

Shell Creek Preserve Land Management Plan

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Community Services Department

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Appendices

Appendix A – Florida Natural Areas Inventory Report Form

Appendix B – Exotic Pest Council’s List of Florida Most Invasive Species

Appendix C – Priority Schedule

Abbreviations and Acronyms

ATV	All-terrain vehicle
CHEC	Charlotte Harbor Environmental Center
DEP	Florida Department of Environmental Protection
DNR	Florida Department of Natural Resources
DOF	Fl. Dep. of Agri, And Consumer Svc. Div. of
Forestry	
FNAI	Fl. Natural Areas Inventory
FWC	Fl. Fish and Wildlife Conservation Commission
HCP	Habitat Conservation Plan
MP	Management Plan
Natural Resources	Charlotte County Natural Resources Division
SWFWMD	SWFL Water Management District
USGS	United States Geologic Survey
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

Shell Creek Preserve is a 360-acre tract of environmentally sensitive land located in north-central Charlotte County, southeast of Washington Loop Rd. (**Exhibit A**). Shell Creek bisects the preserve, and splits with Prairie Creek at the eastern boundary. Citrus groves and other forms of agriculture lie on any side of the preserve. Access to the north side of the Preserve is available through Nellis Ln., and access on the south side is available through an unnamed easement. The preserve is located in Township 40 South, Range 24 East, Section 25; and Township 40 South, Range 25 East, Sections 30 and 31. The preserve is within the United States Geological Survey (USGS) Quadrangles Cleveland and Bermont. The preserve is within one mile of other government and non-profit organizations preserve land (**Exhibit C**).

This property was acquired, in 2007, to maintain and manage environmentally sensitive land for the Conservation Charlotte Program, including scrub and scrubby flatwoods. Listed species such as the Florida scrub jay (*Aphelocoma coerulescens coerulescens*), the gopher tortoise (*Gopherus polyphemus*), the gopher frog (*Rana capito*), eastern indigo snake (*Drymarchon corais*), Florida mouse (*Podomys floridanus*), Florida pine snake (*Pituophis melanoeucus mugitus*), American alligator (*Alligator mississippiensis*), black bear (*Ursus americanus*), and sandhill crane (*Grus Canadensis*), have the potential to be present.

This management plan outline the monitoring and management activities for Shell Creek Preserve. Key management strategies include exotic/invasive species removal, prescribed burns, and pine canopy reduction. Activities such as garbage removal and site security will assist in restoring the preserve to its native state.

2.0 PURPOSE

The purpose of the Shell Creek Preserve acquisition is to protect, preserve, and restore natural communities located along Shell Creek. The preserve also provides an opportunity for passive recreation and educational enrichment. The project site will be managed for protection and enhancement of natural resources, public education and outdoor recreation as outlined in the management plan.

The purpose of this land management plan is to also outline the natural resources of this area, monitoring and management objectives, and provide a framework and schedule for activities.

Management objectives include:

- Long term protection of the natural resources found on the project site.
- Increase habitat suitability for other known or potential listed species.
- Restore existing Flatwoods by reducing the overall Pine canopy cover.
- Removal of invasive/exotic species.

The future land use and zoning designations were changed for Shell Creek Preserve is Environmentally Sensitive.

Objectives of Recreation and Open Space Element, of the Charlotte County, Smart Charlotte 2050 Plan that would be furthered by managing the park include:

- **REC Objective 1.2 Park and Recreation Maintenance and Management**
To protect and maintain existing parks and assets to preserve physical, environmental, functional, recreational and aesthetic values.
- **REC Policy 1.2.1 Public Awareness**
The County shall protect, restore, and manage natural resources in parks and provide interpretive information regarding environmental resources, conservation easements and ecosystems within parks. The County shall consider the proper long-term ecological functions and recreational value of the land and will work to increase public awareness and understanding of ecological systems.
- **REC Policy 1.2.2 Park Management and Maintenance Guidelines**
The County shall develop and implement guidelines for all park assets and improvements that will serve to provide a uniform basis for establishing management and maintenance practices and criteria which consider periodic, short and long-term needs.
- **REC Policy 1.2.3 Invasive Species Removal**
The County shall develop and pursue invasive, exotic plant and animal eradication programs for parks and open space by 2012.

Objectives of Natural Resources Element, of the Charlotte County, Smart Charlotte 2050 Plan that would be furthered by managing the park include:

- **ENV Policy 2.2.7 Environmental Acquisition and Management**
The County shall acquire and manage environmental lands using all available opportunities including, but not be limited to: levying an ad valorem tax; obtaining State, Federal and non-profit grant funding; land swaps; public/private partnerships; public/public partnerships (such as Florida Communities Trust); community land trusts; and conservation easements. All lands acquired by the County for preservation shall be managed to retain their environmental value.
- **ENV Policy 2.2.11 Land Management**
The County, or duly authorized management agencies, shall develop and implement long range management plans for preservation or conservation lands consistent with the natural resources found on these properties.
- **ENV Policy 2.2.12 Public Awareness of Environmental Lands**

In cooperation with other government agencies and non-profit groups, the County shall work to increase public awareness, appreciation, and (consistent with the resources found at each site) access to the publicly owned preserves and environmental parks within the County's borders.

- **ENV Policy 2.3.6 Exotic Plant Removal**

The County shall continue to enforce the removal of invasive exotic plants. The County shall also prohibit the planting of species listed as noxious weeds by 5B-57.007, Florida Administrative Code, and listed as invasive species on the Florida Exotic Pest Plant Council Invasive Plant Lists.

- **ENV Policy 2.3.8 Environmental Education**

The County shall support efforts to increase the public's understanding and stewardship of wildlife, natural communities, and other natural resources through partnerships with non-profit organizations such as the Florida Master Naturalist Program, the Florida Yards and Neighborhoods Program, and the University of Florida Food and Agricultural Sciences program.

3.0 NATURAL AND CULTURAL RESOURCES

Shell Creek Preserve contains uplands and wetlands located on Shell Creek, and serves as an important wildlife corridor to adjacent conservation lands. Natural communities that can be found onsite include Pine Flatwoods, Hardwood Hammock, Scrubby Flatwoods, and Xeric Hammock (*Exhibit D*). Native vegetation communities will be managed in a manner that maintains the natural, functional and or successional integrity. The surface waters of Shell Creek, run west, through project site and are designated by the Department of Environmental Protection as a Class I waterway.

Throughout the year, staff monitors on-site conditions and looks for ways to improve the overall health of the existing natural communities. So far, no unusual flora or fauna have been observed in any of the communities. When occurrences of previously unknown protected and special plant and animal species are observed onsite these observations will be reported to FNAI utilizing the FNAI Field Report Forms or on the FNAI web site at: http://www.fnai.org/FNAI_data/RareSpeciesDataForm.cfm.

3.1 Natural Communities

Scrubby Flatwoods

Shell Creek contains approximately 96 acres of scrubby flatwoods. Like scrub, scrubby flatwoods are mostly limited to Florida; FNAI ranks scrub habitat as imperiled both in-state (S2) and globally (G2) (FNAI 2010). FNAI characterizes scrubby flatwoods by an overstory of widely spaced pines and a short, shrubby understory of saw palmetto (*Serenoa repens*), scrub oaks, wiregrass (*Aristida* spp.), rusty lyonia, lichens, and tarflower (*Bejaria racemosa*) (FNAI 2010). The scrubby flatwoods habitat found within

Shell Creek is minimally disturbed, but overgrown to varying degrees due to fire suppression. In units 1 and 2 of Shell Creek, the pine canopy density is elevated, and in need of reduction. Introducing the appropriate fire regime or mechanical thinning is the key strategy to restoring this habitat (Section 3.5)

Management goals for this habitat type are as follows:

- Maintain a 3-5 burn regime.
- Perform a 10 – 15 percent over-story reduction, of approximately 40 acres of overgrown scrubby flatwoods.
- Continue to manage exotics/ invasive species

Hydric Hammock

There are approximately 135 acres of hardwood hammock found within Shell Creek, along the Shell Creek waterway. Hydric hammocks are characterized as a well-developed hardwoods and cabbage palm (*Sabal palmetto*) forest, with a variable understory of palms and ferns. Typical plants include cabbage palm, laurel oak (*Quercus laurifolia*), red cedar (*Juniperus virginiana*), red maple (*Acer rubrum*), swamp bay (*Persea palustris*), sweetbay (*Magnolia virginiana*), water oak (*Quercus nigra*), southern magnolia (*Magnolia grandiflora*), wax myrtle (*Morella cerifera*), saw palmetto, bluestem palmetto (*Sabal minor*), needle palm (*Rhaphidophyllum hystrix*), poison ivy (*Toxicodendron radicans*), dahoon holly (*Ilex cassine*), myrsine (*Myrsine floridana*), hackberry (*Celtis* spp.), sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), Florida elm (*Ulmus americana*), swamp chestnut oak (*Quercus michauxii*), American hornbeam (*Carpinus caroliniana*), Walter viburnum (*Viburnum obovatum*), royal fern (*Osmunda regalis*), peppervine (*Ampelopsis arborea*), rattanvine (*Berchemia scandens*), yellow Jessamine (*Gelsemium* spp.), and Virginia creeper (*Parthenocissus quinquefolia*). The hydric hammock, located at Shell Creek, is dominated by cabbage palm, peppervine, Carolina willow (*Salix caroliniana*), hickory, oak species, poison ivy, and ferns. The ground cover is sandy with some grasses and leaf litter. Hydric hammocks are typically self-sustaining communities, and management activities associated with hydric hammocks primarily revolve around the control of exotic/nuisance species (FNAI 2010).

Management goals for this habitat type are as follows:

- Continue to manage exotic/ invasive species

Scrub

Shell Creek contains approximately 20 acres of scrub habitat. The FNAI ranks scrub habitat as imperiled both in-state (S2) and globally (G2) (FNAI 2010). Florida scrub communities are unique to the state, although several neighboring states have similar habitats (Myers and Ewel, 1992). FNAI characterizes scrub to be dominated by evergreen shrubs with or without a canopy of pines. Scrub is found on white sandy infertile soils, groundcover, if any, consists of lichens and herbs. Common vegetation includes sand pine, sand live oak, myrtle oak, Chapman's oak, scrub oak (*Quercus inopina*), saw palmetto, rosemary (*Ceratiola ericoides*), rusty lyonia (*Lyonia ferruginea*), scrub hickory (*Carya floridana*), scrub palmetto (*Sabal etonia*), hog plum (*Ximenia*

Americana), silkbay (*Persea humilis*), beak rush (*Rhynchospora* spp.), milk peas (*Galactica* spp.), and staggerbush (*Lyonia* spp.) (FNAI 2010). Scrub habitats found within Shell Creek occur along areas adjacent to the existing Hydric Hammock. Due to fire suppression in these areas, the scrub habitat is succeeding to Xeric Hammock. Introducing the appropriate fire regime and conducting a vegetative reduction of oaks exceeding 9 ft. in height, are the key strategy to restoring this habitat (Section 3.5).

Management goals for this habitat type are as follows:

- Maintain a burn regime of 3 – 5 years
- Perform mechanical reduction of oaks
- Continue to manage exotics/ invasive species

Mesic Flatwoods

There are approximately 90 acres of mesic flatwoods found in the southern end of Shell Creek Preserve. Mesic Flatwoods is characterized as an open canopy with wide spaced pines, little to no understory, and a dense ground cover of herbs and shrubs. Typical plants include slash pine (*Pinus elliotii*), saw palmetto (*Serenoa repens*), fetterbush (*Lyonia lucida*), gallberry (*Illex glabra*), shiny blueberry (*Vaccinium myrsinites*), runner oak (*Quercus elliotii*), dwarf live oak (*Quercus minima*), dropseeds (*Sporobolus curtissii*), panicgrasses (*Dichanthelium* spp.), wiregrass (*Aristida stricta*), broomsedges (*Andropogon* spp.) (FNAI 2010). The mesic flatwoods are located to the south of the Shell Creek waterway in management unit 4. This community is minimally disturbed, but overgrown with a dense pine canopy, due in part to fire suppression. Introducing the appropriate fire regime and mechanical thinning will reduce the pine canopy overstory, and prevent the community from succeeding into a hardwood dominated forest. (Section 3.5)

Management goals for this habitat type are as follows:

- Maintain a burn regime of 2 – 4 years
- Reduce canopy by 10%
- Continue to manage exotics/ invasive species

Listed Plant Species

No species of federally or state-listed plant species have been observed within property boundaries. Staff will continue to monitor native plants onsite.

3.2 Invasive/Exotic Plants and Feral Species Management

Exotic nonnative invasive plant species reduce the quantity and quality of habitat available for native wildlife. Shell Creek is surrounded primarily by other agricultural lands, making it slightly more susceptible to invasive nuisance species; dispersal by birds and other wildlife (e.g., feral hogs) as well as by wind does occur.

Exotic invasive species that have been observed within the park include Brazilian pepper (*Schinus terebinthifolius*), old world climbing fern (*Lygodium microphyllum*), Peruvian primrose-willow (*Ludwigia peruviana*), Caesar weed (*Urena lobate*), para grass

(*Urochloa mutica*), and cogon grass (*Imperata cylindrica*). These species are ranked as Category I according to the 2017 List of Invasive Species from the Florida Exotic Pest Plant Council (FLEPPC), in Appendix 4. Staff has treated larger infestations in the past and attempts to eradicate nuisance exotics upon discovery. Due to the small size of current exotic invasive plant infestations there are no plans for re-vegetating treatment areas. Staff will continue to review on a case by case basis if re-vegetation is needed at the time of treatment.

Prevention is the most effective method of control; staff continually monitors the sites for early detection and control of populations. Currently, efforts to eradicate these Category I species closely parallel the exotic species control plans recommended by FLEPPC. Application of the most recent treatment recommendations by species are available via the FLEPPC web site (<http://www.fleppc.org/>). **Appendix B**

Exotic/Feral Animals

Feral pigs (*Sus scrofa*) are present on Shell Creek. County staff has contracted with local nuisance trappers for the control of exotic/invasive fauna on County conservation lands. Although the trapping program has been very successful, the feral hog population persists. Overall, the contracted numbers of feral hogs have been lowered and impacts to the natural community has been minimized.

Monitoring

The site is monitored on a regular basis, to exclusively assess the presence of invasive/exotic plant and animal species.

3.3 Restoration

Shell Creek Preserve has been County owned and maintained since 2007. There are no plans for restoration now.

3.4 Prescribed Burning

Prescribed burning has taken place on Shell Creek since its purchase for both ecosystem restoration and maintenance. Each of the major vegetative communities, found within the park, are fire adapted and the use of prescribed fire is the best way for staff to manage a healthy ecosystem.

Burn priorities and rotations schedules are revisited throughout each year as both management resources and growing conditions change. All management units have perimeter fire-lines which are maintained throughout the year. Burning is coordinated with the DOF. Charlotte County's outreach program to inform residents of the area of the benefits of prescribed burns includes presentations, direct mailings and additional coordination with FFS.

3.5 Listed Species

Charlotte County maintains a list of species observed within Shell Creek Preserve by County staff. As additional species are observed the list shall be updated. Species found on the Federal and/or State endangered and threatened species lists are referred to as “listed species.” For management purposes, Charlotte County Community Services also refers to the biological status as reported by FNAI.

Listed Species of Bayshore Environmental Park

Endangered (E), Threatened (T)				
Common Name	Genus	Species	State	Fed
American Alligator	<i>Alligator</i>	<i>mississippiensis</i>		T(S/A)
Gopher Tortoise	<i>Gopherus</i>	<i>polyphemus</i>	T	
Osprey	<i>Pandion</i>	<i>haliaetus</i>	SSC	
Wood Stork	<i>Mycteria</i>	<i>americana</i>		T
Little Blue Heron	<i>Egretta</i>	<i>caerulea</i>	T	

3.6 Inventory of the Natural Communities

The natural communities will be monitored as part of ongoing maintenance activities and any information on identified listed species will be forwarded to the Florida Natural Areas Inventory utilizing the FNAI Field Report Forms or on the FNAI web site at: http://www.fnai.org/FNAI_data/RareSpeciesDataForm.cfm. **Appendix A**

3.7 Archeological, Cultural, and Historical Resources

Shell Creek Preserve does not contain, or is not within ¼ mile, a site listed on the National Register of Historic Places by the National Park Service or a site listed in the Florida Master Site File maintained by the Department of State, Division of Historical Resources (Historical Resources).

An archeological survey was conducted, and Shell Creek Preserve is not recognized by a local historic board or the Division of Historical Resources as being significant at the local, regional, or state level.

The Division of Historical Resources will be contacted immediately if evidence is found to suggest an archaeological or historic resource/site at Shell Creek Preserve. If artifacts or historic sites are discovered, collection or disturbance will be prohibited without authorization from the Division of Historical Resources. If artifacts or historical sites are discovered, the Division of Historical Resources will be coordinated with and management will comply with Chapter 267, Florida Statutes, Section 267.061 2(a) and (b). Any significant resources will be interpreted for the public using educational signs

4.0 SITE DEVELOPMENT AND IMPROVEMENT

4.1 Existing Physical Improvements

Existing physical structures within the Park include fences and gates, walking trails, and a parking area. These improvements are designed to improve the ability of the public to enjoy the natural resources of the Park while protecting these resources. All of Charlotte County's environmental parks and preserves are "pack in, pack out" facilities, trash cans are not provided.

- **Entrance Signage** – An entrance sign, bearing the Charlotte County logo and park name has been installed at the entrance to the property.
- **Parking** – The area is located at the end of Nellis Lane at the North-western corner of the property.
- **Walking Trails** – A network of dirt nature trails approximately 3.5 miles in total length, which form 3 one mile long loops. The nature trails begin at the parking area, traversing around sensitive natural communities. The trails follow existing firebreaks minimizing disruption to the natural communities.

4.2 Proposed Physical Improvements

There are no proposed physical improvements to Shell Creek preserve, at this time.

4.3 Wetland Buffer

A 100-foot buffer will be provided between parking lots, major facilities, and wetlands.

4.4 Permits

All applicable permits and/or approvals will be obtained prior to any permissible activities occurring on the project site.

4.5 Easements, Concessions and Leases

No easements or leases are found on Shell Creek Preserve. No concessions have been granted.

5.0 MANAGEMENT NEEDS

5.1 Coordinated Management

Community Services' staff is committed to working with all interested parties in accomplishing the management goals. When appropriate, Staff works on coordination and management of these lands with various County Departments, the Parks and

Recreation Advisory Board and the Charlotte Harbor Community Redevelopment Advisory Board. Coordination also takes place with FFS, DEP, and FWC concerning permitting and wildlife management where necessary. The Charlotte County Sheriff's Office assist in coordinating security on the property.

5.2 Greenways and Trails

Charlotte County Resolution No. 980440A0 pledged to develop an integrated system of trails, greenways, corridors, preserves, and waterways, to provide a foundation for the eco-tourism industry, provide wildlife corridors, and enhance public access to and appreciation of the County's natural resources. A map of publicly-owned land within the vicinity of the preserve is provided in (*Exhibit C*).

Shell Creek Preserve has approximately 4 miles of walking trails (*Exhibit G*), which are located north of the Shell Creek waterway.

5.3 Staffing

The Division will provide staffing, management, and maintenance for the Park. A full time Environmental Specialist will be directly responsible for all land management activities. Assistance from other Environmental Specialists and additional Department staff will be available as needed and the support of the Division Manager and other administrative positions will be available. Additional staffing may be obtained through volunteers, non-profit organizations, and/or contracted services as needed.

5.4 Public Education and Outreach

The County is committed to providing appropriate outdoor recreational opportunities and educational programming opportunities designed to facilitate a greater understanding and appreciation of the historical and natural resources.

5.5 Maintenance

Charlotte County Community Services has the responsibility for managing and maintaining the Park. The maintenance objectives for the Park are visitor and employee health, safety, and welfare, maintenance of aesthetic qualities, and protection of natural resource values. Structures, such as bridges and fences, are inspected during monthly site inspections for maintenance and repair needs. Exotic vegetation treatment needs are met with both habitat management and trail maintenance activities. The site will have dedicated staff to perform routine maintenance tasks, including

- Mowing and pruning of vegetation around the entrance, parking areas, trails, and fire breaks
- Upkeep and cleaning of the facilities (including parking areas, fencing, kiosks, and signage)
- Garbage and debris removal
- Land Management (including removal of exotic species and prescribed burning)

The Division may utilize contracted and/or volunteer services as needed to assist in maintenance tasks.

5.6 Security

Charlotte County is concerned about both the safety of visitors and the protection of natural resources. Community Services staff ultimately has the responsibility for site security, including prevention of vandalism, property damage, and trespassing. A three-tiered approach to site security is employed:

- **Signage and Fencing** – Signs shall be installed to educate users against restricted or prohibited activities.
- **Staff** – Division staff shall monitor the integrity of the fences, repair damage by vandalism, monitor the site for evidence of ATV use, and take measures to clarify restricted areas and activities to citizens with signage
- **Sheriff and Fire/EMS** – Shall respond to emergency calls from citizens.

Activities that are not compatible with passive natural resource based activities are prohibited. Such prohibited activities include alcoholic consumption, social gatherings except for nature hikes, personal acts considered indecent or not appropriate for all ages and all groups within the public, disturbance of the peace, hunting except for the contracted removal of exotic and/or nuisance animals, harassing of wildlife, harvesting, destruction and/or removal of vegetation, any other activity that may have a negative impact on visitors, wildlife and/or the ecosystem.

All wildlife species are protected, including venomous snakes and other dangerous animals, and shall not be killed, harmed or harassed by visitors or staff unless they present an immediate, clear and unavoidable threat, or are part of an exotic species removal program to be carried out by authorized personnel only. Safety against wildlife species is not considered a viable reason to carry a lethal weapon. Except when carrying a concealed weapon for personal safety, accompanied by a license to do so by the state, possessing a firearm, bow, crossbow, trap or other hunting device is considered the intent to hunt or take wildlife and is prohibited.

6.0 COST ESTIMATE AND FUNDING SOURCES

This Park was funded by Charlotte County Local Option Sales Tax and ad valorem County taxes. The Park will be managed using ad valorem County taxes.

The cost estimate was broken into five major categories:

- **Natural Resource Protection**
 - Exotic vegetation treatment - \$2,500
 - Feral animal/Exotic plant monitoring – in house

- Listed species survey – in house or volunteer
- **Resource Enhancement**
 - Controlled burning – \$3,200 (One rotation of all management units, approximately 200 burnable acres at approximately \$16 per acre, in house cost)
 - Mechanical thinning -In house
- **Maintenance**
 - Mowing and pruning of vegetation around the entrance, fence, parking area, trails, and fire breaks -In House Upkeep of facilities (parking area, fencing, kiosk, signage) - \$1500 annually (Cost estimate based on current contract for environmental fencing)
- **Staffing – See Section 5.3**

7.0 PRIORITY SCHEDULE

A priority schedule that details a timeline for major events is included in **Appendix C**. This priority schedule covers 2018-2033.

8.0 MONITORING AND REPORTING

8.1 Habitat Assessment Monitoring

Provisions to periodically monitor the site will insure the continued viability of vegetative communities, plant species and animals found on the site and to control invasive/exotic vegetation.

9.0 REFERENCES

FLEPPC. 2015. *List of Florida's Invasive Species*. Florida Exotic Pest Plant Council. Internet: <http://www.fleppc.org/list/2015FLEPPCLIST-LARGEFORMAT-FINAL.pdf>

Florida Natural Areas Inventory Web Site: <http://www.fnai.org/>

Florida Natural Areas Inventory and Florida Department of Natural Resources. 1990. *Guide to the natural communities of Florida*.

Hipes, D., D. Jackson, K. NeSmith, D. Printiss, and K. Brandt. 2001. *Field guide to the rare animals of Florida*. Florida Natural Areas Inventory.

Myers, R. and J. Ewel. 1992. *Ecosystems of Florida*. University of Central Florida Press.

Soil Conservation Service. 1981. *Soil survey of Charlotte County*. United States Department of Agriculture.

Wunderlin, R. P., and B. F. Hansen. 2008. Atlas of Florida Vascular Plants (<http://www.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.