansion of the Observer Program monitoring is to ultimately decrease the number of bycatch mortalities of Kemp's ridley, loggerhead, and green sea turtles in the shrimp trawl fishery in the Gulf of Mexico. The placement of observers would be reviewed by NOAA to ensure that observations are occurring at the correct times and/or locations where sea turtles are likely to be present and where bycatch concerns are greatest.

13.2.8.2.2 Texas Enhanced Fisheries Bycatch Enforcement

Funds for the Texas Enhanced Fisheries Bycatch Enforcement project component would be used to enhance TPWD enforcement activities for fisheries that incidentally catch sea turtles while they operate

primarily in Texas State waters (approximately 367 miles of coast line out to 9 nautical miles) and the EEZ off Texas within the Gulf of Mexico for a 10-year period. These increased enforcement operations would focus on compliance with TED regulations during the Gulf shrimp fishery season (primarily February through mid-May) right before the Gulf closes to shrimping in May. Patrols would be targeted during this timeframe because it is the beginning of the nesting season and an active time for shrimp fishing. Previous efforts to increase enforcement activities during this time period have had a positive impact on compliance rates, reducing the number of observed strandings during this time period. The primary goal of this project component is to reduce sea turtle mortalities through increased compliance with TED regulations as a result of increased enforcement actions.

The project component would include a series of patrols focusing on the enforcement of TED regulations in the Gulf of Mexico along the entire Texas coast ensuring compliance aboard commercial shrimp vessels. Targeted patrols would primarily occur during the period of the year when sea turtle strandings have historically been the highest. These patrols would be over and above the current patrol frequency in the Texas state waters of the Gulf of Mexico.

The vessels associated with this type of open sea enforcement activities are mid-range patrol vessels with a crew of three Game Wardens and long-range patrol vessels with a crew of four Game Wardens. There are thirteen mid-range patrol vessels and two long-range patrol vessels along the coast. TPWD expects to provide about 200 boat hours of mid-range patrol and boat 80 hours of long-range patrol to enhance enforcement of TEDs. Hours may be shifted between the types of vessel as weather or patrols demand.

13.2.8.3 Construction and Installation

None of the Gulf of Mexico Bycatch Reduction and Texas Enforcement project component activities, including associated land-based activities, require or include any construction activities.

13.2.8.4 Operations and Maintenance

The following subsections describe the operation and maintenance of each of two project components.

13.2.8.4.1 Gulf of Mexico Shrimp Trawl Fishery Bycatch Reduction

Gulf of Mexico Gear Monitoring Team Enhancement

NOAA's GMT Enhancement project component would provide funding to expand upon the existing GMT program currently operating throughout the Gulf of Mexico. The proposed project component would provide a greater capacity for outreach to and education for the shrimp fishing community to improve compliance with existing Federal TED regulations. Enhanced operations would be ongoing for 10 years. GMT enhancement activities would include purchasing vehicles and vessels which would require periodic maintenance.

Southeast Shrimp Trawl Fisheries Observer Program Enhancement

The project component would provide funding to expand upon the existing Observer Program that is currently operating throughout the Gulf of Mexico within the shrimp trawl fishery. Observer Program enhancement would add 300 annual observer sea days for a period of 10 years. None of the Observer Program enhancement activities require or include maintenance of vehicles or other equipment.

The Observer Program is currently operating under scientific research permit file No. 15552 (NMFS 2011a), which was evaluated within an EA titled "Environmental Assessment on a Scientific Research Permit to the National Marine Fisheries Service Science Center (Permit File No. 15552) to conduct research on threatened and endangered sea turtles" (NMFS 2011b). The permit, issued by NMFS, authorizes research activities to be carried out by fishery observers on ESA-listed sea turtles incidentally captured in commercial fisheries. The purpose of the research is to document the take of ESA-listed sea turtles at multiple life stages in commercial fisheries and to enhance estimates of sea turtle bycatch in order to characterize the effects on sea turtle sub-populations (NOAA 2011). Research activities would include the handling of sea turtles for identification, photography, measuring, applying a Passive Integrated Transponder (PIT) tag, collecting a biopsy sample, and flipper tag sea turtles, salvage parts, and potential transportation of dead or injured turtles to approved STSSN personnel. The data collected by the observers would provide valuable information to target, refine, and improve conservation management and recovery of sea turtles in the Gulf of Mexico.

13.2.8.4.2 Texas Enhanced Fisheries Bycatch Enforcement

The Texas Enforcement project component would provide funding to enhance the existing bycatch enforcement activities conducted by TPWD. The project component would include a series of patrols focusing on the enforcement of TED regulations (Statewide Shrimp Fishery Proclamation at 31 TAC 58.160) in the Gulf of Mexico along the entire Texas coast ensuring compliance aboard commercial shrimp vessels. These patrols would be over and above the current patrol frequency in the Texas state waters or the Texas EEZ in of the Gulf of Mexico. Expanded operations would be ongoing for 10 years and would require maintenance of TPWD vessels. Gulf of Mexico Shrimp Trawl Bycatch Reduction and Texas Enhanced Fisheries Bycatch Enforcement Affected Environment and Environmental Consequences

The programmatic analysis in the Final Phase III ERP/PEIS 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 component 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 not evaluated further under a given project component. After preliminary investigation, some resource areas were determined to be either unaffected or minimally affected by the proposed Gulf of Mexico Bycatch Reduction and Texas Enforcement actions. These resources are not discussed in further detail below. Only those resource areas with potential, adverse impacts are discussed in detail below.

Resource areas not analyzed in detail here for this project component include; geology and substrates, hydrology and water quality, socioeconomics and environmental justice, land and marine management,

aesthetics and visual resources, tourism and recreation, infrastructure, and shoreline protection. The affected environment for this project component is the biological and physical resources occurring within the watersheds of the Gulf of Mexico. More specifically, since the proposed project component would involve observation work on active shrimp trawl vessels, data collection on sea turtle species that are incidentally captured in shrimp trawls, and education or enforcement actions taken on active shrimp trawl vessels. For purposes of this analysis the affected environment focuses primarily on the biological resources occurring within these waters.

13.2.9 Gulf of Mexico Shrimp Trawl Bycatch Reduction and Texas Enhanced Fisheries Bycatch Enforcement Affected Environment and Environmental Consequences

13.2.9.1 Physical Environment

This section typically includes geology and substrates, hydrology and water quality, air quality and greenhouse gas emissions, and noise; however, only air quality and greenhouse emissions and noise are described below. See Chapter 3 of the Final Phase III ERP/PEIS for detailed information on the physical environment of the region involved with these project components.

13.2.9.1.1 Air Quality and Greenhouse Gas Emissions

Affected Resources

The project area consists of the entire Gulf of Mexico, a maritime subtropical climate, as described in Chapter 3.2.3 of the Final Phase III ERP/PEIS.

The project component activities would primarily be conducted in the Gulf of Mexico aboard Texas patrol and fishing vessels in zones of the Gulf of Mexico commonly used by the shrimp fishery industry of the U.S.

Environmental Consequences

No Action

No action would maintain the existing level of effort for the Observer Program, GMT, and Texas Enforcement activities within the Gulf of Mexico, and programs would not be enhanced or expanded.

Proposed Actions

Section 6.3.9.3 of the Final Phase III ERP/PEIS describes the impacts to air quality and greenhouse gas emissions from early restoration projects intended to restore and protect sea turtles including expanding bycatch reduction programs.

Expanded Observer Program, GMT, and Texas Enforcement activities would lead to a slight increase in the use of vessels and may result in small, localized emission release as a result of vessel use. The result of the proposed action would result in minor, local, temporary air quality impacts. Any impact would only occur when vessels are in use and existing conditions would prevail in the absence of their use.

13.2.9.1.2 Noise

Affected Resources

The project area consists of nearshore and offshore marine environments in the Gulf of Mexico as described in Chapter 3.2.4 of the Final Phase III ERP/PEIS. The primary sources of ambient (background) noise in the project area are natural sounds such as wind, wave action and wildlife. Very limited ambient noise is sources from humans or human activities. Those noises derived from humans include commercial and recreational vessels, marine transportation vessels or commercial platforms such as oil and gas rigs. In the offshore area, these sources are widely dispersed over broad geographic space.

Noise from vessel operations can travel below and above the surface of the water. Additional noise would be created by limited vehicular and vessel use.

Environmental Consequences

No Action

No action would maintain the existing level of effort for the GMT, Observer Program, and Texas Enforcement activities within the Gulf of Mexico, and programs would not be enhanced or expanded.

Proposed Actions

Section 6.3.9.4 of the Final Phase III ERP/PEIS describes the impacts to noise from early restoration projects intended to restore and protect sea turtles. Section 6.3.9.4 primarily discusses impacts based on construction activities. This project component would not include any construction activities.

Implementation of the project components would include noise from two additional vehicles and vessels in the GMT program and additional boat hours from TPWD enforcement vessels. These impacts would be minor, localized, and in short duration. Once the vessels complete their operations, the noise level returns to ambient levels and any short-term or long-term impact is therefore deemed minor.

13.2.9.2 Biological Environment

The northern Gulf of Mexico contains a range of habitats that support diverse and productive ecosystems with both nursery and feeding grounds for ecologically and economically important species (GCERTF 2011). These habitats and species are connected through the movement of organisms (population and genetic connectivity) and the exchange of nutrients and organic matter. These habitats shelter 97% of all fish and shellfish harvested from the region during spawning or other parts of their life cycle (NOAA 2010). Habitats, resources, and their ecological connection are all part of the biological environment of the Gulf of Mexico. The biological environment is divided into two sections: living coastal and marine resources and protected species. Protected species and their habitats include ESA-listed species and designated critical habitats, marine mammals, migratory birds, and EFH.

13.2.9.2.1 Living Coastal and Marine Resources

Affected Resources

As described in Chapter 3.3 of the Final Phase III ERP/PEIS, the Gulf of Mexico supports more than 15,000 marine species and includes many threatened and endangered species (NOAA 2011a). Detailed descriptions of the habitats and ecological communities found throughout the Gulf of Mexico can be found in Chapters 3.3.1 and 3.3.2 of the Final Phase III ERP/PEIS. This includes nearshore benthic communities including micro- and macro invertebrates such as mollusks, sponges, polycheates and crustaceans as well as infauna and epifauna. Further descriptions include oysters, pelagic microfaunal communities, sargassum, and finfish (demersal, pelagic, diadromous and freshwater fish).

Environmental Consequences

No Action

No action would maintain the existing level of effort for the GMT, Observer Program, and Texas Enforcement activities within the Gulf of Mexico, and programs would not be enhanced or expanded.

Proposed Actions

Section 6.3.9.6 of the Final Phase III ERP/PEIS describes the impacts to living coastal and marine resources from early restoration projects intended to restore and protect sea turtle populations.

Human activity and/or the use of equipment, vessels, or vehicles on coastal environments could result in short-term minor adverse effects to beach habitats and coastal organisms.

13.2.9.2.2 Protected Species

Affected Resources

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species and habitat also include marine mammals protected under the Marine Mammal Protection Act, EFH protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act and eagles protected under the Bald and Golden Eagle Protection Act.

Endangered Species

As described in Section 3.3.2.6 of the Final Phase III ERP PEIS, there are five species of sea turtles found within the Gulf of Mexico, all of which are listed under the ESA. All five species are migratory with a wide geographic range which includes the northern Gulf of Mexico and nesting can occur on any beach with suitable conditions. Section 13.2.1.2 summarizes the status of these five sea turtles in the Gulf of Mexico and a more detailed discussion of these five sea turtle species can be found in Appendix A.5 of the Final Phase III ERP/PEIS.

Sections 3.3.2.8 (birds) and 3.3.2.9 (terrestrial wildlife) of the Final Phase III ERP/PEIS describe other species protected under the ESA that could occur in the project component area including terrestrial fauna. Further details on protected species and life stages of sea turtles can be found in Appendix 6 and Appendix 7 in the Final Phase III ERP/PEIS.

Essential Fish Habitat

The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. The habitat in the project component area includes the Gulf of Mexico waters and consists primarily of (soft bottom and sandy substrate) consistent with sediment along the northern Gulf of Mexico.

Marine Mammals

Marine mammals found within the Gulf of Mexico include 21 species of cetaceans (whales and dolphins) and the West Indian manatee. Six species of marine mammals in the Gulf are listed as threatened or endangered under the ESA, including the West Indian manatee, blue whale, finback whale, humpback whale, sei whale, and sperm whales.

A detailed discussion of protected marine mammals can be found in Section 3.3.2.7 of the Final Phase III ERP/PEIS.

Bald and Golden Eagles

Bald and golden eagles potentially forage within the project component location. A detailed discussion of protected Bald and Golden Eagles can be found in Section 3.3.2.7 of the Final Phase III ERP/PEIS.

Migratory Birds

Many species of birds spend all or a portion of their life cycle along the Gulf of Mexico using a variety of coastal habitats at different stages. Major groups of birds that inhabit coastal areas of the northern Gulf of Mexico include waterfowl and other water-dependent species, pelagic seabirds, raptors, colonial waterbirds, marsh-dwelling birds, and passerines. These groups are discussed in Chapter 3 of the Final Phase III PEIS. A detailed discussion of protected Migratory birds can be found in Section 3.3.2.7 of the Final Phase III ERP/PEIS.

Environmental Consequences

No Action

No action would maintain the existing level of effort for the GMT, Observer Program, and Texas Enforcement activities within the Gulf of Mexico, and programs would not be enhanced or expanded.

Proposed Actions

Section 6.3.9.6, 6.7.6.1 and 6.7.6.2 of the Final Phase III ERP/PEIS describes the impacts to living coastal and marine resources from early restoration projects intended to restore and protect sea turtle populations.

The proposed project component would include handling of sea turtles through NOAA's Observer Program, data collection including measurements, and tagging. Staff would follow existing protocols for response to live and dead sea turtles, including transport and collection. The Observer Program is currently authorized to handle sea turtles, and would be utilizing their existing authorities to handle sea turtles for this project component.

The proposed enhancement of the Observer Program would be performed in the same manner as authorized in the Observer Program permit (Permit No. 15552). The effects of the proposed project component to individual sea turtles would not be expected to differ from those analyzed in the July 2011 EA. Observers would only be authorized to take sea turtles up to the amount authorized in the permit and associated ESA Section 7 consultation biological opinion.

The EA for the Observer Program permit (Permit No. 15552) evaluates the effects of the following activities on sea turtles: handling and holding; measuring, weighing, and photographing; flipper and PIT tagging and carapace painting; release; and salvage. The project component would increase the number of observer sea days that operate under the Observer Program permit, but would not change any of the existing activities or protocols for the Observer Program when a sea turtle is observed. Therefore, the analysis completed in the EA for issuance of Permit No. 15552 also applies to this project component.

The GMT and Texas Enforcement project components would work to improve compliance with federal TED regulations. No direct impacts to protected species would be expected to occur as a result of this project component. The components are designed to improve overall TED compliance rates, which are expected to benefit individual sea turtles. Proper installation and use of TEDs would result in a 97% effectiveness of releasing sea turtles from shrimp trawl nets (NMFS 2014). These project components would increase the potential for sea turtle survival.

Negligible to minor, direct, adverse effects would occur to migratory birds, eagles, or marine mammals by disturbance from vehicles while beach driving or vessels on water; however, mitigation measures currently in place under the existing programs, such as providing information to workers on general awareness and means to avoid impacts to protected species and their habitats would minimize any potential impacts. Effects on these species would be temporary, local, and minor.

13.2.9.3 Human Uses and Socioeconomics

In addition to the ecological significance of its natural resources, and the diversity of its habitats, the Gulf of Mexico ecosystem is also culturally and socioeconomically important to the people of the Gulf coast and the United States. This section includes discussions cultural resources, land and marine management, and public health and safety concerns that are pertinent to Early Restoration.

13.2.9.3.1 Cultural Resources

Affected Resources

As described in the Chapter 3.4.2 of the Final Phase III ERP/PEIS, cultural resources refer to a range of traditional, archeological, and built assets. This may include historical properties in coastal communities or resources that are offshore including shipwrecks, archeological sites, structures, districts or Native American resources protected by a U.S. laws and regulations. Land resources are included in this category because of the level of protection granted by federal, state, and/or local governments. The following are included: National Wildlife Refuges, National Parks, State Parks, State Wildlife Management Areas, City/County parks, land trusts and/or Marine Protected Resources, National Estuarine Research Reserve System, National Marine Sanctuaries.

Environmental Consequences

No Action

No action would maintain the existing level of effort for the GMT, Observer Program, and Texas Enforcement activities within the Gulf of Mexico, and programs would not be enhanced or expanded. This alternative would have no additional effect on cultural resources.

Proposed Actions

No impacts to cultural resources are anticipated as the proposed actions are not anticipated to interact with cultural resources. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources. A review of this project under Section 106 of the NHPA would be completed prior to project implementation.

13.2.9.3.2 Public Health and Safety

Affected Resources

Public health and safety issues relate to long-term program operations and maintenance of vehicles and equipment.

The proposed project component would be conducted following all applicable occupational OSHA safety regulations and laws to ensure the safety for all workers, and protect members of the general public. Vehicles have regulations and laws that are enforced to ensure that proper mechanical and operational hazards are minimized to the extent practicable.

Environmental Consequences

No Action

No action would maintain the existing level of effort for the GMT, Observer Program, and Texas Enforcement activities within the Gulf of Mexico, and programs would not be enhanced or expanded. This alternative would have no effect on public health and safety.

Proposed Actions

The proposed actions would ensure that proper safety measures are followed. No hazardous waste would be created due to the proposed action. In the event of a discharge of oil or release of hazardous substances, the release would be reported to the National Response Center (800-424-8802) and appropriate state agency as required. BMPs in accordance with OSHA, state, and local requirements would be incorporated into all activities. Personal protective equipment would be required for proper handling of sea turtles. Any impact would be minor, local and temporary, and only occur when vessels and/or vehicles are in use.

13.2.10 Overall Summary and Next Steps of Sea Turtle Early Restoration Project

The proposed Sea Turtle Early Restoration project involves a suite of actions to restore and protect sea turtles in the Gulf of Mexico. The Sea Turtle Early Restoration project consists of four project components. However, the EA is composed of three sections, based on observed similarities between the four components. The NEPA analysis of the environmental consequences of each component of this proposed project suggests that minor (or less) impacts to some resource categories and no moderate or major adverse impacts are anticipated to result from any of the project components described above. When environmental consequences were reviewed across the full Sea Turtle Early Restoration project, the analysis suggests that resources would either not be affected by project activities or have minor adverse and/or minor to moderate beneficial impacts.

Impacts to the physical environment from implementation of the Sea Turtle Early Restoration project would include:

- Minor long-term impacts to geology and substrates are associated with the construction of cabins.
- Minor impacts to hydrology and water resources, air quality, greenhouse gas emissions, and noise is expected.

Impacts to the biological environment from implementation of the Sea Turtle Early Restoration project would include:

- Some minor, temporary adverse impacts to living coastal and marine resources such as foraging shorebirds including piping plover and red knot could occur.
- Protected species were concluded to have beneficial impacts, not negative, because the enhanced STSSN and emergency response program would strive to help protected species through rescue, rehabilitation, and the bycatch reduction efforts would reduce mortalities of loggerhead, green and Kemp's ridley sea turtles.
- Kemp's ridley sea turtles would also benefit from nest protection activities occurring in Mexico and Texas.
- Long-term beneficial impacts are expected for loggerhead, Kemp's ridley, and green sea turtles, with additional benefits to leatherback and hawksbill sea turtles.

Impacts to human uses from implementation of the Sea Turtle Early Restoration project would include:

- Socioeconomics and Environmental Justice would not be impacted.
- Cultural resources are not expected to be impacted.
- Land and marine management and infrastructure was determined to have no adverse impact; however, beneficial impacts to land management and infrastructure at PAIS would occur by providing safe and needed infrastructure for patrollers.
- Short-term, minor impacts to aesthetics and visual resources and tourism and recreation would occur as a result of construction of new cabins.
- Minor, short-term adverse impacts to tourism and recreation could occur during the construction phase of the cabins.
- Infrastructure would not be adversely impacted and be benefited through the construction of safe, strategically located cabins and corrals.
- Public health and safety could have short-term minor impacts due to construction and due to the potential for hazardous materials spills through increased the use of marine vessels; however, safety procedures would minimize those impacts.

Overall, only minor (or less) adverse impacts are expected to occur to some resources while long-term beneficial impacts to sea turtles are expected as a result of this project component.

The Trustees have started coordination and review under the Endangered Species Act, Magnuson-Stevens Fishery and Conservation Act, Marine Mammal Protection Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and Coastal Zone Management Act, National Historic Preservation Act, Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and other federal statutes, where appropriate. Implementing Trustees would adopt and be required to implement project-specific mitigation measures (including BMPs) identified in the Final Phase IV Early Restoration Plan and completed consultations/permits. Oversight would be provided by the implementing Trustees. If effects to listed species or their habitat differ from the effects subject to consultation, including unintended consequences to such species, the Trustees would initiate (if no effect originally concluded) or re-initiate (for completed consultations) consultations with the regulatory agencies. Trustees would conduct due diligence with regard to ensuring no unanticipated effects to listed species and habitats occur, including ensuring that BMPs are implemented and continue to function as intended. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project would be included in the Final Phase IV Early Restoration Plan.

13.2.11 Cumulative Impacts of the Sea Turtle Early Restoration Project

As discussed in Chapter 4, CEQ NEPA regulations 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 proposed Sea Turtle Early Restoration project falls within the project type "Restore and Protect Sea Turtles" in the Final Phase III ERP/PEIS, and meets the evaluation criteria established by OPA and the Framework Agreement. The Final Phase III ERP/PEIS analysis of cumulative impacts relevant to the proposed action are incorporated by reference into the following cumulative impacts analysis for the Sea Turtle Early Restoration Project. The following analysis focuses on the potential cumulative effects of the proposed Sea Turtle Early Restoration Project 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.

13.2.11.1 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 Sea Turtle Early Restoration Project may have on a scale relative to this action. Context and intensity, defined in Section 13.2.2, are used to determine whether a potential significant cumulative impact from the sea turtle project exists.

Past, present and reasonably foreseeable other future actions relevant to this action, but not analyzed in the Final Phase III ERP/PEIS, were identified. Actions that could be relevant to the proposed sea turtle project cumulative impacts analysis are defined here as those actions with similar scope, timing, impacts and/or location. The Sea Turtle Early Restoration Project location is defined as the coastal beaches of Texas and along the coast of Tamaulipas, Mexico, and the coastal, nearshore and offshore environments of the Gulf of Mexico from Texas through the Florida Gulf Coast. Federal and state actions, other Phase IV proposed projects, and other restoration projects related to the Spill were considered. ESA Section 7 consultations completed by NMFS and USFWS were reviewed to determine if any actions are similar in scope, timing and impacts to the Sea Turtle Early Restoration Project. Additionally, ESA Section 10 permits issued by NMFS were evaluated for similar impacts, and all Phase IV projects were evaluated for similar impacts.

For the Sea Turtle Early Restoration project, specifically, the relevant affected resources analyzed in this EA are:

- Physical Environment (Air Quality and Greenhouse Gas Emissions and Noise)
- Biological Environment (Living Marine Resources and Protected Resources)
- Human Uses and Socioeconomics (Cultural Resources, Land and Marine Management, Infrastructure).

The following types of activities were identified as having potential impacts to similar resources as the proposed action:

13.2.11.1.1 Commercial Fisheries

The proposed project includes a component with data collection and research on sea turtles that are observed incidentally captured in the shrimp trawl fishery. Commercial fisheries have incidentally taken sea turtles for decades though the magnitude of take by fisheries as a whole has likely changed over time as a result of the protection of sea turtles under the ESA, population declines, changes in fishing practices, and the management of turtle take by fisheries. While regulated, the take of sea turtles in fisheries operating within the Gulf of Mexico are expected to continue for the foreseeable future. A summary of the effects on sea turtles from these fisheries and programs is provided here to provide a more comprehensive discussion related to cumulative effects.

The effects of fishery operations on sea turtles are not limited to the fisheries described in the Proposed Action. The operation of a fishing vessel in waters where sea turtles may be encountered poses some threat to these species due to risk of collisions with moving vessels. Sea turtles also interact with fishing gear such as longlines, hook and line, and bandit reel gear through hooking or entanglement in the fishing gear. Turtles that are hooked by this gear can be injured or killed by the hooking event, depending on whether they are hooked internally or externally and whether the hook sets deep in their tissue. Interaction with fishing gear can have long-term effects on a turtle's ability to swim, forage, migrate, and breed, although these effects are difficult to monitor or measure.

Pound nets, traps, pots, gillnet and trawl fisheries can entangle or entrap sea turtles. Sea turtles are particularly prone to entanglement as a result of their body configuration and behavior. Records of stranded or entangled sea turtles reveal that fishing debris can wrap around the neck, flipper, or body of a sea turtle and severely restrict swimming or feeding.

In the Gulf of Mexico, NMFS has issued Biological Opinions authorizing the bycatch of sea turtles under ESA Section 7, for the following fisheries:

- The Pelagic Longline Fishery
- The South Atlantic Snapper-Grouper Fishery
- The Coastal Migratory Pelagic Fish Fishery
- The Shark Fishery
- The Shrimp Trawl Fishery

13.2.11.1.2 Research Permits

NMFS actively issues research permits to researchers on sea turtle species in areas that could overlap with the proposed action area. The effects of many individual research activities (e.g., a survey, a field trip to capture animals) are short-term, lasting hours to days following the research event. Due to the 10 year duration and wide-spread activities included within the proposed project, it is difficult to specifically identify the extent of overlap in time and space of all of the permitted research, or to identify the frequency with which any given local population may be disturbed.

13.2.11.1.3 Other Human Activities

Historically, one of the major contributors to declines in sea turtle populations was the commercial harvest of eggs and turtles. Today, sea turtles may be adversely affected by human activities including recreational fishing (as bycatch via entrapment and entanglement in fishing gear), habitat degradation, and tourism and recreation (via harassment from human approach and presence) within the action area. Of these activities, lethal takes of turtles and the disturbance that results in displacement of animals or abandonment of behaviors such as feeding or breeding by groups of animals are more likely to have cumulative effects on the species than the proposed research activities.

Sea turtles also benefit from human activities operated by Federal, state, and or local agencies and organizations including management, conservation, and recovery efforts, nest monitoring, education and outreach, and stranding response programs.

13.2.11.2 Potential Cumulative Impacts When Evaluated with Other Phase IV Proposed Projects

Due to the nature of this proposed project, the proposed sea turtle project is not anticipated to contribute to potential adverse cumulative impacts in combination with other Phase IV projects. The proposed project, Pelagic Longline Project, is closest in relationship to the sea turtle project in that it intersects with Gulf of Mexico fisheries activities. Because the two proposed actions affect distinct fisheries, however, no adverse cumulative impacts are possible. Further, as both proposed projects are intended to restore and protect marine resources, together they contribute to cumulative beneficial impacts to Trustee trust resources in the Gulf of Mexico environment.

13.2.11.3 Summary of Cumulative Impacts of the Proposed Action

Overall, the cumulative impact of the proposed Sea Turtle Early Restoration Project when considered with respect to past, present, and reasonably foreseeable future actions would result in beneficial impacts over the long-term, as restoration would contribute to the restoration and protection of endangered and threatened sea turtles, while minimizing socioeconomic impacts on the public.

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