Rattlesnake Hammock Preserve
Land Management Plan

Managed by:

Collier County, FL
Conservation Collier Program

January 2023 - January 2033
(10 Year Plan)

Prepared by: Collier County Conservation Collier Staff

Contents

Land Management Plan Executive Summary

Lead Agency: Conservation Collier Program, Collier County Parks & Recreation Department, Collier County Public Services Department

Properties included in this Plan: Rattlesnake Hammock Preserve
Preserve lands consist of two parcels located within Township 50S, Range 26E and Section 16, in Collier County, Florida (00425920008, 00419160007) Full legal descriptions are provided in Appendix 14.

Total Acreage: 37.16 acres

Management Responsibilities: Collier County Conservation Collier Program staff
Designated Land Use: Preservation

Unique Features: Rattlesnake Hammock Preserve contributes to the conservation of ecologically sensitive lands within the urban area of Collier County. Mature live oaks create a densely shaded canopy atop tropical hardwood species such as red stopper (*Eugenia rhombea*), gumbo limbo (*Bursera simaruba*), and privet senna (*Senna ligustrina*). The preserve contributes to an existing wildlife corridor between the Picayune Strand State Forest and Rookery Bay National Estuarine Research Reserve.

Desired Future Conditions:

Vegetation: A preserve with a matrix of high-quality hammocks, mixed hardwood-coniferous wetlands, and freshwater marshes, with mixed age trees, a diverse understory, and less than 10% infestation of non-native species.

Wildlife: A preserve with a rich diversity of wildlife species utilization year-round comprised of populations with mixed age classes indicating ongoing recruitment and use of the preserve for denning and nesting activities.

Recreation: A preserve with the amenities required for the public to safely engage in passive natural resource-based recreation

Preserve Safety and Security: A preserve free of littering, dumping, illicit activities, neighbor disturbances, unauthorized vehicles, and after-hours trespass.

Cultural Resources: A preserve with intact and secure cultural resources that provide opportunities for community education about pre-historic settlements.

Public Involvement
As part of the Land Management Plan drafting process, a public meeting was held on December 1st, 2022, to gather input from members of the public and preserve stakeholders. Most public comments and questions on the land management plan pertained to reducing public visitation to

the preserve. Many participants expressed a desire to keep the preserve “low key”, and some even questioned whether the preserve should be opened to the public at all or dedicated for resource protection only. Participants wanted to know how many visitors the preserve would attract, how it would affect traffic, and how it would affect road maintenance. Participants primarily discussed reducing the number of proposed parking spaces, parking lot orientation and construction materials, preventing visitors from parking on the street, not erecting navigational signage on Santa Barbara Blvd, and limiting visitor amenities and permitted activities. Secondary topics of discussion centered on a desire to maintain site security and pertained to features as type and length of fencing, automatic gates, lighting, hours of access, alternate entry points, preserve cleanup, and monitoring. Other comments and questions included zoning, management for beneficial insects, trail design, and invasive plant removal. Additional information and staff responses to questions can be found in the appendix *Public Meeting Comments and Staff Responses*.

Introduction

The Rattlesnake Hammock Preserve is a 37.16-acre nature preserve located in South Naples in Collier County, FL. It is largely comprised of mixed hardwood-coniferous and mixed scrub-shrub wetland plant communities. Future access to the preserve is from 6371 Adkins Avenue off of Santa Barbara Blvd. The Preserve was purchased by Collier County in August of 2020 through funds from the Conservation Collier Program. The County holds fee simple title. Prior to acquisition, the property was referred to as SD Corp of Naples. Following a public name submission and voting contest and approval by the Board of County Commissioners (BCC), the preserve was officially named the Rattlesnake Hammock Preserve in February of 2021. Public access opportunities through nature-based recreation are planned for the site following completion of access infrastructure projects including a conceptual parking lot, bench, overlook platform, and interpretive signage. The Conservation Collier Program manages this parcel under authority granted by the Conservation Collier Ordinance 2002-63, as amended (available from www.municode.com). Conservation, restoration and passive public recreation are the designated uses of the property. Management activities allowed are those necessary to preserve and maintain this environmentally sensitive land for the benefit of present and future generations. Public use of this site must be consistent with these goals.

Table 1. Acquisition History and Status of the Rattlesnake Hammock Preserve

Year	**Benchmark**
2017	Acquisition Application submitted to the Conservation Collier Program by SD Corp of Naples, Inc for 115.15 acres
2018	37.16 acres recommended for Cycle 9 Acquisition A -List by the Conservation Collier Land Acquisition Advisory Committee with remaining 77.99 acres recommended for Acquisition B-List
2019	Proposal to purchase 37.16 acres of SD Corp brought by Commissioner Fiala approved by Board of County Commissioners November 12, 2019
2020	37.16 acres purchased by Conservation Collier in August for $1.48m
2021	Public Preserve Naming Competition held. Rattlesnake Hammock Preserve recommended based on total votes in January.
2021	Developed Interim Management Plan- BCC Approved Plan and Preserve Name in February
2022	Developed Final Management Plan in October for review by subcommittee, committee, and BCC

Conservation Collier: Land Acquisition Program and Management Authority

The Conservation Collier Program was originally approved by voters in November 2002 and subsequently confirmed in the November 2006 and 2020 ballot referendum. Both voter-approved referendums enable the program to acquire environmentally sensitive lands within Collier County, Florida (Ordinance 2002-63, as amended). Properties must support at least two of the following qualities to qualify for consideration: rare habitat, aquifer recharge, flood control, water quality protection, and listed species habitat. The BCC appointed a Conservation Collier Land Acquisition Advisory Committee (CCLAAC) to consider any selected or nominated properties that an owner has indicated a willingness to sell. The committee recommends property purchases for final approval by the BCC.

Lands acquired with Conservation Collier funds are titled to "COLLIER COUNTY, a political subdivision of the State of Florida, by and through its Conservation Collier program." The Board of County Commissioners of Collier County (BCC) established the Conservation Collier Program to implement the program and to manage acquired lands. As such, Conservation Collier holds management authority for the Rattlesnake Hammock Preserve.

Purpose and Scope of Plan

The purpose of the plan is to provide management direction for the Rattlesnake Hammock Preserve (Rattlesnake Hammock) by identifying the desired future conditions of each element and the appropriate tools to achieve these conditions. This plan seeks to balance natural resource conservation (listed species protection, habitat restoration, and invasive species management) with outdoor recreational and education use. This plan is divided into sections that include an introduction, parcel description, management element conditions, objectives, and potential tools, and a projected budget.

An Interim Management Plan for the Rattlesnake Hammock Preserve was approved by the Collier County Board of County Commissioners in 2021. This is the Final Management Plan for the Rattlesnake Hammock Preserve. Updates to this plan will be completed every 5 years following approval by the BCC.

Public Involvement

As part of the Land Management Plan drafting process, a public meeting was held on December 1st, 2022, to gather input from members of the public and preserve stakeholders. Thirteen members of the public attended the meeting, most were immediate neighbors or resided along Adkins Ave.

Parcel Description

1. Location

1.1. Description

The Rattlesnake Hammock Preserve is in South Naples, FL at the address 6371 Adkins Avenue, Naples, FL 34112. The preserve is situated east of Santa Barbara Blvd, west of Collier Blvd, and north of Rattlesnake Hammock Rd in Section 16, Township 50S, and Range 26E in the designated Urban Area of Collier County (Figure 1.1.2. Overview Map). Adjacent to the Wing South Airpark, Rattlesnake Hammock Preserve is accessible via Adkins Avenue to the north for both land management and future public access as well as Parkers Hammock Rd to the south for land management access only. The property is made up of two parcels (00425920008 and 00419160007) comprising 37.16 acres in total (Figure 11, Legal Description). Nearby conservation and natural lands include the Collier County Serenity Walk Park (0.5 miles) as well as the Picayune Strand State Forest (3 miles) and Rookery Bay National Estuarine Research Reserve (3 miles).

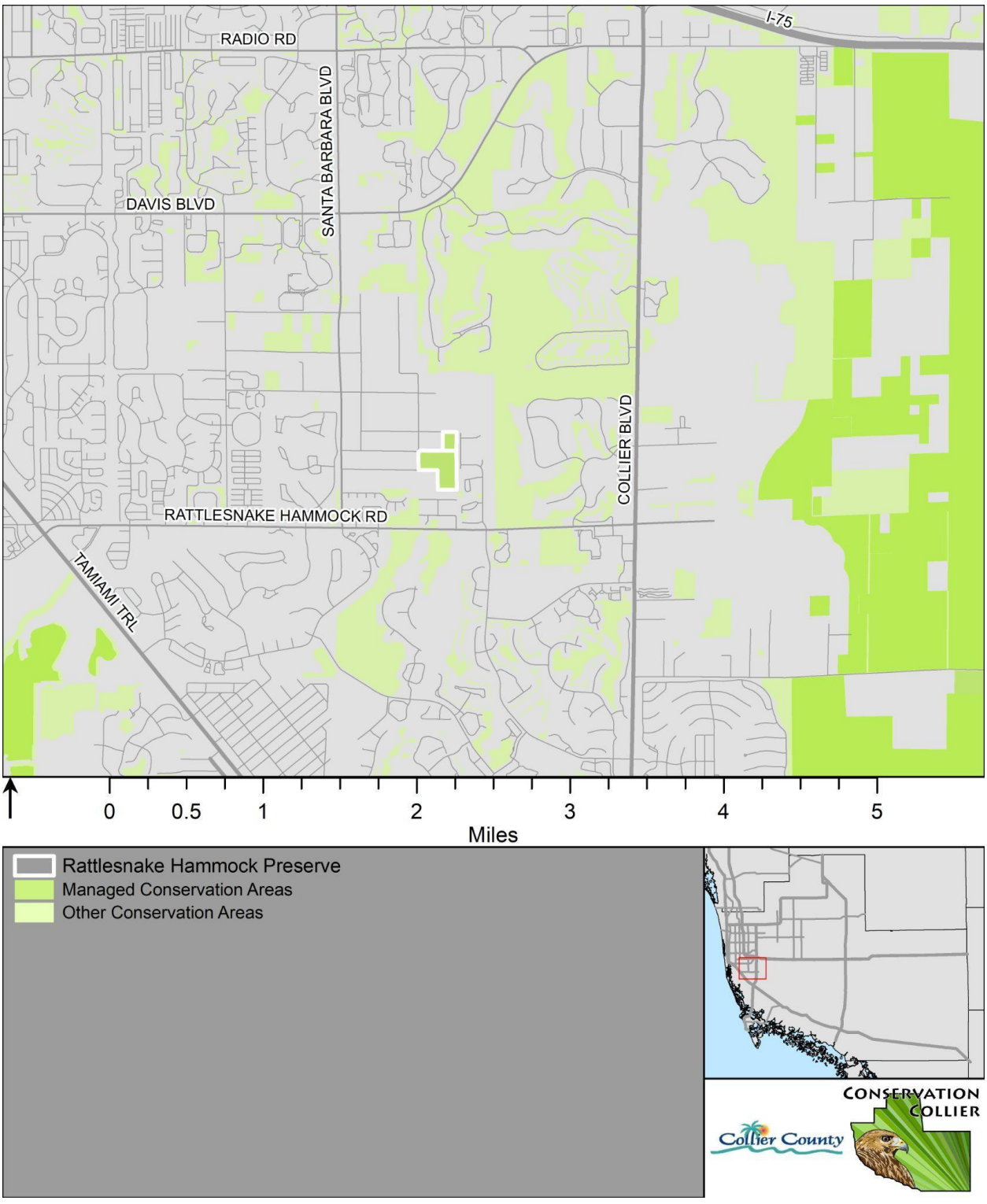


Figure 1.1.1. Overview map of Rattlesnake Hammock Preserve and surrounding conservation areas

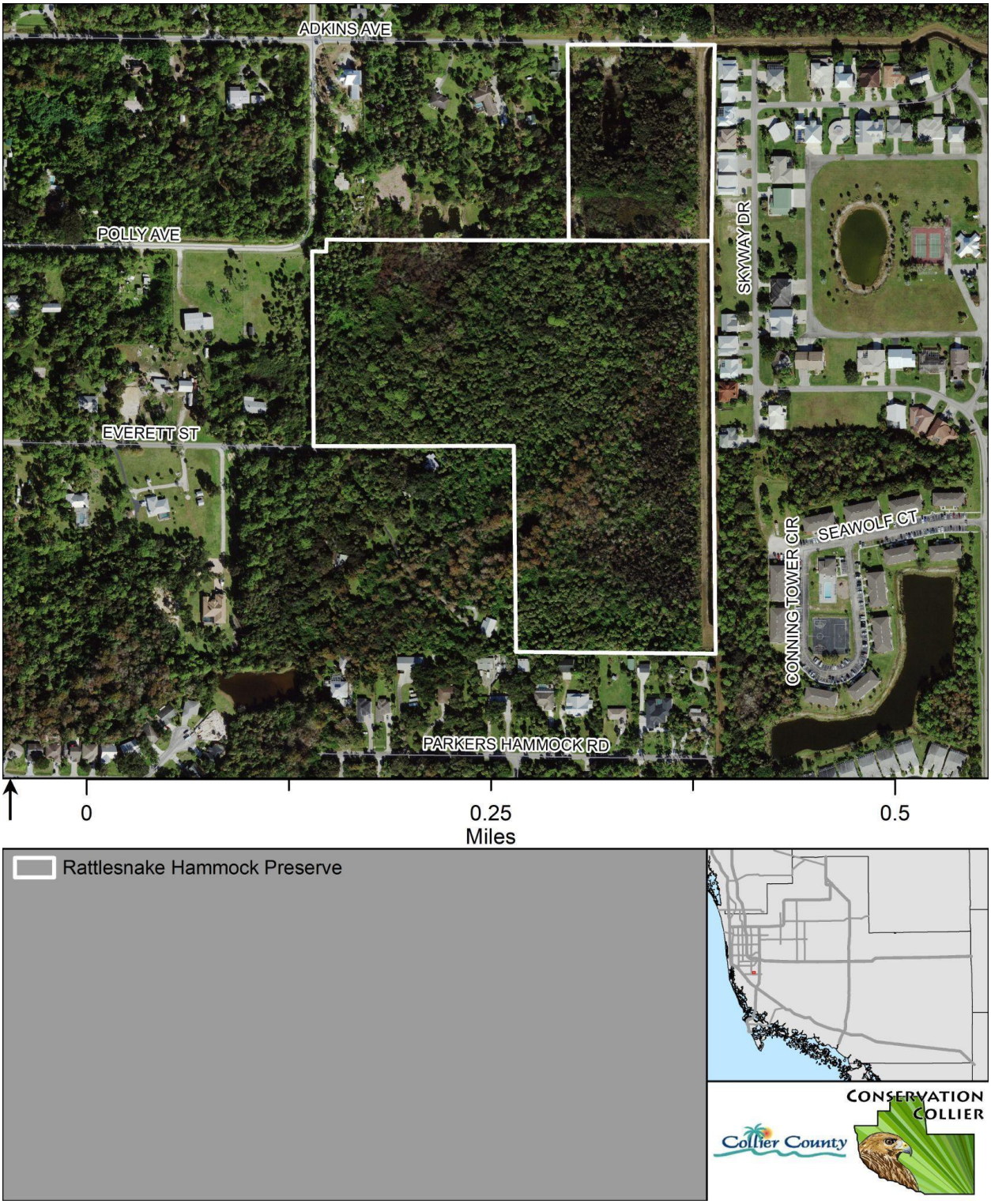


Figure 1.1.2. 2022 Aerial close-up

2. Physiography

2.1. Description

LIDAR and Surface Waters

A Light Detection and Ranging (LIDAR) map provides information about the elevation of the Earth's surface. The topographical map of Rattlesnake Hammock Preserve (Figure 2.1.1) indicates surface features of lower elevation in deepening shades of blue. Five low-elevation features exist within the Rattlesnake Hammock Preserve that are seasonally flooded and collect surface waters from May-November each year. Three of these features are naturally occurring including the North Marsh (herbaceous marsh), Cypress Swamp, West Marsh (willow), while two of the features are the result of land use alterations including the Historic Water Treatment Area (willow marsh) and Canal (Stormwater Easement 51101-255 DAME) as indicated in Figure 2.1.2 Surface Waters Map.

Aquifer Recharge Potential

Figure 5. Aquifer Map indicates the preserve is within a Priority 6 CLIP4 Aquifer Recharge designation. This property lies within the Rookery Bay watershed, with groundwater flowing from the northeast to the southwest. Most of the community drinking water supply in Collier County comes from the surficial aquifer, but many residents also have wells to the Lower Tamiami aquifer, a slightly deeper aquifer. The mapped surficial aquifer recharge for the preserve is 31" to <43" annually. These parcels contribute moderately to the surficial aquifer. The mapped Lower Tamiami aquifer recharge is -16" to -1" annually. Protection of this site in an undeveloped state will help to protect the Lower Tamiami aquifer as there is no confining layer between it and the surficial aquifer system.

Soils

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Three soil types were mapped for the preserve parcels (Figure 2.1.4. Hydric Soils Map) including: Hilolo, Jupiter, and Margate fine sands (hydric), Boca, Rivera, Limestone substratum, Copeland FS (hydric, depressional), and Pineda fine sand, Limestone substratum (hydric).

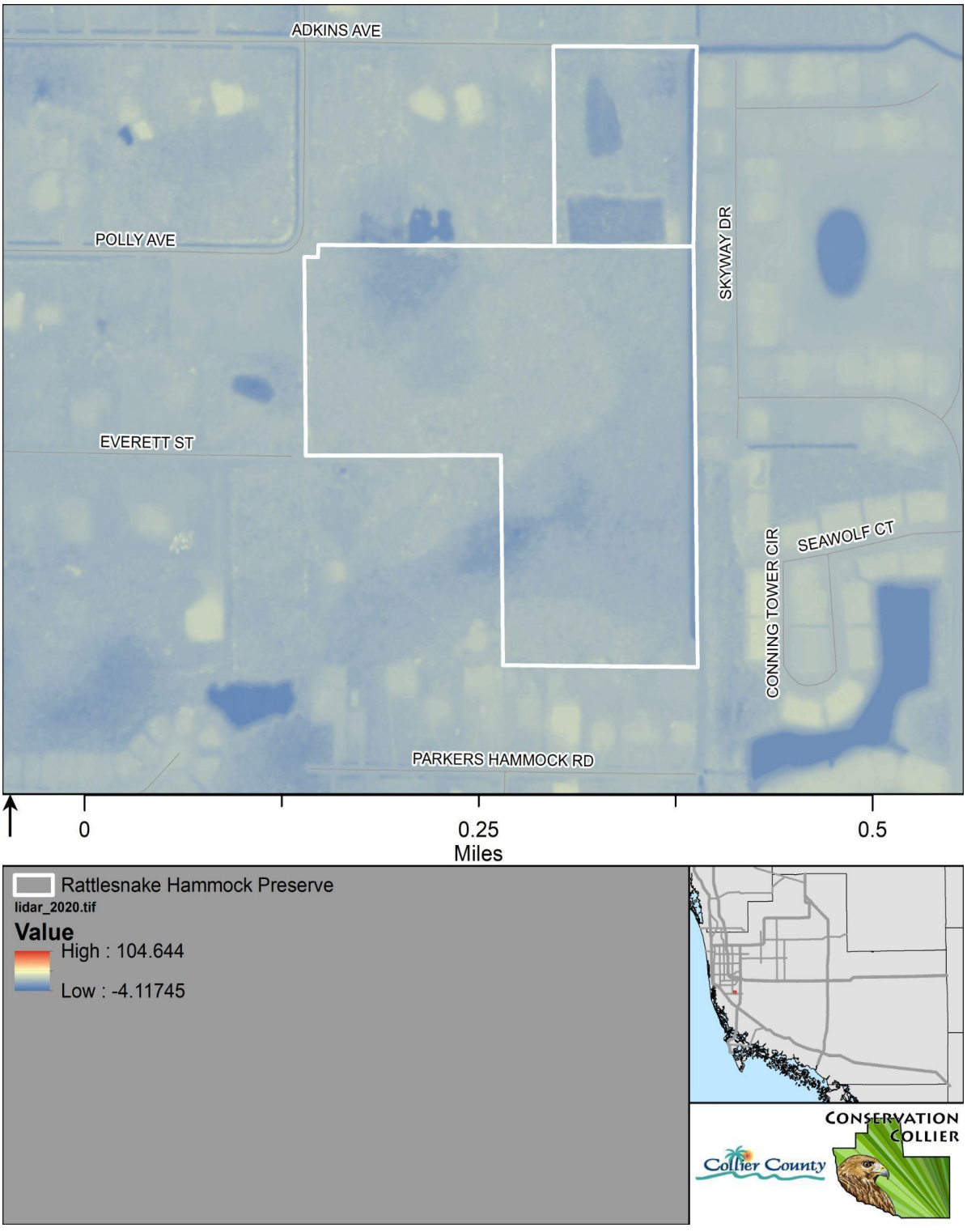


Figure 2.1.1. Topographical Map (LIDAR)

Figure 2.1.2. Surface Waters Map

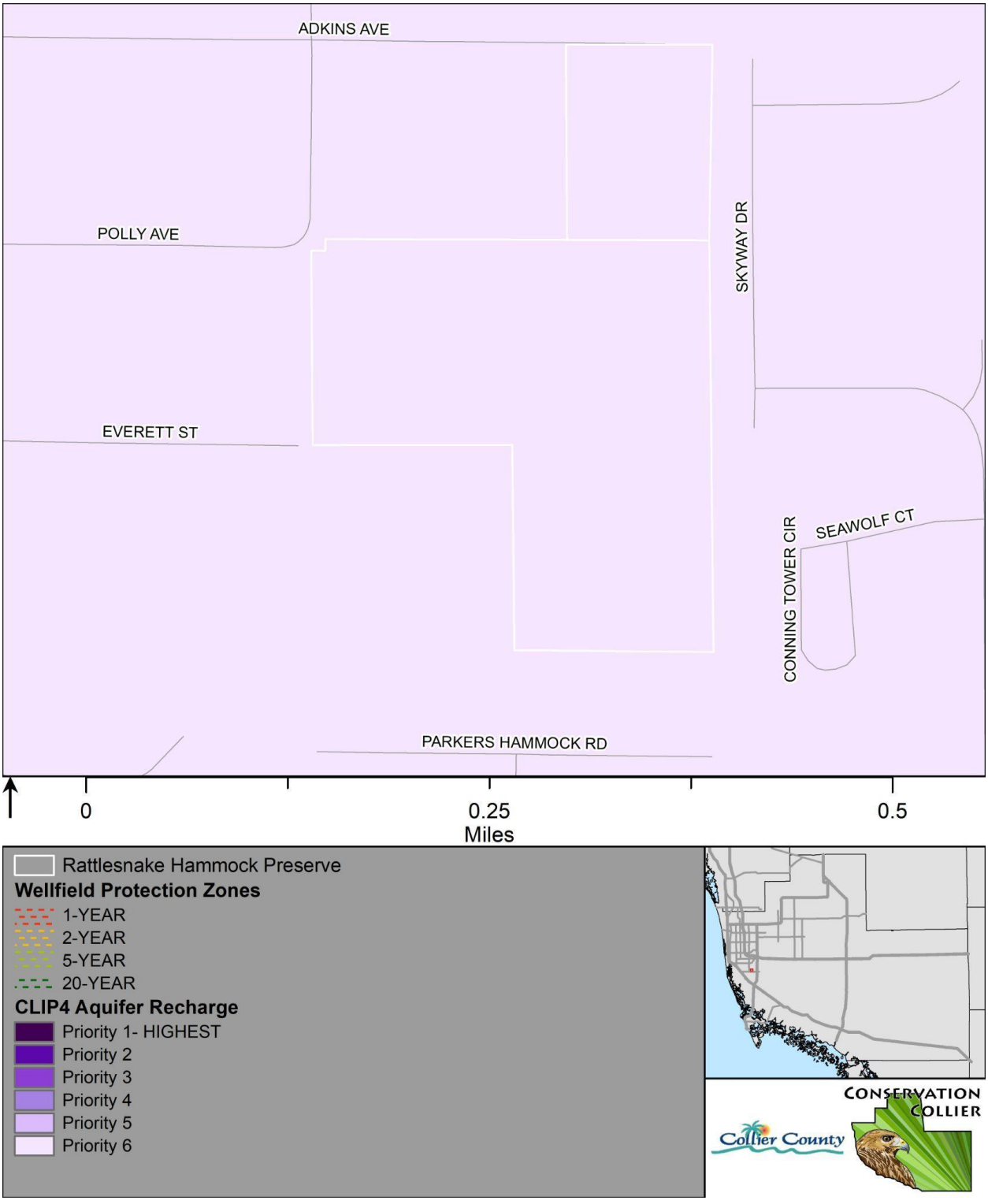


Figure 2.1.3. Aquifer Map (CLIP4 Aquifer Priority Map and Wellfield Protection Zones)

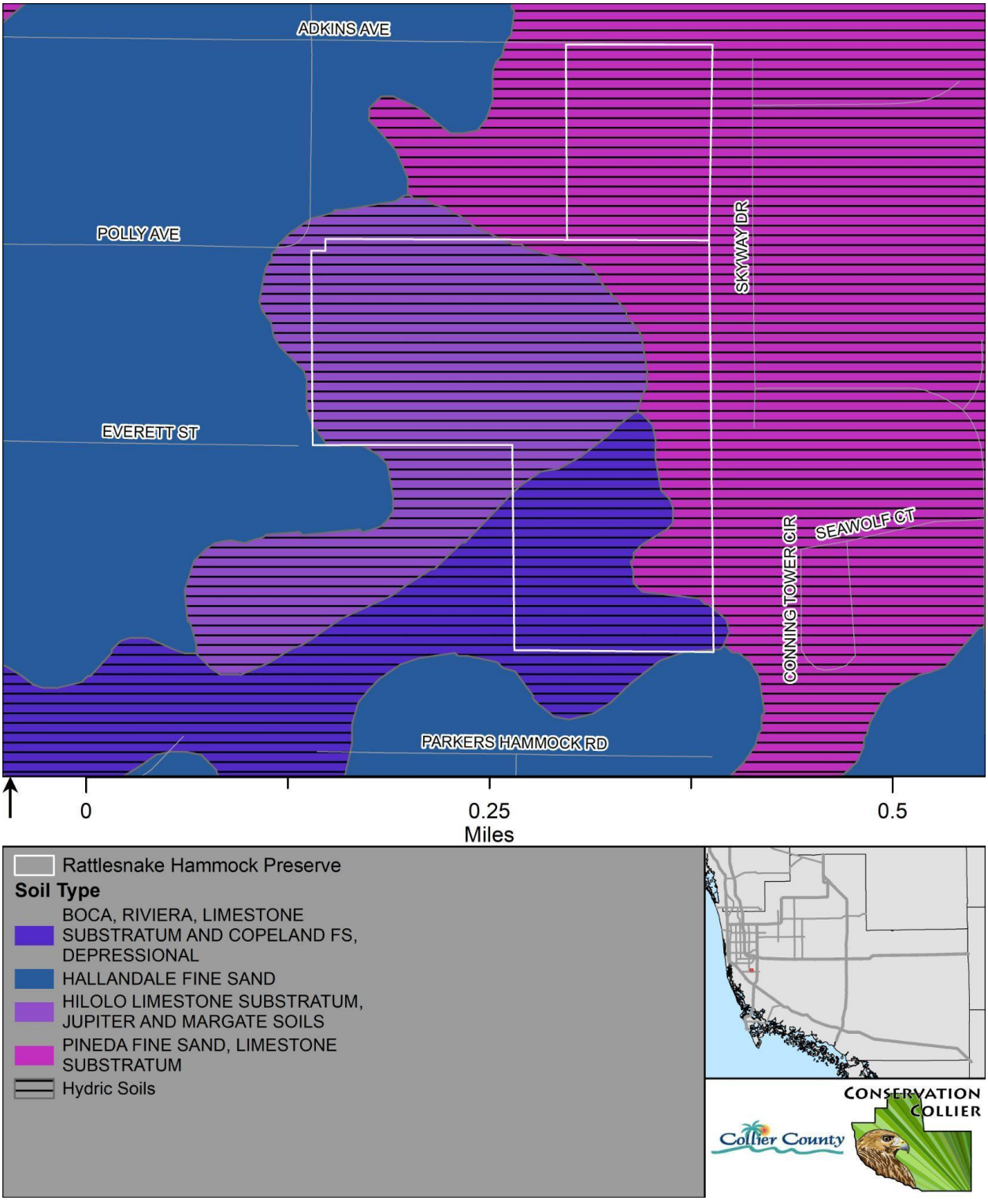


Figure 2.1.4. Hydric Soils Map (Collier County Soils Survey)

3. Historical Land Use

3.1. Description

Historic aerial imagery (Photoset 3.1.2) from the 1940s indicates that the preserve lands were part of a large, contiguous network of Cypress strand and hardwood hammock with seasonal wetlands and surrounding graminoid-dominated prairies composed of grasses, sedges, and rush species. While much of the foundational community within today's preserve boundary have not had significant alterations, the land use of the adjacent area including historic water flow, habitat connectivity, and cover have changed significantly. Aerials from 1978 show significant alterations in place in the lands surrounding and within the preserve including the footprints of the roadways and residential lots and communities that comprise today's neighborhood. Along the eastern boundary of the preserve is the Wing South Airpark community and corresponding runway for small aircraft. Constructed within the current preserve boundaries at this time is the water treatment structure that serviced the community. Also apparent in the aerials from 1978 is a removal of vegetation in the northern portion of today's preserve that would later become the melaleuca-infested seasonal wetland adjacent to Adkins Avenue. Maps of 1985 through to the 2000s indicate growing development and expansion of the lands adjacent to the preserve for residential use and enhancement of roadway infrastructure. In the 2000s, aerials are of a high enough resolution to show the first indications of significant infestation of exotic plant species within the current preserve boundary.

Conservation Collier staff contacted representatives from the Collier County Museum to research the history of the area within and surrounding the preserve and it was determined there was not an abundance of historical information on record about the area. A newspaper clipping (Figure 3.1.1) provided by museum staff indicated that the area was notable historically amongst residents for having a high population of Eastern diamondback rattlesnakes and was sought out as an area for dumping.

Q. Where did the name of Rattlesnake Hammock Road come from?

— Sis Wendeler
Naples

Q&A
IN THE KNOW

A. The exact details of much of Collier County history have been lost over the years. The origin of the name of Rattlesnake Hammock Road, which runs from U.S. 41 East to Collier Boulevard in East Naples, is one of these details, said Ron Jamro, executive director of the Collier County Museum.

But Jamro did say he has heard only one story over the years as a possible explanation — that decades ago, local residents would go down to a dumping area at the end of that road and shoot rattlesnakes. That area's geography had a slightly raised feature, called a hammock, Jamro said.

Jamro said there was a time that an occasional six-foot rattlesnake could be found on doorsteps in Naples. Imagine finding one of those today!

Got a question for the "In the Know" column? Submit it by calling 213-6007, or e-mailing: intheknow@naplesnews.com.

According to the Collier County Museum, Rattlesnake Hammock acquired its name because of the abundance of rattlesnakes in the area. A hammock is an elevated area with rich soil and hardwoods. The early Seminole Indians planted crops in regions like these to avoid the flooding of the lowlands. Rattlesnake Hammock was even used as a filming location for the 1951 Warner Brothers production, "Distant Drums," starring Gary Cooper.

Resource: Collier County Museum Files
Naples Daily News 11/22/04 p.10B

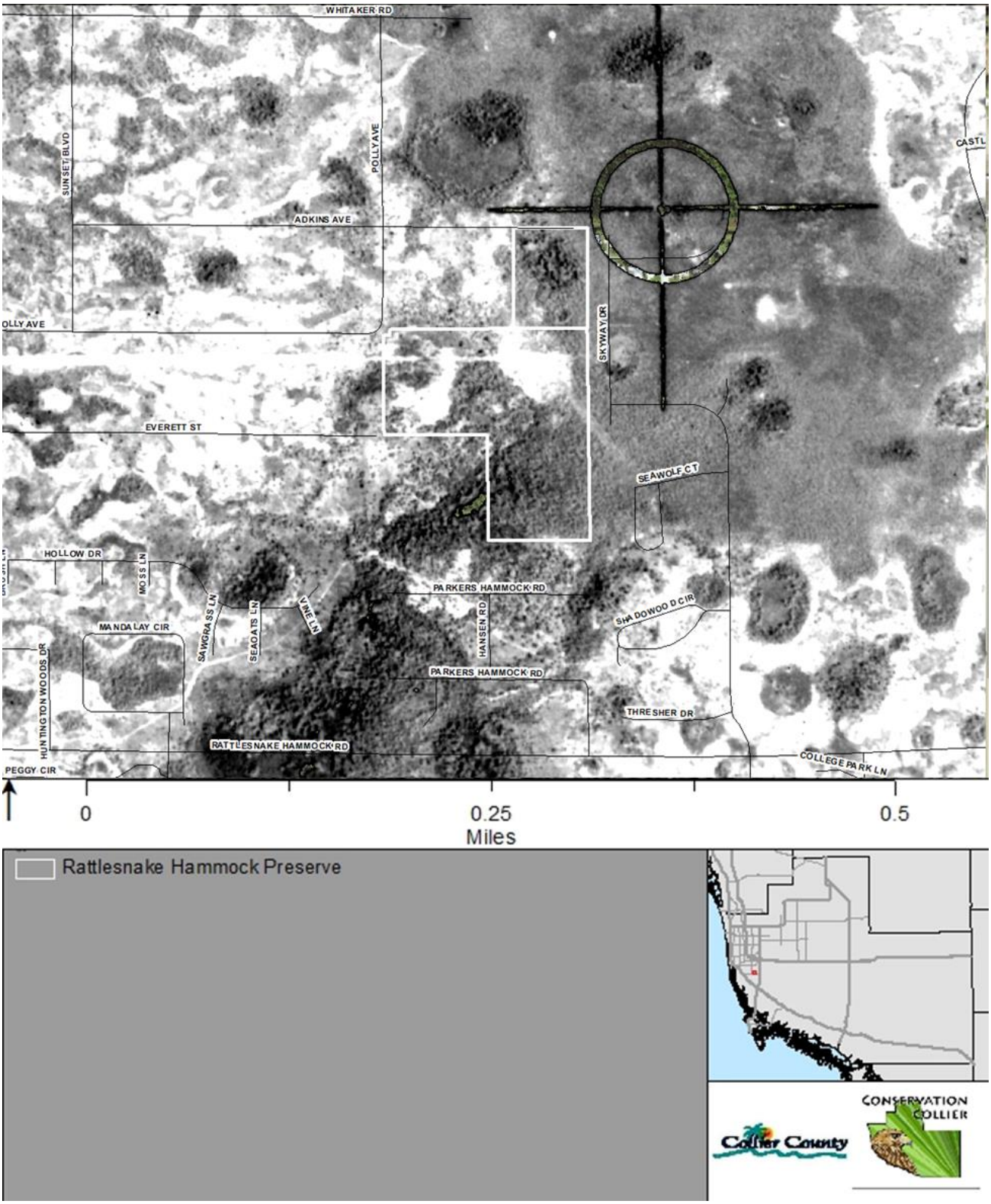
Naples Daily News 1/6/02 p. 1B

Compiled by: Marie A. Mayer 2004

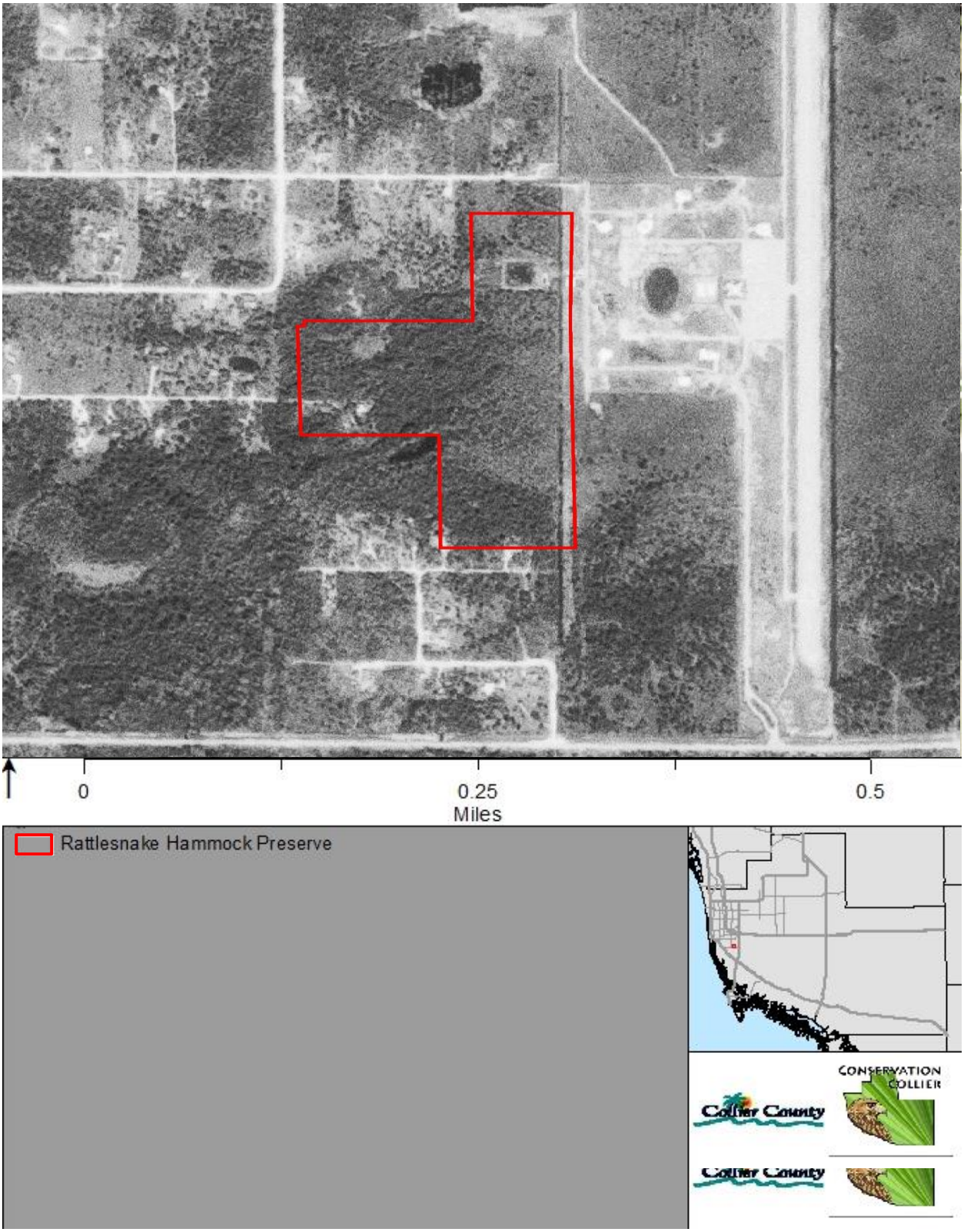
Information provided by Collier County Museum, Naples, FL 34112

Figure 3.1.1. Rattlesnake Hammock Road History, 2002

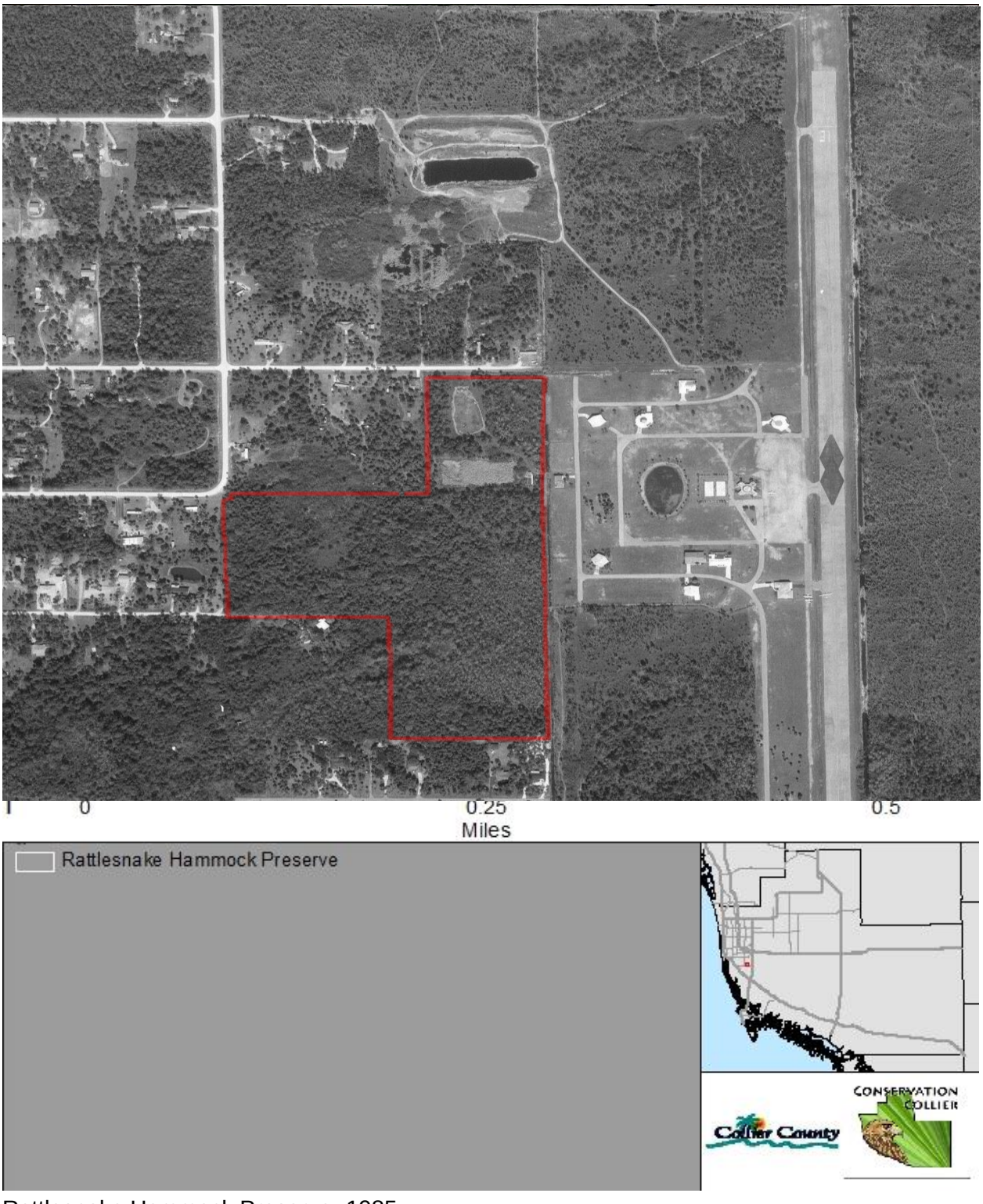
Photoset 3.1.2. Historical Aerial Imagery



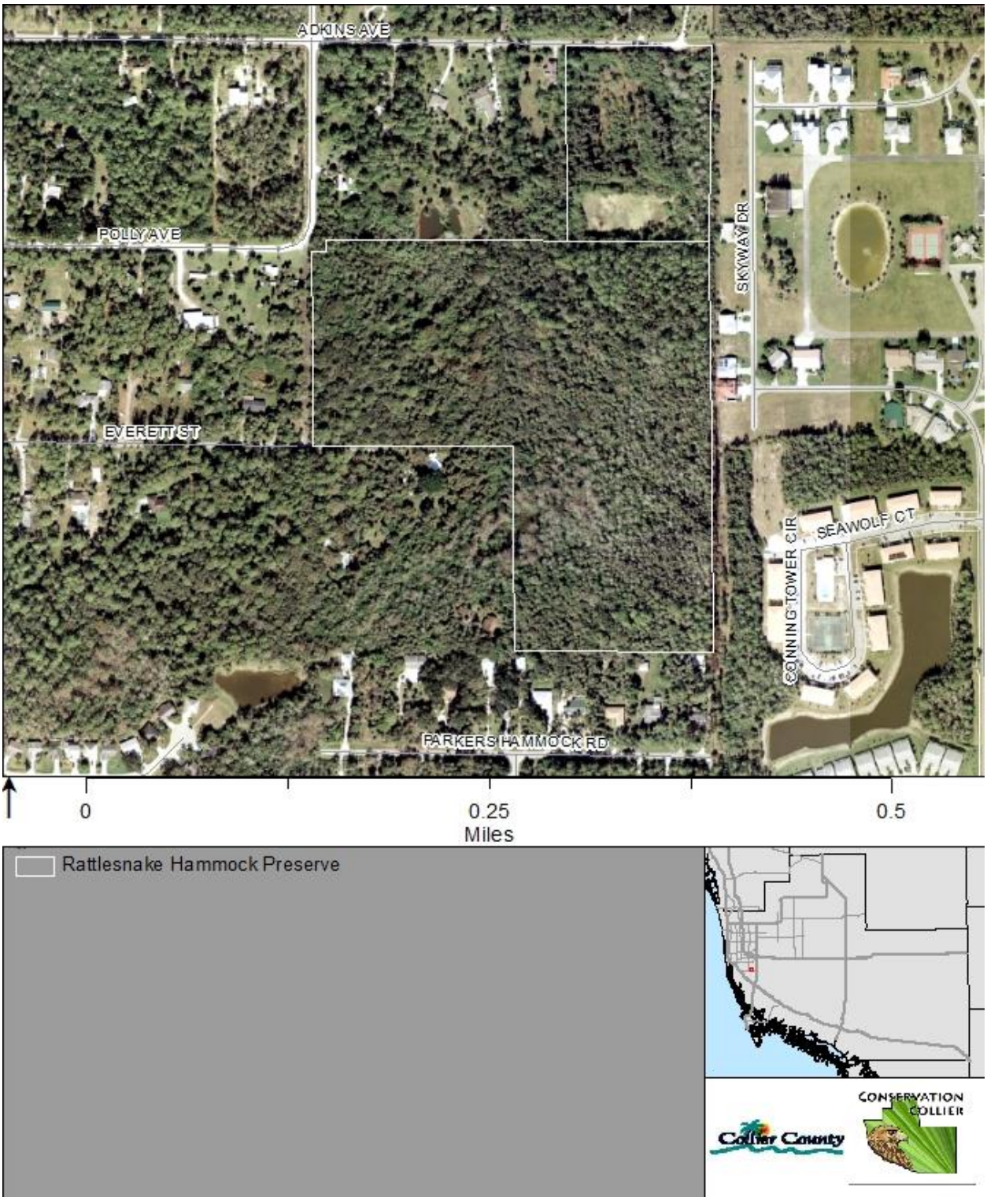
Rattlesnake Hammock Preserve- 1940



Rattlesnake Hammock Preserve- 1978



Rattlesnake Hammock Preserve- 1985



Rattlesnake Hammock Preserve- 2000

4. Adjacent Land Use

4.1. Description

Rattlesnake Hammock Preserve is located within the urban area of Collier County and is adjacent to a low-density residential community along the western and northern property boundary. The eastern boundary of the property is adjacent to a stormwater canal and the Wing South Airpark and runway. The 78 acres to the northeast of the preserve (formally a Cycle 9 acquisition application parcel recommended for the B-List) was clear-cut in the summer of 2022 with a high-density housing development planned for the parcel that was historically an integral wildlife dispersal corridor and connection point between the Rattlesnake Hammock Preserve and the Picayune Strand State Forest. To the South of the preserve is a residential community known as Parker's Hammock. Lands to the north and the east are existing residential communities and golf courses which may provide lasting habitat dispersal corridors for long-ranging wildlife species. The Picayune Strand State Forest to the east is the most significant large conservation area. The existing corridor to the south of the property has historic connection linkages with the Rookery Bay National Estuarine Research Reserve. Stormwater control features and major roadways bisect these habitat linkages on all sides of the preserve.

5. Acquisition and Expansion

5.1. Acquisition Description

In 2017, SD Corp of Naples, Inc applied for three parcels totaling 115.15-acres during Conservation Collier Acquisition Cycle 9. In 2018, the Conservation Collier Land Acquisition Advisory Committee recommended two parcels totaling 37.16-acres for the acquisition A-list and the remaining 77.99-acres for the acquisition B-list. The Board of County Commissioners (BCC) ranked the property as A-category. However, the BCC initially did not recommend for purchase due to lack of budget. In November 2019, Commissioner Fiala proposed the purchase of the SD Corp A-list parcels. This was approved by the BCC on November 12, 2019 (Agenda item #10.A). Conservation Collier purchased the 37.16-acres on August 10th , 2020.

Table 5.1.1. Parcel Attributes Table

Folio(s)	Acreage	Seller	Acquisition Date	Price
425920008	7.16	SD Corp of Naples Inc.	8/10/2020	$1,480,000.00
419160007	30			
Total	37.16			

5.2. Potential Preserve Expansion

Conservation Collier is targeting the only remaining undeveloped parcel adjacent to the preserve. The 4.5-acre parcel (00419840000) indicated in Figure 5.2.1 is located southwest of the preserve at the eastern terminus of Everett St. Increasing development, especially to the north, is isolating the preserve from surrounding natural areas. Acquiring this parcel would protect the last linkage between the preserve and the conservation easements to the south.

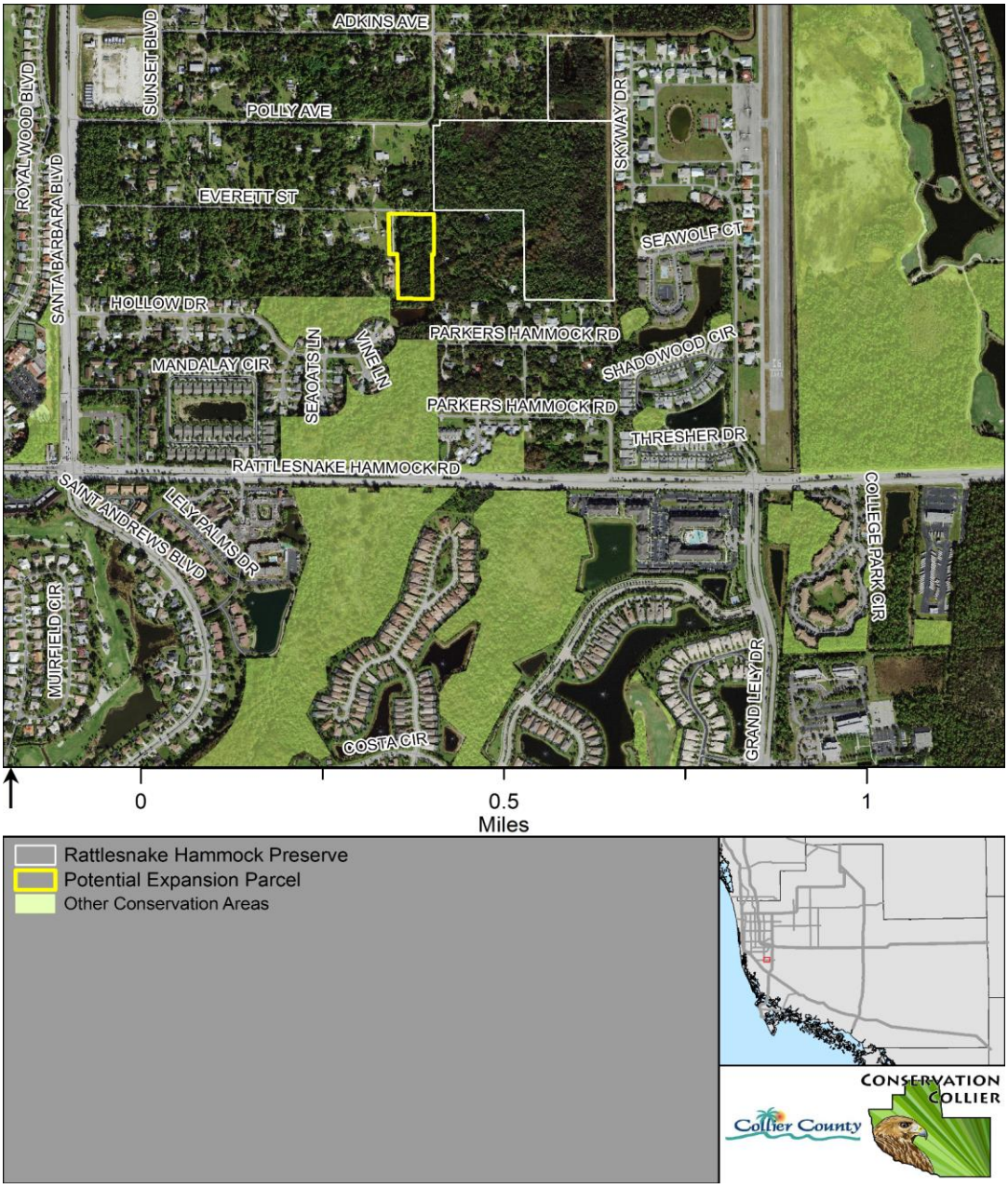


Figure 5.2.1. Potential Expansion Areas Map

Management

6. Vegetation Management

6.1. Current Vegetative Community Conditions

Cooperative Land Cover Classification System Habitats Identified. Non-native species are denoted with an *

1400 Mixed Hardwood-Coniferous - Mix of hardwood and coniferous trees where neither is dominant.

Notes: This community is found throughout the preserve. The center of the preserve is composed primarily of the oaks, palms, and slash pines. The more upland portions of the preserve have a prominent tropical hardwood component. These species give way to cypress, wetland hardwoods, melaleuca, and various non-native species as the elevation drops and in the disturbed margins.

Major Canopy Components – Cabbage palm (*Sabal palmetto*), laurel oak (*Quercus laurifolia*), slash pine (*Pinus elliotti*), bald cypress (*Taxodium distichum*), strangler fig (*Ficus aurea*), royal palm (*Roystonea regia*), gumbo limbo (*Bursera simaruba*), melaleuca (*Melaleuca quinquenervia*) *, Java plum (*Szygium cumini*)*, and earleaf acacia (*Acacia auriculiformes*)

Major Midstory Components – Simpson's stopper (*Myricanthes fragrans*), myrsine (*Myrsine cubana*), fire bush (*Hamelia patens*), bay (*Persea sp.*), wax myrtle (*Myrica cerifera*), buttonbush (*Cephalanthus occidentalis*), saltbush (*Baccharis angustifolia*), dahoon holly (*Ilex glabra*), and Brazilian pepper (*Schinus terebinthifolia*) *

Major Understory/Groundcover Components – Wild coffee (*Psychotria nervosa*), swamp fern (*Blechnum serrulatum*), pokeweed (*Phytolacca americana*), air potato (*Dioscorea bulbifera*) *, caesarweed (*Urena lobata*) *, sword fern (*Nephrolepis sp.*)*

2112 Mixed Scrub-Shrub Wetland - Wetland areas that are dominated by woody vegetation less than 20 feet in height. This can occur in many situations, but in most cases involves transitional or disturbed communities on drier sites. Persistent examples of shrub wetlands include shrub bogs and willow swamps. (SJRWMD)

Notes: This community is not identified on map but is found in two natural marshes and one historic water treatment area.

Major Canopy Components – Melaleuca (*Melaleuca quinquenervia*) *

Major Midstory Components – Coastal plain willow (*Salix caroliniana*), Brazilian pepper (*Schinus terebinthifolius*) *

Major Understory/Groundcover Components – Smartweed (*Polygonum sp.*), swamp fern (*Blechnum serrulatum*), climbing hempvine (*Mikania scandens*), sawgrass (*Cladium jamaicense*), and torpedo grass (*Panicum repens*) *

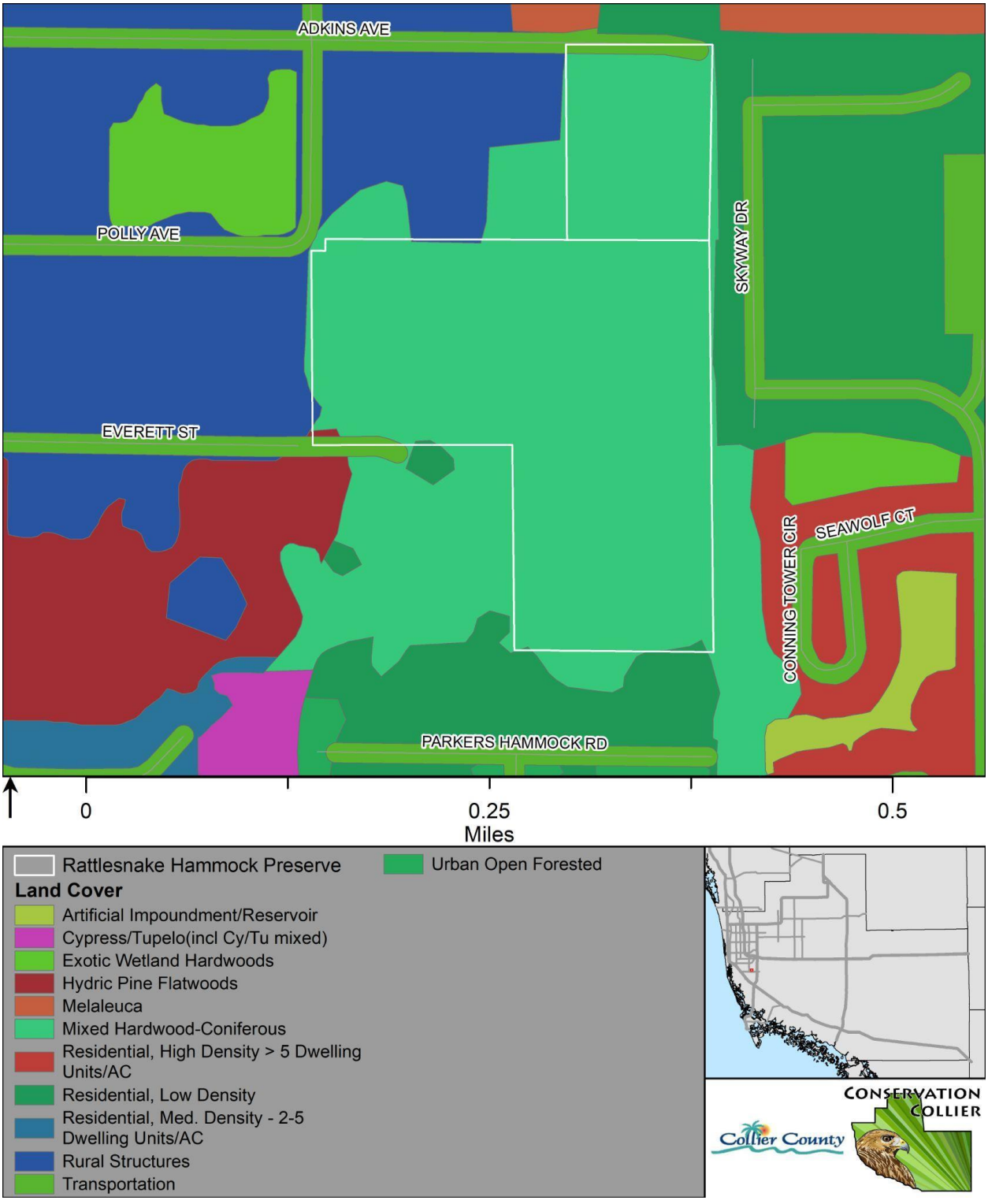


Figure 6.1.1. Cooperative Land Cover Classification Map

Table 6.1.2. Threatened and Endangered Species Table

Imperiled Plant Species		Conservation Status	
Common Name	Scientific Name	State	Federal
Cardinal Airplant	*Tillandsia fasciculata*	Endangered	Not Listed
Northern Needleleaf Airplant	*Tillandsia balbisiana*	Endangered	Not Listed
Giant Airplant	*Tillandsia utriculata*	Endangered	Not Listed
Royal Palm	*Roystonea regia*	Endangered	Not Listed

6.1.3. Vegetation Management Concerns

High woody and vining invasive species cover is the primary concern on this preserve. Not only do these species out compete and smother native plants, they also provide little in the form of forage for wildlife. Monocultures of Brazilian pepper and melaleuca will require re-vegetating once treated or removed. Trees that are treated and left in place may present hazards and negatively impact aesthetics, where they abut the trail and neighboring properties, and easements. Coastal plain willow (*Salix caroliniana*) is acting as a nuisance native in previously herbaceous wetlands. Special considerations should be made to preserve and enhance the tropical hardwood elements present as they represent one of the rarest plant communities in Collier County. A full botanical inventory is required to create a baseline to measure our native restoration against.

6.2. Desired Future Conditions

A preserve with a matrix of high-quality hammocks, mixed hardwood-coniferous wetlands, and freshwater marshes with mixed age trees, a diverse understory, and less than 10% infestation of non-native species.

6.3. Management Tools

6.3.1. Invasive Plant Removal

Upon acquisition, the preserve was >75% infested with invasive plants, primarily melaleuca (*Melaleuca quinquenervia*), Brazilian pepper (*Schinus terebinthifolius*), Java plum (*Szygium cumini*), and air potato (*Dioscorea bulbifera*). In some areas, particularly the north and west sides, these species occur in single species stands that are so dense that even if treated in place, native vegetation will have difficulty recolonizing the area. Other notable species include old world climbing fern (*Lygodium microphyllum*), arrowhead vine (*Syngonium podophyllum*), Asian sword fern (*Nephrolepis sp.*), torpedo grass (*Panicum repens*), cogon grass (*Imperata cylindrica*), Bishopwood (*Bischofia javanica*), and elephant ear (*Xanthosoma sagittifolium*). There is a diverse

array of non-native landscaping plants found along the margins of the preserve. A combination of mechanical and repeated herbicidal treatments of all Florida Invasive Species Partnership Category I&II species will be pursued to achieve the desired future conditions.

Actions taken thus far to reach these goals include Conservation Collier staff hand clearing melaleuca from the north marsh, mechanical removal of melaleuca, Brazilian pepper, and Java plum stands along Adkins Avenue and along the east and south sides of the historic water treatment area to allow for access and debris removal, and herbicidal treatment of all Brazilian pepper, melaleuca, Java plum, and old-world climbing fern in the southern 30-acre parcel of the preserve. This treatment was conducted using funding assistance from the Florida Fish and Wildlife Conservation Commission (FWC) Upland Invasive Exotic Plant Management Program.

6.3.2. Native Plant Restoration

Native plantings have been, and will continue to be used, to increase diversity, improve wildlife forage, enhance aesthetics, and to revegetate mechanically cleared areas. Thus far all mechanically cleared areas, aside from the footprint of the conceptual parking lot and trail, have received native plantings. A combination of herbaceous plants, shrubs, and trees were planted to create a visual buffer between the proposed parking lot and adjacent private residence. Volunteers planted a wide variety of emergent aquatic plants as well as pop ash (*Fraxinus caroliniana*) and pond apple (*Annona glabra*) in the north marsh post melaleuca-removal and coastal plain willow reduction. The non-profit organization, Growing Climate Solutions organized a corporate volunteer workday and provided 150 trees to plant in the remaining cleared areas. These included slash pine, cypress, laurel oak, and red maple. In addition to removing invasive species, staff plans on reducing willow cover in the historic water treatment area. Lack of disturbance has led to willow dominating this marsh, reducing the herbaceous diversity and limiting the available foraging habitat for wading birds and among other species.

6.3.3. Prescribed Fire

Natural communities within this preserve have exceeded their fire return interval. The herbaceous marshes and more upland portions of hammock may benefit from patchy understory fire. However, application of prescribed fire is unlikely for this site due to its urban nature, proximity to the Wing South Airpark, high surrounding fuel loads, and extent of safety improvements required.

6.3.4. Hydrological Restoration

The preserve sits within the center of an extensively altered watershed. The historic northeast to southwest flow through the area has been intercepted and drained by canals and swales resulting in a shorter duration hydroperiod. This change in hydroperiod partially explains the transitional nature of the vegetative communities present. Areas of the preserve that were historically cypress strand forests and depressional marshes are shifting towards less flood tolerant species. Due to the forces altering hydrology being largely upstream and off property, the onsite flow cannot be restored to its pre-development state. The preserve must be managed to benefit the vegetative communities most suited for its current and future conditions. Proposed mastication of large stands of melaleuca may further affect hydrology by creating a mulch layer and reducing water

loss by transpiration. Hydrological mitigation may be required for some or all the proposed visitor amenities. These areas will be planted with appropriate native plants.

6.4. Partnership Opportunities

Conservation Collier will continue to seek funding assistance from the FWC Upland Invasive Exotic Plant Management Program. This program has been critical in conducting initial and otherwise cost prohibitive invasive plant removal projects over the past 20 years. Revegetation needs are expected to grow as invasive vegetation is removed, and Conservation Collier intends to cultivate a lasting partnership with Growing Climate Solutions to meet those needs when feasible.

7. Wildlife Management

7.1. Current Wildlife Community Conditions

The Rattlesnake Hammock Preserve is comprised of a rich mosaic of plant communities and habitat types that contribute to utilization of the property by a wide diversity of bird, mammal, reptile, amphibian, and invertebrate species. The residential neighborhood adjacent to the preserve is made up of low-density, larger acreage lots that have been maintained in a natural state and contribute to the dispersal and persistence of species through the preserve and into the surrounding neighborhood lands. White-tailed deer and wading bird foraging are the most frequently observed groups along existing management access trails by visitors. Ample opportunities exist to enhance the preserve's wildlife community conditions through habitat restoration activities and management.

Table 7.1.1. Observed Wildlife Species Table

Type	Common Name	Species	Protection Status
Mammals	bobcat	*Lynx rufus*	
	Florida black bear	*Ursus americanus floridanus*	
	Florida panther	*Puma concolor coryi*	Federally Endangered
	gray squirrel	*Sciurus carolinensis*	
	nine-banded armadillo	*Dasypus novemcinctus*	
	North American river otter	*Lontra canadensis*	
	Ten Thousand Islands raccoon	*Procyon lotor marinus*	
	Virginia opossum	*Didelphis virginiana*	
	white-tailed deer	*Odocoileus virginianus*	
Birds	blue jay	*Cyanocitta cristata*	

	great-crested flycatcher	*Myiarchus crinitus*	
	mottled duck	*Anas fulvigula*	
	mourning dove	*Zenaida macroura*	
	northern cardinal	*Cardinalis*	
	northern mockingbird	*Mimus polyglottos*	
	red-bellied woodpecker	*Melanerpes carolinus*	
Reptiles	brown anole	*Anolis sagrei*	
	Florida banded water snake	*Nerodia pictiventris*	

Table 7.1.2. Potential Threatened and Endangered Species Table

Type	Common Name	Species	Protection Status
Mammals	Big Cypress fox squirrel	*Sciurus niger avicennia*	State Threatened
	Everglade's mink	*Neovison vison evergladensis*	State Threatened
	Florida panther	*Puma concolor coryi*	Federally Endangered
	Florida bonneted bat	*Eumops floridensis*	Federally Endangered
Birds	Audubon's crested caracara	*Polyborus plancus audubonii*	Federally Threatened
	Everglade's snail kite	*Rostrhamus sociabilis plumbeus*	Federally Endangered
	Little blue heron	*Egretta caerulea*	State Threatened
	Roseate spoonbill	*Platalea ajaja*	State Threatened
	Tricolored heron	*Egretta tricolor*	State Threatened
	Wood stork	*Mycteria americana*	Federally Threatened
Reptiles	American alligator	*Alligator mississippiensis*	Federally Threatened SA
	Eastern indigo snake	*Drymarchon corais couperi*	Federally Threatened
	Gopher tortoise	*Gopherus polyphemus*	State Threatened

Photoset 7.1.3. Wildlife Camera Observations

Photo: White-tailed deer (fStop Foundation, 2021)

Photo: White-tailed deer (fStop Foundation, 2022)

Photo: White-tailed deer (fStop Foundation, 2022)

Photo: Florida black bear (fStop Foundation, 2021)

Photo: Black vulture (fStop Foundation, 2021)

Photo: Florida panther and kittens (fStop Foundation, 2022)

Photo: Nine-banded armadillo (fStop Foundation, 2022)

Photo: Florida bobcat (fStop Foundation, 2022)

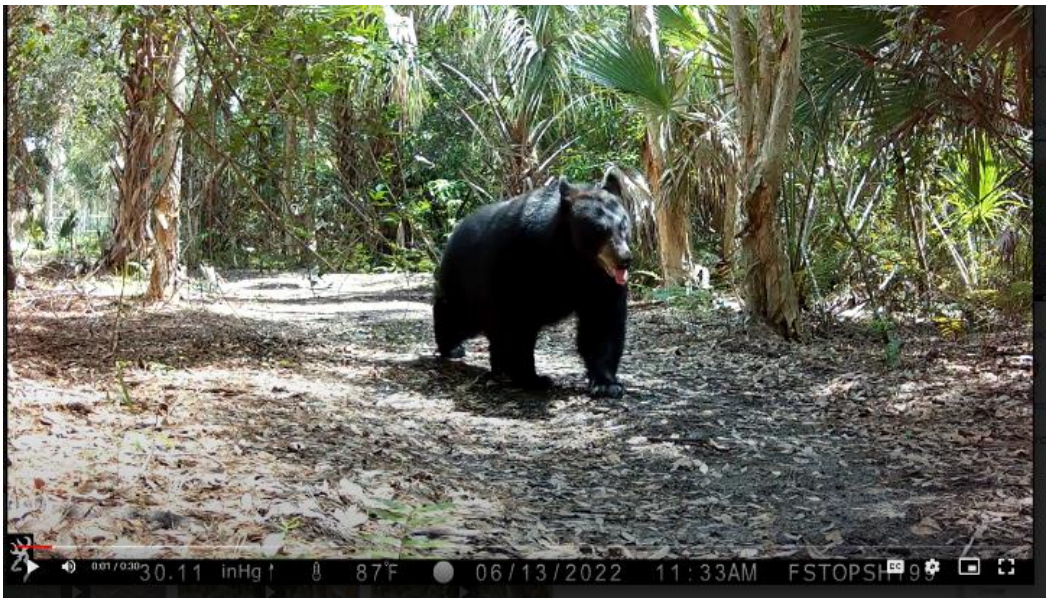


Photo: Florida black bear (fStop Foundation, 2022)

7.1.4. Wildlife Management Concerns

As preserve land in the urban area of South Naples, one of the most significant threats to wildlife species that utilize Rattlesnake Hammock Preserve is the loss of habitat connectivity and safe dispersal corridors between larger conservation lands due to land use changes like development and expansion of roadways. Wildlife cameras within the preserve have continually documented longer ranging larger mammals utilizing the preserve like Florida black bear, bobcat and Florida panther. Due to the surrounding land use changes, each of these species routinely crosses major roadways in order to access the undeveloped habitat within the preserve. Camera footage of injured bears and reports of a panther kitten mortality in 2022 as a result of crossing roadways adjacent to the preserve shed light on the threats wildlife that utilize lands within the urban area face. Actions such as providing educational outreach to surrounding communities, supporting the addition of wildlife crossing signage on nearby roadways, and continuing to target lands within the acquisition area to reduce development pressure along the existing wildlife corridor may help to reduce these conflicts.

Florida black bear are consistently observed utilizing the preserve lands on the wildlife monitoring cameras. Since acquisition, Conservation Collier staff have been notified by neighbors of a number of incidents of conflicts with Florida black bear causing property damage to access food source attractants such as nest boxes and occasionally garbage. As land development expands on parcels adjacent to the existing preserve, staff have the opportunity to partner with adjacent developments and the FWC Florida Black Bear Program to support bear-wise practices for garbage management and attractant reduction to help safeguard the black bears and other species like raccoon and black vulture that utilize the preserve.

7.2. Desired Future Conditions

A preserve with a rich diversity of wildlife species utilization year-round comprised of populations with mixed age classes indicating ongoing recruitment and use of the preserve for denning and nesting activities.

7.3. Management Tools

7.3.1. Habitat Improvements

Management activities undertaken within the preserve will consider impacts to wildlife and opportunities to enhance resources for the species that utilize the property. Ongoing restoration efforts such as invasive plant removal, historic debris removal, and plantings will provide progressive habitat improvements for wildlife species that rely on the Rattlesnake Hammock Preserve. Removal and continued maintenance of exotic plant species that were dominant within the preserve upon acquisition, such as Brazilian pepper and melaleuca, will allow for native forage species to recover from the existing seed bank to support herbivore and carnivore populations. Restoration plantings and exotics removal within the wetlands and marshes of the preserve will enhance foraging habitat for imperiled wading birds, migratory birds, and species like river otter that have been observed using the preserve. Removal of historic, nuisance debris will enhance safe wildlife access and dispersal throughout the plant communities within the preserve. Access trails created for land management and potential future public access are routinely utilized by wildlife and provide opportunities to monitor preserve utilization by species with passive wildlife camera observations.

7.3.2. Consumptive Wildlife Use

Rattlesnake Hammock Preserve is a 37- acre property within the Urban area of Naples and surrounded by residential housing units. In its current state, the property is not compatible with consumptive wildlife uses such as hunting. Wetlands within the preserve are seasonal. As restoration efforts continue, staff will re-evaluate opportunities for consumptive use such as fishing that are not compatible with the current state of the property.

7.3.3. Monitoring

Following acquisition, Conservation Collier staff partnered with the non-profit conservation organization called the fStop Foundation to install and maintain a network of motion-sensor trail cameras throughout the preserve (Photoset 7.1.3: Wildlife Camera Observations) to contribute to data collection for a wildlife utilization species inventory. fStop Foundation cameras provided the first known observations of Florida panther utilizing the property since 2013 and captured mating activities of a male and female panther within the preserve and the kittens that resulted from the interaction. Footage is shared with the FWC Panther Team and provides opportunities for researchers to track utilization of lands within the urban area by imperiled wildlife species. Cameras will continue to be deployed at the preserve to maintain passive monitoring of wildlife.

Property restoration, invasive vegetation removal, and plantings provide staff with an opportunity to utilize wildlife surveys to measure enhanced utilization of the preserve's plant communities by

wildlife in response to management and maintenance actions. It is recommended that regular surveys for breeding birds, reptiles, amphibians, insects, and small and large mammals be conducted on a routine basis to enhance wildlife monitoring and data collection on the preserve.

7.4. Partnership Opportunities

Conservation Collier staff will continue to partner and share data and observations with wildlife management agencies such as the Florida Fish and Wildlife Conservation Commission as well as the United States Fish and Wildlife Service (USFWS) where possible. Grant funding may be available to enhance imperiled wildlife species habitat such as the USFWS Partners Grant. Staff will continue to partner with organizations such as the fStop Foundation for monitoring and outreach opportunities. Staff will continue to work collaboratively with the residents of the neighborhood surrounding the preserve who collect and share observations of wildlife species and conflicts and concerns. Staff will seek opportunities to partner with researchers from higher education institutions to enhance conservation efforts of the wildlife species that utilize the preserve.

8. Recreation Management

8.1. Current Recreational Opportunity Conditions

The preserve is currently closed to the public. There is an access trail that begins at Adkins Avenue and creates a loop throughout the preserve that may be converted to a visitor trail once mechanical vegetation removal is completed and parking lot is installed.

8.2. Desired Future Conditions

A preserve with the amenities required for the public to safely engage in passive natural resource-based recreation. These include a parking lot, visitor trail, educational signage, and viewing/resting areas.

Table 8.2.1. Compatible Recreational Activities

Recreational Activity	Compatible Use
Passive nature-based recreation (hiking, photography, wildlife viewing, environmental education, etc.)	Yes
Hunting	No
Fishing	No
Water-based Recreation (paddling, swimming, etc)	No
Biking	No

8.3. Management Tools

8.3.1. Access Improvements

Direct roadway access is only available via Adkins Avenue. In order to remove debris and damaged fencing along Adkins Avenue a large Brazilian pepper hedge was removed. This cleared area is the proposed location for an 8-10 space parking lot and trailhead. There is an existing gate and right of way which crosses the roadside swale in this area. Design and materials for the parking lot will be determined by the constraints of the site.

8.3.2. Amenity Installation/Enhancement

Amenities dedicated to visitors include converting the current 3000ft unimproved utility trail into a visitor hiking trail, adding viewing decks/overlooks to the north marsh and historic water treatment area, installing an informational kiosk and interpretive signage, and placing benches. If site conditions allow the portion of the trail that connects the parking lot to the southern viewing deck may be improved to meet Americans with Disabilities Act (ADA) standards for accessibility. Native plantings will be utilized to enhance the aesthetics surrounding visitor amenities.

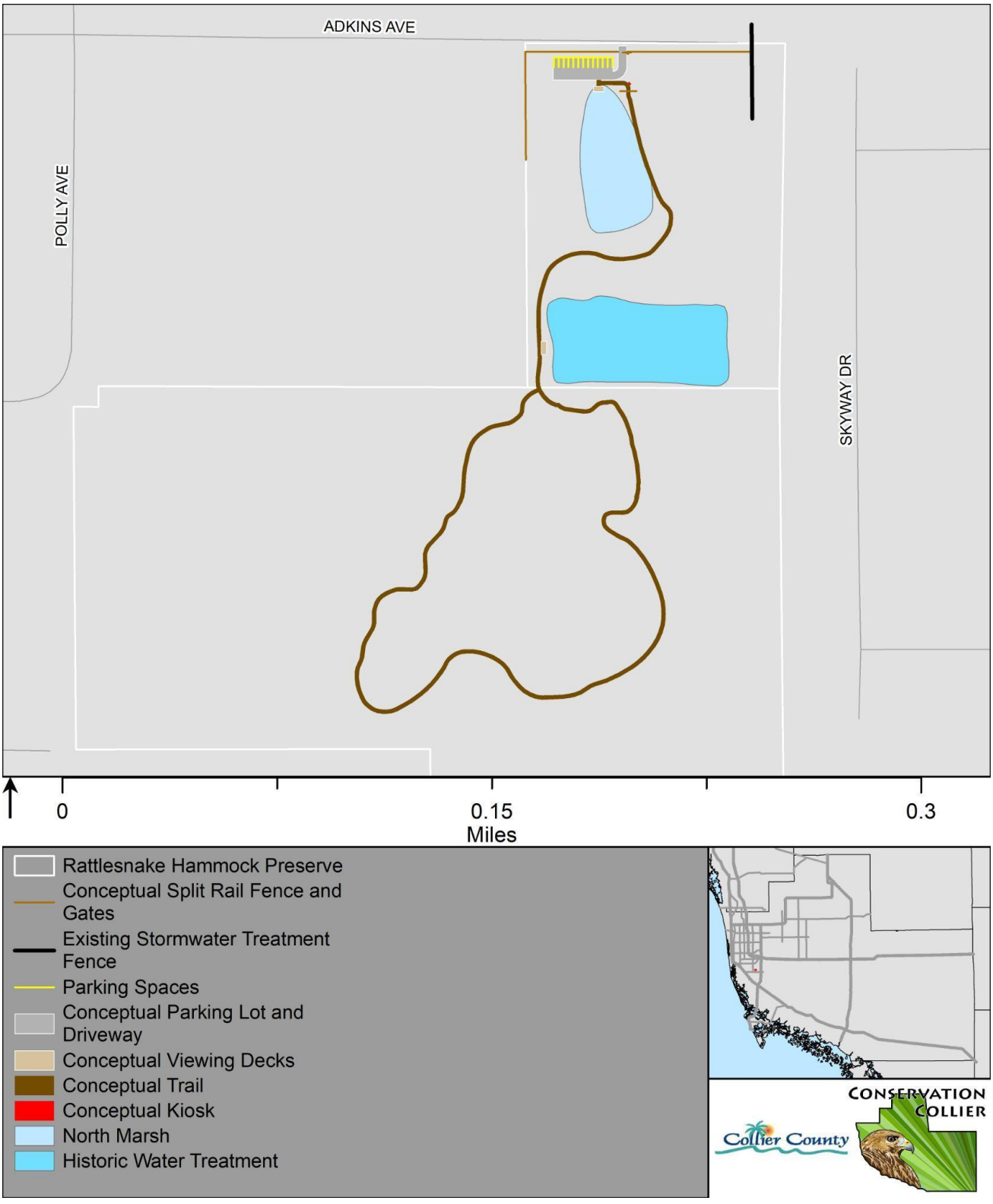


Figure 8.3.3. Conceptual Visitor Amenities

8.4. Partnership Opportunities

Residents adjacent to the preserve have expressed their desire to help maintain trails and plantings and have assisted during volunteer workdays. Once the preserve is open to the public, staff would like to further cultivate this neighborhood volunteer group and train them to independently monitor and clean the trails.

9. Preserve Safety and Security Management

9.1. Current/Predicted Human Conflict Conditions

Prior to acquisition this property had a long history of illegal dumping and housed a package wastewater treatment plant that serviced the adjoining Wing South Airpark for approximately 25 years from starting in the mid-1970s (Photoset 9.1.1: Historic Water Treatment Plant). The wastewater plant structures were demolished and removed from the site in April of 2018. There were no remaining structures on site at the time of acquisition except for approximately 1000ft of 6ft tall, dilapidated, chain link fencing was left surrounding the water treatment area and along Adkins Avenue. Additionally, a large pile of broken concrete, tires, and various other debris was located immediately south of Adkins Avenue. In 2020, invasive vegetation was cleared to allow for machinery to remove and dispose of this fencing and debris. It is likely that more debris will be uncovered as additional stands of invasive vegetation are removed. The previously undeveloped properties to the north of the preserve experienced frequent off-road vehicle trespass. There is currently little off-road vehicle trespass on the site, but it may become more vulnerable as stands of invasive trees are cleared creating potential points of entry. Like other secluded, public properties, the preserve may attract those wishing to engage in illicit activities.

Photoset 9.1.1: Historic Wastewater Treatment Plant

Photo: Collier County Pollution Control, 2017

Photo: Collier County Pollution Control, 2017

Photo: Collier County Pollution Control, 2017

9.2. Desired Future Conditions

A preserve free of littering, dumping, illicit activities, neighbor disturbances, unauthorized vehicles, and after-hours trespass.

9.3. Management Tools

9.3.1. Site Security Improvements

To prevent trespass, staff installed a temporary barbed wire fence along Adkins Avenue that runs between the neighboring residence and ties into the existing Stormwater Treatment fence that runs along the east side of the preserve. A more permanent solution that is more aesthetically pleasing and blocks vehicles, but not wildlife is necessary before the preserve can be opened to the public. This proposed fence will need an automatic gate to allow visitors to access the proposed parking lot between sunrise and sunset. Additional fencing and removable bollards will be necessary to prevent vehicles from entering the trail during times when the gate is open. Trees have already been planted and will continue to be planted to block openings where invasive vegetation has been removed. Preventing access to the parking lot after dark should aid in preventing after hours trespass and illicit activities. Preserve regulations will include signage to the public of carry-in, carry-out practices to reduce impact to the preserve and no trash receptacles will be available along the trail in order to prevent wildlife conflicts.

9.3.2. Debris Removal

Debris will continue to be removed and disposed of offsite as it is encountered. Staff will monitor the preserve boundaries for signs of illegal dumping, erect education signage, and work collaboratively with the Collier County Sheriff's Office to address repeat offenses.

9.3.3. Contamination Remediation

A Phase I Environmental Site Assessment was conducted by Tetra Tech on behalf of Collier County prior to acquisition. This assessment determined no Recognized Environmental Conditions associated with the preserve lands and prior wastewater treatment activities.

9.4. Partnership Opportunities

Staff will collaborate with both the Collier County Sheriff's Office and FWC Law Enforcement to both prevent and respond to any criminal site security and safety issues as they present themselves. Adjacent neighbors have kept staff apprised of notable human and wildlife activity.

10. Cultural Resource Management

10.1. Current Cultural Resource Conditions

A due diligence cultural resource assessment conducted by Archaeological and Historical Conservancy, Inc. in April 2017 revealed two black earth midden archaeological sites ("Porque Pig" 8CR710 and "Wing South 1" 8CR1482) within the SD Corp Preserve boundary. This

assessment included a pedestrian survey and judgmental shovel testing in 11 identified higher probability target areas. A total of 51 shovel tests were excavated. Fourteen shovel tests were positive for prehistoric material including shell tools, faunal bone, and pottery. This site is potentially eligible for listing on the National Register of Historic Places due to the likelihood that it contains information bearing on an important archaeological research question. It is recommended that the two sites be avoided during ground disturbing activities. Although not ground disturbing, archaeological monitoring was conducted by Archaeological and Historical Conservancy, Inc. on November 19, 2020, during debris removal and initial exotic removal near site 8CR710. No disturbance or artifacts were recorded.

10.2. Desired Future Conditions

A preserve with intact and secure cultural resources that provide an opportunity for community education about pre-historic settlements.

10.3. Management Tools

The County will notify the Division of Historical Resources immediately if evidence is found to suggest any additional archaeological or historic resources are discovered. If such resources are identified on-site, staff shall cordon off the area, and a professional survey and assessment shall be instituted. The archaeologist shall prepare a report outlining results of the assessments and issue recommendations to County staff about management of any sites discovered. This report shall be sent to the Division of Historical Resources. The County shall cooperate fully with direction from the Division of Historical Resources on the protection and management of archaeological and historical resources. The management of these resources will comply with the provisions of Chapter 267, Florida Statutes, specifically Sections 267.061 2 (a) and (b).

10.4. Partnership Opportunities

Staff will seek out opportunities to partner with organizations including the Division of Historical Resources, the National Register of Historic Places and research institutions to enhance the knowledge and safeguarding of the properties rich, cultural resources. Staff will seek opportunities to partner with organizations and agencies that can enhance monitoring and enforcement efforts to maintain site security.

11. Budget

Table 11.1. Past and Projected Expenditures Table

Projected Operating Costs	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Debris Removal	$21,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	0	
Trail Installation and Maintenance	$0	$0	$0	$5,000	$500	$500	$500	$500	$500	$500	500	
Trailhead Amenities and Parking Lot (Permitting, Design, Construction, and Maintenance)	$0	$0	5498 (Due Diligence)	104304.28 (Engineering and Permitting)	110695.72 (Construction)	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	
Educational Materials (Kiosks, signs, etc.)	$0	$0	$0	$0	$3,000	$0	$0	$0	$0	$0	0	
Restoration Planting	$0	$800	$0	$25,000	$5,000	$0	$0	$0	$0	$0	0	
Invasive Plant Treatment/Removal	$37,972 (Paid for with FWC funding assistance)	$9,700	$0	$50,000	$30,000	$30,000	$20,000	$20,000	$20,000	$20,000	$20,000	
Equipment and Supplies	$0	$0	$0	$500	$500	$500	$500	$500	$500	$500	$500	
Total Projected Costs	$21,000	$10,500	$0	$80,500	$39,000	$36,000	$26,000	$26,000	$26,000	$26,000	$26,000	Total
												$317,000

12. Appendix

Photoset 12.1: Representative Site Photos

Photo: North Marsh, herbaceous marsh

Photo: Mixed Scrub-Shrub Wetland, North marsh, herbaceous marsh

Photo: Mixed Scrub-Shrub Wetland, North marsh, herbaceous marsh

Photo: Mixed Scrub-Shrub Wetland, Historic Water Treatment Area (Willow Marsh)

Photo: Mixed Scrub-Shrub Wetland, Historic Water Treatment Area (Willow Marsh)

Photo: Mixed hardwood-coniferous, heavy melaleuca infestation

Photo: Mixed hardwood-coniferous, heavy melaleuca infestation

Photo: Cypress and melaleuca along stormwater canal

Photo: Cypress Swamp

Photo: Mixed hardwood-coniferous

Photo: Mixed hardwood-coniferous

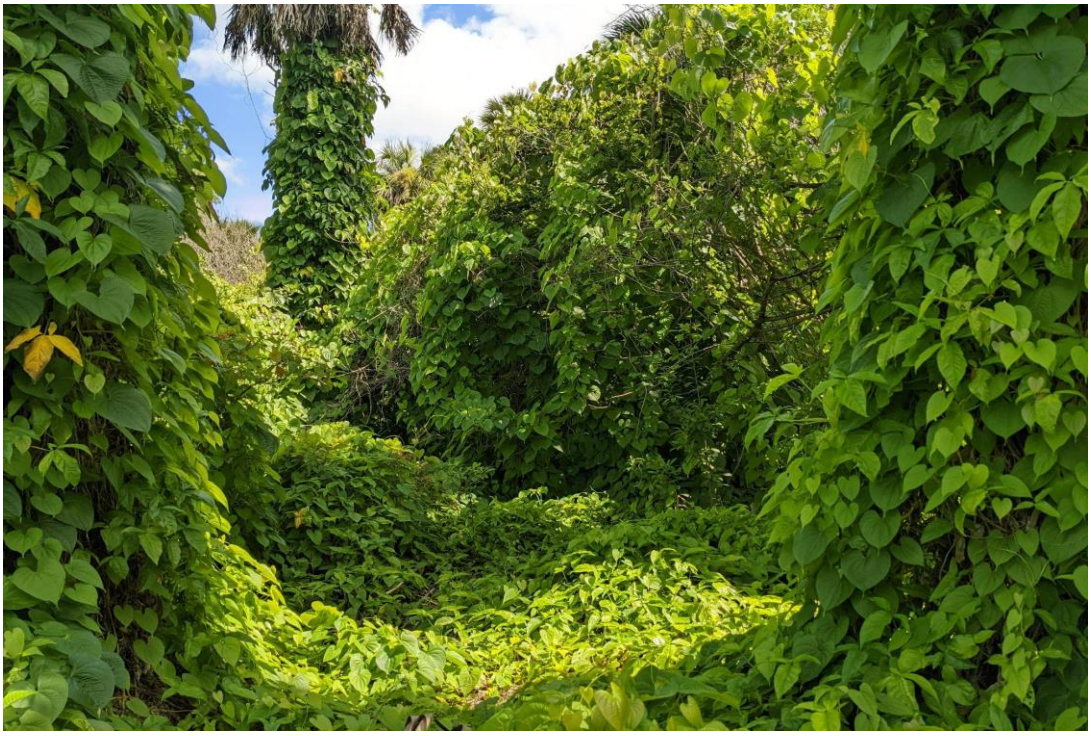


Photo: Southern boundary line adjacent to Parkers Hammock residences

Figure 12.2. Legal Description

CONSERVATION COLLIER – SD CORP/CYPRESS LANDINGS II OF NAPLES, LLC
TAX IDENTIFICATION NUMBER: 00419150007 & 00425920008

EXHIBIT "A"

LEGAL DESCRIPTION:

THE EAST HALF (E ½) OF THE SOUTHEAST QUARTER (SE ¼) OF THE SOUTHWEST QUARTER (SW ¼) OF THE NORTHEAST QUARTER (NE ¼) AND THE EAST HALF (E ½) OF THE WEST HALF (W ½) OF THE SOUTHEAST QUARTER (SE ¼) OF THE SOUTHWEST QUARTER (SW ¼) OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 16, TOWNSHIP 50 SOUTH, RANGE 26 EAST, LYING AND BEING IN COLLIER COUNTY, FLORIDA. LESS THE NORTHERLY 30 FEET THEREOF FOR ROAD RIGHT-OF-WAY PURPOSES AND FORMERLY KNOWN AS THE SEWAGE TREATMENT PLANT LAND. (7.16 ACRES)

PROPERTY IDENTIFICATION NUMBER: 00425920008

1

CONSERVATION COLLIER – SD CORP/CYPRESS LANDINGS II OF NAPLES, LLC
TAX IDENTIFICATION NUMBER: 00419160007 & 00425920008

EXHIBIT "B"

LEGAL DESCRIPTION:

THE NORTH HALF (N ½) OF THE NORTHWEST QUARTER (NW ¼) OF THE SOUTHEAST QUARTER (SE ¼) AND THE SOUTHEAST QUARTER (SE ¼) OF THE NORTHWEST QUARTER (NW ¼) OF THE SOUTHEAST QUARTER (SE ¼) OF SECTION 16, TOWNSHIP 50 SOUTH, RANGE 26 EAST, LYING AND BEING IN COLLIER COUNTY, FLORIDA. (30 ACRES)

PROPERTY IDENTIFICATION NUMBER: 00419160007

1

Public Meeting Comments and Staff Responses

Thirteen members of the public attended the meeting, most were immediate neighbors or resided along Adkins Ave. Attendees had a favorable opinion of the preserve and were supportive of the wildlife, vegetation, and cultural resource management aspects of the plan. Most questions, comments, and concerns pertained to the recreation management, preserve safety, and site security management section. Attendees expressed a desire to limit/prevent visitation to the preserve to maintain the "character" and privacy of their neighborhood. Questions and staff responses are grouped into categories below.

Access:

Question: Does the preserve have to be opened to the public or can it be designated for resource protection?

Staff Response: Conservation Collier preserves belong to all residents of Collier County and are opened to the public when they are accessible, and their site conditions and conservation goals are compatible with outdoor recreation. This preserve was purchased for its ability to both protect wildlife and provide public greenspace in the urban area.

Question: Can you not place a sign advertising the location of the preserve on Santa Barbara Blvd?

Staff Response: Signage would attract visitors to the preserve and aid in navigation but is not critical to meeting public recreation goals.

Question: What kind of amenities will be present on the preserve that will attract visitors?

Staff Response: Proposed amenities are minimal and include a short hiking trail, interpretive signage, observation decks, and a bench at the furthest point of the trail. These features are intended to improve visitor's ability to connect with nature. Typical park-type amenities, such as picnic tables, shade structures, playgrounds, and trash cans are not proposed as they may attract non-nature-based recreationists and detract from the natural setting.

Question: How wide will the trail be and what kind of surface will it have?

Staff Response: The proposed trail will be 6 - 8ft wide and have a dirt or mulch substrate.

Question: How many visitors do you expect to use the preserve? How much additional traffic will these visitors create?

Staff Response: This is currently unknown. It is expected that very few people will visit from May-November due to flooded conditions during these months.

Question: Who will be responsible for maintaining Adkins Avenue?

Staff Response: Adkins Avenue is a public road maintained by Collier County.

Parking Lot Design:

Question: Can you reduce the proposed parking lot from ten to five spaces?

Staff Response: The nearby Serenity Walk Park has five parking spaces which is inadequate for the volume of people who would like to visit that park. We expect a similar number of potential

visitors. Ten parking spaces is not excessive. In addition, funding put towards a parking lot should provide adequate parking; it would be a similar cost to build 5 spaces as it would be to build 10 spaces due to the permitting and design costs. An appropriate parking lot is necessary to provide the taxpayers a way to derive the benefits of their contribution. In addition, if adequate parking is not provided then visitors would end up parking along the street which is not desired by the neighbors.

Question: Can you prevent visitors from parking on the road shoulder?
Staff Response: Signs instructing visitors to avoid parking on the road shoulder could be installed but building an adequately sized parking lot would better prevent this occurrence.

Question: Can you construct the parking lot from crushed shell/gravel/natural materials?
Staff Response: These materials are more difficult to maintain than the proposed permeable concrete surface.

Question: Can you face the parking stalls into the preserve instead of towards the road?
Yes.

Site Security:
Question: How will you prevent unauthorized access to the preserve?
Staff Response: The proposed parking lot will have an automatic gate that remains closed from sunset to sunrise, a fence that runs along the frontage with Adkins Ave, and partially down the western boundary, and bollards at the trailhead. This fence will be constructed so that it will be aesthetically pleasing and stop vehicles but not negatively impact the movement of wildlife. No additional access points are proposed. Dense vegetation prohibits vehicle access to the preserve via Everett St.

Question: Will there be lighting installed in the parking lot?
Staff Response: No. The preserve will be closed from sunset to sunrise, so lighting is unnecessary.

Question: How often will the parking lot be maintained and inspected?
Staff Response: Conservation Collier staff will regularly visit the preserve to inspect/maintain amenities and landscaping.

Question: Who will respond to issues at the preserve?
Staff Response: Emergency/criminal issues should be directed to the Collier County Sheriffs, wildlife issues should be directed to the Florida Fish and Wildlife Conservation Commission Law Enforcement, and all other issues should be directed to Conservation Collier staff.

Other:
Question: Can the preserve be developed?

Staff Response: In accordance with Conservation Collier Ordinance 2019-03, purchasing land using Conservation Collier program funds permanently extinguishes all development rights except those strictly compatible with the purposes and goals of Conservation Collier.
Question: Would you consider you planting beneficial plants for pollinating insects?
Staff Response: Yes. We have already installed some native flowering plants and intend to do more.