

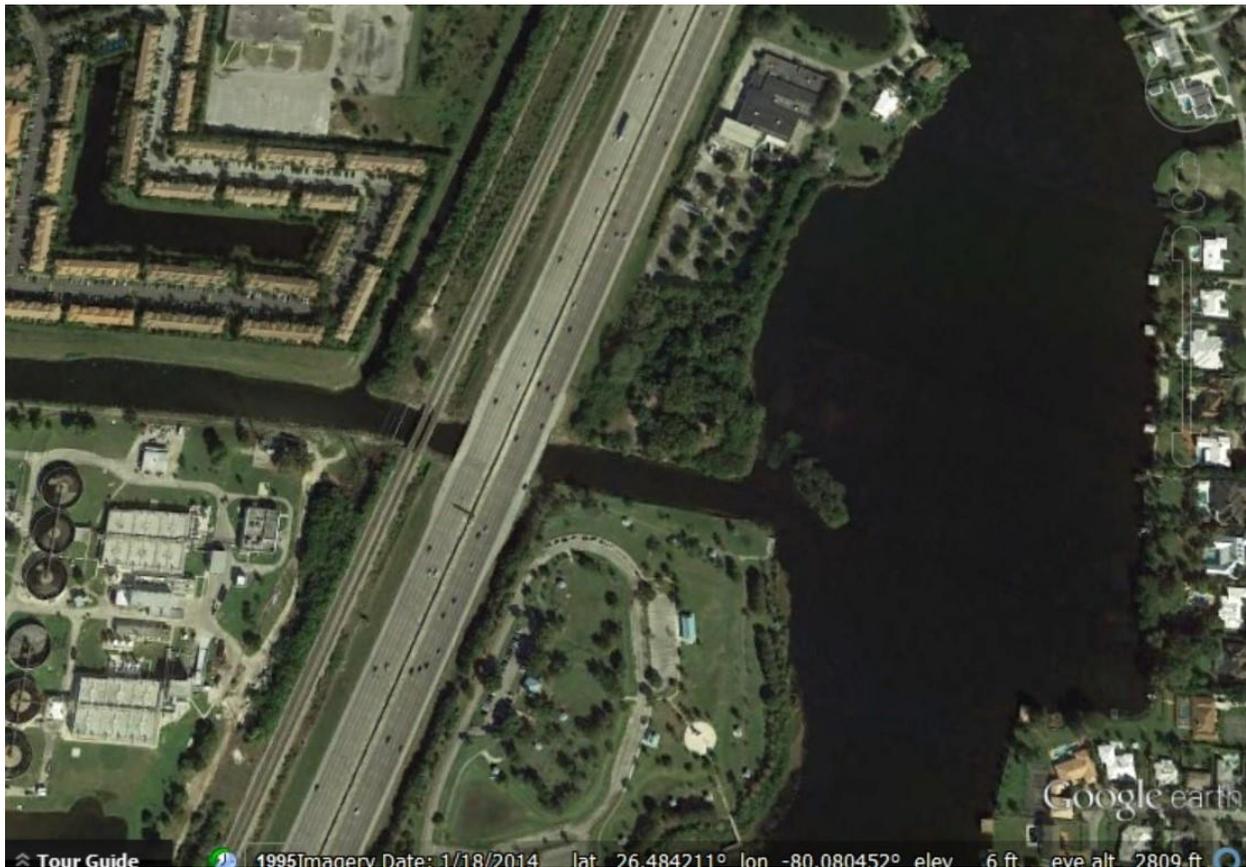


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Rapid Ecological Assessment of the Lake Ida Parcel, City of Delray Beach

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Introduction

On February 15th, 2016, The Institute for Regional Conservation (IRC) initiated a rapid ecological assessment of the City of Delray Beach's recently acquired Lake Ida parcel, located between the western shore of Lake Ida and Interstate 95, just north of Lake Ida Park in northeastern Delray Beach. The site is approximately five acres in size. The scope of work was as follows:

"The Institute for Regional Conservation will conduct a rapid assessment of the Lake Ida parcel recently acquired by the City of Delray Beach. Botanist and Chief Conservation Strategist George Gann and wildlife biologist and CEO Craig van der Heiden, Ph.D. will conduct a one-day survey of the site and prepare a brief report for submittal by February 19th. Field work will focus on recording vascular plants and wildlife, searching for remnants of intact historical native vegetation, documenting concentrations of invasive species, and assessing opportunities for habitat restoration. Findings will be incorporated into the report, including species lists and photographs."

Work was completed as planned and a draft report was submitted on February 19th. Incorporating minor revisions, this document represents the final report.

Methods

Surveys by Gann and van der Heiden took place on the morning of February 15th, 2016. Vascular plant species observed, both native and exotic, were recorded by Gann, while wildlife observed by sight or sign were recorded by van der Heiden. Approach to the site was by land over the bridge along Interstate 95 from Lake Ida Park. Except for locations with dense concentrations of naturalized exotic plants, the entire site was covered. As the approach was by land, additional species of wetland plants are to be expected from future water-based surveys. Some plants which were sterile at the time of the survey (e.g., *Hydrocotyle*) could not be definitively identified; more species will be identified from surveys conducted in additional seasons. The weather during the survey was cool and windy, which affected observations of butterflies and reptiles, but bird activity was normal. Birds flying directly over the site were recorded as present. As with plants, additional surveys during different seasons and weather events will yield additional wildlife species. Evidence of remnant native vegetation and concentrations of invasive species were documented. Gann and van der Heiden collaborated on assessing opportunities for habitat restoration.

Results – Plants

A total of 91 taxa of vascular plants were recorded (Appendix A), including 43 natives and 48 exotics. Taxa were counted as native only if their historical ranges were thought to include the Lake Ida area. Of the natives, none are listed by the U.S. Fish and Wildlife Service or the State of Florida. However, two species are listed as regionally rare by The Institute for Regional Conservation, one grass (*Amphicarpum muhlenbergianum* [Blue maidencane]) and one terrestrial herb (*Helianthemum nashii* [Florida scrub frostweed]). Of the exotics, 17 species are listed by the Florida Exotic Pest Plant Council (FLEPPC) as Category I invasive plants and 13 as Category II invasive plants. One species native to South Florida, seagrape (*Coccoloba uvifera*), is spreading from nearby cultivated plants and is not thought to be native to the site. We have

compiled the data and uploaded it to the Floristic Inventory of South Florida database online, where it can be accessed for free by the public and the scientific community (visit <http://regionalconservation.org/ircs/database/database.asp>, select Plants by Conservation Area and chose Delray Beach Lake Ida parcel).

Results – Wildlife

A total of 26 taxa of animals were recorded, including two mammals, two reptiles, 18 birds, one butterfly, one scale insect and two aquatic snails (Appendix B). One reptile (Green iguana), one bird (Peafowl), one scale insect (Lobate lac scale) and one aquatic snail (Invasive apple snail) are introduced exotics. Of the natives, four birds are listed by the State of Florida as Species of Special Concern: White ibis, Snowy egret, Limpkin, Brown pelican. An additional six species of birds were noted adjacent to the parcel over Lake Ida across the canal at Lake Ida Park. Of these two are listed, one as a Species of Special Concern (Tricolored heron) and one as Federally Threatened (Wood stork).

Results – Vegetation

As suggested by floristic data and satellite imagery, the site is heavily disturbed and dominated by invasive exotic plants. However, concentrations of native species can be found along Lake Ida, including both obligate aquatic species (e.g. *Nuphar lutea* subsp. *advena* [Spatterdock]) and species ranging into the upland areas (e.g., *Chrysobalanum icaco* [Coco-plum]). Another area of relatively intact native vegetation can be found in the center-south part of the parcel (Figures 1 and 2). This area, while weedy, contains several remnant native plant species associated with



Figure 1. Possible remnant scrubby flatwoods along southern edge of property (see areas with visible white sand).

xeric-mesic natural communities in South Florida (e.g., *Cyperus ovatus* [Pinebarren flatsedge], *Dichanthelium portoricense* [Hemlock witchgrass], *Helianthemum nashii* [Florida scrub frostweed]). Other native species can be found growing in the understory of forests of exotic trees (e.g., *Blechnum serrulatum* [Swamp fern], *Passiflora suberosa* [Corkystem passionflower], *Psilotum nudum* [Whisk-fern]). Otherwise, the site is dominated by invasive exotics, including forests and thickets dominated by Brazilian-pepper (*Schinus terebinthifolius*), Earleaf acacia (*Acacia auriculiformis*), and mixed stands of exotics (Figures 3 and 4).

Discussion

On the surface, this site appears to be of low quality. However, the property has numerous attributes. First, although the site is dominated by invasive exotic plants, it appears to be relatively free of debris and other non-biological hazards. Second, the site has significant native biodiversity, albeit intermingled with exotic species. Third, the site is being utilized by native wildlife, both along the interface with Lake Ida and in the upland portions of the site. Although not well documented during this assessment, native butterflies almost certainly utilize the site. Fourth, the site comprises both uplands and freshwater wetlands, which could be restored to a mosaic of ecosystems that would maximize biological values.



Figure 2. Florida scrub frostweed in open sandy area along south boundary.



Figure 3. Near monoculture of Earleaf acacia along southern boundary of property.



Figure 4. Thicket of Brazilian-pepper along eastern boundary of property.

Opportunities for Habit Restoration

The Delray Beach Lake Ida parcel provides the City with an excellent opportunity to restore native habitat and provide for passive nature-based outdoor recreation opportunities. A mix of wetland restoration along the eastern boundary, along with scrubby flatwoods restoration along the southern boundary, and mesic hardwood forest restoration in the west and north, would maximize benefits to native plants and wildlife while creating a pleasant and interesting environment for City residents and visitors to enjoy. In order for this restoration to be successful, close attention must be paid to the soil seed bank, which will be dominated by invasive non-native species. Where possible, and especially in the scrubby flatwoods area along the southern boundary, hand removal of exotic plants is recommended; minimal soil disturbance would be optimal. In areas completely dominated by invasive species, mechanical removal should be considered together with post-clearing management of the soil seed bank to minimize recruitment of invasive species and other weeds. Where practicable, native plants should be clearly marked and protected during the restoration process. Existing native wildlife habitat should be documented, maintained and enhanced.

Appendix A

Vascular plants of the Delray Beach Lake Ida parcel, recorded February 15, 2016

Scientific Name	Common Name(s)	Native Status	FLEPPC Category	Notes
<i>Abrus precatorius</i>	Rosary-pea, Crab-eyes	Not native, naturalized	I	
<i>Acacia auriculiformis</i>	Earleaf acacia	Not native, naturalized	I	
<i>Acrostichum danaeifolium</i>	Giant leather fern	Native		
<i>Ambrosia artemisiifolia</i>	Common ragweed	Native		
<i>Amphicarpum muhlenbergianum</i>	Blue-maidencane	Native		
<i>Annona glabra</i>	Pond-apple	Native		
<i>Antigonon leptopus</i>	Coral vine, Queen's jewels	Not native, naturalized	II	
<i>Bidens alba</i> var. <i>radiata</i>	Spanish-needles	Native		
<i>Blechnum serrulatum</i>	Swamp fern, Toothed midorus fern	Native		
<i>Boehmeria cylindrica</i>	Button-hemp, False nettle, Bog hemp	Native		
<i>Bucida buceras</i>	Common black-olive	Not native, naturalized		
<i>Callisia repens</i>	Basket plant, Creeping inchplant	Not native, naturalized		
<i>Caryota mitis</i>	Burmese fishtail palm	Not native, naturalized		
<i>Casuarina equisetifolia</i>	Australian-pine, Horsetail casuarina	Not native, naturalized	I	
<i>Catharanthus roseus</i>	Madagascar-periwinkle	Not native, naturalized		
<i>Chromolaena odorata</i>	Jack-in-the-bush	Native		
<i>Chrysobalanus icaco</i>	Coco-plum	Native		
<i>Cissus verticillata</i>	Possum-grape, Seasonvine	Native		
<i>Coccoloba uvifera</i>	Seagrape	Not native, naturalized		Native to coastal South Florida
<i>Cocos nucifera</i>	Coconut palm	Not native, naturalized	II	
<i>Commelina diffusa</i>	Common dayflower	Not native, naturalized		
<i>Crinum asiaticum</i>	Poison bulb	Not native, naturalized		
<i>Crotalaria pallida</i> var. <i>obovata</i>	Smooth rattlebox	Not native, naturalized		
<i>Cupaniopsis anacardioides</i>	Carrotwood	Not native, naturalized	I	
<i>Cyperus croceus</i>	Baldwin's flatsedge	Native		
<i>Cyperus ligularis</i>	Swamp flatsedge	Native		

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<i>Cyperus ovatus</i>	Pinebarren flatsedge	Native		
<i>Cyperus polystachyos</i>	Manyspike flatsedge	Native		
<i>Cyperus rotundus</i>	Nut-grass	Not native, naturalized		
<i>Desmodium incanum</i>	Beggar's-ticks	Native		Nativity disputed
<i>Dichanthelium portoricense</i>	Hemlock witchgrass	Native		
<i>Dimocarpus longan</i>	Longan	Not native, naturalized		
<i>Dypsis lutescens</i>	Yellow palm, Areca palm	Not native, naturalized		
<i>Eichhornia crassipes</i>	Common water-hyacinth	Not native, naturalized	I	
<i>Emilia fosbergii</i>	Florida tasselflower	Not native, naturalized		
<i>Eugenia uniflora</i>	Surinam-cherry	Not native, naturalized	I	
<i>Eupatorium capillifolium</i>	Dog-fennel	Native		
<i>Euphorbia cyathophora</i>	Paintedleaf, Fire-on-the-mountain	Native		
<i>Eustachys petraea</i>	Common fingergrass, Pinewoods fingergrass	Native		
<i>Euthamia caroliniana</i>	Slender goldenrod	Native		
<i>Ficus benjamina</i>	Weeping fig	Not native, cultivated only		Planted along north boundary
<i>Ficus microcarpa</i>	Laurel fig, Indian laurel	Not native, naturalized	I	
<i>Helianthemum nashii</i>	Florida scrub frostweed	Native		
<i>Heterotheca subaxillaris</i>	Camphorweed	Native		
<i>Hibiscus tiliaceus</i> var. <i>tiliaceus</i>	Seaside mahoe, Sea hibiscus, mahoe	Not native, naturalized	II	
<i>Hydrocotyle</i> sp.	Pennywort	Native		
<i>Lantana camara</i>	Shrubverbena	Not native, naturalized	I	
<i>Melaleuca quinquenervia</i>	Punktree	Not native, naturalized	I	
<i>Melinis repens</i>	Rose Natalgrass	Not native, naturalized	I	
<i>Melothria pendula</i>	Creeping-cucumber	Native		
<i>Mikania scandens</i>	Climbing hempweed, Climbing hempvine	Native		
<i>Momordica charantia</i>	Wild balsam-apple, Balsampear	Not native, naturalized	II	
<i>Murraya paniculata</i>	Orange jessamine	Not native, naturalized	II	

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<i>Nephrolepis brownii</i>	Asian sword fern	Not native, naturalized	I	
<i>Nuphar lutea</i> subsp. <i>advena</i>	Spatterdock, Yellow Pondlily	Native		
<i>Oeceoclades maculata</i>	African ground orchid, Monk orchid	Not native, naturalized		
<i>Oldenlandia corymbosa</i>	Flattop mille grains	Not native, naturalized		
<i>Panicum maximum</i>	Guineagrass	Not native, naturalized	II	
<i>Panicum repens</i>	Torpedo grass	Not native, naturalized	I	
<i>Parietaria floridana</i>	Florida pellitory	Native		
<i>Parthenocissus quinquefolia</i>	Virginia-creeper, Woodbine	Native		
<i>Paspalum notatum</i>	Bahia grass	Not native, naturalized		
<i>Paspalum setaceum</i>	Thin paspalum	Native		
<i>Passiflora suberosa</i>	Corkystem passionflower	Native		
<i>Phragmites australis</i>	Common reed	Native		
<i>Phytolacca americana</i>	American pokeweed	Native		
<i>Pistia stratiotes</i>	Water-lettuce	Native	I	Nativity disputed
<i>Pontederia cordata</i>	Pickerelweed	Native		
<i>Portulaca pilosa</i>	Pink purslane, Kiss-me-quick	Native		
<i>Psilotum nudum</i>	Whisk-fern	Native		
<i>Quercus laurifolia</i>	Laurel oak, Diamond oak	Native		
<i>Quercus virginiana</i>	Virginia live oak	Native		
<i>Richardia grandiflora</i>	Largeflower Mexican clover	Not native, naturalized	II	
<i>Ricinus communis</i>	Castor-bean	Not native, naturalized	II	
<i>Ruellia blechum</i>	Green shrimpplant, Browne's blechum	Not native, naturalized	II	
<i>Sabal palmetto</i>	Cabbage palm	Native		
<i>Sansevieria hyacinthoides</i>	Bowstring-hemp, Mother-in-laws tongue, Snake plant	Not native, naturalized	II	
<i>Schefflera actinophylla</i>	Australian umbrellatree	Not native, naturalized	I	
<i>Schinus terebinthifolius</i>	Brazilian-pepper	Not native, naturalized	I	
<i>Setaria parviflora</i>	Knotroot foxtail, Yellow bristlegrass	Native		
<i>Sida acuta</i>	Common wireweed, Common fanpetals	Native		
<i>Sida cordifolia</i>	Lima	Not native, naturalized		
<i>Smilax auriculata</i>	Earleaf greenbrier	Native		

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<i>Spermacoce verticillata</i>	Shrubby false buttonweed	Not native, naturalized	II	
<i>Sphagneticola trilobata</i>	Creeping wedelia, Creeping oxeye	Not native, naturalized	II	
<i>Stenotaphrum secundatum</i>	St. Augustine grass	Not native, naturalized		
<i>Syngonium podophyllum</i>	Nephtytis, American evergreen	Not native, naturalized	I	
<i>Tradescantia spathacea</i>	Oysterplant, Moses-in-the-cradle, Boatlily	Not native, naturalized	II	
<i>Urena lobata</i>	Caesarweed	Not native, naturalized	I	
<i>Vitis rotundifolia</i>	Muscadine, Muscadine grape	Native		
<i>Yucca gigantea</i>	Spineless yucca	Not native, cultivated only		

Appendix B

Fauna of the Delray Beach Lake Ida parcel, recorded February 15, 2016

Birds	Species	Common name	Notes
	<i>Dendroica palmarum</i>	Palm warbler	
	<i>Cyanocitta cristata</i>	Blue jay	
	<i>Cathartes aura</i>	Turkey vulture	
	<i>Carogyps atratus</i>	Black vulture	
	<i>Pandion haliaetus</i>	Osprey	
	<i>Anhinga anhinga</i>	Anhinga	
	<i>Butorides virescens</i>	Green heron	
	<i>Eudocimus albus</i>	White Ibis	
	<i>Dumetella carolinensis</i>	Grey cat bird	
	<i>Seiurus aurocapilla</i>	Oven bird	
	<i>Anas fulvigula</i>	Mottled duck	
	<i>Egretta thula</i>	Snowy egret	
	<i>Geothlypis trichas</i>	Common yellow throat	
	<i>Aramus guarana</i>	Limpkin	
	<i>Dendroica coronata</i>	Yellow rumped warbler	
	<i>Polioptila caerulea</i>	Blue grey gnat catcher	
	<i>Pavo cristatu</i>	Peafowl	
	<i>Pelecanus occidentalis</i>	Brown pelican	
	<i>Tachycineta bicoor</i>	Tree swallow	vicinity
	<i>Porphyrio martinica</i>	Purple gallinule	vicinity
	<i>Mycteria americana</i>	Wood stork	vicinity
	<i>Egretta caerulea</i>	Tricolored heron	vicinity
	<i>Melanerpes carolinus</i>	Red bellied woodpecker	vicinity
	<i>Picoides pubescens</i>	Downy woodpecker	vicinity
Other animals	Species	Animals	notes
	<i>Iguana iguana</i>	Iguana	
	<i>Apalone ferox</i>	Soft shelled turtle	shell
	<i>Procyon lotor</i>	Raccoon	vicinity
	<i>Lontra canadensis</i>	Otter	scat
	<i>Heliconius charithonia</i>	Zebra longwing	
	<i>Paratachardina lobata lobata</i>	Lobate lac scale	
	<i>Pomacea paludosa</i>	Apple snail	shell
	<i>Pomacea insularum.</i>	invasive apple snail	shell