
Lee Industrial Park

Environmental Supplement & Protected Species Survey

Prepared by:

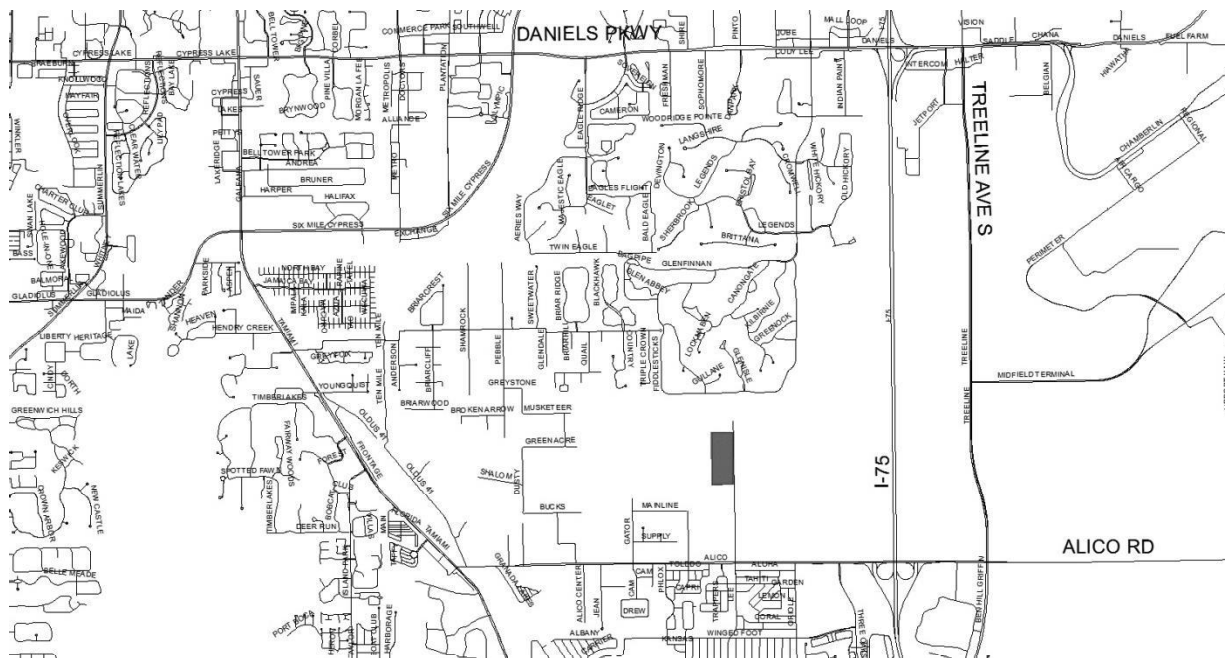
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March 9, 2016

INTRODUCTION

An Environmental Scientist conducted a field investigation on the 38.61± acre property on March 9, 2016. The temperature ranged from 75-80° with partly cloudy conditions. The purpose of the investigation was to review the property for plant and wildlife species listed by Lee County.

The property is located in Section 4, Township 46S, Range 25E more specifically, just west of Lee Road and North of Alico Road in Lee County.



PROTECTED (LISTED) SPECIES SURVEY METHODOLOGY

The methodology consisted of the Wilson-Miller Meandering Strip Methodology previously approved by Lee County and covered greater than 80% of the property.

In summary, it is comprised of a several step process. First, vegetation communities or land-uses on the study area are delineated on an aerial photograph using the Florida Land Use and Forms Classification System (FLUCCS). Next, the FLUCCS codes are cross-referenced with the Lee County Protected Species List. This list names the plant and animal species which have a probability of occurring in any particular FLUCCS community. Lastly, overlapping pedestrian transects are performed on the parcel with emphasis placed on locating potential species on the list and other listed species commonly found in SW Florida according to specific site conditions.

A table is attached that lists FLUCCS communities found on the parcel and the corresponding species which have a probability of occurring in them.

VEGETATION COMMUNITIES:

Vegetation communities were mapped in the field according to the FLUCCS. Listed below are the vegetation communities or land-uses identified on the site. See Florida Land Use, Cover and Forms Classification System (Department of Transportation 1985) for definitions.

The entire parcel is currently being grazed by cattle.

FLUCCS 211 – IMPROVED PASTURE (+/- 37.47 AC)

The community consists of a pasture currently being grazed by cattle. Dominant vegetation includes bahia (*Paspalum notatum*), *Spermacoce*, smutgrass (*Sporobolus indicus*) and scattered pennyroyal (*Piloblephis rigida*).

FLUCCS 621E1 – CYPRESS 0-25% EXOTIC INFESTATION (+/- 0.51 AC)

This community is dominated by cypress with scattered Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquenervia*).

This community is considered indigenous but not rare and unique.

FLUCCS 621E3 – CYPRESS 50-75% EXOTIC INFESTATION (+/- 0.38 AC)

This community is similar to above but with a greater infestation of Brazilian pepper and melaleuca with scattered laurel oaks (*Quercus laurifolia*) around the perimeter.

This community is considered indigenous but not rare and unique.

FLUCCS 742 – COW WATERING HOLE (+/- 0.05 AC)

This community consists of an excavated borrow pit.

FLUCCS 743 – SPOIL (+/- 0.20 AC)

This community consists of spoil from the cow watering hole.

SUMMARY

No Listed Species were observed on the parcel.

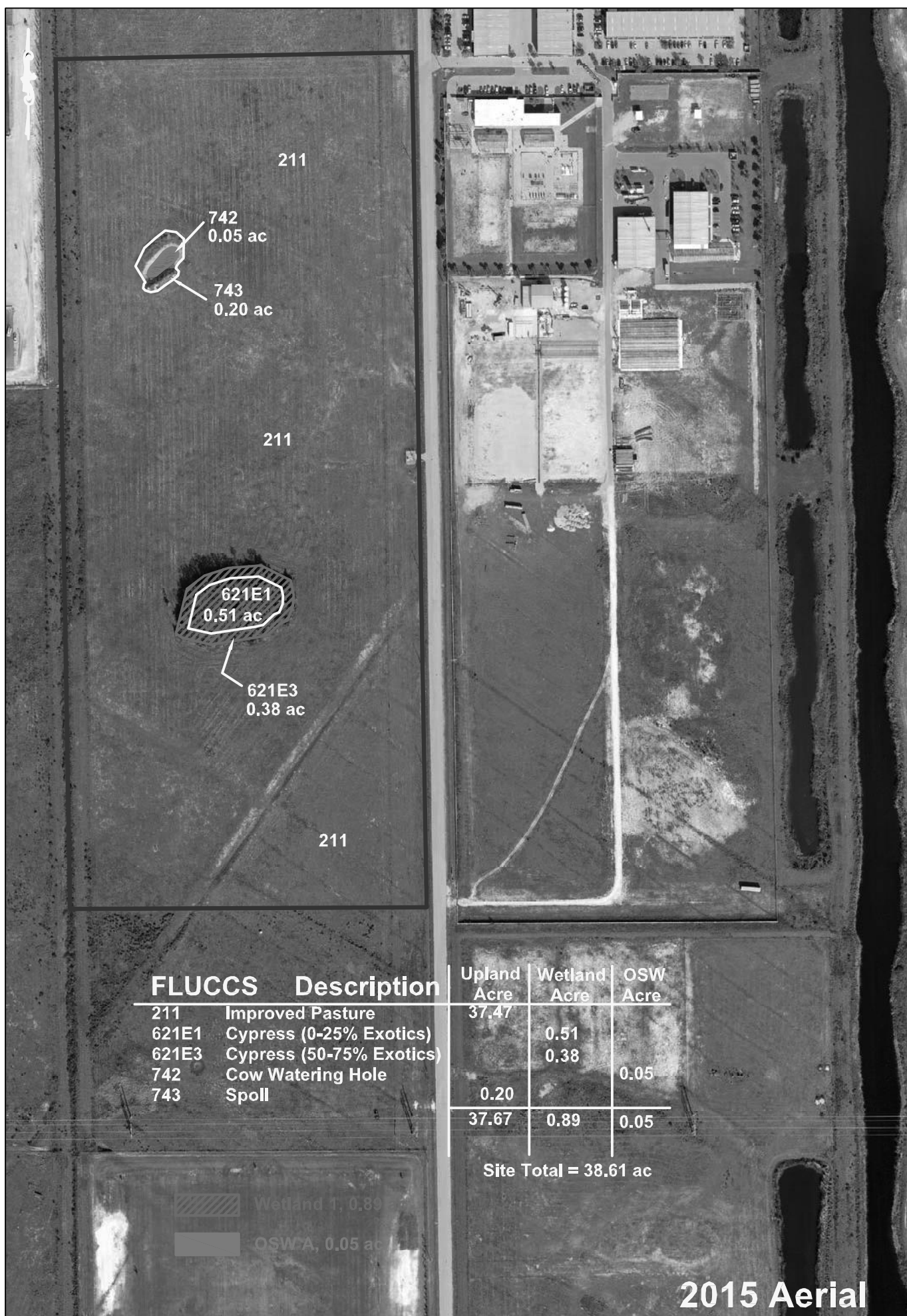
POTENTIAL SPECIES LIST

The various listed species that have a probability of occurring in the FLUCCS communities according to site specific conditions are shown as follows:

FLUCCS	Potential Listed Species	Observed	Not Observed	Density
211	Gopher tortoise <i>Gopherus polyphemus</i>		X	NA
	Burrowing owl <i>Athene cunicularia floridana</i>		X	NA
621E1 & 621E3	American alligator <i>Alligator mississippiensis</i>		X	NA
	Limpkin <i>Aramus guarauna</i>		X	NA
	Wood stork <i>Mycteria americana</i>		X	NA
	Florida panther <i>Felis concolor coryi</i>		X	NA
	Florida black bear <i>Ursus americanus floridanus</i>		X	NA
742	American alligator <i>Alligator mississippiensis</i>		X	NA
	Roseate spoonbill <i>Ajaia ajaja</i>		X	NA
	Limpkin <i>Aramus guarauna</i>		X	NA
	Little blue heron <i>Egretta caerulea</i>		X	NA
	Reddish egret <i>Egretta rufescens</i>		X	NA
	Snowy egret <i>Egretta thula</i>		X	NA
	Tricolored heron <i>Egretta tricolor</i>		X	NA
	Everglades mink <i>Mustela vison evergladensis</i>		X	NA
743	Gopher tortoise <i>Gopherus polyphemus</i>		X	NA

Attachments:

1. FLUCCS / Wetland Map with 2015 aerial
2. FLUCCS / Wetland Map without aerial
3. PSS Graphic with 2015 aerial
4. PSS Graphic without aerial
5. Wetland Preserve / OSW Impact Map
- 6 Conservation Easement Graphic
7. Monitoring, Maintenance & Planting Plan
8. Monitoring Graphic



1" = 300'

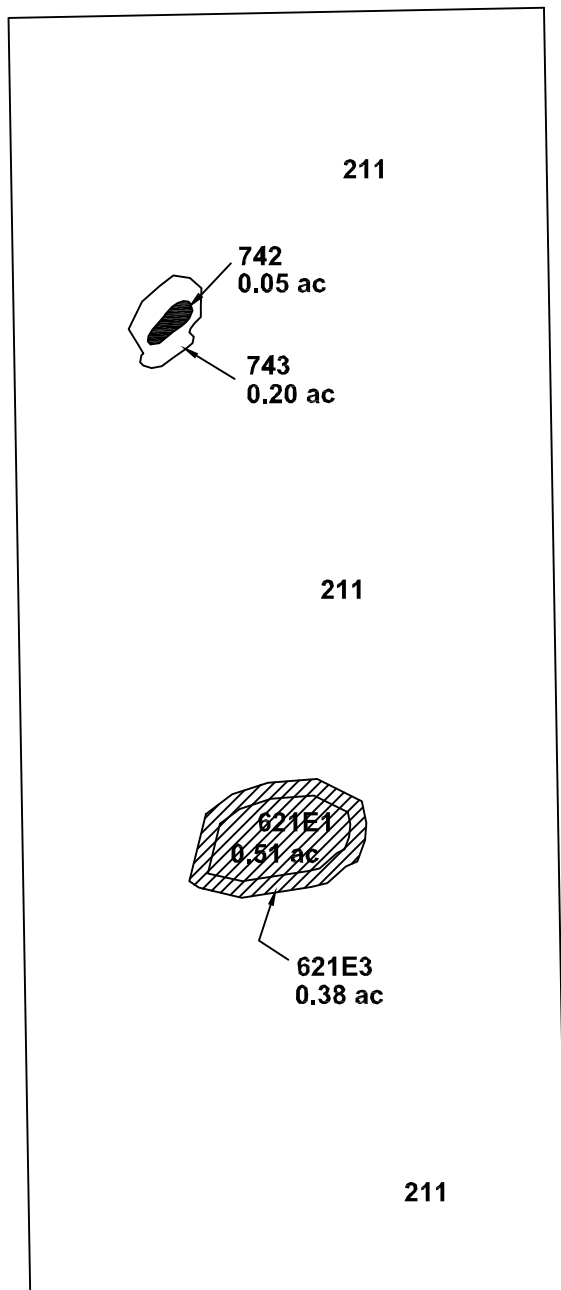
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Lee Industrial Park
FLUCCS / Wetland Map

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FLUCCS Description

		Upland Acre	Wetland Acre	OSW Acre
211	Improved Pasture	37.47		
621E1	Cypress (0-25% Exotics)		0.51	
621E3	Cypress (50-75% Exotics)		0.38	
742	Cow Watering Hole			0.05
743	Spoll	0.20		
		37.67	0.89	0.05

Site Total = 38.61 ac



Wetland 1, 0.89 ac



OSW A, 0.05 ac

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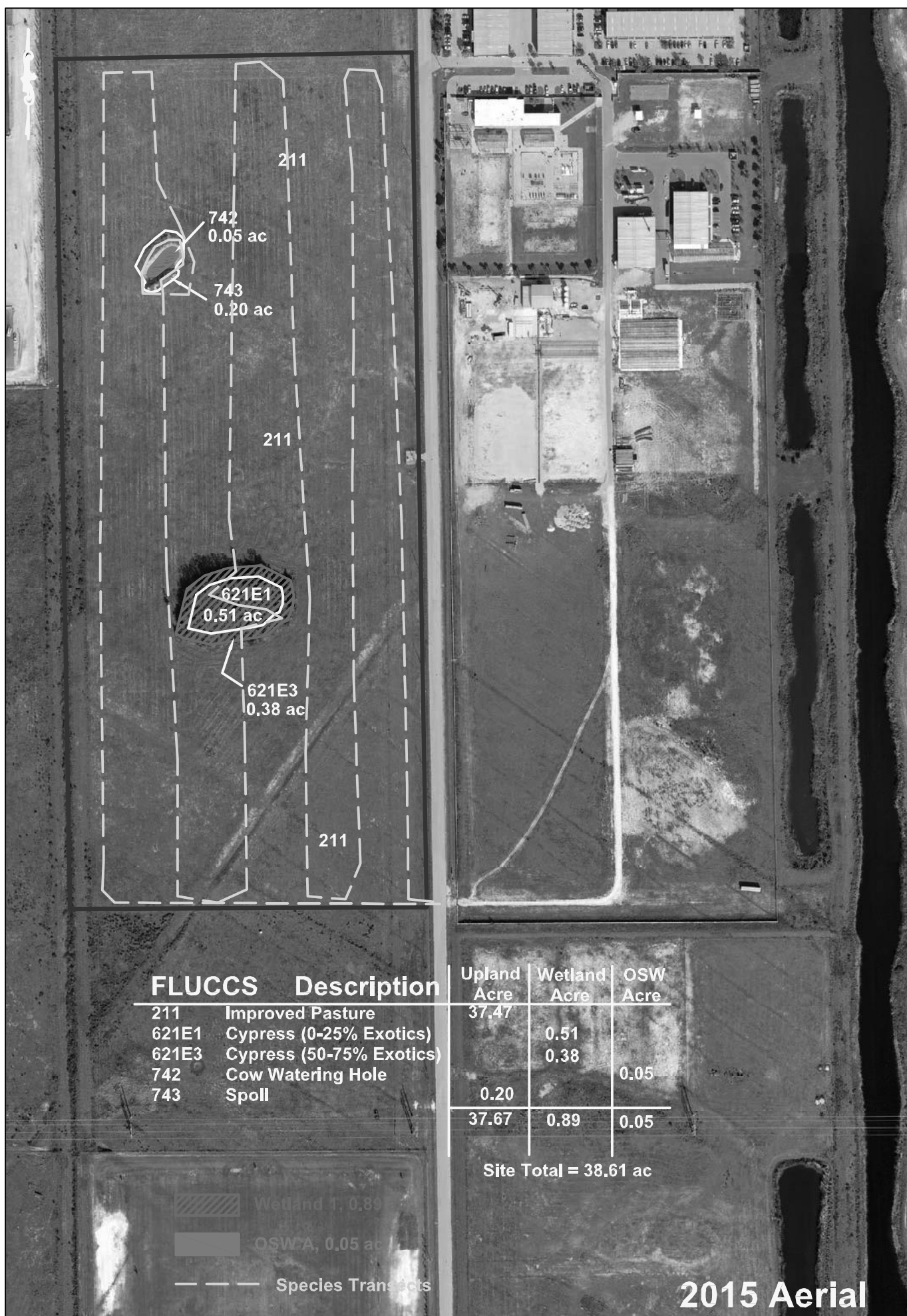
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FLUCCS / Wetland Map

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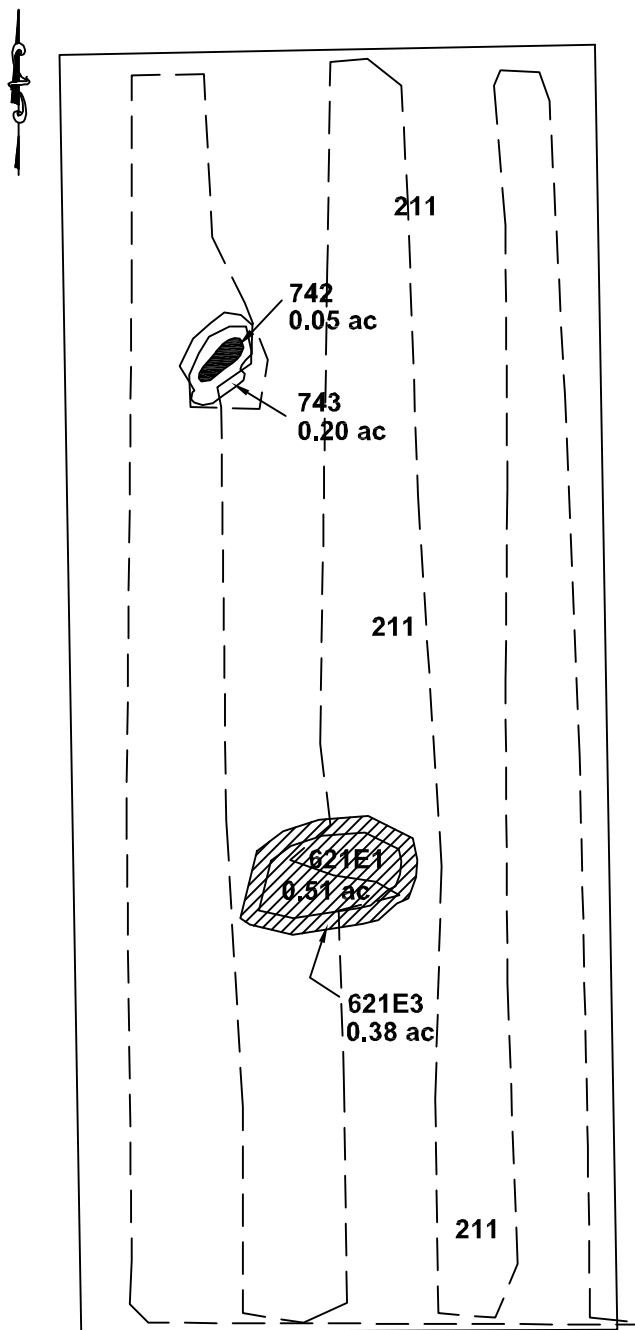
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Lee Industrial Park

Protected Species Graphic

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1" = 300'



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Site Total = 38.61 ac

 Wetland 1, 0.89 ac

 OSW A, 0.05 ac

--- Species Transects

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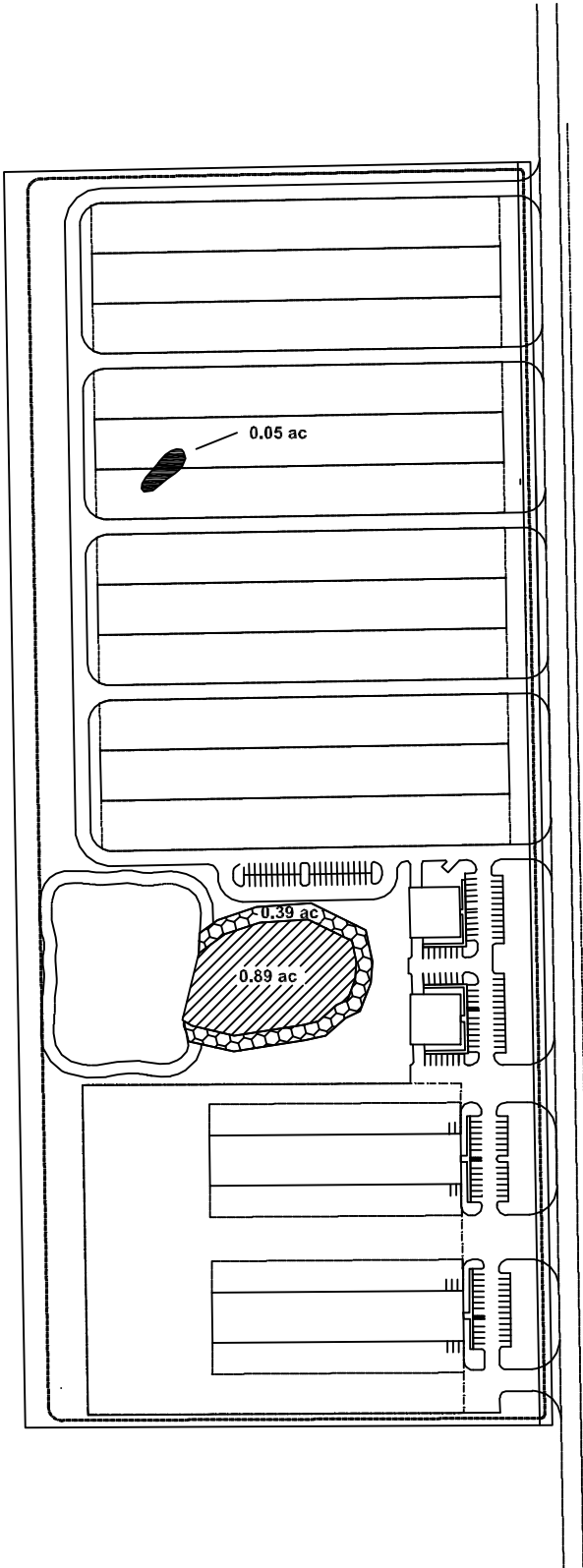
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Lee Industrial Park
Protected Species Graphic

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1" = 300'

2015 Aerial



OSW Fill, 0.05 ac



Wetland Enhancement, 0.89 ac



Planted Buffer 0.39 ac
Trees @20' Centers: 42 Total Trees (5 Gal)
Shrubs @20' Centers: 42 Total Shrubs (1 Gal)

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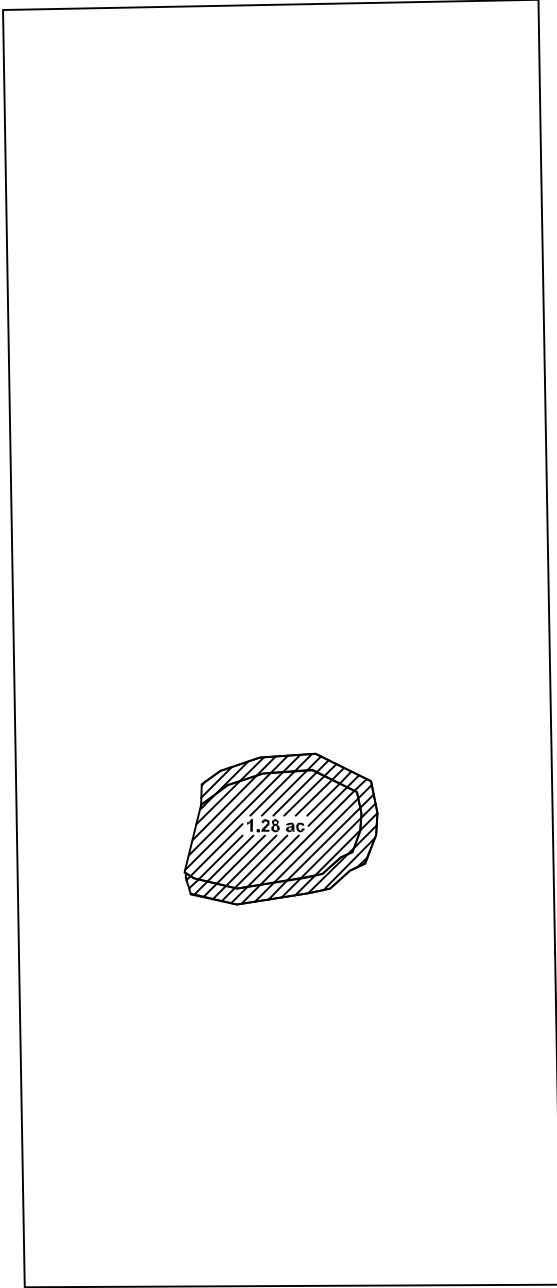
Lee Industrial Park
Wetland Preserve / OSW Impact Map

Job: 07-001

Date: 3/9/16

File: impact2

1" = 300'



Lands to be place under Conservation Easement, 1.28 ac
Wetland Enhancement, 0.89 ac
Planted Buffer, 0.39 ac

1" = 300'

Job: 07-001

Date: 3/9/16

File: impact2

Lee Industrial Park
Conservation Easement Graphic

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Lee Industrial Park Monitoring, Maintenance & Planting Plan

Wetland Preserve (0.89 ac)

The wetland preserve is predominantly cypress with 0.61 acres designated 621E1 with 0-25% exotics (primarily Brazilian pepper and melaleuca) and 0.38 acres 621E3 with 5%-75% exotics (primarily Brazilian pepper and melaleuca). The wetlands would have selective exotic (primarily Brazilian pepper and melaleuca) removal conducted. Exotic removal would be conducted yearly.

Wetland Enhancement (0.38 ac 621E3)

Wetland enhancement is proposed within the preserve designated as FLUCCs Code 621E3 (50%-75% Exotics). Exotics will be cleared preserving the existing indigenous vegetation within this area – primarily cypress, palm and oak.

Wetland Enhancement Planting Plan (0.38 ac 621E3)

It is anticipated that a minimum of two of the following trees would be planted 10' on center enhancing the existing native trees. Utilizing the tree survey, the enhancement will include approximately 76 total trees five gallon in size.

Plant List

Slash Pine (*Pinus elliottii*)
Cabbage Palm (*Sabal palmetto*)
Laurel Oak (*Quercus laurifolia*)
Dahoon Holly (*Ilex cassine*)

It is anticipated that a minimum of three of the following shrubs would be planted 7' on center providing understory vegetation in the enhancement area. Utilizing the tree survey, the enhancement will include approximately 251 shrubs one gallon in size.

Plant List

Coco Plum (*Chrysobalanus icaco*)
Wax Myrtle (*Myrica cerifera*)
Wild Coffee (*Psychotria nervosa*)
Myrsine (*Rapanea punctata*)
Buttonbush (*Cephalanthus occidentalis*)

Planted Upland Buffer (0.39 ac)

The buffer (25') is currently dominated by an improved pasture. The upland buffer would be planted with native trees (five gallon) and shrubs (one gallon) depending upon market availability at the time of planting; the proposed buffer currently consists of herbaceous pasture. After the initial planting, exotic removal would be conducted annually.

Upland Buffer Planting Plan (0.39 ac)

It is anticipated a minimum of two of the following trees would be planted on 10' centers, 121 total trees five gallon size.

Plant List

Slash Pine (*Pinus elliottii*)

Cabbage Palm (*Sabal palmetto*)

Laurel Oak (*Quercus laurifolia*)

Dahoon Holly (*Ilex cassine*)

It is anticipated a minimum of three of the following shrubs would be planted as understory on 7' centers, 264 total shrubs one gallon size.

Plant List

Coco Plum (*Chrysobalanus icaco*)

Wax Myrtle (*Myrica cerifera*)

Fetterbush (*Rusty lyonia*)*

Wild Coffee (*Psychotria nervosa*)

Gallberry (*Ilex glabra*)

Firebush (*Hamelia patens*)*

Myrsine (*Rapanea punctata*)*

Buttonbush (*Cephalanthus occidentalis*)

* These plants should be limited to the outer 10 feet of the buffer.

Maintenance of Exotic and Nuisance Species

A maintenance program will be implemented in the preserved and enhanced wetlands as well as the buffer on a regular basis to ensure the integrity and viability restoration. The maintenance will be conducted in perpetuity for the onsite mitigation to ensure total covert of exotic and nuisance plant species (those species currently identified by the Florida Exotic Pest Plant Council's current list of most invasive plant species incorporated herein by reference), constitute no more than 5% total coverage. The mitigation areas will be exotic free immediately following treatment. After the five (5) year monitoring period, a final environmental compliance inspection will be scheduled with the SFWMD. A final inspection may be requested earlier if the mitigation activities are determined to be successful prior to the five years.

Monitoring of the Mitigation Areas

Introduction:

The purpose of the monitoring program is to evaluate the degree of success and trends for the mitigation activities using qualitative protocols and provide changes to the mitigation and/or maintenance program as necessary.

Monitoring Methodology

Panoramic photo locations will be established at the ends of each transect as identified on the Transect Map. In addition to the panorama photo documentation, qualitative inspections will be made of the mitigation areas. Qualitative Monitoring will include a visual estimations of vegetation coverage in each stratum on the transect line. Vegetation species in each stratum will be recorded along with a visual estimate of cover for each species. The findings of the inspections and panoramic photo conditions will be summarized and submitted to the South Florida Water Management District (SFWMD).

An automated monitoring well will be installed within the preserve (exact location to be determined in the field with The monitoring well will be record daily water levels within the preserve. Water level data will be downloaded quarterly and submitted annually to the SFWMD with each wetland monitoring report.

Mitigation Success Criteria

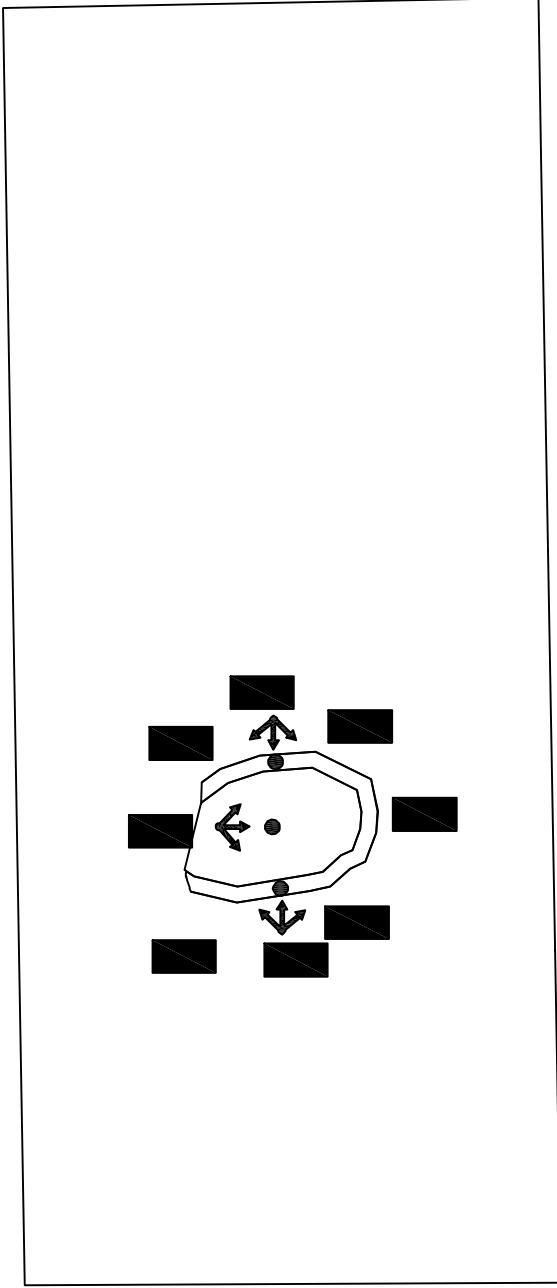
At the end of the second monitoring period, the mitigation areas will contain an 80% survival of planted vegetation. Supplemental plantings being installed if the preserve areas are not achieving 80% cover of desirable wetland species or the survivorship of the plantings falls below 80% after the second annual monitoring report. The 80% survival rate will be maintained throughout the remainder of the monitoring program. At the end of the five-year monitoring program, the mitigation areas will maintain an 80% survival rate of planted vegetation and an 80% coverage of desirable wetland species.

Long Term Management

Long Term Maintenance of the site is the responsibility of the permittee. Yearly inspections should be performed to monitor exotic levels. Maintenance will be conducted in perpetuity for the onsite mitigation to ensure total covert of exotic and nuisance plant species (those species currently identified by the Florida Exotic Pest Plant Council's current list of most invasive plant species incorporated herein by reference), constitute no more than 5% total coverage. Minor infestations of invasive exotics are to hand cleared and treated in an appropriate manor to prevent the spreading of the exotics. Major infestations may be cleared mechanically then treated and replanted to maintain an 80% survival rate.

Work Schedule

Record Conservation Easement	September 1, 2016
Baseline Monitoring Report	April 1, 2017
Time Zero Monitoring Report	September 1, 2017
1 st Annual Monitoring Report	September 1, 2018
2 nd Annual Monitoring Report	September 1, 2019
3 rd Annual Monitoring Report	September 1, 2020
4 th Annual Monitoring Report	September 1, 2021
5 th Annual Monitoring Report	September 1, 2022



3 Photopoints



3 Monitoring Stations



Conservation Easement Signs, 8



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Monitoring Graphic

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