

RESTORE Council Activity Description

General Information

Sponsor:

Florida Department of Environmental Protection

Title:

Florida Strategic Gulf Coast Land Acquisition Program

Project Abstract:

The RESTORE Council has approved \$14M as FPL Category 1 planning and implementation activities in Council-Selected Restoration Component funding for the Florida Strategic Gulf Coast Land Acquisition Program, sponsored by Florida, through the Florida Department of Environmental Protection (FDEP). The program supports the primary RESTORE Comprehensive Plan goal to restore and conserve habitat through a suite of linked activities to increase conserved and protected State owned or managed lands by 10,000 to 20,000 acres. Program activities include implementation of land acquisitions, partnering with the existing Florida Forever Program (FF), Florida's premier conservation and recreation lands acquisition program. The program will utilize the FF priority list to identify parcels for acquisition; parcels on the FF priority list are ranked using a thorough scientific review and a comprehensive natural resource analysis. FDEP will target lands draining into the Gulf of Mexico that are in the FF Critical Natural Lands and Climate Change Lands categories or other FF parcels with similar attributes. Land acquisitions could include both fee simple acquisition and conservation easements from willing sellers. Program activities are intended to result in environmental benefits to Florida's natural resources and ecosystems by protecting critical habitats, preserving native biodiversity and ecosystem function, mitigating sea level rise, flooding, and other current and future risks to coastal communities. Program duration is 10 years.

FPL Category: Cat1: Planning/ Cat1: Implementation

Activity Type: Program

Program: Florida Strategic Gulf Coast Land Acquisition Program

Co-sponsoring Agency(ies): N/A

Is this a construction project?: No

RESTORE Act Priority Criteria:

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

(III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.

Priority Criteria Justification:

The Florida Strategic Gulf Coast Land Acquisition Program includes acquiring lands for conservation. Acquisitions will be strategically linked conservation activities that in combination result in a greater impact, increasing protected areas, strengthening natural resources, and improving resiliency. This program meets both the large-scale and existing Gulf Coast State comprehensive plans priority criteria.

As a program, it is designed to result in large-scale environmental benefits including protecting a range of natural resources and habitats such as beaches and coastal wetlands. This program will be large in scale (i.e., numerous acquisitions; 10,000 to 20,000 acres acquired). The program is also readily scalable to the funding allocated. The program is long in duration, likely to last 10 years and lands acquired will be protected in perpetuity. The program will target lands in the FF Critical Natural Lands and Climate Change Lands categories, or other FF parcels with similar attributes, including functional landscape-scale natural and hydrological systems, significant imperiled natural communities, wildlife corridors, and lands that improve resiliency, promote carbon sequestration, or mitigate effects of sea level rise. Environmental benefits include strengthening natural resources, sustaining healthy habitats for threatened and endangered species, providing opportunities for species and habitat migrations in changing environmental conditions, protecting natural areas for recreation, and preserving cultural heritage.

The lands that will be acquired include parcels evaluated and prioritized as part of the existing FF (FF 2019a). The lands proposed for acquisition undergo a thorough scientific review and comprehensive natural resource analysis and scoring process using FL Natural Areas Inventory (FNAI) database information, a series of geographic data layers, and several project ranking criteria.

Project Duration (in years): 10

Goals

Primary Comprehensive Plan Goal:

Restore and Conserve Habitat

Primary Comprehensive Plan Objective:

Restore, Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:

N/A

Secondary Comprehensive Plan Goals:

N/A

PF Restoration Technique(s):

Protect and conserve coastal, estuarine, and riparian habitats: Land acquisition

Location

Location:

Florida watersheds that drain to the Gulf of Mexico including Perdido, Pensacola, Choctawhatchee – St. Andrew, Apalachicola – Chipola, Ochlocknee – St. Marks, Suwannee, Springs Coast, Withlacoochee, Tampa Bay, Tampa Bay Tributaries, Sarasota-Peace-Myakka, Charlotte Harbor, Caloosahatchee, Everglades West Coast, Everglades, and Florida Keys.

HUC8 Watershed(s):

South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Florida Panhandle Coastal(Perdido Bay)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Escambia(Lower Conecuh)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Florida Panhandle Coastal(Perdido)
South Atlantic-Gulf Region(Southern Florida) - Southern Florida(Everglades)
South Atlantic-Gulf Region(Southern Florida) - Southern Florida(Florida Bay-Florida Keys)
South Atlantic-Gulf Region(Southern Florida) - Southern Florida(Big Cypress Swamp)
South Atlantic-Gulf Region(Southern Florida) - Southern Florida(Caloosahatchee)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Peace(Peace)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Peace(Myakka)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Peace(Charlotte Harbor)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Sarasota Bay)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Manatee)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Little Manatee)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Alafia)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Hillsborough)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Tampa Bay)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Crystal-Pithlachascotee)
South Atlantic-Gulf Region(Peace-Tampa Bay) - Tampa Bay(Withlacoochee)
South Atlantic-Gulf Region(Suwannee) - Aucilla-Waccasassa(Waccasassa)
South Atlantic-Gulf Region(Suwannee) - Aucilla-Waccasassa(Econfina-Steinhatchee)
South Atlantic-Gulf Region(Suwannee) - Suwannee(Santa Fe)
South Atlantic-Gulf Region(Ochlockonee) - Ochlockonee(Lower Ochlockonee)
South Atlantic-Gulf Region(Apalachicola) - Apalachicola(Apalachicola)
South Atlantic-Gulf Region(Apalachicola) - Apalachicola(New)
South Atlantic-Gulf Region(Apalachicola) - Apalachicola(Apalachicola Bay)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Florida Panhandle Coastal(St. Andrew-St. Joseph Bays)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Florida Panhandle Coastal(Choctawhatchee Bay)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Florida Panhandle Coastal(Pensacola Bay)
South Atlantic-Gulf Region(Apalachicola) - Apalachicola(Chipola)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Florida Panhandle Coastal(Yellow)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Florida Panhandle Coastal(Blackwater)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Choctawhatchee(Pea)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Choctawhatchee(Lower Choctawhatchee)
South Atlantic-Gulf Region(Choctawhatchee-Escambia) - Escambia(Escambia)
South Atlantic-Gulf Region(Suwannee) - Aucilla-Waccasassa(Aucilla)
South Atlantic-Gulf Region(Ochlockonee) - Ochlockonee(Apalachee Bay-St. Marks)

State(s):

Florida

County/Parish(es):

FL - Escambia
FL - Pasco
FL - Calhoun
FL - Pinellas
FL - Charlotte
FL - Citrus
FL - Collier
FL - Columbia
FL - Dixie
FL - Franklin
FL - Gadsden
FL - Gilchrist
FL - Polk
FL - Sarasota
FL - Sumter
FL - Suwannee
FL - Taylor
FL - Union
FL - Wakulla
FL - Alachua
FL - Bay
FL - Bradford
FL - Gulf
FL - Hamilton
FL - Santa Rosa
FL - Walton
FL - Washington
FL - DeSoto
FL - Hardee
FL - Hernando
FL - Hillsborough
FL - Holmes
FL - Jackson
FL - Jefferson
FL - Lafayette
FL - Lee
FL - Leon
FL - Levy
FL - Liberty
FL - Madison
FL - Manatee
FL - Marion
FL - Monroe

FL - Okaloosa
FL - Hendry

Congressional District(s):

FL - 14
FL - 15
FL - 26
FL - 11
FL - 13
FL - 16
FL - 5
FL - 12
FL - 1
FL - 19
FL - 25
FL - 2
FL - 17

Narratives

Introduction and Overview:

The Florida Strategic Gulf Coast Land Acquisition Program includes a suite of land acquisitions, increasing State ownership or management by 10,000 to 20,000 acres. The primary goal is to restore and conserve habitat through acquisitions from willing sellers (fee simple acquisitions or conservation easements). The program will include strategically linked conservation activities that in combination result in a greater impact, increasing protected areas, strengthening natural resources, and improving resiliency. All program activities will occur in watersheds that drain to the Gulf of Mexico and will address the same environmental stressors of habitat loss and fragmentation.

Fee simple acquisitions and conservation easements are key components of natural resource conservation and management in Florida and lead to sustained environmental benefits through the protection of lands in perpetuity. The goals and benefits of this land acquisition program include protecting threatened species and rare habitats, conserving natural habitats, preserving public recreation areas, and improving resiliency in the face of climate change impacts.

The majority of funds for the program will be used for implementation. A limited amount of planning funds will be used for program management, monitoring and adaptive management, and data management. Florida has not requested RESTORE funds for land management; however, alternate funds will be utilized for management activities occurring on lands conserved under this program. Florida will leverage the existing science-based FF evaluation process to identify lands for acquisition, and parcels will be selected from the FF priority list. The FF Act (Section 259.105, F.S.) describes the program, which is Florida's premier conservation and recreation lands acquisition program, serving as a blueprint for conserving natural resources and cultural heritage (FF 2019a). The FF priority list is updated annually by the Acquisition and Restoration Council (ARC), which includes scientific representatives, using a science-based process to rank each project for selection. ARC is assisted by the technical and scientific resources of the FNAI (FF 2019a). Under the program, priority parcels in the FF Critical Natural Lands and Climate Change Lands categories or other FF parcels with similar attributes, in watersheds that are hydrologically connected to the Gulf of Mexico, will be selected. Priority will be given to parcels that leverage other funding sources or that can be acquired for less than appraised values.

Goal/Objective: This program meets the Restore and Conserve Habitat Comprehensive Plan Goal. Through acquisition of parcels in FF Critical Natural Lands and Climate Change Lands categories, or other FF parcels with similar attributes, this program will protect ecologically important natural areas, helping to conserve the health, diversity, and resilience of Florida habitats and communities. This program meets the objective of Restore, Enhance, and Protect Habitats by protecting coastal and estuarine wildlife habitats such as beaches, dunes, coastal wetlands, and coastal forests.

Commitments: This program allows for a regional ecosystem-based approach to habitat protection as parcels are ranked through FF without regard to geographic location. FF utilizes a science-based evaluation process for decision making in regards to prioritizing lands for acquisition. Parcels are ranked with the goal of conserving environmentally unique and irreplaceable or rare ecosystems, native flora and fauna, providing natural areas for recreation, and preserving archaeological or historic sites (Section 259.105, F.S.). Parcels undergo a thorough scientific review and comprehensive analysis and scoring process using FNAI's data, a series of geographic data layers (e.g., critical habitats, rare species, biodiversity measures), and several project ranking criteria (e.g., percent inundation at 1-meter sea level rise, restoration priority, etc.; FNAI 2018a). This program will leverage resources by partnering with and building on the work of FF, including \$142.5 million committed over the past 5 years. This collaboration maximizes the impact of habitat protections in Florida and streamlines the process of identifying lands

for acquisition by utilizing the FF priority list. FF also has a strong history of partnering with local entities; the successful acquisition of many State lands is the direct result of these partnerships as demonstrated by the numerous partners involved in the projects on the FF priority list (FF 2019a).

Florida is committed to public engagement, inclusion, and transparency. The public can participate in the project nomination process and the ARC holds meetings that are publicly noticed. Non-profit organizations often help acquire the conserved lands. In addition to the science-based approach to evaluating lands for acquisition, habitat protection is a proven approach to strengthening natural resources and sustaining diverse populations of wildlife, in accordance with Florida's commitment to delivering results. Florida's success with land conservation is proven by the over 3.9 million acres that are currently managed under Land Use or Land Management plans that are updated and reviewed at least every 10 years (FF 2019a). This program also includes efforts to measure outcomes to ensure funds have been invested in a meaningful way. The acreage of lands acquired and managed will be tracked to ensure the habitats have been conserved.

Benefits: The program will result in significant environmental benefits to Florida's ecosystems and coastal communities by protecting critical habitats, preserving native biodiversity and ecosystem function, and mitigating sea level rise, storm surge, flooding, and other current and future risks. Social and economic benefits of the program include increasing opportunities for recreational use of public lands and preserving cultural heritage. Through land acquisition, the program will conserve unique and valuable habitats, including wildlife corridors, which help sustain populations that depend on healthy, connected habitats. Conservation of these lands reduces habitat loss and degradation, allowing natural communities to adapt to increasing challenges associated with global climate change (e.g., allowing for migration in response to changing environmental conditions). Well-planned land acquisition programs in Florida have demonstrated that habitat connectivity provides an opportunity to protect and conserve biological diversity (DeFreeze 1995). Land conservation also enhances water resource protection and management, reducing impervious surfaces, allowing water to filter naturally, and reducing flooding, thereby improving water quantity and quality (Shepard et al. 2016).

Lands acquired under this program include areas prioritized through the existing FF science-based process and include lands critical for sustaining healthy ecosystems and mitigating global climate change. Lands targeted in the FF Critical Natural Lands category include functional landscape-scale natural systems, large hydrological systems, imperiled natural communities, and corridors linking large landscapes, as identified and developed using the best available scientific analysis by the FNAI. Protecting lands in this category will result in significant environmental benefits, protecting habitat for threatened and endangered species, wildlife corridors, and expanding protected natural areas for conservation and recreation. Conserving parcels in the Climate Change Lands category includes acquiring lands that will help strengthen Florida's land, water, and coastal resources, promote carbon sequestration, and mitigate effects of sea level rise.

Environmental Stressors: Comprehensive resource management and planning efforts, such as FF, Florida Gulf Environmental Benefit Fund Restoration Strategy, Basin Management Action Plans, and other efforts have identified stressors and threats to Florida's natural resources including habitat loss, fragmentation, hydrologic alterations, climate change, and sea level rise. This program will directly address habitat fragmentation and climate change stressors by acquiring and protecting critical natural areas, large functional landscapes, large hydrologic systems, imperiled natural communities, wildlife corridors, and lands that will strengthen Florida's land, water, and coastal resource resiliency, promote carbon sequestration, and mitigate sea level rise effects.

Costs: \$14,000,000. Funds for this program will leverage State funds of \$142.5 million over the past 5 years, and possibly additional funds committed for fiscal year 2020-21.

Timeline: The FF priority list is developed annually (FF 2019b) and implementation of land acquisitions could begin as funding is received. The duration of program implementation is expected to be 10 years; however, lands will be maintained in perpetuity.

Partners: This program partners with FF, Florida's premier conservation lands acquisition program. Since 1963, Florida has invested approximately \$8 billion to conserve approximately 3.9 million acres of land for environmental, recreational, and preservation purposes through FF and predecessor programs (FF 2019a). This program will leverage the FF science-based approach to conservation and streamline the land acquisition process. FDEP will also work with nonprofit organizations for help during the acquisition process.

FPL 3 Planning Framework: This program is consistent with the Protect and Conserve Coastal, Estuarine, and Riparian Habitats priority approach. The primary goal and objective is to acquire and conserve lands that drain to the Gulf of Mexico, including coastal, estuarine, and riparian habitats, critical natural areas such as large functional landscapes and hydrological systems as well as wildlife corridors, and lands that will help strengthen Florida's land, water, and coastal resources, promote carbon sequestration, and mitigate effects of sea level rise.

Methods:

The Florida Strategic Gulf Coast Land Acquisition Program will consist of a suite of land acquisitions which will result in an increase in State ownership or management by 10,000 to 20,000 acres. No construction activities are included in the program; funds are for acquisition only. The method for all program activities is land acquisition for the conservation and protection of critical natural lands including landscape-scale natural systems, hydrological systems, wildlife corridors, and a range of potential habitats such as coastal beach and dunes, marshes, forested habitats, and wetlands; as well as lands that will help strengthen Florida's land, water, and coastal resources, promote carbon sequestration, protect habitat and coastal lands, and mitigate effects of sea level rise. Land acquisitions will be from willing sellers and could include both fee simple acquisition and conservation easements.

While Florida is not seeking any RESTORE funds for land management activities, the lands acquired and protected under this program will be under improved management practices or current conservation management practices will be maintained. Management activities will be funded and conducted by the State for fee simple acquisitions and will be included in the requirements for landowners in conservation easement agreements. Land management activities could include habitat restoration and improvement, hydrological preservation and restoration, invasive and non-native species control, and prescribed burns, depending on natural communities and habitats present on the conserved lands. Finally, as part of FF, the ARC and FNAI conduct periodic evaluations of acquired lands and Land Management Plans to ensure management activities are being conducted as outlined in the plans.

To select land acquisitions under this program, Florida will utilize the land acquisition priority list produced through FF. The list is updated and adopted annually by the ARC, a 10-member group including scientific representatives from four State agencies, four appointees of the Governor, one appointee by the Fish and Wildlife Conservation Commission, and one appointee by the Commissioner of Agriculture and Consumer Services. Members of the ARC have backgrounds in scientific disciplines of land, water, environmental sciences, wildlife management, forestry, and outdoor recreation (FF 2019a). The ARC utilizes a science-based evaluation process for decision-making when developing the priority

list for acquisition. To select lands for acquisition, Florida will identify the priority parcels in the Critical Natural Lands and Climate Change Lands categories, or other parcels with similar attributes, that have not already been acquired and determine which are in watersheds that drain into the Gulf of Mexico. Priority will be given to those parcels that leverage other funding sources or those that can be acquired for less than the appraised value.

Once selected, FDEP will follow the land acquisition procedures outlined in the Florida Statutes, Chapter 259, Land Acquisitions for Conservation or Recreation. FDEP's Division of State Lands and its acquisition partners will contract an appraisal of land from an independent private sector appraiser to estimate market value, negotiate with owners to buy the land, conduct any required due diligence such as site environmental assessments, and complete the acquisition on behalf of the State. Lands acquired will be titled to the State and protected in perpetuity.

As noted above, FDEP will utilize FF to identify priority parcels for land acquisitions. FF utilizes a science-based process including a thorough scientific review and a comprehensive natural resource analysis and scoring process to rank parcels. The process starts when parcels are recommended for acquisition by members of the public or private organizations. The ARC then reviews each parcel and ranks them within the following categories: Critical Natural Lands, Partnerships/Regional Incentives, Less-than-Fee, Climate Change Lands, Substantially Complete, and Critical Historical Resources. Activities under this program will be limited to land acquisitions in the Critical Natural Lands and Climate Change Lands categories or other FF parcels with similar attributes.

In general, the ARC ranks parcels with the goal of conserving environmentally unique and irreplaceable lands or rare ecosystems, native flora and fauna, important breeding locations, natural areas for recreation, and archaeological or historic sites (Section 259.105, F.S.). FF and the ARC rely on the FF Conservation Needs Assessment (FFCNA), which is a series of geographic data layers that correspond to specific measures in the FF Act (FNAI 2018a, b). Each FFCNA data layer is designed to address a specific measure in the FF Act. FFCNA layers provide information on strategic habitat conservation areas, rare species habitat conservation priorities, under-represented natural communities, fragile coastal resources (e.g., uplands, lakes), ecological greenways, landscape-sized protection areas, significant surface waters, natural floodplains, functional wetlands, fragile coastal resources (e.g., wetlands), aquifer recharge areas, recreational trails, archaeological or historical sites, sustainable forestry, and forest lands for recharge.

To allow for the FFCNA information, which can be redundant across layers, to be evaluated comprehensively, FFCNA layers are combined into functional groupings for analysis purposes. These groupings are decision support data layers which inform two of the primary evaluation criteria for FF projects: Single Resource Evaluation (SRE) and the FF Tool for Efficient Resource Acquisition and Conservation (F-TRAC; FNAI 2018a).

SREs provide the ARC with concise scores for each acquisition project based on functional resource groupings, such as species, natural communities, surface waters, or other groupings. Projects are scored based on their contribution to that single resource only, without regard to other resource types. The primary purpose of the SRE is to provide a straightforward method for comparing current and proposed land acquisitions based on specific resource goals. FF typically uses a weighted score approach for most SRE project scores where the calculated acres of each project in the different priority classes of each resource type are multiplied by a weight factor corresponding to the priority class. The weighted acres are summed and then divided by the acres of the project to eliminate size bias (FNAI 2018a). Alternative

approaches are utilized for landscapes, trail networks, and cultural resources as described in more detail in FNAI (2018a).

The F-TRAC tool is a systematic reserve design tool that assists decision-makers with evaluating acquisitions for a fixed cost (Oetting et al. 2006). F-TRAC provides a single, concise evaluation of current and potential land acquisition projects across multiple resource types and is tied to the actual amount of acreage projected to be acquired (FNAI 2018a). F-TRAC is based on a computer modeling approach to conservation reserve design called Iterative Site Selection (FNAI 2018a). The F-TRAC analysis considers seven natural resource categories: species, communities, landscape connectivity, surface waters, wetlands, sustainable forestry, and aquifer recharge; and identifies a suite of sites that efficiently protects those resources (FNAI 2018a). The goal is to identify the most efficient grouping (i.e., the optimal solution of the greatest resource protection in a given amount of land).

In addition to the FNAI information, SREs, and F-TRAC layers, the ARC evaluates several additional criteria for each project including sea level rise, population within 100 miles of the project, percentage in urban areas, acres in storm surge zones, flood protection, restoration priority, and soil carbon storage (FNAI 2018a).

Environmental Benefits:

Florida has more than 80 distinct ecosystems, with over 25,000 square miles of forested habitats, 1,350 miles of coastal beaches, dunes and estuarine habitats, and 10 million acres of wetlands (Beaver 2006, Dahl 2005, FNAI 2010). Florida's natural resources support the State's communities and economy.

As a land acquisition program, the public lands acquired for conservation will result in significant environmental benefits through the protection of Florida's critical habitats, native biodiversity, rare and imperiled species, ecosystem function, landscape connectivity, and reduced pressure from development in some cases (Damschen et al. 2019, DeFreese 1995, Tewksbury et al. 2002). Conserving coastal ecosystems can enhance community and ecosystem resiliency to both direct and indirect impacts of climate change (USGCRP 2018). These lands will mitigate a number of impacts resulting from climate change by protecting habitats that reduce impacts from sea level rise, and flooding, among others, and promote carbon sequestration. Land conservation also enhances water resource protection and management, reducing impervious surfaces, allowing water to filter naturally, and reducing flooding, thereby improving water quantity and quality (Shepard et al. 2016).

Conserve biodiversity and rare species: There are approximately 269 species that are endemic to Florida (Stein 2002). Over a large geographic area, diverse climatic conditions support a large number of rare and imperiled species (Stys et al. 2017). Habitat loss due to urbanization is a primary cause of species endangerment in the U.S. (Czech 2004). Press et al. (1996) suggested that land acquisition is the most attractive approach for conserving rare species because the scale of land acquisition is often appropriate for the range of rare species. Despite protections provided by the Endangered Species Act, Hull (2015) suggests that "State and local governments play an increasingly vital role in species protection efforts as climate-induced changes alter natural systems at the local level." FDEP is targeting the FF Critical Natural Lands and Climate Change Lands categories, and other FF parcels with similar attributes, to help conserve Florida's biodiversity, including rare and imperiled species, by protecting large tracts of habitats needed to support these species.

Improve habitat connectivity: Through land acquisition, the program will conserve unique and valuable habitats, including wildlife corridors that help sustain populations that depend on a healthy, connected

landscape. Land conservation reduces habitat loss and degradation and allows natural communities to adapt to increasing challenges associated with global climate change by providing more area over which species can migrate in response to changing environmental conditions. Conservation of habitat buffers and other natural corridors helps to maintain population connectivity, promote genetic diversity, and mitigate the effects of habitat fragmentation, all of which have environmental benefits (Damschen et al. 2019, Tewksbury et al. 2002).

Mitigate climate change: Coastal land in Florida is increasingly susceptible to sea level rise and storm surge due to low elevations across the State. The Florida Keys and the Everglades are particularly vulnerable as elevations are on average less than one meter above present sea level (Stys et al. 2017). Conservation and restoration of coastal habitats such as marshes, mangroves, submerged aquatic vegetation (SAV), oyster reef, coral reef, and barrier islands increase resiliency against the impacts of sea level rise, flooding, increasing wave energy, erosion, and in some cases, storm surge (Beck et al. 2018, Boutwell and Westra 2016, Ferrario et al. 2014, Guannel et al. 2016, Liu et al. 2013, USGCRP 2018, Zhang et al. 2012). Florida ranks in the top three States nationally where existing coastal habitat is expected to defend the greatest number of people and property from projected sea level rise (Arkema et al. 2013). It is estimated that preserving and restoring coastal habitats in the U.S. could reduce the impacts of sea level rise on people and their property by half (Arkema et al. 2013). Furthermore, conservation of riparian buffers and other natural flowways can help mitigate floods and protect coastal communities most susceptible to flood risk (Daily et al. 1997).

Promote carbon sequestration: Vegetated coastal habitats (e.g., marsh, mangrove, seagrass) contribute one- to two-orders of magnitude greater carbon sequestration per unit area compared to terrestrial forests (Mcleod et al. 2011). Thus, conserving and protecting these vegetated coastal ecosystems will contribute positively to offsetting increased atmospheric carbon dioxide and thus help to reduce the effects of climate change.

Metrics:

Metric Title: HC001: Conservation easements - Acres protected under easement

Target: TBD

Narrative: Florida will use this as a program-wide metric to evaluate the success of the program. Program success will be determined by the total number of acres protected under a conservation easement. The purpose of the program metric is to verify that the conservation easement has been acquired and recorded in property records. Florida's target is approximately 10,000 to 20,000 acres protected under either a conservation easement or acquired in fee. Each project or activity under the program will have specific metric(s) aimed at evaluating the success of the individual project or activity.

Metric Title: HC003: Land acquisition - Acres acquired in fee

Target: TBD

Narrative: Florida will use this as a program-wide metric to evaluate the success of the program. Program success will be determined by the total number of acres protected through fee simple acquisition. The purpose of the program metric is to verify that the acquisition has been completed, and the performance measure will be an executed and recorded deed. Florida's target is approximately 10,000 to 20,000 acres protected under either a conservation easement or acquired in fee. Each project or activity under the program will have specific metric(s) aimed at evaluating the success of the individual project or activity.

Risk and Uncertainties:

FDEP has a long history of successfully executing land acquisition projects (FF 2019a), thus there are few risks and uncertainties associated with the implementation of this program. However, there are risks and uncertainties inherent to the acquisition process and sustaining long-term benefits associated with each parcel acquired. The program will promote long-term environmental benefits and coastal resiliency with each land acquisition through site-specific considerations of local and regional risks and uncertainties (e.g., selecting parcels that improve coastal resiliency, reduce erosion, support native flora and fauna), and long-term land use planning (e.g., selecting parcels ecologically connected to other protected areas such as corridors and areas that strengthen Florida's natural resources).

Near-term risks and uncertainties associated with land acquisition include the continued availability of properties, the successful negotiation of sales with landowners (e.g., title issues), and the cost of the land to be acquired (e.g., appraisals, seller price expectations, inflation of land value). The properties proposed for purchase through FF are nominated by private citizens or organizations and have willing sellers. As such, using FF priority list parcels minimizes the risk associated with identifying parcels available for acquisition. Some of these risks can be mitigated through thoughtful discussion with landowners, quality appraisals, the availability of alternate parcels, and due diligence. Ultimately, the number of parcels and the specific parcels acquired will depend on the FF priority list and will be scaled to the program budget.

Long-term risks and uncertainties regarding sustaining benefits associated with acquired lands may result directly or indirectly from climate change, including sea level rise, extreme weather, drought, or wildfires; other unforeseen changes in environmental conditions (e.g., erosion, abundance of invasive species); and land use (e.g., land management practices). The risks that these conditions pose on the long-term success of the program are based on projections, which have their own set of uncertainties (for example, a range of projected sea level rise estimates). The sections below summarize some of the risks and uncertainties associated with climate change as well as the risks and uncertainties associated with land conservation and the long-term success of the program.

Conserve biodiversity and rare species: Climate change is expected to induce shifts in the geographic distribution of plants and animals worldwide; however, the extent to which each individual species' range of distribution will change is uncertain (Heller and Zavaleta 2009). Studies have demonstrated the direct impact of sea level rise, reducing abundance and distribution of plant and animal species restricted to low elevation habitats in Florida (LaFever et al. 2007, Ross et al. 1994). Given the significant number of rare and endemic species in Florida, there is a heightened need to consider the long-term protection of threatened and endangered species through conservation of critical areas that incorporate projections for climate change impacts on rare and imperiled species (Heller and Zavaleta 2009). Both the Critical Natural Lands and Climate Change Lands categories are designed to protect large, intact, natural lands with significant imperiled communities, corridors, and buffers (FF 2019a). Through monitoring and long-term adaptive management that include projections for climate change-induced range shifts, this program may mitigate some of the risk of climate change induced species and biodiversity endangerment.

Habitat connectivity: In general, land conservation is a low risk method to offset impacts of future development; however, there is uncertainty with determining the appropriate spatial extent. The FF Critical Natural Lands category promotes the conservation of large, intact hydrological systems and increased habitat connectivity through protection of corridors. Protecting habitat and wildlife corridors helps to maintain population connectivity, promote genetic diversity, and mitigate the effects of habitat

fragmentation (Damschen et al. 2019, Tewksbury et al. 2002). However, the degree to which individual conservation lands and corridors achieve connectivity is uncertain. The effectiveness of a corridor depends on a variety of factors (e.g., size and shape of the patches connected by the corridor, distance between patches) and may be difficult to quantify (Tewksbury et al. 2002). Wildlife corridors have been effective in promoting connectivity for a variety of animal populations in Florida (Braden et al. 2008, Dixon et al. 2006). Long-term monitoring of corridor effectiveness will inform future corridor design and help ensure habitat connectivity benefits are achieved.

Climate change: Coastal land in Florida is increasingly susceptible to climate change impacts due to low elevations. A range of climate change models exist, which vary in their projection of future conditions; thus, there is uncertainty associated with using models to forecast future impacts and to plan appropriate mitigation measures (FOCC 2010, Strauss et al. 2014, Sweet et al. 2017). Despite these uncertainties, the risk associated with sea level rise is clear; an evaluation by Emrich et al. (2014) found every coastal county in Florida at risk for storm surge and 12 counties had residents at extreme risk to the lowest prediction of sea level rise investigated. As cited in Stys et al. (2017), 25 percent of 1,200 species tracked by the FNAI are expected to lose more than half of their current habitat area due to sea level rise. Increasingly, an understanding of the adverse effects of hardened shorelines and the value of natural shorelines for shoreline protection has led to a reprioritization of coastal management policy (Bilkovic and Mitchell 2017, Reguero et al. 2018). Conservation of coastal habitats that provide a natural buffer to sea level rise and in some cases, storm surge (e.g., marshes, mangroves, SAV, oyster reef, coral reef, barrier islands) will increase Florida's resiliency to climate change (Beck et al. 2018, Boutwell and Westra 2016, Ferrario et al. 2014, Guannel et al. 2016, Liu et al. 2013, USGCRP 2018, Zhang et al. 2012). Feagin et al. (2010) suggest that while coastal vegetation is effective in attenuating short-period wave energy, they may be less effective in reducing the impacts of storm surge. Thus, some uncertainty is associated with the ability of coastal habitats to reduce storm surge impacts.

Arkema et al. (2013) estimate that preserving and restoring coastal habitats in the U.S. could reduce the impacts of sea level rise on people and their property by half. Some risk and uncertainty remain for the long-term conservation of the coastal habitats under unknown future climate scenarios. In the long term, some land acquired may become submerged due to rising sea level and/or land subsidence; however, Land Management Plans will be developed and updated to address such risks. Conservation of parcels in the FF Climate Change Lands category is expected to promote coastal resiliency against future risks associated with sea level rise and land subsidence.

In addition to sea level rise, a number of other indirect environmental changes that introduce additional risks and uncertainties for the long-term success of land acquisition projects are anticipated as a consequence of climate change. These changes include increased frequency and duration of extreme weather events (e.g., hurricanes, storm surge, floods, drought), wildfires, increased air and water temperatures, and increased abundance of invasive species. While some uncertainty exists regarding projected increases in storm frequency, warming ocean water fuels stronger storms and data suggests a trend of increasing wind speeds and rainfall rates associated with hurricanes over the last 20 years (EPA 2016). Menges and Hawkes (1998) studied fire and microhabitat of plants in Florida scrub ecosystems. While individual species demonstrate variable response to fire, the Florida scrub plant community is generally resilient to fire, which demonstrates that conserving lands dominated by scrub communities may increase resilience to the increased frequency and duration of wildfires associated with climate change. Increasing air and water temperatures may promote increased abundance of invasive species; native species may become more susceptible to foreign and domestic pathogens and parasites; thus, native species and natural communities may be subject to multiple stressors with uncertain consequences (Burgiel and Muir 2010, Stys et al. 2017). Increasing water temperatures may have a range of impacts on marine and aquatic species, including coral bleaching and increased susceptibility to

disease (Harvell et al. 1999, Sullivan et al. 2018). The conservation and protection of large areas of natural communities may mitigate some of these impacts in the long-term. Additional monitoring and adaptive management may also help identify long-term mechanisms to protect Florida's native species and communities.

Carbon sequestration: In addition to conserving and protecting natural lands, to the extent possible, FDEP will conserve lands with a high carbon sequestration potential, resulting in positive benefits towards mitigating climate change. Vegetated coastal habitats (e.g., marsh, mangrove, SAV) contribute one- to two-orders of magnitude greater carbon sequestration per unit area compared to terrestrial forests (Mcleod et al. 2011). Mcleod et al. (2011) outline some of the uncertainties associated with the mechanisms that control carbon sequestration; however, there is no doubt that conserving and protecting these vegetated coastal ecosystems will contribute positively to offsetting increased atmospheric carbon dioxide and climate change.

Socioeconomic: There may be socioeconomic risks associated with some land acquisition projects, which could limit economic development, also resulting in lost property tax revenues in most areas; however, these are likely offset by the socioeconomic benefit of the program overall in reducing costs associated with storm and flood damage.

Through the prioritization of FF Critical Natural Lands and Climate Change Lands, the Florida Strategic Gulf Coast Land Acquisition Program will preserve habitats in Florida that promote connectivity, resiliency, and mitigate the effects of climate change. While some risks and uncertainties exist for the long-term success of individual land acquisition projects, these may be mitigated through monitoring and adaptive management.

Monitoring and Adaptive Management:

Program-wide monitoring for the metrics HC001: Conservation easements - Acres protected under easement and HC003: Land acquisition - Acres acquired in fee will occur for the duration of the program. The restoration objective of this program is to acquire and protect critical natural areas and lands that, if protected, will help reduce the effects of climate change in Florida watersheds that drain to the Gulf of Mexico. Program success will be tracked as the total number of acres protected under easement or acquired in fee.

Florida will utilize a monitoring and adaptive management framework consistent with the Deepwater Horizon NRDA MAM Manual (DWH Trustees 2019) and the RESTORE Interim Observational Data Plan (ODP) Guidance (RESTORE 2018). As projects or activities are implemented, the program will be adaptively managed to ensure the greatest benefits are achieved. For example, as lessons are learned regarding the land acquisition process, these will be utilized to improve future acquisitions.

Project or activity monitoring including the metrics, duration, performance criteria, and adaptive management activities, will vary depending on the technique implemented in each project or activity.

Monitoring for the metrics HC001: Conservation easements - Acres protected under easement and HC003: Land acquisition - Acres acquired in fee will take place following acquisition. Acres acquired will be verified by survey or aerial imagery, consistent with methods in the NRDA MAM Manual (DWH Trustees 2019) and ODP Guidance (RESTORE 2018).

Data Management:

FDEP will develop an ODP and Data Management Plan detailing how data will be collected and managed at the time a project or activity is selected and provide a central location to access relevant data. Data will be collected on the acquisition process and each selected parcel (e.g., property information, location, acreage acquired). Other data may be collected such as, but not limited to, the habitats acquired, presence of rare species, or other FNAI information. FDEP will partner with FF and negotiations on conservation easements are confidential until approved by the Board of Trustees. Once closed, property information will be made available on the FDEP Oculus site. Information on any FF activities are available at <https://floridadep.gov/lands/environmental-services/content/florida-forever>.

To the extent any environmental data are collected, field personnel will utilize standardized datasheets. Relevant data that are handwritten will be transcribed into standard digital format or scanned to PDF. Transcribed data will be verified and validated prior to being released. After any identified errors are addressed, data will be considered QA/QC'd. Spatial data collected will have properly documented FGDC/ISO metadata, a data dictionary that defines codes and fields, or a Readme file describing how data was collected, QA/QC procedures, relationships to other data, origin, usage, or format. FDEP will utilize the RESTORE METadata Records Library and Information Network for metadata records creation.

Collaboration:

The Florida Strategic Gulf Coast Land Acquisition Program was developed based on the environmental benefits of conserving natural habitats, and on public input, which highlights the value the public places on protection of natural lands in Florida. FDEP will partner with FF, utilizing the FF priority list to identify lands for acquisition. FF also has a long history of cooperative partnerships with local and national land trusts, water management districts, counties, cities and other local governments, as well as the Federal government; and partnerships with local governments have increased in recent years (FF 2019a). Nonprofit organizations may also play a role in the acquisition process. They can advocate for parcels to be placed onto the FF priority list and can act as intermediaries with owners, including assisting them with tax and estate planning issues. FF has previously collaborated with The Nature Conservancy, the Trust for Public Land, and The Conservation Fund.

Public Engagement, Outreach, and Education:

The Florida public places enormous value on conserving natural areas for the benefit of Florida's ecosystems, public recreation, and cultural preservation as demonstrated through the passing of several land acquisition acts and from the overall success of land acquisition programs since the 1960s. FF includes opportunities for public engagement, outreach, and education. The public has also proposed numerous land acquisition projects through Florida's DWH project portals. As such, FDEP developed this program based on public input. Further, this program will partner with FF to streamline the process of identifying land for acquisition by utilizing the FF priority land acquisition list.

FF promotes land acquisition on behalf of the public, in part to improve public land management and increase public access to natural areas. Thus, public engagement is a critical component of the selection process. Acquisition projects may be nominated by Federal, State and local government agencies, conservation organizations, or private citizens. ARC meetings are publicly noticed, and the public is encouraged to provide comment on the projects. Nonprofit organizations may play a role in helping acquire conservation lands. They advocate for parcels to be placed onto the FF priority list and can act as intermediaries with owners, including assisting them with tax and estate planning issues. FF has previously collaborated with The Nature Conservancy, the Trust for Public Land, and The Conservation Fund.

In addition to providing opportunities for the public to participate in the site selection and land acquisition process, FF provides education and outreach to ensure the public has knowledge of the accessibility of public lands. A publicly available database and mobile application are available to provide the public with information on the location, types of recreational opportunities, access points, facilities, amenities, and restrictions for public lands in Florida (Section 259.105, F.S.).

Leveraging:

Funds: \$142,000,000.00

Type: Bldg on Others

Status: Committed

Source Type: State

Description: This program will leverage State funds already received and possibly additional funds committed for fiscal year 2020-21, along with resources from FF. The program will leverage the FF priority list of land acquisitions which will allow FDEP to maximize the impact of habitat protection in Florida, eliminates duplication of effort, streamlines the process of identifying and acquiring lands, and builds on Florida's capacity for long-term integrated resource management. FDEP's Division of State Lands staff will coordinate with staff helping to administer the program when identifying lands for potential acquisition, selecting parcels for acquisition, determining costs, and ensuring there are willing sellers.

Environmental Compliance:

The planning component of this program is covered by the Council's National Environmental Policy Act Categorical Exclusion for planning and related activities. USDA has advised the Council that the implementation component of this program is covered by a USDA Categorical Exclusion (CE). The Council is using this CE and the associated environmental compliance documentation to support the funding approval of this program component, consistent with Section 4(d)(4) of the Council's National Environmental Policy Act (NEPA) Procedures, which enables the Council to use member CEs, where appropriate. In making this decision, the Council considered potential extraordinary circumstances, including potential negative effects to threatened and endangered species, essential fish habitat, tribal interests and historic properties, where applicable.

Bibliography:

Arkema, K.K., Guannel, G., Verutes, G., Wood, S.A., Guerry, A., Ruckelshaus, M., Kareiva, P., Lacayo, M. and J.M. Silver. 2013. Coastal habitats shield people and property from sea-level rise and storms. *Nature Climate Change*, 3: 913–918.

Beaver, J.C. 2006. U.S. international borders: Brief facts. Library of Congress Washington DC Congressional Research Service.

Beck, M.W., Losado, I.J., Menedez, P., Reguero, B.G., Diaz-Simal, P., and F. Fernandez. 2018. The global flood protection savings provided by coral reefs. *Nature Communications*, 9: 2186.

Bilkovic, D.M. and M.M. Mitchell. 2017. Designing Living Shorelines Salt Marsh Ecosystems to Promote Coastal Resilience, Chapter 15 in Bilkovic, D.M., Mitchell, M., LaPeyre, M., & J. Toft (Eds.), *Living Shorelines: The Science and Management of Nature-Based Coastal Protection*, CRC Press.

Boutwell, J.L. and J.V. Westra. 2016. The role of wetlands for mitigating economic damage from hurricanes. *Journal of the American Water Resources Association*, 52(6), pp.1472-1481.

Braden, A.W., Lopez, R.R., Roberts, C.W., Silvy, N.J., Owen, C.B. and Frank, P.A. 2008. Florida Key deer *Odocoileus virginianus clavium* underpass use and movements along a highway corridor. *Wildlife Biology*, 14(1): 155-163.

Burgiel, S.W. and A.A. Muir. 2010. *Invasive Species, Climate Change and Ecosystem-Based Adaptation: Addressing Multiple Drivers of Global Change*. Global Invasive Species Programme, Washington, DC, US, and Nairobi, Kenya.

Czech, B. 2004. Urbanization as a Threat to Biodiversity: Trophic Theory, Economic Geographic, and Implications for Conservation Land Acquisition. Proceedings of a Symposium at the Society for Conservation Biology 2004 Annual Meeting.

Dahl, T.E. 2005. Florida's wetlands: an update on status and trends 1985 to 1996. U.S. Fish and Wildlife Service, Washington D.C. Retrieved from <https://www.fws.gov/wetlands/Documents/FloridasWetlands-An-Update-on-Status-and-Trends-1985-to-1996.pdf>

Daily, G.C., Alexander, S., Ehrlich, P.R., Goulder, L., Lubchenco, J., Matson, P.A., Mooney, H.A., Postel, S., Schneider, S., Tilman, D. and G.M. Woodwell. 1997. Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems. *Issues in Ecology*, 2:1-16.

DeFreese, D.E. 1995. Land acquisition: a tool for biological diversity protection in the Indian River Lagoon, Florida. *Bulletin of Marine Science*, 57(1): 14-27.

Dixon, J.D., Oli, M.K., Wooten, M.C., Eason, T.H., McCown, J.W. and Paetkau, D. 2006. Effectiveness of a regional corridor in connecting two Florida black bear populations. *Conservation Biology*, 20(1): 155-162.

DWH Trustees (Deepwater Horizon Natural Resource Damage Assessment Trustees). 2019. *Monitoring and Adaptive Management Procedures and Guidelines Manual Version 1.0*. Originally released in December 2017, Updated August 2019. Retrieved from

https://www.gulfspillrestoration.noaa.gov/sites/default/files/201908%20MAM_Manual_FULL_Updated%202019.pdf

EDR (Office of Economic and Demographic Research). 2015. Economic Evaluation of Florida's Investment in Beaches. Revised January 2015. Retrieved from <http://www.edr.state.fl.us/Content/returnoninvestment/BeachReport.pdf>

Emrich, C.T., Morath, D.P., Bowser, G.C. and R. Reeve. 2014. Climate-Sensitive Hazards in Florida: Identifying and Prioritizing Threats to Build Resilience against Climate Effects. Hazards and Vulnerability Research Institute. EPA 430-F-16-011.

EPA (U.S. Environmental Protection Agency). 2016. What climate change means for Florida. EPA 430-F-16-011. Retrieved from <https://archive.epa.gov/epa/sites/production/files/201608/documents/climate-change-fl.pdf>

Feagin, R.A., Mukherjee, N., Shanker, K., Baird, A.H., Cinner, J., Kerr, A.M., Koedam, N., Sridhar, A., Arthur, R., Jayatissa, L.P., Lo Seen, D., Menon, M., Rodriguez, S., Shamsuddoha, M. and F. DahdouhGuebas. 2010. Shelter from the storm? Use and misuse of coastal vegetation bioshields for managing natural disasters. Conservation Letters, 3: 1-11.

Ferrario, F., Beck, M.W., Storlazzi, C.D., Micheli, F., Shepard, C.C. and L. Airoidi. 2014. The effectiveness of coral reefs for coastal hazard risk reduction and adaptation. Nature Communications, 5(1): 1-9.

FF (Florida Forever). 2019a. 2019 Florida Forever Five-year Plan, Summary of Recommendations and Status as of December 2018. Division of State Lands Florida Department of Environmental Protection. May. Retrieved from <http://publicfiles.dep.state.fl.us/DSL/FFWeb/Current%20Florida%20Forever%20Five-Year%20Plan.pdf>

FF (Florida Forever). 2019b. 2020 Florida Forever Priority List – ARC Recommended. December. Retrieved from <http://publicfiles.dep.state.fl.us/DSL/FFWeb/ARC%20Recommended%20Florida%20Forever%20Priority%20List.pdf>

Florida Statutes. Chapter 259 Land Acquisitions for Conservation or Recreation. Title XVIII Public Lands and Property. The Florida Senate. Retrieved from <https://www.flsenate.gov/Laws/Statutes/2018/Chapter259>

FNAI (Florida Natural Areas Inventory). 2010. Guide to the natural communities of Florida: 2010 edition. Florida Natural Areas Inventory, Tallahassee, FL.

FNAI (Florida Natural Areas Inventory). 2018a. Florida Forever Project Ranking Support Analyses Documentation. Florida Natural Areas Inventory. Tallahassee, FL. Retrieved from https://www.fnai.org/PDF/FF_RSA_Report_Nov2018.pdf

FNAI (Florida Natural Areas Inventory). 2018b. Florida Forever Conservation Needs Assessment Technical Report, Version 4.4. Florida Natural Areas Inventory. Tallahassee, FL.

FOCC (Florida Oceans and Coastal Council). 2010. Climate Change and Sea-Level Rise in Florida: An Update of "The Effects of Climate Change on Florida's Ocean and Coastal Resources." 2009 Report. Tallahassee, FL. Retrieved from <http://www.floridaoceanscouncil.org>

Guannel, G., Arkema, K., Ruggiero, P. and G. Verutes. 2016. The power of three: coral reefs, seagrasses and mangroves protect coastal regions and increase their resilience. *PloS one*, 11(7).

Harvell, C.D., Kim, K., Burkholder, J.M., Coldwell, R.R., Epstein, P.R., Grimes, D.J., Hoffmann, E.E., Lipp, E.K., Osterhouse, A.D.M.E., Overstreet, R.M., Porter, J.W., Smith, G.W., and G.R. Vasta. 1999. Emerging marine diseases: climate links and anthropogenic factors. *Science*, 285 (5433): 1505-1510.

Hull, E.V. 2015. Protecting Endangered Species in an Era of Climate Change: The Need for a Smarter Land Use Ethic, 31 *Georgia State University Law Review*. Retrieved from <https://readingroom.law.gsu.edu/gsulr/vol31/iss3/3>

LaFever, D.H., Lopez, R.R., Feagin, R.A. and N.J. Silvy. 2007. Predicting the impacts of future sea-level rise on an endangered lagomorph. *Environmental Management*, 40: 430-437

Liu, H., Zhang, K., Li, Y. and L. Xie. 2013. Numerical study of the sensitivity of mangroves in reducing storm surge and flooding to hurricane characteristics in southern Florida. *Continental Shelf Research*, 64: 51-65.

Mcleod, E., Chmura, G.L., Bouillon, S., Salm, R., Björk, M., Duarte, C.M., Lovelock, C.E., Schlesinger, W.H. and B.R. Silliman. 2011. A blueprint for blue carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO₂. *Frontiers in Ecology and the Environment*, 9(10): 552–560.

Menges, E.S. and C.V. Hawkes. 1998. Interactive effects of fire and microhabitat on plants of Florida scrub. *Ecological Applications*, 8(4): 935-946.

Oetting, J.B., Knight, A.L. and G.R. Knight. 2006. Systematic reserve design as a dynamic process: F-TRAC and the Florida Forever Program. *Biological Conservation*, 128: 37-46.

Press, D., Doak, D.F. and P. Steinberg. 1996. The role of local government in the conservation of rare species. *Conservation Biology*, 10(6): 1538-1548.

Reguero, B.G., Beck, M.W., Bresch, D.N., Calil, J., and I. Meliane. 2018. Comparing the cost effectiveness of nature-based and coastal adaptation: A case study from the Gulf Coast of the United States. *PLoS ONE*, 13(4): e0192132.

RESTORE Council. 2018. Observational Data Plan (ODP) Draft Interim Guidance. https://restorethegulf.gov/sites/default/files/20180713_DraftInterimGuidanceObservationalDataPlan_508Compliant.docx

Ross, M.S., O'Brien, J.J. and L. da Silveira Lobo Sternberg. 1994. Sea-level rise and the reduction in pine forests in the Florida Keys. *Ecological Applications*, 4(1): 144-156.

Shepard C., Majka, D., Brody, S., Highfield, W. and J. Fargione. 2016. Protecting Open Space & Ourselves:

Reducing Flood Risk in the Gulf of Mexico Through Strategic Land Conservation. Washington D.C.: The Nature Conservancy. Retrieved from https://www.conservationgateway.org/ConservationPractices/Marine/crr/library/Documents/TNC_open_spaces_2016.pdf

Stein, B.A. 2002. States of the Union: Ranking America's biodiversity. NatureServe.

Strauss, B., Tebaldi, C. Kulp, S., Cutter, S. Emrich, C., Rizza, D. and D. Yawitz. 2014. Florida and the Surging Sea: A Vulnerability Assessment with Projections for Sea Level Rise and Coastal Flood Risk. Climate Central Research Report.

Stys, B., Foster, T., Fuentes, M.M.P.B., Glazer, B., Karish, K., Montero, N., and J.S. Reece. 2017. Climate Change Impacts on Florida's Biodiversity and Ecology. Chapter 12 in Chassignet, E. P., Jones, J. W., Misra, V., & J. Obeysekera (Eds.), Florida's climate: Changes, variations, & impacts. Gainesville, FL: Florida Climate Institute.

Sullivan, B.K., Trevathan-Tackett, S.M., Neuhausser, S., and L.L. Govers. 2018. Review: Host-pathogen dynamics of seagrass diseases under future global change. Marine Pollution Bulletin, 134: 75–88.

Sweet, W.V., Horton, R., Kopp, R.E., LeGrande, A.N. and A. Romanou, 2017: Sea level rise. In Wuebbles, D.J., Fahey, D.W., Hibbard, K.A., Dokken, D.J., Stewart, B.C. and T.K. Maycock (Eds.]. Climate Science Special Report: Fourth National Climate Assessment, Volume I. U.S. Global Change Research Program, Washington, DC, USA, pp. 333-363.

Tewksbury, J.J., Levey, D.J., Haddad, N.M., Sargent, S., Orrock, J.L., Weldon, A., Danielson, B.J., Brinkerhoff, J., Damschen, E.I. and P. Townsend. 2002. Corridors affect plants, animals, and their interactions in fragmented landscapes. Proceedings of the National Academy of Sciences, 99(20): 12923-12926.

USGCRP (U.S. Global Change Research Program). 2018. Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II. Reidmiller, D.R., Avery, C.W., Easterling, D.R., Kunkel, K.E., Lewis, K.L.M., Maycock, T.K. and B.C. Stewart (Eds.). Washington, D.C.: United States Global Change Research Program. Accessed 3/19/2020. Retrieved from <http://dx.doi.org/10.7930/NCA4.2018>

Zhang, K., Liu, H., Li, Y., Xu, H., Shen, J. Rhome, J. and T.J. Smith. 2012. The role of mangroves in attenuating storm surges. Estuarine, Coastal and Shelf Science, 102–103: 11-23.

Budget

Project Budget Narrative:

The budget for this program consists of \$14,000,000 in Category 1 funds, of which the vast majority will be spent on implementation of land acquisition projects or activities. The Category 1 funds will also be spent on program management, monitoring and adaptive management, and data management activities. More specific budgets will be developed at the project or activity level when projects or activities are selected for funding.

Total FPL 3 Project/Program Budget:

\$ 14,000,000.00

Estimated Percent Monitoring and Adaptive Management: 2 %

Estimated Percent Planning: 0 %

Estimated Percent Implementation: 90 %

Estimated Percent Project Management: 7 %

Estimated Percent Data Management: 1 %

Estimated Percent Contingency: 0 %

Environmental Compliance

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g., title and date of document, permit number, weblink etc.)
National Environmental Policy Act	Yes	USDA Categorical Exclusion
Endangered Species Act	Yes	See USDA CE
National Historic Preservation Act	Yes	See USDA CE
Magnuson-Stevens Act	N/A	
Fish and Wildlife Conservation Act	N/A	
Coastal Zone Management Act	No	
Coastal Barrier Resources Act	N/A	
Farmland Protection Policy Act	N/A	
Clean Water Act (Section 404)	N/A	
River and Harbors Act (Section 10)	N/A	
Marine Protection, Research and Sanctuaries Act	N/A	
Marine Mammal Protection Act	N/A	
National Marine Sanctuaries Act	N/A	
Migratory Bird Treaty Act	N/A	
Bald and Golden Eagle Protection Act	N/A	
Clean Air Act	N/A	
Other Applicable Environmental Compliance Laws or Regulations	N/A	

Maps, Charts, Figures

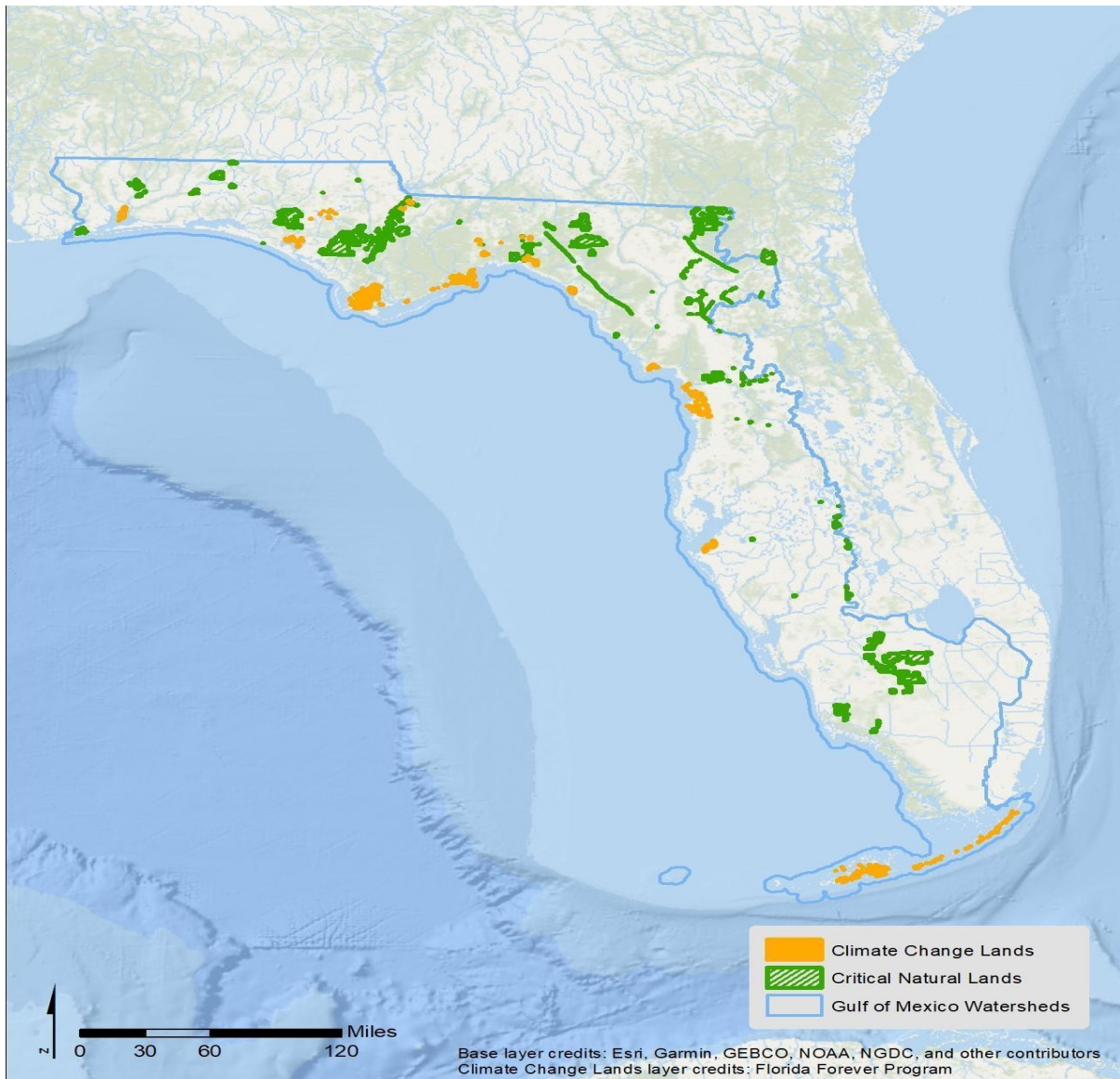


Figure 1: Map illustrating the extent of the Florida Strategic Gulf Coast Land Acquisition Program, including watersheds in Florida draining to the Gulf of Mexico. Areas for potential acquisition under this program, identified as Climate Change Lands or Critical Natural Lands on the Florida Forever Program priority list, are shown.

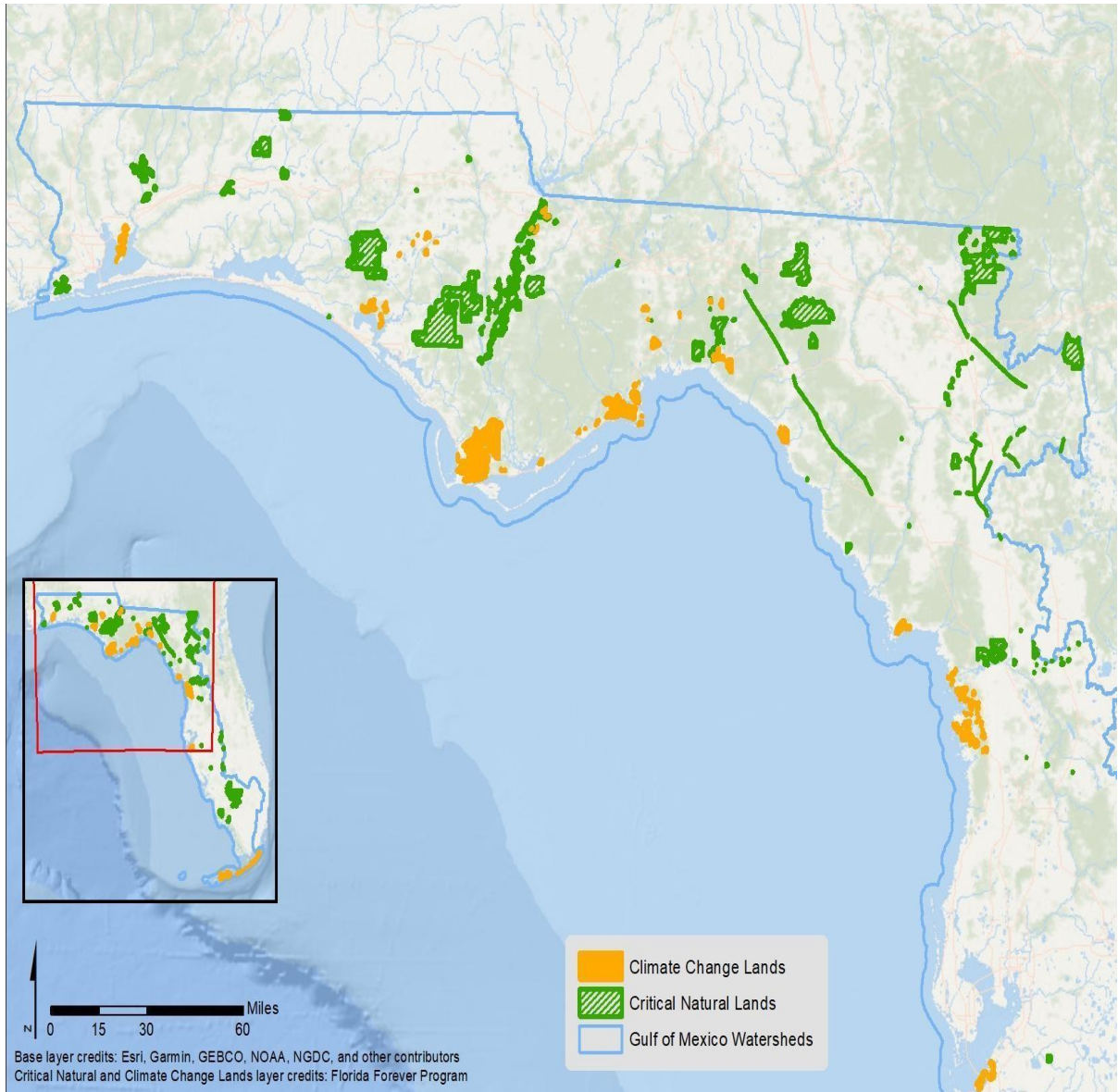


Figure 2: Map illustrating a closer view of the northern extent of the Florida Strategic Gulf Coast Land Acquisition Program and potential land acquisitions for northern Florida and the Panhandle.

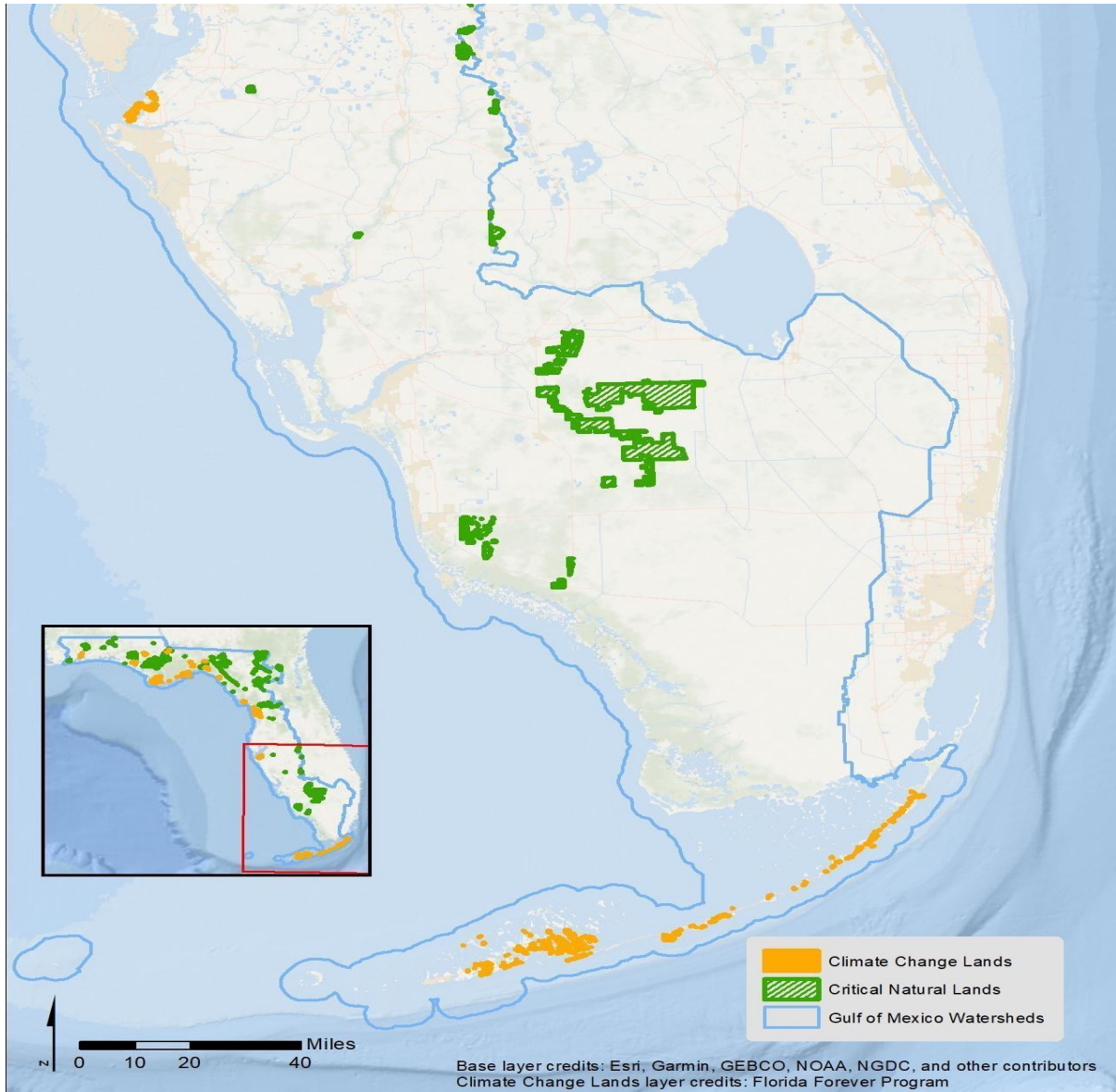


Figure 3: Map illustrating a closer view of the southern extent of the Florida Strategic Gulf Coast Land Acquisition Program and potential land acquisitions for southern Florida and the Keys.