

Crayfish Habitat Restoration
(Bay County)

Fee Simple

Florida Forever Project Evaluation Report

Prepared by:
Division of State Lands
Office of Environmental Services

Submitted to the Acquisition and Restoration Council
October 2020



Proposed Land Manager: FWC
Acres: 2,348
Just Value: \$3,719,232
Application Date: May 13, 2020
Project Sponsor: Bay County Board of County Commissioners

Executive Summary

The Crayfish Habitat Restoration project is a fee-simple proposal for acquisition of 2,348 acres in Bay County. All parcels intersected by the proposed 2,348-acre restoration sites total 4,085.98 acres and are valued at \$6,473,145 (\$1,584 per acre) according to Bay County's property appraiser. The 2,383.8-acre proposed restoration site includes partial parcels. At \$1,584 per acre valuation, the just value of the proposed acquisition acres is \$3,719,232. Bay County will re-record the partial parcels being considered for acquisition (at the time of survey/acquisition) so that only whole parcels are acquired. It was submitted by Bay County Board of County Commissioners, representing the landowner St. Joe Land and Development Company.

The project is comprised of three properties consisting of a 40-acre parcel (Highpoint tract), a 130-acre parcel (Lynn Haven tract), and a 2,178-acre property (Star Avenue tract). The county proposes acquisition of the project site to achieve multiple goals: to protect habitat for the Panama City crayfish (*Procambarus econfinae*), offer recreational greenspace, and provide watershed protection for St. Andrews Bay. Long-term management will be facilitated by funds pledged by the U.S. Fish and Wildlife Service and two private partners.

The St. Joe Land and Development Company property is actively managed for silviculture. Most of the uplands and some of the wetlands are pine silviculture. The properties are located within the range of the Panama City crayfish, which is only found within a range totaling 50 square miles, specifically within the peninsula in Bay County formed by Bayou George, Callaway Bayou, and St. Andrews Bay. The Panama City crayfish is currently a State Species of Special Concern (SSC), and has been proposed for listing as Federally Threatened under the Endangered Species Act (ESA). As a result of urban development, approximately 43 to 54% of the historic habitat remains potentially available for the Panama City crayfish. Based on data from 2016, it is estimated that approximately 9,180 acres of core soils and 5,640 acres of secondary soils remain undeveloped. These properties represent 2,310 acres of the remaining undeveloped core and secondary soils (1,515 acres of core soils and 794 acres of secondary soils).

The Florida Fish and Wildlife Conservation Commission is the proposed manager of the Crayfish Habitat Restoration properties. If approved for addition to the 2021 Florida Forever Priority List, it would ideally be considered as a stand-alone project in the Partnerships and Regional Incentives category for ranking purposes. The land would be designated as essential.

Purpose for Acquisition

Bay County Crayfish Habitat Restoration project in current condition will provide conservation value as a fee-simple acquisition for the State of Florida. One primary benefit initially is protection of potential habitat of Panama City crayfish and potential utilization by other wildlife. Protection of these properties would provide great value for wetland wildlife and water resources and would provide the public with recreational opportunities.

If acquired, conservation of the properties would serve to:

- conserve, protect, manage, or restore important ecosystems, landscapes, and forests, in order to enhance or protect significant surface water, coastal, recreational, timber, and fish and wildlife resources;
- conserve and protect significant landscape-scale habitat and provide wildlife corridors for rare and imperiled species and increasing linkages and conservation corridors between public land and private conservation easements in the region;
- conserve, protect, manage or restore coastal habitat in northwest Florida, provide surface and groundwater protection, and protect natural floodplain functions;
- provide opportunities for fish and wildlife resource-based public outdoor recreation.

Location and Proximity to Other Managed Areas

The Bay County Crayfish Habitat Restoration proposal comprises multiple parcels that total 2,348 acres (per GIS) in eastern Bay County in urban/suburban Panama City. The project is comprised of three disjunct properties consisting of a 40-acre parcel (Highpoint tract), a 130-acre parcel (Lynn Haven tract), and a 2,178-acre property (Star Avenue tract) owned by the St. Joe Land and Development Company. The tracts are separated by ca. 2-3 miles of substantially developed habitat. The Highpoint tract is located approximately 0.15 miles east of Highpoint Road and 1.5 miles north of County Hwy 2321. The Lynn Haven tract is located on Transmitter Road, approximately 0.6 miles south of Hwy 390. The Star Avenue tract is located on Star Avenue, approximately 2.3 miles south of US Hwy 231. All three properties are located in the St. Andrews Bay watershed. The Star Avenue tract and the Lynn Haven tract are situated within the Mill Bayou watershed, a tributary to St. Andrews Bay. The Highpoint tract is located approximately ½ mile from Deerpoint Lake. Established conservation areas located within close proximity to the tracts include the 11-acre Highpoint Preserve, located on the boundary with the Highpoint tract, and 95 acres of existing wetland mitigation property adjacent to the Lynn Haven tract. The Bear Creek Forest Florida Forever project is approximately two miles to the east of the Star Avenue tract. The 9,600-acre Panama City Airport Conservation Easement is approximately nine miles to the west. All sites are owned by St. Joe Land & Development Company, identified as a willing seller.

Resource Description

Florida Natural Areas Inventory (FNAI)

This evaluation is based on information gathered from the proposal, Florida Cooperative Land Cover data version 3.2, and information in the Florida Natural Areas Inventory (FNAI) database. A field

survey was conducted on July 13 by FNAI staff Dan Hipes, along with the Acquisition and Restoration Council (ARC) liaison staff and representatives for the landowner.

The proposed properties lie largely within the Mills Bayou watershed between East Bay and North Bay of the St. Andrews Bay system. Predominant current land use is silviculture. Historically the sites supported wet and mesic flatwoods, in association with baygalls, basin swamps, dome swamps, and other wetlands. Silvicultural activities replaced former open savannas with short-rotation slash pine in bedded plantations, with consequent loss of native groundcover and altered hydrological regimes. These activities have been detrimental to the Panama City crayfish (*Procambarus econfinae*), which is narrowly endemic to a small region of Bay County.

Pine plantation covers the greatest area of the landcover types within the proposal. Sites visited during the field assessment were in various stages of the harvest cycle from recently cut to 20-plus years. All sites supported slash pine (*Pinus elliottii*). In addition to characteristic wet and mesic flatwoods species such as saw palmetto (*Serenoa repens*) and gallberry (*Ilex glabra*), there was a varying number of weedy species at any given site. More recently cut sites had the greatest number of species, including wax myrtle (*Morella cerifera*), persimmon (*Diospyros virginiana*), red bay (*Persea palustris*), yaupon (*Ilex vomitoria*), sawtooth blackberry (*Rubus pensilvanicus*), titi (*Cyrilla racemiflora*) muscadine (*Vitis rotundifolia*), witchgrasses (*Dichantherium* spp.), dogfennel (*Eupatorium capillifolium*), fireweed (*Erechtites hieraciifolius*), bushy bluestem (*Andropogon glomeratus* var. *glaucopsis*), slender flattop goldenrod (*Euthamia caroliniana*), and bracken fern (*Pteridium aquilinum*).

A remnant of mesic flatwoods was observed in a small area sheltered by wetlands that were excluded from forestry operations. The canopy was slash pine. There was an open midstory typical of wet and mesic flatwoods. The shrub layer was generally < 1 meter tall and included saw palmetto, gallberry, huckleberry (*Gaylussacia frondosa*), shiny blueberry (*Vaccinium myrcinites*), and flatwoods St. Johnswort (*Hypericum microsepalum*). Herbaceous species were dominated by panic grass (*Panicum* sp.), beakrushes (*Rhynchospora* spp.), bracken fern, chalky bluestem (*Andropogon virginicus* var. *glauca*), Apalachicola meadowbeauty (*Rhexia parviflora*), and clubmoss (*Lycopodiella* sp.). Wiregrass (*Aristida stricta*) was present, but sparse.

Baygall and basin swamp are intermingled throughout the site, with many areas having characteristics of both. Baygall apparently covers a larger proportion based on observations during the field assessment. Dominant canopy species include sweetbay magnolia (*Magnolia virginiana*) and slash pine. Midstory cover is variable and includes red maple (*Acer rubrum*), redbay, titi, and black titi (*Cliftonia monophylla*). The short shrub layer is a nearly impenetrable thicket of titi, black titi, sweet pepperbush (*Clethra alnifolia*), tall gallberry (*Ilex coriacea*) and wax myrtle. No herbaceous cover was observed.

Two basin swamps were observed during the field assessment. Both had a canopy dominated by laurel oak (*Quercus laurifolia*), pond-cypress (*Taxodium ascendens*), and sweetbay magnolia. The midstory included red maple along with shorter canopy species. The shrub layer was sparse to moderate and included titi, sweet pepperbush, and wax myrtle. The herbaceous cover was dominated by ferns, including Virginia chain fern (*Woodwardia virginica*), cinnamon fern (*Osmundastrum cinnamomeum*), and royal fern (*Osmunda regalis*).

Natural communities and landcover types within Bay County Crayfish Habitat Restoration Florida Forever proposal

Community or Landcover	Acres	Percent of Proposal
baygall/basin swamp	752	32
mesic flatwoods	33	1
planted pine	945	40
wet coniferous plantation	555	24
road	63	3
Totals	2348	100

Florida Fish and Wildlife Conservation Commission (FWC)

Approximately 47% of the property is comprised of upland pine plantation, 20% in hydric pine plantation, 18% in wet flatwoods, 6% in mixed scrub-shrub wetland, 6% in freshwater forested wetlands, 3% in pasture, roads, utilities, and residential facilities. A complete list from the Cooperative Land Cover model is found in the attached FWC GIS Environmental Resources Analysis.

Historically, the property would have consisted of old growth longleaf pine, mesic flatwoods, and wet flatwoods until harvesting occurred in the 1960s. The property would have been planted in slash pine with a harvest cycle of 15 to 25 years. The property has been bedded and would have been planted with up to 800 slash pine seedlings per acre during each rotation. Most of the timber was heavily damaged during Hurricane Michael in 2018, a Category 5 hurricane that made a direct hit in the Panama City area. During the field review, most of the storm damaged planted pines had been harvested and some areas had been freshly tilled and were being prepared for planting. Based on review of soil maps of the area, the natural communities expected to occur on the uplands are sandhill (~24 acres) and mesic flatwoods (~790 acres). Prescribed fire was not routinely used on the site and the use of prescribed fire was not evident during the field review. The ecotones and transition zones between natural communities and pine silviculture were abrupt with pine silviculture historically occurring to the edge and into wetland areas.

The on-site forested wetlands and marshes have been influenced through silviculture planting method and practices through ditching, bedding and furrowing, dense planting practices and planting of pine into wetland areas. Fire suppression or infrequent fire management has resulted in a dense shrub layer of titi (*Cyrilla racemiflora* and *Cliftonia monophylla*). Some cypress harvest probably occurred in the dome swamps during harvest of the old growth pines or during subsequent harvest. Recent harvest of the storm damaged pine has cleared most of the properties to the edge of wetlands. Remnant pockets of herbaceous wetlands (wet prairie) were observed on the properties. The project sponsor understands that restoration and management of the site is a necessary component of the proposed project.

There is moderate potential for listed plant and animal species that depend on fire-maintained pine forests with healthy herbaceous ground cover, but initial management through prescribed fire and/or mechanical treatment would be necessary. Subsequent management with prescribed fire would also be necessary. Habitat for game species, such as white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo osceola*), bobwhite quail (*Colinus virginianus*) and common non-game species is relatively low at present but would increase with appropriate site management. The properties are located within an area of frequent occurrence potential for the Florida black bear (*Ursus americanus floridanus*) and are located within the East Panhandle Bear Management Unit. The properties would

potentially be utilized by little blue heron (*Egretta caerulea*, State Threatened [ST]), Southeastern American kestrel (*Falco sparverius paulus*, ST), gopher tortoise (*Gopherus polyphemus*, ST), Florida pine snake (*Pituophis melanoleucus mugitus*, ST), and bald eagle (*Haliaeetus leucocephalus*). Florida sandhill crane (*Antigone canadensis pratensis*, ST) have historically been documented in the area, and could potentially use the properties.

Goals, Measures and Criteria

Goal A:

Enhance the coordination and completion of land acquisition projects

Measure A2:

The number of acres protected through the use of alternatives to fee simple acquisition.

Approximately 230 acres of habitat for Panama City crayfish have been placed under a permanent easement. FWC set a long-term conservation goal of increasing the total area of occupied Panama City crayfish habitat to 2,000 acres. The U.S. Fish and Wildlife Service has estimated that approximately 2,200 acres of actively managed and permanently protected habitat is needed for the persistence of the Panama City crayfish. Under the proposed ESA listing, the establishment of the approximately 2,200 acres would meet the projected goal for the species.

Measure A3:

The number of shared acquisition projects among Florida Forever funding partners and partners with other funding sources, including local governments and the federal government.

The project sponsor has received commitments from partners to restore and manage the property. Approximately \$3.7 million has been pledged for an endowment as mitigation for the restoration and site management of Panama City crayfish habitat.

Goal B:

Increase the protection of Florida's biodiversity at the species, natural community, and landscape levels

Measure B1:

The number of acres acquired of significant Strategic Habitat Conservation Areas.

Approximately 66% lies within a designated FWC Strategic Habitat Conservation Area (SHCA) for species including the American swallow-tailed kite (*Elanoides forficatus*) and Cooper's hawk (*Accipiter cooperii*). The FWC GIS analysis contains more detailed information.

Measure B2:

The number of acres acquired of highest priority conservation areas for Florida's rarest species.

An analysis of priority conservation areas based on Florida Forever Conservation Needs Assessment data may be found in the Florida Forever Measures table. Habitat conservation priorities for 281 of Florida's rarest species were mapped and divided into six priority classes. The Florida Forever Measures table shows the acres for each priority class found on the Bay County Crayfish Habitat Restoration proposal. Overall, the site contains approximately 2,305 acres (98% of site) of rare species habitat. The

habitat is mostly in Priority 1 (92% of site), with the remainder in Priorities 2, 5, 3 and 6 (5%, 1%, < 1% and < 1%, respectively).

The following table lists the acres of habitat for each species that may be found on the site, based on the FNAI Habitat Conservation Priorities. Please note that habitats for these species overlap, so that the sum total of habitat for all species is more than the total acreage of the priority conservation areas.

Rare species habitat based on FNAI Habitat Conservation Priorities for 281 species with the greatest conservation need

Scientific Name	Common Name	Global Rank	Acres
Procambarus econfinae	Panama City crayfish	G1G2	2,282
Ursus americanus floridanus	Florida black bear	G5T4	2,305

The FWC Florida Landscape Assessment Model (FLAM) is a GIS model that determines the landscape value based on natural resources and fish and wildlife habitat. The FLAM ranks habitat from a 0-10; a rank of 10 being of greatest value. The mean FLAM score for this property is 7.5. Approximately 67% of the property is identified as Priority 1 or 2 (of 5) for the Critical Lands and Waters Identification Project. Approximately 62% of the property is classified as wetland based on the National Wetlands Inventory, and approximately 73% of the property is located within the designated 100-year flood zone.

Measure B3:

The number of acres acquired of significant landscapes, landscape linkages, and conservation corridors, giving priority to completing linkages

The Bay County Crayfish Habitat Restoration Florida Forever proposal does not contribute to significant landscape linkages or corridors.

Measure B4:

The number of acres acquired of under-represented native ecosystems.

The Florida Forever natural community analysis includes only those communities that are under-represented on existing conservation lands. This analysis provides a conservative estimate of the extent of these communities, because it identifies only relatively undisturbed portions of these communities that occur within their historic range. The Florida Forever Measures table lists the acreages of under-represented natural communities found on the site. Based on this analysis, there are 33 acres of mesic flatwoods within the Bay County Crayfish Habitat Restoration Florida Forever proposal.

Measure B5:

The number of landscape-sized protection areas of at least 50,000 acres that exhibit a mosaic of predominantly intact or restorable natural communities established through new acquisition projects, or augmentations to previous projects.

The Bay County Crayfish Habitat Restoration Florida Forever proposal does not contribute to a landscape-sized protection area of 50,000 acres. It is adjacent to a group of conservation easements held by the State of Florida DEP.

Measure B6:

The percentage increase in the number of occurrences of imperiled species on publicly managed conservation areas.

The FNAI database includes few records of rare species within the site. The proposal encompasses much of the area that is the stronghold for *P. econfinae* and may be essential for the long-term survival of that species. Two state-endangered plants, Henry’s spiderlily (*Hymenocallis henryae*) and wiregrass gentian (*Gentiana penneliana*) have been found in the immediate vicinity and may occur on-site; field surveys are needed to search for these species to assure that any remaining populations are protected during potential restoration activities. Although the Florida black bear occurs in low numbers regionally, the site’s contribution to its conservation is likely minimal because of its relatively small size.

Rare plants and animals documented or reported to occur within the Crayfish Habitat Restoration Florida Forever proposed project

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Rare plants documented on site					
none					
Additional rare plants reported on site by applicant					
none					
Rare animals documented on site					
<i>Procambarus econfinae</i>	Panama City crayfish	G1G2	S1S2	PT	SSC
<i>Ursus americanus floridanus</i>	Florida black bear	G5T4	S4	N	N
Additional rare animals reported on site by applicant					
none					

Goal C:

Protect, restore and maintain the quality of natural functions of land, water, and wetland systems of the state

Measure C1:

The number of acres of publicly-owned land identified as needing restoration; enhancement, and management, acres undergoing restoration or enhancement; acres with restoration activities completed, and acres managed to maintain such restored or enhanced conditions; the number of acres which represent actual or potential imperiled species habitat; the number of acres which are available pursuant to a management plan to restore, enhance, repopulate, and manage imperiled species habitat; and the number of acres of imperiled species habitat managed, restored, and enhanced, repopulated, or acquired.

Pine Plantations and other forested communities were severely damaged in 2018 by Hurricane Michael. Many of the plantations were subsequently harvested to salvage the value of the timber. These sites have essentially been prepped for restoration of the microtopography that is important for the local hydrology and Panama City crayfish. Further efforts could include groundcover restoration and re-establishment of longleaf pine, both of which would further enhance the habitat for the crayfish as well as other wildlife in the area.

Measure C4:

The number of acres acquired that protect natural floodplain functions.

Approximately 1,684 acres (72%) provides for the protection of natural floodplain functions, as noted in Appendix A.

Measure C5:

The number of acres acquired that protect surface waters of the State.

Approximately 2,297 acres (98%) provides for the protection of surface waters, as noted in the FFME table (see Appendix A).

Measure C8:

The number of acres of functional wetland systems protected.

Approximately 1,141 acres (49%) provides for the protection of functional wetlands, as noted in the FFME table (see Appendix A).

Goal D:

Ensure that sufficient quantities of water are available to meet the current and future needs of natural systems and the citizens of the state

Measure D3:

The number of acres acquired of groundwater recharge areas critical to springs, sinks, aquifers, other natural systems, or water supply.

Approximately 2,348 acres (100%) provides for aquifer recharge, as noted in the FFME table (see Appendix A).

Spatial Analysis for Potential Water Quality Benefits

Categories	Scoring Criteria	Project Score
FDEP High Profile Springs (In 1,2,3 or > spring sheds)	12,24,36	0
FDEP Select Agricultural Land Use (0-30%, >30-65%, >65%)	4,8,12	0
FDEP Florida Aquifer Vulnerability (FAVA)	4,7,10	7
FDEP Special Nutrient Impaired WBIDs	9	9
FDEP Distance to Major Lakes (100, 500, 1000 meters)	8,7,6	0
FDEP Springsheds or within 5 miles	10,7	0
FDEP BMAPs	10	0
FDEP Distance to Major Rivers (100, 500, 1000 meters)	6,5,4	0
Total Possible	101	16

FINAL DEAR SCORE = 1 (low Water Quality Protection Benefits)

Goal E:

Increase natural resource-based public recreational and educational opportunities

Measure E1:

The number of acres acquired that are available for natural resource-based public recreation or education.

Approximately 2,348 acres (100%) of the proposal would be available for natural resource-based public recreation or education if acquired. The FWC is the proposed manager for this proposal (see Appendix D).

Measure E3:

The number of new resource-based recreation facilities, by type, made available on public land.

Approximately 3.1 miles of recreational trails would be available, as noted in Appendix A.

Goal F:

Preserve significant archaeological or historic sites

There are no recorded archaeological sites or historic structures recorded within the project boundaries. One resource group is recorded along the southern boundary of the project. Tram Road (BY1365) once functioned as a tramway to move lumber and turpentine between the Kent/Majette community and St. Andrews Bay.

The site file shows 796 historic structures, 74 archaeological sites, and 20 resource groups as being located within a five-mile radius of this property.

The tract's location, topography, and proximity to freshwater suggests medium – high probability of holding any potentially significant archaeological or historical sites.

As no historic and archaeological properties listed in the FMSF or NRHP are known to exist on the Crayfish Habitat Restoration Florida Forever Project, the project does not meet Measures for Goal F.

CULTURAL RESOURCES:

Three separate cultural resource assessment surveys have been conducted on portions of the property in response to cell phone tower construction projects; however, the majority of the eastern portion of the project has been subject to survey.

FIELD OBSERVATIONS:

Due to restrictions imposed by Covid-19, DHR did not participate in a field review for this project.

Goal G:

Increase the amount of forestland available for sustainable management of natural resources

Measure G1:

The number of acres acquired that are available for sustainable forest management.

Approximately 2,096 acres (89%) are available for sustainable forest management, as noted in Appendix A.

Measure G2:

The number of acres of state-owned forestland managed for economic return in accordance with current best management practices.

Slash pine stands onsite were observed at various ages, from newly planted to 25 years or older mature stands. Native groundcover flora including wiregrass, palmetto, gallberry, various sedges and wildflowers were observed during site reconnaissance. No wildlife was seen onsite, nor evidence of crayfish chimneys in areas thought by onsite experts as suitable habitat for such sightings. No non-native, invasive species were noted. Primary roads are in good condition, however secondary and tertiary roads may need work to allow for better restoration activity access. Future silvicultural activities should be closely monitored for potential erosion that may negatively impact the PCC. Management activities should continue to adhere to applicable best management practices.

Measure G4:

The percentage and number of acres identified for restoration actually restored by reforestation.

This area of the County was impacted heavily by Hurricane Michael in the fall of 2018. These lands have been operated as silvicultural industry lands for many decades. Many areas were observed during

site reconnaissance to still display the significant hurricane damage by way of ravaged and leaning slash pines that had not yet fallen or been clear cut. Much of the site would necessitate extensive site preparation for habitat restoration. Establishing a prescribed fire regime on the site may be difficult, as urban interface and smoke interference with nearby roads pose a challenge.

Management

The Florida Fish and Wildlife Conservation Commission is recommended to manage the property if acquired, and FWC has provided a management prospectus (see Appendix D.).

Funding Sources

Florida Forever is the proposed funding source for acquisition. The U.S. Fish and Wildlife Service has pledged 3.73 million dollars towards the development and management of the project.

Funding for Mapping, Appraisal, Negotiations & Closing

Florida Forever. The estimated cost of two appraisals and an appraisal review for the subject is estimated to range from about \$15,000 to \$25,000.

Ownership Pattern and Acquisition Planning

Ownership information is based on the information from the property appraiser website and is currently owned by St. Joe Land and Development. It is a 2,348-acre property located in Bay County.

Acquisition Phases

The three sites proposed for this project comprise 2,383.8 acres. As the first phase of this project, 2,000 acres of Panama City crayfish habitat within the 2,383.8 acres will be acquired and protected to ensure the species maintains population resilience (Florida Fish and Wildlife Conservation Commission, 2007; 2016). All parcels intersected by the proposed 2,383.8-acre restoration sites total 4,085.98 acres and are valued at \$6,473,145.00 (\$1,584 per acre) according to Bay County's property appraiser. The 2,383.8-acre proposed restoration site currently includes partial parcels. Bay County will re-record the partial parcels being considered for acquisition (at the time of survey/acquisition) so that only whole parcels are acquired.

Government Planning and Development

Contribution to Recreation and Open Space Needs

Moderate to High: The project will provide hiking and biking trails within a mile of the urban Panama City Area. Once these lands are secured, it will create other opportunities to connect with trails and greenways within the County. The habitats are very attractive to birders and plant enthusiasts due to the number of threatened and endangered species thought to exist in the habitats of the Mill's Bayou Watershed area. Additional connecting trails are planned for the property if acquired. Educational Kiosks, signage and plant species identifiers will be established as the project progresses. This will help to educate the public and raise awareness of the importance of the Mill's Bayou Watershed and its

relation to St. Andrew's Bay. The recreational value of this property is also aided by fact that; the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission have committed to manage the property.

Potential for Losing Significant Natural Attributes or Recreational Open Spaces

High: The potential for losing significant natural attributes is very high due to the proximity of Panama City, and development occurring near or adjacent to the project site. The project site acts as a buffer between urban development and the resources of St. Andrew's Bay and the aquatic Preserve.

The lands proposed for this property have the highest priority by FNAI for protection under the Florida Forever Program. The project would enable the survival and recovery of the Panama City Crayfish, a federally endangered species. The Panama City Crawfish supports populations of other federally endangered species including the West Indian Manatee, and other federally threatened species such as Gulf Sturgeon, White-birds-in-a-nest, Papery Whitlow-wort, Panhandle Butterwort, Florida Skullcap, American Alligator, Leatherhead turtle, Loggerhead Turtle, and others. Forty-one percent of the property in the project is located within the FEMA A zones. These properties in the past have acted as a buffer to protect the 24,116- acre St. Andrews aquatic preserve. The preserve is habitat to more than 40 listed species. The properties help to filter runoff from urbanized Panama City from entering the Mill's Bayou micro-estuary helping to filter the Class II waters of St. Andrews Bay which are approved for shellfish harvesting. These habitats are endangered from encroachment and degradation from proposed development. These habitats are also stressed as a result numerous downed trees from hurricane Andrew which act to restrict watershed flow. The purchase of these properties would allow the eventual restoration of the watershed to improve its role as a buffer between the developed urban areas and St. Andrews Bay.

Potential for Being Subdivided

Moderate to High: The subject property has a moderate to high potential for being subdivided. The future land use designation is Agriculture, which allows residential use at a density of one dwelling unit per twenty acres. An amendment to the comprehensive plan would be required to develop the site. Bay County currently has a relatively low rate of population growth in recent years (less than one percent a year). Hurricane Michael in 2018 inflicted severe damaged on the Panama City community. As a result, there is a serious housing shortage in Bay County. This is compounded by the fact that the mission of Tyndall Air Force Base has recently expanded to include a new air wing at the further increasing the housing demand. Some of the property in the project is within walking distance of Panama City and a short distance from the City of Lynn Haven. As the County recovers and begins to address some its current housing shortage, this could trigger a more rapid rate of growth in the Future. This in turn could trigger land use conversion and subdivision of property. The property is relatively close to Residential and Commercial land uses located on either side of US 231. Property to the east of the site lies within the northern node of the City of Panama City. The property is bordered by City lands to the east which contain mixed-use, commercial, and urban community land uses. All lands in the area south to the Gulf of Mexico and north to St. Andrews Bay have been converted from natural habitat to housing or commercial property. According to the application, the only region left to build around Panama City is the northeast, which puts this property at risk from development. A new apartment complex and an 800-

acre residential development are currently in various phases of the permitting process and are located adjacent to the project site.

Zoning and Densities within the Project Boundaries

Density Housing: No more than one (1) dwelling per twenty (20) acres.

Intensity: No more than 10% impervious area. No more than 50-feet in height except for silos, barns, storage buildings, and communications towers.

Existing Land Uses and Future Land Use Designations (Bureau of Appraisal)

The subject parcels existing land uses are timberland.

The subject's zoning is AG-2 Agriculture Timberland. The following uses are allowed in all AG-2 Zones. All other uses are conditional or prohibited.

- a. All allowable AG-1 uses.
- b. All forestry activities described in Subsector 113 of the North American Industry Classification System, Office of Management and Budget.
- c. All public and private forestry support services such as fire towers and related facilities, sawmills, cut timber storage area, and related uses.

All timber harvesting and forestry-related activities shall be undertaken in strict conformance with Silviculture Best Management Practices, most recent edition, published by the Florida Department of Agriculture and Consumer Services.

Conditional Uses

- a. Wind farms and photo-voltaic arrays.
- b. Landfills and mining.

Future Land Use

The subject's future land use is Agriculture Timberland. The purpose is to provide areas for the ongoing growing and harvesting of trees for silviculture purposes.

Service Area: All

Designation Criteria: Areas owned by paper companies or other large landholders that are engaged in the operation of timber tracts or farms for the purpose of selling standing timber.

Allowable Uses: Timberland; tree farms, tree nurseries, forestry services, and similar related activities, recreation, conservation, logging, sawmills and planing mills, borrow pits, public/institutional, public utilities including wind farms and photo-voltaic arrays, communications towers, temporary special purpose plants (e.g. asphalt, pipe yard, etc.), and very low density residential.

Development Restrictions: Logging road clearing and timber cutting activities to be conducted in strict compliance with Silviculture Best Management Practices, Dept. of Agriculture and Consumer Services, 1993.

Development Potential (Bureau of Appraisal)

Hurricane Michael's destruction of homes caused a surge of residential building in Panama City. Legal and insurance issues are forcing Panama City's homeowners to rebuild their homes in new locations. This is causing a shift in residential growth to the east and northeast of Panama City. Numerous new developments are being constructed on undeveloped lands including one community located in Panama City less than one-mile northeast of the proposed site. Although St. Joe Land & Development Company has not shared the proposed development timeline for the three proposed sites, these properties are likely one of the next to be developed. All lands south to the Gulf and north west to St. Andrew Bay have converted from natural habitat to housing and commercial property. The only region left to build around Panama City is the northeast, which puts this land as a potential candidate for development. A new apartment complex and residential development are currently in permitting phases adjacent to these lands.

Based on the Bay County Comprehensive Plan future land use designation (Agriculture/Timberland), the subject property has a development potential of at least 204 residential dwelling units.

Surrounding Zoning and Land Use: Land uses for the subject area are estimated to be 75% residential and commercial uses.

Availability of Electricity, Water, and Sewer: Electric, water, and sewer are available to the sites.

Transportation Issues:

Located in FDOT's District 3 in Bay County, the northwestern area of the proposed project lies approximately 0.5 mile south of SR 390. The main/larger area of the project lies approximately 0.5 mile east of CR 2327/Transmitter Road, 0.5 mile north of SR 30A/US 98/Tyndall Pkwy, and 0.5 miles south of SR 75/US 231. All of these roads are Strategic Intermodal System (SIS) facilities (including CR 2327/Transmitter Road), and all of the state roads listed are evacuation routes. A SIS rail corridor also runs parallel to SR 75/US 231 in the area. The SUN Trail Great NW Coastal Trail Priority Corridor also runs along the project parcels along Nehi Road.

There are several FDOT Work Program projects in the area, including the following: widening SR 390 from SR 77 to SR 75/US 231 and widening SR 75/US 231 from south of Pipe Line Road to north of Penny Road. The multi-lane reconstruction project primarily consists of widening SR 390 (St. Andrews Boulevard) from CR 2312 (Baldwin Road) to Jenks Avenue. The typical section will consist of six (6) 12-foot travel lanes separated by a 22-foot median with curb and gutter, 4-foot bicycle lanes and curb and gutter on the outside. Six-foot sidewalk will be constructed along both sides of the roadway adjacent to the curb and gutter. There is one (1) signalized intersection within the project limits at the intersection of SR 390 and Jenks Avenue. The signal is currently supported by strain poles. New signal supports will be constructed and traffic loops on SR 390 and Jenks Avenue will be replaced as impacted by the widening. ADA improvements will be included in this project. Sidewalk will be constructed along both sides of SR 390, along with bicycle lanes. Pedestrian signals will be included at the signalized intersection with Jenks Avenue.

There should be coordination with the appropriate FDOT District staff during the acquisition process to ensure that any issues related to the transportation facilities and the SUN Trail priority corridor are addressed and incorporated into the management plan as appropriate.

ACKNOWLEDGEMENTS

Staff in DEP's Division of State Lands (DSL) and the Florida Natural Areas Inventory determined the final project recommendations. Deborah Burr in DSL's Office of Environmental Services was responsible for the overall coordination of this report, with contributions from the following:

Florida Department of State, Division of Historical Resources - Joshua Goodwin

Florida Forest Service - Cat Ingram and Daniel Young

Department of Economic Opportunity - Dan Evans

DSL Bureau of Appraisal - Frances Alford

Florida Fish and Wildlife Conservation Commission – Laramie Ferry and Bryan Phillips

Florida Natural Areas Inventory - Dan Hipes, Katy Nesmith, Dale Jackson and Nathan Pasco

DEP Division of Environmental Assessment and Restoration - Kevin Coyne and Janis Morrow

Florida Department of Transportation - Jennifer Carver

Appendices

Appendix A:

Final FF measures table prepared by Florida Natural Areas Inventory (report requirement 259.105 (15)d)

Bay County Crayfish Habitat Restoration: Florida Forever Measure Evaluation 20200820

GIS ACRES = 2,348

MEASURES	Resource Acres ^a	% of project
B1: Strategic Habitat Conservation Areas		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	1,470	63%
Priority 4	0	0%
Priority 5	53	2%
Total Acres	1,523	65%
B2: FNAI Habitat Conservation Priorities		
Priority 1	2,154	92%
Priority 2	122	5%
Priority 3	2	< 1%
Priority 4	0	0%
Priority 5	26	1%
Priority 6	1	< 1%
Total Acres	2,305	98%
B3: Ecological Greenways		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	0	0%
Priority 4	0	0%
Priority 5	2,099	89%
Priority 6	0	0%
Total Acres	2,099	89%
B4: Under-represented Natural Communities		
Upland Glade (G1)	0	0%
Pine Rockland (G1)	0	0%
Scrub and Scrubby Flatwoods (G2)	0	0%
Rockland Hammock (G2)	0	0%
Dry Prairie (G2)	0	0%
Seepage Slope (G2)	0	0%
Sandhill (G3)	0	0%
Sandhill Upland Lake (G3)	0	0%
Upland Pine (G3)	0	0%
Mesic/Wet Flatwoods (G4)	33	1%
Upland Hardwood Forest (G5)	0	0%
Total Acres	33	1%
B6: Occurrences of FNAI Tracked Species		
G1	3	
G2	0	
G3	0	
G4	1	
G5	0	
Total	4	
C4: Natural Floodplain Function		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	289	12%
Priority 4	1,262	54%
Priority 5	33	1%
Priority 6	101	4%
Total Acres	1,684	72%

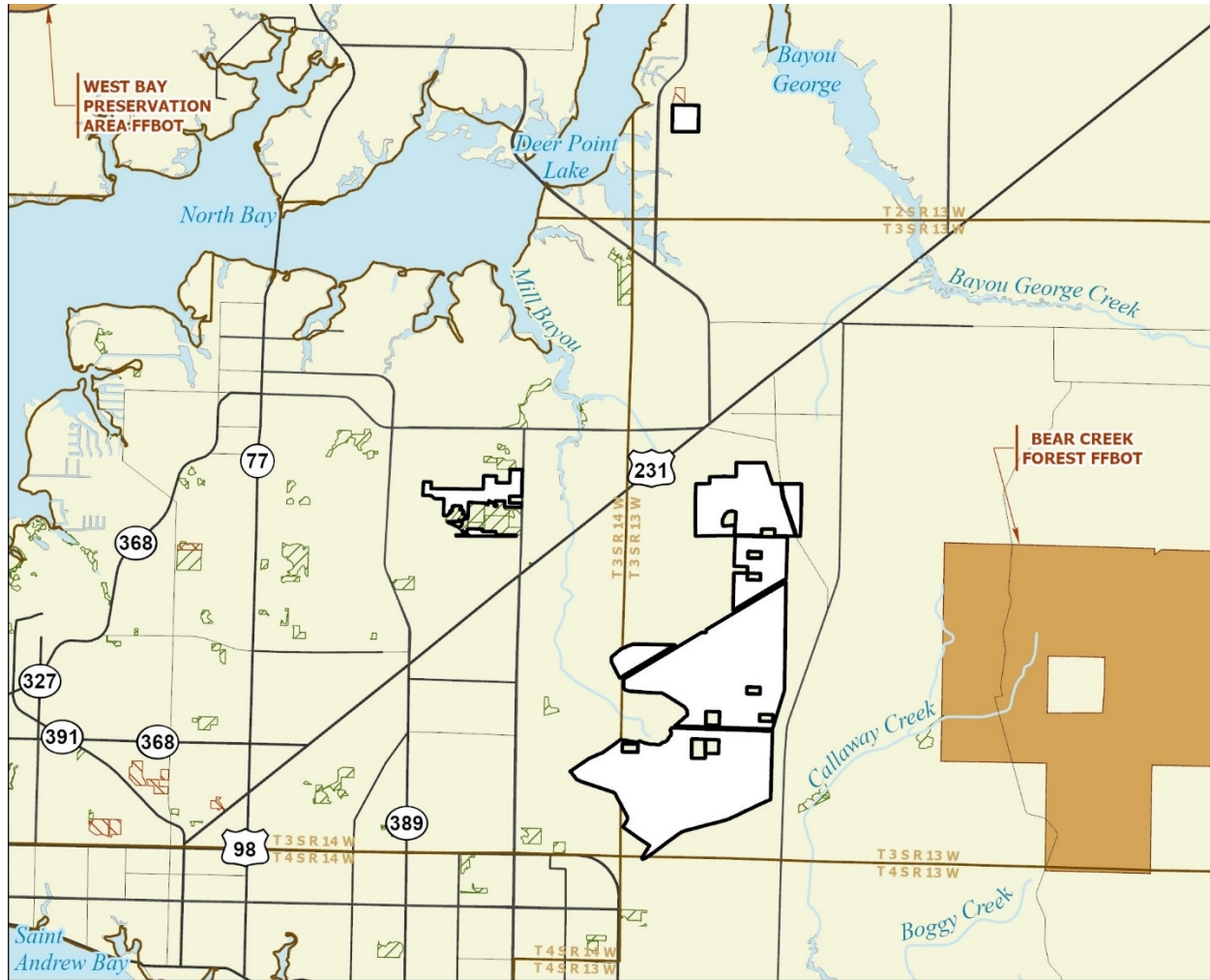
MEASURES (continued)	Resource Acres ^a	% of project
C5: Surface Water Protection		
Priority 1	399	17%
Priority 2	0	0%
Priority 3	0	0%
Priority 4	1,898	81%
Priority 5	0	0%
Priority 6	0	0%
Priority 7	0	0%
Total Acres	2,297	98%
C7: Fragile Coastal Resources		
Fragile Coastal Uplands	0	0%
Imperiled Coastal Lakes	0	0%
Coastal Wetlands	0	0%
Total Acres	0	0%
C8: Functional Wetlands		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	204	9%
Priority 4	874	37%
Priority 5	26	1%
Priority 6	36	2%
Total Acres	1,141	49%
D3: Aquifer Recharge		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	0	0%
Priority 4	169	7%
Priority 5	2,009	86%
Priority 6	170	7%
Total Acres	2,347	100%
E2: Recreational Trails (miles) <small>(prioritized trail opportunities from Office of Greenways and Trails & Univ. Florida)</small>		
Land Trail Priorities	3.1	
Land Trail Opportunities	0.0	
Total Miles	3.1	
F2: Arch. & Historical Sites (number) 0 sites		
G1: Sustainable Forestry		
Priority 1	277	12%
Priority 2	438	19%
Priority 3	1,343	57%
Priority 4	0	0%
Priority 5 - Potential Pinelands	38	2%
Total Acres	2,096	89%
G3: Forestland for Recharge 0 0%		

^aAcres of each resource in the project and percentage of project represented by each resource are listed except where noted. This analysis converts site boundary into pixels, which causes slight differences from GIS acres; this effect is greatest on small sites.

Appendix B:





Final FF proposal boundary maps prepared by Florida Natural Areas Inventory (report requirement 259.105 (15)k)

B1: Florida Forever map



**BAY COUNTY CRAYFISH HABITAT RESTORATION
FLORIDA FOREVER PROPOSAL**

BAY COUNTY

-  Proposed Florida Forever BOT Project
-  Florida Forever BOT Projects
-  Other Conservation Lands
-  FL DEP Conservation Easements

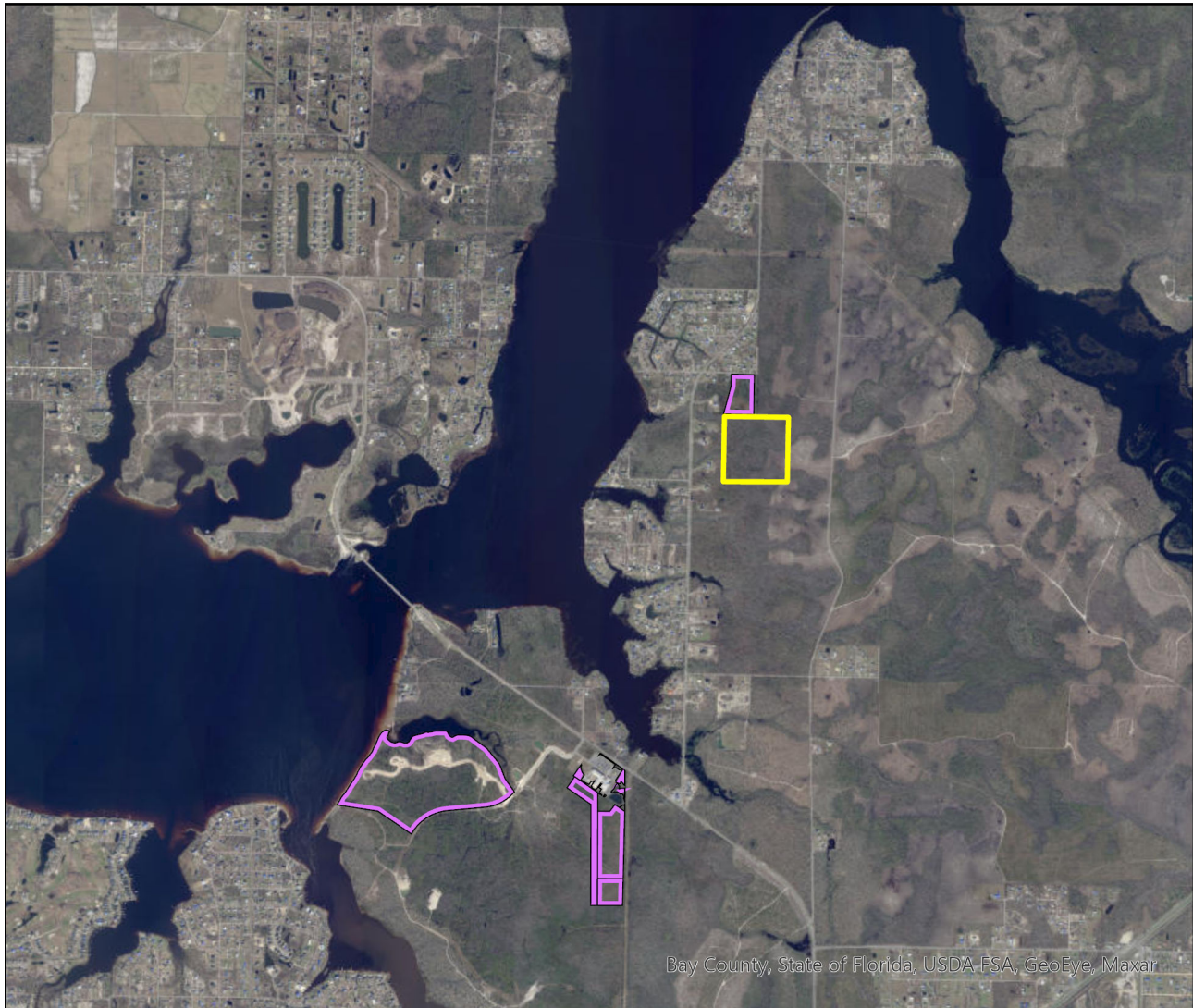


AUGUST 2020

B2: Aerial map 1 of 2

**Bay County Crayfish Habitat Restoration Florida Forever Proposal
Map 1 of 2**

FLORIDA FOREVER BOARD OF TRUSTEES PROJECT PROPOSAL BOUNDARY AS OF AUGUST 2020

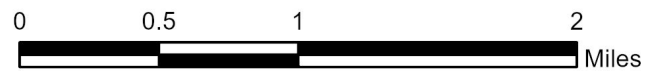
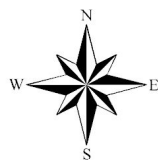


Map Produced by: N. Pasco, August 2020

Background: World Imagery Resolution = 0,3 meter



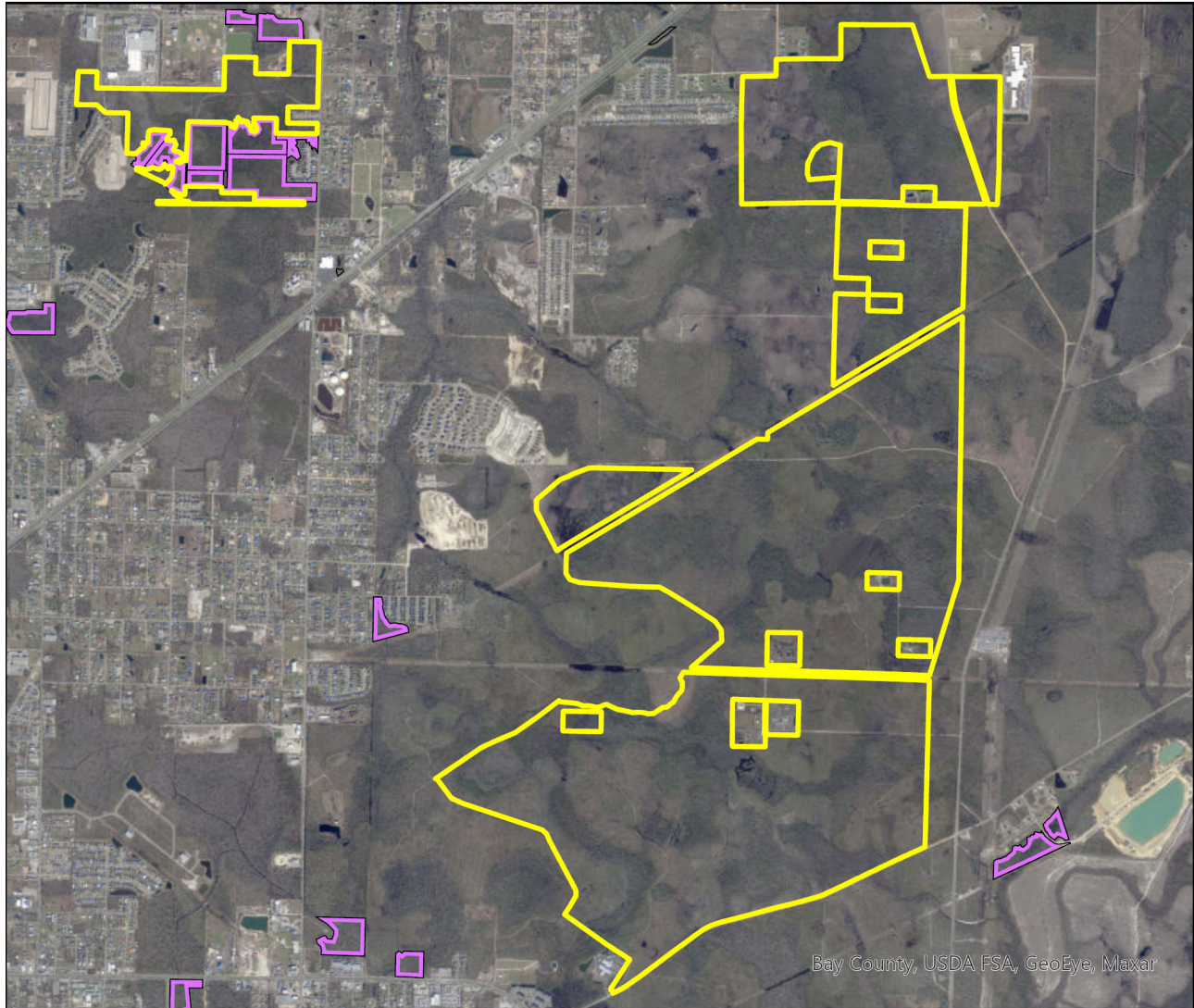
1018 Thomasville Road
Suite 200-C
Tallahassee, Florida 32303
850-224-8207
fax 850-681-9364
www.fnai.org



B2: Aerial map 2 of 2

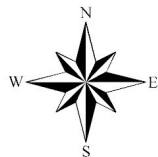
Bay County Crayfish Habitat Restoration Florida Forever Proposal Map 2 of 2

FLORIDA FOREVER BOARD OF TRUSTEES PROJECT PROPOSAL BOUNDARY AS OF AUGUST 2020



Map Produced by: N. Pasco, August 2020

Background: World Imagery Resolution = 0.3 meter



	Florida Forever Proposal Boundary
	Existing Private Conservation Lands

1018 Thomasville Road
 Suite 200-C
 Tallahassee, Florida 32303
 850-224-8207
 fax 850-681-9364
 www.fnai.org



Appendix C:

Summary of properties tax I.D. owner, size, value and parcel status.

Parcel ID	Owner	Acres	Just (Market) Value	Entire parcel is inside 2,383.8-acre proposal
05532-000-000	THE ST JOE COMPANY LLC	280.11	\$330,042	No
05906-000-000	ST JOE TIMBERLAND CO OF DE LLC	333.21	\$282,157	No
05911-000-000	THE ST JOE COMPANY LLC	180.20	\$151,776	No
05911-020-000	THE ST JOE COMPANY LLC	188.15	\$160,522	No
05932-000-000	ST JOE TIMBERLAND CO OF DE LLC	47.41	\$340,402	Yes
05949-000-000	ST JOE TIMBERLAND CO OF DE LLC	465.92	\$396,014	No
05955-000-000	ST JOE TIMBERLAND CO OF DE LLC	5.01	\$5,000	Yes
05969-000-000	ST JOE TIMBERLAND CO OF DE LLC	382.37	\$325,014	No
05973-000-000	ST JOE TIMBERLAND CO OF DE LLC	607.51	\$519,690	No
05979-000-000	ST JOE TIMBERLAND CO OF DE LLC	520.50	\$533,460	No
05983-000-000	ST JOE TIMBERLAND CO OF DE LLC	308.92	\$262,447	No
11515-000-000*	THE ST JOE COMPANY LLC	146.02	\$2,209,841	Yes
11515-000-001	THE ST JOE COMPANY LLC	25.79	\$260,000	Yes
11917-000-000	ST JOE TIMBERLAND CO OF DE LLC	214.37	\$315,380	No
14908-000-000	THE ST JOE COMPANY LLC	380.48	\$381,400	No
		4085.98		

*parcel includes acres encumbered by an existing conservation easement

Appendix D: Management Prospectus for Crayfish Habitat Restoration, a fee simple proposal**Management Prospectus
Bay County Crayfish Habitat Restoration
Florida Forever Proposal
Florida Fish and Wildlife Conservation
Commission August 2020****Introduction**

The Bay County Crayfish Habitat Restoration (CHR) Florida Forever proposal includes three properties encompassing approximately 2,348 acres. The three properties consist of a 40-acre parcel, a 130-acre parcel, and a 2,178-acre property, located within the St. Andrew's Watershed and ten miles north of the Gulf of Mexico. A couple of the established conservation areas located within proximity include Highpoint Preserve and the Panama City Airport Conservation Easement to the west.

The CHR proposal consists of a variety of habitats with the majority being tree plantations, wet flatlands, freshwater forested wetlands, prairies and bogs, and mesic flatwoods. The CHR has the potential to serve as an integral part of a larger system of conservation lands within the northwest region of Florida that provides important water quality protection and conserves and protects vital wildlife habitat, including for the Panama City crayfish (*Procambarus econfinae*), which is currently a state Species of Special Concern (SSC) and is expected to soon become a Federally listed species.

The Florida Fish and Wildlife Conservation Commission (FWC) could manage the CHR for the purposes of operating a Wildlife Management Area, providing ecological diversity, providing managed habitat for both imperiled and common wildlife, and providing the public with fish and wildlife-based outdoor recreational opportunities.

Adjacent Public and Private Conservation Lands and Florida Forever Projects

The CHR is part of a network of conservation lands and Florida Forever projects in Northwest Florida. The Bear Creek Forest Florida Forever project is approximately two miles to the east. St. Andrews State Park, managed by the Department of Environmental Protection-Division of Recreation and Parks (DEP-DRP) and Econfina Creek Water Management Area, managed by the Northwest Florida Water Management District (NFWFMD), are also within a ten-mile radius. Nine miles to the west is the 9,600-acre Panama City Airport Conservation Easement, managed by the DEP. There are additional properties owned by private conservation organizations within close proximity, along with three Florida Forever projects within a ten-mile radius of the CHR (Figure 1, Table 2).

Table 1 lists the conservation lands within a ten-mile radius of CHR, including lands managed by public and private entities, that conserve cultural and natural resources within this region of Florida. Some of the conservation lands are owned in full-fee by a public entity. However, other areas fall within a less-than-fee ownership classification where the land is owned and managed by a private landowner while a public agency or not-for-profit organization holds a conservation easement on the land.

Table 1. Conservation Lands within Ten Miles of the CHR

Federal Government	Managing Agency
Naval Coastal Systems Center	DOD, Navy
Tyndall Air Force Base	DOD, Air Force
State of Florida	Managing Agency
Panama City Airport Conservation Easement	DEP, Northwest District
St. Andrews State Park	DEP-DRP
Patronis Conservation Easement	NFWFMD
Econfina Creek Water Management Area	NFWFMD
Local Government	Managing Agency
Audubon Nature Preserve	Bay County Conservancy
King Family Preserve	Bay County Conservancy
Mary Ola Reynolds Miller Palm Preserve	Bay County Conservancy
Talkington Family Preserve	Bay County Conservancy
Sapp Family Preserve	Bay County Conservancy
Marjorie's Magical Marsh	Bay County Conservancy
Margaret Roberts Meek Preserve	Bay County Conservancy
McNaughton Tract	Bay County Conservancy
Private Conservation Organizations	Managing Agency
Sweetwater Mitigation Bank	Sweetwater Mitigation Bank, LLC
Breakfast Point Mitigation Bank	The St. Joe Company

Acronym Key	Agency Name
DEP	Department of Environmental Protection
DEP-DRP	Department of Environment Protection-Division Recreation and Parks
DOD	United States Department of Defense
NFWFMD	Northwest Florida Water Management District

Table 2. Florida Forever Projects within Ten Miles of the CHR

Project Name	GIS Acres
Florida's First Magnitude Springs	3,587
Bear Creek Forest	100,461
West Bay Preservation Area	4,510

Past and Current Use

Thousands of years before Europeans arrived, Native Americans hunted, fished, and gathered wild plants along Florida's Gulf coast. The coastal hardwood forests and the streams flowing through these lands provided rich hunting and fishing grounds for Native Americans, and millennia later, continue to do so today for modern Floridians.

Prior to European settlement, the landscape of Florida was settled and used by a variety of aboriginal peoples whose culture relied primarily on hunting, fishing, and subsistence agriculture. Though some land alteration occurred, only minor alteration of the landscape is thought to have taken place until the advent of European settlement, beginning with the Spanish occupation of Florida in the 16th century. Along with more intensive agricultural practices, the Spanish and other settlers brought livestock, mainly cattle and hogs, to Florida. This began an era of broad use of the landscape for agriculture.

Rangeland cattle grazing and other agricultural practices began to be utilized in a more systematic way and occurred through much of Florida throughout most of the European settlement era from the 16th through the 20th century. Use of these agricultural practices began an era of increased alteration of the natural landscape. However, it wasn't until the 19th and 20th centuries that major settlement and more extensive alteration of the landscape in the area began with the widespread use of agriculture and associated development.

Today the CHR is actively managed for silviculture; most of the uplands and some of the wetlands are pine silviculture. Historically though, the properties would have consisted of old growth longleaf pine, mesic flatwoods, and wet flatwoods until harvesting occurred in the 1960s. The property was planted in slash pine with a harvest cycle of 15 to 25 years. The property has been bedded and was planted with up to 800 slash pine seedlings per acre during each rotation.

Most of the timber was heavily damaged during Hurricane Michael in 2018, a Category 5 hurricane that made a direct hit in the Panama City area. During the field review, most of the storm damaged planted pines had been harvested and some areas had been freshly tilled and were being prepared for planting.

Prescribed fire was not routinely used on the site and the use of prescribed fire was not evident during the field review. The ecotones and transition zones between natural communities and pine silviculture were abrupt with pine silviculture historically occurring to the edge and into wetland areas.

Purpose for Acquisition

As stated in the Florida Forever application, the CHR meets numerous Florida Forever goals, performance measures, and criteria as outlined in Florida Statute (F.S.) 259.105. Acquisition of the CHR would help meet Florida Forever goals including enhancing the coordination and completion of land acquisition projects [e.g., Water Management District project (Goal A)]; increasing the protection of Florida's biodiversity at the species, natural community, and landscape levels (Goal B); protect, restore, and maintain the quality and natural functions of land, water, and wetland systems of the state (Goal C); ensure sufficient quantities of water are available to meet the current and future needs of natural systems and the citizens of the state (Goal D); and would increase natural resource-based public recreation and education opportunities (Goal E).

If acquired, conservation of the CHR would serve to:

- conserve, protect, manage, or restore important ecosystems, landscapes, and forests, in order to enhance or protect significant surface water, coastal, recreational, timber, and fish and wildlife resources;
- conserve and protect significant landscape-scale habitat and provide wildlife corridors for rare and imperiled species and increasing linkages and conservation corridors between public land and private conservation easements in the region;
- conserve, protect, manage or restore coastal habitat in northwest Florida, provide surface and groundwater protection, and protect natural floodplain functions;
- provide opportunities for fish and wildlife resource-based public outdoor recreation.

Natural Resources

The CHR lies within the Coastal Lowlands physiographic region which is low in elevation and poorly drained. The Coastal Lowlands is a geomorphological province in Florida. The Coastal Lowlands form the entire coastline and reach inland up to sixty miles at some points. The province extends along the coast of the Gulf of Mexico from the western end of the Florida Panhandle to near Ft. Myers in southern Florida. While much of the province is less than 15 feet above mean sea level (MSL), it rises to about 100 feet above MSL along its inland side. It is the largest geomorphological province in Florida. Due to its low elevation, the province

was below sea level during warmer periods of the Pliocene and Pleistocene, and features such as ancient dunes and sand bars are found far inland. The Gulf Coastal Lowlands is mainly covered with unconsolidated sand that becomes clayey with depth; however, wetland areas typically have organic soils. Soils found within the project consist of Foxworth sand, Hurricane sand, Chipley sand, Leefield sand, along with several other less prominent soils.

The natural communities for the CHR were mapped using the Florida Cooperative Land Cover (CLC) map. The CLC is a cooperative effort between the FWC and the Florida Natural Areas Inventory (FNAI) to develop ecologically-based statewide land cover from existing sources and expert review of aerial photography. The CLC describes 18 natural and anthropogenic community types existing on the CHR (Table 3).

Table 3. Natural Community Types on the CHR

Community Type	Acres	Percentage
Cropland/Pasture	0.13	<0.1%
Cultural - Lacustrine	0.21	<0.1%
Cypress	13.82	0.6%
Freshwater Forested Wetlands	102.09	4.4%
Freshwater Non-Forested Wetlands	2.09	<0.1%
High Intensity Urban	1.42	<0.1%
High Pine and Scrub	0.01	<0.1%
Improved Pasture	0.03	<0.1%
Low Intensity Urban	0.66	<0.1%
Mesic Flatwoods	26.81	1.2%
Other Hardwood Wetlands	4.80	0.2%
Prairies and Bogs	171.07	7.29%
Rural	21.65	0.9%
Shrub and Brushland	15.24	0.7%
Transportation	47.46	2.0%
Tree Plantations	1,525.19	65.0%
Utilities	4.21	0.2%
Wet Flatwoods	410.85	17.5%

Table 4. Imperiled Plant Species Observed at the CHR

Common Name	Scientific Name
Henry's spiderlily	<i>Hymenocallis henryae</i> var. <i>henryae</i>
Mock pennyroyal	<i>Stachydeoma graveolens</i>
Wiregrass gentian	<i>Gentiana pennelliana</i>

No exotic and invasive plant species were observed during the initial evaluation. However, it is possible that such species would be found on the area through more intensive, field-based surveys should the project be acquired.

Cooperative Landcover Type Descriptions

Following are brief descriptions of the primary cooperative landcover classifications found on the CHR. Descriptions are provided only for the more prevalent community types; however, as noted above, there are a total of 18 community types identified. If acquired, prescribed burning would be the primary practice needed to maintain and restore natural communities. Some areas would benefit from mowing prior to prescribed fire to reduce fuel. These community types and percentages may vary from this early assessment upon completion of a more comprehensive field-based analysis of the vegetative community compositions through natural communities mapping.

Tree Plantation (1,525 acres)

Pine plantations that are artificially generated by planting seedling stock or seeds.

Wet Flatwoods (411 acres)

Area that is primarily flatland with sand substrate as well as seasonally inundated. Community found statewide except extreme southern peninsula and Keys. Community requires frequent fire (2-4 years for grassy wet flatwoods, 5-10 years for shrubby wet flatwoods). Characteristics include closed to open pine canopy with grassy or shrubby understory.

Prairies and Bogs (171 acres)

Area dominated by grasses, sedges, and/or titi with a short hydroperiod.

Freshwater Forested Wetlands (102 acres)

Floodplain or depression wetlands dominated by hydrophytic trees.

Fish and Wildlife

The various land cover types on the CHR provide the resources necessary to sustain diverse assemblages of wildlife and create habitat conditions beneficial to both migratory species and a number of resident rare and imperiled species. Currently, there have been no observed invasive and exotic wildlife species, however, if acquired, further assessment of the area may

be warranted. This area contributes to habitat connectivity given its location within a mosaic of conservation lands and easements.

According to the GIS Environmental Resource Analysis, approximately 66% of the CHR lies within a designated FWC Strategic Habitat Conservation Area (SHCA) for species including the Cooper's hawk (*Accipiter cooperii*) and the American swallow-tailed kite (*Elanoides forficatus*). Also, records show Rare Fish Imperiled Waters occurrence for the Alabama shad (*Alosa alabamae*), Alligator gar (*Atractosteus spaula*), Gulf Sturgeon (*Acipenser oxyrhynchus desotoi*), Snail bullhead (*Ameiurus brunneus*), and Spotted bullhead (*Ameiurus serracanthus*). Additionally, the analysis also shows approximately 67% of the property is identified as Priority 1 or 2 (of 5) for the Critical Lands and Waters Identification Project. Approximately 62% of the property is classified as wetland based on the National Wetlands Inventory, and approximately 73% of the property is located within the designated 100-year flood zone.

There is moderate potential for listed plant and animal species that depend on fire-maintained pine forests with healthy herbaceous ground cover, but initial management through prescribed fire and/or mechanical treatment would be necessary. Subsequent management with prescribed fire would also be necessary. Habitat for game species, such as white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo osceola*), northern bobwhite (*Colinus virginianus*), and common non-game species is relatively low at present but would increase with appropriate site management.

The properties are located within an area of frequent occurrence potential for the Florida black bear (*Ursus americanus floridanus*) and are located within the East Panhandle Bear Management Unit. The properties would potentially be utilized by little blue heron (*Egretta caerulea*, State Threatened [ST]), Southeastern American kestrel (*Falco sparverius paulus*, ST), gopher tortoise (*Gopherus polyphemus*, ST), Florida pine snake (*Pituophis melanoleucus mugitus*, ST), and bald eagle (*Haliaeetus leucocephalus*). Florida sandhill crane (*Antigone canadensis pratensis*, ST) have historically been documented in the area, and could potentially use the properties.

The properties are also located within the range of the Panama City crayfish, which is only found within a range totaling 50 square miles, specifically within the peninsula in Bay County formed by Bayou George, Callaway Bayou, and St. Andrews Bay. The Panama City crayfish is currently a SSC, and has been proposed for listing as Federally Threatened under the Endangered Species Act (ESA). As a result of urban development, approximately 43 to 54% of the historic habitat remains potentially available for the Panama City crayfish.

The FWC set a long-term conservation goal of increasing the total area of occupied Panama City crayfish habitat to 2,000 acres. The U.S. Fish and Wildlife Service has estimated that approximately 2,200 acres of actively managed and permanently protected habitat is needed

for the persistence of the Panama City crayfish. Under the proposed ESA listing, the establishment of the approximately 2,200 acres would meet the projected goal for the species.

Management Intent

The FWC would manage the CHR under the multiple-use concept as a Wildlife Management Area. The CHR will provide fish and wildlife resource-based public outdoor recreation and educational opportunities, while protecting the natural and historical resources. If acquired, all requirements of the Management Procedures document from the Division of Historical Resources (DHR) will be followed with regard to any potential ground disturbing activities. All the natural and historical resources would be managed for the purposes of acquisition included within the Florida Forever Act and Chapters 253 and 259, F.S., under a management plan approved by the Acquisition and Restoration Council.

The FWC uses a comprehensive resource management approach on FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. The FWC uses Objective-based Vegetation Management (OBVM) to monitor how specific vegetative attributes are responding to FWC management. The OBVM includes the delineation of management units and the quantification of desired future conditions for each actively managed natural community.

Additionally, as another critical component of this comprehensive resource management approach, the FWC uses the Wildlife Conservation Prioritization and Recovery (WCPR) program to ensure that management is having the desired effect on wildlife. The goal of the WCPR is to provide assessment, recovery, and planning support for FWC-managed areas to enhance management of locally important species and recovery of imperiled species. The WCPR program objectives include prioritizing what the FWC does for imperiled and locally important species on FWC-managed areas; ensuring the actions taken on these areas are part of statewide conservation programs and priorities; and informing others about the work accomplished on lands that the FWC manages.

Conditions Affecting Intensity of Management

Resources described in this management prospectus indicate conditions affecting intensity of management. These include natural community types, topography and soils, surface and ground water conditions, extent of historic disturbance, and already existing improvements. Environmentally sensitive areas, such as erosion-prone sites, important habitats, outstanding natural areas, wetlands, or cultural sites shall be identified, appropriately managed, and protected.

The FWC conducts analysis of historic vegetation of natural community types when necessary to determine appropriate desired future conditions. Upland wildlife management concentrates on appropriate vegetative manipulations guided by the FWC's OBVM program,

which includes the application of prescribed fire to achieve conditions acceptable to a broad range of wildlife species within the area's fire-adapted natural communities. Some areas may require ecological restoration of ground cover, control of invasive and exotic species, and either thinning or reforestation. Such resource management projects including hydrologic restoration may be necessary to accomplish restoration objectives and to attain the desired future conditions for communities. This is especially important for conservation of habitats and populations of imperiled or rare species. Landscape ecology is also important, as land use changes in the vicinity of the area, such as intensive residential, commercial, and industrial developments, and the roads that often accompany them, may also affect the attainment of resource conservation goals for the area and the effectiveness of necessary resource management projects.

Timetable for Implementing Management Provisions

If acquired and leased to the FWC for management, the FWC will develop a management plan describing the management goals and objectives necessary to implement future resource management programs on the CHR. The management plan will also establish the current and future roles of cooperating entities including governmental agencies, non-governmental organizations, and other stakeholders.

Long-range plans would stress ecosystem management and the protection and management of locally important, rare, and imperiled species. If acquired, historic analysis of natural communities and vegetation types may be conducted, if deemed necessary, and quantified vegetation management objectives will be developed. The FWC would also assess the condition of wildlife resources and provide planning support to enhance management of locally important species and recovery of imperiled species on the area. Use of prescribed fire and other essential resource management activities will be implemented to maintain and restore natural communities and vegetation types to benefit native wildlife resources.

Programs providing multiple fish and wildlife-based public outdoor recreational uses will be considered for implementation following acquisition. These potential recreational uses will enhance the public's understanding of the region while providing ample opportunities for outdoor recreational enjoyment. Essential roads will be maintained to provide all weather public access and management operations. Unnecessary roads, fire lanes, and hydrological disturbances will be abandoned or restored as practical. Infrastructure development will be limited to only that which is necessary to allow public access and to provide for the necessary facilities, security, and management of the property. Archaeological and historical sites will be managed in coordination with DHR.

Estimate of Revenue-Generating Potential

Revenue from conservation lands can include sales of various permits and recreational user fees and ecotourism activities, if such projects could be economically developed. Area regulations would be developed to identify the necessary and required permits, fees, and regulations. Timber sales from thinning operations or restoration of off-site plantations may also yield additional revenue. Apiary leases will be considered as a revenue source depending on whether the area meets the criteria of the FWC's Apiary Policy.

The Florida Legislature appropriates funds for land management. In addition, the project sponsor, Bay County, has received commitments from partners to restore and manage the property. Approximately \$3.7 million has been pledged for an endowment as mitigation for the restoration and site management of Panama City crayfish habitat.

The long-term values of ecosystem services to local and regional land and water resources, and to human health, are expected to be significant.

Recommendations as to Other Governmental Agency Involvement

The FWC will continue to cooperate with other state and local governmental agencies including the Florida DEP, the Florida Department of Agriculture and Consumer Services, Florida Forest Service, the NFWFMD, the U.S. Fish and Wildlife Service, and Bay County in management of the property.

Estimate of Costs

The initial non-recurring (first year only) start-up cost for the CHR is estimated to be \$375,680, which includes public access and infrastructure and fixed capital outlays necessary for management of the area. Below is an estimate of the recurring, annual operating costs to operate and manage the CHR. Optimal management of the area would require one (1) full-time equivalent (FTE) position. Salary requirements for these FTE positions, as well as those of other needed FWC staff, and costs to operate and manage the CHR, are reflected in the cost estimate below. All land management funding is dependent upon annual legislative appropriations.

Crayfish Habitat Restoration
Estimated Recurring Annual Management Costs

<u>Resource Management</u>	<u>Expenditure</u>	<u>Priority</u>	Priority schedule:
Exotic Species Control	\$5,800	(1)	(1) Immediate (annual)
Prescribed Burning	\$12,421	(1)	(2) Intermediate (3-4 years)
Cultural Resource Management	\$517	(1)	(3) Other (5+ years)
Timber Management	\$798	(1)	
Hydrological Management	\$5,260	(1)	
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	\$64,946	(1)	
Subtotal	\$89,741		
<u>Administration</u>			
General administration	\$1,949	(1)	
<u>Support</u>			
Land Management Planning	\$3,170	(1)	
Land Management Reviews	\$470	(3)	
Training/Staff Development	\$564	(1)	
Vehicle Purchase	\$14,487	(2)	
Vehicle Operation and Maintenance	\$5,776	(1)	
Other (Technical Reports, Data Management, etc.)	\$5,330	(1)	
Subtotal	\$29,796		
<u>Capital Improvements</u>			
Facility Maintenance	\$13,665	(1)	
<u>Visitor Services/Recreation</u>			
Info./Education/Operations	\$8,617	(1)	
<u>Law Enforcement</u>			
Resource protection	\$1,808	(1)	
<u>Total</u>	\$145,576	*	

* Based on the characteristics and requirements of this area, one (1) full time equivalent (FTE) position would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

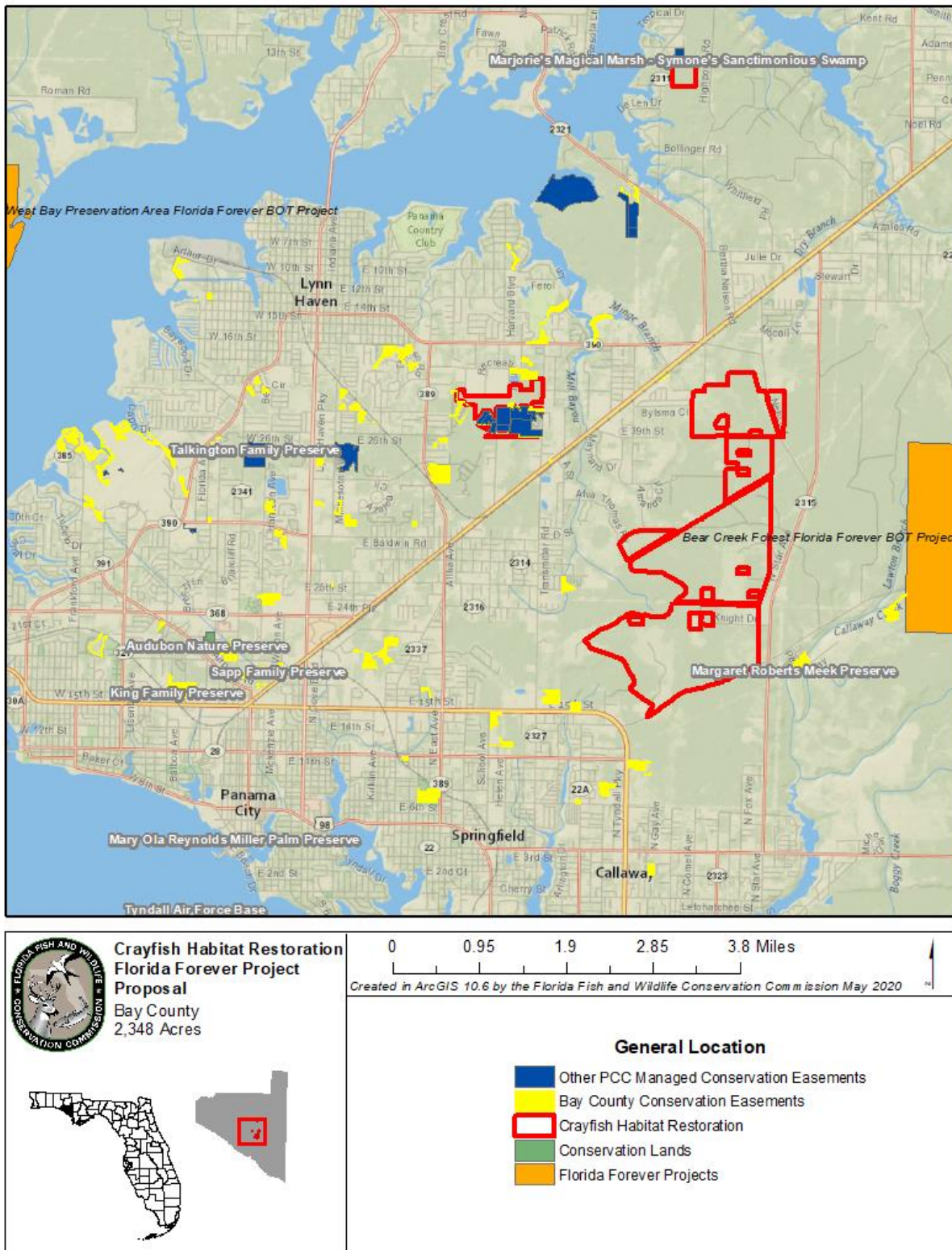


Figure 1. General Location of the CHR

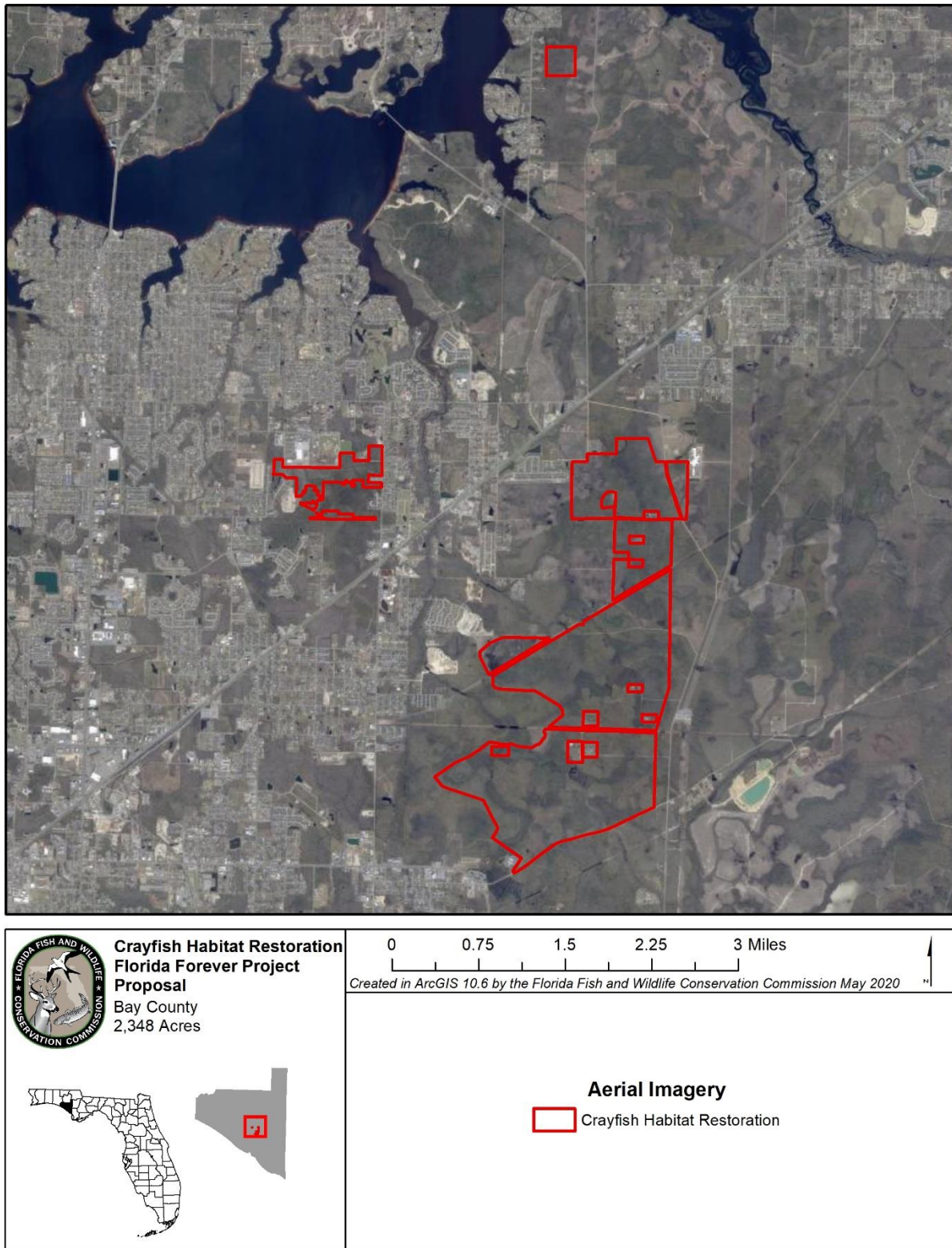


Figure 2. Aerial Imagery and Boundary of the CHR

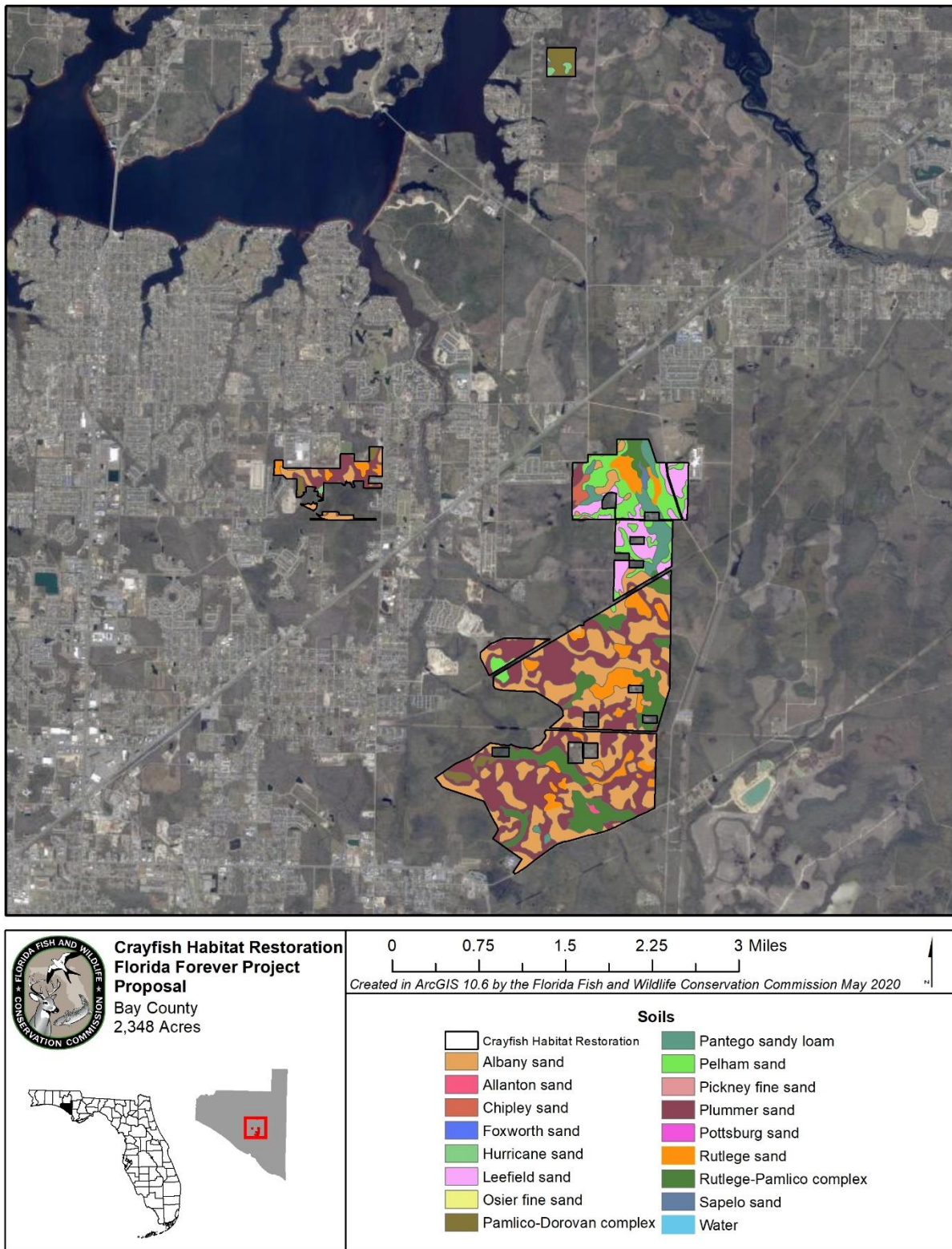


Figure 3. The CHR Soils

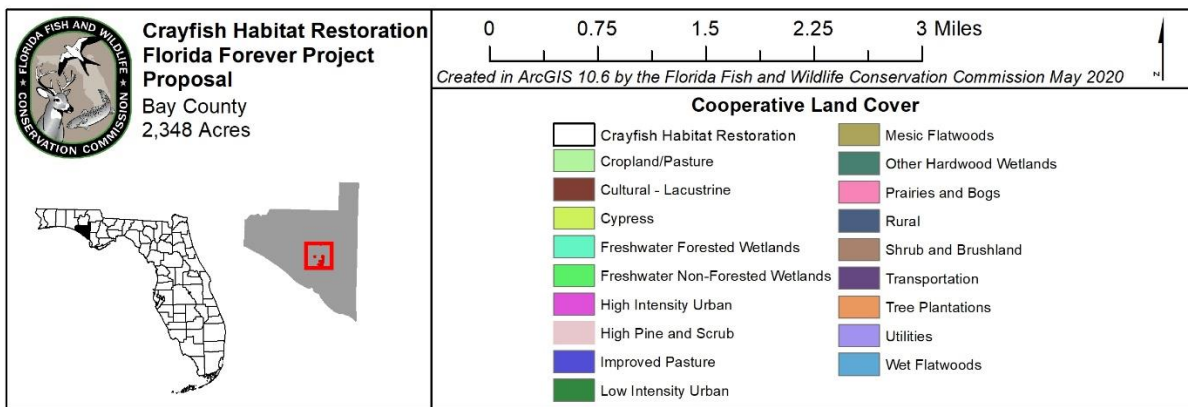
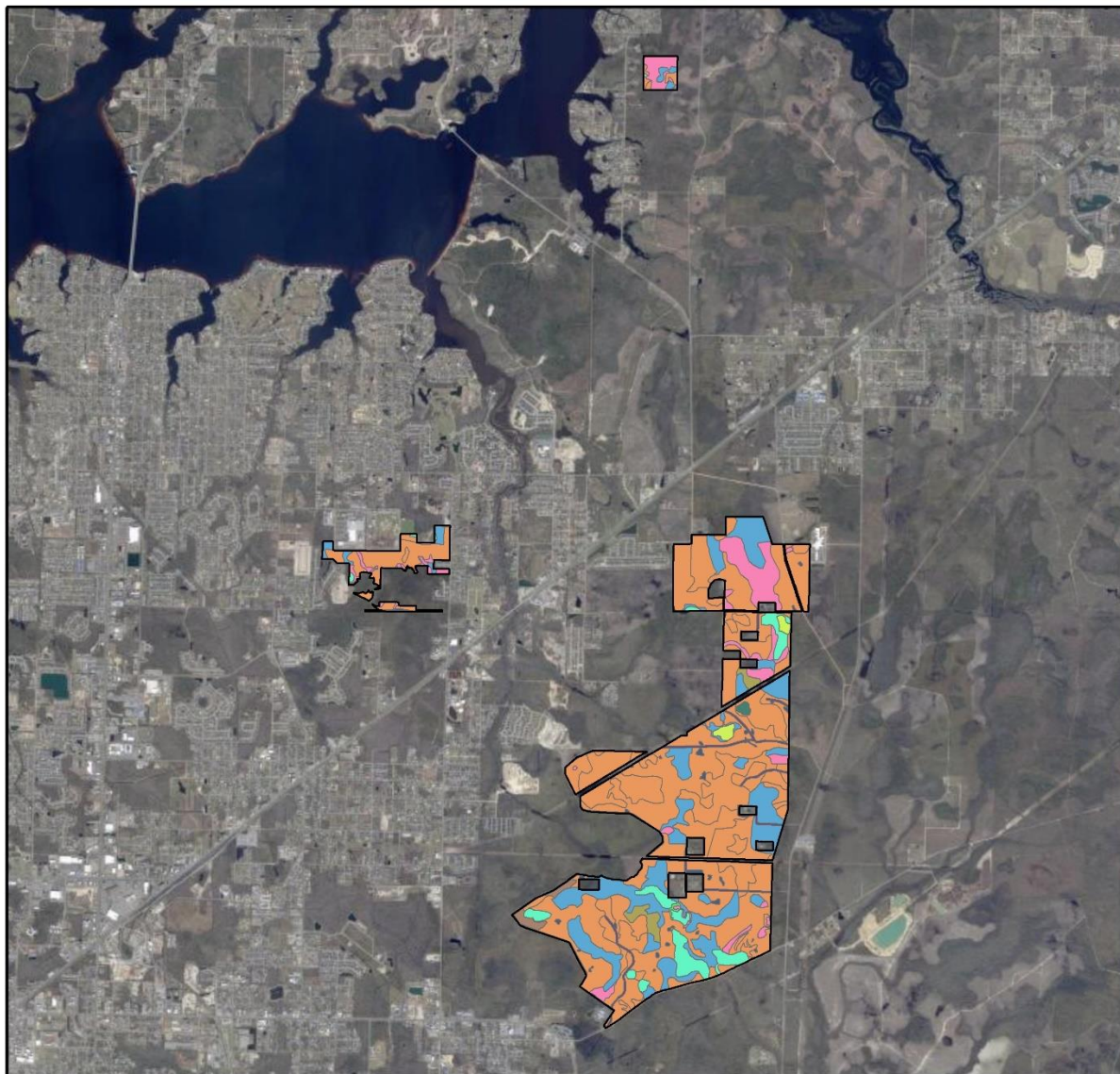


Figure 4. Cooperative Landcover

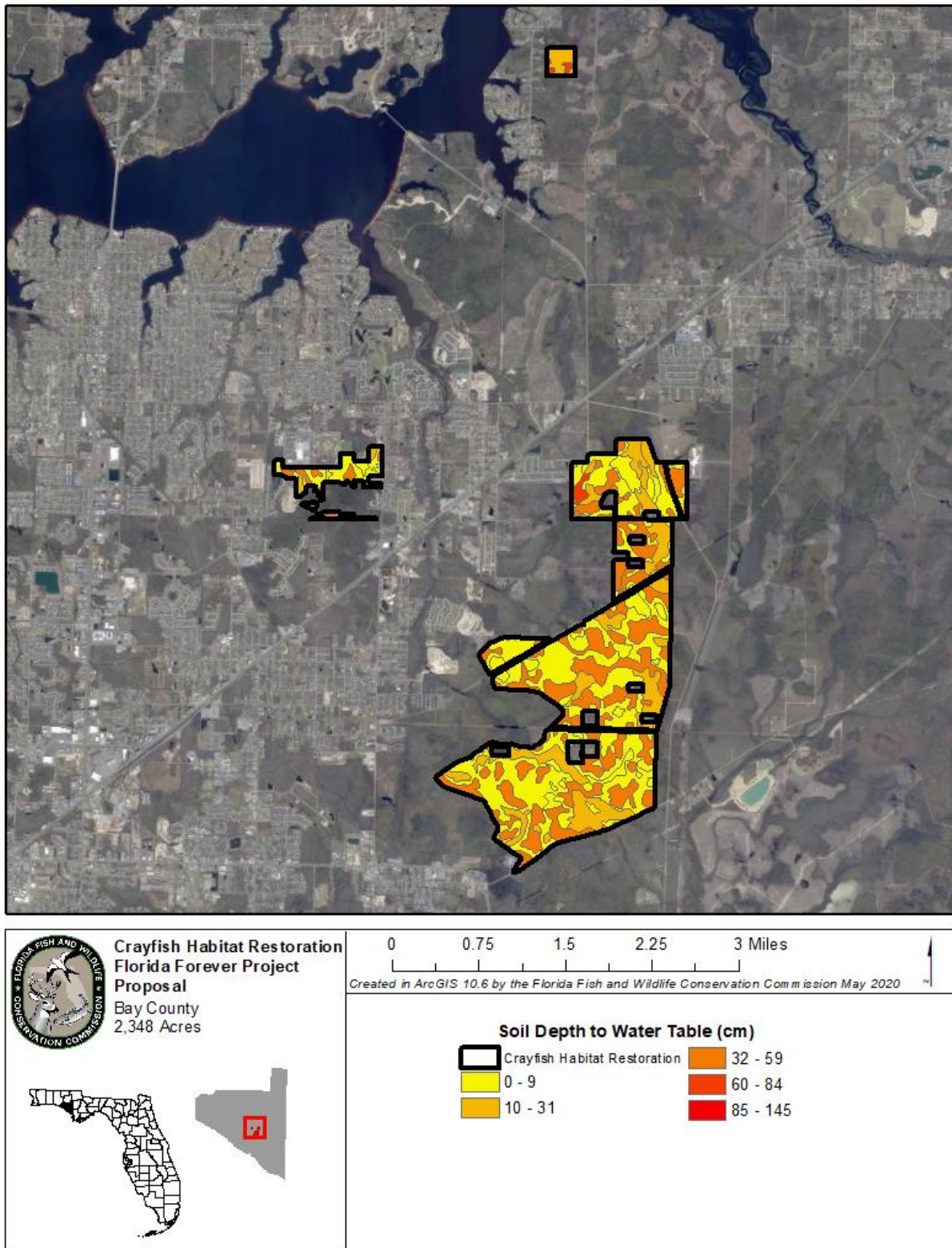


Figure 5. Soils-Depth to Water Table (cm)