

**Florida Gulf of Mexico
Natural Resource Restoration Plan**

Summary of Commitments and FWC Potential Projects

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Florida Gulf of Mexico

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FWC Potential Projects

Proposed Project or Program: **Establish a Gulf Marine Fisheries and Habitat Enhancement Network for the Gulf of Mexico**

1) Project description, including location

This project would construct a network of three marine fish hatcheries and habitat restoration centers on the Gulf Coast of Florida. This hatchery network will provide the foundation for sustaining and enhancing marine fisheries resources that are vital to the nation's largest recreational fishing industry. This industry contributes in excess of \$5 billion annually to the Gross State Product and is a major factor in Florida's boating, angling and tourism economies. The hatchery network would be a major investment in sciences of marine fisheries research, aquaculture, and management. It would provide innovative solutions by employing new aquaculture science and technologies to directly benefit the recreational fishing industry and the many small businesses such as marinas, boat dealerships, hotels and restaurants that depend heavily on this industry. These centers would also serve as focal points for regional outreach and education efforts promoting recreational fishing and the importance of healthy coastal ecosystems.

The Pensacola hatchery will use innovative technologies to spawn and raise popular sportfish species (e.g. red drum, spotted seatrout, red snapper) for stocking. The Walton County center will complement the Pensacola operation by providing large scale grow-out facilities to grow a portion of the fish spawned at Pensacola to larger sizes for stocking. The Walton County center will also contain specialized marine/estuarine plant nurseries which will provide source material for restoration projects, a water quality laboratory to support a highly successful monitoring partnership (the Choctawhatchee Bay Alliance), and a facility for recycling oyster shell. The sportfish enhancement research center in Tampa Bay will replace the current FWC Stock Enhancement Research Facility (SERF) located at Port Manatee. The new Tampa Bay facility will be located at Apollo Beach and form a cornerstone of a new partnership with FWC, TECO and the Florida Aquarium. In addition to the proposed hatchery, the new energy and conservation park will contain renewable energy exhibits, coral nurseries and quarantine facilities for Aquarium exhibits, and an FWC Youth Conservation Network facility. The Tampa Bay hatchery will provide a state of the art center for the development of innovative sportfish culture methodologies to support future enhancement efforts.

Phase I funding for the Pensacola project is pending contingent on final approval by the trustees and BP. This proposal includes additional funding to expand the Pensacola hatchery production capability and include educational exhibits and visitor amenities.

Funding is also requested to conduct a large scale project focusing on the contribution of stocked fish to recreational fisheries including catch rates, angler participation, and economic impact to local communities. This study will be the first of its kind to comprehensively evaluate the effectiveness of stocking programs as a fishery management tool in estuarine and marine ecosystems.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

Planning and Construction

Pensacola Fishery Enhancement Center (Phase II)	\$12 million
Walton County Enhancement Center	\$15 million
Tampa Bay Sportfish Enhancement Research Center	\$20 million
Subtotal	\$47 million

Operational Costs

Pensacola Fishery Enhancement Center (\$800,000 annually for five years)*	\$4 million
Walton County Enhancement Center (\$600,000 annually for ten years)	\$6 million
Tampa Bay Sportfish Enhancement Research Center (\$300,000 annually for ten years)**	\$3 million

***The pending Pensacola Phase I project includes five years operational funding in the request*

**The bulk of the operational costs for the Tampa Bay facility will be funded through current programs.*

Subtotal \$13 million

Total Project Costs \$60 million

3) Duration of project or program

Ten years of operational funds are requested. The facilities have an expected operational lifespan of 25 years.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat**
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources**
- d. Enhance Community Resilience**
- e. Restore and Revitalize the Gulf Economy**

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FWC Potential Projects

Proposed Project or Program: **A Comprehensive Fisheries Monitoring and Research Program for the Gulf of Mexico**

1) Project description, including location

Impacts of the Deepwater Horizon disaster (DWH) on Gulf of Mexico fishery resources remain largely undetermined. Consensus among scientists is that potential long-term effects will require development of a rigorous and comprehensive fishery-independent data collection program. Assessments of Gulf of Mexico fisheries have historically relied heavily on harvest data collected from the fishery (i.e., fishery-dependent data), although limitations and biases inherent to these data are admittedly a major source of uncertainty in current assessments. Concerns brought up by the DWH have heightened awareness of these deficiencies and highlighted a critical need for research and monitoring data that reflect the status of fish populations as a whole, rather than just the portion of the population taken in the fishery. Existing fishery-independent surveys—conducted or coordinated by the National Marine Fisheries Service—target various habitats, species, and life history stages but lack the geographic coverage and sampling intensity needed to support expanded and more robust stock assessments. The five Gulf States, the National Marine Fisheries Service (NMFS) and a number of universities have partnered to develop a long-term (ten year) fisheries independent monitoring plan for the Gulf of Mexico. This survey will provide data required to meet a variety of emerging needs including single-species stock assessment, ecosystem-based fisheries management, and Deepwater Horizon impact assessment.

The approach of the long-term monitoring program is two-fold: 1) current fishery independent surveys would be modified/expanded in order to gain a more ecosystem-level perspective to better assess the Gulf for possible lingering effects of the DEEPWATER HORIZON incident; and 2) new surveys would be developed to gain a better understanding of the ecosystem not currently surveyed.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

The total budget for all proposed Florida activities is \$40,000,000 over a period of 10 years.

Labor and Benefits - A total of 20.5 full-time staff will be hired to support the proposed surveys, data processing, sample processing, data analysis, and write-up - \$13,800,000 over ten years.

Vessel Costs – Vessel costs vary by survey depending on the vessel used. Overall, vessel costs are \$14,650,000 over the ten year period.

Supplies, Travel and Equipment - \$11,550,000 over the ten year period

The total budget for all proposed activities Gulfwide is \$331,400,000 over a period of 10 years. Following is the budget breakdown by partner:

Florida:	\$40,000,000
Alabama:	\$6,200,000
Mississippi:	\$78,000,000

Louisiana:	\$35,000,000
Texas:	\$1,200,000
NMFS:	\$171,000,000
Total:	\$331,400,000

3) Duration of project or program

Ten years.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat**
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources**
- d. Enhance Community Resilience**
- e. Restore and Revitalize the Gulf Economy**

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FWC Potential Projects

Proposed Project or Program: Ecosystem Services: Cooperative Conservation Blueprint

1) Project description, including location

Providing incentives to private landowners for conserving ecosystem services has been identified as a way of conserving critical landscapes, habitats, and wildlife species. Florida has been working on development of a Cooperative Conservation Blueprint (CCB). The core concept of the CCB is to work with interested citizens, private landowners, non-governmental organizations, and local, state, and federal governments to create a consensus vision with associated policies and incentives for the most important landscapes to conserve in Florida. To this end, a broad array of partners have worked together to create the Critical Lands and Waters Identification Project. This project, or CLIP as it is known, takes all of the best available statewide science and merges it into a single, unified map of the critical conservation landscapes in the state. CLIP ranks these landscapes based on priority from P1 to P5, with P1 lands being the most critical. Along with CLIP, partners have been working to identify, modify, and create new policies and incentives to enable the conservation of the priority lands identified in CLIP while respecting and working within private landowner rights and needs. An emerging idea that enjoys widespread support is to focus on water storage to protect waterways and estuaries. This project will enable payment to landowners to provide ecosystem services that will benefit and improve the health of the Gulf of Mexico.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

The costs necessary to implement the CCB program statewide totals **\$25 million** for an endowment fund that would provide approximately \$1 million a year in interest that would enable payment for ecosystem services of \$10 per acre for the highest priority lands within 20 miles of the Gulf coast identified in CLIP 2.0.

3) Duration of project or program

More than 15 years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience

e. Restore and Revitalize the Gulf Economy

This program would benefit all of the above areas, with the primary benefit being the enhancement of community resilience through conservation and management of private lands that are critical to the health of fish and wildlife in Florida

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FWC Potential Projects

Proposed Project or Program: Coastal Wildlife Conservation Initiative (Comm Resilience #3)

1) Project description, including location

Many species depend up Florida's coastal areas for all or part of their life cycle. These areas also are sites that many coastal residents and visitors enjoy for recreation. Pressures on coastal resources have led to the declining populations of many species such as shorebirds, sea turtles, and beach mice. An integrated approach that focuses on wildlife and habitat needs as well as socio-economic issues, and includes participation by partners and input from stakeholders is needed to address, in a balanced way, the range of activities that impact coastal wildlife.

The CWCI is an FWC-led multi-agency strategy which aims to develop such an integrated approach. The Initiative will address threats to coastal wildlife and habitats, while considering human interests and uses of Florida's coastal areas. The goal is a statewide, cooperative process to: protect coastal wildlife populations, conserve and manage coastal ecosystems, and achieve balance between conservation and opportunities for recreation, commercial activities, and responsible development. The CWCI will build a collaborative forum for local, state and federal government agencies, conservation groups, and coastal businesses to work together to address threats to coastal wildlife while still meeting their economic and public use goals. The structure, consisting of local working groups and a guiding team, will allow for "bought-in" solutions to current and emerging issues on both a local and statewide scale. To begin achieving these goals, the CWCI has secured grant funding for a coordinator to lead the external development of the CWCI, and two additional grants to address sea level rise and to coordinate the management of Critical Wildlife Areas. The Sea Level Rise program is managed jointly with the University of Florida's Sea Grant program to incorporate sea level rise response into the activities of both Sea Grant and the FWC. The Critical Wildlife Area program identifies and manages sites critical for congregating wildlife, primarily shorebirds, seabirds, and waterbirds, during all or part of their life cycle. Current grant funding is limited to a two-year period; maintaining and funding the coordinator position and the additional programs for a longer period is critical to achieving the CWCI goals.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

The total project cost is **\$5,000,000**. This includes operational costs (salaries, indirect costs associated with salaries, travel, training, office space, general expense, and meeting costs) and capital cost for a vehicle.

CWCI Coordinator

CWA (Critical Wildlife Area) Coordinator

SLRP (Sea Level Rise Planning) Coordinator

Development of a volunteer-based shorebird monitoring organization similar to the sea turtle group

3) Duration of project or program

15 years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience**

- e. Restore and Revitalize the Gulf Economy

This program would benefit all of the above areas, with the primary benefit being to enhance community resilience through community involvement in replenishing and protecting living coastal and marine resources through enhanced conservation and management of coastal resources. CWA's protect areas critical for congregating wildlife, and this program includes components to manage CWA's to improve use by shorebirds and seabirds. Incorporating sea level rise planning into county comprehensive plans, Sea Grant programs, and FWC management planning will also enhance community resiliency.

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FWC Potential Projects

Proposed Project or Program: Implement a Prescribed Fire Ecosystem Resiliency Program on Florida's Gulf Coast

1) Project description, including location

Based on data recently released by the Florida Natural Areas Inventory, Florida currently has approximately 8,346,600 acres of lands dependent upon burning (pyrogenic) to maintain their function. Prescribed fire is the most cost-effective tool to promote ecosystem health and to reduce hazardous fuel buildups. Florida leads the nation in prescribed fire law, training, and application. Private and public land managers in Florida do a heroic job of implementing prescribed fire on as many of these acres as possible. However, budgets and staffing are limited and insecure.

This program would create a dedicated fund from which interest would be used to fund the gap between need and capacity for prescribed fire on private and public lands. On average, each acre of pyrogenic land in Florida needs to be burned every 3-5 years. This necessity translates into just over 2 million acres a year needing prescribed fire. Data from 2009 show that approximately 1.5 million acres were authorized for prescribed fire, leaving a gap of approximately 500,000 acres. This program would utilize the extensive infrastructure already in place in Florida for prescribed fire and bring dedicated money to ensure appropriate burn regimes on all pyrogenic lands.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

The request to implement the Prescribed Fire Ecosystem Resiliency Program on Florida's Gulf Coast totals **\$25 million** for an endowment fund that would provide approximately \$1 million a year in interest that would enable prescribed fire on approximately an additional 42,000 acres per year.

3) Duration of project or program

15 plus years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. **Restore and Conserve Habitat**
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources

d. Enhance Community Resilience

e. Restore and Revitalize the Gulf Economy

This program would enhance community resilience by focusing on the most important component of ecosystem health for most of Florida- prescribed fire.

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FWC Potential Projects

Proposed Project or Program: Conservation of state and federally listed coastal species

1) Project description, including location

Numerous coastal wildlife species are federally or state listed. Federal species have recovery plans outlining management, research, and other conservation actions that are needed to bring the species' back from the brink of extinction. Florida is completing development of Species Action Plans that will do the same for state listed species. Gulf coastal species include five species of sea turtles, four species of beach mice, numerous shore and wading birds, scrub jays, gopher tortoises, etc.

A comprehensive wildlife conservation plan for Florida's coastal wildlife species will be created in which species recovery and action plans activities will be collectively prioritized. Management, monitoring, and research activities will then be implemented under this project.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

These activities have been estimated to total \$400,000,000 but this project is requesting \$60,000, 000 to target the highest priority activities.

3) Duration of project or program

15 plus years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

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FWC Potential Projects

Proposed Project or Program: Non-native Species Management (Comm resilience #3)

1) Project description, including location

Because of its benign climate, long peninsular shape, proximity to Caribbean islands, and multiple hubs of international trade and transport, Florida is susceptible to invasion by exotic and other non-native species. Consequently, a robust program to assess potential threats, respond to incipient outbreaks, manage established non-native populations, and conduct applied research is needed. Currently, the Florida Fish and Wildlife Conservation Commission has created a focus on this issue, but staffing and resources are limited. The primary need is for availability of programmatic funds to target assessment and response to specific issues through contracting with existing outside agencies, organizations, and businesses.

Contractors would be used for control and management of non-native species. Rapid assessments would be contracted with local agencies, non-governmental organizations (NGOs), US Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS), or Florida Fish and Wildlife Research Institute (FWRI). USDA APHIS Wildlife Services would be a primary contractor for eradication and control of terrestrial species. Universities and other research institutions would be contracted to conduct directed research projects on problematic introduced species. Outreach specialists (marketers, communications experts) would formulate and implement programs to prevent introduction of non-native species.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

The costs necessary to implement the Non-native Species Project totals **\$10 million** for an endowment fund that would provide approximately \$500,000 a year in interest that would enable rapid assessment and response to non-native species outbreaks along Florida's Gulf coast.

3) Duration of project or program

20+ years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience

- e. Restore and Revitalize the Gulf Economy

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FWC Potential Projects

Proposed Project or Program: **Create Artificial Reefs along the Florida Gulf Coast for Public Fishing, Snorkeling and Diving**

1) Project description, including location

The intent of the proposed artificial reef projects is to provide additional long term fishing and diving opportunities. In Florida, the state artificial reef program was legislatively created in 1980. The program is described in §379.249 Florida Statutes, operates under Chapter 68E-9 Florida Administrative Code, with staff located as a subsection within FWC's Division of Marine Fisheries Management. Florida's public artificial reefs are generally placed by commercial marine contractors selected through a competitive bid process and subcontracted by a local coastal government who is the permit holder of the reef area where the artificial reef will be constructed. Artificial reefs are enjoyed by thousands of visitors and residents of the Florida panhandle each year. Restoring and constructing artificial reefs will be a means to compensate for recreational opportunities that were lost due to the Deepwater Horizon oil spill. These reefs will support eco-tourism and a range of human uses including: snorkeling, recreational fishing, kayaking, and scuba diving.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

This project provides \$5,000,000 annually in funding for artificial reef development and deployment for a period of ten years (\$50,000,000 total). The projects will be overseen by FWC, with local governments taking the lead on site-specific design, contracting and deployment.

3) Duration of project or program

Funding is requested for ten years. The reefs themselves are expected to last, on average, 20-25 years.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. **Replenish and Protect Living Coastal and Marine Resources**
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

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FWC Potential Projects

Proposed Project or Program: Removal of derelict vessels (#5)

1) Project description, including location

This proposal is to assist in the removal of derelict vessels. This would be a damage mitigation project that would directly assist the environment of both affected and non affected areas of Florida's Coast. There are an estimated 1,500 derelict vessels in the State of Florida. Removal of these vessels from the waters of the state would benefit both the safety of the public and the quality of the marine environment and is crucial to the continued protection of Florida waters.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

Detection, processing and removal of all of these vessels would take approximately \$20,000,000 to complete.

3) Duration of project or program

6 years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience**
- e. Restore and Revitalize the Gulf Economy

The removal of derelict vessels not only reduces dangerous navigational hazards for the boating public but also removes hazards to the marine environment caused by the leaching of toxins, fuels, oils from these vessels as well as their damage to corals, sea grasses and general bottom habitat.

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FWC Potential Projects

Proposed Project or Program: Habitat preservation through Strategically Provided Boating Access (#5)

1) Project description, including location

Provide managed mooring fields to remote areas, small towns and cities, coastal state parks, coastal county parks, and small private marinas. Proposed areas include City of Carrabelle, Ochlockonee River/Bay, Keaton Beach, Horseshoe Beach, Crystal River, Charlotte Harbor, Marco Island, Ten Thousand Islands, Escambia County, Ft Myers, Naples, Ft. Walton Beach, Destin, Panama City, and Port St. Joe. These would be maintained for the state through cooperator agreements with the local areas. In addition this project would assist Gulf coast marinas with renovations that they have not been able to perform since the oil spill because of economic hardship from loss of business, oil spill damage, or other affects. Boat ramps will be repaired or constructed in Port St. Joe, St. Marks, and Walton County, and elsewhere.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

Construction costs and monitoring of mooring fields for 10 years is estimated to be \$20,000,000.

3) Duration of project or program

Construction to be approximately 2 years with maintenance and monitoring for a 10 year period.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Provide managed mooring fields in sensitive areas to protect seagrass and provide boaters the option to anchor in a managed field and attract visitors to the Gulf.

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FWC Potential Projects

Proposed Project or Program: Florida Youth Conservation Center Network

1) Project description, including location

The Florida Youth Conservation Centers Network is an FWC priority program to engage youth and their families in nature-based recreation, environmental stewardship, outdoor ethics, and conservation education. The FYCCN has eight major sites that are connected with over 50 partner sites. Many sites within affected counties in the Panhandle are involved and development of FYCCN elements would strengthen their effectiveness by reaching more youth and families.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

Total Costs -- \$7,500,000

Capital costs \$5,000,000 to build and enhance existing facilities

Operating costs \$2,000,00 for 10 years

Monitoring costs \$500,000 for 10 years

3) Duration of project or program

10 years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
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- d. Enhance Community Resilience**
- e. Restore and Revitalize the Gulf Economy

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FWC Potential Projects

Proposed Project or Program: Home and School Sites as Wildlife Habitat

1) Project description, including location The Home and School Sites as Wildlife Habitat Program provides homeowners, renters, businesses and schools with the tools and knowledge to transform their properties into habitat that benefit and attract native wildlife for the purpose of wildlife conservation, fostering stewardship ideals and enhancing wildlife viewing opportunities.

The program uses three FWC products– *Planting a Refuge for Wildlife*, *Schoolyard Ecosystems of Florida: A Guide for Planning, Installing, Maintaining and Using* and the *Wildlife Viewing Curriculum Guide*. (See elements of *Planting a Refuge for Wildlife* on MyFWC.com

<http://www.myfwc.com/viewing/adventures/wildlife-viewing-at-home/refuge/>)

Planting a Refuge for Wildlife targets an important audience – the residential wildlife viewer and provides the tools needed to take direct action to benefit fish and wildlife by designing and creating a native, wildlife-friendly habitat that provides year-round viewing opportunities on private property. Floridians will learn which plant and wildlife species thrive naturally in their environment, identify native species they want to attract, and create elements that enhance habitat for native wildlife. Materials will be customized for Gulf Coast counties. To implement the program with homeowners hard copies are needed as well as an interactive website and training.

Schools are major property owners in Florida and have the potential to restore natural ecosystems on a large amount of land throughout the state. Using FWC's *Schoolyard Ecosystems of Florida: A Guide for Planning, Installing, Maintaining and Using*, teachers, students and community members will receive the tools and knowledge to enhance or restore wildlife habitat on their school sites. Enhancing or restoring habitat on school sites presents information about Florida ecosystems, provides opportunities for parental and community involvement, provides a permanent site for environmental education and wildlife viewing, restores degraded habitat, instills a land ethic, reduces water used in landscaped area and improves the quality of water run-off. The new *Wildlife Viewing Curriculum Guide* will be used to teach students key wildlife viewing skills and ecological literacy. Materials will be customized for Gulf Coast counties.

Implementation includes conducting workshops with homeowners, renters, businesses and school staff (teachers, maintenance staff, principal), follow-up consultations, hard copies of print material and development of an interactive website.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

\$3million for staff, travel, materials, workshops, and program assessment

3) Duration of project or program

10 years.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Native ecosystems on school campuses or private property home sites can help conserve species of wildlife and plant life by providing viable habitats where they can thrive.

A home or schoolyard ecosystem is more than just a nature trail or a butterfly garden. A true home or schoolyard ecosystem is a restored habitat containing plants and animals native to the area in which the home or school is located. Recreating native ecosystems on Florida's home sites and school campuses benefits the environment, wildlife, homeowners, students and the community as a whole. Especially on school sites, habitat restoration is a unifying project that the entire community can become involved in and it provides a valuable learning tool for students at every stage of its development. Parents, businesses, and other segments of the local community can assist in the design, preparation, construction and/or maintenance of the site as well as use it for wildlife viewing or other recreational purposes.

Participants will learn just how connected we are to the environment and to each other. Through concrete examples and hands on experience, students and homeowners will learn the importance of restoring the respective habitats of various plants and animals. The Home and School Sites as Wildlife Habitat Program lets participants take responsibility for, and ownership of, a special piece of land on their campuses or at home, which helps foster a stewardship ethic and may improve their attitudes toward environmental issues. Those who participate can develop a greater sense of ethics when dealing with the environment directly, and will be better equipped to make responsible decisions about environmental issues in the future.

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FWC Potential Projects

Proposed Project or Program: **Wildlife Viewing and Wildlife-based Tourism Infrastructure Development**

1) Project description, including location

This project will enhance community resilience in Florida Gulf Coast counties by implementing a comprehensive strategy for fish and wildlife based tourism. The project will identify and develop physical infrastructure necessary to provide excellent wildlife viewing experiences while protecting fish and wildlife and their habitat; will enable communities to diversify their tourism offerings and grow jobs based on this sustainable resource; thereby creating an increased incentive to protect coastal habitats.

Project 1: Identifying and Implementing Site Improvements

Site amenities are an essential component of wildlife-based tourism. Interpretive kiosks educate the public and emphasize the importance of conserving and enhancing wildlife habitats. Trail and Viewing structures, as shown by a Great Florida Birding and Wildlife Trail Satisfaction Survey, are key to visitor satisfaction, providing the best possible viewing experience while decreasing the overall negative impact on the habitat and wildlife. Benches, covered seating areas, picnic tables, and ADA-accessible trails extend the use of the site to new demographic groups. Money will be used to implement identified site improvements.

Project 2: Development, printing and distribution of printed materials

The Florida Gulf Coast encompasses three sections of the Great Florida Birding and Wildlife Trail (GFBWT); Panhandle, West and South. This project will print and distribute copies of each sections dedicated guidebook containing information about each trail site. The guidebooks are an essential component of the GFBWT to inform, educate and promote the GFBWT program and the wildlife habitats and conservation lands it serves to thousands of people from all over the world. Additionally, tourists are making decisions on where to visit based on the availability of bird and animal checklists and educational materials.

Project 3: Community and Business Development Learning Opportunities

Many Gulf Coast community lack the information and support needed to realize the potential of economic gain possible from protecting vulnerable coastal and watershed habitats. To counter this barrier, FWC's Wildlife-based tourism workshops and on-line e-

learning opportunities will help Chambers of Commerce, Economic/Tourism Development Councils, and Cooperative Extension agents better understand how to market their cities and towns to birdwatchers and grow jobs while conserving wild spaces. By connecting conservation of natural areas to an economic gain, communities are more likely to conserve these critical habitats through more sustainable development practices. **Based on a successful model used with inland Counties, project 3 would be in cooperation with Texas A&M University and would promote Florida as a model for the complete Gulf Coast Area.**

Project 4: Website Support

Develop a fully mobile (HTML 5) website to cater to the wildlife viewing and nature-tourist. This website would contain all the information needed by the public to make informed decisions concerning their travel opportunities. Focusing on Great Florida Birding and Wildlife Trail sites, along with Wildlife Management Lands, the site would allow users to create individual trip plans and itineraries. These “trip tics” could be downloaded on mobile devices and used during their travels.

Project 5: Airport Informational Stations

VISIT FLORIDA research has indicated 84 million non-residential visitors, over 55% engage in some form of wildlife / habitat dependent recreation. Many of these participants made their recreation choices after entering Florida. To focus these visitors towards wildlife viewing and wildlife-based recreational opportunities, an airport informational kiosk will be placed in the 5 major Gulf Coast airports (Pensacola, Panama City, Tallahassee, Tampa, and Naples). These kiosks, similar to those placed by FWC in Bass Pro stores, will contain guide books, checklists, trip suggestions and an interactive computer linking to the trip planning website.

Project 6: Marketing the Gulf Coast to potential visitors.

Florida is the number one destination for the wildlife viewing public and continues to be popular among our international visitors. Even with the challenges facing the Gulf Coast region, birding and wildlife viewing opportunities are abundant. Through strategic marketing efforts, we can continue to grow visitation to the gulf region. Promotion of Florida as a wildlife tourism destination would be facilitated through the following:

- Articles and advertisements placed in major national and international bird watching magazines
- Placement of Florida wildlife viewing inserts in National Geographic, National Audubon, and major city newspapers
- Article and advertisements in airline based / in-flight magazines for both domestic and international carriers

- Exhibits at major travel shows nationally in New York, Illinois, Georgia, Nevada and internationally in Brazil, Great Britain and Germany
- Printed Advertisements for lighting-enabled information boards at airports (similar to those found at baggage claims)

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

\$8,000,000

3) Duration of project or program

Projects are based on a five year cycle including 12-18 months to implement projects and 36 – 42 months of monitoring and evaluation.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- Restore and Conserve Habitat**
- Restore Water Quality
- Replenish and Protect Living Coastal and Marine Resources
- Enhance Community Resilience**
- Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: Wildlife Viewing Areas on FWC Coastal Lands

1) Project description, including location

Design, permit and construct elevated walkways where needed through periodically wet hiking trails. Using partnerships, design, permit and construct fishing and bird and other wildlife viewing platforms. Projects will protect shoreline and wetlands by providing better access to resources while protecting sensitive shoreline and wetlands at this Great Florida Birding and Wildlife Trail Site located along the nationally designated Big Bend Scenic Byway and provide access for mobility impaired visitors.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

\$15,000,000

3) Duration of project or program

Projects should be completed within 3 years with an additional 5 years for maintenance.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. **Restore and Conserve Habitat**
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico

Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: **Natural shoreline protection for shoreline stabilization and ecosystem and shellfish restoration in Florida's Gulf coast estuaries**

1) Project description, including location

This project will provide a comprehensive science-based approach to restoration that includes pre-restoration monitoring to map and characterize remaining natural resources followed by development and implementation of restoration activities. Multiple partners (The Nature Conservancy, DEP, Florida SeaGrant, National Estuary Programs, University of Florida, FWC) in multiple areas (**Pinellas to Lee Counties, Big Bend, Pensacola Bay**) will develop living shorelines and oyster reefs to buffer storm events and restore ecosystems. The team will use the most appropriate methods to improve habitat for finfish and shellfish, restore forage and nesting areas for birds, reduce wave energy, shoreline erosion and turbidity, and stabilize sediments. This effort will restore hydrologic functions, shellfish, seagrass, and mangrove habitat in portions of Florida's Gulf coast estuaries. Oysters will be transplanted from waters classified as "prohibited " for shellfish harvesting in small creeks and rivers to open water sites (but not harvestable areas). These projects will serve to protect and improve water quality as well as provide community resilience by being the first line of defense from storms and storm surge.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring

Total Project: **\$42.4 million**

Pinellas to Lee Counties project: \$24.3 million

Pensacola Bay: \$16.7 million

Big Bend: \$1.4 million

3) Duration of project or program

The duration of the project is **5 years**.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience**
- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico

Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: **Establish a comprehensive coral reef and hardbottom assesment program for the Gulf of Mexico & Florida Keys**

1) Project description, including location

This program will expand an existing comprehensive coral monitoring program in the **Florida Keys** and **Dry Tortugas** and add hardbottom resources on the **West Florida Shelf** in the Gulf of Mexico, which are currently unmapped and largely undocumented. Benthic resources in the Gulf of Mexico and the Florida Keys include hard corals, soft corals, sponges, and other invertebrates critical for providing essential habitat and a prey source for fisheries. This program will provide annual information on the health and status of the benthic resources, will identify threats to the system, and will be integrated with existing fisheries management programs.

The Gulf of Mexico hardbottom sampling will be a collaborative effort between FWC and several subcontractors (e.g. University of South Florida, Mote Marine Laboratory). Sampling effort will be stratified by depth and regional allocation (e.g. 10-20m, 20-30m, 30-40m in the NW FL Shelf; 10-20m, 20-30m, 30-40m along the W Central FL Shelf, etc.) and will be divided into 4 regions (Panhandle, NW FL Shelf, W Central FL Shelf, SW FL Shelf). The spatial design of the program will include a mix of random stratified (25-50 sites per year) and fixed sites (96-144 per year) to discern Gulf-wide distributions and abundances of benthic organisms and to identify processes or stressors that occur at more regional scales. Sampling effort for fixed monitoring sites will target (*a priori*) sensitive and highly productive fishery habitats (e.g. FL Middle Grounds).

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

The total cost for this program is **\$10 million** or \$500,000 annually.

3) Duration of project or program

The duration of this program is **20 years**.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. **Restore and Conserve Habitat**
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico

Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: **Restore the Florida Keys water quality and coral reef ecosystems**

1) Project description, including location

The well-documented, widespread progressive degradation of the **Florida Keys** coral reef ecosystem has resulted in an ever-increasing acceptance by resource managers that direct intervention through the active restoration of this ecosystem's components is now necessary to reverse this trend. The U.S. Coral Reef Task Force has identified a reduction in land-based sources of pollution and active restoration of coral reefs as essential actions necessary to enhance community resiliency of coral reefs. In the Florida Keys, the joint EPA/FDEP/NOAA Water Quality Protection Program (WQPP) has directed extensive effort to reduce nutrient sources and enhance water quality. Simultaneously, an informal partnership has developed among multiple governmental and non-governmental organizations to conduct coral reef ecosystem restoration. To date, the WQPP's restorative efforts have focused on the implementation of a central sewer system to reduce nutrient input. However, the WQPP partners now recognize that the next action should be the restoration of the canal systems. Active restoration of coral reefs is still in its infancy, and present efforts have largely been centered on small-scale, predominately species-specific, projects. This project will build on these partnerships and restoration efforts. FWC scientists are participants in the WQPP Steering and Management Committees and are actively involved in existing coral reef restoration efforts that include managing a coral nursery and research related to the re-establishment of ecologically functional populations of long-spined urchins, a keystone coral reef herbivore.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring

The cost necessary to implement this effort is **\$50 million**. Approximately \$3.5 million per year will be apportioned to canal restoration, and \$1 million per year will be apportioned for coral reef restoration. The remaining \$0.5 million will support the performance monitoring of both restoration efforts.

3) Duration of project or program

The duration of this program would **10 years**.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality**
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico

Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: **Improve fisheries habitat management through integrated seagrass and coastal wetland assessment and restoration**

1) Project description, including location

The State of Florida has more than 2.3 million acres of seagrass, 739,000 acres of salt marsh, and 674,000 acres of mangroves. This highly collaborative program (currently over 60 partners) will produce updated maps of seagrass and coastal wetland abundance and distribution and conduct monitoring of seagrass and coastal wetland resources along the **entire Florida Gulf of Mexico coastline** to inform resource management actions. Mapping information will be updated every six years and monitoring information will be updated every 2 years. Comprehensive seagrass mapping and monitoring data was invaluable during the Deepwater Horizon Oil Spill (booming plans, response activities, damage assessments) and for evaluating response to management actions (nutrient reductions, prop scar avoidance actions, fish population fluctuations).

Seagrass restoration will occur in three Aquatic Preserves: **Alligator Harbor, St. Joe Bay, and St. Andrews Bay**. FWC and partners will survey seagrass injuries, will manufacture, fill and deploy sediment tubes to stabilize scars, and will place buoys around the restoration area to prevent re-injury. The project will include monitoring to determine long-term success and inform adaptive management. The boater outreach education component includes installing Shallow Seagrass Area signage, generating 2,500 brochures, installing education signage at 3-4 popular boat ramps, and providing community and volunteer opportunities.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring

The total cost of the project is **\$10 million**—\$7.5 million for the mapping and monitoring program and \$2.5 million for the Aquatic Preserves seagrass restoration.

3) Duration of project or program

This request is for **12 years**—the mapping and monitoring will be done in 2 six-year cycles and the restoration will be done in the first 3 years.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. **Restore and Conserve Habitat**
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience

- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: Land Conservation

1) Project description, including location

Throughout the Big Bend and Panhandle of Florida there remain extensive, unique natural communities that provide important fish and wildlife habitat and services to people. Many of these systems are relatively intact and under single or relatively few ownerships that interconnect and serve a significant role in maintaining the viability and productivity of the resource based economy of the region (e.g. fisheries). As a result of the high ecosystem values of these systems, they have been identified for protection by multiple agencies and nongovernmental organizations. The funds for this project would be applied to conserve and restore these landscape-level communities. There are a wide range of transactional methods to achieve the protection of these ecosystems. Although fee simple acquisition may be appropriate in a few places, this program would emphasize less than fee methods. A less than fee approach would look beyond the scope of traditional conservation easements, reserving rights for the fee owners to pursue a wide range of economic uses of the land that are compatible with the overarching ecological processes. Specific north central and north Florida projects that are currently listed by the Acquisition and Restoration Council's Florida Forever List and estimated costs are listed below (not in priority order). The project would rely and build upon the excellent foundation already in place in Florida developed by Preservation 2000, Florida Forever, and related programs. This infrastructure provides an efficient, effective means by which to achieve such large scale conservation that is not possible in other states. The project costs include acquisition costs, land management costs in perpetuity, and initial infrastructure development needs.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

Property	Acres	Acquisition, infrastructure, and mgmt costs
St Joe Timberland/St. Joe Bay Buffer/Lake Wimico	89,976 acres	\$369,504,000
Escribano Point	1,798 acres	\$ 7,517,600
Apalachicola River	16,010 acres	\$ 66,601,600
Aucilla River/Flint Rock	46,671 acres	\$194,151,360
Big Bend	10,519 acres	\$ 43,579,040

Box-R	1,445 acres	\$ 6,011,200
Charlotte Harbor Flatwoods/Yucca Pines	6,300 acres	\$ 26,208,000
Chassahowitzka WMA	6,844 acres	\$ 28,471,040
Florida Keys Ecosystem	6,235 acres	\$ 25,937,600
Shoal River Buffer	2,106 acres	\$ 8,760,960
Total: 187,904 acres		\$766,922,400

3) Duration of project or program

15 years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico

Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: **Repair damage to Panhandle river systems; restore damaged river banks, restore natural flow patterns, and reduce erosion and sedimentation**

1) Project description, including location

Florida has recently developed a basin approach to conserving freshwater resources. The core concept of this basin approach is that freshwater systems and the uplands that surround them need to be inventoried and managed to help preserve not only Florida's precious freshwater resources, but also the estuarine and marine systems into which they flow. A prioritized list of basins identifies 12 basins located around the State in need of conservation and restoration activities. This proposed project includes the assessment (4 basins) and restoration (6 basins) of the 6 conservation river basins along the Gulf coast, including the **Yellow, Choctawhatchee, Chipola, Apalachicola, Lower Ochlockonee, and Aucilla**. These HIC-8 watersheds need enhanced riparian buffers, floodplain reconnection, bank stabilization and erosion reduction, sediment removal, exotic species removal and revegetation. Partnerships with other state and federal agencies, non-governmental organizations and private citizens have been created to help implement these projects. Conducting these restoration projects will not only enhance habitat for fish and wildlife at the project site, but will also affect the ecosystem health throughout the basin.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring

4 additional assessments (\$2 million), implementation projects for 6 basins (\$75 million), and monitoring for 6 basins (\$3 million). The total cost for the six conservation basins would be **\$80 million**.

3) Duration of project or program

The duration of this program would be **15 years**.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality**
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: **Restore Water Quality through Land Management on Public Lands**

1) Project description, including location

Four areas in Florida's wildlife management area system – the Box-R, Apalachicola River, Aucilla and Big Bend – protect hundreds of miles of Florida's coastline and 195,910 acres of wildlife habitat adjacent to the coast. These areas are critical to sustaining a range of threatened and endangered species, and their habitats, they protect Florida's water quality, its coastal and marine resources and help support the local economies of these rural areas of critical economic concern.

These management areas were heavily impacted by past silvicultural practices negatively affecting hydrological regimes and water quality. This project will conduct: 1) hydrologic assessments to include historical hydrological patterns, current conditions and identify required restoration activities; 2) implement identified restoration activities; 3) monitor and evaluate restoration activities; and 4) modify restoration projects to meet hydrologic restoration objectives as needed.

2) Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

Total costs for the project are estimated at \$1.5 million. Additional breakdowns for each area can be provided if the project is selected.

Box R (11,216 acres in Franklin County) – Assessment complete. Project would consist of implementation, monitoring, evaluation and modification as necessary.

Apalachicola River (63,257 acres in Gulf and Franklin counties) Assessment and implementation is complete. Monitoring, evaluation and modification is needed.

Aucilla (46,261 acres in Jefferson County) – Assessment is complete. Implementation is underway. Monitoring, evaluation and modification is needed.

Big Bend (75,176 acres in Taylor and Dixie counties) Project would consist of all four phases – assessment, implementation, monitoring, evaluation and modification.

HYDROLOGICAL RESTORATION COSTS				
		\$ 12.00		\$ 40,000.00
Area	Acreage	Hydro plan costs	Road Mileage	Road/Hydro restoration costs
Apalachicola River	60932	\$ 731,184.00	100.5	\$ 4,020,000.00
Aucilla	47532	\$ 570,384.00	109	\$ 4,360,000.00
Andrews	3587	\$ 43,044.00	22.6	\$ 904,000.00
Big Bend	69112	\$ 829,344.00	231.5	\$ 9,260,000.00
Box R	8397	\$ 100,764.00	42	\$ 1,680,000.00
Chassahowitzka	27183	\$ 326,196.00	22.6	\$ 904,000.00
	TOTALS	\$ 2,600,916.00		\$ 21,128,000.00

3) Duration of project or program

7 to 10 years to include all phases of assessment, implementation, monitoring, evaluation and modification.

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. Restore and Conserve Habitat
- b. Restore Water Quality
- c. Replenish and Protect Living Coastal and Marine Resources
- d. Enhance Community Resilience
- e. Restore and Revitalize the Gulf Economy

Florida Gulf of Mexico Natural Resource Restoration Plan

FWC Potential Projects

Proposed Project or Program: **Enhancing Florida's Oil Spill Response, Planning and Damage Assessment Capabilities**

Project description, including location

For the past 20 years Florida has prepared for coastal and marine oil spill response by developing map-based, targeted spill response information and placing it in the hands of spill responders for both immediate and ongoing use in the event of a spill. This information ranges from location and extent of sensitive ecological and human-use features, pre-defined protection priorities, and explicit strategies to support decision making by responders. Collecting, assembling and delivering this important information in hard-copy and digital form for a coastal state as large as Florida is a very labor and time-intensive operation, which requires constant upkeep. Additionally, as the Deepwater Horizon spill demonstrated, the increase in drilling operations in the Gulf has increased the need to develop information into the deeper waters of the West Florida Shelf. To date funding has not kept pace with demand for timely and substantive information using current technologies to support response.

This project will build on existing information databases and delivery platforms to enhance Florida's ability to prepare for, and respond to oil spills in the Gulf of Mexico. This will consist of two main activities conducted in parallel:

Development of Targeted, Map-based Information:

- Updated Environmental Sensitivity Index (ESI) maps for Florida's Gulf Coast. ESI information is considered the core information base for spill response. Current update cycle will be accelerated to include all 4 regions covering Florida's Gulf coast.
- Development of Tidal Inlet Protection Strategies (TIPS) for the Panhandle and NW Peninsular Florida. These important inlet-specific plans exist for South and West Florida but were never done for NW Florida. Both the US Coast Guard and Florida DEP have expressed a strong need for these.
- Updated Area Contingency Plans (ACP) for Sectors Mobile, St Petersburg and Key West. These comprehensive plans include input from municipal, county, state, federal and other organizations to establish effective response strategies based on pre-established priorities.

Improved Information Delivery and Analysis Systems:

- Update existing Florida Marine Spill Analysis System (FMSAS) to current technologies. The FMSAS, Florida's spill response decision support system is currently running on 1990's technology and needs updating to run on modern web-based platform to be accessible to all responders.

Provide a range of costs and if necessary, break down into capital costs, operational, or monitoring.

The costs necessary to implement this effort is \$4 million over 10 years. This funding includes two ESI updates, three ACP updates, and two TIPS updates over a ten year period.

Duration of project or program

Ten years

4) Direct benefits to one of the following (pick the one that is the primary beneficiary)

- a. **Restore and Conserve Habitat**
- b. Restore Water Quality
- c. **Replenish and Protect Living Coastal and Marine Resources**
- d. **Enhance Community Resilience**
- e. **Restore and Revitalize the Gulf Economy**