



March 14, 2018

Scott Brown
Alabama Department of Environmental Management
Mobile Branch | Coastal Section
3664 Dauphin Street, Suite B
Mobile, Alabama 36608

RE: Proposed Restoration Projects in the Alabama Restoration Area

Dear Mr. Brown:

The Natural Resource Trustees for the Deepwater Horizon Oil Spill Alabama Trustee Implementation Group (Alabama TIG) have prepared a draft restoration plan, entitled, "Draft Restoration Plan II and Environmental Assessment: Restoration of Wetlands, Coastal, and Nearshore Habitats; Habitat Projects on Federally Managed Lands; Nutrient Reduction (Nonpoint Source); Sea Turtles; Marine Mammals; Birds and Oysters". This restoration plan, if approved by the Alabama TIG after consideration of public review and comment, would select for implementation 22 restoration projects within Alabama's coastal zone. The Alabama TIG includes two state trustee agencies and four federal trustee agencies: the Alabama Department of Conservation and Natural Resources (ADCNR); the Geological Survey of Alabama; the United States Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); the United States Department of the Interior (DOI), represented by the United States Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), and National Park Service (NPS); the United States Department of Agriculture (USDA); and the United States Environmental Protection Agency (EPA) (collectively the AL TIG).

DOI, NOAA, USDA, and EPA (the "Federal Trustees") have reviewed the restoration plan and proposed projects for consistency with the Alabama Coastal Area Management Program (ACAMP) and have found that, as proposed, these restoration actions are consistent to the maximum extent practicable with the applicable, enforceable policies of the State's federally-approved ACAMP. This letter submits that determination for State review on behalf of all Federal Trustees.

Background

On April 20, 2010, the Deepwater Horizon (DWH) mobile drilling unit exploded, caught fire, and eventually sank in the Gulf of Mexico, resulting in a massive release of oil and other substances from British Petroleum's (BP) Macondo well and causing loss of life and extensive natural resource injuries. Initial efforts to cap the well following the explosion were unsuccessful, and for 87 days after the explosion, the well continuously and uncontrollably discharged oil and natural gas into the northern Gulf of Mexico. Approximately 3.19 million barrels (134 million gallons) of oil were released into the ocean. Oil spread from the deep ocean to the surface and nearshore environment, from Texas to Florida. The oil came into contact with and injured natural resources as diverse as deep-sea coral, fish and shellfish, productive wetland habitats, sandy beaches, birds, endangered sea turtles, and protected marine life. The oil spill prevented people from fishing, going to the beach, and enjoying their typical recreational activities along the Gulf of Mexico. Extensive response actions, including cleanup activities and actions to try to prevent the oil from reaching sensitive resources, were undertaken to try to reduce harm to people and the environment. However, many of these response actions had collateral impacts on the environment and on natural resource services. The oil and other substances released from the well in combination with the extensive response actions together make up the DWH oil spill.

In accordance with the Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (Final PDARP/PEIS) and Record of Decision (ROD), the AL TIG has prepared a draft Restoration Plan/Environmental Assessment (RP II/EA), which



simultaneously fulfills requirements under the Oil Pollution Act (OPA) and the National Environmental Policy Act (NEPA) and proposes a range of restoration alternatives to restore for losses to natural resources and services injured in Alabama as a result of the DWH oil spill. Specifically, the restoration alternatives proposed in the draft RP II/EA focus on the following resource topics: Wetlands, Coastal, and Nearshore Habitats; Habitat Projects on Federally Managed Lands; Nutrient Reduction (Nonpoint Source); Sea Turtles; Marine Mammals; Birds; and Oysters. OPA requires the Trustees to develop a restoration plan. NEPA requires federal agencies to conduct NEPA analysis, in this case an EA, for any “major federal action significantly affecting the quality of the human environment.” The draft RP II/EA describes the restoration planning process and provides analysis focusing on project-specific issues in an integrated EA tiered from the Final PDARP/PEIS. The RPII/EA considers a total of 26 unique restoration projects, of which 22 unique projects have been identified as preferred alternatives or MAM funded to be carried forward for implementation. These projects are described below.

Proposed Alabama Restoration Projects:

The AL TIG proposes the following restoration actions for implementation in Alabama. Projects proposed for only engineering and design (E&D) at this time are noted as such:

1. Magnolia River Land Acquisition (Holmes Tract)

Project Summary. The Magnolia River Land Acquisition (Holmes Tract) project would acquire an 80-acre property through a fee simple purchase by the Weeks Bay Foundation (WBF) and transfer it into the permanent ownership of ADCNR with management by the Weeks Bay National Estuarine Research Reserve (Weeks Bay NERR). The Holmes Tract is located in Baldwin County off Keith Lane along the Magnolia River (PIN 287940, 65806, and portion of 20643) and includes about 80 acres. The property is one of the largest undeveloped tracts on Magnolia River that has not been timbered. It contains more than 1 mile of frontage on Magnolia River and Weeks Creek, including a perimeter of salt marsh and forested wetland fringe. WBF would protect the property in perpetuity and address restoration needs to ensure that it provides the best habitat for native and endemic species. Restoration activities proposed for the Holmes Tract could include invasive species control (prescribed fire or other methods), native vegetation planting, and minimal limited erosion control measures. This project would be accomplished with support from the town of Magnolia Springs and the Weeks Bay National Estuarine Research Reserve (NERR).

Project Implementation. The property would be purchased by WBF through a willing seller at or below the Yellow Book appraised value and transferred into the permanent ownership of the State. The acquisition of this property would include an appropriate land protection instrument (i.e., deed restriction or conservation easement placed on the property) to ensure that the purpose of restoration as described in this plan is maintained in perpetuity. In addition, WBF would work with the Weeks Bay NERR to create a management plan and prioritize restoration needs, including re-creating longleaf pine savannas, pitcher plant bogs, and marsh and swamp habitat (where appropriate).

Project Timeline. Due diligence and acquisition would take approximately 6 months to 1 year to complete. Development of a restoration plan and associated restoration activities would be conducted over a 3- year period following acquisition.

2. Weeks Bay Land Acquisition (East Gateway Tract)

Project Summary. The Weeks Bay Land Acquisition (East Gateway Tract) project would fund the WBF to acquire the 175-acre East Gateway Tract through a fee simple purchase and transfer it into the permanent ownership of ADCNR with management by the Weeks Bay NERR. The East Gateway Tract is located in Baldwin County at the mouth of Weeks Bay and contains approximately 175 undeveloped acres. The project would protect the eastern shore of the mouth of Weeks Bay where a large salt marsh with an unnamed stream provides protected habitat and shelter for wading birds, duck species, and



various indigenous marine life. This property contains more than 100 acres of wetlands, including estuarine intertidal marsh and freshwater forested wetlands. The bay front edge of the property is a popular place for anglers to anchor and angle for redfish and speckled trout.

Project Implementation. WBF would purchase the property from a willing seller at or below the Yellow Book appraised value. The acquisition of this property would include an appropriate land protection instrument (i.e., deed restriction or conservation easement) to ensure that the purpose of restoration as described in this plan is maintained in perpetuity. WBF would work with Weeks Bay NERR to create a management plan and prioritize restoration needs, including re-creating longleaf pine savannas, pitcher plant bogs, and marsh and swamp habitat (where appropriate). This project would also include E&D for the removal of a bulkhead on the waterfront point of the property that splits Weeks Bay and Mobile Bay. The bulkhead is contributing to shoreline scouring and erosion. A shoreline restoration plan would be developed as part of the bulkhead removal E&D.

Project Timeline. The total project timeframe is 4 years. Due diligence and land acquisition would take approximately 6 months to complete. Development of a shoreline restoration plan would take approximately 1 year to complete. Design and engineering of the bulkhead removal on the point would take approximately 18 months to complete following completion of the plan.

3. Weeks Bay Land Acquisition (Harrod Tract)

Project Summary. The proposed Weeks Bay Land Acquisition (Harrod Tract) project would fund WBF or the State of Alabama would acquire the 231-acre Harrod Tract and transfer it into the permanent ownership of ADCNR with management by the Weeks Bay NERR. The Weeks Bay Land Acquisition (Harrod Tract) project would protect approximately 231 acres in perpetuity to maintain its conservation value. The Harrod Tract is located in Baldwin County, Alabama, off Sherwood Highland Road (PIN 065600). The property is one of the largest remaining undeveloped parcels of cypress and gum swamp, marsh, and river shoreline in coastal Alabama and is the largest privately owned tract on the lower Fish River. Located adjacent to protected wetlands, it includes 7,600 feet of Fish River shoreline, as well as frontage along Turkey Branch and Waterhole Branch, two of Fish River's primary tributaries. Multiple smaller bayous (artificially constructed lakes) are also present on the property. The wetlands are composed of fringing salt marsh transitioning into hardwood cypress and gum swamp. The extensive marsh edge provides valuable nursery habitat for a host of estuarine organisms including shrimp, crabs, and fish. Hundreds of species of migratory birds use the habitat, more than a dozen resident species of shorebirds are found at the edges and within the property, along with a representative array of local wetland flora and fauna. The 231-acre property includes more than 100 acres of intact wetlands habitat.

Project Implementation. A restoration plan would be developed, and associated restoration activities would be conducted on the purchased property, which could include invasive species control (prescribed burning or other methods), native vegetation planting, and limited erosion control measures. WBF would purchase the property through a willing seller at or below the Yellow Book appraised value; as an accredited land trust, WBF would maintain the conservation value of the property and prohibit any future development. The acquisition of this property would include an appropriate land protection instrument (i.e., deed restriction or conservation easement) to ensure that the purpose of restoration as described in this plan is maintained in perpetuity.

Project Timeline. Acquisition would take approximately 6 months to complete. Restoration activities would be conducted over a 3-year period following acquisition. A monitoring plan would be developed and implemented as part of this project.



4. Lower Perdido Islands Restoration Phase I (E&D)

Project Summary. In recent decades, the valuable habitats on the Perdido Islands complex have experienced sustained erosion and other ecological injuries resulting from storms, intense boat traffic in nearshore waters, and shoreline and upland recreational use. The Lower Perdido Islands Restoration Phase I project would fund The Nature Conservancy (TNC) to develop a proactive and unified strategy for protecting the ecological functions of the Perdido Islands complex while allowing for passive public recreation. The project area includes several islands at the intersections of Bayou Saint John, Terry Cove, Cotton Bayou, and Perdido Pass, all in proximity to Orange Beach, Alabama, within the lower Perdido River and Bay watershed. The total project area encompasses approximately 420 acres and includes Robinson Island (11 acres), Bird Island (15 acres), Walker Island (7 acres), Gilchrest Island (2 acres), Boggy Point (7 acres), and the surrounding estuarine and marine environment. The remaining portion of the project area includes open water and a variety of wetland types.

Project Implementation. For Phase I of the Lower Perdido Islands Restoration Project, TNC would develop a conservation management plan to evaluate the most appropriate methods for minimizing adverse impacts on sensitive habitats, and conduct a sediment modeling study to provide information on erosion that would inform future habitat restoration activities on the islands. Project elements would include identifying and describing the issues (such as erosion) and evaluating and recommending shoreline protection and restoration, submerged aquatic vegetation (SAV) protection, and dune habitat protection strategies. Specific activities likely would include a habitat survey, baseline monitoring, recreational use monitoring/behavioral observations, preliminary permit and compliance investigations, stakeholder coordination, and identification of factors that may assist in restoration and improved conservation. Other interim habitat enhancement activities associated with the project would include the installation of signage on the islands alerting visitors to nesting bird habitat, tree plantings for bird nesting habitat, and marine debris monitoring. Aside from marine debris monitoring, which the City of Orange Beach would implement through its regular program, these activities would be implemented by TNC in close coordination with the City of Orange Beach.

Project Timeline. This Phase I project is expected to take approximately 18 months to complete, including the development of a conservation management plan, sediment modeling study, and interim habitat enhancement activities. Baseline monitoring data would be collected as part of Phase I.

5. Southwestern Coffee Island Habitat Restoration Project-Phase I (E&D)

Project Summary. This project would support planning activities related to the restoration and creation of colonial nesting bird breeding habitat and tidal wetlands along the southwestern shoreline of Coffee Island, located in Mississippi Sound in south Mobile County, Alabama. Phase I proposes funding for two tasks—(1) a synthesis of colonial wading bird and shorebird nesting data, and (2) E&D and permitting for the restoration of habitat on Coffee Island to evaluate whether the project should be considered for further development in a later plan. The project site where E&D activities would occur is state-owned island (managed by ADCNR) located in the Portersville Bay section of eastern Mississippi Sound. The island currently supports a small (approximately 1.0 acre) breeding colony of wading birds, including snowy egrets, tricolor herons, little blue herons, cattle egrets, white ibis, and similar colonial nesting wading bird species. Additionally, adjacent to the colony, a small shelly beach (approximately 0.50 acre) provides nesting habitat for shorebirds such as black skimmers and American oystercatchers.

Project Implementation. This project includes E&D and analysis activities resulting from field studies, biological assessments, data synthesis, modeling, sediment source investigations, development of drawings and construction plans, and construction cost estimates as well as obtaining required permits. The project consists of two components. First, all colonial nesting bird habitat data in coastal Alabama would be compiled and analyzed, resulting in a Colonial Nesting Birds Data Synthesis and Assessment.



Findings from this assessment are expected to determine whether nesting habitat is a limiting resource for colonial wading birds and if this project would be designed to restore wetlands and/or bird nesting habitat. The second component would include conducting engineering, design, and regulatory compliance for the proposed restoration of wetlands and bird nesting habitats along the southwestern shoreline of Coffee Island.

Project Timeline. Planning, site investigations, data synthesis, and E&D would take approximately 12 to 18 months. Permitting would take 6 to 9 months, running concurrently with E&D.

6. Little Lagoon Living Shoreline

Project Summary. The Little Lagoon Living Shoreline project aims to restore a minimum of 2,200 feet of shoreline of Little Lagoon, on Bon Secour National Wildlife Refuge (BSNWR), to the west of Gulf Shores, Alabama. Little Lagoon is a shallow body of brackish water, 10 miles long and 0.5 mile wide, and the targeted length of shoreline is actively eroding, threatening the adjacent Pine Beach Road.

Construction of a living shoreline would protect habitat on adjacent federal land by buffering the shoreline against erosion. The project would include planning, implementation, and monitoring of a living shoreline project that uses natural materials rather than hardened structures or barriers, strategically placed to provide protective erosion control management to restore natural habitat, functions, and processes.

Project Implementation. The Little Lagoon Preservation Society, Friends of BSNWR, and BSNWR would collaborate on implementation. USDOJ would contract a qualified professional with living shoreline expertise to evaluate, plan, and implement the project. Depth surveys and measurements for project design such as wave energy would be provided in a desk top analysis. In general, one or two rows of biodegradable coconut fiber “coir” logs may then be placed along the eroding shoreline to stabilize vegetation and attenuate wave action, and grass plantings (e.g., *Spartina alterniflora* or *Juncus roemerianus*) may be placed between the logs and the eroded shoreline to jump start a vegetated buffer. Native mussels may also be seeded among the shoreline grasses. The specific restoration activities would be finalized during the evaluation and planning process.

Project Timeline. Once the contract is awarded to a qualified professional, planning, permitting, and project implementation should occur within approximately 10 to 12 months. Following installation, the monitoring surveys would be performed quarterly for 3 years by BSNWR staff or other designated individuals to evaluate erosion and vegetation recovery.

7. Restoring the Night Sky – Assessment, Training, and Outreach (E&D)

Project Summary. Past lighting assessments and documented sea turtle disorientations along the Alabama coast suggest that anthropogenic light pollution negatively affects Alabama’s natural resources. The long-term goal of the Restoring the Night Sky—Assessment, Training, and Outreach (E&D) project is to reduce the impacts of light pollution on federally managed lands that disorients nesting sea turtles and hatchlings, disrupting their reproductive activities and reducing their reproductive success. The project would produce an Alabama coast-wide analysis of the impacts of light pollution on federally managed lands and nearshore waters in Baldwin and Mobile counties in Alabama, helping to guide future work to mitigate this issue. Specifically, the project would help restore coastal habitats at BSNWR injured by the DWH oil spill by producing an inventory of artificial light sources that affect the refuge. This project has three primary objectives: (1) use remote sensing and NPS data products to identify locations that disproportionately contribute to light pollution on the Alabama coast; (2) produce a detailed strategy to mitigate the identified problematic lighting; and (3) work with local governments to improve their understanding and capacity to address lighting concerns in the future. The assessment would detail the most problematic locations across the Alabama coast with respect to impacts on coastal wildlife, evaluate the most cost-effective options to reduce light pollution in coastal Alabama, and describe the best options



to elicit public participation in reducing light pollution. The project would also include pilot tests of alternative lighting systems to assess public and ecological responses to different lighting options.

Project Implementation. The project would help support lighting workshops and training for city code enforcement and staff, homeowners, and condominium and hotel owners in Alabama's coastal cities that wish to participate. These workshops would ensure that the technical nature of assessing and improving lighting for sea turtles is well understood by those in local government who are tasked with addressing problematic lighting. Further assistance may include developing meaningful ordinance language and reasonable solutions to any conflicts created by lighting. Once funded, USDOJ would implement the project through the NPS's Natural Sounds and Night Skies Division, which has experience working throughout the country on light pollution mitigation projects. Local assistance would be provided by USFWS. This project would be performed largely through face-to-face meetings and training, data collection in the field, and computer modeling.

Project Timeline. The timeline for this project would be determined based on the availability of funding.

8. Toulmins Spring Branch Engineering and Design (E&D)

Project Summary. The Toulmins Spring Branch project would fund E&D for a variety of non-structural and structural best management practices (BMPs) that would reduce nutrients and pollutants into Toulmins Spring Branch, a creek that is listed as having impaired water quality on Alabama's 303(d) list. The project location is at the headwaters of Toulmins Spring Branch, within the Three Mile Creek watershed and directly south of the Bessemer Hope VI multi-family and mixed use development in the City of Prichard, Alabama. This E&D project is intended to fill this critical funding gap and clear the way for the actual project to be implemented.

Project Implementation. The project would include a watershed assessment and a conceptual plan for the entire length of Toulmins Spring Branch that details opportunities for erosion and sedimentation reduction, nutrient and pathogen reduction, and flooding and stormwater management. E&D would be performed for an approximately 6-acre park, a 1-acre created wetland, approximately 600 linear feet of bioswales, and riparian buffers on vacant, abandoned urban parcels in the headwaters of Toulmins Spring Branch. These structural BMPs would have the combined purpose of reducing the input of sediment, nutrients, and pollutants into the creek via stormwater runoff. Non-structural BMPs would include public outreach, community education and training, and litter clean-ups, with the goal of reducing inputs from litter and other avoidable water pollutants. As a secondary benefit, additional features such as trails, footbridges, gazebos, and public gathering areas can be incorporated to create valuable public recreational and community amenities and increase public awareness for Toulmins Spring Branch and its restoration.

Project Timeline. The proposed E&D work is estimated to be completed in approximately 6 months.

9. Fowl River Nutrient Reduction

Project Summary. The Fowl River Nutrient Reduction project seeks to improve water quality in the Fowl River watershed through improved land management practices that reduce nutrient and sediment runoff. The watershed encompasses 52,782 acres, draining much of southern Mobile County, and is a significant contributor of freshwater flow into Mobile Bay. Land uses in the watershed are 21 percent urban, 15 percent agricultural, 63 percent forested, and 1 percent water/wetlands. Increasing development and continuing erosion and sedimentation threaten water and habitat quality. Improved land management practices using existing USDA-NRCS conservation practice standards (CPS) and their specifications, would be the primary tool used to reduce erosion and nutrient inputs in the watershed. Examples of such measures would include erosion and sediment control practices such as cover crops, conservation tillage, and field borders. Although cattle production is not the primary agricultural industry in the watershed, livestock exclusion from stream, wetlands, and drainage ways would be a priority conservation measure.



Ecosystem services that are provided by conservation practices include reducing nitrogen, phosphorus, and sediment runoff, which would improve water quality and mitigate chronic ecosystem threats (e.g., hypoxia, harmful algal blooms, and impaired recreational use). Improved water quality in the Fowl River watershed would ultimately benefit all estuarine and marine resources of coastal Alabama.

Project Implementation. The project is organized into four phases for implementation: (1) conservation planning (including landowner outreach and education) and environmental evaluation, (2) conservation practice engineering and design, (3) conservation practice implementation, and (4) water quality monitoring. Technical assistance would be provided to landowners through the development of conservation plans for their lands, which would identify water quality resource concerns. Financial assistance could be provided to landowners to implement site-specific conservation practices to address the resource concerns on their property. USDA-NRCS would implement the project in the Fowl River watershed to improve water quality by implementing conservation practices to reduce nutrient and sediment runoff. USDA-NRCS and its conservation partners would help voluntarily participating landowners by developing conservation plans that identify natural resource concerns and conservation practices that landowners can implement to reduce nutrient and sediment runoff. The conservation planning and implementation would be completed for the purpose of addressing nutrient and sediment loading concerns, with the goal of making and observing a measurable impact.

Project Timeline. The project would be implemented over a 4-year period with the first year consisting primarily of landowner outreach and planning. Implementation of the conservation plans would begin in year 2 and continue through year 4. Baseline data collection through instream water quality monitoring would be initiated in the targeted watersheds in year 1. Water quality monitoring would be continued after most of the conservation practices are implemented. More than one of the four phase as described above can be conducted simultaneously. The project would last no more than 5 years.

10. Weeks Bay Nutrient Reduction

Project Summary. The Weeks Bay Nutrient Reduction project seeks to improve water quality in the Weeks Bay watershed through improved land management practices that reduce nutrient and sediment runoff. The watershed encompasses approximately 130,000 acres in southwest Baldwin County, which flows into Weeks Bay, a shallow sub-estuary of Mobile Bay.

The implementation of land management practices using existing USDA-NRCS CPS and specifications would be the primary tool used to reduce erosion and nutrient inputs in the watershed. Examples of such measures would include erosion and sediment control measures such as cover crops, conservation tillage, and field borders. Ecosystem services that are provided by conservation practices include reducing nitrogen, phosphorus, and sediment runoff, which would improve water quality and mitigate chronic ecosystem threats (e.g., hypoxia, harmful algal blooms, and impaired recreational use). Improved water quality in Weeks Bay watershed would ultimately benefit all estuarine and marine resources of coastal Alabama.

Project Implementation. The Weeks Bay Nutrient Reduction project would focus on the middle Fish River, lower Fish River, and Magnolia River. Conservation planning would be conducted in all three of these watersheds; however, conservation implementation would only occur in two of the watersheds. The watersheds selected for implementation would be based on conservation opportunities on high-priority lands as ascertained from conservation planning efforts, and the phases of project implementation would be the same as described above for the Fowl River Nutrient Reduction project. Technical assistance would be provided to landowners through the development of conservation plans for their lands, which would identify water quality resource concerns.

Project Timeline. The project would be implemented over a 4-year period with the first year consisting primarily of landowner outreach and planning. Implementation of the conservation plans and identified



land management practices would begin in year 2 and continue through year 4. Baseline data collection through instream water quality monitoring would be initiated in the targeted watersheds in year 1. Water quality monitoring would be continued after most of the conservation practices are implemented. More than one of the four phase as described above can be conducted simultaneously. The project would last no longer than 5 years.

11. CAST Conservation Program

Project Summary. The Coastal Alabama Sea Turtle (CAST) Conservation Program project is designed to support existing sea turtle programs in Alabama to strengthen efforts to protect nesting sea turtles and enhance the survival of sea turtle hatchlings in Alabama. The proposed project would provide funding for the continued operation, expansion, and enhancement of the existing Share the Beach Sea Turtle Nest Monitoring Program (Share the Beach), which as of January 2018 is proposed to be managed by the Alabama Coastal Foundation (ACF). ACF is an organization dedicated to environmental stewardship, with considerable experience in program management; fundraising; and volunteer recruitment, training, and management. ACF's administration of the program would allow for better overall program management, including better management, analysis, and reporting of data collected under the program. Previously, this program had been managed by Friends of BSNWR.

The CAST Conservation Program would expand and enhance ACF's Share the Beach program by providing funds to guide the Share the Beach program in actions necessary to support sea turtle restoration in Alabama, such as maintaining and implementing protocols for sea turtle nest monitoring activities and reducing threats on nesting beaches. Under this project, additional staff experienced in sea turtle nest monitoring protocol would be hired to work with Share the Beach. This project would also help support a greater emphasis on public education, focused on minimizing anthropogenic threats to sea turtles outlined in the Northwest Atlantic Loggerhead Recovery Plan (NMFS, et al., 2008), such as artificial lighting and nesting obstacles and promoting the region's potential for ecotourism while avoiding disturbance to or manipulation of sea turtle nests and hatchlings. This project would bring Alabama's sea turtle conservation program to a level of capacity similar to other states in the region by funding two full-time biologists, four seasonal team leaders annually, two summer interns annually, and an administrative position, as well as staff training, data collection and management, program equipment, and public education, among other activities.

Project Implementation. Under this project, ACF would provide management of the Share the Beach program, and administrative activities would occur out of ACF's Mobile office. ACF would manage program administration; volunteer contact information; and all files, equipment, and materials necessary to successfully administer the Share the Beach program. This project would fund staff time, additional program equipment, education, and travel expenses. No infrastructure or other proposed improvements would be funded with these proposed project funds. As part of program management, all current permits would be maintained, and ACF employees and volunteers would be trained by personnel with sea turtle expertise in nesting survey protocols and data management, in collaboration with USFWS. ACF would work with USFWS on the permitting process to revise Alabama sea turtle nest monitoring permit and permit holders as needed. Under the administration of ACF, the Share the Beach program would be reviewed annually to evaluate its effectiveness, including: (1) lessons learned from previous year, (2) consulting new scientific information about sea turtles, and (3) collaboration with USFWS to review sea turtle data collection, monitoring, and handling protocols. Additional activities that would be continued and expanded include continual recruitment and engagement of volunteers, volunteer training, nest monitoring and related data collection, outreach and education to residents and tourists, and data management.

Project Timeline. Management of Share the Beach and expansion of the program would occur over a 3-year period.



12. CAST Triage

Project Summary. The purpose of this project is to provide a new, appropriately equipped facility and program for the initial triage, treatment, release, and/or transfer of injured or ill sea turtles. Currently, there are no facilities in Alabama equipped for handling sea turtle strandings. The project would construct a new facility on property owned by the City of Orange Beach and establish a program that would be supported by the City of Orange Beach in the future. This facility would complement and enhance the current Alabama Sea Turtle Stranding and Salvage Network (ALSTSSN). This facility and associated program would allow sea turtles injured in Alabama and proximity in adjacent states to be treated and released faster and with less stress on the animal from handling and transport. The expectation is that faster intervention, along with shorter periods of captivity and minimized handling, would improve the outcomes for injured or ill turtles by decreasing the time to receive treatment and providing a local resource to contact for citizens to report injured or distressed turtles. The program would also work to educate the public about (1) anthropogenic threats to sea turtles treated at the facility, (2) current science on how best to address the threats, and (3) conservation for sea turtles in the wild. Educational materials would be coordinated with Alabama's Share the Beach Sea Turtle Nest Monitoring Program to create a consistent and unified message.

Project Implementation. The site for this proposed facility is located in Orange Beach, Alabama, on city-owned property adjacent to Cotton Bayou. A large portion of the proposed site was previously a fire station. The building slab, some of the parking lot and other features still exist. The remaining areas have all been disturbed/filled/excavated for the construction of the adjacent water tower, power substation, and the roadway. The project would occupy 1 to 3 acres of land, upon which would be built a 40-foot by 60-foot, wind-rated, light commercial metal structure on a concrete slab be built. Construction would include the following elements: base building; site/utilities; water supply (bore); pumps/filtration; tanks (1 large and 2 medium, miscellaneous small); HVAC (entire building) office/storage area; perimeter fence; concrete drives/apron; walk-in cooler/freezer; and enclosed triage/necropsy area. The building would be insulated, climate controlled, and equipped with a full bath, office/storage area, and walk-in cooler/freezer units. The budget includes funds for a variety of tank sizes to accommodate the different species/sizes of marine turtles and one large enough for pre-release assessment (this can be changed to any number of configurations). Each tank would be accessed by an overhead hoist or mobile gantry and would include an elevating floor platform as is appropriate in a rehabilitation tank. The primary water source would be achieved through an underground bore into Cotton Bayou. The proposed project would likely place four pipes underneath the roadway between Cotton Bayou and the project site. Two pipes would be for intake and two for discharge (primary and secondary). The primary discharge pipe would be the first pipe used for discharge. The secondary discharge pipe would be in place as a backup. The pipes would likely be 3 to 4 inches in diameter depending upon the terms of the permit, and they would be bored (horizontally drilled) in place. The final location of the pipe and its point of exchange with Cotton Bayou would be determined during the permitting process and informed by the regulatory process.

Construction methods would include common construction practices consistent with the adopted International Building Codes for steel buildings and associated items such as electrical, mechanical, plumbing, and fire/life safety. The parking lot would be constructed of pervious material such as crushed concrete. Estimated parking for 10 to 12 vehicles is possible at the site. The facility would be connected to the public sewer system, and waste water would be discharged to the sanitary sewer via grinder pump. Associated infrastructure would require both a domestic and saltwater source (both are nearby, but the saltwater requires a bore); electrical service (nearby); sewer line tap and grinder pump (nearby and included); and broadband network access (achieved via point-to-point microwave shot to nearby service provider access point). Effluent from the tanks would be discharged into Cotton Bayou in accordance with all required permits. Required permits may include United States Army Corps of Engineers (USACE) Section 10 and Section 404 permits as well as water quality and coastal zone management consistency certifications from the Alabama Department of Environmental Management (ADEM). Any



necessary building permits would be obtained in accordance with local, state, and federal laws. Other permits such as National Pollutant Discharge Elimination System permits would be obtained if required and necessary.

Project Timeline. Planning could take from 60 to 120 days. Construction would require approximately 90 days and would include completion of the necessary regulatory and compliance process. The facility would operate under the ALSTSSN permit and would always remain a sub-permittee on the ALSTSSN permit. Additionally, the facility would need its own permits based on the treatment being performed and length of captivity. These facility permits are not in place but would be applied for at the appropriate time relative to the project because facilities and other program requirements must be in place at the time of application.

13. CAST Habitat Usage and Population Dynamics

Project Summary. The CAST Habitat Usage and Population Dynamics project would study migration patterns, habitat usage, and distribution patterns of sea turtles of the Alabama Coast. The project proposes to sample in-water sea turtles to initiate a long-term monitoring program designed to determine distribution and habitat use, vital rates (including survival rates), connectivity, and potential impacts of anthropogenic activities for sea turtles in coastal and nearshore waters of Alabama. The project objective is to inform the AL TIG and other state and federal initiatives about the locations and types of activities that would provide the most cost-effective means of reducing threats to sea turtles and increasing their populations in coastal Alabama.

Using biological, genetic and stable isotope analyses researchers can explain links among and within populations that can identify human actions that disrupt important population connections and cause environmental threats. Genetic analysis allows researchers to identify the connectivity of turtles using Alabama waters to larger populations, such as determining from which nesting beaches juvenile turtles using Alabama waters originated. The project would also fund the collection of sea turtle movement data in and around the Alabama coast. Analyses of these data would be used to characterize where sea turtles are foraging, migration patterns, habitat use, and life history parameters for sea turtles using Alabama waters.

Project Implementation. The methods proposed for collecting these data include genetic analyses, stable isotope analyses, mark-recapture, and habitat modeling (including anthropogenic threats). The sea turtles would be captured by hand or using dip nets and tangle (set) nets at several sites along the Alabama coast, including inshore waters (i.e., Perdido Bay, Bon Secour Bay, Mobile Bay, and the Mississippi Sound) and the nearshore waters of the Gulf of Mexico. Gulf of Mexico Marine Assessment Program for Protected Species would serve as a pilot study for this project. Data from that work would help to locate prime capture locations in Alabama waters and identify the most effective capture methods. In addition, funds from these projects can be leveraged to provide a region-wide assessment of juvenile turtles using waters of the northern Gulf of Mexico. Data sharing would follow standard Natural Resource Damage Assessment (NRDA), Bureau of Ocean Energy Management, and United State Geological Survey (USGS) protocols. In addition to direct capture, researchers may obtain sea turtles for study that are legally captured during relocation trawling by the USACE hopper dredging operations. Morphometric data, including size and weight, would be gathered from all sampled turtles, and a visual health assessment would be conducted. Biological samples, including blood, skin, and scute, would be gathered from each individual.

It is estimated that 100 turtles could be captured per year, with a minimum of 40 samples per species needed for genetic and vital rates analysis. For mark-recapture analysis, a minimum of 5 years of captures is necessary.



Project Timeline. Investigators currently hold a current, 5-year, renewable National Marine Fisheries Service (NMFS) permit (#17304-03) that allows these activities; therefore, capture, marking, and sampling for this project could be initiated immediately upon receipt of funds. The project is funded for 3 years.

14. CAST Protection: Enhancement and Education

Project Summary. Enforcement of existing Federal, state and local regulations and ordinances is a crucial tool for reducing activities and behaviors that cause harm to sea turtles in state waters. This project would enhance state enforcement of federal regulations and increase turtle protections in Alabama state waters by: (1) increasing awareness and understanding of the Endangered Species Act (ESA) and applicable regulations through education of state enforcement officers; (2) increasing resources for state enforcement agencies to more proactively dedicate efforts toward ESA-related activities; (3) taking steps to reduce fisheries bycatch (i.e., fishery and social science surveys, purchasing and distributing turtle excluder devices for the skimmer trawl fishery); and (4) taking steps to reduce impacts on nesting turtles, such as nest vandalism and lighting harassment.

Project Implementation. NMFS, USFWS, and ADCNR would work collaboratively with Marine Resources Division (AMRD) law enforcement and federal offices of law enforcement to determine law enforcement training needs, how best to conduct consistent training, and to identify specific training and educational needs/products. A full-time AMRD biologist would be hired to implement several elements in this project (i.e., enforcement training sessions, public education and outreach, stakeholder collaboration). Training of AMRD enforcement officers would be conducted and outreach products would be distributed to the public. NOAA NMFS protected resources staff, USFWS, and AMRD biologists would also work together to identify and prioritize hot spot areas for potential ESA violations and those areas that need increased and consistent enforcement efforts. Resources and equipment necessary to increase and sustain enforcement activities in identified hot spot areas would be identified, and state enforcement increased/enhanced in areas of need to reduce associated harm from illegal activities. A communication pathway between the state and federal agencies and law enforcement would also be established to continuously reevaluate needs to ensure consistency in enforcement enhancement efforts.

Project Timeline. This project would begin as soon as funding becomes available and is proposed for 4 years. Increased state enforcement around sea turtle nesting beaches would occur throughout the duration of the project. Year 1 would be used to hire and train a biologist, to develop initial partnerships with local and federal stakeholders, and coordinate with skimmer trawl owners for Turtle Excluder Device (TED) installation. Social science and fisheries surveys would be contracted by the end of year 2, and the results would be used to inform the targeting of public outreach materials. Training of AMRD law enforcement officers on sea turtles would likely occur in the winter of years 2, 3, and 4, with the bulk of training in year 2 and supplemental training of newly hired officers provided in years 3 and 4. In year 3, nest sites would be remotely monitored with game and/or surveillance cameras, and in years 3 and 4, outreach plans would be developed and targeted outreach and education would be implemented.

15. Enhancing Capacity for the Alabama Marine Mammal Stranding Network

Project Summary. This project would enhance the capacity of the Alabama Marine Mammal Stranding Network (ALMMSN) by providing funding for staff time, equipment and supplies, and sample analyses. ALMMSN is operated out of the Dauphin Island Sea Lab (DISL) on Dauphin Island, Alabama. This project would allow ALMMSN to use and expand on its existing infrastructure for cetacean stranding response and communications and data management to enhance the ALMMSN's operations. Information on dead or stranded cetaceans is obtained by collecting basic stranding data (Level A) and performing necropsies; however, ALMMSN has limited capacity for live cetacean stranding response. In addition,



ALMMSN has limited resources to conduct in-depth analysis of causes of illness and mortality in stranded cetaceans. The project would allow ALMMSN to better respond to live or dead stranded cetaceans, to necropsy animals, and to analyze samples collected from cetaceans stranded in Alabama waters to better understand the causes of marine mammal illness and death. It would also support increased data consistency for information collected from stranded marine mammals by supporting ALMMSN to enter its data into a regional marine mammal health database (known as GulfMAP, hosted by NOAA). The information collected by ALMMSN from stranded cetaceans should enable managers to mitigate impacts on marine mammals from natural and anthropogenic threats and to monitor population recovery post-DWH oil spill. Accordingly, this project is expected to provide a better understanding of the causes of illness/mortality through the early detection and intervention of anthropogenic and natural threats. Additionally the project is expected to increase the survival of rescued animals and recovery of populations affected by the DWH oil spill by improving marine mammal stranding response, data collection, data analyses, and reporting for Alabama waters. By enhancing mutual aid and collaboration to augment overall response capability of NOAA's Marine Mammal Health and Stranding Response Program, this project would also increase data consistency and the timeliness of data availability to managers of marine mammals to allow for rapid responses to emerging threats.

Project Implementation. This project would continue ALMMSN's current data collection efforts and expand them by providing more in-depth data analysis provided by the ALMMSN staff in collaboration with the NMFS Southeast Regional Office and Southeast Fisheries Science Center. This increased collaboration would build capacity in the region by training ALMMSN to improve live stranding responses in the future. ALMMSN would also maintain its current reporting, databases, publications, and necropsy reports, and increase the number of metadata records relative to cetaceans responded to, necropsies conducted, and samples processed, as well as its number of publications.

Project Timeline. This effort is currently funded by NFWF-GEBF through 2019. The proposed timing of this project is January 1, 2020, to January 1, 2023, which includes all activities under this program

16. Assessment of Alabama Estuarine Bottlenose Dolphin Populations and Health

Project Summary. This project is aimed at defining common bottlenose dolphin distribution, abundance, and population structure within Alabama state waters to assess the status of bottlenose dolphins using Alabama waters by collecting data on dolphin distribution, habitat use, mortality rates, and feeding habits. The project is a data collection effort to: (1) investigate stock structure across Mobile Bay, Perdido Bay, and nearshore Alabama waters and the seasonal (summer/winter) abundance, distribution, and habitat use of common bottlenose dolphins on the Alabama coast using capture-mark-recapture and photo-ID surveys; and (2) assess dolphin condition following the DWH oil spill using field observation and remote biopsy sampling, both of which would inform future restoration planning. This data collection effort would provide valuable resource-level monitoring for bottlenose dolphins, a largely unstudied top predator in Alabama waters, informing pre restoration baselines and providing more effective restoration planning and implementation.

Project Implementation. With additional training and support from NOAA NMFS Southeast Fisheries Science Center, DISL has in place the infrastructure and staff necessary to manage the project, including coordinating fieldwork with collaborators, performing sample processing and analyses, and submitting annual reports to ADCNR. Data would be comparable to and transferable to inform Gulf-wide conservation efforts. Four remote biopsy surveys of bottlenose dolphins would be conducted in Mobile Bay, Perdido Bay, and adjacent coastal waters defined as more than 2 kilometers from the shoreline to the 20 meter contour line to obtain adequate seasonal sample sizes for genetic analysis. Each season, the goal would be to collect 40 samples within both Mobile Bay and Perdido Bay and 25 samples in the adjacent coastal waters (i.e., a total of 260 samples). Each seasonal remote biopsy survey would be conducted during a 42 day window using one boat staffed with four scientists. This survey window includes an



average of 2 days for each full survey day required. Dolphin tissue samples would be stored at DISL, and analyses would include: (1) genetic analysis for stock structure, sex determination, species confirmation, and morphotype determination; (2) stable isotope and fatty acid analyses for diet assessment; (3) contaminant and harmful algal bloom toxin detection; and (4) mtDNA integrity and bioenergetics efficiency analysis. All samples (~260) would be analyzed for genetic structure, ~200 samples would be analyzed for diet assessment, and ~50 percent of samples would be randomly selected for contaminant analyses, depending on the quantity of sample available to accommodate the multiple analyses proposed and selected to represent each sampling location and time relative to sex and age class of the sampled population. Twelve seasonal (two per site per year) photo-ID mark-recapture surveys of dolphins would also be conducted at sites in Perdido Bay and Mobile Bay following established protocols outlined in Rosel et al 2011. Abundance estimates for Mobile Bay and Perdido Bay would follow established methods for photo-ID mark-recapture surveys. Mobile Bay surveys would require two boats staffed with three scientists each. Photos would be collected using high-resolution digital photography of dorsal fin and flanks of each animal.

Project Timeline. This project has a 4-year timeline. As proposed, identifying survey routes and selection and staff training would occur during spring 2019. Photo-ID surveys would begin during summer 2019 and repeated during summers 2020 and 2021, as well as winters 2019–2020 and 2021–2022. Remote biopsy surveys would be performed during winter 2019–2020 and summer 2020 and 2021. Tissue and data analysis would begin after the first surveys are completed and continue through the duration of the study. Final reporting is expected by winter 2022.

17. Alabama Estuarine Bottlenose Dolphin Protection: Enhancement and Education

Project Summary. This project would reduce injury and mortality in Alabama estuarine bottlenose dolphins. This would be accomplished by: (1) increasing resources for ADCNR AMRD to dedicate toward MMPA-related activities and increasing patrol hours; and (2) increasing awareness and understanding of the MMPA through education to assist state enforcement efforts; (3) conducting social science studies (e.g. interviews, focus groups, etc.) to help (a) characterize the nature and extent of the illegal feeding of dolphins, vessel-based harassment, and interactions of dolphins with hook and line fishing gear in Alabama and (b) understand attitudes and perceptions of these user groups; (4) conducting systematic fishery surveys to help characterize the nature and extent of dolphin interactions with commercial fishing vessels and hook-and-line gear in Alabama, and (5) developing and implementing a comprehensive and targeted outreach plan based on the results of these social science studies and systematic fishery surveys. Enforcement is a crucial tool for reducing activities known to cause harm to marine mammals in state waters, and enhancing state enforcement would provide a key component to aid in reducing injury and mortality in Alabama estuarine bottlenose dolphins. NMFS and ADCNR would work collaboratively with AMRD law enforcement and NOAA Office of Law Enforcement to determine law enforcement training needs and how best to conduct consistent training and to identify specific training and educational needs/products. AMRD would hire a biologist to implement training of enforcement officers on the MMPA and public outreach topics related to marine mammals. The biologist would coordinate with the NMFS Office of Protected Resources to receive and stay up-to-date on issues and information related to marine mammal protection.

Resources and equipment necessary to increase and sustain state enforcement activities in hotspot areas would be identified, and state enforcement would be increased/enhanced in areas of need to reduce harm from illegal activities. A communication pathway between the state and federal agencies and law enforcement would be established to reevaluate needs on an ongoing basis to ensure consistency in enforcement enhancement efforts.

This project would also enhance public knowledge of marine mammal protection and the MMPA by contracting with a company who would conduct a social science survey, which would inform the creation



of a well-informed, targeted education and outreach program for the Alabama coast. This program would inform the public and vessel operators about the harmful effects of illegal feeding and harassment of marine mammals in the Gulf of Mexico. Additionally, this project would contract with a company to conduct a fisheries survey to characterize dolphin interactions with commercial and recreational fisheries, which would also inform the education and outreach program. Educational components could include how commercial and recreational fisheries could help prevent these impacts within Alabama state waters. The biologist would oversee the contracting for the surveys and the implementation of the education and outreach program for coastal Alabama.

Project Implementation. AMRD would hire a full-time biologist to implement the elements in this project (i.e., enforcement training sessions, targeted public education and outreach, stakeholder collaboration) and to work on the CAST Protection: Enhancement and Education project (i.e., the position would be funded 50 percent from this project budget. See Section 2.6.4.5. This biologist would specifically focus on (1) characterizing dolphin interactions with commercial and recreational fishing vessels; (2) developing practices to reduce harmful and/or lethal impacts on dolphins from hook-and-line fishing related injuries, illegal feeding activities, and vessel-based ecotourism activities; (3) implementing a public outreach and education program based on the results of the social science and fisheries surveys; and (4) training AMRD enforcement personnel.

To develop the outreach and education program, the AMRD biologist, in coordination with NMFS, would specifically focus on contracting with a company(ies): (1) to conduct a systematic fisheries science survey to characterize dolphin interactions with commercial and recreational fisheries; and (2) to conduct social science studies (e.g. interviews, focus groups) to characterize the nature and extent of illegal feeding and harassment activities in Alabama state waters by user group. Conducting the fishery surveys and social science studies would help inform the identification, development, and implementation of ways to reduce harmful interactions with dolphins, including outreach and education.

Project Timeline. This project is proposed to support 4 years of implementation. Year 1 would be used to (1) hire and train a biologist, (2) develop initial partnerships with local and federal stakeholders, and (3) develop and print enforcement training materials. Training AMRD law enforcement officers on the MMPA and safe marine mammal viewing practices would likely occur in the winter of years 2, 3, and 4, with the bulk of training in year 2 and supplemental training provided in years 3 and 4, as updates to viewing practices are added, and as potentially new harmful fisheries and viewing interactions are discovered. The biologist would contract with a company (or companies) to conduct social science and systematic fisheries surveys in years 2-3. These surveys would inform the development of a targeted outreach program, which would be developed and implemented by the biologist in years 3 and 4. Additional MMPA-related patrols would be conducted throughout the project life.

18. Colonial Nesting Wading Bird Tracking and Habitat Use Assessment – Two Species

Project Summary. This project would initiate monitoring studies expected to inform and enhance future restoration planning for key colonial nesting wading bird species along the Alabama coast that were injured by the DWH oil spill. The goals of the monitoring are to better understand the extent to which declines in colonial nesting wader populations result from habitat limitations versus other potential causes such as increased prevalence of predators or human disturbance. The proposed study would (1) determine daily and seasonal movements among nesting colonies at three important breeding areas—Mississippi Sound, Gaillard Island, and Perdido Bay; (2) determine seasonal and annual home ranges for birds marked at sites identified above and document fidelity to specific nesting colonies, dispersal timing, and regional dispersal among known breeding colonies within the study area; (3) document average foraging distances, time away from nests, and important foraging areas within the study area; and (4) determine weekly and seasonal habitat use within the study area. This project alternative would sample only two species to provide information that is of comparable value in characterizing colonial wading bird



movements, habitat use and survival. The project would include 30 satellite tags per species (120 total) and 50 VHF per species (100 total)

Project Implementation. This project proposes a telemetry tracking study of the movements of two wading bird species breeding along the Alabama coast. Target species include tricolored heron and either little blue heron or white ibis, based on additional recommendations from Trustee bird experts. The proposed 4-year study would employ a combination of satellite and VHF transmitters in conjunction with color leg-banding to generate the monitoring data to help elucidate limiting habitat components for these species.

Project Timeline. Banding permits and state/federal scientific permits are required to capture, handle, and mark birds. Researchers would be required to supply applicable Institutional Animal Care and Use Committee permits before work begins. Satellite tags are custom built and would take approximately 3 months upon receipt of funds for tags to be acquired for deployment. Bird captures would begin the first breeding season after project funding and mobilization.

19. Oyster Cultch Relief and Reef Configuration

Project Summary. The AMRD is proposing to investigate the merits of deploying different types of cultch material in various configurations to facilitate positive settlement and growth of oysters on selected reef areas in Mobile Bay, Alabama, building on work they previously conducted with DISL. This project has three primary objectives: (1) determine if there are differences in oyster settlement, growth, and survival on reefs of differing levels of relief and/or orientation relative to currents, (2) determine optimum reef material relief needed to restore oyster density on specific reefs within historical reef areas in which hydrology parameters such as oxygen and salinity and oyster recruitment and survival are highly variable, and (3) estimate the cost/benefits of deploying cultch in certain configurations as opposed to traditional cultch broadcast methods. AMRD experts expect this alternative would provide useful insights into improving methods for locating cultch sites in coastal Alabama similar to other studies that have been conducted (Gregalis et al., 2008), selecting appropriate cultch materials, and constructing reefs with the most effective degree of relief.

Project Implementation. The construction phase of the project would include the deployment of oyster shell, limestone rock, and fossilized oyster shell in three experimental configurations including mounding, elongated furrows, and control plots using typical cultch broadcasting methods. Within the designated area(s), nine mounds, six furrows, and six control plots would be created. Control plots would be created using traditional cultch broadcast methods at 100 percent 1-inch bottom coverage in the vicinity of experimental plots. Control plots would cover approximately the same area as the experimental plots. Final project site selection, cultch height, and reef area would be determined by the results of pre-monitoring surveys. For the purposes of this project, two sites have been tentatively selected for pre-monitoring surveys, including a 36-acre reef approximately 1 mile north-northeast of the mouth of East Fowl River, and Denton Reef (70 acres), located approximately 3 miles southeast of the mouth of East Fowl River. Physical conditions would determine which type of plot would be used in each project site. For example, previous physical data indicate dissolved oxygen at the benthic (bottom) interface at Denton Reef is consistently hypoxic (low oxygen) or anoxic (no oxygen) and not conducive to oyster growth. Therefore, using mounds at Denton Reef could place spat in areas of more suitable dissolved oxygen by elevating the oysters in the water column where dissolved oxygen is higher. Using this proposed design, nine mounds (three cultch treatments at three different depths and with three different cultch types) would be created at Denton Reef. Three control plots would be established at this site. The control plots would use traditional oyster shell cultch and broadcast methods.

On the proposed site near the mouth of Fowl River, six furrow sites would be created to evaluate the effects of relief, reef material, and orientation relative to currents on settlement, growth, and survivorship.



Three control plots using traditional cultch shell deployed in traditional 1-inch bottom coverage would be established at this site.

Following the construction phase these mounds and furrows and control plots would be monitored for oyster settlement and growth annually for 3 years. Individual mound construction including total area and maximum height would depend on the depth of the bottom in which it is placed to ensure compliance with the USACE authorized minimum clearance requirement depth. The area of the base of each mound would be calculated to support reef material to attain the desired relief. Length, height, and orientation of each furrow would also depend on depth and direction of currents at study site. It is anticipated that the width of each furrow would be approximately 2 feet wide, although the actual width would depend on the cascading effect of material deployed to a specific maximum height. Furrows would be planted a minimum of 2 feet apart.

Project Timeline. Planning, pre-monitoring, and site selection are anticipated to take 3 months (January–March of project year). The invitation to bid and bid process is anticipated to take 1 month (March of project year). Construction is anticipated to take 1 month and conclude by May of the first year. Construction would include acquiring, transporting, and deploying cultch material on areas and in configurations as determined by AMRD staff. It is anticipated that those selected to do the work would transport cultch by push boat and barge to the site and deploy the material off the deck using skid steers, excavator shovels, or high pressure water hoses. High pressure water hoses may only be used to distribute shell onto control plots.

20. Side-scan Mapping of Mobile Bay Relic Oyster Reefs (E&D)

Project Summary. This project would use sonar technology to identify benthic areas of mid- to lower-Mobile Bay that are suitable to support cultch material for oyster reef restoration. Depending on the side-scan results, these areas could be used to reestablish oyster populations through initial efforts to seed reef areas with hatchery-raised, high-density oyster spat setting. The project would survey the current extent and conditions of the relic oyster reefs identified in the 1968 reef surveys contracted by AMRD and other water bottoms not surveyed. Approximately 8,847 acres of non-contiguous, state-owned water bottoms have been identified for side-scan mapping in mid- to lower Mobile Bay based on a survey of living and relic oyster reefs conducted in 1968. An additional 5,153 acres of oyster bottoms have been identified in upper Mobile Bay to quantify the location and extent of existing oyster resources that contribute to larval production and recruitment to lower Mobile Bay oyster reefs.

Project Implementation. Side-scanning activities may be performed by an entity with side-scan sonar capabilities, in addition to AMRD staff. To identify priority areas for side scanning and for contract specifications, grids comprising 2 kilometers by 2 kilometers would be superimposed on a map of historical oyster surveys within Mobile Bay. Side scanning and image processing would occur during the following 4 months. Once completed, AMRD staff would verify the data from random areas in mapped areas with high reflectance via hand dredge and pole to confirm the extent of bottom hardness and sediment burden. The gathered information would be used to prioritize areas for future oyster reef restoration.

Project Timeline. The surveys are expected to be completed within 1 year. Afterward, the next 4 months of the project would entail project planning and identification of target areas for side-scan mapping and contract development. Side scanning and image processing would occur during the next 4 months. The final 4 months would consist of ground-truthing mapped areas. The overall project would last approximately 2 years.



21. Oyster Hatchery at Claude Peteet Mariculture Center – High Spat Production with Study

Project Summary. The proposed project would construct an oyster hatchery at the existing Claude Peteet Mariculture Center in Gulf Shores and would provide operation and maintenance funding for the facility for a 4-year project period. Additionally the project would result in the deployment of cultch material, including spat on shell, to areas identified as suitable for oyster growth. The 45-acre Claude Peteet Mariculture Center complex is located on the north side of the Gulf Intracoastal Waterway. The oyster spat produced from this project would be used for oyster restoration projects in Mobile Bay, which has experienced reduced oyster production compared to the early 20th century. This project would use information gained from mapping relic oyster reefs identified in the late 1960s. Information from areas mapped with side-scan technology in previous efforts and as part of another proposed project in this Restoration Plan would be assessed to determine suitability (i.e., hardness of bottom, sediment burden) for spat deployment. Side-scan images would be produced of water bottoms in areas recognized as conditionally approved for oyster harvest, while other areas would be identified in conditionally restricted or restricted waters. Images would direct where spat deployment would occur during each year of operation. Spat produced in the proposed hatchery would be deployed to both areas as conditions allow. Cultch material could also be deployed as needed.

Additionally, a comprehensive oyster restoration plan would be developed for coastal Alabama and funded through this restoration plan. The purpose of the comprehensive oyster restoration plan is to develop a long-term strategy to develop and sustain stable and resilient oyster populations in coastal Alabama. The plan would characterize local oyster populations, including an understanding of larval transport and recruitment trends, as well as environmental factors that affect them. The plan would aim to restore oyster abundance and spawning stock to support a regional oyster larvae pool sufficient for healthy recruitment levels to subtidal and nearshore oyster reefs. The plan would analyze existing literature, pull together data from previous and ongoing projects (including side-scan sonar, larval transport studies, and habitat suitability index), develop overall restoration goals and priorities, and provide specific recommendations to meet overall restoration goals and objectives.

Project Implementation. The proposed project would create an oyster hatchery at the existing Claude Peteet Mariculture Center in Gulf Shores and provide operation and maintenance funding for the facility for 4-year project period. A new greenhouse building is proposed for protecting the oyster hatchery tanks and equipment. The greenhouse would be approximately 60 X 96 feet (5,760 ft²) and constructed with sidewalls, ventilation, and mechanical devices to maintain temperature within the structure. The proposed greenhouse structure would have two bays (adjoining rooms) and would replace two of four existing greenhouses of the same dimensions. The proposed greenhouse would be on the footprint of the existing structure. As part of this proposed hatchery project, broodstock holding and spawning tanks and larvae settlement tanks, water chillers/heaters, pumps, air blowers, and filtration systems would be purchased and installed within or adjacent to the new greenhouse.

Additionally, an existing concrete pad at the AMRD office on Dauphin Island would be expanded to approximately 70 x 25 feet, and a roof structure would be constructed over the pad. The covered pad would contain a total of four settlement tanks (three existing, one new), to which water would be supplied from Little Dauphin Island Bay. The concrete pad is approximately 60 feet from the water source.

Oyster Culture: The project would entail acquisition of wild oyster broodstock from local waters and maintaining that broodstock in existing ponds at the Claude Peteet Mariculture Center. Before spring spawning, oyster broodstock would be gathered from the ponds and held in tank systems (within the newly constructed hatchery which is described below) where the temperatures would be held at levels to prevent spawning but maintain adult oysters in pre-spawning ripe condition. As needed, small batches of oysters would be retrieved from the holding tanks and induced to spawn in smaller temperature-controlled systems. Released eggs and sperm would be combined to produce fertilized larvae, which would be



moved into culture systems and fed daily rations of paste algae. These larvae would remain in the culture system for approximately 14 to 20 days until they develop into pediveligers (footed larvae). Once the larvae have reached the pediveliger state, they would be transferred to setting tanks where they would be given approximately 10 to 14 days to set on the provided substrate. During the setting period, spat would be fed live algae sourced naturally from brackish water sources. After the setting period, the cultch material and spat would be removed from the tanks and placed on a contracted barge for transport to suitable areas in Mobile Bay and Mississippi Sound identified by AMRD staff.

Hatchery Infrastructure: The proposed hatchery would install a static water culture system. This static water culture system consists of broodstock holding and spawning tanks, larvae settlement tanks, water chillers/heaters, pumps, air blowers, and filtration systems. Once the static water culture system is installed, the proposed oyster hatchery is anticipated to produce up to approximately 65 million 10-day-old spat (24-day-old oysters) each year.

In addition to the oyster culture facility at the Claude Peteet Mariculture Center, an additional settlement tank and a simple structure to cover existing and proposed additional settlement tanks, are proposed at the AMRD office on Dauphin Island. The current 50 x 20-foot concrete pad would be expanded to 70 x 25 feet, and a simple roof structure would be constructed to cover the 70 x 25-foot structure and protect the settlement tanks. Currently, three settlement tanks are in place at the existing concrete pad. The dimensions of each tank are 30 feet long x 4 feet high x 3 feet wide. The volume is approximately 2,693 gallons. Each settlement tank holds 20 cultch cages. Each cultch cage holds 0.38 cubic yard of cultch. The existing water intake and effluent pipes would likely be reconfigured to accommodate the additional tank.

Project Timeline. Within the first few months of the project, AMRD would hire one full-time biologist to oversee purchasing of equipment and installation of tanks, pumps, and the heater/chiller. Three biologist aides would be hired within 6 months of the project start to assist with hatchery infrastructure installation and spawning, larvae, and spat production. During years 2–4, a biologist aide within existing AMRD biological staff would be used during the summer to assist with oyster spat care and deployment. In addition, a portion of the operating budget would be set aside to pay for electricity, maintenance, replacement of equipment, and algae paste for larval culture.

Design and construction of the proposed additional settlement tank and simple structure to cover existing and proposed settlement tanks would likely take 6 months and occur during the first winter (non-spawning season) the project is funded.

Contracts would be developed during the first 3 months of the project for the greenhouse structure at the Claude Peteet Mariculture Center and barge transport of spat. The greenhouse is anticipated to be installed within 6 months (June assuming a January start date) and barge contracting would be completed within 8 months (August) of the start of the project. The tanks, heater chillers, and filtration would be purchased during the first 6 months and installed 3 months after the installation of the greenhouse. Oyster broodstock would be acquired in months 9 to 12 (September–December), and the first spawning cycle would begin around the fourth month (April) of years 2 through 4. The barge would be contracted for deployment to occur 4 days per month or 20 days per season during years 2 through 4.

The comprehensive oyster restoration plan would be developed within the first year after project funding.

22. Oyster Grow-Out and Restoration Reef Placement

Project Summary. This project would establish up to three protected oyster gardening grow-out areas located in Grand Bay, Portersville Bay, and Bon Secour Bay, and use these adult sized oysters for restoration reef placement. The project, to be conducted and managed by the Alabama Cooperative Extension System in coordination with its other oyster gardening activities, would grow out oysters to at least 1 year old, place these oysters on existing reef sites, including existing complementary living shoreline sites in Mobile Bay and Mississippi Sound as well as cultched sites, and identify and prioritize



future restoration reef locations (including nearshore living shorelines and intertidal reefs). Additionally, the project would include monitoring the success in terms of oyster survival and reproduction of both the grow-out areas and restoration sites to determine effective techniques to increase the sustainability of oyster populations in Alabama. This project would build on other efforts such as ACF's Oyster Shell Recycling Program and the Mobile Bay Oyster Gardening effort, which recently received approval to expand into Little Lagoon. It would also build on a recently completed NFWF-funded project that demonstrated successful plantings and subsequent spawning of advanced stock-sized oysters in Mobile Bay and Mississippi Sound can potentially reduce aggressive predation by oyster drills.

Project Implementation. Once the necessary permits are obtained, 12 to 20 pilings (12-inches diameter) would be pushed into the sediment, or if necessary, installed with a vibratory hammer. A wire or rope would connect the pilings, to which oyster baskets (cages) would be attached at regular intervals and hang, suspended in the water column. A single layer of oysters would be placed on the bottom of each oyster basket. Each site would occupy approximately 0.5 acre. The targeted volume of each grow-out site is 20,000–25,000 oysters using the Oyster Gardening program only, or 48,000–50,000 oysters per site when supplemented from the Auburn University Shellfish Lab hatchery.

Periodic maintenance may be necessary following severe weather events or other situations that would disturb the grow-out sites. If the structures were disturbed, they would need to be repaired and/or reinstalled. Further, the grow-out sites would be adaptively managed over time to retrofit the structures with the most effective predator controls.

Oysters would be grown at the selected grow-out sites for 1 year within suspended oyster baskets that would be installed on pilings. Each of the grow-out sites are on privately leased riparian areas and would be managed by the Auburn University Marine Extension and Research Center. Then, the cultch, live oysters, and spat on shell, would be transferred via boat from the grow-out sites to reefs, living shorelines, and intertidal areas that are located in waters classified as Conditionally Approved for oyster harvesting by the Alabama Department of Public Health: Seafood Division. The Alabama Cooperative Extension System would work with the AL TIG, AMRD, and other restoration practitioners to determine the need for additional locations for other oyster gardening program grow-out sites. If additional sites were needed, they would be identified in Mobile Bay, Bon Secour Bay, Mississippi Sound, and Perdido Bay.

Project Timeline. Planning and permitting is expected to take approximately 8 to 12 months. Installation and setup of the grow-out sites is expected to take approximately 6 months. Oysters would be grown at the selected grow-out sites for 1 year. Monitoring would be conducted for the duration of the project (approximately 5 years).



Summary of Coastal Zone Management Consistency Review for Proposed Projects:

The AL TIG's view of the principal enforceable policies of the ACAMP that are potentially applicable to the projects proposed in the RP II/EA and the basis of our determination of consistency with these policies is reflected in the following summaries:

1. Magnolia River Land Acquisition (Holmes Tract)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. Acquisition of the parcel would not violate any state air quality standards. The project would result in long-term beneficial impacts to water quality by preventing future development of the site.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and would have long-term beneficial impacts on wildlife and fisheries habitats by preventing development and restoring native vegetation and habitats on the parcel.

Provisions of ACAMP Considered Inapplicable to the Magnolia River Land Acquisition (Holmes Tract) Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Magnolia River Land Acquisition (Holmes Tract) project:

335-8-2-.02 Dredging and/or Filling

335-8-2-.03 Mitigation

335-8-2-.04 Marinas

335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures

335-8-2-.06 Shoreline Stabilization and Erosion Mitigation

335-8-2-.07 Canals, Ditches and Boatslips

335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes

335-8-2-.09 Groundwater Extraction

335-8-2-.10 Siting, Construction and Operation of Energy Facilities

335-8-2-.11 Commercial and Residential Development

335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

2. Weeks Bay Land Acquisition (East Gateway Tract)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. Acquisition of the parcel would not violate any state air quality standards. The project would result in long-term beneficial impacts to water quality by preventing future development of the site.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project



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would not adversely affect these resources and would have long-term beneficial impacts on wildlife and fisheries habitats by preventing development restoring native vegetation and habitats on the parcel.

Provisions of ACAMP Considered Inapplicable to the Weeks Bay Land Acquisition (East Gateway Tract) Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Weeks Bay Land Acquisition (East Gateway Tract) project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

3. Weeks Bay Land Acquisition (Harrod Tract)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. Acquisition of the parcel would not violate any state air quality standards. The project would result in long-term beneficial impacts to water quality by preventing future development of the site.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and would have long-term beneficial impacts on wildlife and fisheries habitats by preventing development restoring native vegetation and habitats on the parcel.

Provisions of ACAMP Considered Inapplicable to the Weeks Bay Land Acquisition (Harrod Tract) Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Weeks Bay Land Acquisition (Harrod Tract) project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)



4. Lower Perdido Islands Restoration Phase I (E&D)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The project would not violate any state air and water quality standards because only engineering and design activities are proposed at this time.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and would result in short- and long-term beneficial impacts to wildlife habitats during the interim by installing signage alerting visitors to nesting bird habitat and planting trees to enhance bird nesting habitat.

Provisions of ACAMP Considered Inapplicable to the Lower Perdido Islands Restoration Phase I (E&D) Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Lower Perdido Islands Restoration Phase I (E&D) project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

5. Southwestern Coffee Island Habitat Restoration Project-Phase I (E&D)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The project would not violate any state air and water quality standards because only engineering and design activities are proposed at this time.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and may result in long-term beneficial impacts to wildlife habitat because data collected from the study are expected to provide useful insights that would allow the TIG to more effectively target future active restoration measures designed to benefit colonial nesting birds in Alabama.



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Provisions of ACAMP Considered Inapplicable to the Southwestern Coffee Island Habitat Restoration Project- Phase I Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Southwestern Coffee Island Habitat Restoration Project- Phase I project:

335-8-2-.02 Dredging and/or Filling
335-8-2-.03 Mitigation
335-8-2-.04 Marinas
335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
335-8-2-.07 Canals, Ditches and Boatslips
335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
335-8-2-.09 Groundwater Extraction
335-8-2-.10 Siting, Construction and Operation of Energy Facilities
335-8-2-.11 Commercial and Residential Development
335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

6. Little Lagoon Living Shoreline

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats and motor vehicles during project implementation, would result in temporary adverse impacts on air quality, but these impacts would be negligible and would not violate any state air quality standards. Similarly, the project would cause short term adverse impacts to water quality resulting from increased turbidity during placement of coco coir logs and shoreline vegetation planting. However, any effects to water quality would be temporary and would not violate state water quality standards.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would result in temporary adverse impacts on previously impacted shoreline and estuarine habitat due to noise, increased human traffic and other temporary disturbances. Following construction, long-term impacts on habitat resulting from the project would be beneficial and would include stabilization of at least 2,200 feet of shoreline along Little Lagoon. Best Management Practices (BMPs) would be implemented to ensure that adverse impacts to wildlife and protected species are avoided or minimized. The AL TIG is currently in consultation with the Alabama State Historic Preservation Office (SHPO) to ensure that impacts to any cultural or archeological resources that may be present in the project area are avoided.

335-8-2-.06 Shoreline Stabilization and Erosion Mitigation

Pursuant to Ala. Admin. Code r. 335-8-2-.06 (1), bulkheads, the placement of rip-rap, and other structural shoreline armament shall not adversely affect hydrology or function of wetlands or submerged aquatic vegetation beds. Although the project would result in temporary adverse impacts to wetlands due to increased turbidity and other disturbances during project implementation, the project is expected to result in long-term beneficial impacts to wetlands by reducing erosion, restoring natural hydrological processes, and enhancing shoreline vegetation. No filling of wetlands would occur.



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Pursuant to Ala. Admin. Code r. 335-8-2-.06 (2), jetties, groins, breakwaters and like structures must protect an existing navigational channel or a use of regional benefit, and must not result in significant impacts to adjacent shorelines. The project would implement living shoreline techniques that use natural materials rather than hardened structures or barriers, strategically placed to provide protective erosion control management to restore natural habitat, functions, and processes.

Provisions of ACAMP Considered Inapplicable to the Little Lagoon Living Shoreline Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Little Lagoon Living Shoreline project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

7. Restoring the Night Sky – Assessment, Training, and Outreach (E&D)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The project would not violate any state air and water quality standards because it focuses on reducing light pollution on Alabama's sea turtle nesting beaches and does not include in-water work or the use of motorized equipment.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and would have long-term beneficial impacts on loggerhead sea turtle critical nesting habitat on Alabama beaches by reducing light pollution, which can disorient nesting turtles and hatchlings.

Provisions of ACAMP Considered Inapplicable to the Restoring the Night Sky – Assessment, Training, and Outreach (E&D) Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Restoring the Night Sky – Assessment, Training, and Outreach (E&D) project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes



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335-8-2-.09 Groundwater Extraction
335-8-2-.10 Siting, Construction and Operation of Energy Facilities
335-8-2-.11 Commercial and Residential Development
335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

8. Toulmins Spring Branch Engineering and Design (E&D)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The project would not violate any state air and water quality standards because only engineering and design activities are proposed at this time. The project is anticipated to result in long-term beneficial impacts to water quality because it would develop BMPs that would reduce nutrients and pollutants into Toulmins Spring.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources because only engineering and design activities are proposed at this time.

Provisions of ACAMP Considered Inapplicable to the Toulmins Spring Branch Engineering and Design Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Toulmins Spring Branch Engineering and Design project:

335-8-2-.02 Dredging and/or Filling
335-8-2-.03 Mitigation
335-8-2-.04 Marinas
335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
335-8-2-.07 Canals, Ditches and Boatslips
335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
335-8-2-.09 Groundwater Extraction
335-8-2-.10 Siting, Construction and Operation of Energy Facilities
335-8-2-.11 Commercial and Residential Development
335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

9. Fowl River Nutrient Reduction

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The Fowl River Nutrient Reduction project would not violate any state air or water quality standards. The project would result in long-term beneficial impacts due to water quality in the Fowl River watershed through improved land management practices that reduce nutrient and sediment runoff.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the



critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and would have long-term beneficial impacts on fisheries habitats due to reduced nutrient inputs, which are expected to improved water quality in the Fowl River watershed.

Provisions of ACAMP Considered Inapplicable to the Fowl River Nutrient Reduction Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Fowl River Nutrient Reduction project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

10. Weeks Bay Nutrient Reduction

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The Weeks Bay Nutrient Reduction project would not violate any state air or water quality standards. The project would result in long-term beneficial impacts due to water quality in the Weeks Bay watershed through improved land management practices that reduce nutrient and sediment runoff.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and would have long-term beneficial impacts on fisheries habitats due to reduced nutrient inputs, which are expected to improved water quality in the Weeks Bay watershed.

Provisions of ACAMP Considered Inapplicable to the Weeks Bay Nutrient Reduction Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Weeks Bay Nutrient Reduction project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction



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335-8-2-.10 Siting, Construction and Operation of Energy Facilities
335-8-2-.11 Commercial and Residential Development
335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

11. CAST Conservation Program

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The project would not violate any state air or water quality standards because it consists of the continuation and expansion of Alabama's existing sea turtle conservation program.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources and would have long-term beneficial impacts on threatened and endangered sea turtles and their critical habitat on Alabama beaches because the existing sea turtle conservation program would be continued and expanded.

Provisions of ACAMP Considered Inapplicable to the CAST Conservation Program Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the CAST Conservation Program project:

335-8-2-.02 Dredging and/or Filling
335-8-2-.03 Mitigation
335-8-2-.04 Marinas
335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
335-8-2-.07 Canals, Ditches and Boatslips
335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
335-8-2-.09 Groundwater Extraction
335-8-2-.10 Siting, Construction and Operation of Energy Facilities
335-8-2-.11 Commercial and Residential Development
335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

12. CAST Triage

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as excavators, dozers, loaders, trenchers, and dump trucks, would result in temporary adverse impacts on air quality, but these impacts would not violate any state air quality standards. The project could result in short-term adverse impacts to water quality in Cotton Bayou due to increased runoff during the initial stages of construction. BMPs would be implemented to ensure that impacts are minimized to the extent possible and violations of any state air or water quality standards are avoided.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the



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critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. Although the project would result in short- and long-term adverse impacts to wildlife habitat within the project footprint, impacts would be minimal because the project would be located on a previously disturbed site that does not provide high quality wildlife habitat. The project area does not contain designated critical habitat for any endangered or threatened species. BMPs would be implemented to ensure that any adverse impacts to wildlife or fisheries habitats are minimized to the extent possible. The AL TIG is currently in consultation with the Alabama SHPO to ensure that impacts to any cultural or archeological resources that may be present in the project area are avoided.

Provisions of ACAMP Considered Inapplicable to the CAST Triage Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the CAST Triage project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

13. CAST Habitat Usage and Population Dynamics

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats and motor vehicles during the study, would result in temporary adverse impacts on air quality, but these impacts would be negligible and would not violate any state air quality standards. This project would not result in any adverse impacts to water quality.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources because project activities would be limited to a study that would consist of mark and re-capture of sea turtles.

Provisions of ACAMP Considered Inapplicable to the CAST Habitat Usage and Population Dynamics

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the CAST Habitat Usage and Population Dynamics project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas

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335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
335-8-2-.07 Canals, Ditches and Boatlips
335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
335-8-2-.09 Groundwater Extraction
335-8-2-.10 Siting, Construction and Operation of Energy Facilities
335-8-2-.11 Commercial and Residential Development
335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

14. CAST Protection: Enhancement and Education

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats and motor vehicles associated with increased enforcement activities, would result in temporary adverse impacts on air quality, but these impacts would be negligible and would not violate any state air quality standards. This project would not result in any adverse impacts to water quality.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources because project activities would include increased enforcement and education and outreach programs. The project may result in long-term beneficial impacts to threatened and endangered sea turtles and their critical habitats in Alabama due to enhanced public awareness and increased enforcement.

Provisions of ACAMP Considered Inapplicable to the CAST Protection: Enhancement and Education Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the CAST Protection: Enhancement and Education project:

335-8-2-.02 Dredging and/or Filling
335-8-2-.03 Mitigation
335-8-2-.04 Marinas
335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
335-8-2-.07 Canals, Ditches and Boatlips
335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
335-8-2-.09 Groundwater Extraction
335-8-2-.10 Siting, Construction and Operation of Energy Facilities
335-8-2-.11 Commercial and Residential Development
335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

15. Enhancing Capacity for the Alabama Marine Mammal Stranding Network

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with

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the ACAMP. The use of criteria pollutant generating equipment, such as boats and motor vehicles associated with stranding response activities, would result in temporary adverse impacts on air quality, but these impacts would be negligible and would not violate any state air quality standards. This project would not result in any adverse impacts to water quality.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project could result in short-term adverse impacts on beaches or other coastal habitats where marine mammal strandings and associated response activities typically occur. All potential impacts would be temporary, resulting from boat traffic, noise, and human presence during stranding response, and conditions would quickly return to baseline upon completion of stranding response activities.

Provisions of ACAMP Considered Inapplicable to the Enhancing Capacity for the Alabama Marine Mammal Stranding Network Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Enhancing Capacity for the Alabama Marine Mammal Stranding Network project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

16. Assessment of Alabama Estuarine Bottlenose Dolphin Populations and Health

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats during sample collection activities, would result in temporary adverse impacts on air quality, but these impacts would be negligible and would not violate any state air quality standards. This project would not result in any adverse impacts to water quality.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources because project activities would be limited to sample collection and data analysis.

Provisions of ACAMP Considered Inapplicable to the Assessment of Alabama Estuarine Bottlenose Dolphin Populations and Health Project



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The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Assessment of Alabama Estuarine Bottlenose Dolphin Populations and Health project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

17. Alabama Estuarine Bottlenose Dolphin Protection: Enhancement and Education

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats and motor vehicles associated with increased enforcement activities, would result in temporary adverse impacts on air quality, but these impacts would be negligible and would not violate any state air quality standards. This project would not result in any adverse impacts to water quality.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources because project activities would include increased enforcement and education and outreach programs. The project may result in long-term beneficial impacts to bottlenose dolphins and their habitats in Alabama due to enhanced public awareness and increased enforcement.

Provisions of ACAMP Considered Inapplicable to the Alabama Estuarine Bottlenose Dolphin Protection: Enhancement and Education Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Alabama Estuarine Bottlenose Dolphin Protection: Enhancement and Education project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development

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335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

18. Colonial Nesting Wading Bird Tracking and Habitat Use Assessment – Two Species

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats and motor vehicles during bird banding, satellite tagging, and other data collection activities, would result in temporary adverse impacts on air quality, but these impacts would be negligible and would not violate any state air quality standards. This project would not result in any adverse impacts to water quality.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources because project activities would be limited to data collection to better understand movement and habitat use among colonial nesting wading bird species in Alabama. Results from this project would assist the AL TIG in planning more effective restoration of bird species injured in the DWH spill in Alabama, potentially resulting in long-term beneficial impacts to their habitats.

Provisions of ACAMP Considered Inapplicable to the Colonial Nesting Wading Bird Tracking and Habitat Use Assessment – Two Species Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Colonial Nesting Wading Bird Tracking and Habitat Use Assessment – Two Species project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

19. Oyster Cultch Relief and Reef Configuration

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats, barges, skid steers and excavator shovels, would result in temporary adverse impacts on air quality, but these impacts would not violate any state air quality standards. The project would result in short-term adverse impacts to water quality due to increased turbidity during deployment of oyster cultch material. Turbidity would return to



baseline levels following cultch placement. BMPs would be implemented to ensure that impacts are minimized to the extent possible and violations of any state air or water quality standards are avoided.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would have short-term adverse impacts on fisheries and wildlife habitats due to noise and a temporary increase in turbidity during cultch deployment. However, the proposed project would be expected to result in long-term, beneficial impacts on wildlife and fisheries habitats because it would create or enhance oyster reef habitat in Mobile Bay. BMPs would be implemented to ensure that adverse impacts to wildlife and protected species are avoided or minimized. The AL TIG is currently in consultation with the Alabama SHPO to ensure that impacts to any cultural or archeological resources that may be present in the project area are avoided.

335-8-2-.02 Dredging and/or Filling

Ala. Admin Code r. 335-8-2-.02 contains a number of requirements for projects which include the dredging and filling of State water bottoms. The proposed Oyster Cultch Relief and Reef Configuration project would place oyster cultch material at two sites in Mobile Bay. Deployment of oyster cultch is an approved activity by USACE under a Nationwide Permit. Although the project may cause short term impacts to water quality resulting from increased turbidity, any effects to water quality will be temporary and the proposed project is not expected to adversely impact existing natural oyster reefs, submersed grassbeds, or wetlands. The project would enhance existing oyster reefs resulting in long term beneficial impacts to oysters and oyster reef habitats. Data collected from the project would help to inform the most productive and cost effective method(s) for conducting larger scale restoration of Alabama's oyster reefs.

Provisions of ACAMP Considered Inapplicable to the Oyster Cultch Relief and Reef Configuration Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Oyster Cultch Relief and Reef Configuration project:

- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

20. Side-scan Mapping of Mobile Bay Relic Oyster Reefs (E&D)

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of boats during mapping and ground-truthing activities would result in temporary adverse impacts on air quality, but these impacts would not violate any state air quality standards. Hand dredge and cane pole sampling could result in short-term adverse impacts on water quality due to



increased turbidity, but conditions would quickly return to baseline upon completion of sampling. The proposed project would not violate any state water quality standards.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would have short-term adverse impacts on fisheries and wildlife habitats due to noise and a temporary increase in turbidity during sampling activities. BMPs would be implemented to ensure that adverse impacts to wildlife and protected species are avoided or minimized. The AL TIG is currently in consultation with the Alabama SHPO to ensure that impacts to any cultural or archeological resources that may be present in the project area are avoided.

Provisions of ACAMP Considered Inapplicable to the Side-scan Mapping of Mobile Bay Relic Oyster Reefs (E&D) Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Side-scan Mapping of Mobile Bay Relic Oyster Reefs (E&D) project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

21. Oyster Hatchery at Claude Peteet Mariculture Center – High Spat Production with Study

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as barges, vehicles, and other equipment, would result in temporary adverse impacts on air quality, but these impacts would not violate any state air quality standards. The project would be located in upland areas and would not adversely affect water quality. Waste from the hatchery tanks would be collected, and would not be discharged into surrounding waters.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The project would not adversely affect these resources because it would be located in developed, unvegetated upland areas that do not provide suitable habitat for most native wildlife species, nor public access to recreational resources. The AL TIG is currently in consultation with the Alabama SHPO to ensure that impacts to any cultural or archeological resources that may be present in the project area are avoided.

335-8-2-.11 Commercial and Residential Development



Ala. Admin. Code r. 335-8-2-.11 contains requirements for coastal construction and development projects. This proposed project will be in compliance with the requirements of these regulations. New construction would be limited to a greenhouse facility to be located on the site of the existing Claude Peteet Mariculture Center and expansion of an existing concrete pad to a total area of 500 square feet. The project would have no effect on wetlands. Because new construction proposed under the project would not exceed five acres, a permit would not be required.

Provisions of ACAMP Considered Inapplicable to the Oyster Hatchery at Claude Peteet Mariculture Center – High Spat Production with Study Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Oyster Hatchery at Claude Peteet Mariculture Center – High Spat Production with Study project:

- 335-8-2-.02 Dredging and/or Filling
- 335-8-2-.03 Mitigation
- 335-8-2-.04 Marinas
- 335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures
- 335-8-2-.06 Shoreline Stabilization and Erosion Mitigation
- 335-8-2-.07 Canals, Ditches and Boatslips
- 335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes
- 335-8-2-.09 Groundwater Extraction
- 335-8-2-.10 Siting, Construction and Operation of Energy Facilities
- 335-8-2-.11 Commercial and Residential Development
- 335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

22. Oyster Grow-Out and Restoration Reef Placement

335-8-2-.01 General Rules Applicable to all Uses Subject to the ACAMP

Pursuant to Ala. Admin. Code r. 335-8-2-.01 (1), all uses subject to the ACAMP that are in violation with applicable state air and water quality standards shall not be permitted or certified to be in compliance with the ACAMP. The use of criteria pollutant generating equipment, such as boats and barges, during project implementation and maintenance activities would result in temporary adverse impacts on air quality. The project would result in short-term adverse impacts to water quality due to increased turbidity during the installation of piles and oyster grow-out baskets, monitoring and maintenance activities, and deployment of oysters and cultch material on other restoration reef sites. BMPs would be implemented to ensure that impacts are minimized to the extent possible and violations of any state air or water quality standards are avoided.

Pursuant to Ala. Admin. Code r. 335-8-2-.01(2), uses subject to the ACAMP shall not have an adverse impact on historical, cultural or archeological resources, on wildlife and fisheries habitats (especially the critical habitat of endangered species listed pursuant to 16 U.S.C. §§ 1531-1543), or on public access to tidal and submerged lands, navigable waters, beaches and other public recreational resources. The proposed project would result in short-term adverse impacts to unvegetated soft-bottom fisheries habitats due to increased noise, vibration, increased turbidity, and visual disturbances during project construction, monitoring, and maintenance. BMPs would be implemented to ensure that adverse impacts to wildlife and protected species are avoided or minimized. The project would result in long-term, beneficial impacts on oyster reef habitat because oysters placed at the sites would enhance spat production, potentially increasing oyster abundance and recruitment in Alabama waters. The presence of the pile-supported grow-out structures would impose a small limitation on public access to tidal and submerged lands, but the restricted area would be minimal in comparison to the large amount of surrounding submerged lands



accessible by the public. The AL TIG is currently in consultation with the Alabama SHPO to ensure that impacts to any cultural or archeological resources that may be present in the project area are avoided.

335-8-2-.02 Dredging and/or Filling

Ala. Admin Code r. 335-8-2-.02 contains a number of requirements for projects which include the dredging and filling of State water bottoms. The proposed Establishment of Protected Oyster Gardening Program Grow-Out Areas project would place oysters and oyster cultch material at various restoration reef sites in Alabama state waters. Deployment of oysters and oyster cultch is an approved activity by USACE under a Nationwide Permit. Although the project may cause short term impacts to water quality resulting from increased turbidity, any effects to water quality will be temporary and the proposed project is not expected to adversely impact existing natural oyster reefs, submersed grassbeds, or wetlands. The project would enhance existing oyster reefs resulting in long term beneficial impacts to oysters and oyster reef habitats.

335-8-2-.05 Piers, Docks, Boathouses, and Other Pile Supported Structures

Ala. Admin Code R. 335-8-2-.05 contains a number of requirements for projects which include piers, docks, boathouses, and other pile supported structures. The proposed project would construct oyster grow-out areas, consisting of suspended oyster baskets that would be installed on pilings, at up to three sites in Alabama state waters. At each grow-out site, pilings would be installed to support the suspended oyster baskets. Each grow out site is approximately 0.5 acres and 12-20 total pilings per site would need to be installed to support grow-out installation. The pile-supported oyster grow-out structures would not alter natural hydrology at the sites, and would not affect wetlands or submerged grassbeds.

Provisions of ACAMP Considered Inapplicable to the Oyster Grow-Out and Restoration Reef Placement Project

The following additional elements of the ACAMP were considered but, based on our review, did not appear to be applicable to the Oyster Grow-Out and Restoration Reef Placement project:

335-8-2-.03 Mitigation

335-8-2-.04 Marinas

335-8-2-.06 Shoreline Stabilization and Erosion Mitigation

335-8-2-.07 Canals, Ditches and Boatslips

335-8-2-.08 Construction and Other Activities on Gulf Beaches and Dunes

335-8-2-.09 Groundwater Extraction

335-8-2-.10 Siting, Construction and Operation of Energy Facilities

335-8-2-.11 Commercial and Residential Development

335-8-2-.12 Discharges to Coastal Waters (greater than 1 million gallons per day)

Conclusion:

Based on this review, the Federal Trustees find the Draft RP II/EA to be consistent with the federally-approved ACAMP. This letter submits that determination for review by the State coincident with public review of this document.

The Federal Trustees are requesting and would deeply appreciate a response to this determination of consistency as soon as is practicable. We thank you in advance for your efforts to accommodate this request.



United States Department of Agriculture

Sincerely,

A handwritten signature in black ink that reads "Homer L. Wilkes". The signature is written in a cursive, flowing style.

Dr. Homer L. Wilkes, Director
Gulf Coast Ecosystem Restoration Team