Otter Mound Preserve and Marco Island Project Area

Land Management Plan

Updated June 2019 and April 2023

Managed by:

Conservation Collier Program
Collier County
April 2023-April 2033 (10 yr plan)

BCC Approved July 11, 2023

Prepared by:

Collier County Parks and Recreation Department
April 2023Otter Mound Preserve

Land Management Plan Executive Summary

Lead Agency: Collier County Board of County Commissioners, Parks and Recreation Department, Conservation Collier Program

Properties included in this Plan include four parcels originally having Folio numbers 21840000029, 21840000045, 21840000061, and 2583040000, which were combined into folio number 21840000029 in 2007 and any additional parcels acquired on Marco Island during the life of this plan

Acreage: 2.46 acres

Management Responsibilities: Collier County Conservation Collier Program has oversight responsibility with day to day responsibilities shared by the City of Marco Island under an Inter-local Agreement attached as Appendix 1.

Designated Land Use: Conservation and natural resource-based recreation

Unique Features: Mature, tropical hardwood hammock

Archaeological/Historical: Calusa shell mound, historic whelk shell terracing, and historic outhouse

Management Goals:

- **Goal 1:** Maintain the property in its natural condition prior to modern development.
- **Goal 2:** Reduce human impacts to indigenous plant and animal life.
- **Goal 3**: Maintain the trail to provide a safe and pleasant visitor experience.
- **Goal 4**: Protect Archaeological, Historical and Cultural Resources.
- **Goal 5**: Facilitate uses of the site for educational purposes.
- **Goal 6**: Provide a plan for security and disaster preparedness

Acquisition Needs: None

Surplus Lands: None

Public Involvement: Public meeting held September 17th, 2020. No public comment was received.

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1.0 Introduction

Otter Mound Preserve is a 2.46-acre urban preserve located in southwestern Collier County in a residential area of Marco Island. The entire preserve site is a Calusa shell mound (c. 700 A.D.-1200 A.D.) that contains artifacts of both archaeological and historical significance. Access to the preserve is from Osceola Court and Addison Court - with 4-space public parking available including handicapped space at the entrance.

The Conservation Collier Program acquired the bulk of the preserve in July 2004 and the southwestern-most "Karen" property in June 2007. The Karen property has been incorporated into the existing preserve; therefore, this plan applies to both properties, and both properties are collectively referred to as the Otter Mound Preserve. Largely comprised of native, tropical hardwood hammock species, the preserve also contains examples of non-native, historical vegetation. The Conservation Collier Program manages this parcel under authority granted by the Conservation Collier Ordinance 2002-63, as amended (available from www.municode.com) with assistance from the City of Marco Island under an Interlocal Agreement signed February 28, 2006 and renewed in October 2013. (Appendix 1)

Conservation, restoration, and passive public use are the designated uses of the property. Management activities allowed are those necessary to preserve and/or restore this environmentally and historically endangered land for the benefit of present and future generations. Public use of this site must be consistent with these goals.

An initial site assessment of the preserve was conducted on September 22, 2003 and the northernmost section was purchased by the Conservation Collier Program on July 12, 2004. Previously known as the "Gionet Otter Mound" property for the former owners – Ernest and Gladys Otter and Michael, Mary, and Gary Gionet – it was renamed Otter Mound Preserve in May 2005. On June 18, 2007, the southernmost part of the preserve was purchased from Harvey and Lisa Karen. Initial preserve activities are identified in Table 1 below.

This Plan is being updated in to provide current preserve information.

Table 1: Acquisition History and Status for Otter Mound Preserve

Year	Benchmark
2003	Gionet property initially assessed
2004	Gionet Otter Mound property purchased
2004	Interim Management Plan developed
2005	Gionet Otter Mound property renamed to Otter Mound Preserve
2005	Initial exotic plant and debris removed
2006	Exotics maintenance started (contracted)
2006	Inter-local Agreement with City of Marco Island developed
2006	Trails created from Hurricane Wilma debris and post and rope fence installed
2006	Over 200 native species planted
2006	Karen property initially assessed
2007	Bench, garbage cans, plant identification signs, three interpretive signs, entrance sign, sidewalk, and three parking spaces installed (all contracted except plant ID signs)
2007	Preserve opened to the public in March

2007	0.68 acre Karen parcel purchased
2008	Final management plan approved by BOCC (1/15/2008, Item 16e)
2013	Inter-local Agreement with City of Marco Island renewed
2014	5-year Management Plan Update approved by BOCC (May)
2023	10-Year Management Plan Update

1.1 Purpose of the Project and Scope of Plan

The purpose and scope of this management plan is to provide management direction for Otter Mound Preserve, and any additional parcels acquired by Conservation Collier on Marco Island, by identifying the goals and objectives necessary to eliminate or minimize any threats to the resources and integrity of the preserve. During the next management plan update any parcels acquired on Marco Island will be incorporated into the Plan at that time. This text is a working document that establishes the foundation for the ten-year plan by identifying the appropriate management techniques necessary to preserve and/or restore the resource, considering budget needs. This plan will seek to balance resource restoration and protection with passive public recreational and educational use while looking at restoration needs, budgetary needs, listed species protection, archaeological/historical feature protection, and invasive exotic plant and species maintenance. This plan is divided into sections that incorporate an introduction; descriptions of the natural and cultural resources; projected uses of the property; and management issues, goals, and objectives.

On May 3rd, 2023, the Conservation Collier Land Acquisition Advisory Committee (CCLAAC) recommended this plan be approved by Collier County Board of County Commissioners (BCC). When approved by the BCC, this plan will supersede the Final Management Plans prepared by Conservation Collier staff in January 2008 and approved by the Board of County Commissioners on January 15, 2008 (Agenda Item 16E).

1.2 Location

Otter Mound Preserve is located at 1831 Addison Court within the City of Marco Island, in Collier County, Florida. Lying in the middle of the semi-circle formed by East, West and South Inlet Drive, the preserve is bound on the north by Addison Court and on the southwest by Osceola Court. The site location is shown in Figure 1. The legal description is attached as Appendix 2.

Figure 1: Otter Mound Preserve Location

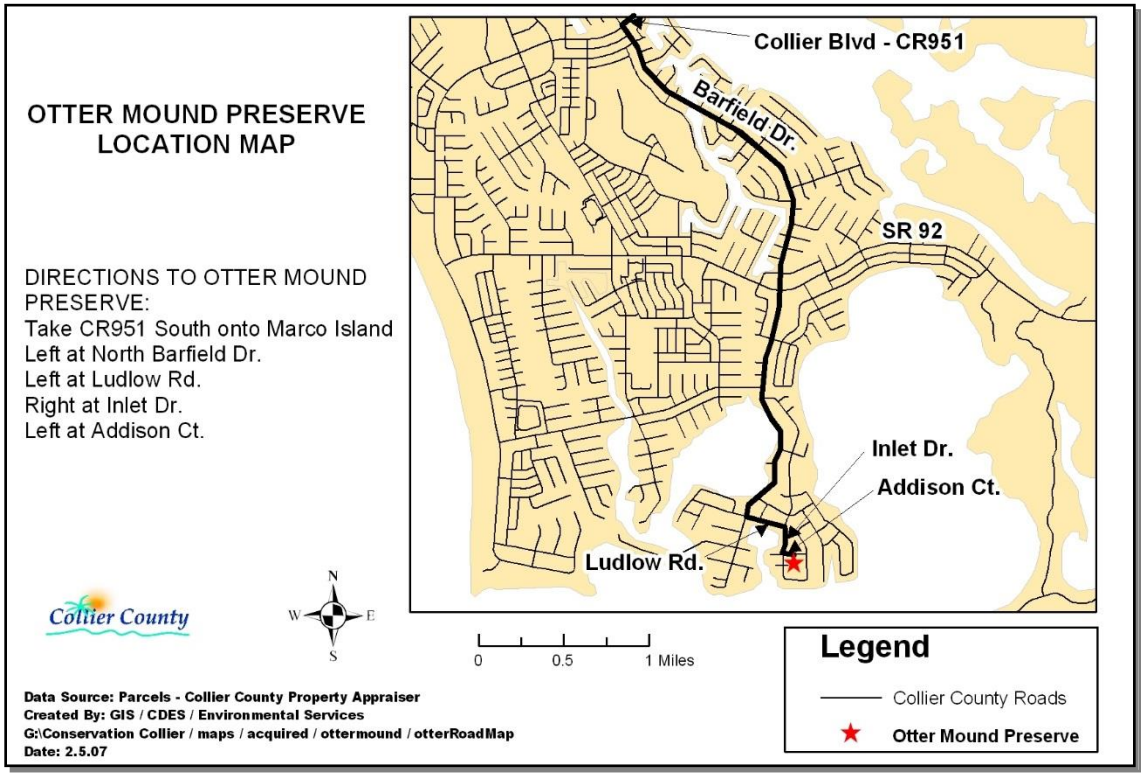
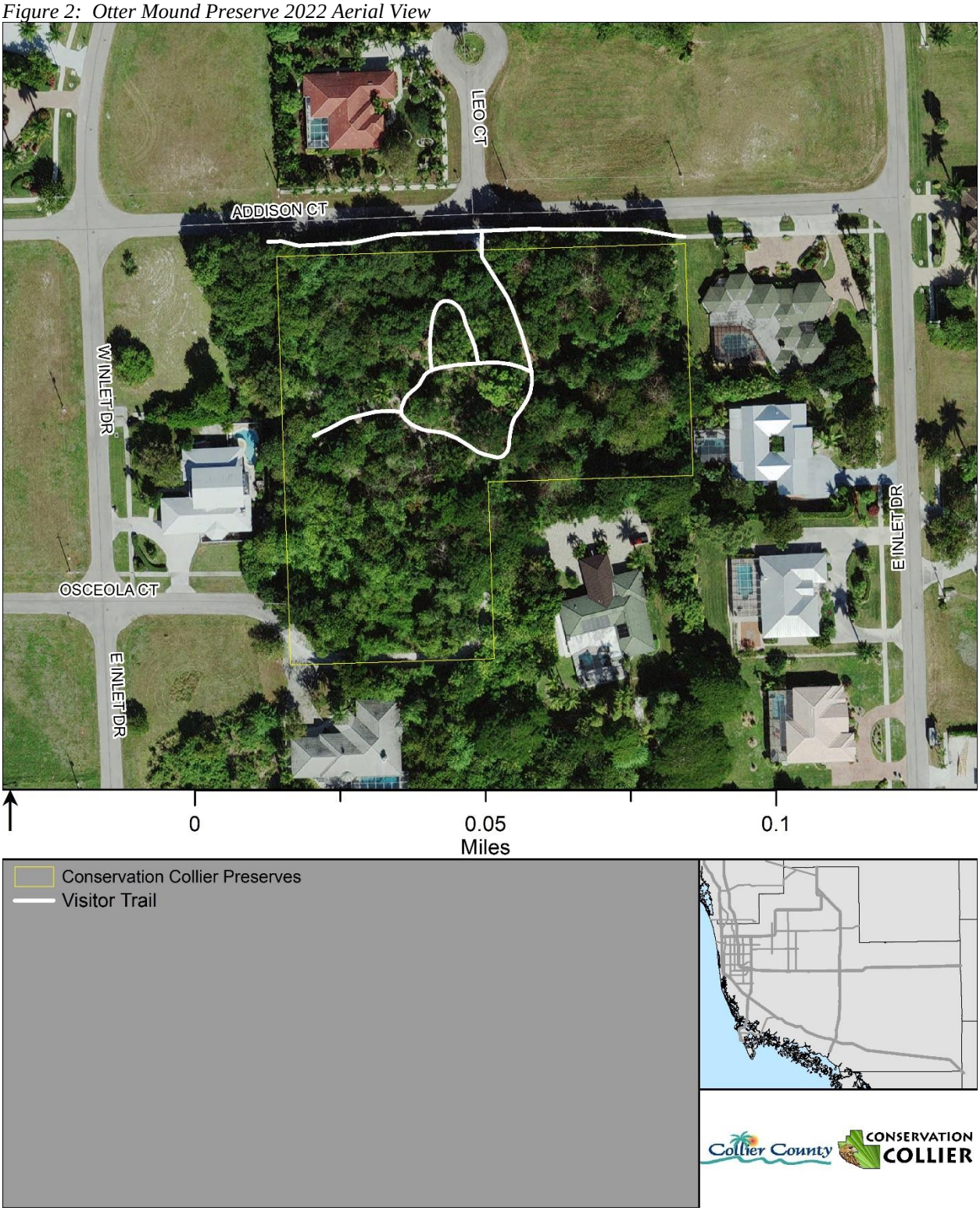


Figure 2: Otter Mound Preserve 2022 Aerial View



1.3 Regional Significance of Otter Mound Preserve

Despite having 877,000, or 68%, of County lands protected by conservation status, Collier County has lost, and is losing, many of its rare and unique habitats. The Conservation Collier Ordinance 2002-63, as amended (available from www.municode.com) identifies these specific habitats and gives preference to them in acquisition evaluations. These habitats include, in order of preference: tropical hardwood hammock, xeric oak scrub, coastal strand, native beach, riverine oak, high marsh (saline), and tidal freshwater marsh. Otter Mound Preserve was purchased because it contains tropical hardwood hammock habitat. In addition, the preserve contains the following features that make it an important archaeological and historical site: undisturbed Calusa shell mounds, a historic pioneer structure (outhouse), and historic man-made shell terracing that runs along the northern and western sections of the property. The location of the preserve in the urban area provides an opportunity for citizens, visitors, and school-age children to view this habitat type without traveling far.

The preserve serves as an important stopover site for a variety of migratory bird species, and it is home to the Florida banded tree snail (*Orthalicus floridensis*), the largest tree snail in the state of Florida. In addition, Otter Mound Preserve contains seven state listed plant species: Curacao bush *(Cordia globosa)*, giant wild pine *(Tillandsia utriculata)*, Florida thatch palm *(Thrinax radiata)*, Satin leaf *(Chrysophyllum oliviforme)*, Red stopper *(Eugenia rhombea)*, Lignum vitae *(Guaiacum sanctum)*, and barbed-wire cactus *(Acanthocereus tetragonus)*. The protection and management of these listed species and their habitat is critical to their long-term existence in Collier County and in Florida.

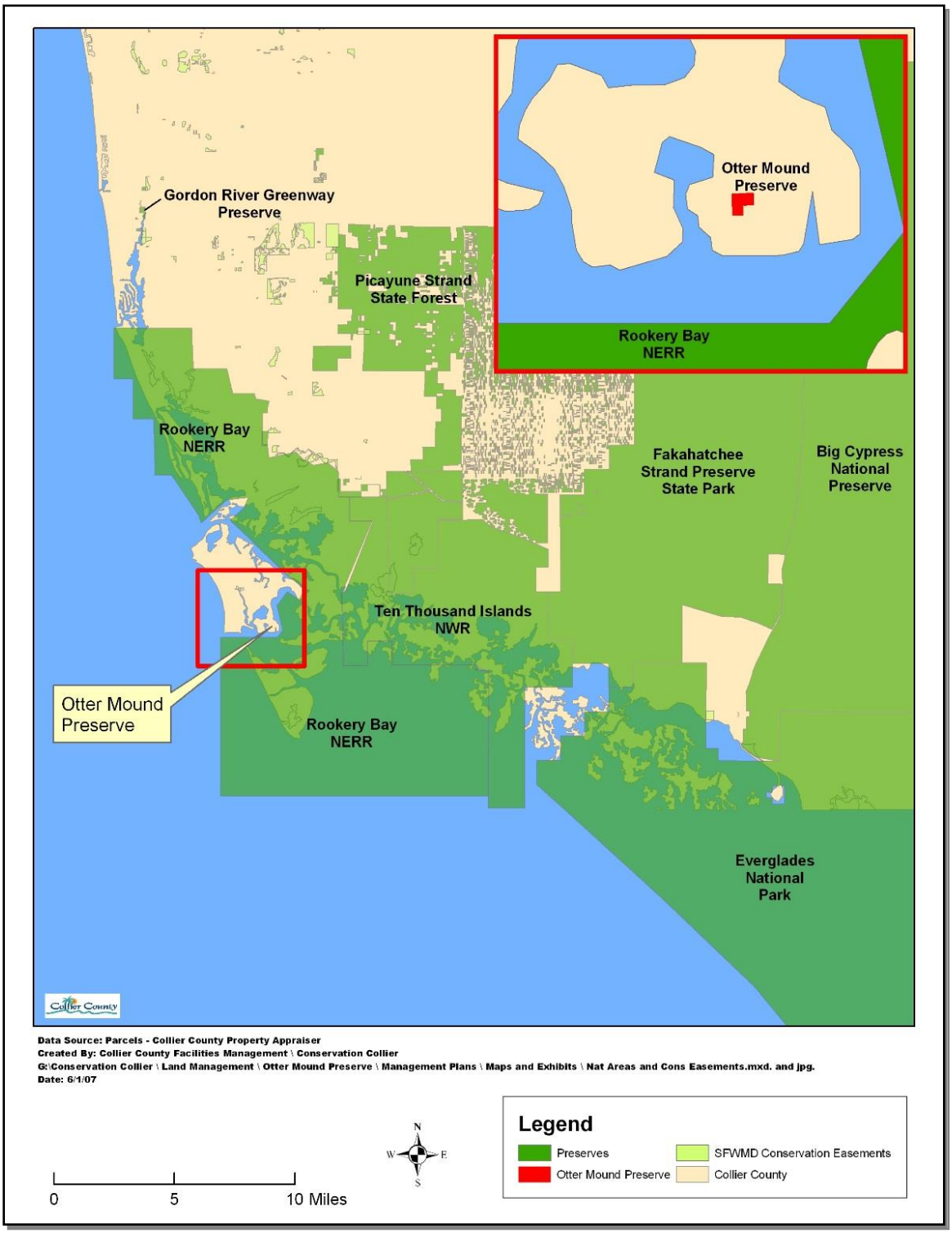
1.4 Nearby Public Lands and Designated Water Resources

The closest preserve to Otter Mound is Rookery Bay National Estuarine Research Reserve (RBNERR), a 110,000-acre preserve surrounding Marco Island. Other preserves, in order of increasing distance, are identified in Table 2 below.

Table 2: Public lands and designated water resources located near Otter Mound Preserve

Preserve	Distance (miles)	Direction	Type
Rookery Bay NERR	0.15	S	National
Ten Thousand Islands National Wildlife Refuge	3.0	E	National
Collier Seminole State Park	5.0	N and E	State
Picayune Strand State Forest	9.0	NE	State
Fakahatchee Strand Preserve State Park	11.5	NE	State
Everglades National Park	12.5	S and E	National
Gordon River Greenway Preserve	18.0	N	County
Big Cypress National Preserve	20.0	E	National

Figure 3: Natural Areas and Designated SFWMD Conservation Easements Existing in Collier County



1.5 Management Authority

Lands acquired by Conservation Collier are titled to "COLLIER COUNTY, a political subdivision of the State of Florida, by and through its Conservation Collier Program." Under the Conservation Collier Ordinance, the Collier County Conservation Collier Program holds management authority for all Conservation Collier Program lands. The City of Marco Island assists with specific management tasks for Otter Mound Preserve, as identified in the Interlocal Agreement (Appendix 1).

1.6 Public Involvement

Neighborhood involvement will be sought through direct mailing notice for public meetings to residents within the surrounding area, owners of properties that border the preserve, and organizations with an interest in the preserve (City of Marco Island, Marco Island Historical Society, Southwest Florida Archaeological Society, Archaeological and Historical Conservancy, Inc.). Any major changes or management activities that are likely to be intrusive or in some way affect neighboring properties will be reviewed with these contacts prior to conducting the activity. Staff will also seek volunteers through these contacts (Appendix 3).2.0 Natural and Cultural Resources

2.1 Physiography

2.1.1 Topography and Geomorphology

A review of a United States Geological Survey (U.S.G.S.) 7.5 Minute Series map of the Marco Island area and on-site investigation reveals that a slight mounding exists on the preserve. The elevation is generally between 10 and 15 feet National Geodetic Vertical Datum (NGVD) for most of the site (Lucas & White 2004). Portions of at least six linear depressions ("canals") and six ridges are present in the southwestern portion of the preserve. The middle of the preserve is elevated, relatively flat ground. The eastern side of the preserve contains a complex of elevated knolls and lower zones resembling the central parts of most large shell mounds found in the region. Four deep borrow pits of unknown origin also exist within the eastern section of the preserve (Figures 4 and 5).

2.1.2 Geology

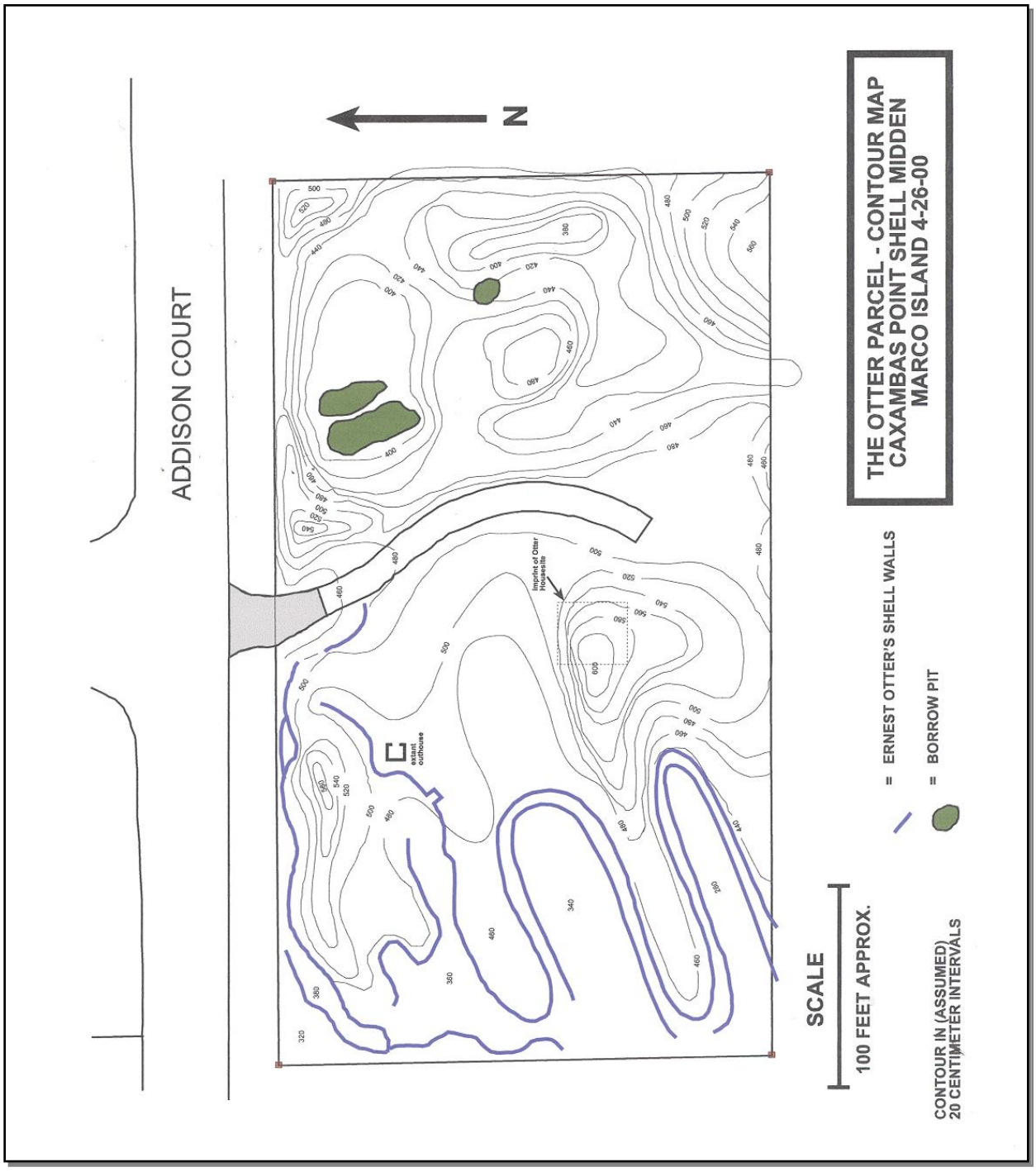
The geology of the area is characterized by aboriginal shell deposits adjoining and intergrading with surrounding mangrove peat deposits. The peat deposits, in turn, intergrade and interlayer with marine marls, coastal sand deposits, and naturally occurring shell bar formations that are deposited and altered by sea level fluctuation, storm surge activity, and other coastal energetic activity. At even greater depths the Holocene deposits give way to elements of the Pleistocene Caloosahatchee formation and various Wisconsian sand terrace features. These marine marls or calcified "muds" contain lenses and deposits of clay intermixed with varying percentages of sand (Beriault & Carr 2000).

2.1.3 Soils

Soils data is based on the Soil Survey of Collier County, Florida (USDA/NRCS 1990, rev. 1998). Mapped soils on the preserve show the entire area to be urban land – aquents complex, organic substratum. This soil consists of urban land soil materials that have been dug from different areas in the county and have been spread over organic muck soils for coastal urban development (Lucas & White 2004).

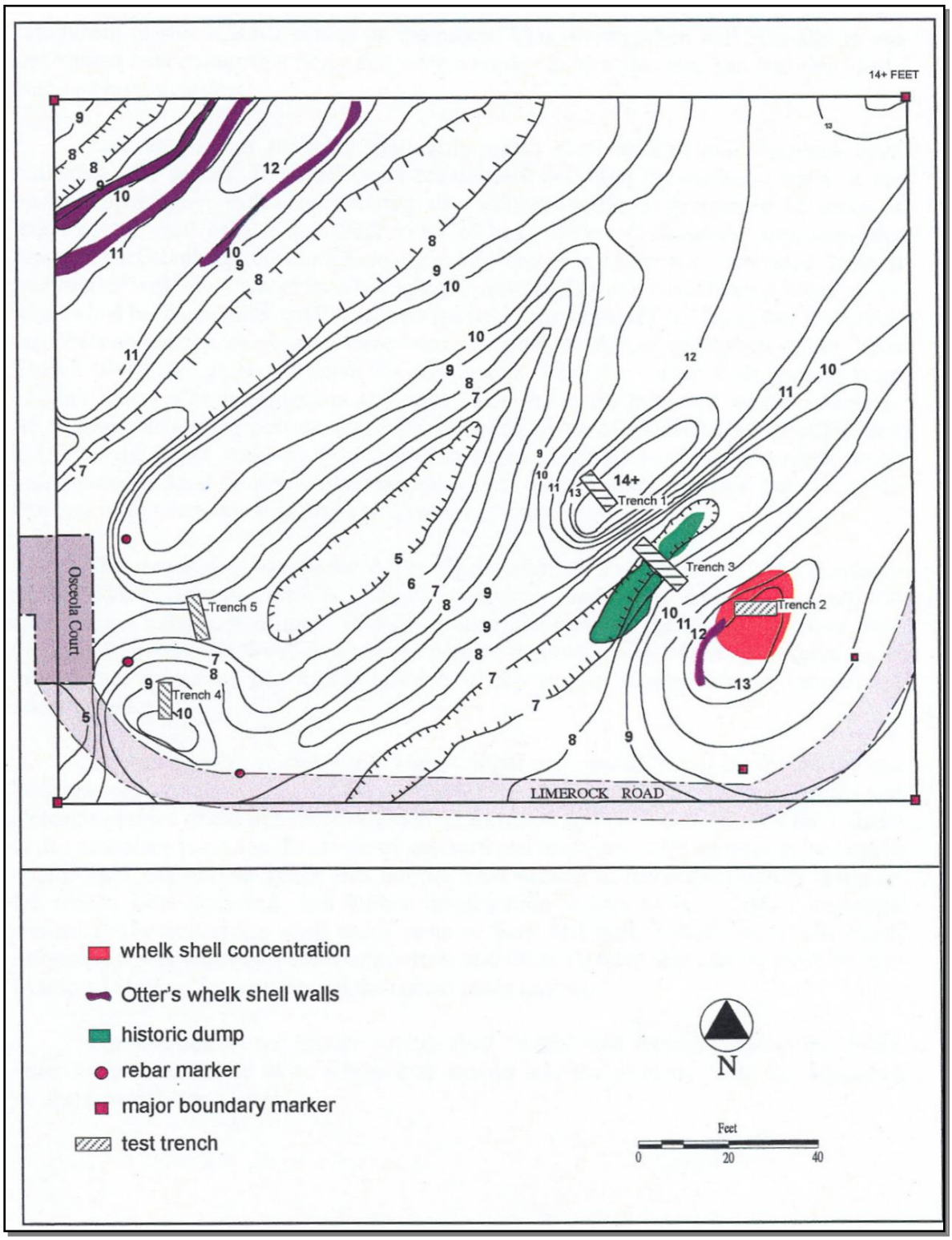
Otter Mound Preserve lies on a slight topographic high that is associated with a Calusa shell mound. Shell mound soils are composed of shells and shell fragments with an organic component derived from forest litter. The soil generally is circum-neutral to slightly alkaline (pH = 7-8) and contains 1-20% organic materials. The loose collection of shells allows water to drain extremely rapidly. The calcareous substrate and coastal location of shell mounds often permit tropical or subtropical species of plants to grow much further north than their normal range on other substrates permits [Florida Natural Areas Inventory (FNAI) & Florida Department of Natural Resources (FDNR) 1990]. Figure 6 shows the substrate profile of one 3-meter trench dug by the Archaeological and Historical Conservancy, Inc. at Otter Mound Preserve.

Figure 4: Otter Mound Preserve North Contour Map



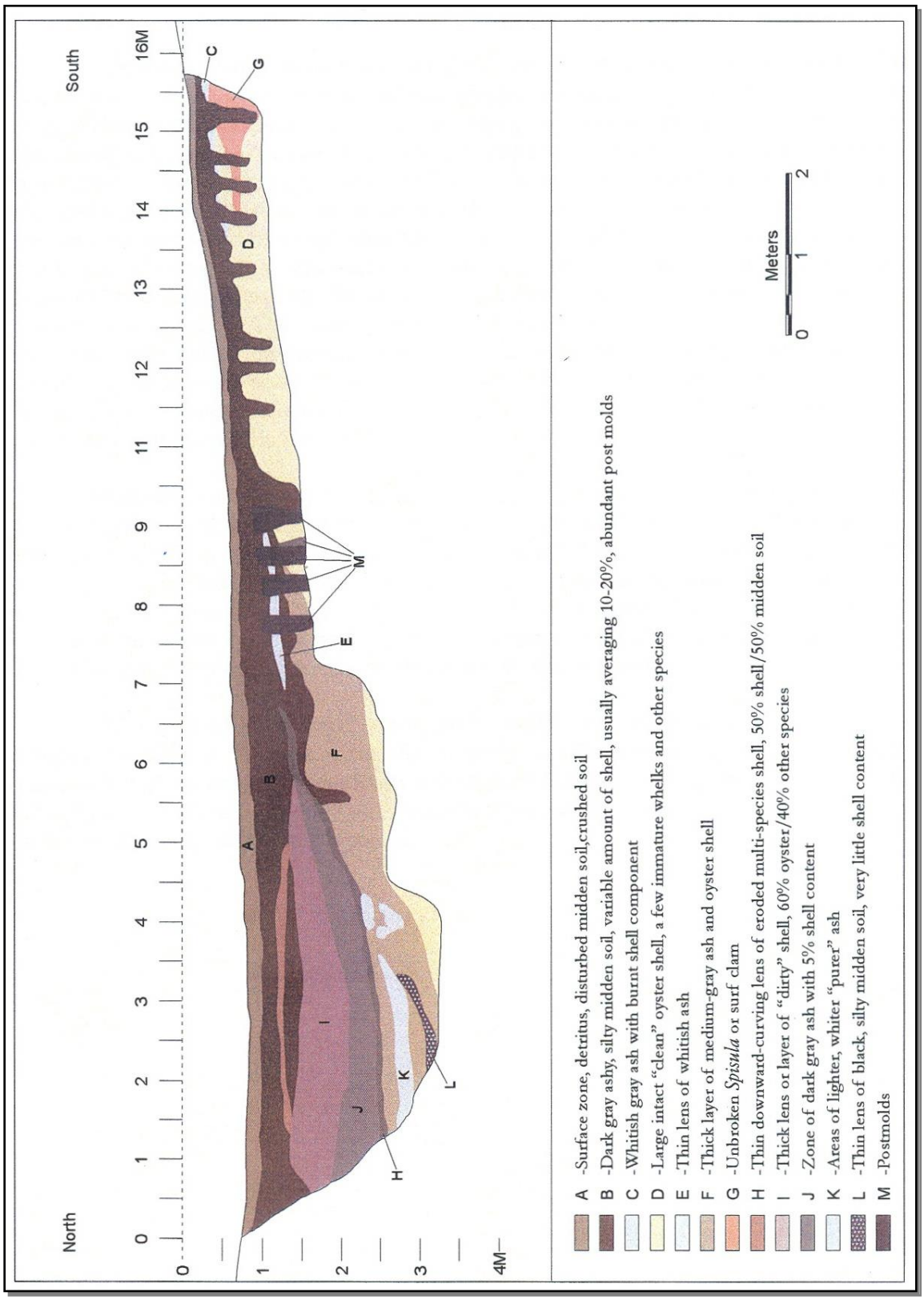
Map provided by John Berialt, Archaeological and Historical Conservancy, Inc.

Figure 5: Otter Mound Preserve South Contour Map



Map provided by John Berialt, Archaeological and Historical Conservancy, Inc.

Figure 6: Otter Mound Preserve Substrate Profile



Map provided by John Berialt, Archaeological and Historical Conservancy, Inc.

2.1.4 Hydrology/Water Management

Surface water drains quickly through the Otter Mound Preserve soil/substrate. Water does not pool in any area of the site, even after heavy rain events. Water management does not appear to be an issue at the site.

2.2 Climate

Otter Mound Preserve is located in an area of Florida that is overlapped by a humid subtropical climate and a tropical savanna climate in which temperatures are moderated by winds from the Gulf of Mexico and the Atlantic Ocean. A tropical savanna climate is characterized by sharply delineated wet and dry seasons and average monthly temperatures greater than 64º Fahrenheit. Monthly rainfalls may exceed 10 inches during the wet season. Humid subtropical climates are characterized by less extreme rainfall fluctuations between wet and dry seasons and average monthly temperatures less than 64º Fahrenheit in some months.

The average annual temperature for the coastal portion of Collier County is approximately 75º Fahrenheit. The warmest months are usually July and August. The humidity is high during these months, but frequent afternoon thunderstorms prevent excessively high temperatures.

Two-thirds of the annual rainfall occurs in the wet season, which is from May to October. Thunderstorms are frequent during the wet season, occurring on average every two out of three days between June and September. Rainfall records for the area indicate that there is no significant variation in the annual rainfall throughout much of the county; however, large variations often occur within a single year. The hurricane season extends from June through November, with peak activity occurring in September and October when ocean temperatures are warmest (URS 2007).

2.3 Natural Communities

Table 3: Summary of Natural Communities

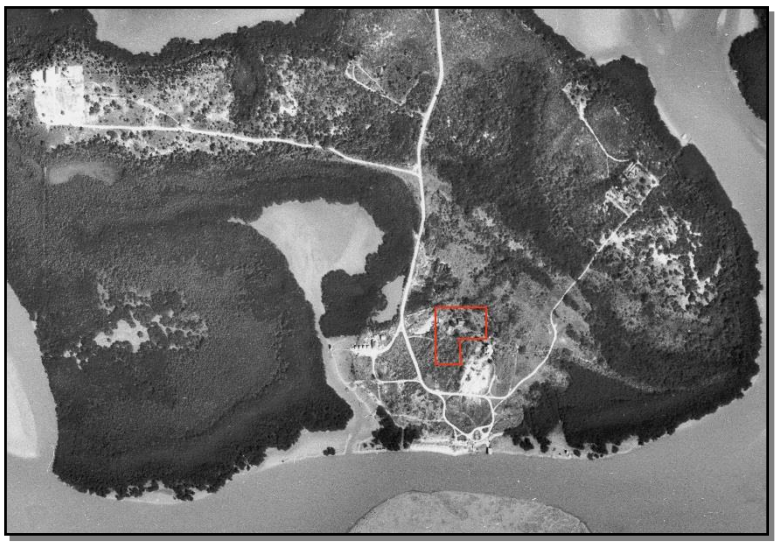
FNAI Natural Community Type	# Acres	% of Area	Global Rank	State Rank	Comments
Shell Mound	2.46	100%	G2	S2	10 gopher tortoise burrows located, 4 live gopher tortoise seen

2.3.1 Shell Mound

Otter Mound Preserve consists entirely of Shell Mound, as defined by FNAI & FDNR (1990). This natural community type, synonymous with tropical hardwood hammock, is largely a result of the activities of the Calusa, instead of natural physical factors. Shell Mound is generally characterized as an elevated mound of mollusk shells and aboriginal garbage on which a hardwood, closed-canopy forest develops. Their coastal, usually insular, location generally protects Shell Mounds from fire, but subjects them to marine influences, including high winds, hurricanes, salt spray, high insolation, and storm surge. Typical shell mound plants include: gumbo-limbo *(Bursera simaruba),* cabbage palm *(Sabal palmetto),* mastic *(Sideroxylon foetidissimum),* red cedar *(Juniperus virginiana),* hackberry *(Celtis occidentalis),* live oak *(Quercus virginiana),* Florida privet *(Forestiera segregata),* coral bean *(Erythrina herbacea),* marlberry *(Ardisia*

escallonioides), saffron plum *(Sideroxylon celastrinum)*, coontie *(Zamia pumila)*, and others. The species vegetation composition on Otter Mound Preserve varies slightly. While no red cedar, saffron plum, or coontie are present, species such as soapberry *(Sapindus saponaria)*, strangler fig *(Ficus aurea)*, Jamaican dogwood *(Piscidia piscipula)*, and yellow elder *(Tecoma stans)* are common. The previous use of the preserve as an early 1900's home-site also led to the introduction of many non-native species such as: mango *(Mangifera indica)*, royal poinciana *(Delonix regia)*, guava *(Psidium guajava)*, oyster plant *(Tradescantia spathacea)*, air potato *(Dioscorea bulbifera)*, coral vine *(Antigonon leptopus)*, and others. Aerial photographs from 1952 show that much of the present-day preserve was wooded, while surrounding parcels were almost completely cleared. More recent development in the 1960s further affected the surrounding lands (Figure 7).

Figure 7: Historic Aerials



1952 Aerial Courtesy of USGS

2006 Aerial Courtesy of Collier County Property Appraiser

2013 Aerial Courtesy of Collier County Property Appraiser

2019- Aerial Courtesy of Collier County Property Appraiser

2.3.2 Existing Habitat Conditions 2007

In June 2005 a large amount of mature Brazilian pepper *(Schinus terebinthifolia)* was removed from the northern section of the preserve, significantly reducing the canopy cover. Subsequently, in October 2005, Hurricane Wilma passed through Marco Island. The combined effect of invasive exotic removal and Hurricane Wilma damage resulted in 0% canopy coverage in some sections of the preserve. During June and July of 2006, 331 native plants (85 trees, 87 shrubs, and 159 groundcovers) were planted within the barest areas of the preserve (Figure 9). A planting list is attached as Appendix 5.

Irrigation supplement gel was planted with each plant to aid in establishment because no irrigation was available at the preserve. The gel, consisting of 95% water and 5% cellulose, was planted with the root ball of each plant and provided supplemental irrigation for approximately 30 days.

All the soil material within each plant hole was sifted and surveyed for artifacts by members of the Southwest Florida Archeological Society. All artifacts that were found are housed at the Collier County Museum in Naples. Because of the archaeological nature of the site, only plants in 3-gallon pots or smaller were planted. As a result, canopy coverage in the northern section of the preserve has been slow to recover, despite a high planting survival rate (Figure 8).

Photo by Melissa Hennig.

Figure 8: Sparse vegetation within planting area one year after planting – July 18, 2007.

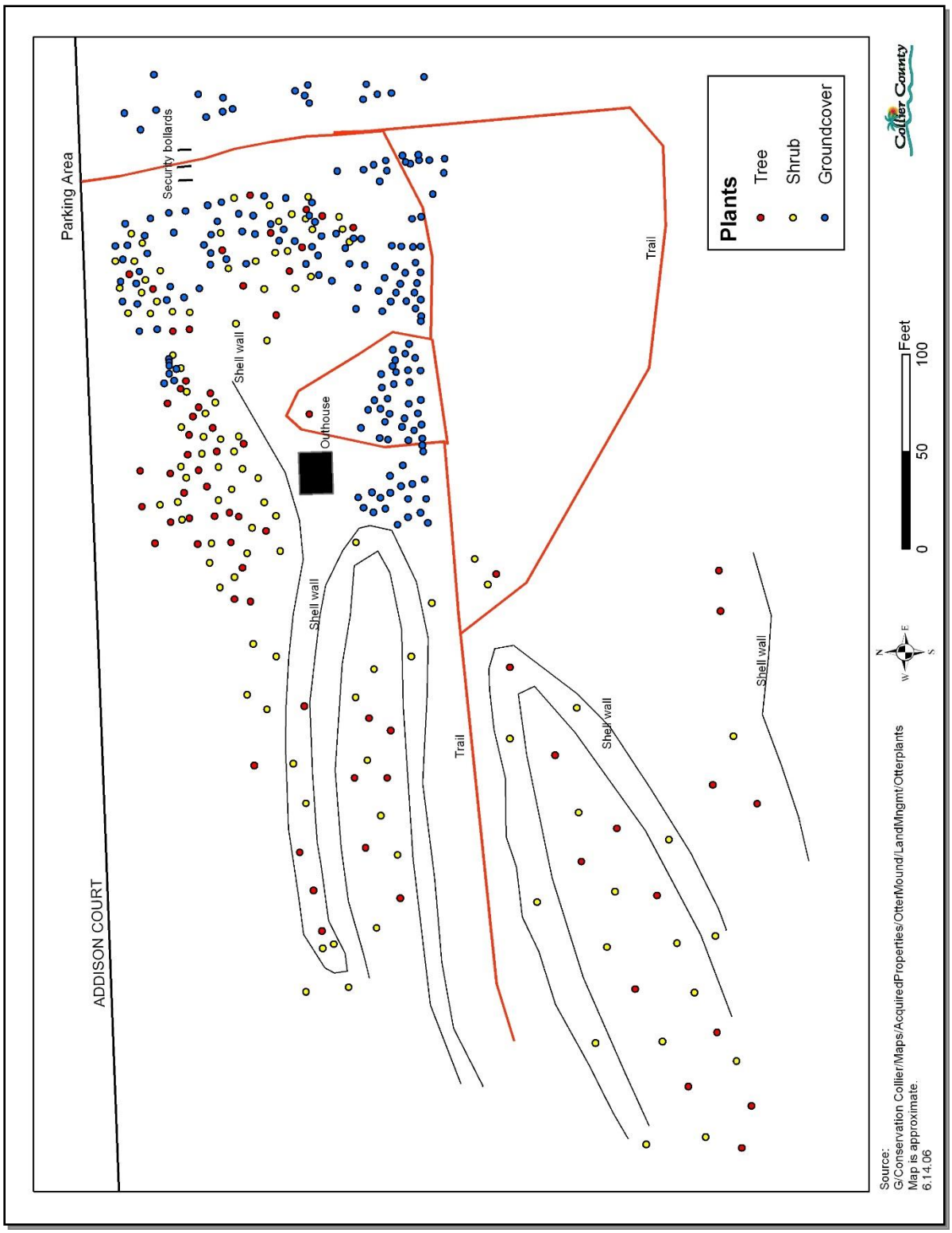


Figure 9: Otter Mound Preserve 2006 Summer Planting

In July 2009, in a second planting project, 471 native plants (106 trees, 204 shrubs, and 161 ground cover plants) were planted at Otter Mound Preserve. Irrigation supplement gel was planted with each plant to aid in establishment because no irrigation was available at the preserve.

The gel, consisting of 95% water and 5% cellulose, was planted with the root ball of each plant and provided supplemental irrigation for approximately 30 days. Table 4 includes a list of species and quantities installed.

Table 4: Otter Mound Plant List 2009

Common Name	Scientific Name	Quantity
TREES		
Gumbo Limbo	*Bursera simaruba*	1
Paradise tree	*Simaruba glauca*	14
Pigeon plum	*Coccoloba diversifolia*	41
Sweet acacia	*Acacia farnesiana*	40
Wild tamarind	*Lysiloma latisiliquum*	10
SHRUBS		
Fiddlewood	*Citharexylum spinosum*	5
Firebush	*Hamelia patens*	23
Florida privet	*Forsetiera segregata*	10
Jaimaican Caper	*Capparis cyanophallophora*	15
Limber Caper	*Capparis flexuosa*	13
Sea Grape	*Coccoloba diversifolia*	7
Simpson stopper	*Myrcianthes fragrans*	22
Snowberry	*Chiococca alba*	9
Spanish stopper	*Eugenia foetida*	35
White Indigoberry	*Randia aculeata*	16
White stopper	*Eugenia axillaris*	36
Wild Coffee	Psychotria nervosa	13
GROUNDCOVER		
Bird pepper	*Capsicum annuum*	25
Blue porterweed	*Stachytarpheta jamaicense*	62
Lantana	*Lantana involucrata*	2
Rouge Plant	*Rivina humilis*	12
Scorpiontail	*Heliotropium angiospermum*	60

In 2011, 35 7-gallon native plants were planted along the eastern edge of the preserve after removal of neighboring landscape plants that were encroaching into the preserve. See Section 3.2 (Landscaping) for more information.

2.4 Plant and Animal Species

The 2.46-acre Otter Mound Preserve tropical hardwood hammock provides food and cover for resident and migratory species of animals that typically use such habitat.

Botanical surveys conducted in 2020 identified 164 species present, 10 of which are state threatened or endangered, 60 of which were non-native, 28 of which are FISC Category I&II invasive species. (Appendix 6).

Occurrences of fauna at the preserve are based on direct visual and aural observations by Collier County personnel during site visits, evidence of activity such as spoor, scat, or burrows, and available site information. Mammal species known to occur or individuals and/or evidence of activity directly observed within the preserve include the Virginia opossum (*Didelphis virginiana*), nine-banded armadillo (*Dasypus novemcinctus*), raccoon (*Procyon lotor*), and eastern gray squirrel (*Sciurus carolinensis*). Neighbors reported seeing a bobcat at the preserve in 2009.

Bird observations by Collier County staff are included in Table 4. Fifty-seven different species of birds have been observed to date.

Table 5: Otter Mound Preserve Bird Observations

Scientific Name	Common Name
Accipiter cooperii	Cooper's Hawk
Accipiter striatus	Sharp-shinned Hawk
Archilochus colubris	Ruby-throated Hummingbird
Bombycilla cedrorum	Cedar Waxwing
Buteo lineatus	Red-shouldered Hawk
Cardinalis cardinalis	Northern Cardinal
Cathartes aura	Turkey Vulture
Catharus ustulatus	Swainson's Thrush
Coccyzus americanus	Yellow-billed Cuckoo
Columbina passerina	Common Ground-Dove
Contopus virens	Eastern Wood-Pewee
Coragyps atratus	Black Vulture
Corvus brachyrhynchos	American Crow
Corvus ossifragus	Fish Crow
Cyanocitta cristata	Blue Jay
Dendroica caerulescens	Black-throated Blue Warbler
Dendroica castanea	Bay-breasted Warbler
Dendroica discolor	Prairie Warbler
Dendroica fusca	Blackburnian Warbler
Dendroica magnolia	Magnolia Warbler
Dendroica palmarum	Palm Warbler
Dendroica pensylvanica	Chestnut-sided Warbler
Dendroica petechia	Yellow Warbler
Dendroica striata	Blackpoll Warbler
Dryocopus pileatus	PiliatedPileated Woodpecker
Dumetella carolinensis	Gray Catbird
Empidonax minimus	Least Flycatcher
Eudocimus albus	White Ibis
Fregata magnificens	Magnificent Frigatebird

Scientific Name	Common Name
Geothlypis trichas	Common Yellowthroat
Guiraca caerulea	Blue Grosbeak
Hirundo rustica	Barn Swallow
Hylocichla mustelina	Wood Thrush
Lanius ludovicianus	Loggerhead Shrike
Melanerpes carolinus	Red-bellied Woodpecker
Mimus polyglottos	Northern Mockingbird
Mniotilta varia	Black-and-white Warbler
Myiarchus crinitus	Great Crested Flycatcher
Parula americana	Northern Parula
Passerina cyanea	Indigo Bunting
Pelecanus occidentalis	Brown Pelican
Piranga olivacea	Scarlet Tanager
Piranga rubra	Summer Tanager
Polioptila caerulea	Blue-gray Gnatcatcher
Quiscalus major	Boat-tailed Grackle
Quiscalus quiscula	Common Grackle
Seiurus aurocapilla	Ovenbird
Setophaga ruticilla	American Redstart
Streptopelia decaocto	Eurasian Collared-Dove
Sturnus vulgaris	European Starling
Toxostoma rufum	Brown Thrasher
Tyrannus tyrannus	Eastern Kingbird
Vermivora chrysoptera	Golden-winged Warbler
Vermivora peregrina	Tennessee Warbler
Vireo flavifrons	Yellow-throated Vireo
Vireo griseus	White-eyed Vireo
Vireo olivaceus	Red-eyed Vireo
Zenaida macroura	Mourning Dove

The Breeding Bird Atlas documents breeding distributions of all bird species in Florida between 1986 and 1991 (FFWCC 2003). It lists 62 bird species that have been recorded as confirmed, probable, or possible breeding in the vicinity of Otter Mound Preserve (in the Marco Island USGS quadrangle). These species are listed in Appendix 7.

Reptile and amphibian species observed at the preserve include brown anole (*Anolis sagrei*), green anole (*Anolis carolinensis*), southern black racer (*Coluber constrictor priapus*), ring neck snake (*Diadophis punctatus*), and greenhouse frog (*Eleutherodactylus planirostris*). Neighbors have also reported observing coral snakes (*Micrurus fulvius*) near the property. During the winter of 2018, three hatchling, non-native green iguanas (*Iguana iguana*) were observed by staff in a gumbo-limbo root ball adjacent to the parking area. Subsequent observations through 2023 indicate iguana of multiple age groups are present and burrowing within the cleared lot adjacent to the western boundary of the preserve.

Invertebrates observed at the preserve include cloudless sulphur butterfly (*Phoebis sennae*), cassius blue butterfly (*Leptotes cassius*) Eastern tiger swallowtail butterfly *(Papilio glaucus),* white peacock butterfly (*Anartia jatrophae*), monarch butterfly (*Danaus plexippus*), Gulf fritillary (*Agraulis vanilla*) , zebra longwing butterfly (*Heliconius charitonius*), green orchid bee (*Euglossa dilemma Friese),* leafcutting bee (*Megachilidae spp*.), giant vinegaroon (*Mastigoproctus giganteus*), banded tree snail (*Orthalicus floridensis*), and various wasp species. These observations represent anecdotal observations and no official invertebrate surveys have been conducted at the preserve to date.

Other wildlife species that have not been recorded undoubtedly occur at Otter Mound Preserve. During migration periods, transient bird species utilize this area for short periods of time. The developed character of the adjacent properties may inhibit transient use by many mammal, reptile, and amphibian species, thus possibly limiting the utilization of the preserve to resident individuals or inhibiting the dispersal of many species to and from the preserve.

2.5 Listed Species

2.5.1 Listed Plant Species

There are 7 plant species at Otter Mound that are listed by the Florida Department of Agriculture and Consumer Services, 5 as Endangered and 2 as Threatened. FNAI lists 1 species as Critically Imperiled in Florida, and 2 species as Imperiled in Florida. There is one species listed as Endangered or Threatened by the U.S. Fish and Wildlife Service (Table 5).

Table 6: Rare Plant Species at Otter Mound Preserve

Scientific Name	Common Names	State	FNAI	USFWS
Acanthocereus tetragonus	Barbed-wire cactus	T	Not ranked	n/a
Chrysophyllum oliviforme	Satin leaf	T	Not ranked	n/a
Cordia globosa	Curacao bush	E	Not ranked	n/a
Eugenia rhombea	Red stopper	E	S1	n/a
Guaiacum sanctum	Lignum vitae	E	G2, S1	n/a
Thrinax radiata	Florida thatch palm	E	G4G5, S2	n/a
Tillandsia fasciculata	Stiff-leaved wild pine	E	Not ranked	n/a
Trichostigma octandrum	Hoop vine	E	G4G5, S1	E

E: Endangered, T: Threatened, C: Commercially Exploited, S1: Critically Imperiled in FL, S2: Imperiled in FL, G2: Imperiled Globally G4:Apparently secure globally, G5:Demonstrably secure globally

Barbed-wire Cactus *(Acanthocereus tetragonus)*

This cactus is endemic to peninsular Florida where it has been reported from 6 southern counties (Wunderlin & Hansen 2004). This plant is present within the eastern portion of Otter Mound Preserve, located off the trail.

Barbed-wire Cactus *(Acanthocereus tetragonus)*
Photo by Shirley Denton

Satin Leaf (*Chrysophyllum oliviforme)*
This medium to large sized tree is endemic to peninsular Florida where it has been reported from 10 counties (Wunderlin & Hansen 2004). Sixteen satin leaf trees were planted in June 2006. No other satin leaf trees were known to exist at Otter Mound prior to these plantings.

Satin leaf *(Chrysophyllum oliviforme)*
Photo by Shirley Denton

Curacao bush *(Cordia globosa)*

This rare understory shrub is endemic to peninsular Florida where it has been reported from 3 counties (Wunderlin & Hansen 2004). Two curacao bushes were planted in June 2006. It is unknown whether any curacao bushes existed at Otter Mound Preserve prior to these plantings.

Curacao bush (*Codia globosa*)
Photo by T. Ann Williams

Red Stopper *(Eugenia rhombea)*

This very rare understory shrub is endemic to peninsular Florida where it has been reported from 2 counties (Wunderlin & Hansen 2004).). Two red stoppers were planted in June 2006. No other red stoppers were known to exist at Otter Mound prior to these plantings.

Red Stopper (*Eugenia rhombea*)
Photo by T. Ann Williams

Lignum vitae *(Guaiacum sanctum)*

This very rare small tree is endemic to South Florida and the Florida Keys where (Wunderlin & Hansen 2004). One Lignum vitae was planted at the entrance of the preserve in July 2007. No other Lignum vitaes were known to exist at Otter Mound prior to this planting.

Ligum vitae ***(Guaiacum sanctum)***
Photo by Walter Hodge

Florida Thatch Palm *(Thrinax radiata)*

This small palm is endemic to South Florida and the Florida Keys where it has been reported from 3 counties (Wunderlin & Hansen 2004). One palm is present near the entrance of the preserve.

Florida Thatch Palm (Thrinax radiata)
Photo by T. Ann Williams

Stiff-leaved Wild Pine *(Tillandsia fasciculata)*
This air plant is abundant throughout South Florida. Several are present within Otter Mound Preserve.

Stiff-leaved Wild Pine *(Tillandsia fasciculata)*
Photo by Shirley Denton

Hoop vine (*Trichostigma octandrum*)
Hoop vine is native to southern Florida, throughout the West Indies and from Mexico to northern Argentina. Although relatively common in most other areas, the species is listed as endangered in the United States/Florida. This plant is abundant within Otter Mound Preserve.

Hoop vine (*Trichostigma octandrum***)**

Additional rare plant species may be found at Otter Mound Preserve following further field surveys. Confirmation of rare plant identifications will be made by a qualified botanist.

2.5.2 Listed Wildlife Species

Listed wildlife species observed onsite include state-threatened Florida gopher tortoise (*Gopherus polyphemus*). A map has been prepared by staff showing locations of existing gopher tortoise burrows; however, it is not appended to this plan to protect the burrows from disturbance. Two active state-threatened Florida burrowing owl burrows exists within 150 ft and 350ft of the preserve boundary and it is presumed the preserve is occasionally utilized by the owls for foraging.

Within Otter Mound Preserve, FNAI has no documented occurrence of any listed wildlife species (Appendix 4). However, the FNAI database report indicates that 20 listed species have the potential to occur at the preserve based on their known or predicted range. At least 13 of these 20 species could utilize the tropical hammock community at the preserve (Table 6).

Table 7: Rare wildlife species with the potential to occur at Otter Mound Preserve

Scientific Name	Common Names	Federal	State	FNAI
Haliaeetus leucocephalus	Bald eagle	T, PDL	T	G5, S3
Ardea herodias occidentalis	Great white heron			G5T2, S2
Athene cunicularia floridana	Florida burrowing owl		SSC	G4T3, S3
Dendroica discolor paludicola	Florida prairie warbler			G5T3, S3
Drymarchon couperi	Eastern indigo snake	T	T	G3, S3
Eumops floridanus	Florida bonneted bat		E	G1, S1
Gopherus polyphemus	Gopher tortoise		SSC	G3, S3
Patagioenas leucocephala	White-crowned pigeon		T	G3, S3
Rostrhamus sociabilis plumbeus	Snail kite	E	E	G4G5T3Q, S2
Sceloporus woodi	Florida scrub lizard			G3, S3
Ursus americanus floridanus	Florida black bear			G5T2, S2

E: Endangered, T: Threatened, **PDL:** Currently Threatened but proposed for de-listing, S1: Critically Imperiled in FL, S2: Imperiled in FL, S3: Very Rare in FL or Restricted in its FL range, G1: Critically Imperiled Globally, G2: Imperiled Globally, G3: Very Rare Globally or Restricted in its range, G4: Apparently Secure Globally, G5: Demonstrably Secure Globally, G#T#: Rank Globally and Rank of Taxonomic Subgroup, ?: Tentative Rank, Q: Questionable Subspecies, G#G#: Range of Rank

2.6 Invasive Non-native and Problem Species

Thirty introduced plant species have been found at Otter Mound, making up 28.3% of the plant species recorded there. Of these, 10 are considered Category I - Invasive and 7 are considered Category II - Potentially Invasive by the Florida Exotic Pest Plant Council (FLEPPC) (FLEPPC Plant List Committee 2007)(see Appendix 6).

The most problematic non-native plant species at Otter Mound are royal poinciana (Delonix regia), yellow elder (Tecoma stans), and coral vine (Antignon leptopus).,Large amounts of Brazilian pepper were removed from the western section of the preserve in June 2005. Most of the other species in Appendix 6 are not yet problematic or only slightly problematic on the site. Large scale removal of royal poinciana began in 2021. A program of exotic removal and maintenance at the preserve has reduced most exotic plant occurrences to minimal, however coral vine remains problematic.

Under certain conditions, especially following soil disturbance or drainage, some native plant species can become invasive. There are no native plants species at Otter Mound Preserve that are currently a management problem on the site.

2.7 Archaeological, Historical and Cultural Resources

Otter Mound Preserve is a small part of the Caxambas Point archaeological site (8CR107), which was once a 70-80 acre complex of shell features constructed by the Calusa. The site appears to

have been constructed and occupied from approximately 750 A.D.-1200 A.D., and the substrate of the ancient mound appears to be relatively undisturbed.

Historic Outhouse at time of acquisition
Photo by Doug Suitor

The preserve was also once part of Caxambas Village. In the early 1900's Caxambas Village was a thriving community which grew with the Marco Island clamming industry. Jim and Tommie Barfield, influential citizens in the history of Marco Island, once owned the property that is present day Otter Mound. They sold it to Charles Griner and his wife in 1919. Prior to 1950, Ernest and Gladys Otter, would vacation in Caxambas Village, spending the winters at the Griner's home. Eventually Mrs. Griner sold the property to the Otters after her husband's death in 1950. By all accounts, the whelk shell terracing throughout the preserve was constructed by Mr. Otter sometime in the 1940s, 50s and 60s. It has been reported that Mr. Otter used ancient Calusa whelks (*Busycon* sp.) that he found buried in and around his property to construct the shell terracing. (Beriault & Carr 2000)

A house built in 1923 once stood near the center of the preserve. The home, which was occupied by the Otters until 1977, burned down in 1978. The only structure left within the preserve is a historic out-house located approximately 75-feet north of the old home-site.

2.8 Scenic Resources

The primary scenic resources of this preserve are the whelk shell terracing and the mature hardwood trees. Additionally, the natural buffer created by the vegetation in the preserve allows visitors to experience the feeling of being alone in nature in an urbanized area.

3.0 Use of the Property

3.1 Previous Use and Development

The preserve was a homesite dating back to the early 1900s. Previous owners had cleared and farmed much of the land, planting mango, guava, avocado, and Surinam cherry trees that are still present on the property. A home built in the 1920s occupied the site until it burned down in 1978. An old outhouse is the only structure left in the preserve. Nearly all the surrounding land immediately outside the preserve boundaries has been developed with single family homes.

3.2 Current Public Use and Land Uses

The preserve is currently open to the public for use of a walking trail. Three large interpretive signs that present the history of the preserve have been installed along the trail. Small plant identification signs have also been placed within the preserve. These signs are intended to educate visitors and school-age children about the preserve.

Planned Public Uses and Assessment of Impacts

Easements, Concessions, and Leases – There are two easements associated with Otter Mound Preserve. The first easement, as described in Collier County Subdivision Plat Book 39 pages 96 and 97 (Figure 10) and approved by Marco Island City Council on October 7, 2002 as Resolution

02-31, is a 4,051 square foot historical preservation easement along the northwestern boundary of the preserve encompassing a portion of the man-made shell wall and the land surrounding it (Figure 11).

Figure 10: Shell Wall Preservation Easement Description

A PRESERVATION EASEMENT OVER A PORTION OF LOT 1 IN FAVOR OF DECLARANT, A HOME OWNER'S ASSOCIATION, THE MARCO ISLAND HISTORICAL SOCIETY, INC., A FLORIDA NON-PROFIT CORPORATION AND THE CITY OF MARCO ISLAND FOR ITS GOVERNMENTAL EMPLOYEES AND ITS SPECIFICALLY DESIGNATED REPRESENTATION, FOR INGRESS, EGRESS AND PRESERVATION AND STUDY OF THE ARCHAEOLOGICAL SHELL WALL AS DEPICTED ON THE PLAT OF LOT 1, ADDISON ESTATES. THE OWNER OF LOT 1 SHALL NOT INTERFERE WITH THIS ARCHAEOLOGICAL ACCESS NOR DIG, CONSTRUCT, PLANT, OR OTHERWISE, DISTURB THE SHELL WALL. THE CONTENTS OF THE SHELL WALL SHALL BE OWNED BY THE HOME OWNER'S ASSOCIATION FOR THE BENEFIT OF THE HISTORICAL SOCIETY OF MARCO ISLAND, INC. AND THE CITY OF MARCO ISLAND. THE HISTORICAL SOCIETY OF MARCO ISLAND, INC. AND THE CITY OF MARCO ISLAND SHALL HAVE THE RIGHT, BUT NOT THE OBLIGATION TO ENFORCE THE PROVISIONS OF THIS PARAGRAPH BY ANY LEGAL OR EQUITABLE REMEDY. IN THE EVENT IT IS NECESSARY TO RESORT TO LITIGATION, TO ENFORCE THEIR RIGHTS AS SET FORTH HEREIN THEN THE PREVAILING PARTY IN ANY LITIGATION SHALL BE ENTITLED TO RECOVER REASONABLE ATTORNEY'S FEES AND COURT COSTS IN CONNECTION THEREWITH.

In accordance with this easement, the Preserve Manager will advise the City of Marco and the Historical Society of Marco Island of plans prior to doing any work within the boundary of the preservation easement. No Declarations for an Addison Estates Home Owner's Association have been established or recorded in the Collier County public records.

The second easement, a 20 foot wide ingress/egress easement exists through the southwestern boundary of the preserve which allows the neighboring property owners access to their home (Figure 12). The easement is solely for the purposes of ingress/egress and is described in the deed of the adjacent property owners (Figure 13). The full deed is attached as Appendix 8. The access road associated with the ingress/egress easement is currently unpaved; however, the easement does not prohibit future paving. Conservation Collier staff will work with the present and future adjacent property owners to encourage them to maintain the easement using only pervious materials.

Landscaping

Large, dense native species will be planted along the western property line, and perhaps along the eastern property line, to screen the neighboring houses from the preserve. All planting will be coordinated with a qualified archaeologist.

In 2011, it was discovered that neighbors along the east side of the preserve had encroached into the preserve boundary approximately 10-15 feet with landscape plants. After discussions with the neighbors, it was decided to remove the landscape plantings and re-plant native shrubs and trees in this area. An archeologist was onsite during the plantings. The artifacts recovered included shell net weights, pottery shards, and fish and animal bones. Native plants were installed within the cleared encroachment area, including: pigeon plum (*Cocoloba diversifolia*), red stopper (*Eugenia rhombea*), myrsine (*Rapanea punctata*) and wax myrtle (*Myrica cerifera*). All but the wax myrtle survived, and additional seeds from existing *Rivina humilis* plants were scattered, which grew to fill in much of the empty space.

View along east property line August 2011

View along east property line August 2013

On October 17, 2013, an additional group of plantings was placed on the northwest side of the preserve behind 1016 E Inlet Dr. The resident requested screening after a tree removal was done in that area and the 2011 planting behind his home had failed to provide the hoped-for screening. Three (3)_ *Hamelia patens*, two (2) *Capparis cyanophallophora* and three (3) *Coccoloba uvifera* were planted.

10/17/13 Planting behind1016 E Inlet Dr., with Archeologists onsite.

Trail Network
There are trails totaling approximately 1,000 feet in length, 375 feet of which are accessible by wheelchair, for public access to the parcel.

Figure 11: Shell Wall Preservation Easement Map

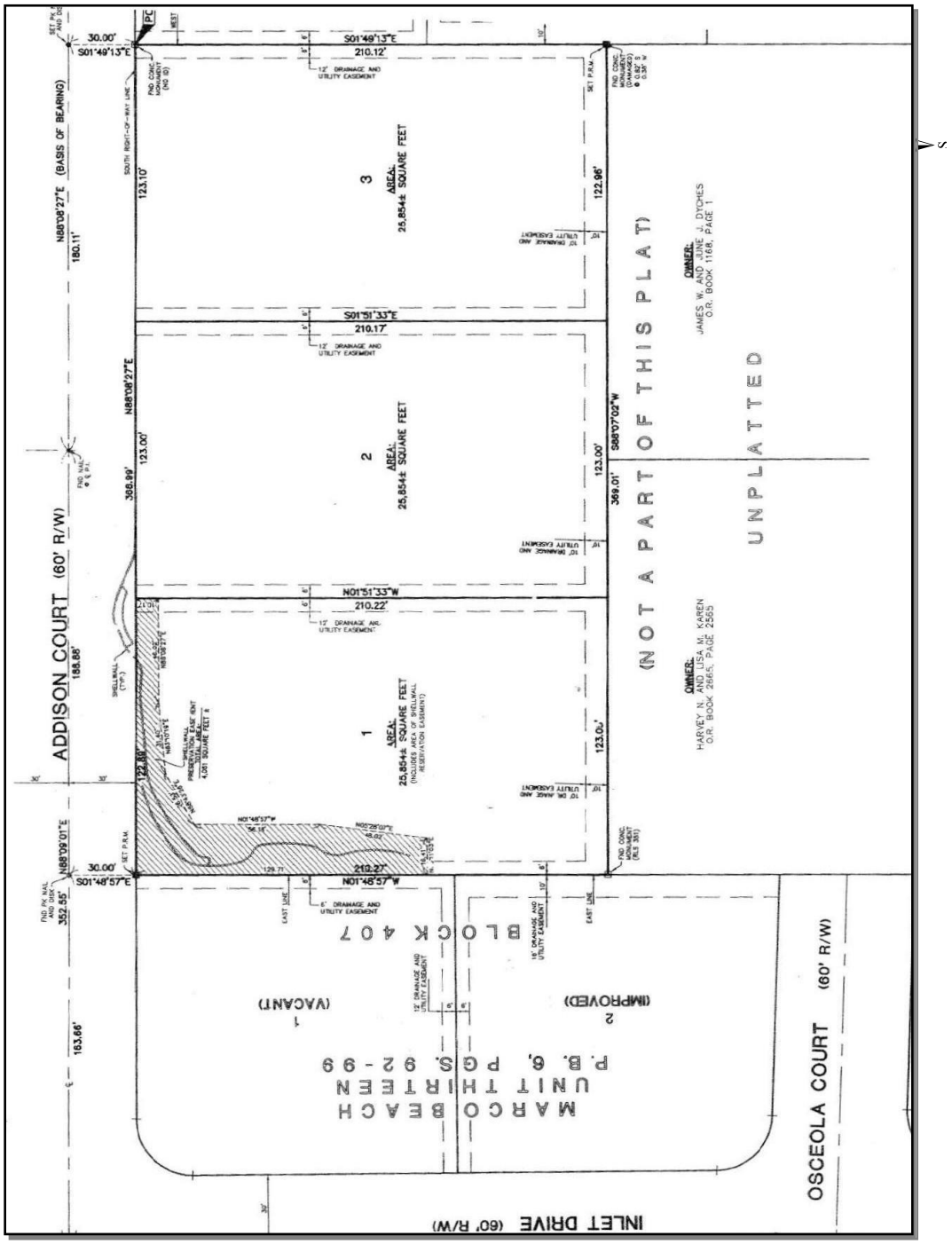


Figure 12: Ingress/Egress Easement Map

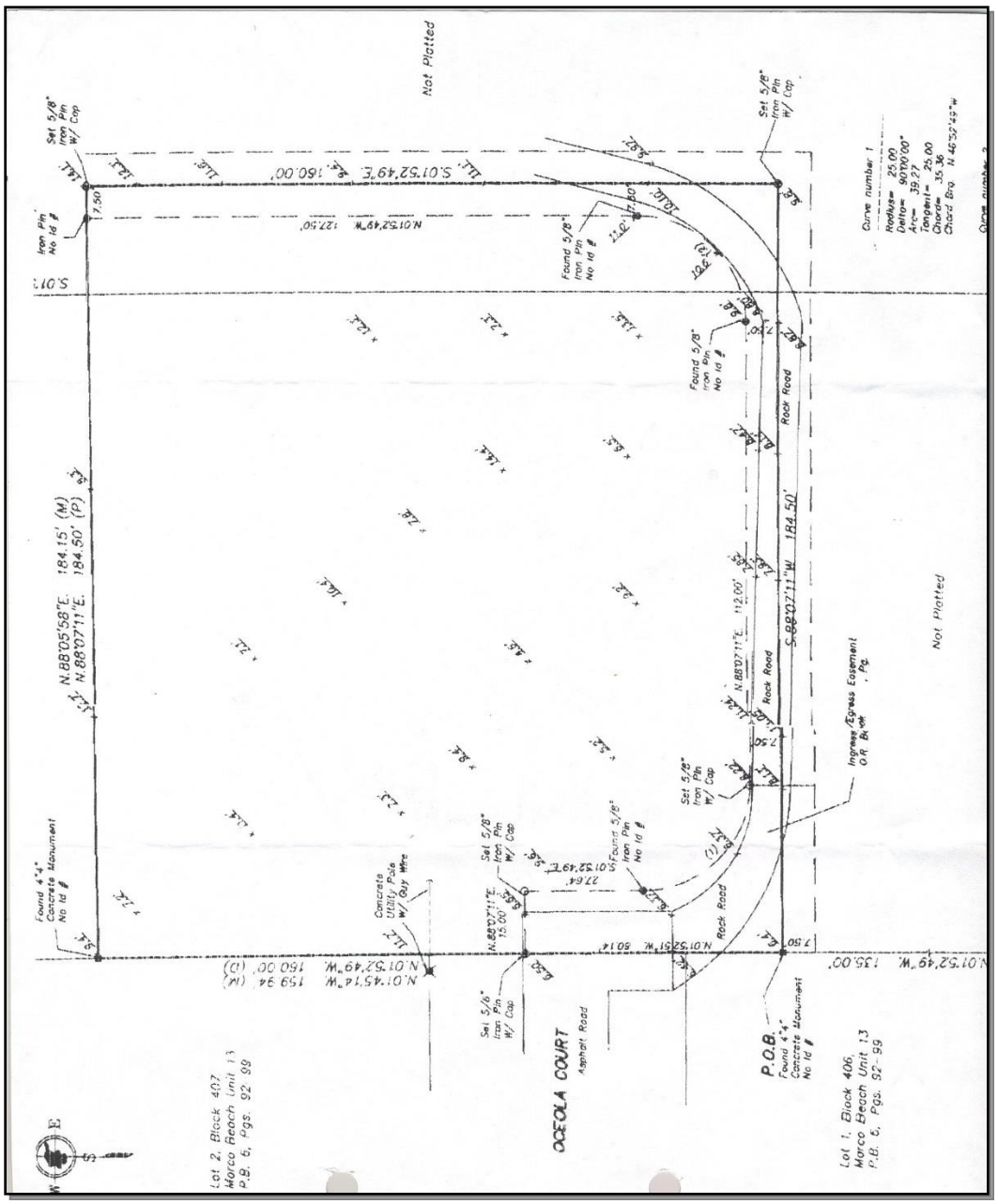
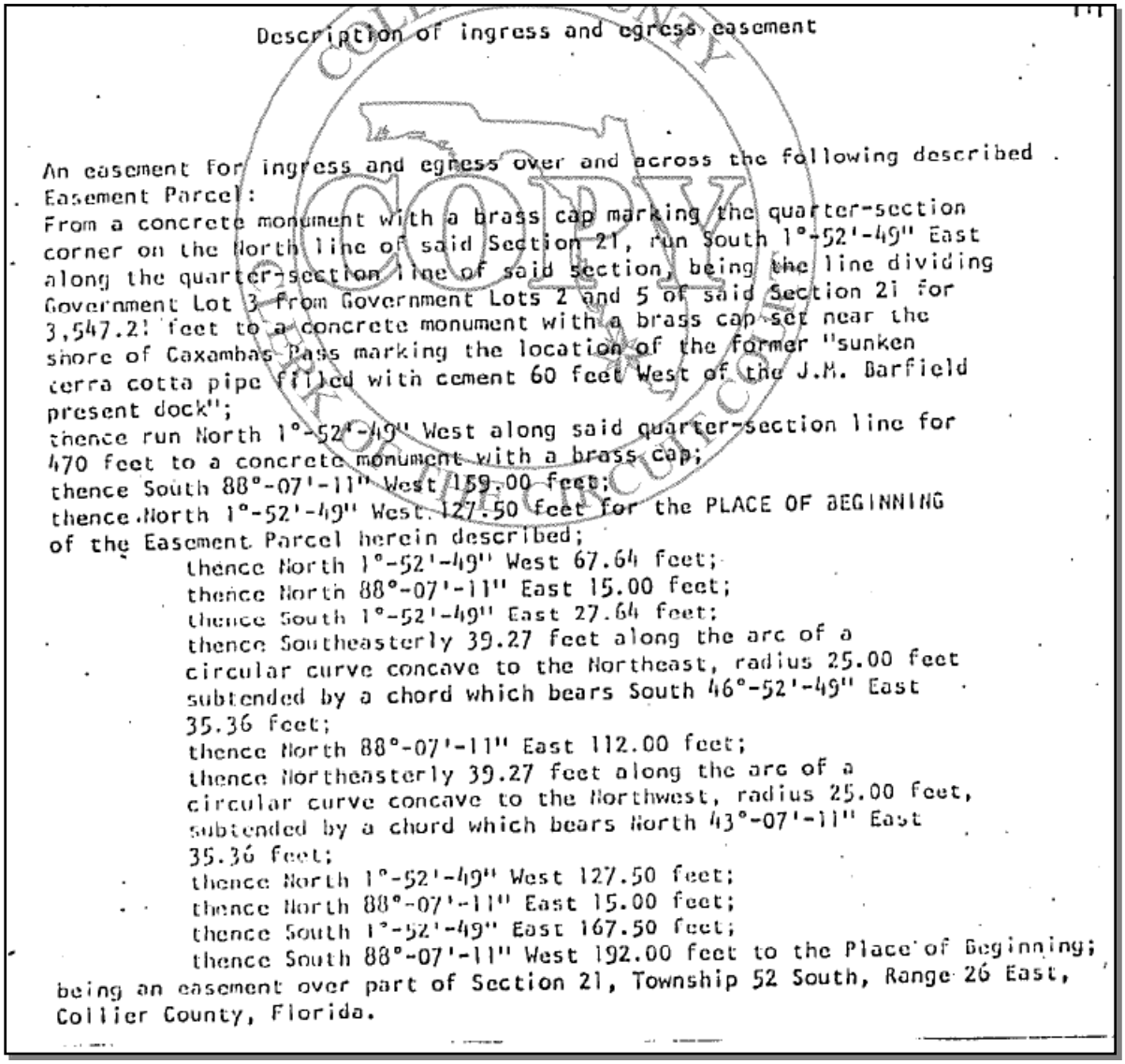

Not Platted
Set 5/8" Iron Pin W/ Cap
Iron Pin No Id #
S.01°52'49"E. 160.00'
N.01°52'49"W. 127.50'
Found 5/8" Iron Pin No Id #
Curve number 1
Radius= 25.00
Delta= 90°00'00"
Arc= 39.27
Tangent= 25.00
Chord= 35.36
Chord Brg N 46°52'49"W
Rock Road
S.88°07'11"W. 184.50'
N.88°07'11"E. 112.00'
N.88°05'58"E. 184.15' (M)
N.88°07'11"E. 184.50' (P)
Found 4"x4" Concrete Monument No Id #
Concrete Utility Pole W/ Guy Wire
Ingress/Egress Easement O.R. Book , Pg
Not Platted
N.01°52'49"W. 159.94' (M)
N.01°52'49"W. 160.00' (P)
OCEOLA COURT
Asphalt Road
P.O.B.
Found 4"x4" Concrete Monument No Id #
Lot 2, Block 407, Marco Beach Unit 13, P.B. 6, Pgs. 52-59
Lot 1, Block 406, Marco Beach Unit 13, P.B. 6, Pgs. 52-59

Figure 13: Ingress/Egress Easement Description



Description of ingress and egress easement

An easement for ingress and egress over and across the following described Easement Parcel:
From a concrete monument with a brass cap marking the quarter-section corner on the North line of said Section 21, run South 1°-52'-49" East along the quarter-section line of said section, being the line dividing Government Lot 3 from Government Lots 2 and 5 of said Section 21 for 3,547.21 feet to a concrete monument with a brass cap set near the shore of Caxambas Pass marking the location of the former "sunken terra cotta pipe filled with cement 60 feet West of the J.M. Barfield present dock";
thence run North 1°-52'-49" West along said quarter-section line for 470 feet to a concrete monument with a brass cap;
thence South 88°-07'-11" West 159.00 feet;
thence North 1°-52'-49" West 127.50 feet for the PLACE OF BEGINNING of the Easement Parcel herein described;
thence North 1°-52'-49" West 67.64 feet;
thence North 88°-07'-11" East 15.00 feet;
thence South 1°-52'-49" East 27.64 feet;
thence Southeasterly 39.27 feet along the arc of a circular curve concave to the Northeast, radius 25.00 feet subtended by a chord which bears South 46°-52'-49" East 35.36 feet;
thence North 88°-07'-11" East 112.00 feet;
thence Northeasterly 39.27 feet along the arc of a circular curve concave to the Northwest, radius 25.00 feet, subtended by a chord which bears North 43°-07'-11" East 35.36 feet;
thence North 1°-52'-49" West 127.50 feet;
thence North 88°-07'-11" East 15.00 feet;
thence South 1°-52'-49" East 167.50 feet;
thence South 88°-07'-11" West 192.00 feet to the Place of Beginning;
being an easement over part of Section 21, Township 52 South, Range 26 East, Collier County, Florida.

3.3 Adjacent Land Uses

Single-family residential developed lots surround the preserve on all sides. A paved road, Addison Court, runs along the entire north edge of the preserve, and a shell hash road extension of Osceola Court, runs through the southwestern edge of the preserve within the ingress/egress easement.

3.4 Prospective Land Acquisitions

There are no prospective additions to the preserve at this time.

4.0 Management Issues, Goals and Objectives

4.1 Program Framework and Goals

The Conservation Collier Program considers properties of high natural resource value throughout Collier County for acquisition from willing and voluntary participants. Properties must support at least two of the following qualities to qualify for further consideration: rare habitat, aquifer recharge, flood control, water quality protection, and listed species habitat. The Collier County Board of County Commissioners (BCC) appointed a Land Acquisition Advisory Committee 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. Acquisitions were halted by the Board of County Commissioners in 2011 and remaining acquisition funds have been shifted to the Land Management Trust Fund.

This property, and any additional parcels acquired on Marco Island during the lifetime of this plan, will be managed for protection/restoration of natural and historical/archaeological resources and for passive, outdoor public recreation that will be compatible with the protection/restoration of the site and surrounding lands.

4.1.1 Management Activities to Protect/Restore the Resource

"Each property purchased by Conservation Collier shall have its own management plan. The ordinance requires that an 'Interim' Management Plan be developed within 60 days of purchase and that a 'Final' management plan be developed within two years. After that, property management plans must be updated every five years. Interim plans shall be concerned with basic items such as removal of invasive exotics and trash, establishing site security, developing management partnerships, and planning for public access. All management plans must be approved by both the Conservation Collier Land Acquisition Advisory Committee (CCLAC) and the Board of County Commissioners."

4.1.2 Manager

The Site Manager for Otter Mound Preserve will be a designated Collier County Environmental Specialist.

4.1.3 Preserve Rules and Regulations

No dumping, use of unauthorized vehicles, or removal or destruction of natural or historical/archaeological resources will be permitted within the preserve. The goal is to allow limited non-destructive public access to native plant communities and animal species. Currently,

the preserve rules are those identified in Collier County Ordinance 76-48, as amended (available from www.municode.com). A Preserve Use ordinance (Ord. 2011-38) was developed by the Conservation Collier Land Acquisition Advisory Committee and approved on October 11, 2011 (Agenda item 8E) by the Board of County Commissioners to administer public use of preserves.

4.2 Desired Future Conditions

This section includes a description of the proposed future conditions for the site's natural areas. Management techniques to achieve these conditions are outlined in section 4.4.

After managers complete recommended management actions, Otter Mound Preserve will consist of tropical hardwood hammock habitat that has a similar structure and composition to that which existed prior to modern settlement in the late 1800s. With the exception of the trail, the site will be heavily vegetated with appropriate mature native vegetation that will provide suitable cover for a variety of wildlife species. The main canopy will be comprised of gumbo limbo, soapberry, and false mastic. Mid-story will consist of a variety of natives including stoppers, black-bead, marlberry, wild coffee, and firebush. Groundcover will be native and will include rouge plant, scorpion tail, and blue porterweed.

Some non-natives will remain in the preserve, depending upon their historical significance and relative invasiveness. Historic non-native, invasive plants will be limited to contained management areas along the trail and removed from all other areas of the preserve.

4.3 Major Accomplishments During Previous Years

Table 9: Major Management Accomplishments during previous years	
Accomplishment	**Year(s)**
Initial removal of invasive exotic vegetation	2005
Hurricane Wilma debris clean-up	2006
Development of management agreement with City of Marco Island	2006
Native plant planting days (over 300 plants planted)	2006
US Fish and Wildlife Service grant for invasive exotic plant maintenance	2006
Development of 1,000-foot trail with a representative sidewalk portion built to be accessible to wheelchairs	2006-2007
Florida Humanities Council grant for historic interpretive signs and post/rope fence	2006-2007
Formal ceremony to open preserve for passive public use	2007
Native plant restoration project (471 trees, shrubs and ground cover plants planted)	2009
Eastern boundary encroachment cleared and replanted (7 trees, 21 shrubs)	2011
Tree Management Plan Developed, Supplemental planting at north east corner (8 shrubs)	2013
Hurricane Irma debris clean-up and trail clearing	2017
Hurricane Irma debris cleanup and woody debris removal	2019
Royal poinciana treatment and removal begun	2021
Tree and shrub planting	2022
Hurricane Ian debris cleanup and trail clearing	2022/2023

4.4 Goals and Objectives for 10-year period

A set of goals and objectives for Otter Mound Preserve were developed in conjunction with the drafting of this Management Plan. The goals and objectives in this plan are tailored specifically for Otter Mound Preserve based on the purposes for which the lands were acquired, the condition of the resources present, and the management issues for the property. On-site managers should be familiar with this entire Management Plan. Goals and objectives from the interim management plan for the Otter Mound Preserve were reviewed to determine whether they should be included in this plan. The goals and objectives presented here reflect programmatic goals and ideas of Conservation Collier personnel in charge of managing and protecting the area. These goals shall not be modified, but specific application of management techniques may take into consideration input by user groups and other stakeholders from outside the program, accommodating user needs and desires where practicable and where overarching management goals are not violated.

Management issues are discussed below in separate sections. Within each section, approaches for dealing with these issues are described. The ability to implement the specific goals and objectives identified in this plan is dependent upon the availability of funding resources. The following goals have been identified for Otter Mound Preserve:

Goal 1: Maintain the property in its natural condition prior to modern development.
Goal 2: Reduce human impacts to indigenous plant and animal life.
Goal 3: Maintain the trail to provide a safe and pleasant visitor experience.
Goal 4: Protect Archaeological, Historical and Cultural Resources.
Goal 5: Facilitate uses of the site for educational purposes.
Goal 6: Provide a plan for security and disaster preparedness

GOAL 1: *MAINTAIN THE PROPERTY IN ITS NATURAL CONDITION PRIOR TO MODERN DEVELOPMENT*

<u>Action Item 1.1</u> Remove populations of exotic plants to restore natural habitats.

Because of the severity of the infestation, the invasive exotic vegetation within Otter Mound Preserve were treated in phases to avoid non-target damage to sensitive and recruiting native plant species. Currently, exotic plants constitute a small (5% or less) component of the vegetation community. Some examples of invasive exotic plant species that are deemed to be historic may be left along the trail, visible to visitors (Table 10).

Table 10: Otter Mound Preserve Invasive Exotic Plant Species Control Plan

Scientific Name	**Common Name**	**Phase**	**Historic**	**Recommended Control**
Antigonon leptopus	coral vine	1	X	Vines should be carefully foliar sprayed with glyphosate or cut and the root end sprayed with glyphosate if they are growing over the top of native vegetation. Herbicide application only works to knock back growing vegetation. The tubers need to be removed to kill this plant.
Broussonetia papyrifera	paper mulberry	1		Large trees should be cut, stumps treated with triclopyr, and trees removed from site or chipped on site and added to the mulched trail. Small trees and re-growth should be cut, the stumps treated with triclopyr, and the debris should remain on site if it is not extensive. Basal treatment may be used; however, it is not recommended near sensitive natives or native seedlings.
Dioscorea alata	air-potato	1		The vines should be cut and the root end sprayed with triclopyr if they are growing over the top of native vegetation. If caught early in the spring, the emerging vines can be sprayed with triclopyr foliar mix or glyphosate. Potatoes should be collected in winter if possible.
Momordica charantia	balsam apple	1		Same as *Antigonon leptopus*
Sansevieria hyacinthoides	bowstring hemp	1	X	The cuticle should be cut with a machete before herbicide is applied. Glyphosate and triclopyr have been used and have been moderately successful for control. If control becomes increasingly problematic, manual removal may be employed if coordinated with an archaeologist.

Schinus terebinthifolia	Brazilian pepper	1		Same as *Broussonetia papyrifera*.
Cupaniopsis anacardioides	carrotwood	2		Same as *Broussonetia papyrifera*.
Melia azedarach	chinaberry	2		Same as *Broussonetia papyrifera*.
Sphagneticola tril obata	wedelia	2		The leaves should be foliar sprayed with glyphosate.
Syzygium cumini	java plum	2		Same as *Broussonetia papyrifera*.
Kalanchoe pinnata	walking plant	3		Same as *Sphagneticola trilobata*. Care should be taken not to disturb the walking plant. Any section that breaks from this plant and falls to the ground will produce roots.
Rhynchelytrum repens	natal grass	3		Same as *Sphagneticola trilobata*.
Bauhinia variegata	orchid tree	4		Same as *Broussonetia papyrifera*.
Eugenia uniflora	Surinam cherry	4	X	Same as *Broussonetia papyrifera*.
Lantana camara	Lantana	4		Same as *Broussonetia papyrifera*.
Leucaena leucocephala	leadtree	4		Same as *Broussonetia papyrifera*.
Tradescantia spathacea	oyster plant	4	X	Same as *Sansevieria hyacinthoides.*

Other non-native species within the preserve, specifically royal poinciana or yellow elder, will be controlled as warranted. Removal of royal poinciana will be conducted over time as funding allows.

Action Item 1.2 Manage the property for the benefit of native and listed wildlife species.

Management actions to protect native bird species:

Avoid off target damage to native plants and animals, especially rare species, during invasive exotic plant treatments.

Prohibit unleashed domestic animals from being brought onto the preserve lands.

A population of banded tree snails exists at the preserve. Historically, the major causes of tree snail colony mortality have been habitat destruction and commercial exploitation of their shells. Pesticide spraying for mosquito control may also affect their survival (Emmel & Cotter 1995).

Management actions to protect banded tree snails:

Protect and restore existing hammock vegetation.

Protect against collection – a sign has been posted along the trail proclaiming all plants and animals in the preserve are protected.

Reduce pesticide effects through increased tree canopy. Reducing mosquito pesticide applications within the preserve is not a tangible goal because the preserve is located in a dense residential area. However, maintaining canopy and mid-story cover should reduce

some effects of the pesticide by physically blocking the amount of pesticide entering the preserve via aerial spraying.

Because of growing developmental pressures and the limited availability of natural areas, Conservation Collier and City of Marco Island staff contacted FFWCC staff to evaluate whether Otter Mound Preserve would serve as an adequate gopher tortoise relocation site. FFWCC staff have expressed that they would be extremely reluctant to deem a heavily vegetated tropical hardwood hammock as an acceptable gopher tortoise relocation site (Appendix 9).

Action Item 1.3 Restore native vegetation as appropriate and necessary.

Monitor native plant recruitment and re-growth in areas of invasive exotic removal and/or hurricane damage. *Plant appropriate native vegetation to restore tree canopy coverage to 85% - 95% and understory density to 50% - 75%.

*All plantings should be done during rainy season in accordance with the Action Items set forth to attain *Goal 4: Protect Archaeological, Historical and Cultural Resources.* Supplemental irrigation may also be necessary with plantings.

Action Item 1.4 Monitor need for and success of management.

Conduct periodic wildlife surveys - While some wildlife data has been collected, additional baseline data should be collected, especially on invertebrates, small mammals, reptiles, and amphibians. The Preserve Manager may contract this work out or enlist the assistance of local educators to coordinate student research projects. Wildlife sampling should take place at regular intervals (2-4 years) to detect long-term trends.

A complete plant inventory was completed for the preserve in 2007. A new plant inventory by a qualified botanist should be performed every 5 years, or as funding allows, to detect long-term trends.

Install permanent photo points – Five photo points have been established at random locations on the property. Photo point locations are marked with small white plastic signs and rebar, and their positions have been recorded with a GPS. All photo points will be taken annually at a standard height and angle of view.

GOAL 2: *ELIMINATE OR REDUCE HUMAN IMPACTS TO INDIGENOUS PLANT AND ANIMAL LIFE AND ON HISTORICAL/ARCHAEOLOGICAL RESOURCES.*

Action Item 2.1 Maintain bollards at north trail entrance to prevent unauthorized vehicle access.

Action Item 2.2 Identify locations of rare native plant species.

Action Item 2.3 Enforce regulations prohibiting trash and landscape debris dumping in or near the preserve.

Action Item 2.4 Encourage visitors to stay on trail with signs and fencing.

Action Item 2.5 Identify actual and potential locations of resident animal life and take

steps such as locating visitor amenities away from animal nesting sites.

Action Item 2.6 Avoid non-target damage to native plants and animals, especially rare species, during invasive exotic plant treatments.

Action Item 2.7 Note and research all site development occurring adjacent to Otter Mound Preserve to determine that the proper site development permits have been obtained and that the site development complies with the permits.

All existing local, state, and federal regulations should be strictly followed and enforced during any site development adjacent to the preserve. It shall be the responsibility of the developer to establish erosion control measures and vegetation protection measures (i.e., protective fencing or barriers). If any site developer working in areas adjacent to the preserve does not take the necessary control measures, construction shall be immediately halted until control measures are put into place and mitigation and/or remediation will be the sole responsibility of the developer.

GOAL 3: *MAINTAIN THE TRAIL TO PROVIDE A SAFE AND PLEASANT VISITOR EXPERIENCE.*

Action Item 3.1 Keep trail area open and free of weedy species, debris, and litter.

Action Item 3.2 Inspect trail monthly for tripping hazards and fix immediately.

Action Item 3.3 Inspect trail monthly for overhead hazards such as broken or hanging tree limbs and fix immediately.

Action Item 3.4 Monitor hornets near trail.
A population of ground-nesting hornets was observed near the trail. If this population begins to pose a problem to visitors, it should be removed.

Action Item 3.5 Keep signs, benches, and post/rope fence in good repair.

Action Item 3.6 Empty garbage cans regularly, as needed.

Action Item 3.7* Mow Addison Court right of way regularly.
At least once every two weeks in rainy season; as needed during dry season.
**Action Item 3.7 will be the responsibility of the City of Marco Island per Interlocal Agreement - Appendix 1*

Action Item 3.8 Keep adjacent trail vegetation lush.
The view from the trail should be focused on blocking out the urban environment.

Action Item 3.9 Remove vines and weedy vegetation from shell terracing that is in view of the public.
Follow guidelines of Action Item 4.7 below.

GOAL 4: *PROTECT ARCHAEOLOGICAL, HISTORICAL AND CULTURAL RESOURCES.*

The Archaeological and Historical Conservancy, Inc. included management recommendations in their Phase 1 archaeological survey and assessment of the preserve in April 2000. Their recommendations for management of the site stipulated that "efforts should be made to minimize impacts to [the parcel's shell mound] features and the historic shell walls created by Ernest Otter that are found on the north and west sides of the parcel." Also, "the Otter shell walls that terrace the northern and western periphery of the parcel are historically significant and should be avoided during development" (Beriault & Carr 2000). The County will follow these recommendations, as detailed in the Action Items below, and shall cooperate fully with any other direction from the Florida Division of Historical Resources on the protection and management of archaeological and historical resources, per provisions of the Land Development Code Section 2.2.25.

The management of the resources present on Otter Mound Preserve will comply with the provisions of Chapter 267, Florida Statutes, specifically Sections 267.061 2 (a) and (b). The collection of artifacts or the disturbance of the archaeological and historic sites within the preserve shall be prohibited unless prior authorization has been obtained from the Collier County Board of County Commissioners and the Department of State, Division of Historical Resources.

Action Item 4.1 Limit visitor use of the preserve to designated trail areas.
Signage that states, "FRAGILE Please do not walk on shell walls and terracing" and post and rope fencing have been placed along the trail in the most sensitive areas of the preserve to encourage visitors to stay on the trail.

Action Item 4.2 Remulch the trail every 1-3 years or as needed.

Efforts will be made to utilize mulch from removed royal poinciana trees and downed tree debris by grinding this material on site and spreading it on the trail. In 2013, the trail was mulched with mulch made from removed Royal Poinciana trees. Beginning in 2017, staff began mulching the trail annually using sterilized Flori-Mulch from non-native melaleuca trees with assistance from the Marco Island Sunrise Rotary Club.

Action Item 4.3 Prohibit bicycle use within the preserve.
Bicycle riding is listed on the prohibited activities sign, and a bicycle rack is located at the entrance of the preserve to encourage visitors to park their bikes.

Action Item 4.4 Prohibit managers and contractors from walking within 6 feet of the edge of the shell terrace walls unless absolutely necessary.
These areas are extremely fragile and subject to erosion.

Action Item 4.5 Prohibit planting near the edge of the shell terracing walls.
Plant groundcovers and shrubs a minimum of 6' from the edge of the walls. Plant trees a minimum of 10' from the walls. All planting must be coordinated with a qualified archaeologist.

Action Item 4.6 Prohibit mechanical removal of vegetation using machinery.

Invasive exotic vegetation will be cut and stump sprayed with herbicide or foliar sprayed with herbicide. No plants or trees will be pulled out by the roots unless coordinated with a qualified archaeologist.

If native or invasive exotic debris is to be removed from site, large limbs will not be dragged across the floor of the preserve. Large limbs will be cut into manageable sections and carried so as not to disturb the surface substrate.

Action Item 4.7 Allow only minimal, careful weed/vine control along the shell walls.
Foliar spray vines and weeds. Once dead, carefully cut and/or brush dried vegetation away from walls. Live or dead plants will not be pulled out of shells.

Action Item 4.8 Maintain/restore historic outhouse structure.
Staff, in conjunction with a qualified historical architect, will assess and determine how best to restore and maintain the outhouse, as funds allow Recommendations from the historical architect will be used to guide a qualified contractor (County staff, contractor, or volunteer) to make repairs and maintain the outhouse to the reasonable extent that management funds allow. A sign stating, "HISTORIC STRUCTURE do not disturb" is displayed in front of the outhouse, which is located near the trail behind the post and rope fence.

Reasonable recommendations made by partners for protection/maintenance of the outhouse will also be considered and coordinated with the historical architect.

Action Item 4.9 Maintain/restore historic shell wall terracing.
Vegetation is fundamental in erosion control (Glowacki et al. 2000). Native groundcover, such as scorpiontail, rouge plant, and blue porterweed, will be encouraged to grow along the tops and edges of the shell wall terracing to guard against erosion If native groundcover is lacking in an area, seeds will be dispersed. Planting should be avoided unless absolutely necessary.

The Preserve Manager will coordinate with a qualified archaeologist to develop a shell wall maintenance and restoration plan. Once complete, this maintenance and restoration plan will be incorporated into a revised edition of the Otter Mound Preserve Final Management Plan. The Preserve Manager will follow the recommendations set forth in the shell wall maintenance and restoration plan to the reasonable extent that management funds allow.

Action Item 4.10 Discourage vandalism.
Maintain the preserve and encourage frequent site visits from partners (Marco Island Historical Society, Southwest Florida Archaeological Society, City of Marco, Archaeological and Conservancy, Inc., neighbors). Sites that appear cared for, well maintained, clearly interpreted, and frequently visited, are seldom vandalized (Glowacki et al. 2000).

GOAL 5: *FACILITATE USES OF THE SITE FOR EDUCATIONAL PURPOSES.*

Action Items 5.1 Maintain interpretive signage and plant signage to educate preserve visitors.

One copy of each of the three large interpretive historic signs and nine replacement plexiglass sign covers were purchased with the original large interpretive historic signs in anticipation of damage and wear.

The small, white UV resistant signs throughout the preserve may also need to be replaced periodically due to discoloration and wear.

In 2019, staff installed an educational and interpretive sign focused on the protection of state-threatened Florida gopher tortoise along the public walking trail. In 2020, staff installed interpretive signage about migratory birds and butterfly species.

Action Item 5.2 Provide Preserve brochures in rainproof box on site.
To lower printing costs and foster sustainability, staff have replaced the existing brochure boxes with waterproof units containing reusable brochures that visitors borrow for the duration of their visit and replace upon exiting.

Action Item 5.3 Encourage historical presentations and gatherings.
Coordinate events with the Marco Island Historical Society and/or The Southwest Florida Archaeological Society. Volunteers from these organizations may provide trail tours for interested parties or for classes of school children upon teacher request.

GOAL 6: *PROVIDE A PLAN FOR SECURITY AND DISASTER PREPAREDNESS*

Action Item 6.1 Security at the preserve.
City of Marco Island Police have agreed to perform routine patrols in the area.

Action Item 6.2 Discourage visitation to the park at night.
A Lee County Electric Company (LCEC) streetlight was installed at the NE corner of Addison and Leo Courts. A sign designating park hours as dawn to dusk has been installed at the entrance of the preserve.

Action Item 6.3 Enforce regulations prohibiting trash and landscape debris dumping in or near the preserve.

Action Item 6.4 Visit preserve within 48 hours after a storm event to assess damage.
Staff will take photos of damage and fill out appropriate Collier County Risk Management Department forms. If damage is extensive, the preserve will be closed until public safety hazards are cleared.

Action Item 6.5 Promptly clear storm debris from preserve.
If necessary, a Collier County emergency debris removal contractor will be contracted as soon as possible after the storm to schedule clean-up. First priority will be the shell walls and the historic outhouse. Damage to the shell walls and outhouse will be documented with photos prior to the start of any clean-up. All debris on top of the shell walls and outhouse will be lifted and carried away by hand, not pulled or dragged. Any large debris on the shell walls or outhouse will be cut into pieces that are small enough to be lifted and carried away by hand or, if the debris cannot be

cut into pieces, it will be lifted and carried away by several people working together. They will be left in the position in which they fell, and any attached limbs will be cut, lifted, and carried away. Trails will be cleared next. Other downed trees and limbs that do not appear to be a public safety hazard will be cleared at the discretion of the Preserve Manager. Debris removal will be carried out in accordance with Goal 4: Protect Archaeological, Historical and Cultural Resources. Funds should be budgeted annually to cover this potential expense.

Action Item 6.7 Promptly secure cultural resources after a storm event.
Once storm debris has been cleared, damage to the shell walls and outhouse will be documented with photos prior to the start of any repairs. Damage to the shell walls will be initially repaired to the extent possible by the Preserve Manager and staff. Large whelk shells that may have become dislodged will either be gently pushed back into place or gathered and placed near the damaged area. Loosened shell substrate will be gathered and patted back into place. Extensive damage that cannot be repaired by the Preserve Manager and staff will be cordoned off and covered with a tarp until a qualified archaeologist can be contacted. If sections of the outhouse have been blown off, these sections will be gathered and placed inside the outhouse until they can be repaired. All repairs to the shell walls and outhouse will be documented with photos.

4.5 Public Use Facilities

Public Access / Parking / Handicap Facilities/ Restrooms: There is one public entrance to the preserve, at the north end of the property along Addison Court. A parking area consisting of three parking spaces - one of which is Americans with Disabilities Act (ADA) compliant - exists at the entrance. Both a 375-foot ADA compliant sidewalk trail within the Addison Court right of way and a 625-foot mulched trail through the preserve connect to the parking area. Because of the sensitivity and slope of the shell mound, it was not feasible to provide an ADA compliant trail for the entire length of the planned trail. No restrooms exist at the preserve.

4.6 Operational Plan for Otter Mound Preserve

4.6.1 Maintenance

Monthly site visits will be made by County staff to inspect/control littering within and around the preserve, monitor exotic plant re-growth, maintain the trail in a safe and aesthetically pleasing way, refill brochure boxes, inspect signs and equipment (bench and trash cans) and review general site security.

The Preserve Manager will keep a management log to record observations from the site visit, any contacts made or issues raised. Projects such as exotic removal, debris removal, and plantings will be carried out in accordance with Action Items listed in Section 4.4 Goals and Objectives for 10 year period.

4.6.2 Estimated Annual Costs and Funding Sources

Preliminary budget estimates for the Otter Mound Preserve include cost breakdowns associated with resource restoration and management. The funding source identified for the restoration and management activities is the Conservation Collier Program Management Trust Fund. Alternative funding sources, such as grant funds, will be sought as opportunities arise to supplement existing funding.

Table 11 shows the activities planned for the next ten years and the initial and annual cost estimate of each activity. Private organizations may also provide funding for specific projects.

Table 11: Estimated Annual Land Management Budget (2019-2029)

Item	YEARS											
	2018-19	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	Total
Exotic Species Management	$6,000	$6,000		$5,000		$5,000		$5,000			$5,000	**$37,000**
Cultural Resources Management		$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	**$5,500**
Debris Removal	$6,000	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	**$11,500**
Restoration/ Planting Projects	$500		$500			$500		$500			$500	**$2,500**
Tree Management	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	**$12,000**
Small signs		$200			$200			$200		$200		**$800**
Plant signs												
Visitors Services/ Recreation												
Parking and Sidewalk	$0			$400			$400		$400			**$1,200**
Equipment (bench, trash cans)	$1,000				$400				$400			**$1,800**
Trail Maintenance	$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	**$8,400**
Brochures	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	**$2,400**
Addison Court Streetlight	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	**$1,800**
Grand Total	**$15,550**	**$9,250**	**$3,550**	**$8,450**	**$3,650**	**$8,550**	**$3,450**	**$8,250**	**$3,550**	**$8,850**	**$3,250**	**$8,550**	**$84,900**

4.6.3. Potential for Contracting Restoration and Management Activities by Private Vendors

Table 12: Potential Contracting for Activities			
Activity	**Approved**	**Conditional**	**Rejected**
Trail maintenance	X		
Storm debris removal	X		
Post and rope fence installation and maintenance			X
Wildlife inventory and monitoring		X	
Native plant restoration		X	
Archaeological / historical monitoring	X		
Reduce exotic species	X		
Education facilities, programs, and literature development and printing		X	
Education signs development and installation	X		
Law enforcement and patrol	X		

4.7 Partnerships and Regional Coordination

4.7.1 Interdepartmental Partnerships and Agreements

Collier County has an Interlocal Agreement with the City of Marco Island for certain aspects of management within the preserve (Appendix 1).

Collier County has entered into a management agreement with the US Fish and Wildlife Service Partnership for Fish and Wildlife Program. The Service provided funding for exotic removal within Otter Mound Preserve through a Cooperative Agreement. Under the agreement, Otter Mound Preserve must remain as habitat for wildlife for a minimum of 10 years (Appendix 10).

4.7.2 Cooperating Agencies and Organizations

The preserve is managed in accordance with all applicable Florida Statutes and administrative rules. Agencies having a major or direct role in the management of the preserve are discussed in relevant portions of this plan. The Florida Fish and Wildlife Conservation Commission (FFWCC) may aid Conservation Collier with wildlife management programs, including the development and management of Watchable Wildlife programs. In addition to the involvement of the Marco Island Historical Society, Southwest Florida Archaeological Society, Naples Chapter of the Florida Native Plant Society, Florida Humanities Council, Calusa Garden Club, Boy Scouts, and City of Marco Island, other potential partnerships may include, but may not be limited to: surrounding residential and commercial property owner associations, the Conservancy of Southwest Florida, The Audubon Society, Florida Wildlife Federation, Collier County Schools, Collier County Sheriff's Office, Florida Division of Forestry, Florida Department of Environmental Protection, South Florida Water Management District, Big Cypress Basin, and other County Departments, as some goals and purposes will be similar.

5.0 Literature Cited

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Emmel, T. C. and A. J. Cotter. 1995. A summary of the historical distribution and current status of the Florida tree snail, *Liguss fasciatus*. Nongame Wildlife Program Project GFC-86-034 Report, Gainesville, FL.

Glowacki, M., S. Hopper, J. Miller, H. Pence, and L. Tesar. 2000. Best management practices: an owner's guide to protecting archaeological sites. Florida Department of State, Tallahassee, FL.

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Shields, M. 2002. Brown Pelican (*Pelecanus occidentalis*). The Birds of North America, No. 609 in A. Poole and F. Gill editors The Birds of North America, Inc., Philadelphia, PA.

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Wunderlin, R.P., and B.F. Hansen. 2004. Atlas of Florida vascular plants. [S.M. Landry and K.N. Campbell (application development), Floirda Center for Community Design and Research]. Institute for Systematic Botany, University of South Florida, Tampa. Available from http.//www.plantatlas.usf.edu/.

Appendix 1: First Extension Interlocal Agreement between Collier County and the City of Marco Island

INTERLOCAL AGREEMENT
OTTER MOUND PRESERVE
First Extension

THIS INTERLOCAL AGREEMENT ("Agreement") is made and entered into this 8th day of October 2013, by and between Collier County, a political subdivision of the State of Florida ("County"), and the City of Marco Island, a municipal corporation ("City").

RECITALS:

WHEREAS, Collier County Ordinance No. 02-63, authorizes the County to enter into a written mutual agreement for management arrangements and responsibilities with municipalities, for the management and maintenance of land; and

WHEREAS, the Otter Mound Preserve ("Preserve") is located within the City on Addison Court and owned by the County; and

WHEREAS, the Preserve contains historical and archaeological artifacts; and

WHEREAS, the Preserve will be open to the public and managed only for the conservation, protection and enhancement of natural and historical resources; and

WHEREAS, public outdoor recreation allowed on the Preserve will be compatible with the conservation, protection and enhancement of the Preserve and its surrounding lands; and

WHEREAS, Preserve management duties shall be the shared responsibility of the County and the City.

NOW, THEREFORE, THE PARTIES HEREBY AGREE AS FOLLOWS:

Section 1. Obligations of the Parties

A. The City's Obligations:

1. The City shall be responsible for maintaining the right of way adjacent to the Preserve. Maintenance shall include, but not be limited to, mowing the grass within the right of way as deemed necessary by City Code Enforcement personnel. Maintenance of the right of way shall not include vegetation trimming around or restoration of the historic shell wall terracing. The City shall not use any sort of weed whacking or mowing device within one foot of the historic shell wall terracing or existing trees.

2. The City shall provide routine Police patrols of the Preserve.

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RECORDED 10/15/2013 4:58 PM PAGES 3
DWIGHT E. BROCK, CLERK OF THE CIRCUIT COURT
COLLIER COUNTY FLORIDA
REC $27.00

3. The City will provide assistance and cooperation to the County when applying for future grants.

4. The City will monitor and make recommendations as needed for Wildlife Habitat Enhancement.

B. The County's Obligations:

1. The County shall be responsible for maintaining the historic shell wall terracing. Maintenance shall include, but not be limited to, vegetation trimming and vegetation removal.

2. The County will create a parking area to allow for the parking of three vehicles.

3. The County shall ensure the removal of invasive exotic vegetation from the Preserve as defined in the County Land Development Code. The County shall also ensure that the Preserve remains free of invasive exotic vegetation in perpetuity.

4. The County will maintain the Preserve in a manner that will allow for public use of the site.

5. The County will install a permanent "Otter Mound Preserve" sign.

6. The County will remove trash from the trash receptacles as necessary.

Section 2.

1. Written notice between the parties, if and when appropriate, shall be given to the parties at the following addresses or such other person or place as each party shall designate by similar notice.

As to Collier County:
Alexandra Sulecki, or current Coordinator
Conservation Collier Program
Parks and Recreation Administration Building
15000 Livingston Road
Naples, FL 34109

As to Marco Island:
Dr. James Riviere
City Manager, City of Marco Island
50 Bald Eagle Dr.
Marco Island, FL 34145

2. Each party agrees that it shall be solely responsible for its employees, contractors or agents with regard to the rights, duties, and obligations created hereby. However nothing herein shall constitute a waiver by either party of its sovereign immunity and other limitations of liability, if any, set forth in Section

CAO

768.28, Florida Statutes. There are no third party beneficiaries to this Interlocal Agreement.

3. This Agreement shall be recorded by the County in the Official Records of Collier County, Florida, within fourteen (14) days after the County enters into this Agreement. The County shall incur all costs of recording this Agreement. A copy of the recorded document will be provided to the City within fifteen (15) days of recordation.

4. The agreement shall be in effect for five years after the effective date and may be extended beyond five years by written acknowledgement of both parties.

IN WITNESS WHEREOF, the parties hereto have executed this Interlocal Agreement the day and year first above written. This agreement becomes effective on the day that it is executed by all parties.

ATTEST:
DWIGHT E. BROCK, Clerk

By: _____
Attest as to Chairman's signature only.

BOARD OF COUNTY COMMISSIONERS, COLLIER COUNTY, FLORIDA.

By: _____
Commissioner Georgia A. Hiller, Esq.
Chairwoman, District 2

Approved as to form
and legal ~~sufficiency.~~

_____
Jennifer ~~White~~ A. Belpedio
Chief Assistant County Attorney

Approved as to form
and legal sufficiency:

_____
Burt L. Saunders
Marco Island City Attorney

CITY OF MARCO ISLAND

By: _____
City Manager

June 10, 2013
G:/CDES Planning Services/ Land Development Services/Conservation Collier/Land Management/Otter Mound/Otter Mound ILA City of Marco.doc

CAO

Appendix 2: Legal Description

PROPERTY TAX IDENTIFICATION NUMBER: 25830400004

LEGAL DESCRIPTION:

A PARCEL OF LAND IN SECTION 21, TOWNSHIP 52 SOUTH, RANGE 26 EAST, COLLIER COUNTY FLORIDA BEING DESCRIBED AS FOLLOWS:

FROM A CONCRETE MONUMENT WITH A BRASS CAP MARKING THE QUARTER SECTION-CORNER ON NORTH LINE OF SAID SECTION 21, RUN SOUTH 1°-52'-49" EAST ALONG THE QUARTER-SECTION LINE OF SAID SECTION, BEING THE LINE DIVIDING GOVERNMENT LOT 2 FROM GOVERNMENT LOTS 2 AND 5 OF SAID SECTION 21 FOR 3,547.21 FEET TO A CONCRETE MONUMENT WITH A BRASS CAP SET NEAR THE SHORE OF CAXAMBAS PASS MARKING THE LOCATION OF THE FORMER "SUNKEN TERRA COTTA PIPE FILLED WITH CEMENT 60 FEET WEST OF THE J.M. BARFIELD PRESENT DOCK;" THENCE RUN NORTH 1°- 52'-49" WEST ALONG SAID QUARTER-SECTION LINE FOR 470 FEET TO A CONCRETE MONUMENT WITH A BRASS CAP; THENCE SOUTH 88°-07'–11" WEST 159.00 FEET; THENCE NORTH 1°-52'-49" WEST 135.00 FEET FOR THE PLACE OF BEGINNING OF THE PARCEL HEREIN DESCRIBED:

THENCE NORTH 1°-52'-49" WEST 160.00 FEET;
THENCE NORTH 88°-07'–11" EAST 184.50 FEET;
THENCE SOUTH 1°-52'-49" EAST 160.00 FEET;
THENCE SOUTH 88°-07'–11" WEST 184.50 FEET TO THE PLACE OF BEGINNING, BEING PART OF SECTION 21, TOWNSHIP 52 SOUTH, RANGE 26 EAST, COLLIER COUNTY, FLORIDA.

TAX IDENTIFICATION NUMBER: 21840000029, 21840000045 & 21840000061

LEGAL DESCRIPTION:

ADDISON ESTATES, LOT 1, 2, & 3, AS RECORDED IN PLAT BOOK 39, PAGE 96-97 IN THE OFFICIAL PUBLIC RECORDS OF COLLIER COUNTY, FLORIDA.

AND AS FURTHER DESCRIBED AS:

BEGINNING AT THE SOUTHWEST CORNER OF LOT 20, BLOCK 7, JAMES M. BARFIELD'S SUBDIVISION OF LOTS 2, 3, AND 5, IN SECTION 21, TOWNSHIP 52 SOUTH, RANGE 26 EAST; THENCE SOUTH 46° 30" WEST 1400 FEET TO THE SOUTHEAST CORNER OF J. L. COLLIER'S LOT; THENCE NORTH 295 FEET TO POINT OF BEGINNING OF THE LAND HEREIN DESCRIBED; THENCE NORTH 210 FEET; THENCE WEST 369 FEET; THENCE SOUTH 210 FEET TO J. L. COLLIER'S NORTH WEST CORNER; THENCE EAST 369 FEET TO POINT OF BEGINNING, ALL IN THE PUBLIC RECORDS OF COLLIER COUNTY, FLORIDA.

Appendix 3: Otter Mound Preserve Updated Final Management Plan Public Involvement Contact List

Marco Island Historical Society
180 S. Heathwood Dr.
Marco Island, F 34145
239-642-1440

City of Marco Island
www.cityofmarcoisland.com

City Manager
50 Bald Eagle Drive
Marco Island, FL 34145
Phone: 239-389-5005
Fax: 239-389-4359

– Community Affairs Director
50 Bald Eagle Drive
Marco Island, FL 34145
Phone: 239-389-5000
Fax: 239-389-4359

Nancy Richie – Environmental Specialist
50 Bald Eagle Drive
Marco Island, FL 34145
Phone: 239-389-5003
Fax: 239-393-0266

nrichie@cityofmarcoisland.com

Southwest Florida Archaeological Society

P.O. Box 9965
Naples, FL 34101

Archaeological and Historical Conservancy, Inc.
Robert Carr
Davie Professional Plaza
4800 Davie Road, Suite 107
Davie, FL 33314
(954) 792-9776
archlgcl@bellsouth.net

Marco Island, FL 34145

John Beriault – Local Archaeologist
PO Box 9074
Naples, FL 34101
239-641-4919
JGBeriault@aol.com

Native Plant Society, Naples Chapter
Chad Washburn, Naples Botanical Gardens
naplesnativeplants@gmail.com

Neighbors
Jim and June Dyches
P.O. Box 1213
Marco Island, FL 34146

Michael and Brandice Simpson
1016 E. Inlet Dr.
Marco Island, FL 34145

Neighbors Cont'd

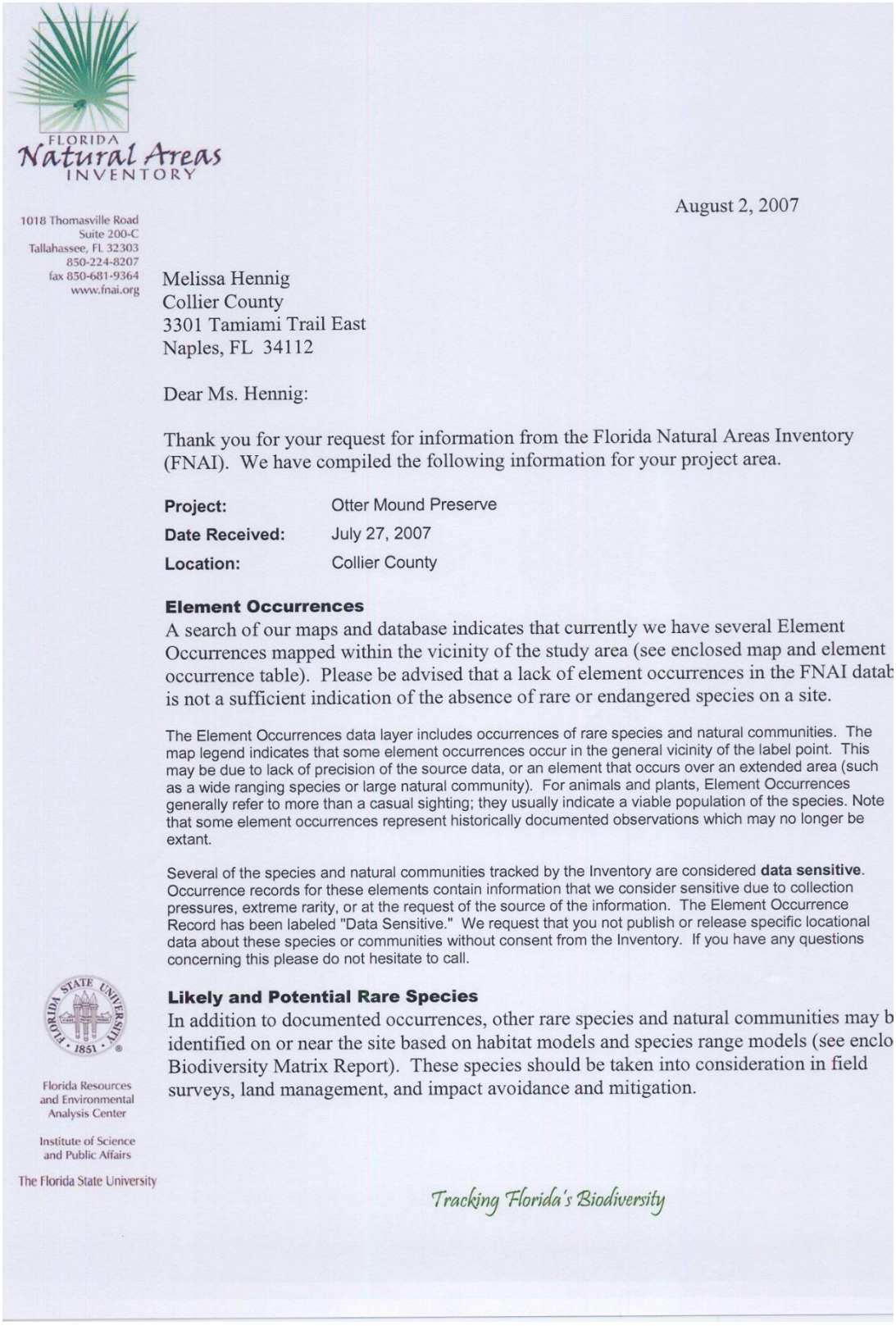
Mr. and Mrs. Albino Martinez
975 Leo Ct.
Marco Island, FL 34145

Raymond & Patricia Yodlow
1851 Addison Ct.
Marco Island, FL 34145

Heidi Becker
1026 Inlet Dr.
Sessions Family Partners LTD
Mailing Address:11660 German Church Rd.
Burr Ridge, IL 60527
Site Address: 1821 Osceola Ct.

William and Joan Davenport
Mailing Address: 92 Birch Pkwy.
Sparta, NJ 07871
Site Address: 1011 Inlet Dr.
Marco Island, FL 34145

Appendix 4: Florida Natural Areas Inventory (FNAI) Managed Area Tracking Record and Element Occurrence Summary; FNAI Ranking System Explanation



FLORIDA Natural Areas INVENTORY

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

August 2, 2007

Melissa Hennig
Collier County
3301 Tamiami Trail East
Naples, FL 34112

Dear Ms. Hennig:

Thank you for your request for information from the Florida Natural Areas Inventory (FNAI). We have compiled the following information for your project area.

Project: Otter Mound Preserve
Date Received: July 27, 2007
Location: Collier County

Element Occurrences

A search of our maps and database indicates that currently we have several Element Occurrences mapped within the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI datab is not a sufficient indication of the absence of rare or endangered species on a site.

The Element Occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, Element Occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant.

Several of the species and natural communities tracked by the Inventory are considered **data sensitive**. Occurrence records for these elements contain information that we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may b identified on or near the site based on habitat models and species range models (see enclo Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

Florida Resources and Environmental Analysis Center
Institute of Science and Public Affairs
The Florida State University

Tracking Florida's Biodiversity

FNAI habitat models indicate areas, which based on landcover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the most rare species tracked by the Inventory, including all federally listed species.

FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

Managed Areas

Portions of the site appear to be located within the Otter Mound Preserve, managed by Collier County.

The Managed Areas data layer shows public and privately managed conservation lands throughout the state. Federal, state, local, and privately managed conservation lands are included.

The Inventory always recommends that professionals familiar with Florida's flora and fauna should conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. FNAI data may not be resold for profit.

Thank you for your use of FNAI services. If I can be of further assistance, please give me a call at (850) 224-8207.

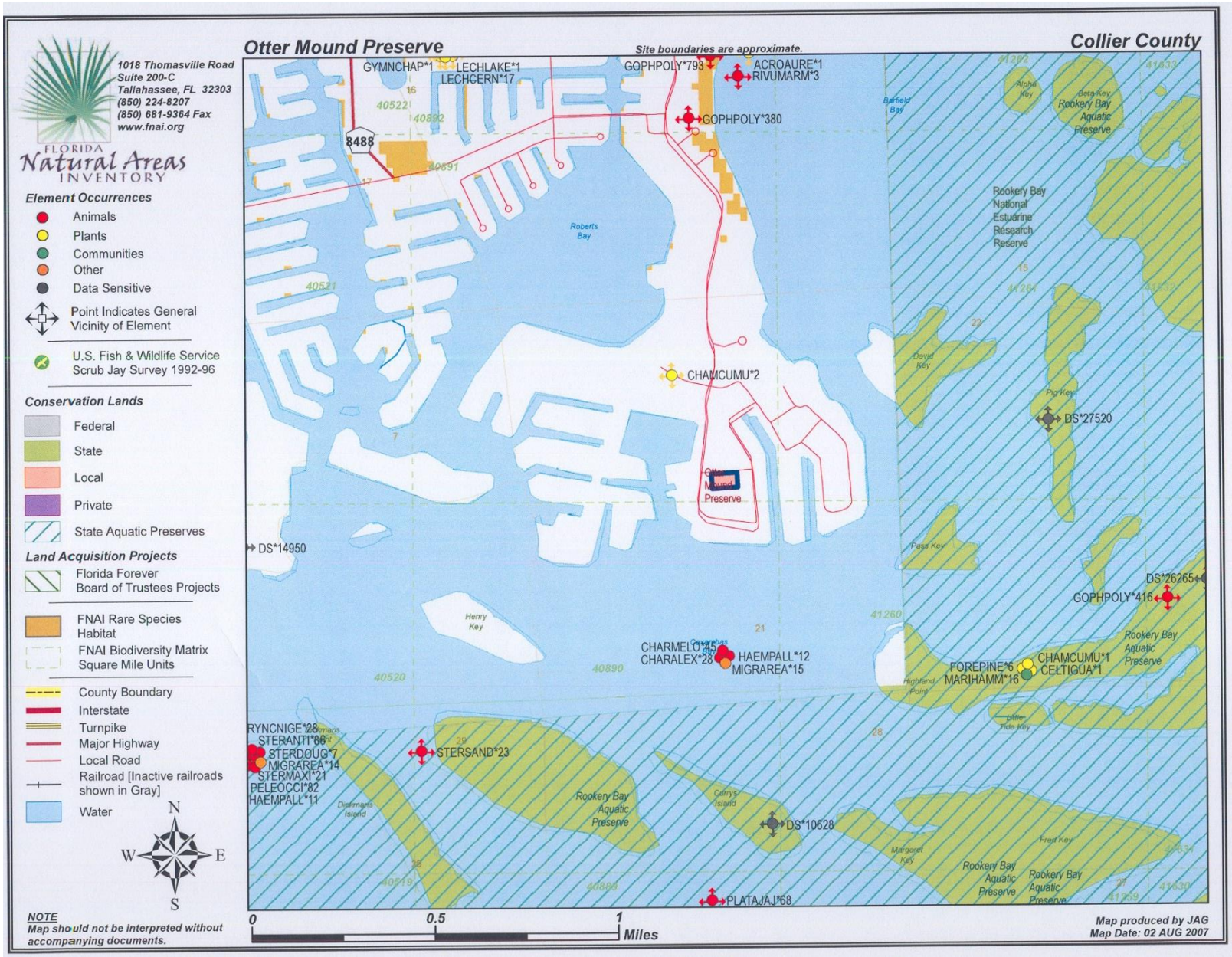
Sincerely,

Jason A. Griffin

Jason A. Griffin
Data Services Coordinator

encl

Tracking Florida's Biodiversity


Otter Mound Preserve
Collier County
Site boundaries are approximate.
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FLORIDA Natural Areas INVENTORY
Element Occurrences
Animals
Plants
Communities
Other
Data Sensitive
Point Indicates General Vicinity of Element
U.S. Fish & Wildlife Service Scrub Jay Survey 1992-96
Conservation Lands
Federal
State
Local
Private
State Aquatic Preserves
Land Acquisition Projects
Florida Forever Board of Trustees Projects
FNAI Rare Species Habitat
FNAI Biodiversity Matrix Square Mile Units
County Boundary
Interstate
Turnpike
Major Highway
Local Road
Railroad [Inactive railroads shown in Gray]
Water
N
W
E
S
NOTE
Map should not be interpreted without accompanying documents.
GYMNCHAP*1
LECHLAKE*1
LECHCERN*17
GOPHPOLY*793
ACROAURE*1
RIVUMARM*3
GOPHPOLY*380
8488
CHAMCUMU*2
DS*27520
DS*14950
DS*26265
GOPHPOLY*416
CHARMELO*45
CHARALEX*28
HAEMPALL*12
MIGRAREA*15
FOREPINE*6
MARIHAMM*16
CHAMCUMU*1
CELTIGUA*1
RYNCNIGE*28
STERANTI*86
STERDOUG*7
MIGRAREA*14
STERMAXI*21
PELEOCCI*82
HAEMPALL*11
STERSAND*23
DS*10628
PLATAJAJ*68
Roberts Bay
Rookery Bay National Estuarine Research Reserve
Rookery Bay Aquatic Preserve
Barfield Bay
Alpha Key
Beta Key
David Key
Pig Key
Pass Key
Henry Key
Highland Point
Little Tide Key
Fred Key
Margaret Key
Currys Island
Dismans Island
0
0.5
1
Miles
Map produced by JAG
Map Date: 02 AUG 2007

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FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

ELEMENT OCCURRENCES DOCUMENTED ON OR NEAR *PROJECT SITE*

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
LECHCERN*17	Lechea cernua	Nodding Pinweed	G3	S3	N	LT	1969-12-30	WHITE SAND, OAK SCRUB WITH PINE OVERHEAD NEAR SCHOOLHOUSE TO COASTAL STRAND, CERATIOLA-QUERCUS SCRUB TO SCRUB-SPARSE VEGETATION.	1969-12-30: STERILE; 1967-08-07: FLOWERING; 1964-11- 24: PAST FRUITING WITH BASAL SHOOT; 1959-12-27: STERILE WITH NEW SHOOTS; 1959-09-06: FRUITING/FLOWERING.
GYMNCHAP*1	Gymnopogon chapmanianus	Chapman's Skeletongrass	G3	S3	N	N	1967-10-22	PARTLY CLEARED MARGIN OF PINUS-CERATIOLA SCRUB, WHITE SAND, SOIL VERY DRY.	1967-10-22: PLANTS ABUNDANT. 1964-09-27: WITH POLYGONELLA AND CHRYSOPSIS.
LECHLAKE*1	Lechea lakelae	Lakela's Pinweed	GH	SH	N	LE	1968-07-30	COASTAL STRAND, PINUS ELLIOTTII ASSOCIATION; MOIST LEVEL GRASY AREA, HIGHER BEACH OF RECENTLY MADE LAKE W/ PINES OVERHEAD; WITH INDIGOFERA, POLYGONELLA IN CERATIOLA-QUERCUS SCRUB.	FRUITING: 1968-07-30, 1967-08-07, 1964-09-27.
MIGRAREA*15	Migratory Bird Concentration Area		GNR	SNR	N	N	1992	TIDAL AREA.	CONCENTRATED SHOREBIRD FEEDING AREA; GOOD FOR AMERICAN OYSTERCATCHERS. OTHER SPECIES THAT USE SITE INCLUDE BLACK-BELLIED PLOVER, SNOWY PLOVER, WILSONS PLOVER, SEMIPALMATED PLOVER, PIPING PLOVER, AMERICAN AVOCET, GREATER YELLOWLEGS, LESSER YELLOWLEGS, WIL
DS*10628	Data Sensitive Element	Data Sensitive	G3	S2	N	N	1999	Data Sensitive	Data Sensitive
HAEMPALL*12	Haematopus palliatus	American Oystercatcher	G5	S2	N	LS	1992	TIDAL AREA.	FEEDING AREA. GOOD SITE FOR SPECIES.
CHARMELO*45	Charadrius melodus	Piping Plover	G3	S2	LT	LT	1992	TIDAL AREA.	FEEDING AREA.
CHARALEX*28	Charadrius alexandrinus	Snowy Plover	G4	S1	N	LT	1992	TIDAL AREA.	FEEDING AREA.
MARIHAMM*16	Maritime hammock		G3	S2	N	N	1999	"HIGH SAND & SHELL RIDGE". WAS PINEAPPLE PLANTATION. REMAINS OF OLD HOUSES STILL PRESENT F87JOH03.	1999: Update to last obs date was based on interpretation of aerial photography (previous value was 1987-05-06) (U05FNA02FLUS). PLANT LIST IN U77AVE02, BUT NO INDIC. WHICH PLANTS AREIN WHICH NC. F87JOH03: CANOPY (25') OF REDBAY (PERSEA BORBONIA) STRANGLE

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ELEMENT OCCURRENCES DOCUMENTED ON OR NEAR *PROJECT SITE*

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
DS*27520	Data Sensitive Element	Data Sensitive	G3	S2	N	N	1999	Data Sensitive	Data Sensitive
RIVUMARM*3	Rivulus marmoratus	Mangrove Rivulus	G3	S3	C	LS	1987-01-05	No general description given	1987: Dogwood: 24 individuals, average of 1.04 fish per trap; 1987: April Court: 171 individuals caught, average of 7.43 individuals per trap; 1986: Dogwood: 26 individuals, average of 1.18 fish per trap; 1986: April Court: 17
CHAMCUMU*2	Chamaesyce cumulicola	Sand-dune Spurge	G2	S2	N	LE	1967-07-01	HIGH SANDY RIDGES/DUNES WITH EITHER LIVE OAK/PERSEA OR SCRUB.	1967-07-01: FLOWERING/FRUITING; 1965-11-13: FLOWERING/FRUITING; 1965-05-01: FLOWERING/FRUITING; 1965-03-19: LOCALLY COMMON WITH LIVE OAK/PERSEA; 1964-10-26: PROSTRATE, FREQUENT IN OLD STABILIZED SAND DUNES, FLOWERING/FRUITING.
GOPHPOLY*793	Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS	1987-07-21	SCRUB. NO SANDPINES. TALL (3 M) OAKS, QUERCUS GEMINATA. BUMELIA, OPUNTIA, VITRIS, CASSIA OCCIDENTALIS, PERSEA-SIL BAY (?), SMILAX, GOPHER APPLE, ASCLEPIAS TOMENTOSA, ERYGIUM, WHITE STINKY PEA.	MINNO OBSERVED 4 LARGE BURROWS (2 OF WHICH CONTAINED TORTOISES), 1 MEDIUM BURROW AND 1 SMALL BURROW.
STERSAND*23	Sterna sandvicensis	Sandwich Tern	G5	S2	N	N	1990-05-11	Consolidated substrate	1990: M.S. Robson, GFC, observed 1 adult on 5/11 and 1 on 4/26.
DS*14950	Data Sensitive Element	Data Sensitive	G5	S3	N	LT	1966-08-31	Data Sensitive	Data Sensitive
PLATAJAJ*68	Platalea ajaja	Roseate Spoonbill	G5	S2	N	LS	1989-07-27	exposed tidal flat	1989-07-27: M.S. Robson, GFC, observed 3 adults on exposed tidal flat with many other birds.
GOPHPOLY*380	Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS	1990-02-19	Low density urban development	1990-02-19: M.S. Robson, GFC, observation. A number of tortoises was reported.
GOPHPOLY*416	Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS	1988-04-25	60% OF ISLAND SURVEYED-BURROWS FOUND IN DISTURBED SECOND GROWTH, LOW OAK SCRUB, AND INTERMEDIATE SLOPE COMMUNITIES.	106 ACTIVE AND 84 INACTIVE BURROWS FOUND; "A RELOCATION PLAN AS PER THE PUD, FOR TORTOISES IN THE PATH OF INFRASTRUCTURE AND BUILDINGS WILL BE DEVELOPED AND IMPLEMENTED"; P. 18.

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Florida Natural Areas Inventory

ELEMENT OCCURRENCES DOCUMENTED ON OR NEAR *PROJECT SITE*

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
ACROAURE*1	Acrostichum aureum	Golden Leather Fern	G5	S3	N	LT	1965-10-22	1965-10-22: saline soil at edge of buttonwood swamp (S65WARUFFLUS).	1965-10-22: frequent at site; specimen with fertile fronds (S65WARUFFLUS).
DS*26265	Data Sensitive Element	Data Sensitive	G5	S3	N	LE	1977-03-06	Data Sensitive	Data Sensitive
CELTIGUA*1	Celtis iguanaea	Iguana Hackberry	G5	S1	N	LE	1970-09-03	2000-10-03: DEVELOPED RESIDENTIAL AREA (PNDCOI01FLUS). 1970: MARITIME HAMMOCK; HIGH SAND AND SHELL RIDGE (PNDBER01FLUS).	2000-10-03: NO PLANTS OBSERVED; AREA HAS BEEN CONVERTED TO A GATED COMMUNITY (PNDCOI01FLUS). 1970-09-03: PLANTS STERILE (PNDBER01FLUS).
CHAMCUMU*1	Chamaesyce cumulicola	Sand-dune Spurge	G2	S2	N	LE	1970-09-03	MARITIME HAMMOCK; HIGH SAND AND SHELL RIDGE	OCCURRENCE AT SITE
FOREPINE*6	Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N	1970-09-03	MARITIME HAMMOCK; HIGH SAND AND SHELL RIDGE	OCCURRENCE AT SITE
RYNCNIGE*28	Rynchops niger	Black Skimmer	G5	S3	N	LS	1992	TIDAL AREA.	FEEDING SITE AUGUST-MAY.
STERANTI*86	Sterna antillarum	Least Tern	G4	S3	N	LT	1992	TIDAL AREA.	FEEDING SITE AUGUST-MAY.
STERMAXI*21	Sterna maxima	Royal Tern	G5	S3	N	N	1992	TIDAL AREA.	FEEDING SITE AUGUST-MAY.
STERDOUG*7	Sterna dougallii	Roseate Tern	G4	S1	LT	LT	1992	TIDAL AREA.	FEEDING SITE AUGUST-MAY.
PELEOCCI*82	Pelecanus occidentalis	Brown Pelican	G4	S3	N	LS	1992	TIDAL AREA.	FEEDING SITE AUGUST-MAY.
MIGRAREA*14	Migratory Bird Concentration Area		GNR	SNR	N	N	1992	TIDAL AREA.	FEEDING SITE. UP TO 10,000 BIRDS SEEN IN WINTER (AUG.-MAY). SPECIES INCLUDE SANDERLING, SHORT-BILLED DOWITCHER, WESTERN SANDPIPER, RED KNOT, AMERICAN OYSTERCATCHER, BLACK-BELLIED PLOVER, SEMIPALMATED PLOVER, DUNLIN, RUDDY TURNSTONE, MARBLED GODWIT, WILLE
HAEMPALL*11	Haematopus palliatus	American Oystercatcher	G5	S2	N	LS	1992	TIDAL AREA.	FEEDING SITE AUGUST-MAY.

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FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Matrix Unit ID: 40891

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Likely					
Acrostichum aureum	Golden Leather Fern	G5	S3	N	LT
Chamaesyce cumulicola	Sand-dune Spurge	G2	S2	N	LE
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS
Haliaeetus leucocephalus	Bald Eagle	G5	S3	LT,PDL	LT
Rivulus marmoratus	Mangrove Rivulus	G3	S3	C	LS
Potential from any/all selected units					
Acipenser oxyrinchus desotoi	Gulf Sturgeon	G3T2	S2	LT	LS
Ardea herodias occidentalis	Great White Heron	G5T2	S2	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	LS
Charadrius melodus	Piping Plover	G3	S2	LT	LT
Crocodylus acutus	American Crocodile	G2	S2	LT	LE
Dendroica discolor paludicola	Florida Prairie Warbler	G5T3	S3	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	LT
Eragrostis pectinacea var. tracyi	Sanibel Lovegrass	G5T1	S1	N	LE
Eretmochelys imbricata	Hawksbill	G3	S1	LE	LE
Eumops floridanus	Florida bonneted bat	G1	S1	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gymnopogon chapmanianus	Chapman's Skeletongrass	G3	S3	N	N
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Carter's Large-flowered Flax	G2T2	S2	N	LE
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3	S3	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Patagioenas leucocephala	White-crowned Pigeon	G3	S3	N	LT
Polyrrhiza lindenii	Ghost Orchid	G2G4	S2	N	LE
Pteroglossaspis ecristata	Giant Orchid	G2G3	S2	N	LT
Rallus longirostris scottii	Florida Clapper Rail	G5T3?	S3?	N	N
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T3C	S2	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Sceloporus woodi	Florida Scrub Lizard	G3	S3	N	N
Sterna dougallii	Roseate Tern	G4	S1	LT	LT
Trichechus manatus	Manatee	G2	S2	LE	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	LT*

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

SPINY HACKBERRY

Celtis pallida Torr.
Synonyms: *Momisia pallida* (Torr.) Planch. ex Small
Celtis spinosa Spreng. var. *pallida* (Torr.) M. C. Johnst.
Family: Ulmaceae (elm)
FNAI Ranks: G4/S1
Legal Status: US–none FL–Endangered
Wetland Status: US–UPL FL–UPL

Dick Workman

Field Description: Shrub to 9 feet tall with pale, spreading branches. **Leaves** usually less than 1 inch long, alternate, simple, oval, somewhat fleshy, upper surfaces rough, leaf tips rounded, leaf margins entire to shallowly toothed; leaf nodes armed with straight, stout **spines** up to 1 inch long. **Flowers** white, inconspicuous, in small clusters in the angle of leaf and stems. **Fruit** small, round, yellow or orange.

Similar and Related Rare Species (drawing, bottom): Iguana hackberry

Spiny hackberry *Celtis pallid*

Habitat: Both species grow on shell mounds and middens in tropical coastal hammocks.

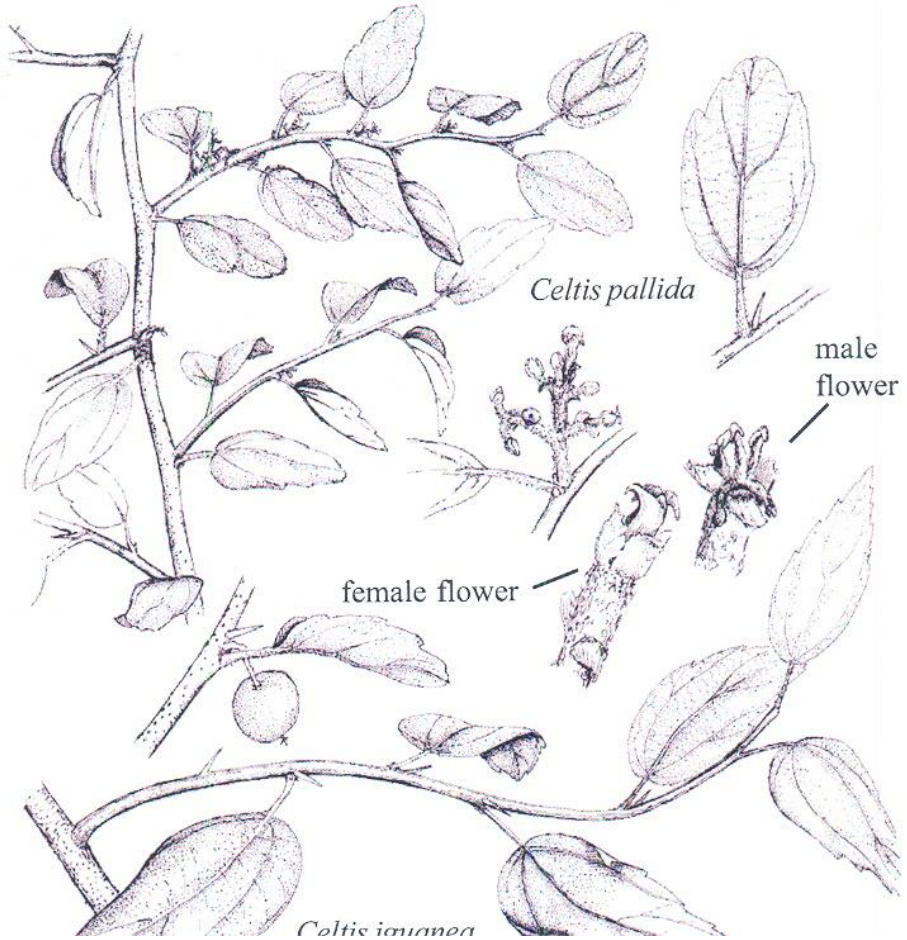
Best Survey Season: Both species flower in summer and fruit in fall; leaves and spines are distinctive all year.

Range-wide Distribution: Spiny hackberry: FL, TX, NM, AZ, northern Mexico. Iguana hackberry: Collier and Lee counties, FL; West Indies, Central and South America.

Conservation Status: Development and shell mining for fill have destroyed most of these species' habitat. Both species are known from only 3 preserves in SW FL.

Protection & Management: Monitor known populations. Protect shell mounds from mining and development.

References: Coile 2000, Correll and Correll 1982, D'arcy 1987, IRC 1999, Nelson 1996, Ward 1979, Wunderlin 1982, Wunderlin 1998, Wunderlin and Hansen 2000a.



GOPHER TORTOISE
Gopherus polyphemus

Order: Testudines
Family: Testudinidae
FNAI Ranks: G3/S3
U.S. Status: None in Florida; Threatened in Louisiana, Mississippi, and western Alabama
FL Status: Species of Special Concern

Florida prohibits take, possession, sale, or purchase of tortoises or their parts except by permit.

© Dan Hipes

juvenile
© Dan Hipes

Description: A medium-sized turtle (to 10 in. = 254 mm) fully adapted for life on land. Upper shell brown and relatively flat above; lower shell yellowish, without hinge, and projecting forward, especially in male; skin brown to dark gray. Forelimbs greatly expanded for digging; hind limbs reduced, stumpy, lacking any form of webbing between toes. Lower shell of male somewhat concave. Young: scales of carapace often with yellow centers, skin yellowish to tan; approximately 2 in. (51 mm) shell length at hatching.

203 mm), less stout feet, moveable hinge on lower shell, and often but not always by black and yellow upper shell. Tortoise burrows, which are useful in determining species' presence, typically have lower, flatter profile than more rounded burrows of armadillos; this reflects differences in cross-sectional shapes of the two animals.

Habitat: Typically found in dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; also commonly uses disturbed habitats such as pastures, oldfields, and road shoulders. Tortoises excavate deep burrows for refuge from predators, weather, and fire; more than 300 other species of animals have been recorded sharing these burrows.

Seasonal Occurrence: Above-ground activity is greatly reduced during cold weather, with tortoises in northern Florida remaining below ground for months. Nonetheless, burrows are relatively conspicuous year-round.

Florida Distribution: State-wide except absent from the Everglades and Keys.

Range-wide Distribution: Lower Southeastern Coastal Plain, extending from southern South Carolina southward through lower Georgia and Florida and westward through southern Alabama, Mississippi, and extreme southeastern Louisiana.

Conservation Status: Despite its widespread occurrence throughout Florida, there is considerable concern about the declining abundance of this species. Much of its native habitat has been lost to agriculture, citriculture, forestry, mining, and urban and residential development. Although protected populations occur on many state, federal, and private conservation lands, recent development of a severe respiratory disease threatens even those.

Protection and Management: Manage large, undivided tracts of upland habitat to maintain native vegetative conditions; this generally requires periodic prescribed fire beneath trees to reduce brush and favor growth of grasses and forbs. Avoid building roads and houses in xeric uplands. Because of risk of introducing tortoises infected with respiratory disease to uncontaminated populations, tortoises should not be relocated except

Appendix 6: 2022 Otter Mound Plant List

Feb/Aug 2007 Burch Survey	Jul/Nov 2011 Burch Survey	Sep 2020 Barry Survey	Planted by Conservation Collier	2006 Plantings	2009 Plantings	2011 Plantings (East Boundary)	2013 Plantings (East Boundary)	Jan 2020 Plantings	March 2020 Plantings	June 2022 Plantings	Scientific Name (prior name)	Common Names	Native	Not Native	State	FNAI	FLEPPC
x	x										*Agave decipiens*	False-sisal	N				
x	x	x									*Alternanthera flavescens (=A. ramoisissima)*	Yellow joyweed	N				
x	x	x	Y							5	*Ardisia escallonioides*	Marlberry	N				
x	x	x									*Argemone mexicana*	Mexican pricklypoppy	N				
		x									*Asemeia violacea (=Polygala grandiflora, P. violacea)*	Candyweed, Showy milkwort	N				
x	x	x									*Bidens alba*	Spanish-needles	N				
x		x									*Boerhavia diffusa*	Red spiderling, wineflower	N				
x	x	x	Y	3	1						*Bursera simaruba*	Gumbo-limbo	N				
	x		Y					5	5		*Callicarpa americana*	Beautyberry	N				
x	x										*Capraria biflora*	Goatweed	N				
x	x										*Capsicum frutescens*	Tabasco pepper	N				
x											*Cardiospermum microcarpum*	Balloonvine, Heartseed	N				
x	x	x									*Carica papaya*	Papaya	N				

x											*Cenchrus echinatus*	Southern sandbur	N				
x	x	x	Y	9	9						*Chiococca alba*	Common snowberry, Milkberry	N				
x	x	x	Y	16						1	*Chrysophyllum oliviforme*	Satinleaf	N		T		
x	x	x	Y	10	5					5	*Citharexylum spinosum (=C. fruticosum)*	Florida fiddlewood	N				
	x	x	Y		41	7				5	*Coccoloba diversifolia*	Pigeonplum, Tietongue	N				
x	x	x	Y	5	7		3	10		5	*Coccoloba uvifera*	Seagrape	N				
x	x										*Conyza canadensis*	Canadian horseweed	N				
		x									*Crotalaria pallida* var. *obovata*	Smooth rattlebox	N				
x	x	x	Y	3	13						*Cynophalla flexuosa (=Capparis flexuosa)*	Limber caper, Bayleaf capertree	N				
x		x									*Cyperus ligularis*	Swamp flatsedge	N				
		x									*Cyperus ovatus (=C. retrorsus)*	Pinebarren flatsedge	N				
x											*Dichanthelium commutatum*	Variable witchgrass	N				
	x										*Dichanthelium* sp.	witchgrass	N				
		x									*Digitaria ciliaris*	Southern crabgrass	N				
		x									*Eclipta prostrata*	False daisy	N				
x	x	x	Y	11						5	*Erythrina herbacea*	Coralbean, Cherokee bean	N				
x	x	x	Y		36					5	*Eugenia axillaris*	White stopper	N				
x	x	x	Y	9	35					5	*Eugenia foetida*	Spanish stopper	N				
	x	x	Y	2		7					*Eugenia rhombea*	red stopper	N		E	S1	
x	x	x									*Euphorbia cyathophora (=Poinsettia cyathophora)*	Painted leaf, Fire-on-the-mountain	N				
		x									*Euphorbia heterophylla (=Poinsettia heterophylla)*	Fiddler's spurge, Mexican fireplant	N				

x	x	x									*Euphorbia hirta (=Chamaesyce hirta)*	Hairy spurge, Pillpod sandmat	N				
x	x	x									*Euphorbia hypericifolia (=Chamaesyce hypericifolia)*	Eyebane, Graceful sandmat	N				
		x									*Eustachys petraea*	Pinewoods fingergrass	N				
x	x	x	Y	5				8		5	*Ficus aurea*	Strangler fig, Golden fig	N				
	x	x									*Ficus benjamina*	Weeping fig	N				
x	x	x	Y	15	10				7	5	*Forestiera segregata*	Florida swampprivet	N				
x	x	x									*Galactia regularis*	Eastern milkpea	N				
	x	x									*Galactia striata*	Florida hammock milkpea	N				
x	x	x									*Galactia volubilis*	Downy milkpea	N				
x	x	x	Y	10	23	7	3				*Hamelia patens*	Firebush	N				
x		x	Y					40	45		*Helianthus debilis*	East Coast dune sunflower	N				
x	x	x	Y	25	60						*Heliotropium angiospermum*	Scorpionstail	N				
x											*Herissantia crispa*	Bladdermallow	N				
x	x										*Hymenocallis latifolia*	Mangrove spiderlily, Perfumed spiderlily	N				
		x									*Ipomoea alba*	Moonflower; Tropical white morning-glory	N				
x	x										*Ipomoea cordatotriloba (=Ipomoea trichocarpa)*	Tievine	N				
x	x	x									*Ipomoea indica* var. *acuminata*	Ocean-blue morningglory	N				
	x	x									*Lasiacis divaricata*	Smallcane, Florida tibisee,	N				

												Wild-bamboo					
x	x	x									*Lepidium virginicum*	Virginia pepperweed	N				
x	x		Y	6	10						*Lysiloma latisiliquum*	Wild-tamarind, False tamarind	N				
		X									*Malvastrum corchorifolium*	False mallow	N				
x	x	x									*Melanthera nivea*	Snow squareste m	N				
x	x	x									*Melothria pendula*	Creeping-cucumber	N				
x	x	x									*Mentzelia floridana*	Poorman's-patch, Stickleaf	N				
			Y					10			*Mimosa strigillosa*	Sunshine mimosa	N				
			Y						10		*Monarda punctata*	Spotted Beebalm; Horsemint	N				
x	x	x									*Morinda royoc*	Redgal, Mouse's pineapple	N				
x	x	x									*Morus rubra*	Red mulberry	N				
x	x	x	Y	9	22					5	*Myrcianthes fragrans*	Twinberry, Simpson's stopper	N		T		
		x									*Myriopus volubilis (=Tournefortia volubilis)*	Twining soldierbush	N				
x	x	x									*Nekemias arborea (=Ampelopsis arborea)*	Peppervine	N				
	x										*Orthosia scoparia (=Cynanchum scoparium)*	Leafless swallowwor t	N				
x	x	x									*Oxalis corniculata*	Common yellow woodsorrel	N				
x		x									*Parietaria floridana*	Florida pellitory	N				
x	x	x									*Parthenocissus quinquefolia*	Virginia-creeper, Woodbine	N				
x	x	x	Y	13				3			*Passiflora suberosa*	Corkystem passionflower	N				

		x									*Pattalias palustre (=Cynanchum angustifolium)*	Vine milkweed, Gulf Coast swallowwort	N				
x		x									*Pedilanthus tithymaloides subsp. smallii (=Euphorbia tithymaloides subsp. smallii)*	Jacob's ladder, Devil's backbone	N				
x	x	x									*Petiveria alliacea*	Guinea hen weed	N				
x	x										*Phlebodium aureum*	Golden polypody	N				
x	x	x									*Physalis angulata*	Cutleaf groundcherry	N				
		x									*Physalis angustifolia*	Coastal groundcherry	N				
x											*Physalis arenicola*	Cypresshead groundcherry	N				
x	x										*Phytolacca americana*	American pokeweed	N				
x	x	x	Y	2							*Piscidia piscipula*	Jamaica-dogwood, Florida fishpoison tree	N				
x	x	x									*Pisonia aculeata*	Devil's claws, Pullback	N				
x	x		Y	7							*Pithecellobium keyense*	Florida Keys blackbead	N		T		
x	x	x								5	*Pithecellobium unguis-cati*	Cat's-claw, Catclaw blackbead	N				
x	x	x									*Portulaca oleracea*	Purslane, Little hogweed	N				
		x									*Portulaca pilosa*	Pink purslane, Kiss-me-quick	N				
x	x	x	Y	50	13			20			*Psychotria nervosa*	Shiny-leaved wild coffee	N				
		x	Y					10			*Psychotria tenuifolia (=Psychotria sulzneri)*	Shortleaf wild coffee	N				

x	x	x	Y	3	15		2	3		5	*Quadrella jamaicensis(= Capparis jamaicensis)*	Jamaican capertree	N				
x											*Quercus virginiana*	Virginia live oak	N				
x	x	x	Y	9	16						*Randia aculeata*	White indigoberry	N				
x	x	x	Y	21	12						*Rivina humilis*	Rougeplant	N				
	x										*Roystonea regia*	Royal palm	N		E	S2	
x	x	x									*Sabal palmetto*	Cabbage palm	N				
x		x							30		*Salvia coccinea*	Tropical sage, Blood sage	N				
x	x	x	Y	10							*Sapindus saponaria*	Soapberry	N				
	x	x	Y					5			*Senna ligustrina*	Privet wild sensitive plant	N				
x											*Senna obtusifolia*	Sicklepod, Coffeeweed	N				
x											*Setaria magna*	Giant bristlegrass	N				
	x										*Setaria parviflora (=Setaria geniculata)*	Knotroot foxtail, Yellow bristlegrass	N				
x	x	x									*Sida ulmifolia (=Sida acuta, S. antillensis)*	Common wireweed, Common fanpetals	N				
x	x	x	Y	2							*Sideroxylon foetidissimum (=Mastichodendron foetidissimum)*	Mastic	N				
x	x	x	Y	4	14						*Simarouba glauca*	Paradisetree	N				
		x									*Spermacoce remota (=Spermacoce assurgens)*	Woodland false buttonweed	N				
x											*Spigelia anthelmia*	West Indian pinkroot	N				
x											*Sporobolus virginicus*	Seashore dropseed	N				
x	x	x	Y	50				20			*Stachytarpheta jamaicensis*	Porterweed	N				

?	x									5	*Thrinax radiata*	Florida thatch palm	N		E	S2	
x	x										*Tillandsia fasciculata*	Stiff-leaved wild-pine, Cardinal airplant	N		T		
	x										*Tillandsia recurvata*	Ball-moss	N				
x											*Tillandsia usneoides*	Spanish-moss	N				
	x										*Tillandsia utriculata*	Giant wild-pine, Giant airplant	N		E		
	x	x									*Trichostigma octandrum*	Hoopvine	N		E	S1	
x			Y	7	40					5	*Vachellia farnesiana (=Acacia farnesiana)*	Sweet acacia	N				
	x	x									*Vachellia pinetorum (=Acacia pinetorum)*	Pineland acacia	N				
x	x	x	Y	2							*Varronia globosa (=Cordia globosa)*	Curacao bush	N				
x	x	x									*Verbesina virginica*	Frostweed, White crownbeard	N				
			Y	3							*Viburnum obovatum*	Walter's Viburnum	N				
x		x									*Vitis rotundifolia*	Muscadine, Muscadine grape	N				
x											*Waltheria indica*	Sleepy morning	N				
			Y	2							*Ximenia americana*	Hog plum	N				
	x										*Yucca aloifolia*	Spanish bayonet, Aloe yucca	N				
x	x	x	Y	8						5	*Zanthoxylum fagara*	Wild-lime, Lime prickly-ash	N				
		x	Y					8			*Gaillardia pulchella*	Indian blanket, Firewheel	N?				
x	x	x									*Acalypha wilkesiana*	Wilkes' copperleaf		√			
x	x										*Acanthocereus tetragonus (=Cereus*	Barbed-wire cactus,			T		

											tetragonus, C. pentagonus)	Dildoe cactus					
x	x										*Aloe vera*	Aloe		√			
x	x										*Amaranthus blitum*	Purple amaranth		√			
	x										*Anredera vesicaria*	Texas madeiravine		√			
x	x	x									*Antigonon leptopus*	Coral vine, Queen's jewels		√			II
x											*Asclepias curassavica*	Scarlet milkweed, Bloodflower		√			
x	x										*Bauhinia* sp.	Orchid tree		√			
	x	x									*Bromelia pinguin*	Pinguin		√			
			Y		25						*Capsicum annuum*	Bird pepper					
x	x	x									*Catharanthus roseus*	Madagascar-periwinkle		√			
	x										*Cenchrus purpureus (=Pennisetum purpureum)*	Elephantgrass, Napier grass		√			I
		x									*Cereus peruvianus*	Peruvian cereus		√			
	x	x									*Cereus* sp.	Columnar cactus		√			
x	x										*Citrus x aurantifolia*	Key lime		√			
x	x	x									*Cocos nucifera*	Coconut palm		√			II
x	x	x									*Commelina diffusa*	Common dayflower		√			
x	x										*Crinum asiaticum*	Poison bulb		√			
	x										*Crotalaria incana*	Rattlesnake weed, Shakeshake		√			
		x									*Crotalaria spectabilis*	Showy rattlebox		√			
x		x									*Cupaniopsis anacardioides*	Carrotwood		√			I
		x									*Cyperus rotundus*	Nutgrass		√			
x	x										*Cyperus* sp.	Sedge		√			
x											*Dactyloctenium aegyptium*	Crow's-foot grass		√			II

x	x	x									*Delonix regia*	Royal poinciana, Flamboyant		√			
	x										*Desmodium incanum*	Beggar's-ticks		√			
		x									*Desmodium tortuosum*	Dixie ticktrefoil		√			
		x									*Digitaria bicornis*	Asia crabgrass		√			
x	x	x									*Dioscorea bulbifera*	Air potato		√			I
x	x	x									*Dracaena hyacinthoides (=Sansevieria hyacinthoides)*	Mother-in-law's tonge		√			II
		x									*Dracaena reflexa*	Song of Jamaica		√			
x	x	x									*Eugenia uniflora*	Surinam-cherry		√			I
		x									*Eulophia graminea*	Grass-leaved orchid		√			II
x											*Euphorbia* sp. (=*Poinsettia* sp.)	Poinsettia					
x	x	x									*Euphorbia tirucalli*	Pencil cactus, Indian tree spurge		√			
		x									*Indigofera spicata*	Trailing indigo		√			
x		x									*Kalanchoe pinnata*	Life plant, Cathedral bells		√			II
x	x	x	Y		2						*Lantana involucrata*	Wild-sage, Buttonsage					
x		x									*Lantana strigocamara (=L. camara)*	Shrubverbena		√			I
x	x	x									*Leucaena leucocephala*	White leadtree		√			II
x	x	x									*Mangifera indica*	Mango		√			
x		x									*Melia azedarach*	Chinaberry		√			II
x	x										*Meliins repens (=Rhynchelytrum repens)*	Rose Natalgrass		√			I
x	x	x									*Momordica charantia*	Balsampear		√			II
x											*Musa x paradisiaca*	Common banana		√			
	x										*Oeceoclades maculata*	African ground		√			

												orchid, Monk orchid					
		x									*Panicum* sp.	Panic grass					
x	x	x									*Persea americana*	Avocado		√			
x	x										*Psidium guajava*	Guava		√			I
x		x									*Ruellia blechum (=Blechumn pyramidatum)*	Green shrimp-plant, Browne's blechum		√			II
		x									*Schefflera actinophylla*	Australian umbrellatree		√			I
x	x	x									*Schinus terebinthifolia*	Brazilian pepper		√			I
x	x										*Sonchus oleraceus*	Common sowthistle		√			
		x									*Spermacoce verticillata*	Shrubby false buttonweed		√			II
x		x									*Sphagneticola trilobata (=Wedelia trilobata)*	Creeping wedelia, Creeping oxeye		√			II
		x									*Sporobolus jacquemontii (=S. indicus var. pyramidalis)*	Smutgrass, West Indian dropseed		√			i
		x									*Stenotaphrum secundatum*	St. Augustine grass		√			
x	x	x									*Syngonium podophyllum*	American evergreen		√			i
x		x									*Syzygium cumini*	Java plum		√			I
x	x	x									*Tecoma stans*	Yellow elder, Yellow trumpetbush		√			
x	x	x									*Tradescantia spathacea (=Rhoeo spathacea)*	Moses-in-the-cradle, Oyster plant		√			I
	x										*Tridax procumbens*	Coatbuttons		√			
		x									*Urena lobata*	Caesarweed		√			i

	x	x									*Urochloa maxima (=Panicum maximum)*	Guineagrass		√			II
						7					*Myrica cerifera*	Southern Wax Myrtle	N				
		x									*Urochloa ramosa*	Brown-top millet grass, Dixie signalgrass		√			
Count																		
154	**120**	**164**		**331**	**409**	**28**	**8**	**142**	**97**	**76**			**123**	**60**	**10**	**4**	**28**

State Codes: E=Endangered, T=Threatened
FNAI Codes: S1=critically imperiled; S2=imperiled because of rarity; S3=very rare in Florida or restricted range

FLEPPC Codes: Category I = species has altered native plant communities; Category II = species with increasing abundance or frequency

Sources. Scentific plant names and Native/Not-Native status is according to the Atlas of Florida Plants website as of July 2020. State status is from Florida Department of Agriculture and Consumer Services 2018 list. FNAI category is from Florida Natural Areas Inventory April 2019 list. FLEPPC category is from the Florida Exotic Pest Plant Council 2019 list.

Appendix 7: Breeding bird species recorded in the Marco Island Quadrangle in the vicinity of Otter Mound Preserve

Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Pied-billed Grebe	*Podilymbus podiceps*	Mangrove Cuckoo	*Coccyzus minor*
Brown Pelican	*Pelecanus occidentalis*	Great Horned Owl	*Bubo virginianus*
Double-crested Cormorant	*Phalacrocorax auritus*	Burrowing Owl	*Athene cunicularia*
Anhinga	*Anhinga anhinga*	Common Nighthawk	*Chordeiles minor*
Great Egret	*Ardea alba*	Chimney Swift	*Chaetura pelagica*
Snowy Egret	*Egretta thula*	Red-bellied Woodpecker	*Melanerpes carolinus*
Little Blue Heron	*Egretta caerulea*	Downy Woodpecker	*Picoides pubescens*
Tricolored Heron	*Egretta tricolor*	Northern Flicker	*Colaptes auratus*
Reddish Egret	*Egretta rufescens*	Pileated Woodpecker	*Dryocopus pileatus*
Cattle Egret	*Bubulcus ibis*	Great Crested Flycatcher	*Myiarchus crinitus*
Green Heron	*Butorides striatus*	Eastern Kingbird	*Tyrannus tyrannus*
Black-crowned Night-Heron	*Nycticorax nycticorax*	Gray Kingbird	*Tyrannus dominicensis*
Glossy Ibis	*Plegadis falcinellus*	White-eyed Vireo	*Vireo griseus*
Black Vulture	*Coragyps atratus*	Black-whiskered Vireo	*Vireo altiloquus*
Osprey	*Pandion haliaetus*	Blue Jay	*Cyanocitta cristata*
Swallow-tailed Kite	*Elanoides forficatus*	American Crow	*Corvus brachyrhynchos*

Common Name	Scientific Name	Common Name	Scientific Name
Bald Eagle	*Haliaeetus leucocephalus*	Fish Crow	*Corvus ossifragus*
Red-shouldered Hawk	*Buteo lineatus*	Purple Martin	*Progne subis*
Short-tailed Hawk	*Buteo brachyurus*	Carolina Wren	*Thryothorus ludovicianus*
American Kestrel	*Falco sparverius*	Northern Mockingbird	*Mimus polyglottos*
Northern Bobwhite	*Colinus virginianus*	Brown Thrasher	*Toxostoma rufum*
Common Moorhen	*Gallinula chloropus*	European Starling	*Sturnus vulgaris*
Snowy Plover	*Charadrius alexandrinus*	Yellow Warbler	*Dendroica petechia*
Wilson's Plover	*Charadrius wilsonia*	Prairie Warbler	*Dendroica discolor*
Killdeer	*Charadrius vociferus*	Eastern Towhee	*Pipilo erythrophthalmus*
Willet	*Catoptrophorus semipalmatus*	Northern Cardinal	*Cardinalis cardinalis*
Least Tern	*Sternula antillarum*	Red-winged Blackbird	*Agelaius phoeniceus*
Black Skimmer	*Rynchops niger*	Common Grackle	*Quiscalus quiscula*
Mourning Dove	*Zenaida macroura*	Boat-tailed Grackle	*Quiscalus major*
Common Ground Dove	*Columbina passerina*	Brown-headed Cowbird	*Molothrus ater*
Yellow-billed Cuckoo	*Coccyzus americanus*	House Sparrow	*Passer domesticus*

Source: Florida Fish and Wildlife Conservation Commission 2003 - Florida Breeding Bird Atlas, www.wildflorida.org/bba

Appendix 8: Adjacent property owners' deed describing ingress/egress easement

00971976 1985 DEC -6 PM 3:39 001168 000001
COLLIER COUNTY RECORDED OR BOOK PAGE

REC 9.00
DOC .50
INT

WARRANTY DEED

THIS INDENTURE, made this 9 day of October, 1985, between JAMES WILSON DYCHES, joined by his wife, JUNE JOLLEY DYCHES, of the County of Collier, State of Florida, hereinafter called "Grantor"; and JAMES WILSON DYCHES and JUNE JOLLEY DYCHES, husband and wife, as an estate by the entireties, whose Post Office address is P.O. Box 1213, Marco Island, Florida 33937, hereinafter called "Grantee";

WITNESSETH, that the Grantor, for and in consideration of the sum of Ten Dollars and other valuable consideration to it paid by the Grantee, the receipt of which is hereby acknowledged, does hereby grant, bargain, sell and convey unto the said Grantee the following described real estate, situated in Collier County, Florida, to wit:

PARCEL D as described in the attachment hereto identified as Exhibit D.

ACTUAL CONSIDERATION IS LESS THAN $100.00.

As part of the consideration of this conveyance, Grantee herein assumes and agrees to pay the balance due on mortgage to Naples Federal Savings and Loan Association recorded in OR Book 789, Page 1550, Public Records of Collier County, Florida.

The Grantor hereby covenants with the Grantee that said real estate is free of all encumbrances, that lawful seisin of and good right to convey said real estate are vested in the Grantor, and that the Grantor hereby fully warrants the title to said land and will defend the same against the lawful claims of all persons whomsoever, except applicable zoning regulations; easements, restrictions and reservations of record; terms and provisions of aforementioned mortgage; and taxes for the year 1985 and thereafter, which Grantee herein assumes and agrees to pay.

Signed, sealed and delivered
in the presence of:

James Wilson Dyches (SEAL)
James Wilson Dyches

June Jolley Dyches (SEAL)
June Jolley Dyches

WHEN RECORDED RETURN TO
JAMES E. WILLIS
LAWYER

STATE OF FLORIDA
COUNTY OF COLLIER

The foregoing instrument was acknowledged before me this 9 day of October, 1985, by JAMES WILSON DYCHES, joined by his wife, JUNE JOLLEY DYCHES.

(NOTARY SEAL HERE)

NOTARY PUBLIC
My commission expires:
NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXPIRES SEPT 29 1986
BONDED THRU GENERAL INSURANCE UND

THIS INSTRUMENT PREPARED BY: James E. Willis, Esquire, Willis & Jones, 531 Third Street South, Naples, Florida 33940
WITHOUT BENEFIT OF TITLE EXAMINATION
7bbD3

Received $ .50
Documentary Stamp Tax
Collier County, Florida
William J. Reagan, Clerk
by D.C.

Parcel 0

A parcel of land in Section 21, Township 52 South, Range 26 East, Collier County, Florida being described as follows:
From a concrete monument with a brass cap marking the quarter-section corner on the north line of said Section 21, run South 1°-52'-49" East along the quarter-section line of said section, being the line dividing Government Lot 3 from Government Lots 2 and 5 of said Section 21 for 3,547.21 feet to a concrete monument with a brass cap set near the shore of Caxambas Pass marking the location of the former "sunken terra cotta pipe filled with cement 60 feet west of the J.M. Barfield present dock;" thence run North 1°-52'-49" West along said quarter-section line for 470 feet to a concrete monument with a brass cap; thence run North 88°-07'-11" East for 210 feet to a concrete monument with a brass cap marking the northeast corner of Block 15 of J.M. Barfield's Subdivision and the PLACE OF BEGINNING of the Parcel herein described;
thence South 88°-07'-11" West 184.50 feet;
thence North 1°-52'-49" West 295.00 feet;
thence North 88°-07'-11" East 184.50 feet to a concrete monument with a brass cap marking the Northeast corner of the Lot sometimes referred to as the J.L. Collier's Lot;
thence South 1°-52'-49" East 295.00 feet to the Place of Beginning;
being a part of Section 21, Township 52 South, Range 26 East, Collier County, Florida;
containing 1.25 Acres more or less.

OR BOOK 01168 PAGE 000002

Description of ingress and egress easement

An easement for ingress and egress over and across the following described Easement Parcel:
From a concrete monument with a brass cap marking the quarter-section corner on the North line of said Section 21, run South 1°-52'-49" East along the quarter-section line of said section, being the line dividing Government Lot 3 from Government Lots 2 and 5 of said Section 21 for 3,547.21 feet to a concrete monument with a brass cap set near the shore of Caxambas Pass marking the location of the former "sunken terra cotta pipe filled with cement 60 feet West of the J.M. Barfield present dock";
thence run North 1°-52'-49" West along said quarter-section line for 470 feet to a concrete monument with a brass cap;
thence South 88°-07'-11" West 159.00 feet;
thence North 1°-52'-49" West 127.50 feet for the PLACE OF BEGINNING of the Easement Parcel herein described;
thence North 1°-52'-49" West 67.64 feet;
thence North 88°-07'-11" East 15.00 feet;
thence South 1°-52'-49" East 27.64 feet;
thence Southeasterly 39.27 feet along the arc of a circular curve concave to the Northeast, radius 25.00 feet subtended by a chord which bears South 46°-52'-49" East 35.36 feet;
thence North 88°-07'-11" East 112.00 feet;
thence Northeasterly 39.27 feet along the arc of a circular curve concave to the Northwest, radius 25.00 feet, subtended by a chord which bears North 43°-07'-11" East 35.36 feet;
thence North 1°-52'-49" West 127.50 feet;
thence North 88°-07'-11" East 15.00 feet;
thence South 1°-52'-49" East 167.50 feet;
thence South 88°-07'-11" West 192.00 feet to the Place of Beginning;
being an easement over part of Section 21, Township 52 South, Range 26 East, Collier County, Florida.

JAMES E. WILLIS LAWYER

RECORDER'S MEMO: Legibility of writing, Typing or Printing unsatisfactory in this document when received.

Recorded and Verified In Official Records of COLLIER COUNTY, FLORIDA Clerk of Circuit Court