Attachment E – Lake Alice Watershed – Conservation Area Vegetation Inventory and Recommendations

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Section 1.0 Introduction

The University of Florida (UF) has 19 Conservation Areas located within the Lake Alice Watershed. Landscape types within the Conservation Areas include both wetland and upland communities. Active management of these areas is important to control invasive species, preserve and enhance wildlife habitat, and facilitate passive recreational use. For the purposes of this document, management is defined as monitoring and maintenance that evaluates natural area conditions, promotes ecological integrity, and preserves ecosystem services through mitigating site impacts. Monitoring the current condition in designated Conservation Areas may reveal acceptable conditions, the need for normal maintenance, or the need for restorative action. The purpose of this document is to discuss the community types present in the Lake Alice Watershed, provide community specific data by Conservation Area within the watershed, discuss appropriate vegetation species by community type, and make monitoring and maintenance recommendations. This document is meant to supplement and complement the Conservation Area Land Management (CALM) Plans developed for each Conservation Area located in the Lake Alice Watershed. While this document discusses vegetation in each Conservation Area the primary focus of the management recommendations is on community type generally, rather than the Conservation Areas individually. This report presents vegetation data coverage by community type, stratum, and status for each Conservation Area within the Lake Alice Watershed. The species lists presented are not comprehensive and do not represent a complete survey of the vegetation communities. Additional sources of vegetation species data for the Conservation Areas include the CALM Plans and BioGator.

Section 2.0 Natural Community Types in the Lake Alice Watershed

The 19 Conservation Areas within the Lake Alice Watershed include seven natural community types (Table 1). The condition of the Conservation Areas varies; identified impacts include invasive vegetation cover, human use, litter, and stormwater. Stormwater impacts are variable based on watershed and landscape position but include erosion, degraded water quality, streambank instability, and sedimentation.

Natural communities were described using classifications provided by the Florida Natural Areas Inventory (FNAI) (Florida Natural Areas Inventory, 2010). The natural community types present within the Conservation Areas are described below with a list of characteristic plant species. Section 5.0 discusses common impacts, outlines management considerations, and provides recommendations for enhancement for each natural community type present in the Lake Alice Watershed Conservation Areas.

Table 1. Conservation Areas and Natural Community Types in the Lake Alice Watershed

Conservation Area	Community Type						
	Basin Marsh	Bottomland Forest	Mesic Hammock	Sinkhole	Sinkhole Lake	Upland Hardwood Forest	River Floodplain Lake
Bartram-Carr Woods						X	
Dairy Pond				X	X		
Diamond Creek		X				X	
Digital Design Wetland	X	X		X	X	X	
Fraternity Wetland		X				X	
Gator Pond				X	X		
Graham Pond		X					
Graham Woods		X				X	
Harmonic Woods						X	
Hume Creek		X				X	
Jennings Creek		X				X	
Lake Alice	X	X	X			X	X
Lake Alice South		X				X	
Law School Woods						X	
McCarty Woods						X	
Liberty Pond				X	X	X	
Newins-Ziegler Sink				X			
Ocala Pond				X	X		
Reitz Ravine Woods		X	X			X	

2.1 Basin Marsh

Basin marshes are regularly inundated wetlands comprised of freshwater macrophytes including submersed, floating-leaved, emergent, and grassy zones from deeper to shallower areas; shrub patches may be present within any of these zones (Florida Natural Areas Inventory, 2010). Characteristic plant species are presented below, summarized from the 2010 *Guide to the Natural Communities of Florida* (Florida Natural Areas Inventory, 2010).

Common species include maidencane (*Hymenachne hemitoma*), sawgrass (*Cladium jamaicense*), lanceleaf arrowhead (*Sagittaria lancifolia*), pickerelweed (*Pontederia cordata*), smooth beggarticks (*Bidens laevis*), Carolina willow (*Salix caroliniana*), southern cattail (*Typha domingensis*), and giant cutgrass (*Zizaniopsis miliacea*).

2.2 Bottomland Forest

Bottomland forests are deciduous, or mixed deciduous/evergreen, closed-canopy forests on terraces and levees within riverine floodplains and in shallow depressions. An example bottomland forest community in Reitz Ravine Woods Conservation Area is shown in Figure 1. Generally located between swamps and uplands, the canopy is often diverse with both deciduous and evergreen hydrophytic to mesophytic trees. Characteristic plant species are presented below, summarized from the 2010 *Guide to the Natural Communities of Florida* (Florida Natural Areas Inventory, 2010).

Common canopy species include sweetgum (*Liquidambar styraciflua*), sugarberry (*Celtis laevigata*), loblolly pine (*Pinus taeda*), sweetbay (*Magnolia virginiana*), swamp laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), live oak (*Quercus virginiana*), and swamp chestnut oak (*Quercus michauxii*).

The subcanopy stratum is typically composed of younger canopy species and/or small trees and tall shrubs such as American hornbeam (*Carpinus caroliniana*), swamp dogwood (*Cornus foemina*), swamp bay (*Persea palustris*), dahoon holly (*Ilex cassine*), dwarf palmetto (*Sabal minor*), wax myrtle (*Morella cerifera*), and swamp highbush blueberry (*Vaccinium formosum*).

Ground cover is often variable in composition and abundance due to an overlap of herbaceous species adapted to both mesic and hydric conditions. Common species include witchgrasses (*Dichanthelium spp.*), slender woodoats (*Chasmanthium laxum*), and sedges (*Carex spp.*).

Figure 1. Bottomland Forest Community Adjacent to a Creek in the Reitz Ravine Woods Conservation Area

2.3 Mesic Hammock

Mesic hammock is a well-developed evergreen hardwood and/or palm forest on soils that are rarely inundated. The canopy is typically closed and dominated by live oak, with cabbage palm generally common in the canopy and subcanopy. The subcanopy may be dense or open. Characteristic plant species are presented below, summarized from the 2010 *Guide to the Natural Communities of Florida* (Florida Natural Areas Inventory, 2010).

Common canopy species include live oak, cabbage palm (*Sabal palmetto*), Southern Magnolia (*Magnolia grandiflora*), pignut hickory (*Carya glabra*), loblolly pine, sweetgum, upland laurel oak (*Quercus hemisphaerica*), and water oak.

Subcanopy species include saw palmetto (*Serenoa repens*), American beautyberry (*Callicarpa americana*), American holly (*Ilex opaca*), gallberry (*Ilex glabra*), yaupon holly (*Ilex vomitoria*), Carolina laurelcherry (*Prunus caroliniana*), and wax myrtle.

Ground cover typically consists of various graminoids, including panic grasses (*Panicum spp.*), witchgrasses, woodsgrass (*Oplismenus hirtellus*), longleaf woodoats (*Chasmanthium sessiliflorum*), sedges (*Cyperaceae*), and whip nutrush (*Scleria triglomerata*), as well as various ferns and forbs such as bracken fern (*Pteridium aquilinum*) and partridgeberry (*Mitchella repens*).

2.4 Upland Hardwood Forest

Upland hardwood forest is a well-developed, closed-canopy forest dominated by deciduous hardwood trees on mesic soils in areas sheltered from fire. An example of an upland hardwood forest is in the Fraternity Wetlands Conservation Area is shown in Figure 2. Upland hardwood forest typically includes a diverse assemblage of deciduous and evergreen tree species in the canopy and midstory, a shade-tolerant shrub layer, and sparse groundcover. Characteristic plant species are presented below, summarized from the 2010 *Guide to the Natural Communities of Florida* (Florida Natural Areas Inventory, 2010).

Common canopy species include live oak, Southern magnolia, pignut hickory, loblolly pine, sweetgum, upland laurel oak, and water oak. White ash (*Fraxinus americana*), American beech (*Fagus grandifolia*), southern hackberry (*Celtis occidentalis*), spruce pine (*Pinus glabra*), white oak (*Quercus alba*), and Florida maple *(Acer saccharum ssp. floridanum)*. These species are commonly found in the Florida panhandle and northern peninsula but not further south.

Subcanopy species include small trees and/or tall shrubs such as American holly, redbay (*Persea borbonia*), eastern hophornbeam (*Ostrya virginiana*), American hornbeam (*Carpinus caroliniana*), gum bully (*Sideroxylon lanuginosum*), eastern redbud (*Cercis canadensis*), American strawberrybush (*Euonymus americanus*), winged elm (*Ulmus alata*), black cherry (*Prunus serotina*), and basswood (*Tilia americana*).

The groundcover consists of shade-tolerant forbs, graminoids, and vines including partridgeberry, Virginia creeper (*Parthenocissus quinquefolia*), violets (*Viola spp.*), sedges (*Carex spp.*), sarsaparilla vine (*Smilax pumila*), ebony spleenwort (*Asplenium platyneuron*), woodsgrass, and longleaf woodoats. Trilliums (*Trillium spp.*) can be found in the ground cover in the Panhandle and northern peninsula.

Figure 2. Upland Hardwood Forest in the Fraternity Wetland Conservation Area

2.5 River Floodplain Lake

River floodplain lakes are shallow, generally permanent, open water areas surrounded by basin swamp or floodplain swamp. "*They are typically lentic water bodies occurring in confined basins or depressions. However, during floods or following heavy rains, they may exhibit decidedly lotic characteristics, flowing with the flood water or overflowing their banks into lower topographic areas.*" (Florida Natural Areas Inventory, 2010). Vegetation in the more central zone (excluding the fringe of hydrophytic trees, shrubs, and emergent plants) ranges from an absence of plants to complete cover by floating and submerged aquatic plants. Characteristic plant species are presented below, summarized from the 2010 *Guide to the Natural Communities of Florida* (Florida Natural Areas Inventory, 2010).

Common plants include white waterlily (Nymphaea odorata), yellow waterlily (Nymphaea mexicana), American lotus (Nelumbo lutea), pondlilies (Nuphar spp.), duckweed (Lemna spp.), watermeal (Wolffia spp.), mudmidget (Wolffiella spp.), water-lettuce (Pistia stratiotes), water spangles (Salvinia minima), watershield (Brasenia schreberi), frog's bit (Limnobium spongia), waterhyssop (Bacopa spp.), marshpennywort (Hydrocotyle spp.), coontail (Ceratophyllum demersum), water milfoil (Myriophyllum spp.), bladderwort (Utricularia spp.), stream bogmoss (Mayaca fluviatilis), and Carolina fanwort (Cabomba caroliniana). Several exotic plants may also occur, including water hyacinth, water spangles, alligator weed (Alternanthera philoxeroides), water spinach (Ipomoea aquatica), parrot feather water

milfoil (Myriophyllum aquaticum), watersprite (Ceratopteris thalictroides), hydrilla (Hydrilla verticillata), and Canadian waterweed (Elodea canadensis). Scattered emergent plants such as lizard's tail (Saururus cernuus), pickerelweed, slender spikerush (Eleocharis spp.) and goldenclub (Orontium aquaticum) may also occur.

2.6 Sinkhole and Sinkhole Lake

Sinkholes are cylindrical or steep-sided conical depressions common in areas of karst geology generally formed by the slumping of soil into subterranean cavities or the dissolution of limestone near the surface. A sinkhole that holds water throughout most of the year and dries out only during extreme droughts is considered to include both a sinkhole and sinkhole lake community (Florida Natural Areas Inventory, 2010). In Peninsular Florida, sinkholes are most often associated with hardwood forest communities such as upland hardwood forest and mesic hammock habitats (Florida Natural Areas Inventory, 2010). All sinkholes and sinkhole lakes within the Lake Alice Conservation Areas are surrounded by upland hardwood forest.

Sinkhole vegetation is highly variable and typically influenced by the surrounding matrix of natural communities. Their vegetative structure ranges from vertical walls devoid of plants to soil-covered rock areas with well-developed cover by hardwood canopy species. Moist microclimates moderated from temperature extremes are common in sinkholes as they are typically sheltered habitats with ephemeral standing water, seepage inputs from the surrounding uplands, and reduced exposure to air movement. Sinkholes with ephemeral standing water are important breeding sites for many amphibian species as they are less likely to support populations of predatory fish. Species distribution along the slope of a sinkhole is dependent on several factors such as light availability, temperature, humidity, soil presence and type, drainage and seepage, and steepness of the sinkhole walls (Florida Natural Areas Inventory, 2010).

Section 3.0 Conservation Areas in the Lake Alice Watershed

Nineteen Conservation Areas are located within the Lake Alice Watershed (Figure 3). Each site was visited and surveyed to assess vegetation community structure including species diversity and abundance by natural community type and strata (canopy, subcanopy, and groundcover). Strata criteria are described in Table 2. Each community type within the Conservation Area was visually surveyed to develop a representative plant list, including the most abundant species for each stratum. Values for percent cover were visually estimated by community type and stratum across the entire Conservation Area. The only area that did not receive a complete survey was the Lake Alice Conservation Area due to its size. The Lake Alice Conservation Area was divided into smaller subsampling areas consisting of a single natural community type (See Section 3.12). Several completed surveys were more generalized due to limited site accessibility related to the water depths. These included:

- Digital Design Wetland Bottomland Forest,
- Digital Design Wetland and Lake Alice Basin Marshes,
- Dairy Pond, Gator Pond, Liberty Pond, and Ocala Pond Sinkhole Lakes.

The communities listed above were surveyed at a distance from multiple vantage points along berms, trails, bridges, etc. Certain portions of the Conservation Areas were not surveyed due to water levels or the lack of an existing natural community. These included:

- Digital Design Wetland sinkhole (Sweet Sink),
- Lake Alice river floodplain lake,
- Channelized creeks in the Lake Alice, Digital Design Wetland, and Bartram-Carr Woods Conservation Areas,
- Developed areas including buildings and paved roads/sidewalks,
- Mowed areas with minimal cover by canopy or subcanopy species.

The qualitative plant surveys completed as a part of this project are intended to provide preliminary information that can be used to inform prioritization, guide future data collection efforts, and management plan development. A list of invasive species observed in the Conservation Areas of the Lake Alice Watershed is provided in Table 5. Invasive species classification is provided in Table 3 based on the Florida Invasive Species Council's (FISC) *2019 FISC List of Invasive Plant Species* (Florida Invasive Species Council, 2019).

Stormwater is a common feature in most of the Conservation Areas on campus. All 19 Conservation Areas had one or more stormwater pipes entering or exiting as shown in Table 4. The following sections outline the location of each natural area, present the vegetation cover of each natural area by natural community type and strata, discuss the impacts to each natural area by natural community type, and provide recommendations for mitigating current and future impacts to each natural area by natural community type.

Figure 3. Lake Alice Watershed Conservation Areas

Table 2. Canopy, Subcanopy, and Groundcover Definitions

Strata	Definition
Canopy	Woody species over 4" diameter at breast height (DBH)
Subcanopy	Woody species over 1" and under 4" DBH
Groundcover	Woody species under 1" DBH and herbaceous species

Table 3. Florida Invasive Species Council's Invasive Plant Categories

Category	Definition	Abbreviation
Category I	Invasive exotics that alter native plant communities by displacing native species, change community structure or ecological function, or hybridize with native vegetation.	FISC Cat I
Category II	Invasive exotics that have increased in abundance or frequency but are not yet altering Florida plant communities to the extent shown by Category I species.	FISC Cat II

Table 4. Stormwater Features Entering or Exiting Each Conservation Area and Acreage

Conservation Area	Stormwater Pipes	Acreage
Bartram-Carr Woods	2	8.7
Dairy Pond	7	0.7
Diamond Creek	5	2.0
Digital Design Wetland	7	8.6
Fraternity Wetland	4	4.5
Gator Pond	5	0.6
Graham Pond	2	0.6
Graham Woods	14	7.5
Harmonic Woods	1	10.0
Hume Creek	3	0.6
Jennings Creek	14	3.6
Lake Alice	26	134
Lake Alice South	3	10.6
Law School Woods	1	3.3
McCarty Woods	5	2.9
Liberty Pond	1	1.5
Newins-Ziegler Sink	2	0.4
Ocala Pond	3	0.6
Reitz Ravine Woods	8	2.9

Table 5. Category I and Category II Invasive Plant Species Observed in the Lake Alice Watershed's Conservation Areas

Latin Name	Common Name	Invasiveness Classification
Albizia julibrissin	Silktree mimosa	FISC Cat I
Ardisia crenata	Coral ardisia	FISC Cat I
Cinnamomum camphora	Camphortree	FISC Cat I
Colocasia esculenta	Taro	FISC Cat I
Dioscorea bulbifera	Air potato	FISC Cat I
Dolichandra unguis-cati	Catclawvine	FISC Cat I
Lantana strigocamara	Lantana	FISC Cat I
Ligustrum lucidum	Glossy privet	FISC Cat I
Ligustrum sinense	Chinese privet	FISC Cat I
Ludwigia peruviana	Peruvian primrosewillow	FISC Cat I
Lygodium japonicum	Japanese climbing fern	FISC Cat I
Nandina domestica	Heavenly bamboo	FISC Cat I
Nephrolepis cordifolia	Tuberous swordfern	FISC Cat I
Oshuna crassipes	Water hyacinth	FISC Cat I
Paederia foetida	Skunkvine	FISC Cat I
Salvinia minima	Water spangles	FISC Cat I
Syngonium podophyllum	American evergreen	FISC Cat I
Tradescantia fluminensis	Small-leaf Spiderwort	FISC Cat I
Triadica sebifera	Chinese tallow tree	FISC Cat I
Urena lobata	Caesarweed	FISC Cat I
Urochloa maxima	Guineagrass	FISC Cat I
Urochloa mutica	Paragrass	FISC Cat I
Broussonetia papyrifera	Paper mulberry	FISC Cat II
Epipremnum aureum	Pothos	FISC Cat II
Koelreuteria elegans subsp. formosana	Flamegold	FISC Cat II
Melia azedarach	Chinaberrytree	FISC Cat II
Sphagneticola trilobata	Creeping oxeye	FISC Cat II
Wisteria sinensis	Chinese wisteria	FISC Cat II
Xanthosoma sagittifolium	Arrowleaf elephant's ear	FISC Cat II

3.1 Bartram-Carr Woods

The Bartram-Carr Woods Conservation Area is located roughly 200 feet south of Museum Road between Center Drive and South Newell Drive (Figure 4). This Conservation Area includes landscaped areas maintained with a mowed groundcover and widely spaced trees (Figure 5) and areas resembling a more natural upland hardwood forest community including a fuller canopy, subcanopy cover, and reduced groundcover disturbance (groundcover in the forested areas still resembles that of a disturbed upland hardwood forest). The site is readily accessible with paved trails connecting the Psychology Building, Carr Hall, and the Harrell Medical Education Building. A bridge to the south crosses Lake Alice Creek connecting the Conservation Area's southern border to the health center facilities across the creek. Concrete picnic benches are located in the upland hardwood forest and in the more landscaped portions of the property. These amenities provide students and faculty with recreational and contemplative natural spaces in the center of campus. Bartram-Carr Woods also provides an educational destination to supplement ecology, land management, urban planning, and natural resource management lectures with in-person field trips.

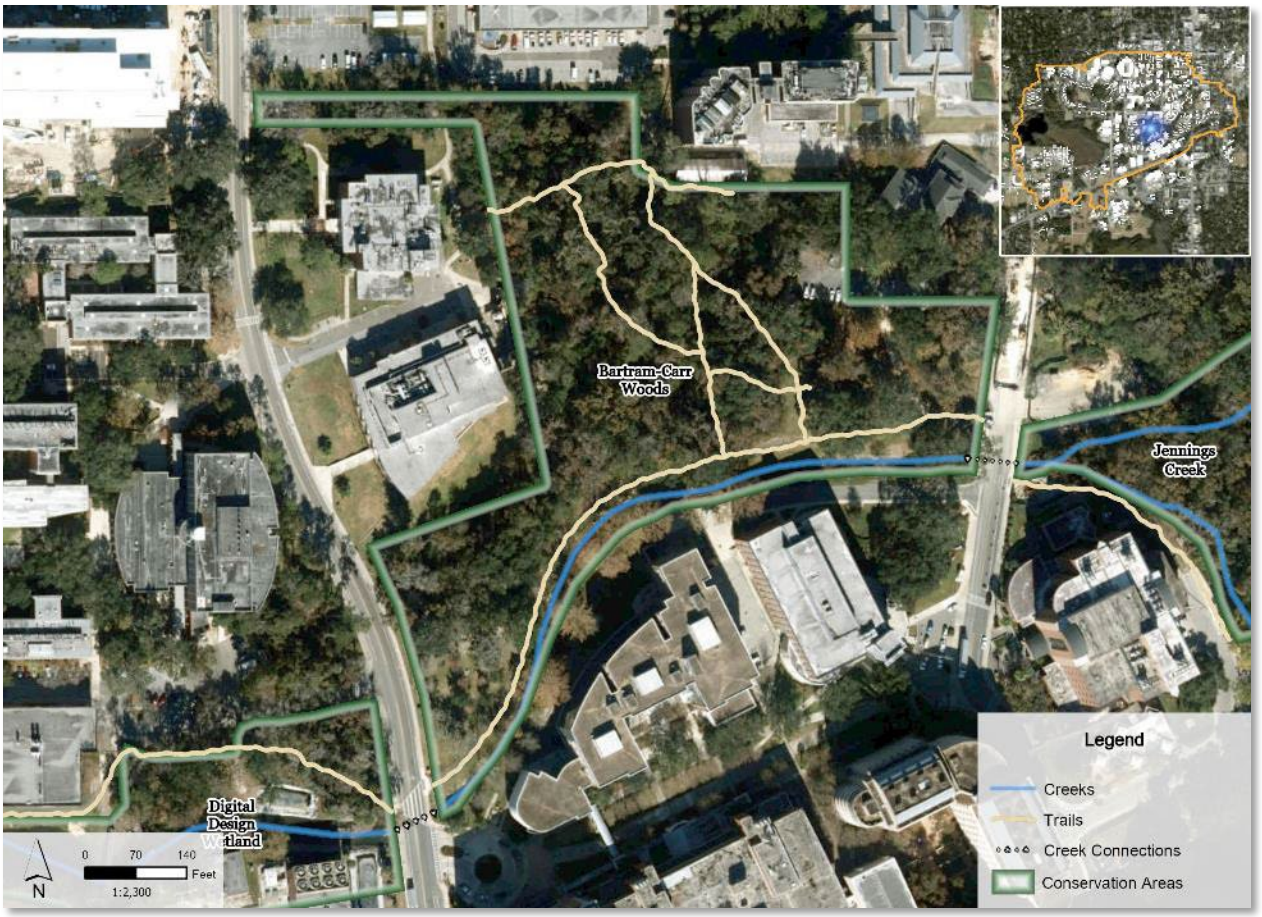

Figure 4. Bartram-Carr Woods Conservation Area

Figure 5. Landscaped Portion of the Bartram-Carr Woods Conservation Area

A site visit was conducted on October 31, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the *University of Florida Conservation Areas Land Management Plan – Bartram-Carr Woods* (University of Florida, n.d.-a) and supplement the species data reported in BioGator. Figure 6 summarizes vegetation percentage cover by community type, strata, and native status in the Bartram-Carr Woods Conservation Area. A complete list of observed species for the Bartram-Carr Woods Conservation Area is provided in Appendix A. The following section discusses current site conditions and impacts to the ecological structure of the Conservation Area.

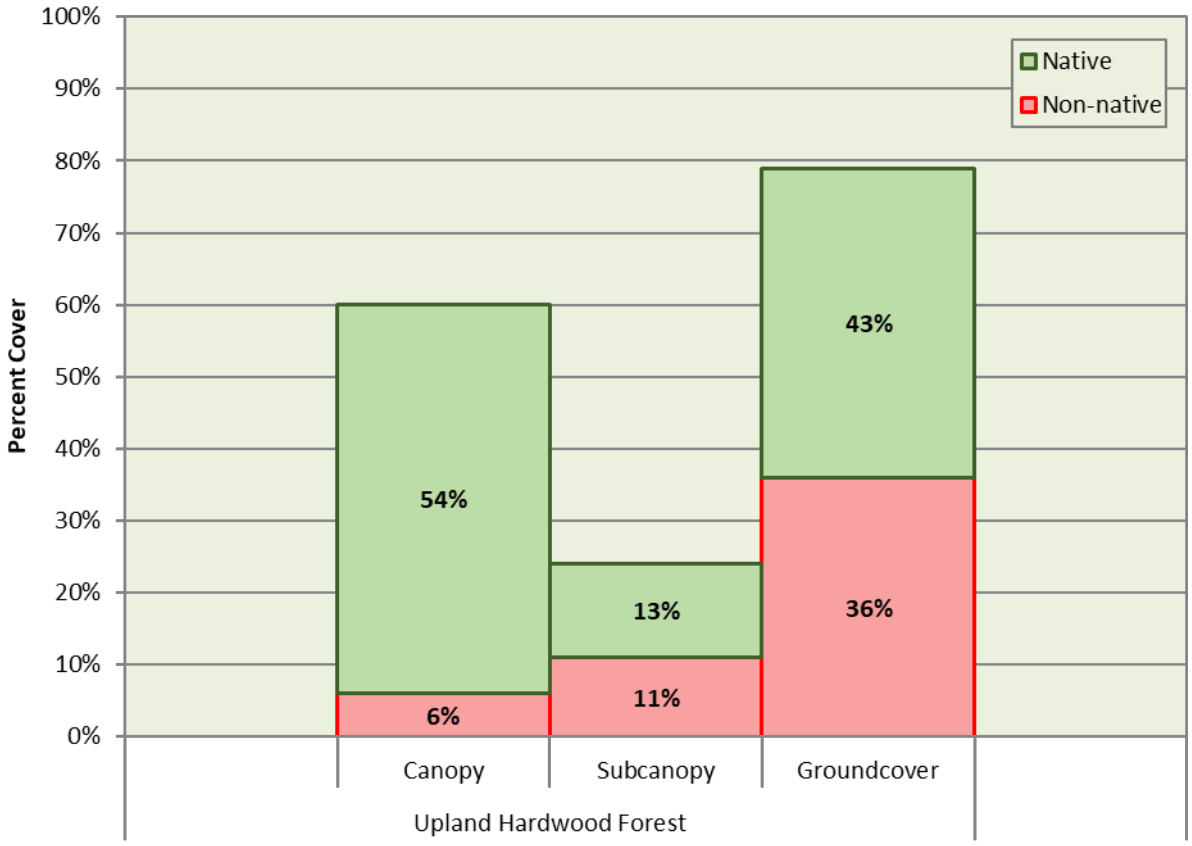

Figure 6. Bartram-Carr Woods Vegetation Cover by Community, Strata, and Native Status

3.1.1 Upland Hardwood Forest

The upland hardwood forest is a closed canopy system including live oak, American sycamore (*Platanus occidentalis*), loblolly pine, sweetgum, and cabbage palm. The common plant species in the scarcer subcanopy include Carolina laurel cherry, glossy privet, and kodo (*Ehretia acuminata*). The more common groundcover species include guineagrass, catclaw vine, air potato, basketgrass, Carolina laurel cherry, and muscadine grape (*Vitis rotundifolia*). Other common groundcovers include mile-a-minute vine (*Ipomoea cairica*), crossvine, cabbage palm, St. Augustinegrass (*Stenotaphrum secundatum*), camphor tree, peppervine (*Nekemias arborea*), coral ardisia, sugarberry, and sweetgum.

Light availability, human use, vegetative material, and landscaping along the interface between the natural and landscaped portions of the Conservation Area have resulted in the encroachment and establishment of various exotic and invasive species. Other impacts include litter and the loss/destabilization of soil caused by stormwater erosion along Lake Alice Creek.

3.2 Dairy Pond

The Dairy Pond Conservation Area is located roughly 250 feet south of Marston Science Library (Figure 7). This Conservation Area consists of a sinkhole with a sinkhole lake in the center and vegetation resembling upland hardwood forest along the sinkhole edges. The site provides stormwater retention and aesthetic value to the landscape and is accessible via the sidewalks that connect McCarty Hall to the Marston Science Library on the western and northern portions of the Conservation Area.

Figure 7. Dairy Pond Conservation Area

A site visit was conducted on October 16, 2023, to evaluate the ecological structure and collect vegetation data. Figure 8 summarizes vegetation percentage cover by community type, strata, and native status in the Dairy Pond Conservation Area. It should be noted that only sinkholes without a permanently flooded cavity (Newins-Ziegler Sink) use the combined area of the sinkhole edges and the cavity to calculate vegetation percentage covers. Sinkholes containing a sinkhole lake (Dairy Pond, Gator Pond, Graham Pond, Ocala Pond) use individual areas for each natural community type (sinkhole and sinkhole lake) included in these Conservation Areas to generate vegetation percentage cover estimates. A complete list of observed species by natural community for the Dairy Pond Conservation Area is provided in Appendix A. The following sections discuss current site conditions and observed impacts to the ecological structure by natural community type.

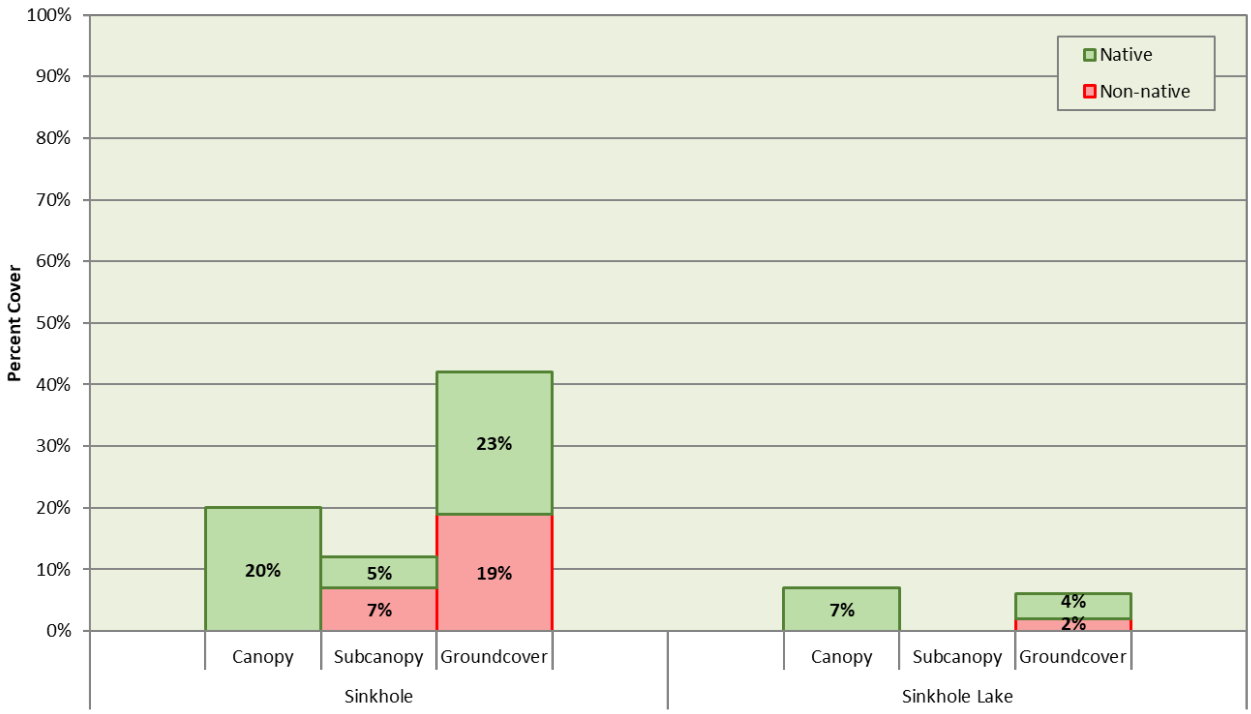

Figure 8. Dairy Pond Vegetation Cover by Community, Strata, and Native Status

3.2.1 Sinkhole

The vegetation along the edges of the sinkhole resembles a highly disturbed, open canopy, upland hardwood forest habitat including live oak, cabbage palm, river birch (*Betula nigra*), and sweetgum. Other common canopy species include pignut hickory, swamp laurel oak, and Shumard oak (*Quercus shumardii*). The subcanopy is scarce and includes winged elm, sweet viburnum (*Viburnum odoratissimum*), American beech, glossy privet, and sweetgum. Common groundcover species include catclaw vine, beggarticks (*Bidens alba*), fingergrass (*Digitaria sp.*), and skunkvine. Other common groundcovers include American beautyberry, climbing hempvine (Mikania scandens), shakeshake (*Crotalaria incana*), lantana, fakahatcheegrass (*Tripsacum dactyloides*), and cape leadwort (*Plumbago auriculata*).

Light availability, human use, vegetative material, and landscaping along the site boundary have resulted in the encroachment and establishment of various exotic and invasive species. Other impacts include litter and the loss/destabilization of soil caused by stormwater erosion.

3.2.2 Sinkhole Lake

The sinkhole lake portion of Dairy Pond is a small, open water system with steep side slopes. The canopy consists of several cabbage palms and one water oak (Figure 9) rooted along the edges of the sinkhole but with a portion or all of their crowns above the sinkhole lake. Cover by subcanopy is absent. Groundcover observed in the open water footprint was confined to the littoral edge. This included taro, buttonbush (*Cephalanthus occidentalis*), and Mexican primrosewillow (*Ludwigia octovalvis*).

The open water community receives stormwater inputs from direct impervious surface runoff and stormwater pipes that are likely to impact water quality and contribute sediment.

Figure 9. Water Oak Tree Leaning Over the Sinkhole Lake in the Dairy Pond Conservation Area

3.3 Diamond Creek

The Diamond Creek Conservation Area is located directly west of the intersection of SW Archer Road and SW 13th Street (Figure 10). This conservation area includes bottomland forest habitat on both sides of Diamond Creek and an upland hardwood forest habitat which acts as a buffer to this riparian corridor. The bottomland forest community quickly transitions into upland hardwood forest due to the steep side slopes that have resulted from stormwater erosion in the steep gradient creek. The property has no designated trails for access.

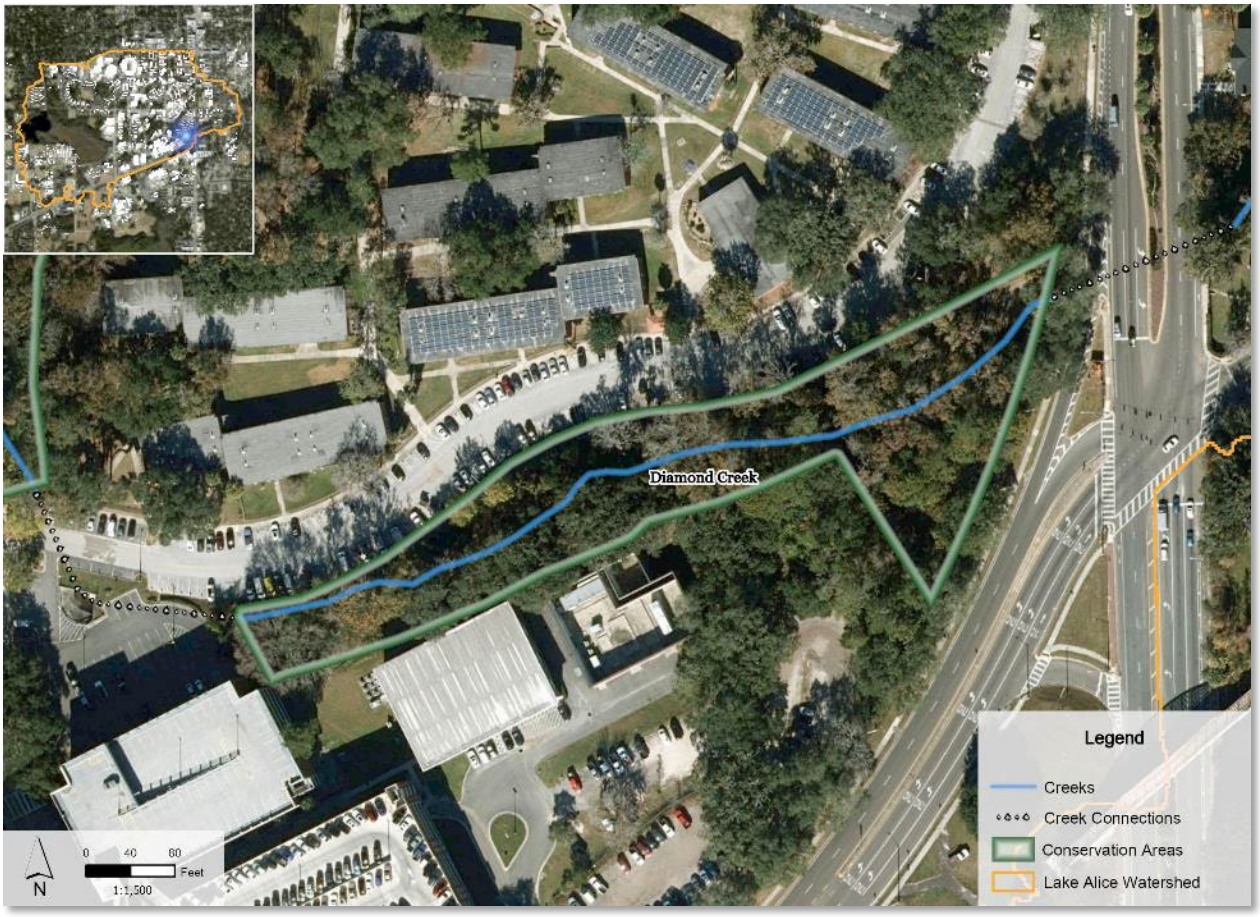

Figure 10. Diamond Creek Conservation Area

A site visit was conducted on December 5, 2023, to assess ecological structure and collect vegetation data for the upland hardwood forest in the Diamond Creek Conservation Area. A separate vegetation survey was not conducted for the bottomland forest community because of its limited area and lack of vegetation along the steep-sided channel. Figure 11 summarizes vegetation percentage cover by community type, strata, and native status in the Diamond Creek Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following section discusses current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

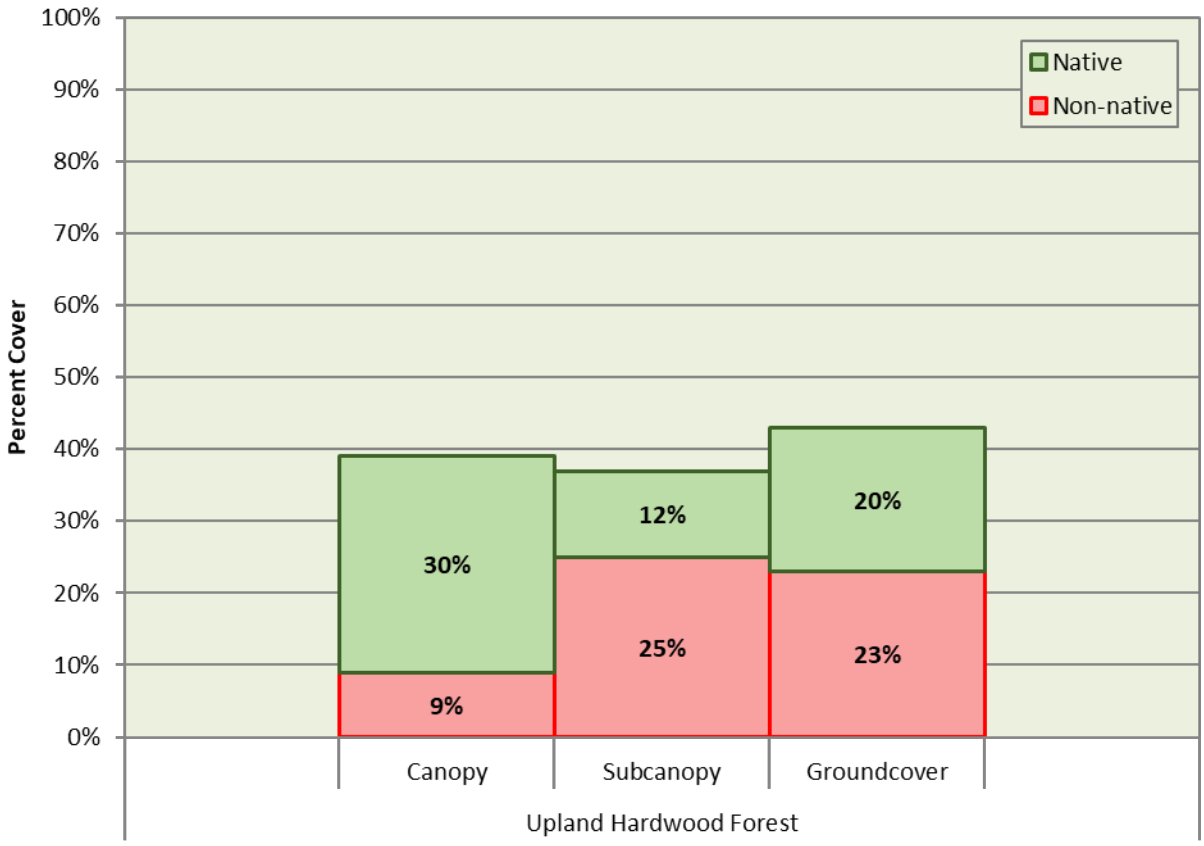

Figure 11. Diamond Creek Vegetation Cover by Community, Strata, and Native Status

3.3.1 Upland Hardwood Forest

The upland hardwood forest is an open canopy system including sweetgum, flamegold, Shumard oak, and live oak. Other common canopy species included pignut hickory, white ash, glossy privet, and loblolly pine. The subcanopy primarily consists of glossy privet. Other common subcanopy species include flamegold, paper mulberry, pignut hickory, sugarberry, sweetgum, eastern hophornbeam, Carolina laurel cherry, and water oak. Common groundcover species include flamegold and cabbage palm. Other common groundcovers include Carolina laurel cherry, greenbriar, tuberous swordfern, muscadine grape, and glossy privet.

Light availability, human use, vegetative material, and landscaping in and around the upland forest have resulted in the encroachment and establishment of various exotic and invasive species. Stormwater erosion has resulted in steep side slopes that have reduced the transitional area from this community to the creek bottom.

3.3.2 Bottomland Forest

The bottomland forest community at the Diamond Creek Conservation Area has been largely eliminated as a result of stormwater erosion that has caused the failure and collapse of the creek banks. This erosion has been partially addressed through hardening of the side slopes near the pipe under SW 13th Street where gabion baskets were installed in 2008 (Figure 12) although erosion and steep creek banks remain an issue further downstream.

Figure 12. Diamond Creek Bank Stabilization

3.4 Digital Design Wetland

The Digital Design Wetland Conservation Area is located between UF's Water Reclamation Facility and Black Hall (Figure 13). This Conservation Area consists of upland hardwood forest, bottomland forest, and basin marsh habitats. The site provides stormwater retention and aesthetic value to the landscape. Trail access in this area is on a shared use path located at the southern end of the Conservation Area along Lake Alice Creek. A site visit was conducted on December 21, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the *University of Florida Conservation Areas Land Management Plan – Digital Design Wetland* (University of Florida, n.d.-b) and species data reported in BioGator. Figure 14 summarizes vegetation percentage cover by community type, strata, and native status in the Digital Design Wetland Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

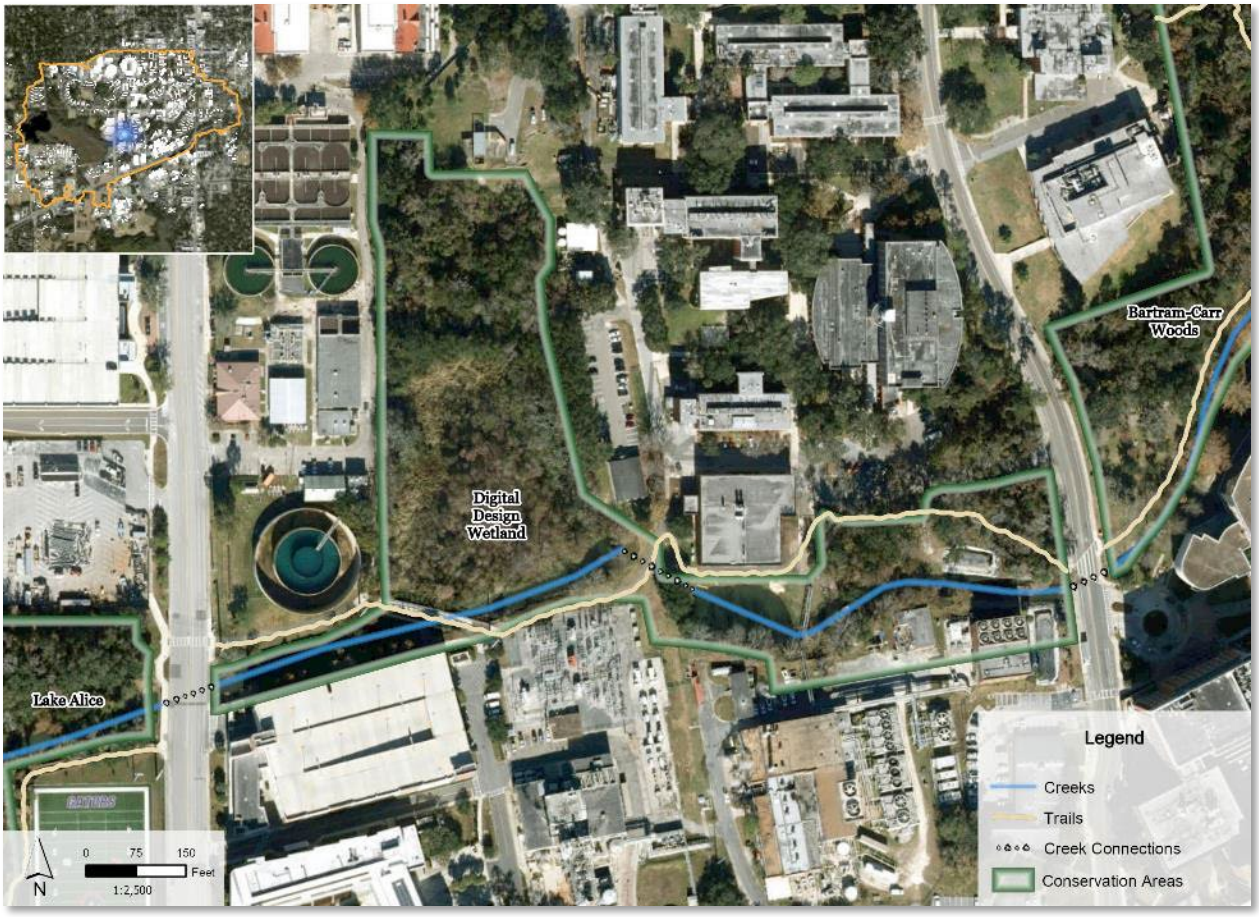

Figure 13. Digital Design Wetland Conservation Area

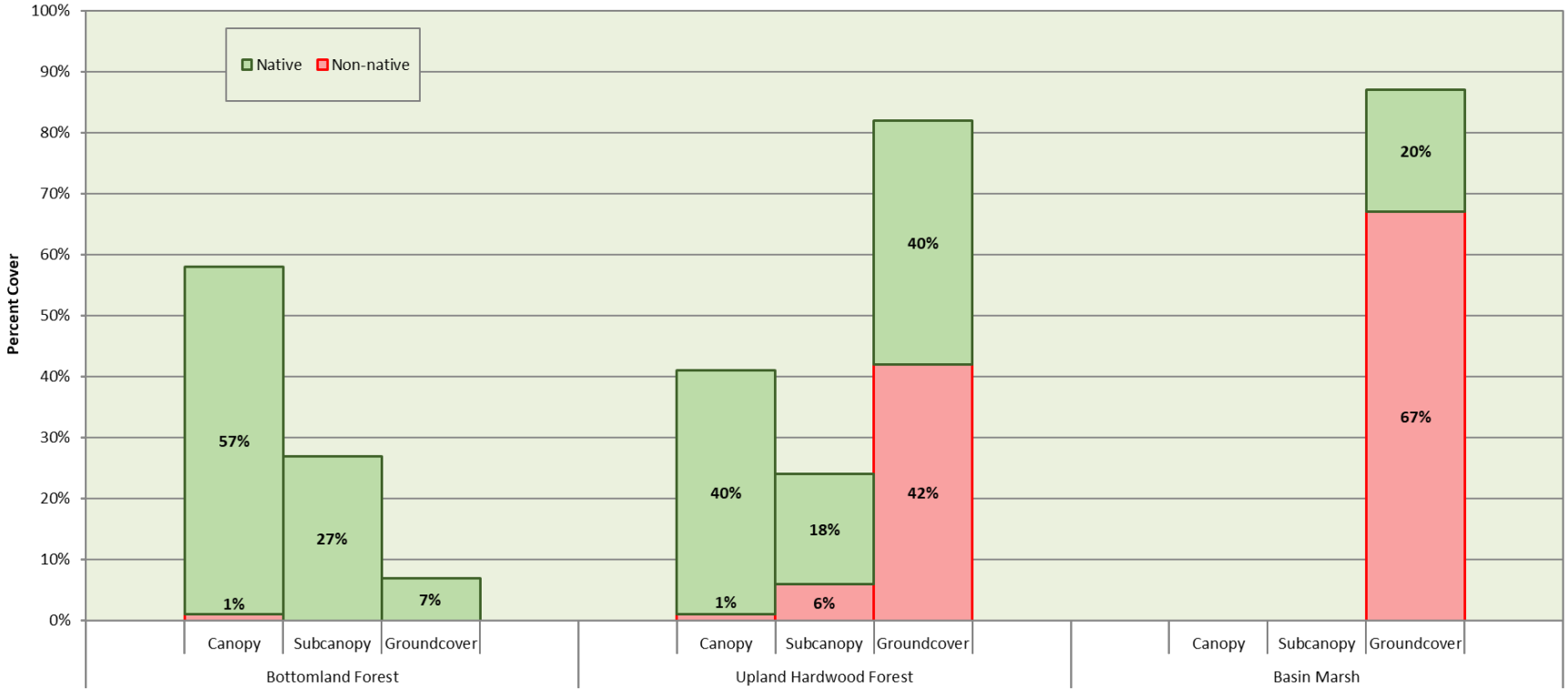

Figure 14. Digital Design Wetland Vegetation Cover by Community, Strata, and Native Status

3.4.1 Upland Hardwood Forest

The upland hardwood forest is a closed canopy system including live oak, cabbage palm, sugarberry, water oak, red cedar (*Juniperus virginiana*), and silktree mimosa. The subcanopy is scarce and primarily consists of glossy privet with smaller areas vegetated with sugarberry and water oak. Common groundcover species include cabbage palm and mile-a-minute vine. Other, less common, groundcover species include catclaw vine and glossy privet.

Light availability, human use, vegetative material, and landscaping in the upland hardwood forest and along the upland hardwood forest's boundary have resulted in the encroachment and establishment of various exotic and invasive species.

3.4.2 Bottomland Forest

The bottomland forest surveyed (along the paths connecting Black Hall to Gale Lemerand Drive) is a closed canopy system dominated by Carolina willow. Other common canopy species include wax myrtle and box elder (*Acer negundo*). The subcanopy is scarce and dominated by wax myrtle. Other, less common, subcanopy species include Carolina willow. Common groundcover species include climbing aster (*Ampelaster carolinianus*) and Carolina willow.

3.4.3 Basin Marsh

The basin marsh community is a regularly inundated deep freshwater marsh dominated by paragrass (*Urochloa mutica*). Other groundcover species include giant cutgrass, climbing aster, Peruvian primrosewillow, Carolina willow, and pennywort (*Hydrocotyle sp.*)

The transport of low-quality water, undesirable vegetative material, and sediment to this community from larger stormwater events has significantly impacted the ecological structure of this marsh and resulted in the establishment and dominance of paragrass observed during the site visit.

3.4.4 Sinkhole Lake

This community was not surveyed during the site visit.

3.5 Fraternity Wetland

The Fraternity Wetland Conservation Area is located between Fraternity Row and Flavet Field (Figure 15). This Conservation Area consists of a bottomland forest surrounded by upland hardwood forest habitat. A small, incised creek exists near the center of the Conservation Area, which exits the Conservation Area through a pipe along the southwestern edge. There are no designated trails to access the site.

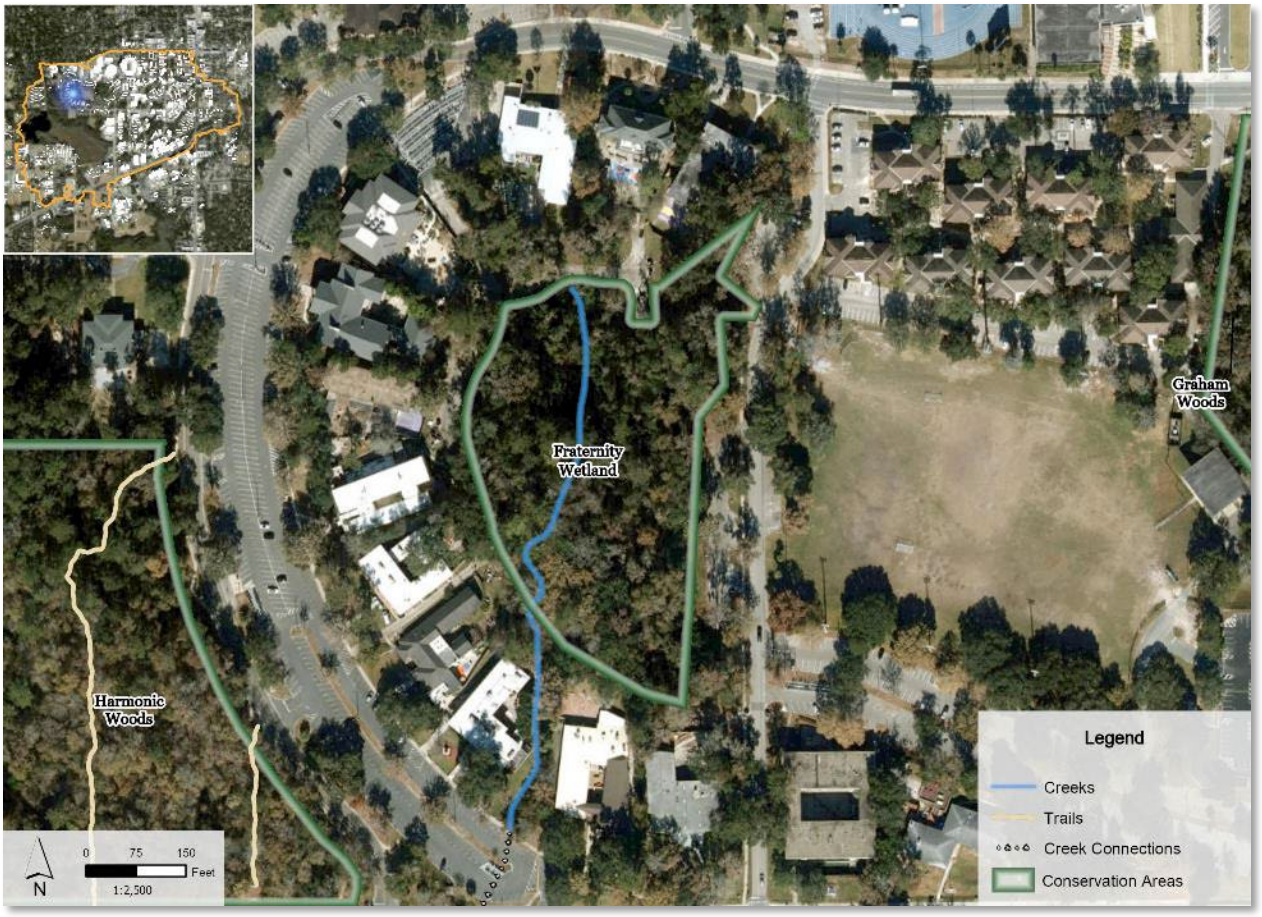

Figure 15. Fraternity Wetland Conservation Area

A site visit was conducted on October 24, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the 2011 *University of Florida Conservation Areas Land Management Plan – Fraternity Wetland* (University of Florida, n.d.-c) and species data reported in BioGator. Figure 16 summarizes vegetation percentage cover by community type, strata, and native status in the Fraternity Wetland Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

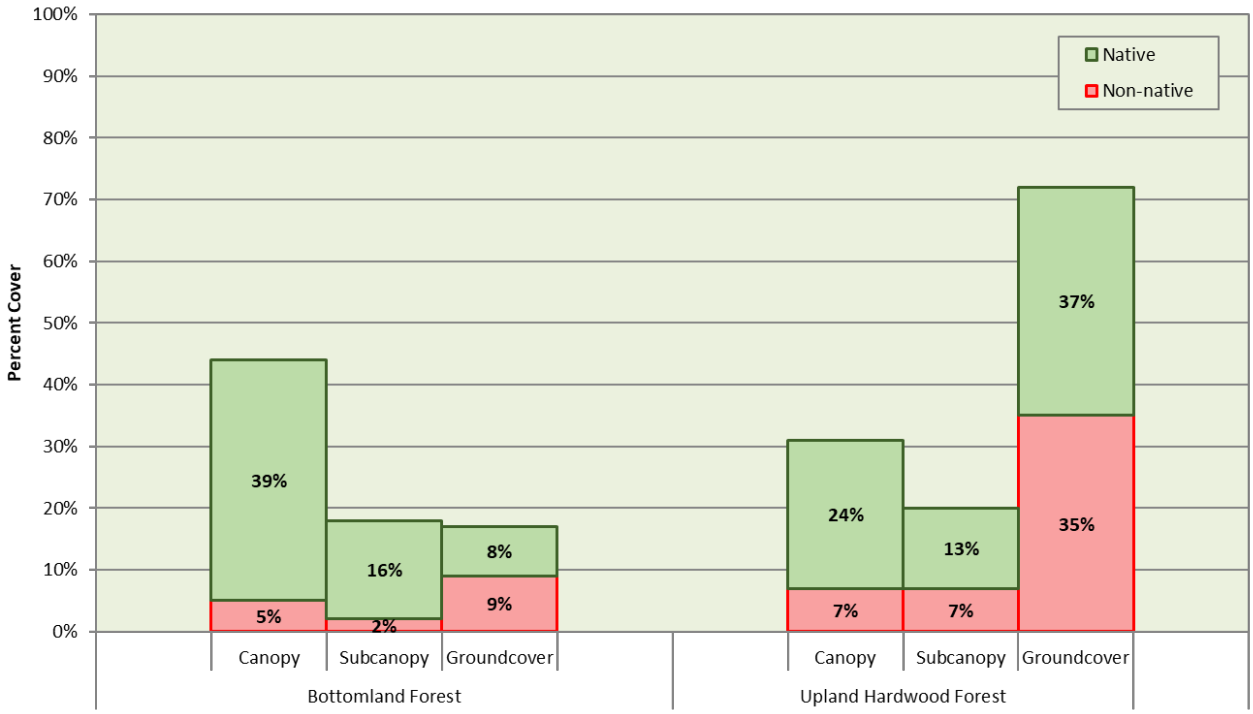

Figure 16. Fraternity Wetland Vegetation Cover by Community, Strata, and Native Status

3.5.1 Upland Hardwood Forest

The upland hardwood forest is a closed canopy system including loblolly pine, cabbage palm, and glossy privet. Other common canopy species include sugarberry, American hornbeam, pignut hickory, sweetgum, eastern hophornbeam, and southern magnolia. The comparatively scarce subcanopy includes water oak, American hornbeam, sweetgum, eastern hophornbeam, Carolina laurel cherry, loquat (*Eriobotrya japonica*), glossy privet, and paper mulberry. Common groundcover species include small-leaf spiderwort and crossvine (*Bignonia capreolata*). Other groundcovers include Carolina laurel cherry, coral ardisia, American evergreen, pothos, switch cane, and greenbriar.

Light availability, human use, vegetative material, and landscaping in the upland hardwood forest and along the upland hardwood forest boundary have resulted in the encroachment and establishment of various exotic and invasive species.

Impacts to both natural communities (upland hardwood forest and bottomland forest) include large amounts of litter from the adjacent fraternity houses (Figure 17 and Figure 18). Trash observed during the site visit included:

- A 35-gallon trash receptacle in the creek (Figure 17), two wooden tabletops, and one foldable plastic table in the upland forest community,
- Dense patches of litter in several forested areas within 100 feet of the dumpsters (Figure 18) and an area littered with over 100 aluminum/glass beer bottles and cans.

Figure 17. Trash Bin (left) and Tables (right) in the Fraternity Wetland Conservation Area

Figure 18. Litter in the Fraternity Wetland Conservation Area

3.5.2 Bottomland Forest

The bottomland forest is a closed canopy system including American hornbeam, sweetgum, eastern hophornbeam, cabbage palm, glossy privet, swamp tupelo (*Nyssa sylvatica var. biflora*), water oak, and red maple. Other common canopy species include swamp chestnut oak and sugarberry. The subcanopy is scarce and includes American hornbeam, eastern hophornbeam, sweetgum, elderberry and glossy privet. The groundcover includes maiden fern (*Thelypteris sp.*), small-leaf spiderwort, and coral ardisia.

Vegetative material and soil disturbance have resulted in the encroachment and establishment of various exotic and invasive species in the bottomland forest community.

3.6 Gator Pond

The Gator Pond Conservation Area is located near Century Tower between Little Hall and the Architecture Building (Figure 19). This Conservation Area consists of a sinkhole with a sinkhole lake in the center and vegetation resembling upland hardwood forest along the sinkhole edges. The site provides stormwater retention and aesthetic value to the landscape and is accessible via the sidewalks along the entire perimeter of the Conservation Area.

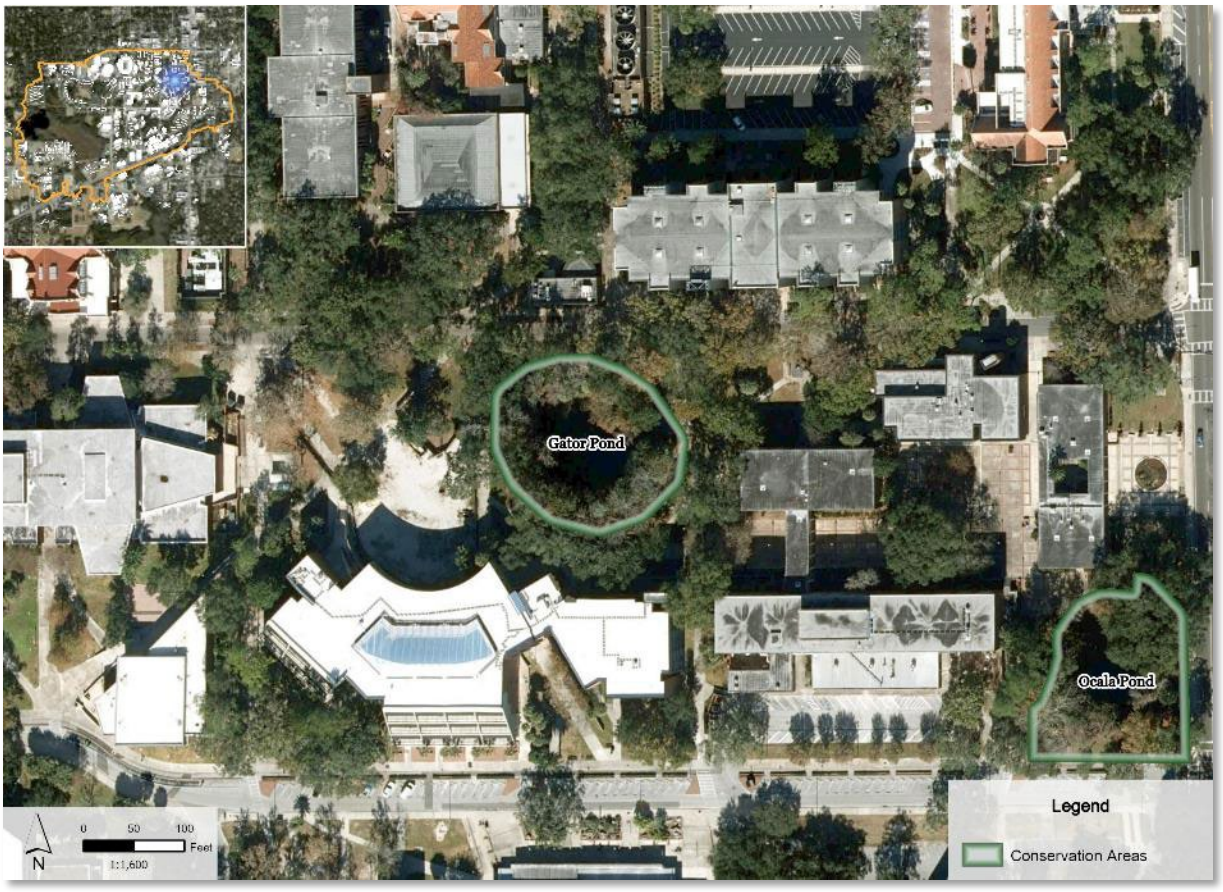

Figure 19. Gator Pond Conservation Area

A site visit was conducted on October 16, 2023, to evaluate the ecological structure and collect vegetation data. Figure 20 summarizes vegetation percentage cover by community type, strata, and native status in

the Gator Pond Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and observed impacts to the ecological structure by natural community type.

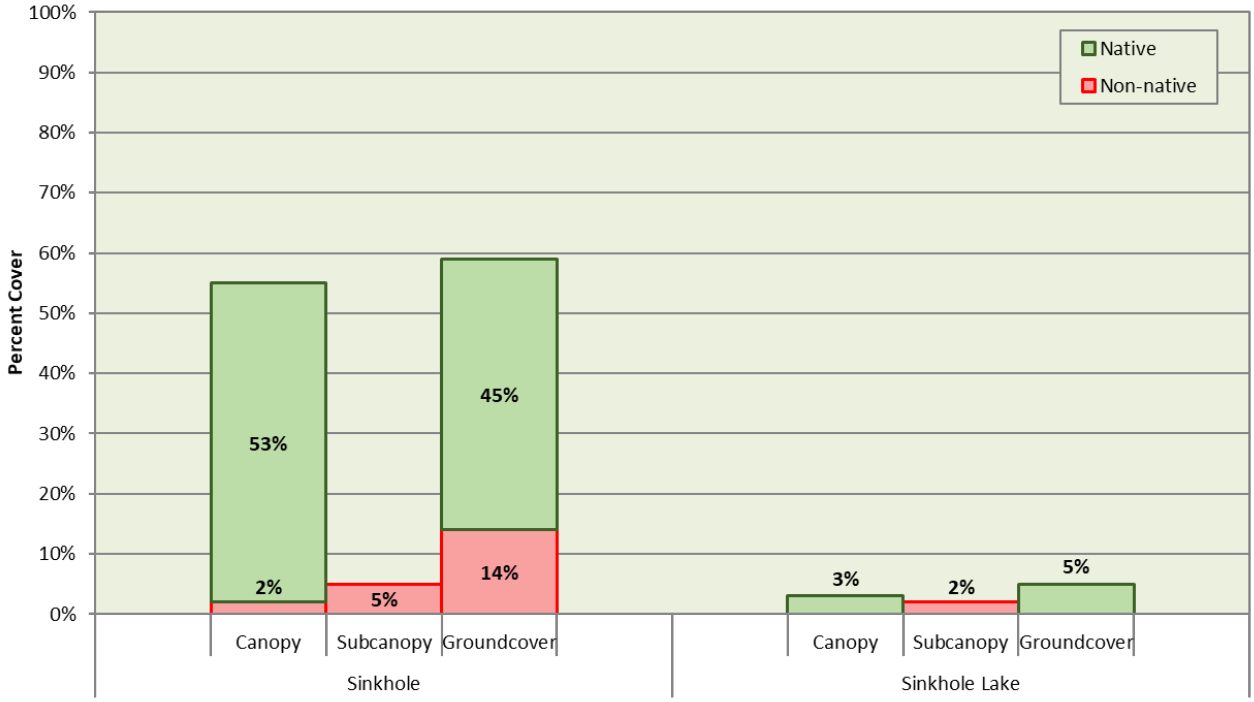

Figure 20. Gator Pond Vegetation Cover by Community, Strata, and Native Status

3.6.1 Sinkhole

The vegetation along the edges of the sinkhole resembles an open canopy upland hardwood forest habitat with areas of exposed limestone. The more common canopy cover species includes pignut hickory, cabbage palm, live oak, and red mulberry (*Morus rubra*). Other common canopy species include sugarberry, swamp laurel oak, and southern magnolia. The subcanopy is scarce including sweetgum, sugarberry, red mulberry, wax myrtle, Chinese privet, and Silktree mimosa. The more common groundcover includes tuberous swordfern, switch cane, and a non-native species of the Ericaceae family (*Rhododendron sp.*). Other common groundcover includes skunkvine (Figure 21), sugarberry, sweetgum, red mulberry, coral bean, greenbriar, oakleaf hydrangea, yaupon, beggarticks, witchgrass (*Dicanthelium sp.*), Virginia creeper, carpetgrass (*Axonopus sp.*), St. Augustinegrass, fingergrass, and camphortree.

Light availability, human use, vegetative material, and landscaping along the site boundary have resulted in the encroachment and establishment of various exotic and invasive species. Other impacts to community structure include littering and the loss/destabilization of soil caused by stormwater erosion.

3.6.2 Sinkhole Lake

The sinkhole lake portion of Gator Pond is a small (roughly 0.25 acres), circular, open water system with steep side slopes and exposed limestone along its northeastern edge (Figure 21). The canopy consists of sweetgum and cabbage palm trees that are rooted along the sinkhole edges but have a portion of their crown over the open water system. Cover by subcanopy is more scarce including buttonbush and sweetgum. Sweetgum was the only observed groundcover in the open water system with saplings (less

than 1” DBH) rooted on the edge with their crown extending over the open water as with the canopy stratum. Invasive skunkvine was observed along the edge of the lake (Figure 22), as was wildlife (Figure 23).

The open water community receives stormwater inputs from direct impervious surface runoff and stormwater pipes which are likely to impact water quality and contribute sediment.

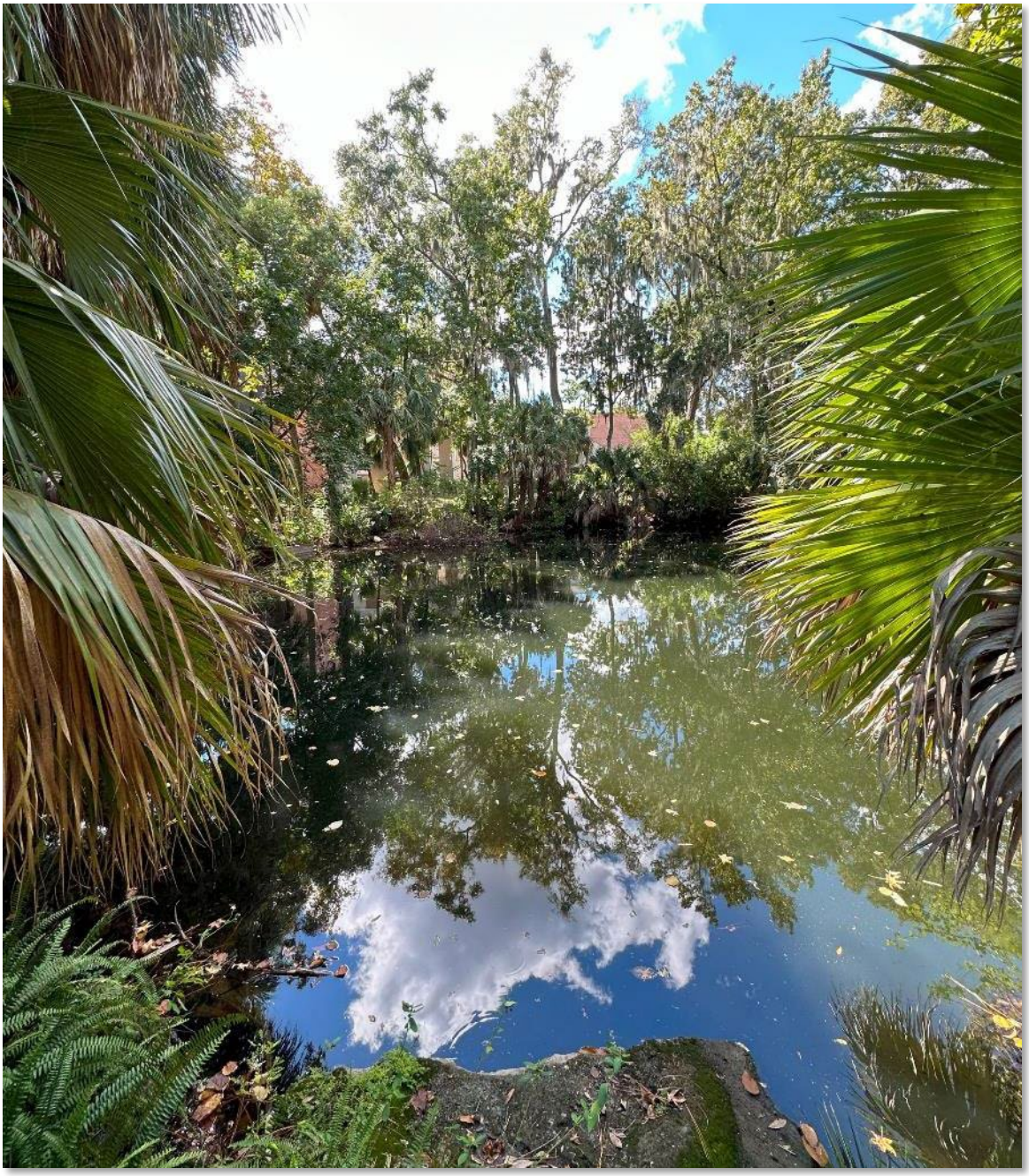

Figure 21. Sinkhole Lake Community at Gator Pond

Figure 22. Skunkvine (*Paederia foetida*) (FISC Cat I) Blooming in the Gator Pond Conservation Area

Figure 23. Red Shouldered Hawks on a Cabbage Palm Tree in the Gator Pond Conservation Area

3.7 Graham Pond

The Graham Pond Conservation Area is located in between Simpson Hall and Gale Lemerand Drive (Figure 24). This Conservation Area consists of a pair of ponds surrounded by vegetation resembling bottomland forest habitat. The site provides stormwater retention and aesthetic value to the landscape and is accessible via the sidewalks along Museum Road and Gale Lemerand Drive and along the Conservation Area's northern and eastern boundaries.

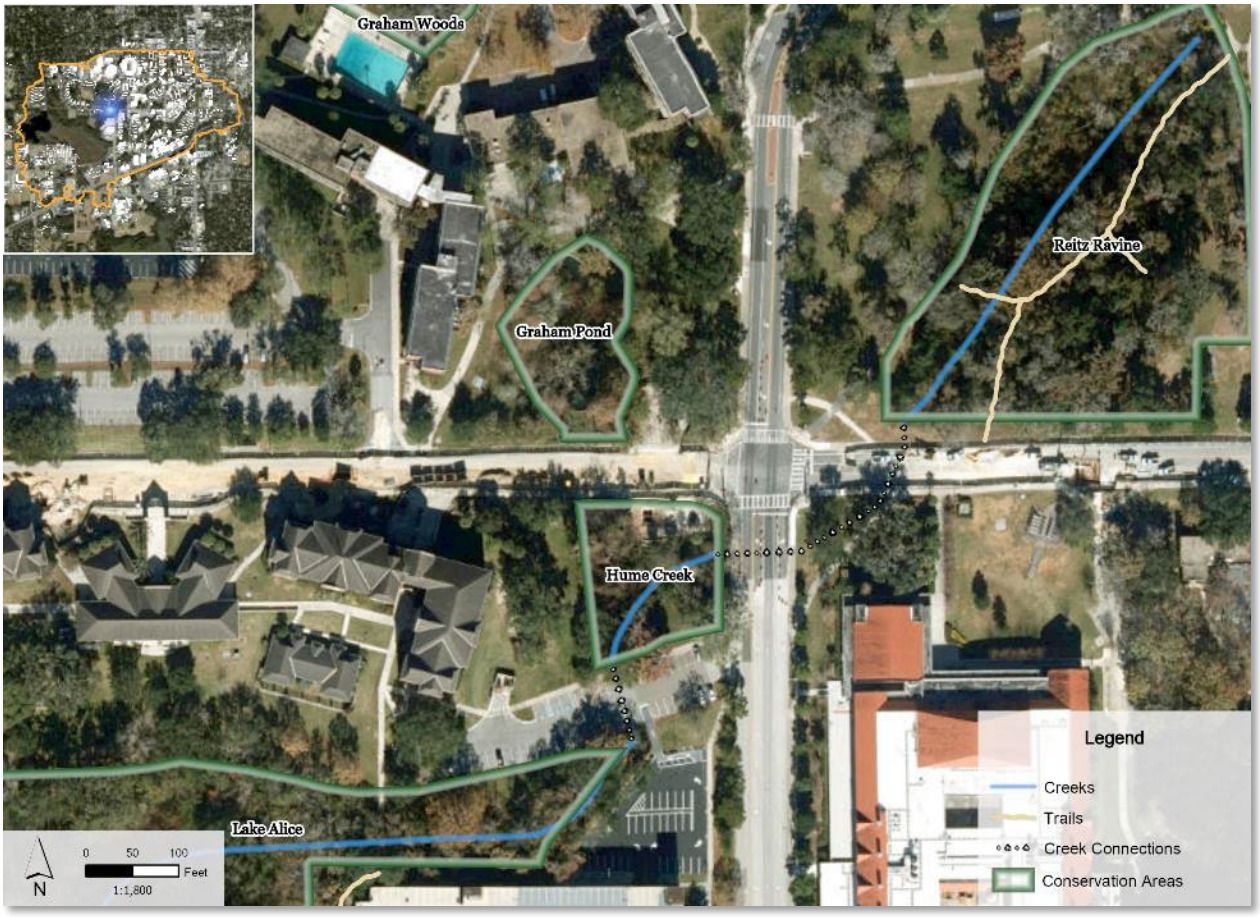

Figure 24. Graham Pond and Hume Creek Conservation Areas

A site visit was conducted on September 21, 2023, to evaluate the ecological structure and collect vegetation data. Figure 25 summarizes vegetation percentage cover by community type, strata, and native status in the Graham Pond Conservation Area. A complete list of observed species by community is provided in Appendix A. The open water community in the Graham Pond Conservation Area includes two man-made ponds with concrete-rock overflow weirs. This portion of the site was not categorized as a natural community type. The following sections discuss current site conditions and observed impacts to ecological structure by community type.

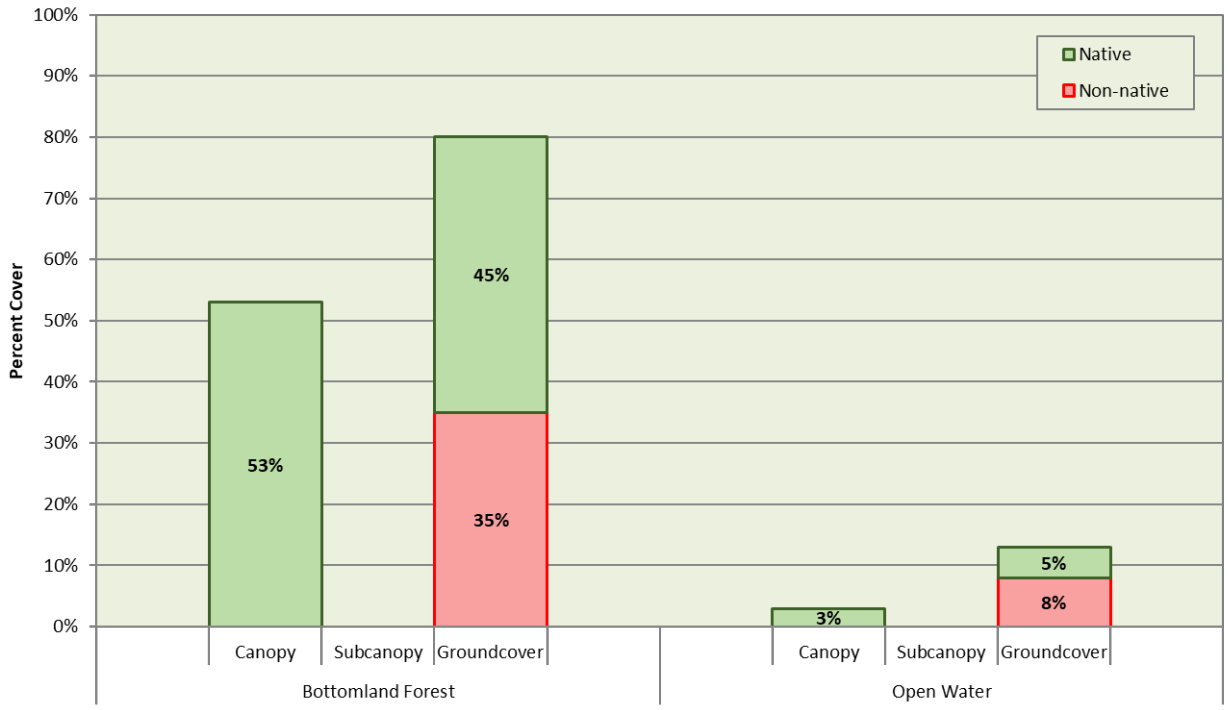

Figure 25. Graham Pond Vegetation Cover by Community, Strata, and Native Status

3.7.1 Bottomland Forest

The vegetation along the edges of the ponds most resemble an open canopy bottomland forest habitat including eastern cottonwood, live oak, red maple, bald cypress, and slash pine. Other common canopy species include swamp chestnut oak. The subcanopy is absent. The more common groundcover species include St. Augustinegrass and small-leaf spiderwort. Other groundcover species include cabbage palm, chamber bitter (*Phyllanthus urinaria*), pennywort, and basketgrass.

Light availability, human use, vegetative material, and landscaping inside and directly adjacent to the site boundary have resulted in the encroachment and establishment of various exotic and invasive species. To beautify the pond and potentially improve water quality, (University of Florida, n.d.-a) it is proposed that a native buffer be established along the eastern portion of Graham Pond. However, the site visit revealed that the western portion of the pond appears to receive less frequent mowing than the eastern portion (Figure 26), possibly as a result of observed seepage along that slope. A large portion (30%) of the native groundcover in this community is mowed St. Augustinegrass that lies within the Conservation Area boundary. The groundcover of the bottomland forest is impacted based on a lack of subcanopy vegetation, the establishment and spread of invasive vegetation, and a reduction of native species diversity (Figure 27). Other impacts to community structure include sedimentation of the open water community from the stormwater runoff conveyed through a pipe located at the northernmost extent of the Conservation Area.

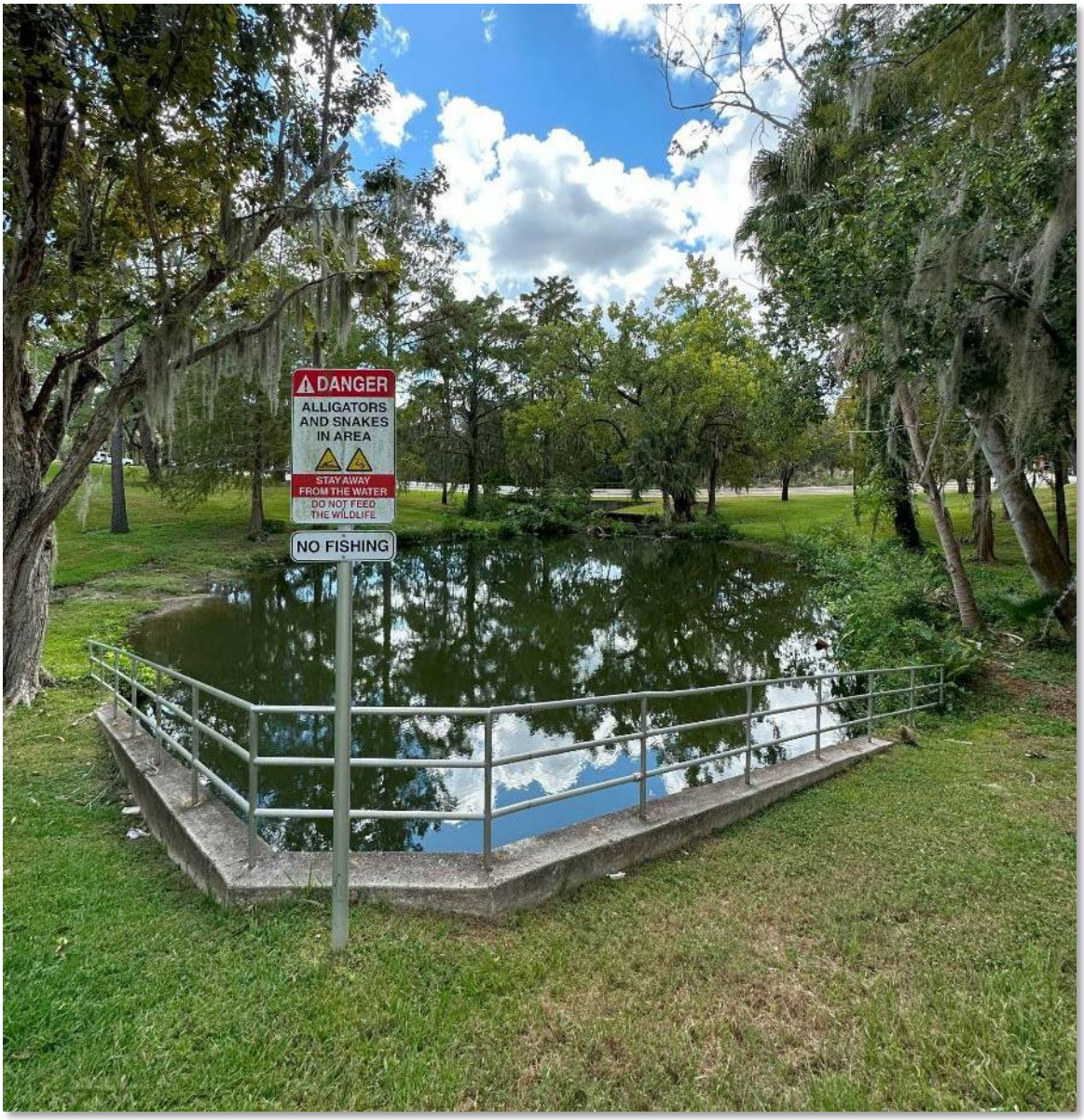

Figure 26. Mowing Buffer on the Western Portion of Graham Pond (right) and Mowing to Waterline on the Eastern Edge (left)

3.7.2 Open Water

The ponded portions of the Graham Pond Conservation Area include two small (less than 0.25 acres combined), circular, open water systems with steep side slopes. These are constructed ponds that were developed historically that have similar communities to sinkhole lakes on campus because of their edges which are reinforced with concrete. The canopy consists of eastern cottonwood and bald cypress trees rooted along the edges but have a portion of their crown over the open water systems. Cover by subcanopy is absent. Groundcover species include Peruvian primrose willow, Mexican primrosewillow, arrowleaf elephant's ear, taro, and Virginia sweetspire (*Itea virginica*).

The open water community receives stormwater inputs from direct impervious surface runoff and stormwater pipes that are likely to impact water quality through sediment and pollutant loading.

Figure 27. Ponded System and Impacted Groundcover in the Graham Pond Conservation Area

3.8 Graham Woods

The Graham Woods Conservation Area is located between Flavet Field and Riker Hall (Figure 28). This Conservation Area consists of upland hardwood forest and bottomland forest habitats with a permanent stream that runs southwest to Graham Pond which ultimately discharges to Lake Alice. The site provides limited stormwater treatment and aesthetic value due to its deeply incised stream banks (caused by

downcutting due to stormwater runoff), a lack of established trails, and low stormwater retention times during larger events. Trail access is limited to two unmarked footpaths which form an oval extending from the Conservation Area's northern edge along Stadium Road to its southern edge near the Flavet Pickleball Courts.

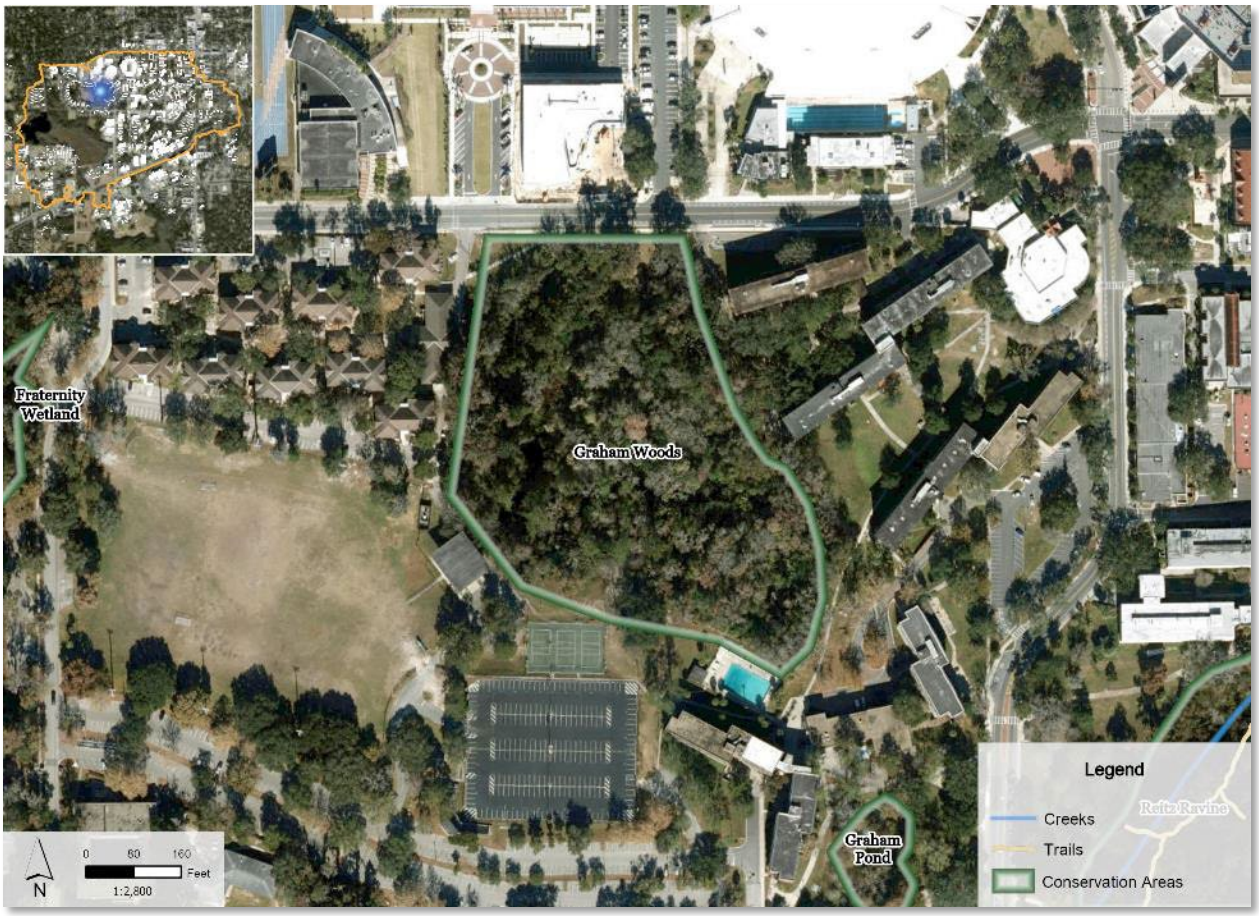

Figure 28. Graham Woods Conservation Area

A site visit was conducted on October 24, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the *University of Florida Conservation Areas Land Management Plan – Graham Woods* (University of Florida, n.d.-d) and species data reported in BioGator. Figure 29 summarizes vegetation percentage cover by community type, strata, and native status in the Graham Woods Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

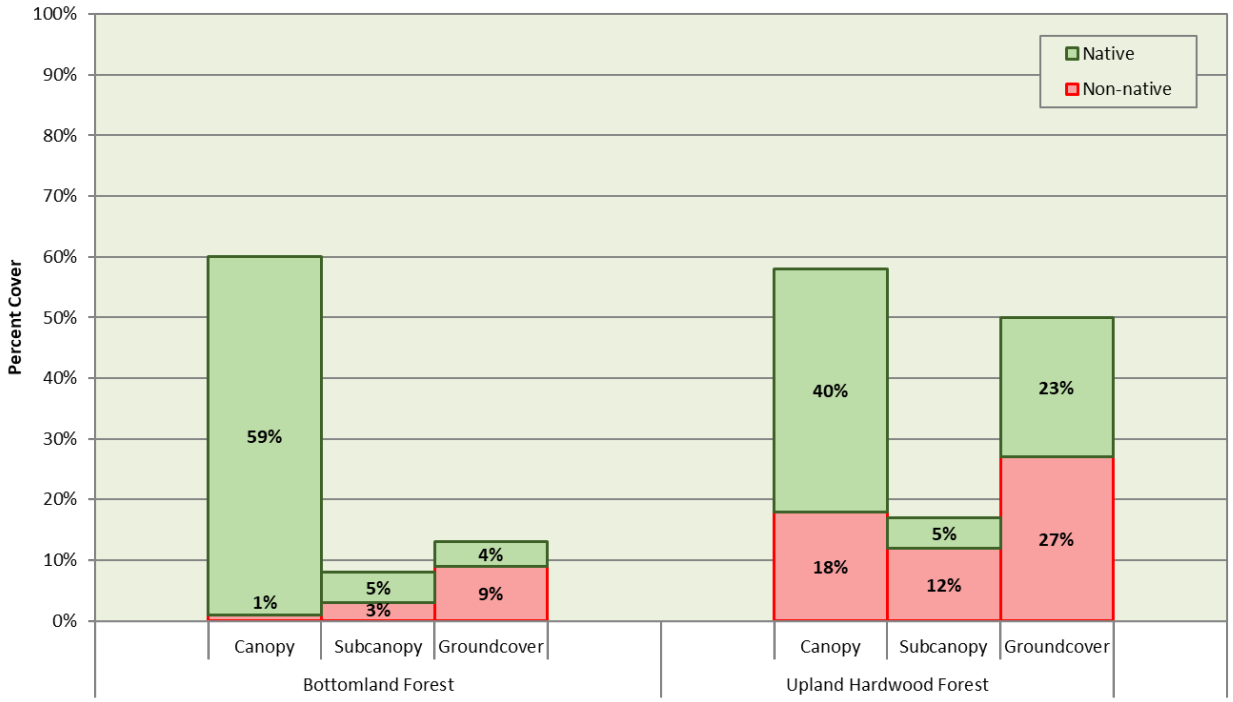

Figure 29. Graham Woods Vegetation Cover by Community, Strata, and Native Status

3.8.1 Upland Hardwood Forest

The upland hardwood forest is a closed canopy system including sugarberry, cabbage palm, and glossy privet. Other common canopy species include flamegold, sweetgum, and southern magnolia. The subcanopy is scarce and primarily consists of glossy privet and Carolina laurel cherry with smaller areas vegetated with camphortree. Common groundcover species includes crossvine, Catclawvine, Carolina laurel cherry, flamegold, and kodo. Other groundcover species includes muscadine grape, St. Augustinegrass, English ivy, coral ardisia, small-leaf spiderwort, guineagrass, and confederate jasmine.

Light availability, human use, vegetative material, and landscaping in and along the upland forest have resulted in the encroachment and establishment of various exotic and invasive species.

3.8.2 Bottomland Forest

The bottomland forest is an open canopy system including cabbage palm (Figure 30), sugarberry, sweetgum, swamp tupelo, and red maple. Other common canopy species include southern magnolia, swamp chestnut oak, white ash, and white mulberry (*Morus alba*). The subcanopy is scarce and includes American hornbeam, glossy privet, and buttonbush. Common groundcover species include small-leaf spiderwort, dwarf palmetto, and wild Boston fern (*Nephrolepis exaltata*). The transport of low-quality water and undesirable vegetative material along with sediment transport (Figure 31) from larger stormwater events have significantly impacted the ecological structure of this forested wetland.

Figure 30. Open Cabbage Palm Canopy in the Bottomland Forest Habitat of Graham Woods

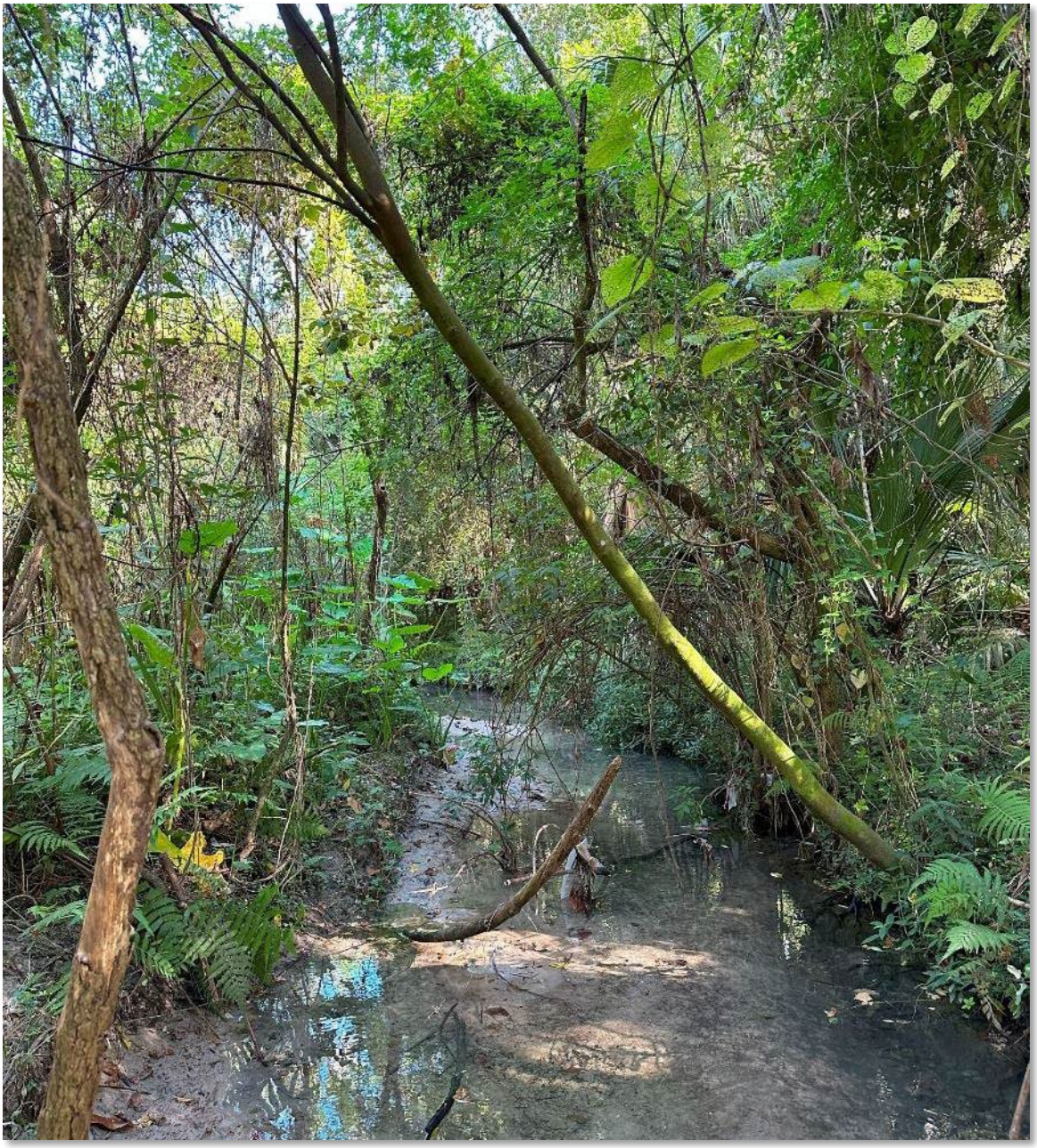

Figure 31. Sediment Accumulation in the Bottomland Forest Habitat of Graham Woods

3.9 Harmonic Woods

The Harmonic Woods Conservation Area is located between West Fraternity Drive and Museum Road (Figure 32). This Conservation Area includes upland hardwood forest habitat with small portions of the site to the south mowed to maintain cover by subcanopy and groundcover. The site is accessible via unmarked footpaths. This Conservation Area provides students and faculty with recreational and contemplative natural spaces in the center of campus. Harmonic Woods is also used as an educational destination by many departments to supplement ecosystem ecology, land management, urban planning, and natural resource management lectures with in-person field trips.

Figure 32. Harmonic Woods Conservation Area

A site visit was conducted on October 27, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the 2011 *University of Florida Conservation Areas Land Management Plan – Harmonic Woods* (University of Florida, 2011a) and species data reported in BioGator. Figure 33 summarizes vegetation percentage cover by community type, strata, and native status in the Harmonic Woods Conservation Area. A complete list of observed species for the Conservation Area is provided in Appendix A. The following section discusses current site conditions and impacts to the ecological structure of the Conservation Area.

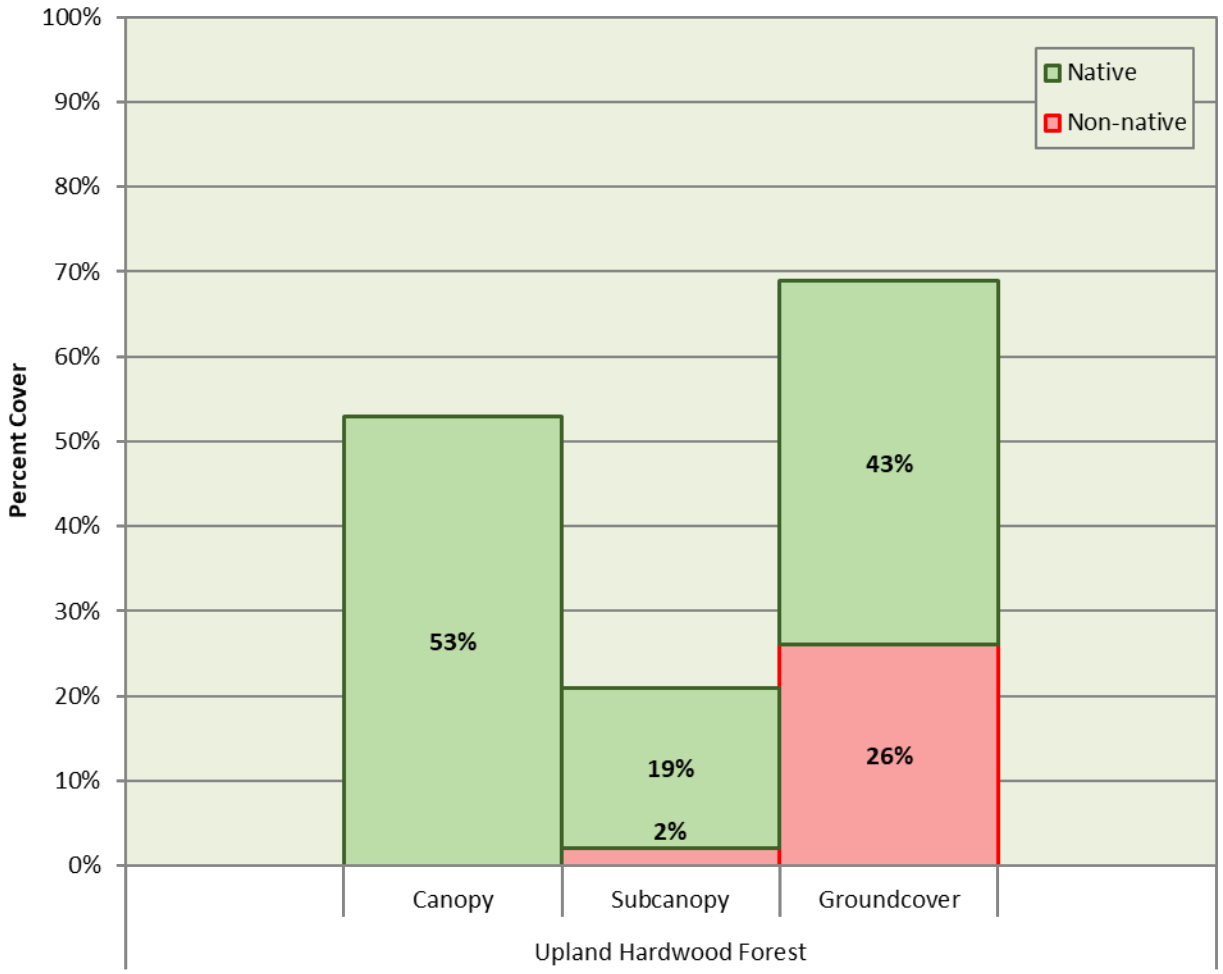

Figure 33. Harmonic Woods Vegetation Cover by Community, Strata, and Native Status

3.9.1 Upland Hardwood Forest

The upland hardwood forest is a closed canopy system including pignut hickory, eastern hophornbeam, sweetgum, and loblolly pine. Other common canopy species include sugarberry. Species in the comparatively scarce subcanopy include eastern hophornbeam, pignut hickory, and water oak. Common groundcover species include Carolina laurel cherry, cabbage palm, crossvine, sugarberry, eastern hophornbeam, water oak muscadine grape, and resurrection fern (Pleopeltis polypodioides).

Light availability, human use, vegetative material, and landscaping along the perimeter of the Conservation Area have resulted in the encroachment and establishment of various exotic and invasive species. The vegetative structure in multiple portions of the site is highly impacted by these species (coral ardisia, tuberous swordfern, and confederate jasmine). The western border of the Conservation Area along Village Drive includes areas with scarce canopy cover and dense populations of confederate jasmine and coral ardisia. Observations included populations dominated by both species (Figure 35), and by individual taxon (Figure 36). The Conservation Area's eastern border along Fraternity Drive has several dense populations of tuberous swordfern (Figure 36).

Figure 34. Forested Area in the Eastern Portion of the Harmonic Woods Conservation Area

Figure 35. Mixed Vegetation Stand Dominated by Coral Ardisia (FISC Cat I) and Confederate Jasmine (Exotic) in the Harmonic Woods Conservation Area

Figure 36. Groundcover in the Harmonic Woods Conservation Area Dominated by Tuberous Swordfern and Coral Ardisia (both FISC Cat I)

3.10 Hume Creek

The Hume Creek Conservation Area is located roughly 150 feet south of Graham Pond across Museum Road (Figure 24). This is a smaller Conservation Area that consists of a bottomland forest buffered by upland hardwood forest habitat. There are no designated walkways to access the site as it is primarily used for stormwater conveyance to Hume Pond and ultimately to Lake Alice. Most of the Conservation Area can be seen from Museum Road. A site visit was conducted on October 25, 2023, to evaluate ecological structure and collect vegetation data. Figure 37 summarizes vegetation percentage cover by community type, strata, and native status in the Hume Creek Conservation Area. A complete list of observed species by natural community is provided in Appendix A.

The following sections discuss current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

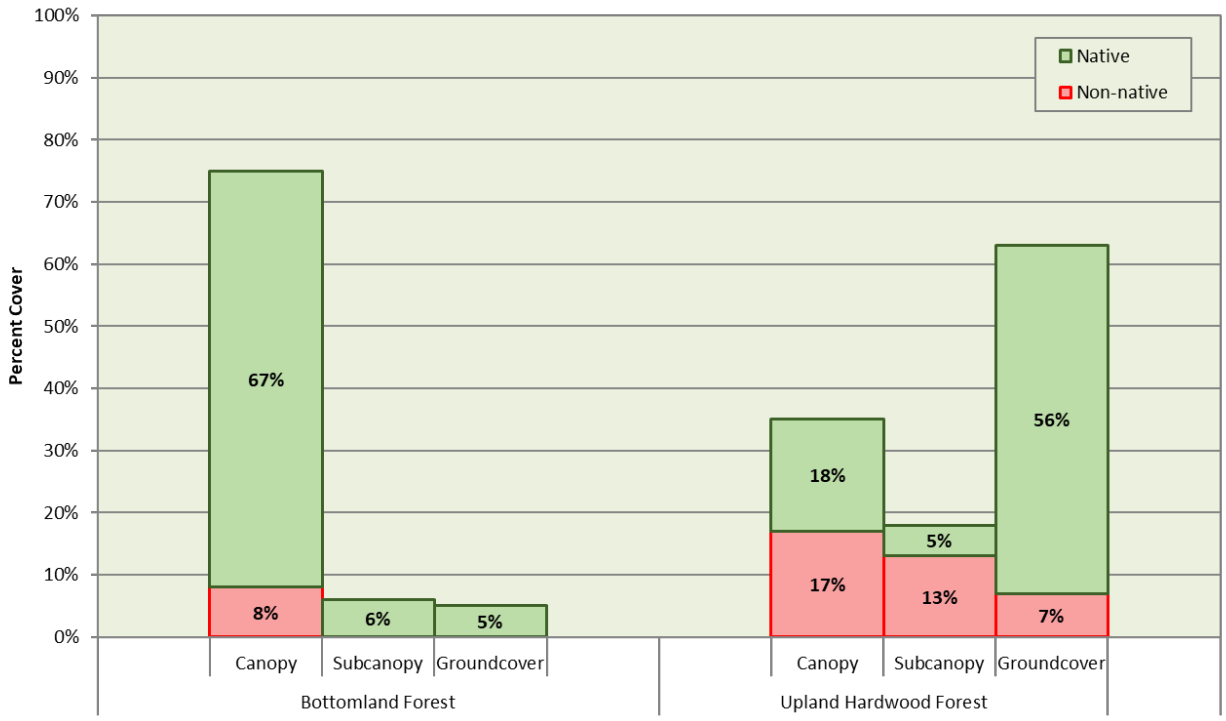

Figure 37. Hume Creek Vegetation Cover by Community, Strata, and Native Status

3.10.1 Upland Hardwood Forest

The upland hardwood forest is an open canopy system including live oak and paper mulberry. Other common canopy species include sugarberry and glossy privet. The subcanopy is less vegetated and includes sugarberry, glossy privet, and paper mulberry. Other common subcanopy species include Chinese elm (*Ulmus parviflora*). Common groundcover species include St. Augustinegrass, Florida grape (*Vitis simpsonii*), and crossvine. Groundcover species include beggarticks, Carolina laurel cherry, American evergreen, and small-leaf spiderwort.

Light availability, human use, vegetative material, and landscaping in and along the upland forest have resulted in the encroachment and establishment of various exotic and invasive species.

3.10.2 Bottomland Forest

The bottomland forest is an open canopy system dominated by box elder along Hume Creek (Figure 38). Other common canopy species include sweetgum, sugarberry, American sycamore, and Chinese tallowtree. The subcanopy is less-vegetated and includes elderberry and sugarberry. The most common groundcover was the Florida grape rooted in the upland hardwood forest and growing over the bottomland forest community.

Vegetative material and soil disturbance have resulted in the encroachment of invasive (Chinese tallowtree and paper mulberry) species into the edges of the bottomland forest community.

Figure 38. Hume Creek Channel and Bottomland Forest

3.11 Jennings Creek

The Jennings Creek Conservation Area borders the southern edge of Jennings Hall from Museum Road to South Newell Drive (Figure 39). The Conservation Area consists of a thin strip of bottomland forest along Jennings Creek buffered by upland hardwood forest habitat. Access to the site is limited due to the riparian corridor's steep side slopes and a lack of trails outside of established footpaths (University of Florida, n.d.-a).

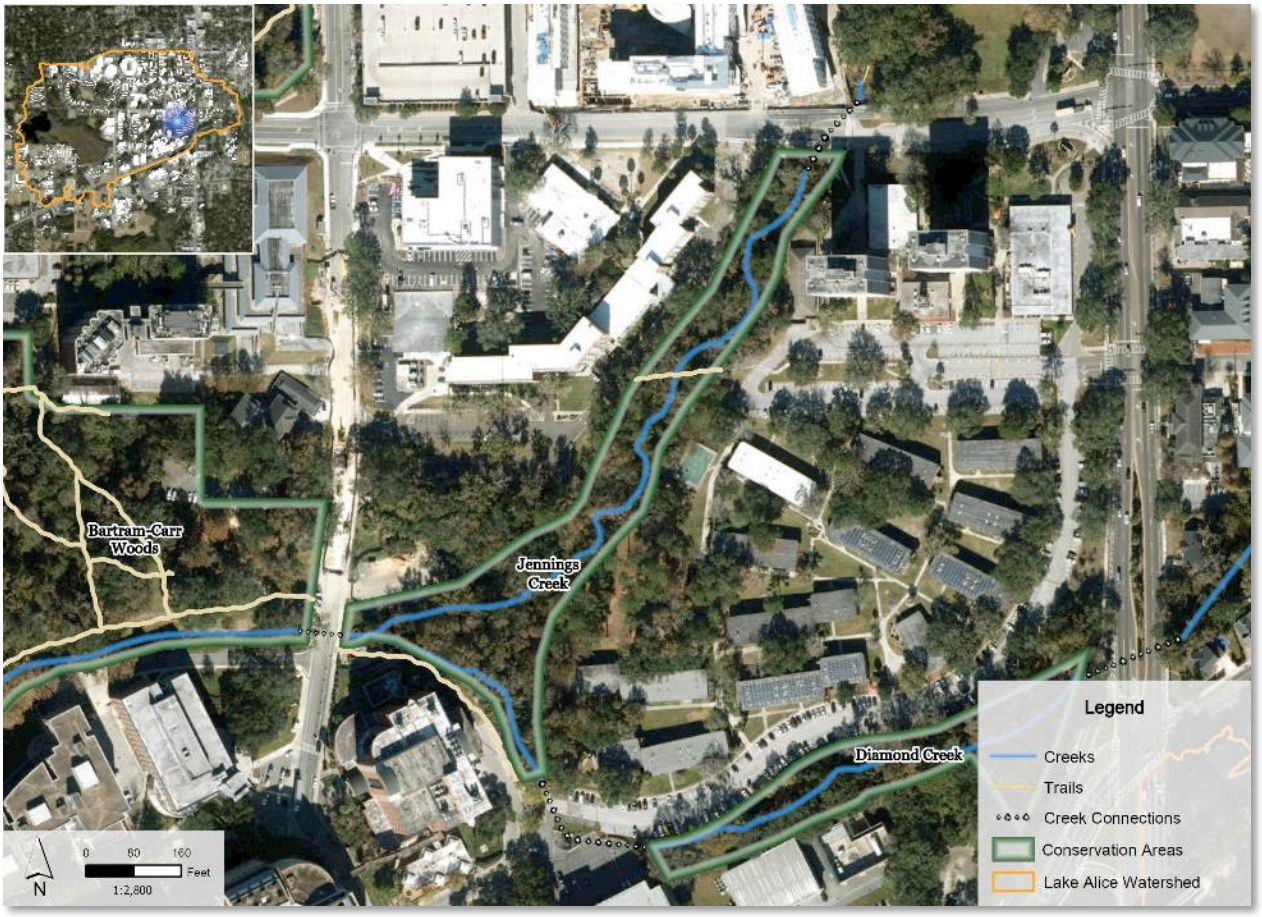

Figure 39. Jennings Creek Conservation Area

A site visit was conducted on December 5, 2023, to evaluate ecological structure and collect vegetation data for the upland hardwood forest in the Jennings Creek Conservation Area. A separate vegetation survey was not conducted for the bottomland forest community because of its limited area and lack of vegetation in areas with steep sides. Figure 40 summarizes vegetation percentage cover by community type, strata, and native status in the Jennings Creek Conservation Area. A complete list of observed species by natural community is provided in Appendix A.

The following sections discuss current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

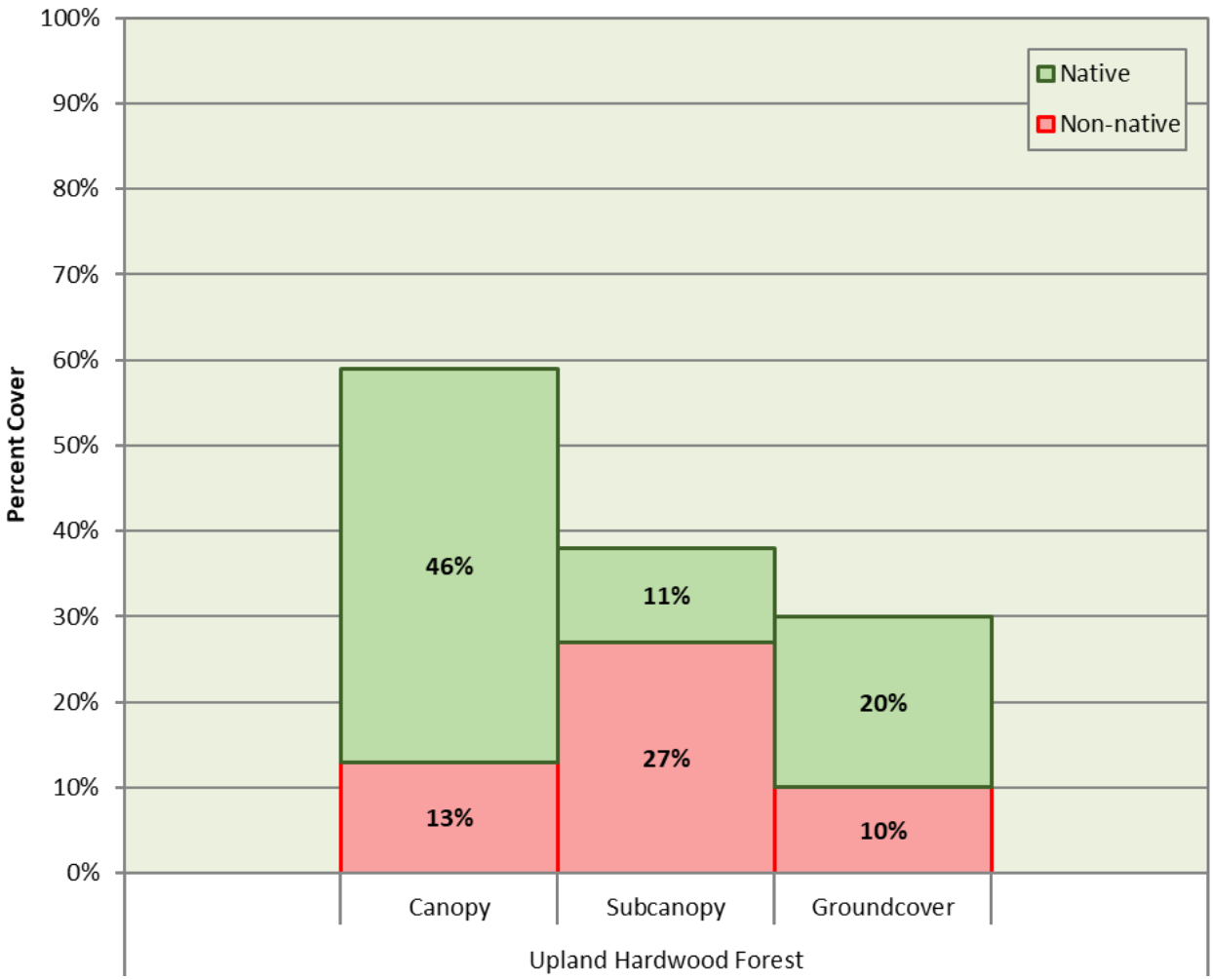

Figure 40. Jennings Creek Vegetation Cover by Community, Strata, and Native Status

3.11.1 Upland Hardwood Forest

The upland hardwood forest is an open canopy system including cabbage palm, upland laurel oak, sweetgum, Shumard oak, white ash, and paper mulberry along the steep-sided creek (Figure 41). Other common canopy species include live oak, glossy privet, and flamegold. The subcanopy is mostly glossy privet. Other common subcanopy species include upland laurel oak, water oak, flamegold, sugarberry, Carolina laurel cherry, and paper mulberry. Common groundcover species include greenbriar, glossy privet, and coral ardisia.

Light availability, human use, vegetative material, and landscaping in the upland forest and along its border with more developed areas have resulted in the encroachment and establishment of various exotic and invasive species.

Figure 41. Jennings Creek Channel and Steep Side Slopes

3.12 Lake Alice

The Lake Alice Conservation Area is located in the center of campus bounded by Museum Road to the north, Mowry Road and Memorial Road to the south, Museum Drive to the west, and Gale Lemerand Drive to the east (Figure 42). It is the most diverse Conservation Area in terms of natural community diversity and floral and faunal diversity (University of Florida, n.d.-e)(Ionta & Judd, 2005). This is attributed to its large areal extent which creates more habitat opportunity and its varying geomorphology generating a wide variety of natural community types. The Lake Alice Conservation Area consists of upland hardwood forest, bottomland forest, mesic hammock, basin marsh, and river floodplain lake habitats. Lake Alice is the receiving waterbody for a majority of the campus's stormwater and serves as UF's primary stormwater facility (University of Florida, n.d.-e). Access to the site includes sidewalks and a boardwalk along Museum Road, a shared use path/boardwalk connecting Mowry Road and Gale Lemerand Drive, and a trailhead on Museum Road across the street from the Harmonic Woods Conservation Area.

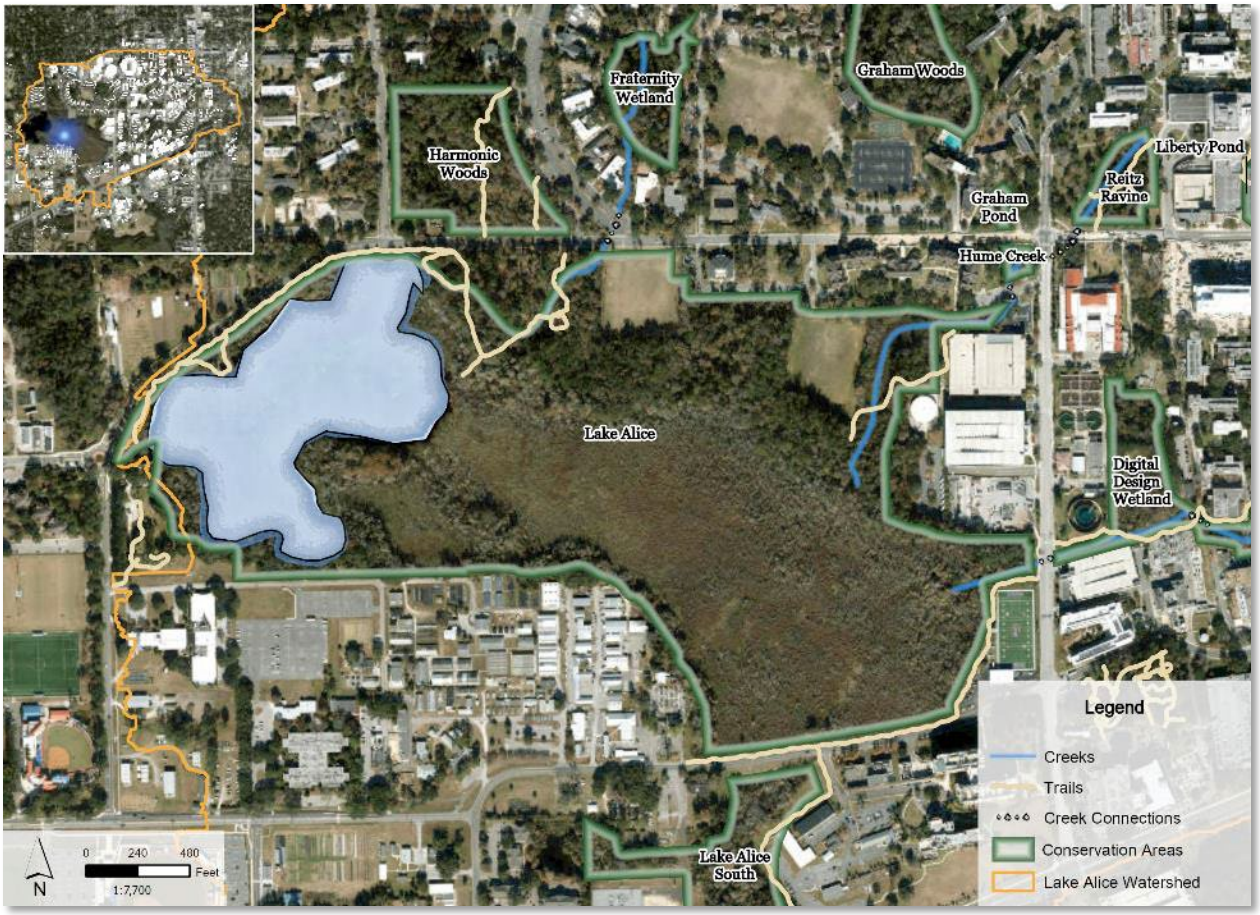

Figure 42. Lake Alice Conservation Area

A site visit was conducted on December 21, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the *University of Florida Conservation Areas Land Management Plan – Lake Alice* (University of Florida, n.d.-e) and species data in BioGator. The surveyed communities include one upland hardwood forest, two

bottomland forests, and one basin marsh. Figure 43 summarizes vegetation percentage cover by community type, strata, and native status in the Lake Alice Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

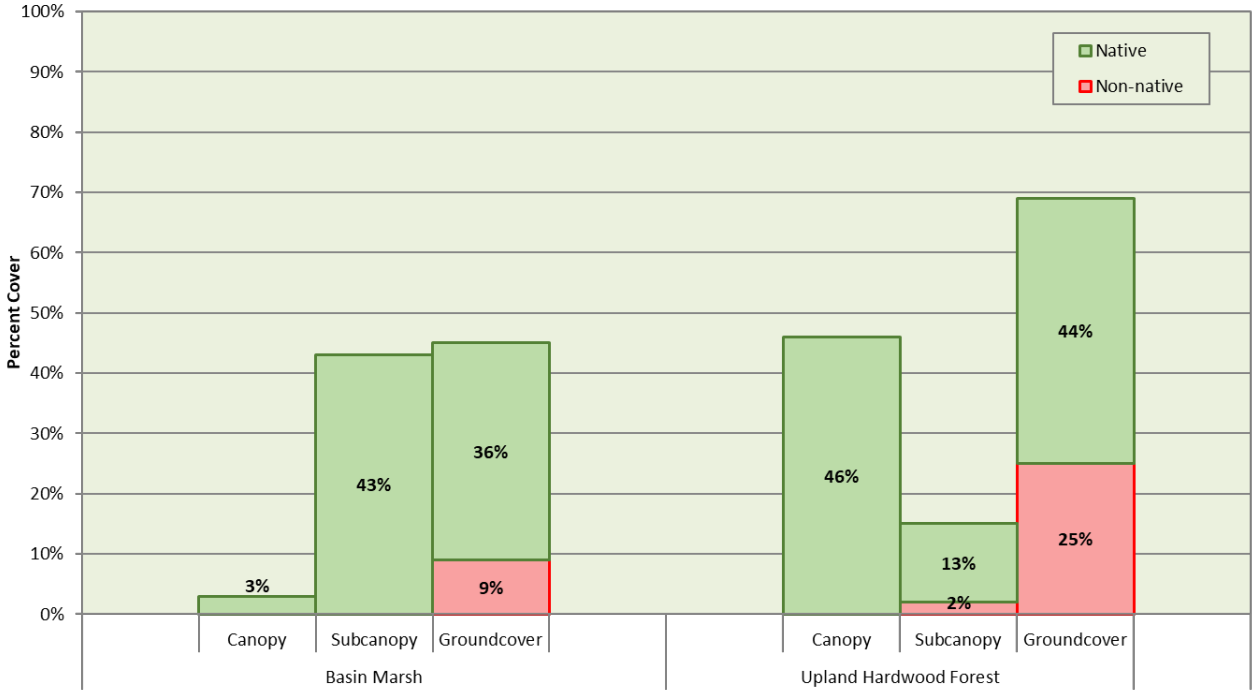

Figure 43. Lake Alice Vegetation Cover by Community, Strata, and Native Status

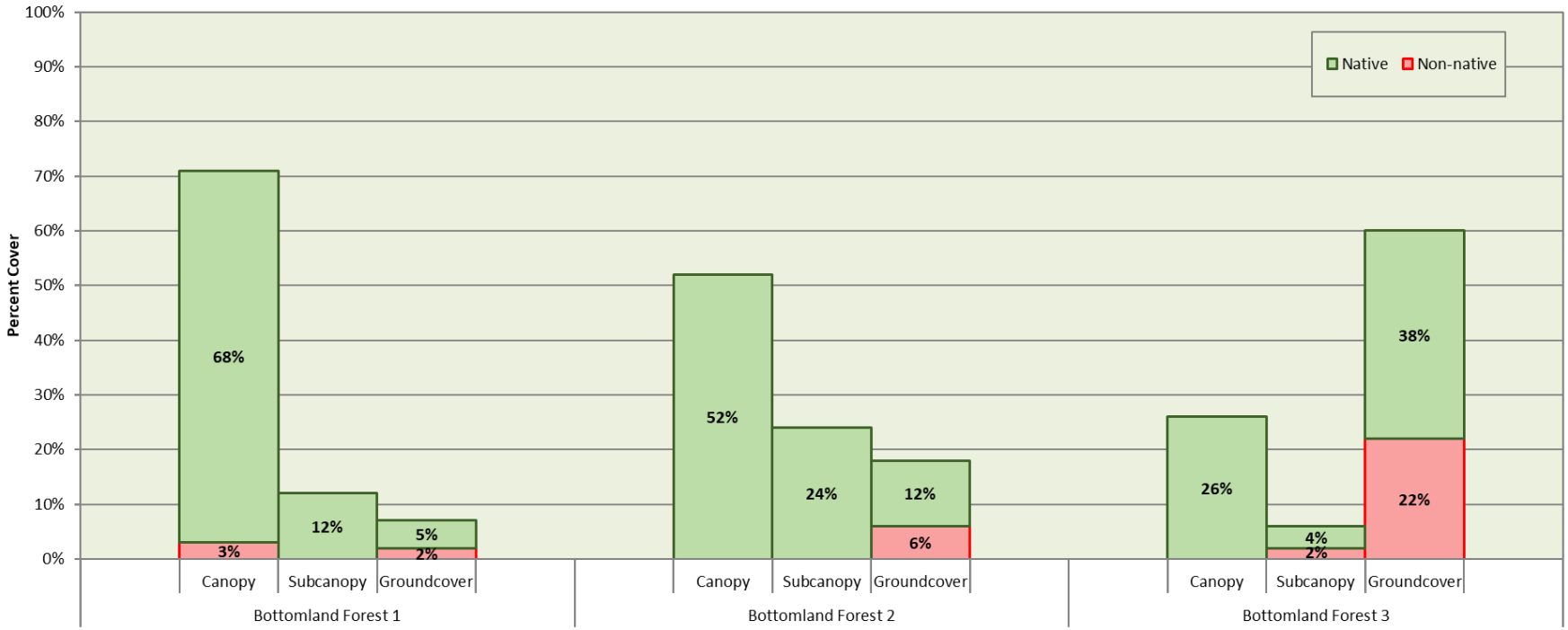

Figure 44. Lake Alice Vegetation Cover by Community, Strata, and Native Status Continued

3.12.1 Upland Hardwood Forest

The upland hardwood forest community borders a portion of the existing trail which starts on Museum Road and runs southeast towards the basin marsh portion of the Conservation Area. This community is a closed canopy system including sugarberry, sweetgum, pignut hickory, and white ash. Other common canopy species include loblolly pine, cabbage palm, southern magnolia, swamp chestnut oak, and red mulberry. The subcanopy is scarce and dominated by sugarberry. Other subcanopy species include red mulberry. Common groundcover species include pink woodsorrel, switch cane, small-leaf spiderwort, and Carolina laurelcherry.

3.12.2 Bottomland Forest 1

The first bottomland forest community is located directly west of Pony Field. This community is a closed canopy system including red maple, swamp tupelo, and Carolina willow. Other common canopy species include swamp laurel oak, Chinese tallowtree, and wax myrtle. The subcanopy is scarce and includes red maple and wax myrtle. Other common subcanopy species include elderberry. Common groundcover species include taro, dwarf palmetto, and elderberry. The transport of low-quality water and undesirable vegetative material along with sediment transport and erosion from larger stormwater events have significantly impacted the ecological structure of this forested wetland.

3.12.3 Bottomland Forest 2

The second bottomland forest community borders a portion of the existing trail which starts on Museum Road and runs southeast towards the basin marsh portion of the Conservation Area. This community is a closed canopy system including red maple, swamp laurel oak, water oak, and sweetgum. Other common canopy species include bald cypress. The subcanopy is scarce and includes red maple, American hornbeam, and swamp laurel oak. Other subcanopy species include water oak. Common groundcover species include giant cutgrass and water hyacinth in areas with deeper water and lower canopy cover, and taro and swamp lily in shallower areas with more canopy cover. The transport of low-quality water and undesirable vegetative material have significantly impacted the ecological structure of this forested wetland. Bottomland forest 3 was broken up as a drier forested portion of bottomland forest 2. This forest included a canopy of more facultative vegetation including red mulberry, Florida maple, and cabbage palm. Wetter species still occurred in this system including cald cypress, sugarberry, red maple, and swamp chestnut oak.

3.12.4 Basin Marsh

Basin marsh is the largest natural community type in the Lake Alice Conservation Area. The surveyed basin marsh community is located across the street from Chilled Water Plant #10 along Mowry Road. The scarce canopy consisted of a few cypress trees rooted along the edge of the basin marsh along Mowry Road. The subcanopy is dominated by Carolina willow. It also includes a small percentage cover of red maple and wax myrtle. The groundcover is mostly royal fern (*Osmunda regalis*) growing on hummocks. Other common groundcover species include giant cutgrass, taro (along the edges), Peruvian primrosewillow, pennywort, parrot feather, and climbing aster.

3.13 Lake Alice South

The Lake Alice South Conservation Area is located between Gainesville Fire Rescue Station 2 and Mowry Road (Figure 45). The Lake Alice South Conservation Area consists of upland hardwood forest and bottomland forest habitats. Access to the site is limited as it is almost completely surrounded by roadways, and it has no trails through the forested sections.

Figure 45. Lake Alice South Conservation Area

A site visit was conducted on December 21, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the *University of Florida Conservation Areas Land Management Plan – Lake Alice South Wetland* (University of Florida, n.d.-f) and species data reported in BioGator. Figure 46 summarizes vegetation percentage cover by community type, strata, and native status in the Lake Alice South Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

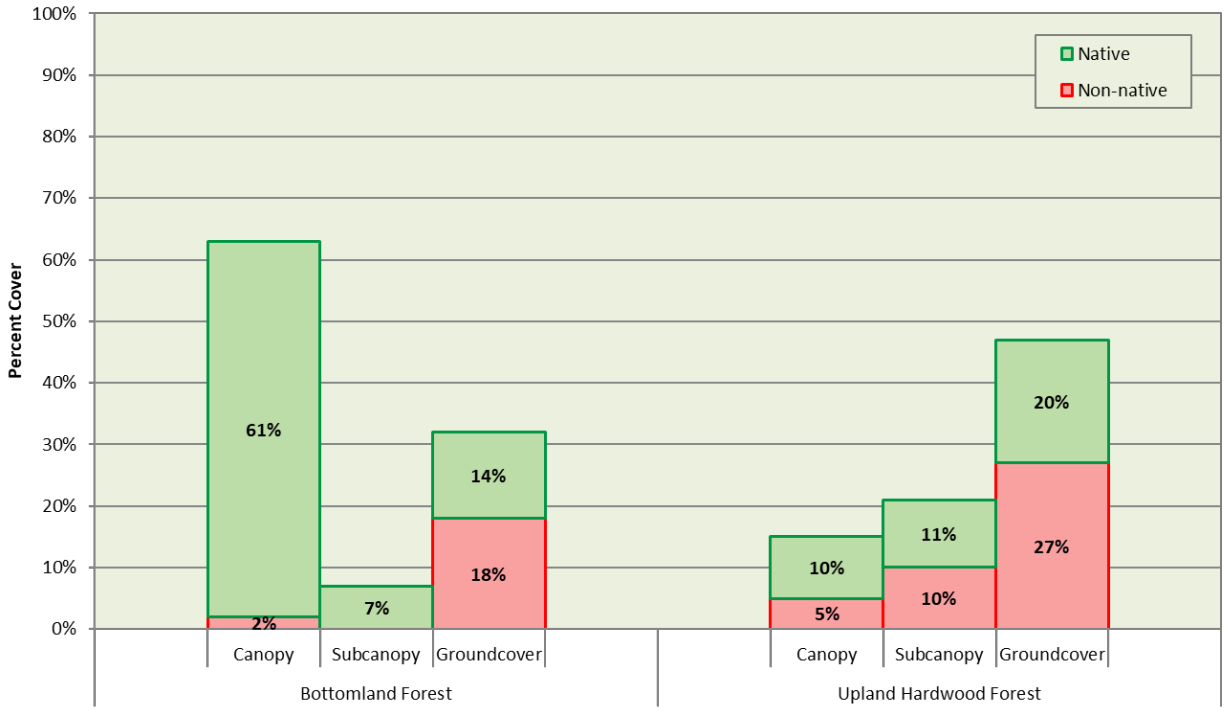

Figure 46. Lake Alice South Vegetation Cover by Community, Strata, and Native Status

3.13.1 Upland Hardwood Forest

The upland hardwood forest is a closed canopy system including live oak and glossy privet. Other common canopy species include loblolly pine and water oak. Common subcanopy species include water oak and Carolina laurel cherry. Common groundcover species include coral ardisia, southern shield fern (*Thelypteris kunthii*), greenbriar, Carolina laurel cherry, muscdine grape, and tuberous swordfern.

Light availability, human use, vegetative material, and landscaping in and along the upland forest have resulted in the encroachment and establishment of various exotic and invasive species.

3.13.2 Bottomland Forest

The bottomland forest is an open canopy system including cabbage palm, red maple, sweetgum, box elder, and Carolina willow. Other common canopy species include swamp laurel oak, sugarberry, swamp chestnut oak, and crape myrtle (*Lagerstroemia indica*). The subcanopy is scarce and includes red maple sugarberry, and elderberry. Common groundcover species include southern shield fern, taro, coral ardisia, climbing aster, and lizard's tail (*Saururus cernuus*).

The transport of low-quality water, undesirable vegetative material, littering, and sediment transport from larger stormwater events have significantly impacted the ecological structure of this forested wetland.

3.14 Liberty Pond

The Liberty Pond Conservation Area is located directly south of the Reitz Union and east of the UF Bookstore (Figure 47). This Conservation Area consists of a sinkhole with a sinkhole lake in the center and vegetation resembling upland hardwood forest along the sinkhole edges. Parts of the site along the

stormwater-fed creek (which ultimately feeds into Hume Creek) would more appropriately be described as bottomland forest habitat. However, these areas were small and so the vegetation observed in these areas were combined with the vegetation present in the upland hardwood forest. The site provides aesthetic value to the landscape and is accessible via the Reitz Union Amphitheater and the sidewalks and boardwalk connecting the Reitz Union Amphitheatre to the Reitz Union Bus Stop.

Figure 47. Liberty Pond and Newins-Ziegler Sink Conservation Areas

A site visit was conducted on September 29, 2023, to evaluate the ecological structure and collect vegetation data. Figure 48 summarizes vegetation percentage cover by community type, strata, and native status in the Liberty Pond Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and observed impacts to the ecological structure by natural community type.

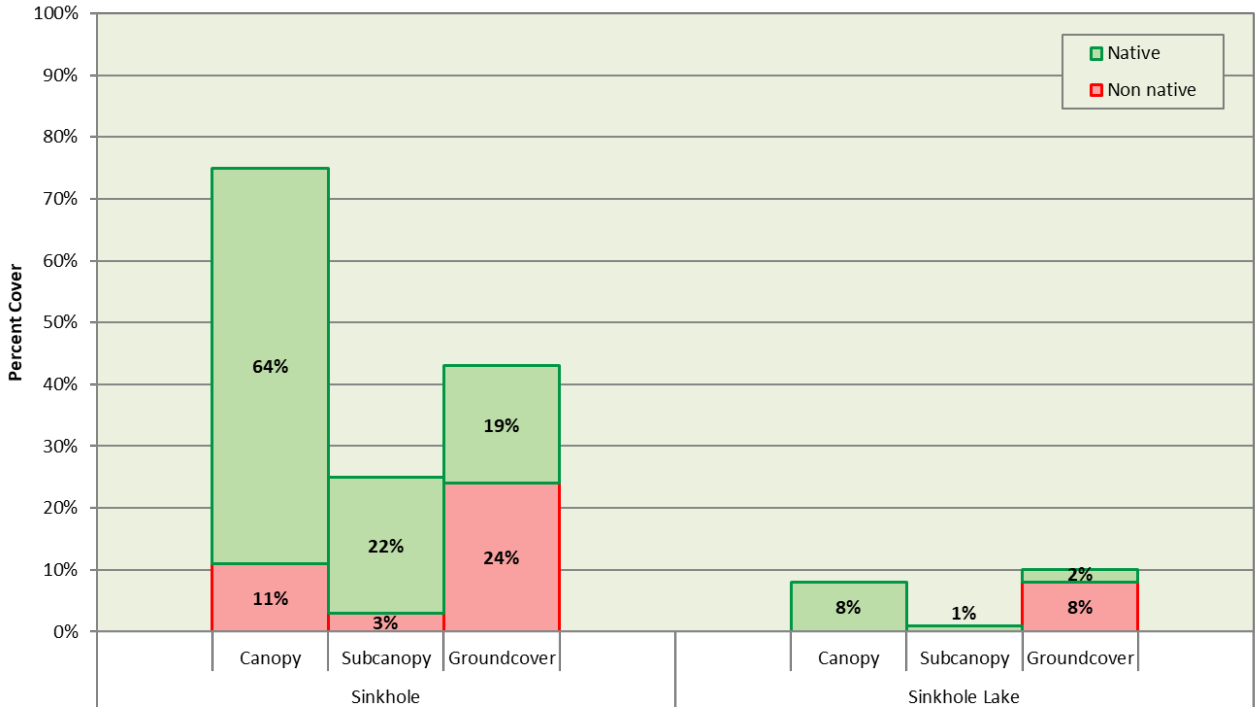

Figure 48. Liberty Pond Vegetation Cover by Community, Strata, and Native Status

3.14.1 Upland Hardwood Forest

The upland hardwood forest is an open canopy system including pignut hickory, sweetgum, and camphortree. Other common canopy species include cabbage palm, live oak, eastern hophornbeam, sugarberry, and swamp chestnut oak. The subcanopy is scarce and includes sweetgum, upland laurel oak, Carolina laurel cherry, and pignut hickory. The more common groundcover species include switch cane, catclawvine, and Chinese wisteria. Other common groundcover species include Carolina laurel cherry, basswood, elderberry, eastern winged sumac (*Rhus copallinum var. copallinum*), Libertybriar, Camphortree, tuberous swordfern, and pignut hickory.

Light availability, human use, vegetative material, and landscaping inside and directly adjacent to the site boundary have resulted in the encroachment and establishment of various exotic and invasive species. Other impacts include erosion caused by stormwater (Figure 49).

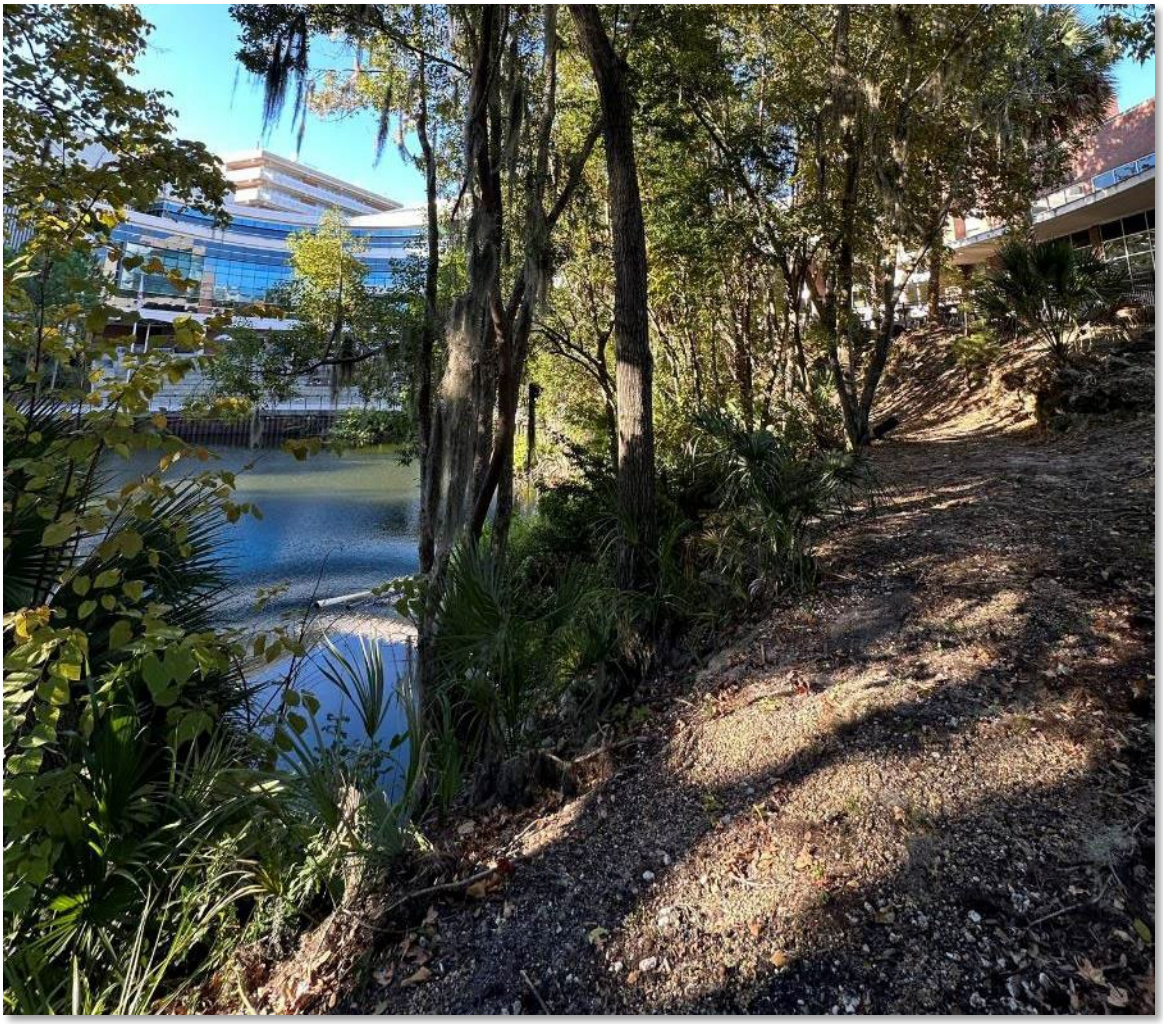

Figure 49. Erosion of a Sloped Section of Sinkhole Habitat in the Liberty Pond Conservation Area

3.14.2 Sinkhole Lake

The sinkhole lake portion of Liberty Pond is a small (roughly 0.50 acres), circular, open water system with steep side slopes. The canopy consists of bald cypress (*Taxodium distichum*), sweetgum, red maple, and eastern hophornbeam trees that are rooted in the sinkhole edges but have a portion of their crown over the open water system. Subcanopy cover is more scarce including only American hornbeam. Groundcover was also scarce and includes Peruvian primrosewillow, flatsedge (*Cyperus sp.*), buttonbush, cabbage palm, and taro.

The open water community receives stormwater inputs from direct impervious surface runoff and stormwater pipes that are likely to impact water quality through sediment and pollutant loading.

3.15 Law School Woods

The Law School Woods Conservation Area is located directly west of the Levin College of Law southwest of the intersection of Village Drive and SW 2nd Avenue (Figure 50). This Conservation Area includes areas of disturbed upland hardwood forest habitat and areas maintained in a more open state through mowing. The site is readily accessible with paved trails throughout the Conservation Area. Concrete picnic tables are located in the upland hardwood forest under a wooden gazebo (Figure 51). These amenities provide students and faculty access to landscapes that more closely resemble a Florida natural community.

Figure 50. Law School Woods Conservation Area

Figure 51. A Gazebo in the Law School Woods Conservation Area

A site visit was conducted on November 1, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the 2005 *University of Florida Conservation Areas Land Management Plan – Law School Woods* (University of Florida, 2005) and species data recorded in BioGator. Figure 52 summarizes vegetation percentage cover by community type, strata, and native status in the Law School Woods Conservation Area. A complete list of observed species for the Conservation Area is provided in Appendix A. The following section discusses current site conditions and impacts to the ecological structure of the Conservation Area.

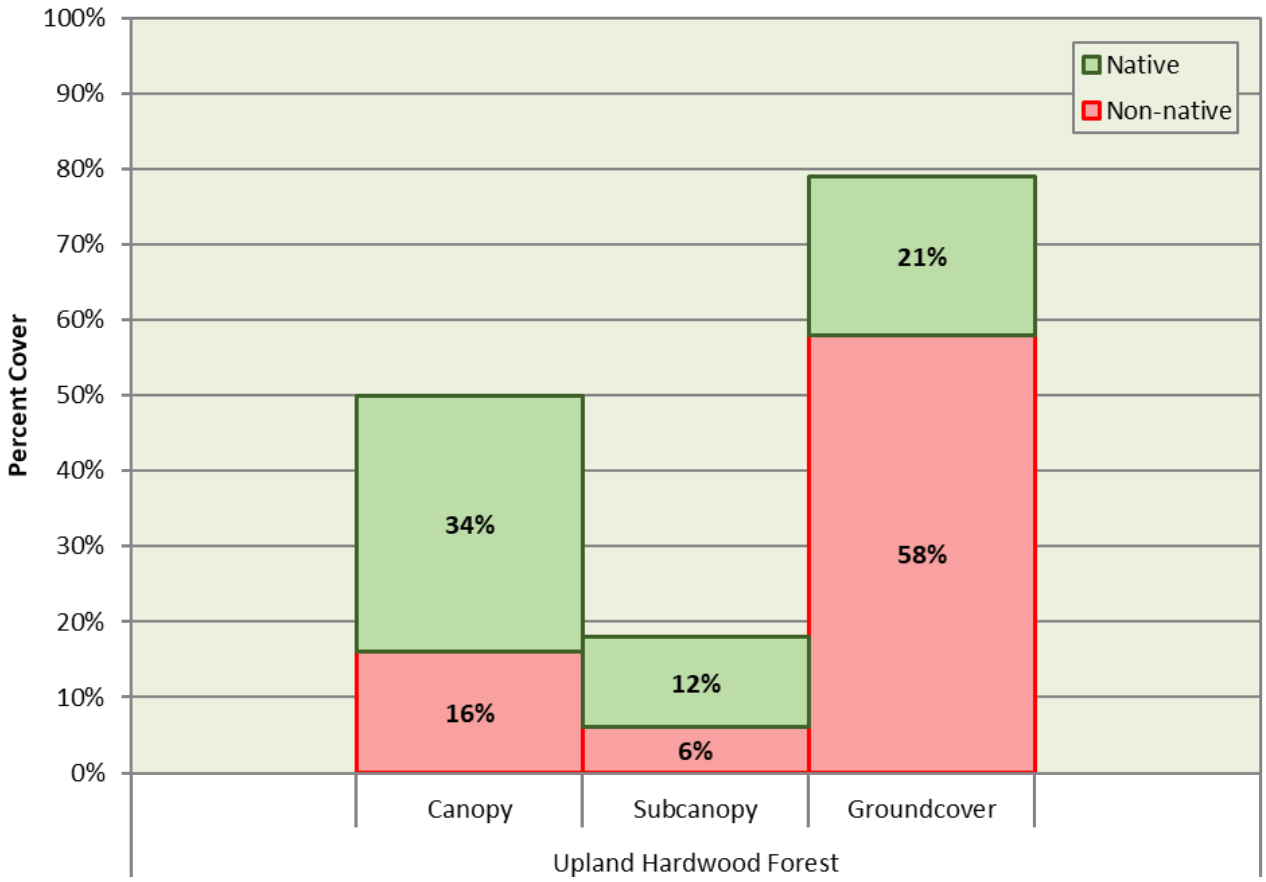

Figure 52. Law School Woods Vegetation Cover by Community, Strata, and Native Status

3.15.1 Upland Hardwood Forest

The upland hardwood forest is an open canopy system including sweetgum, camphor tree, upland laurel oak, and loblolly pine. Other common canopy species included Carolina laurel cherry, flamegold, sugarberry, and paper mulberry. The more common plants in the scarce subcanopy include Carolina laurel cherry, glossy privet, and flamegold. Other common subcanopy species include sugarberry and eastern hophornbeam. Groundcover is dominated by catclaw vine and confederate jasmine (*Trachelospermum jasminoides*) (Figure 53 and Figure 54). Other common groundcovers include cabbage palm, Carolina laurel cherry, peppervine, coral ardisia, sugarberry, greenbriar (*Smilax sp.*), tuberous swordfern (Figure 54), glorybower (*Clerodendrum sp.*), heavenly bamboo, muscadine grape, Carolina jessamine (*Gelsemium sempervirens*), coral ardisia, flamegold, and small-leaf spiderwort.

Light availability, human use, vegetative material, and landscaping in and around the upland forest have resulted in the encroachment and establishment of various exotic and invasive species. Additional observable impacts to community structure include the historic loss of pine tree cover due to the Pine Beetle outbreak in 2003 (University of Florida, 2005) and the introduction of multiple non-native species from adjacent residential properties (Figure 55).

Figure 53. Terrestrial American Evergreen (FISC Cat I) Groundcover and Climbing Confederate Jasmine Groundcover on Native Tree Populations in the Law School Woods Conservation Area

Figure 54. Tuberous Swordfern (FISC Cat I) and Flamegold (FISC Cat II) Populations in the Law School Woods Conservation Area

Figure 55. Confederate Jasmine (Non-native), Coral Ardisia (FISC Cat I), and Japanese Climbing Fern (FISC Cat I) Along the Law School Woods Conservation Area Border with the Golfview Neighborhood

3.16 McCarty Woods

The McCarty Woods Conservation Area includes the area east of Newins-Ziegler Hall to Newell Drive between McCarty Drive and Museum Road (Figure 56). This Conservation Area includes upland hardwood forest habitat accessible via sidewalks along Newell Drive, Museum Road, and McCarty Drive, and unmarked paths through the forested portions. This area provides students and faculty with recreational and contemplative natural spaces in the center of campus. McCarty Woods is also used as an educational destination used by many departments to supplement ecosystem ecology, land management, urban planning, and natural resource management lectures with in-person field trips.

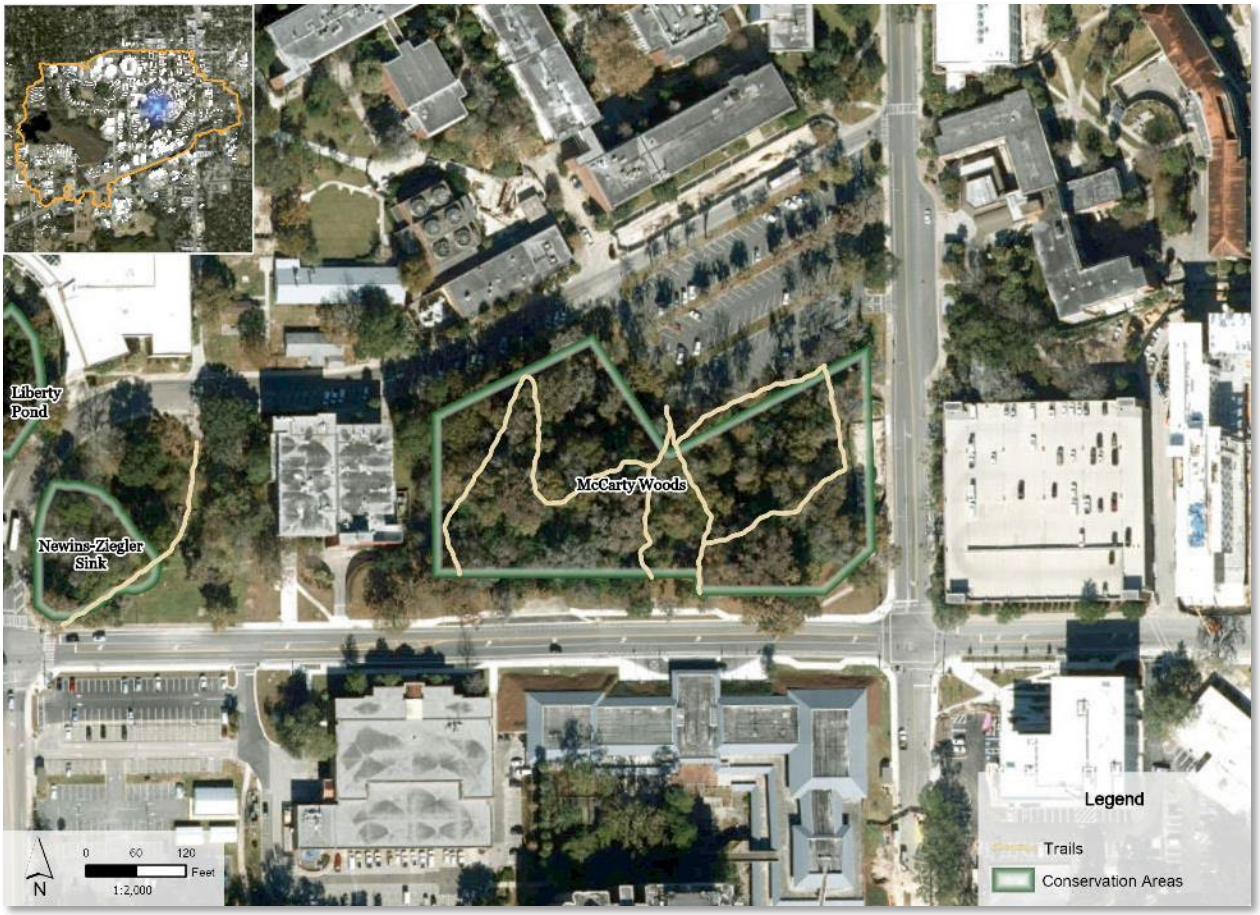

Figure 56. McCarty Woods Conservation Area

A site visit was conducted on October 24, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the 2011 *University of Florida Conservation Areas Land Management Plan – McCarty Woods* (University of Florida, 2011b) and species data reported in BioGator. Figure 57 summarizes vegetation percentage cover by community type, strata, and native status in the McCarty Woods Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following section discusses current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

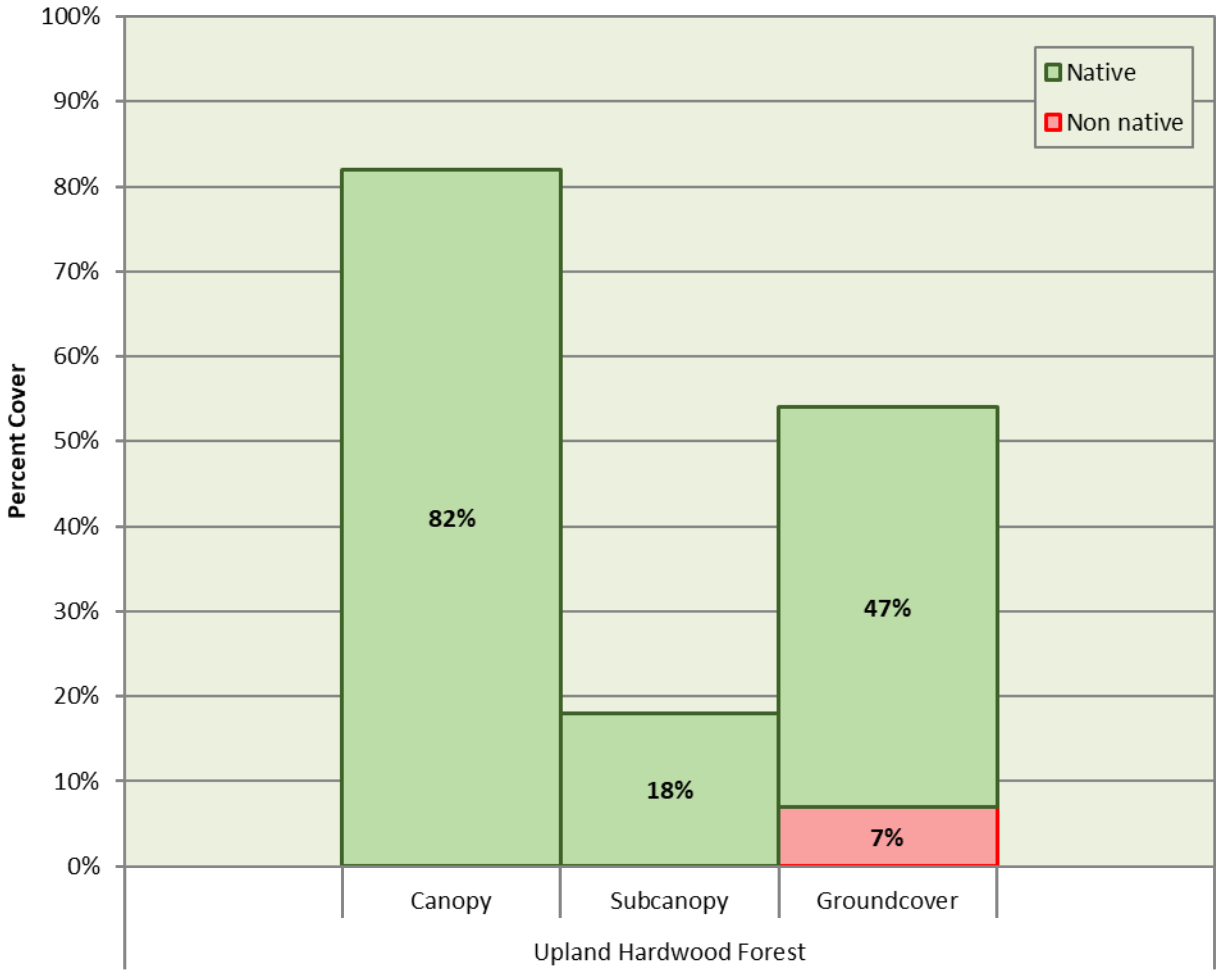

Figure 57. McCarty Woods Vegetation Cover by Community, Strata, and Native Status

3.16.1 Upland Hardwood Forest

The upland hardwood forest is a closed canopy system (Figure 58) including pignut hickory, white ash, sweetgum, and Carolina laurel cherry. Other common canopy species include sugarberry, cabbage palm, and swamp chestnut oak. Species in the scarce subcanopy include sugarberry, Carolina laurel cherry, and eastern hophornbeam. Common groundcover species include Guinea hen weed, Carolina laurel cherry, Catclawvine, American pokeweed (*Phytolacca americana*), sugarberry, crossvine, yaupon, greenbriar, paintedleaf (*Euphorbia cyathophora*), and beggarticks.

Figure 58. Forested Area Along a Footpath That Bisects the McCarty Woods Conservation Area

Historically, light availability, human use, vegetative material, and landscaping in the Conservation Area resulted in the encroachment and establishment of various exotic and invasive species. However, several student organizations have worked to remove non-native vegetation and replant the Conservation Area with appropriate native species. All of the Conservation Area edges are currently mowed and the groundcover in the un-mowed portions of the site is indicative of a disturbed system. Roughly half of the total groundcover is Guinea hen weed. This is likely the result of disturbances to the vegetative structure of the McCarty Woods Conservation Area including the maintenance of the (now) un-mowed forest floor as a lawn (University of Florida, 2011b). Observed during the site visit, were recently planted native

species from the UF Native Plant Nursery (Figure 59) along the eastern border of the Conservation Area along Newell Drive. Although there remains room for ecological enhancement in this Conservation Area, it is proof that the UF Conservation Areas can be successfully maintained for exotic and invasive plant cover while simultaneously serving as an outdoor educational facility and place of respite for UF students and faculty.

Figure 59. Native Plants Installed on the Eastern Edge of the McCarty Woods Conservation Area

3.17 Newins-Ziegler Sink

The Newins-Ziegler Sink Conservation Area is bounded by Newins-Ziegler Hall to the east, McCarty Drive to the north and west, and Museum Road to the south (Figure 47). This Conservation Area consists of a sinkhole with vegetation resembling that of an upland hardwood forest habitat along the sinkhole edges surrounded by areas with widely spaced canopy tree species and mowed groundcover. Newins-Ziegler Sink was the only observed sinkhole in the Conservation Areas of the Lake Alice Watershed to not appear to be permanently flooded. The site provides aesthetic value to the landscape and is accessible by sidewalks along McCarty Drive and Museum Road and via a footpath connecting Museum Road to McCarty Drive. A site visit was conducted on October 31, 2023, to evaluate the ecological structure and collect vegetation data. Figure 60 summarizes vegetation percentage cover by community type, strata, and native status in the Newins-Ziegler Sink Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and observed impacts to the ecological structure by natural community type.

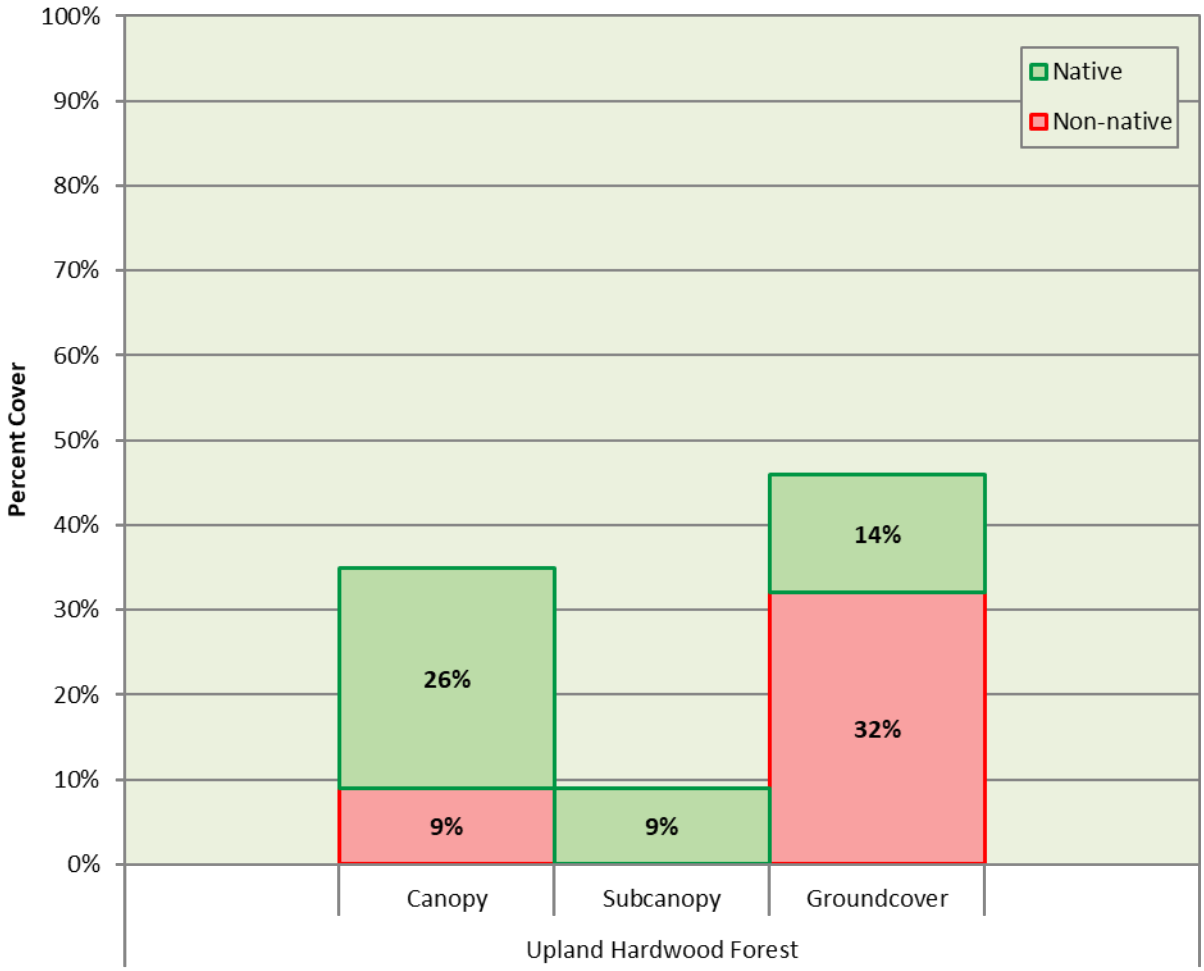

Figure 60. Newins-Ziegler Sinks Vegetation Cover by Community, Strata, and Native Status

3.17.1 Sinkhole

The vegetation along the edges of the sinkhole resembles an open canopy upland hardwood forest habitat including sugarberry and camphortree as the main canopy cover. Other common canopy species include bluff oak (*Quercus austrina*), cabbage palm, white ash, glossy privet, water oak, live oak and swamp chestnut oak. The species in the scarce subcanopy include Carolina laurel cherry, overcup oak (*Quercus lyrata*), and sugarberry. The most common groundcover is Burmann's basketgrass. Other common groundcover species include cabbage palm, camphortree, monkey grass (*Liriope spicata*), and hedge apple (*Maclura sp.*).

Vegetation inside the sinkhole included scarce cover by cabbage palm canopy, elderberry subcanopy and giant ironweed (*Vernonia gigantea*), pennywort, southern shield fern, and tuberous sword fern groundcover.

Light availability, human use, vegetative material, and landscaping inside and directly adjacent to the Conservation Area have resulted in the encroachment and establishment of various exotic and invasive species. Other impacts include sedimentation caused by stormwater.

3.18 Ocala Pond

The Ocala Pond Conservation Area is bordered by SW 13th Street to the East, Fine Arts Building C to the west, Inner Road to the south, and Fine Arts Building B to the north (Figure 61). This Conservation Area consists of a sinkhole with a sinkhole lake and vegetation resembling that of an upland hardwood forest habitat along the sinkhole edges. The site provides stormwater retention and aesthetic value to the landscape and is accessible via the sidewalks along SW 13th Street and Inner Road and the courtyards surrounding Fine Arts Build B and Fine Arts Building C.

Figure 61. Ocala Pond Conservation Area

A site visit was conducted on October 31, 2023, to evaluate the ecological structure and collect vegetation data. Figure 62 summarizes vegetation percentage cover by community type, strata, and native status in the Ocala Pond Conservation Area. A complete list of observed species by natural community is provided in Appendix A. The following sections discuss current site conditions and observed impacts to the ecological structure by natural community type.

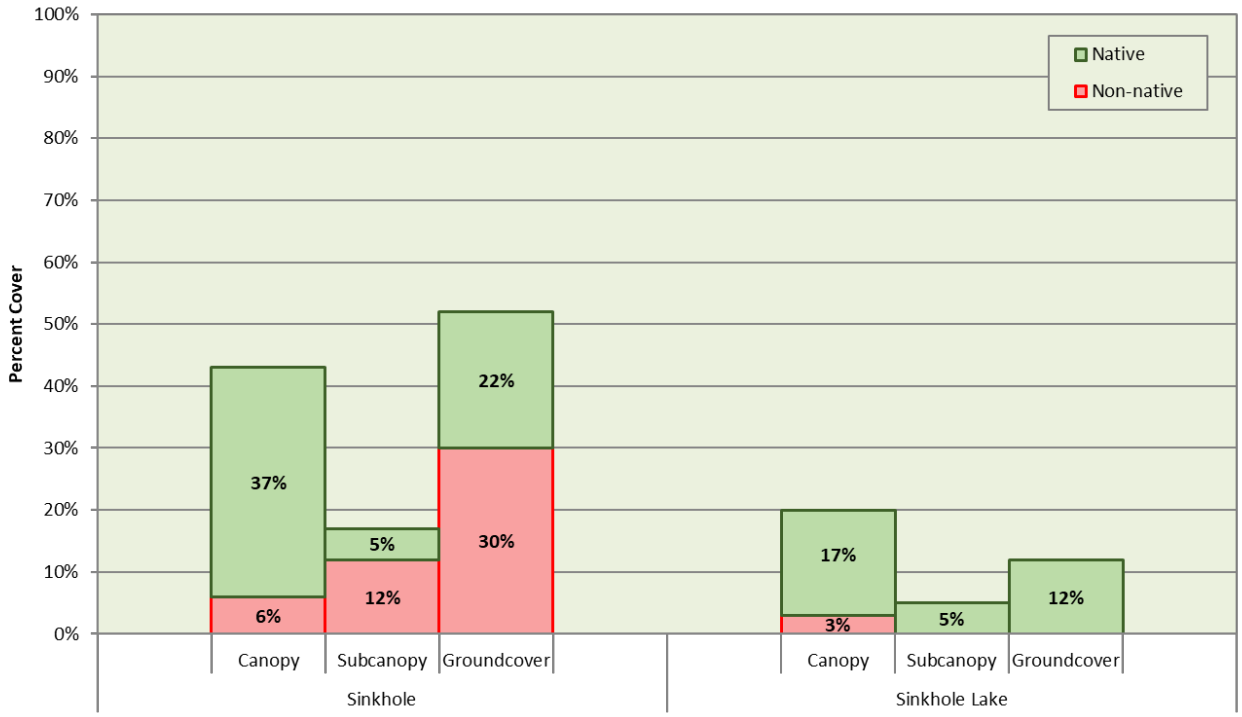

Figure 62. Ocala Pond Vegetation Cover by Community, Strata, and Native Status

3.18.1 Sinkhole

The vegetation along the edges of the sinkhole resembles an open canopy upland hardwood forest habitat including cabbage palm, live oak, loblolly pine, red mulberry, and Florida maple. Other common canopy species include American holly, silktree mimosa, crape myrtle, eastern hophornbeam, and common persimmon. The subcanopy species include camphortree, glossy privet, American holly, red mulberry, and silktree mimosa. Common groundcover species include switch cane, wax myrtle, peppervine, tuberous swordfern, creeping oxeye, and an unidentified taxon in the ginger family (*Zingiberaceae*). Other groundcover species include sweetgum, resurrection fern, St. Augustinegrass, beggarticks, and spadeleaf (*Centella asiatica*).

Light availability, human use, vegetative material, and land use changes inside and directly adjacent to the site have resulted in the encroachment and establishment of various exotic and invasive species. Other impacts to community structure include sedimentation of the open water community from stormwater runoff conveyed through a pipe located at the northernmost extent of the Conservation Area.

Figure 63. Little Blue Heron and Litter Along the Sinkhole Edge in the Ocala Pond Conservation Area

3.18.2 Sinkhole Lake

The sinkhole lake portion of Ocala Ponds is a small (roughly 0.25 acres), circular, open water system with steep side slopes and exposed limestone along its northeastern edge. The canopy consists of bald cypress, red maple, and cabbage palms rooted along the sinkhole edges but with a portion of their crown over the open water system. Cover by subcanopy is more scarce including only small sweetgum trees along the edges of the open water system. Groundcover species include buttonbush, pennywort, and sweetgum.

The open water community receives stormwater inputs from direct impervious surface runoff and stormwater pipes that are likely to impact water quality through sediment and pollutant loading.

Figure 64. Sinkhole Lake Community in the Ocala Pond Conservation Area

3.19 Reitz Ravine Woods

Reitz Ravine Woods is located southwest of the Reitz Student Union north of Museum Road and west of Reitz Union Drive. This natural area includes upland hardwood forest and bottomland forest habitats. The site is readily accessible with sidewalks surrounding the forested system, a boardwalk and paved trail that runs through the site and over the creek that bisects the ravine, and multiple dirt trails. These walkways (Figure 65) provide students and faculty access to a landscape in the center of campus that more closely resembles a Florida natural community, to use as an area of respite.

Figure 65. Reitz Ravine Woods Conservation Area

A site visit was conducted on September 21, 2023, to provide an assessment of ecological structure based on current site conditions including an updated species list; cover estimates by species, stratum, and community type; and current impacts. These data expand on the vegetation data presented in the 2005 *University of Florida Conservation Areas Land Management Report* for the Reitz Ravine Woods Conservation Area (University of Florida, 2005) and species data reported in BioGator. Figure 66 summarizes vegetation percentage cover by community type, strata, and native status in the Reitz Ravine Woods. A complete list of observed species by natural community is provided in Appendix A. The following section discusses current site conditions and impacts to the ecological structure of the Conservation Area by natural community type.

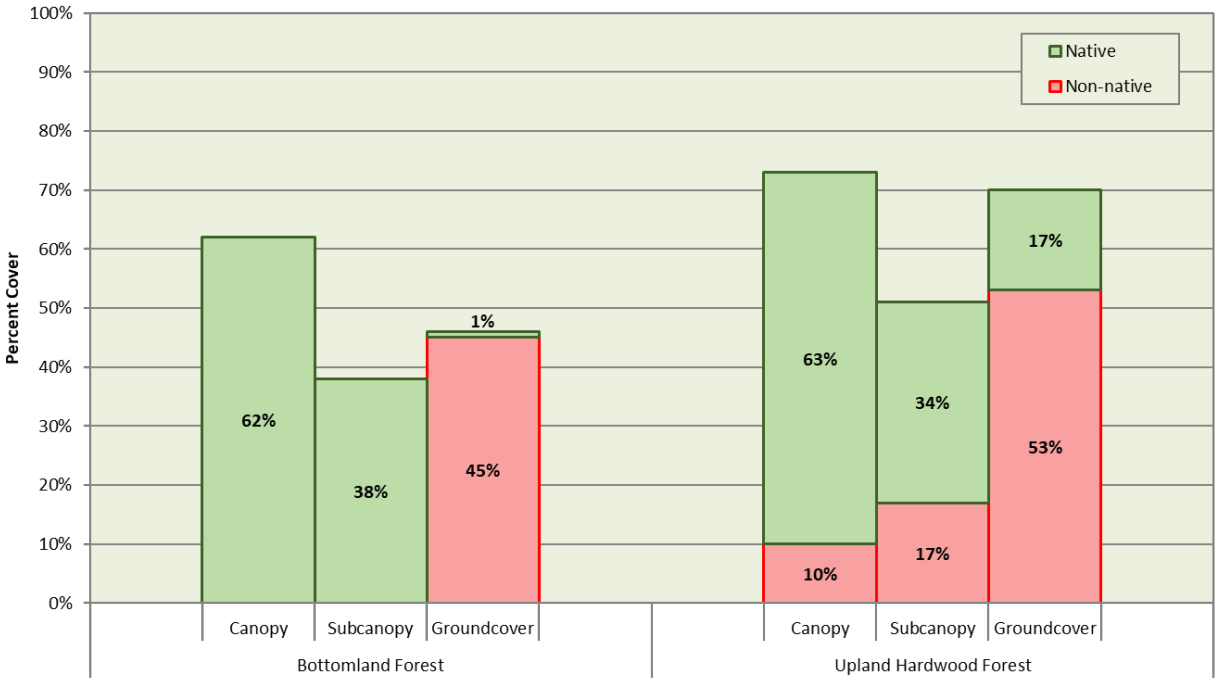

Figure 66. Reitz Ravine Woods Vegetation Cover by Community, Strata, and Native Status

3.19.1 Upland Hardwood Forest

Although non-native vegetation comprises a large portion of the total vegetation cover in both natural communities, the non-native vegetation cover in the upland hardwood forest is higher and crosses all strata due to a higher degree of disturbance, particularly on the Conservation Area edges where human use, landscape maintenance, vegetative material (seeds and propagules), and light availability allow for a proliferation of fast-growing invasive species (Figure 68).

A small area directly west of the Reitz Union Drive Loop resembles a mesic hammock community but was surveyed as part of the upland hardwood forest. The upland hardwood forest is a closed canopy system including sugarberry, sweetgum, and camphor tree. Other common canopy species include box elder, southern magnolia, swamp chestnut oak, and cabbage palm. The subcanopy is scarce and includes glossy privet, pignut hickory, Florida maple, camphortree, sweetgum, and Carolina laurel cherry. Groundcover species include American evergreen, tuberous swordfern, and small-leaf spiderwort. Other common groundcover species include catclaw vine, crossvine, Carolina laurel cherry, and muscadine grape.

Figure 67. Northwestern Edge of the Upland Hardwood Forest in the Reitz Ravine Woods Conservation Area

At Reitz Ravine Woods the upland hardwood forest acts as a natural buffer between the bottomland forest habitat and the sodded landscape. Light availability, human use, vegetative material, and landscaping practices along the upland forest and sodded landscape interface have resulted in the encroachment and establishment of various invasive species. Other impacts to community structure include the loss/destabilization of soil caused by stormwater erosion (Figure 69) and litter (Figure 70).

Figure 68. Reitz Ravine Woods Upland Hardwood Forest and Mowed Landscape Interface

Figure 69. Erosion and Bank Failure in Reitz Ravine Woods

Figure 70. Litter in Reitz Ravine Woods

3.19.2 Bottomland Forest

The bottomland forest (Figure 71) is a closed canopy system of sweetgum and sugarberry hydrologically supported by seepage and a narrow creek which is buffered on both sides by the upland hardwood forest. Other common canopy species include box elder, red maple (*Acer rubrum)*, and cabbage palm. The subcanopy includes box elder and swamp chestnut oak, red maple, Florida maple, sweetgum, and sugarberry. The groundcover was dominated by invasive vegetation including American evergreen, tuberous swordfern, and small-leaf spiderwort. The only commonly observed native species in the groundcover classification was Virginia sweetspire.

Figure 71. Dense Small-leaf Spiderwort (left of the creek) and American Evergreen (both FISC Cat I) (right of the creek) in the Reitz Ravine Woods Conservation Area Bottomland Forest

Figure 72. Bottomland Forest (left) and the Upland Hardwood Forest (Right) Communities in the Reitz Ravine Woods Conservation Area

Section 4.0 UF Natural Resource Policies

Conservation Areas on campus range in their level of disturbance due to adjacent urbanization, human use, stormwater impacts from erosion and sedimentation, encroachment of impervious surfaces, and fire suppression (UF Facilities, Planning & Construction Division, 2004). To reduce future impacts in Conservation Areas, policies to protect and preserve natural resources have been adopted in various campus planning documents. Relevant policies and guidelines are discussed in additional detail in the following sections.

4.1 Tree Mitigation

In August 2019, the Lake, Vegetation and Landscape (LVL) Committee adopted the *Tree Mitigation Policy* (UF LVL Committee, 2019). This document outlines policies and procedures designed to offset the loss of values (aesthetic, ecological, monetary, etc.) due to the removal of healthy trees on campus. The required compensation for a removed tree depends on the species and size of the existing tree. The policy identifies the preferred approach as one of avoidance and minimization of impacts to trees. Unavoidable impacts to trees are required to be mitigated based on the values in the policy with monies generated as part of the fund used, with LVL approval, to complete open-space enhancement projects.

4.2 Stormwater Impacts in Conservation Areas

Many of the Conservation Areas in the Lake Alice Watershed include water features that are a part of the stormwater system on campus. This includes sinks, creeks, wetlands, and lakes that store or convey water within the watershed. The following guidelines with regards to water quality and stormwater were summarized from the *Landscape Master Plan Report* (CRJA-IBI Group et al., 2018):

- Manage waterbodies on campus in a holistic manner, realizing the integrated nature of these features.
- Discourage direct stormwater runoff from impervious areas into campus waterbodies.
- Intercept runoff through the incorporation of low impact development (LID) and green stormwater infrastructure (GSI).
- Use natural buffers to provide pre-treatment of runoff. This is of particular concern in areas of campus where fertilizer-rich runoff from athletic fields eventually reaches Lake Alice.
- Daylight piped streams to improve habitat and promote the infiltration of surface water runoff. Provide planted riparian and upland zones of native plant material to prevent erosion of the stream banks.
- Remove non-native plant species and re-establish native species to provide habitat.
- Enhance and stabilize the edge of waterbodies by establishing riparian zones of native plants.
- Correct erosion and sedimentation issues by vegetating the edges with appropriate tree species incorporated with riparian plantings of native shrubs and groundcovers. In higher-energy areas incorporate natural elements such as native boulders or stones to reduce erosion. Avoid the use of non-native erosion control solutions.

- Use naturally landscaped and vegetated edges adjacent to waterbodies.

4.3 Invasive Species Management

Non-native plant species can cause stress to Florida's natural communities. Policy 2.8 of the *Campus Master Plan* states that non-native species should be removed from all University landscapes, including plants on any of the following lists:

- The Florida Exotic Pest Plant Council's *2019 List of Invasive Plant Species*,
- IFAS's *Assessment of Non-Native Plants in Florida's Natural Areas*,
- The Department of Agriculture's *Noxious Weed List*, and
- The Department of Environmental Protection's *Prohibited Plant List.*

Section 5.0 Recommendations

Natural communities are commonly valued by the ecosystem services they produce evaluated at the local, regional, and global scale (Costanza et al., 2014). Ecosystem services are the benefits people can obtain from ecosystems. These benefits are categorized as provisioning, regulating, cultural, and supporting ecosystem services (Reid et al., 2005). Conservation Areas on campus and their associated ecosystems provide regulating (flood abatement, water purification, and stormwater retention and conveyance), cultural (education, aesthetics, recreational, and spiritual benefits), and supporting (regulation of nutrient cycling) ecosystem services. A clear benefit of the Conservation Areas to the University of Florida is the use of these spaces as a cultural resource. UF faculty use many Conservation Areas on campus to educate students about ecology, limnology, entomology, sustainability, land management, botany, and other subjects. Additionally, numerous research studies have used the campus as a study site. Monitoring plans should be developed in collaboration with faculty and students for each Conservation Area, to maintain a temporal record of site conditions.

Impacts to Conservation Areas in the Lake Alice Watershed vary in both type and severity. Without active management, such as that undertaken at McCarty Woods (invasive plant removal and native species replanting), these areas are more likely to experience impacts that could affect the provisioning of ecosystem services and the benefits to wildlife, such as:

- Disturbances to vegetative structure caused by human use and landscape maintenance (mowing, leaf-blowing, and other disruptive landscaping processes), that promote the recruitment, establishment, and spread of exotic or invasive plant species;
- Disturbances to ecosystem structure caused by human use, the loss of adjacent natural areas, and vegetative maintenance that produce lower-quality habitat for native plant and animal species;
- Stormwater erosion which impacts the structure and function of Conservation Areas and, in the case of Diamond Creek Conservation Area, has effectively eliminated the bottomland forest community adjacent to the creek (see Section 3.3.2);
- Sedimentation that degrades the water environment (water levels and water quality) and vegetative structure (species composition and stratification) of Conservation Areas;
- Point and non-point source pollution (nutrient loading and trash disposal) that reduces water quality and habitat value; and
- Fire suppression that can alter vegetative communities.

Landscaping on campus is maintained by the Grounds Department within Facilities Services. This Department is responsible for managing both landscaped areas and the Conservation Areas on campus. Based on feedback received as a part of this project, there is a perception of competing goals and messages for maintenance of Conservation Areas. These spaces are highly valued by numerous campus stakeholders, often making it challenging for the Grounds team to conduct work in conservation areas without raising concern. The Grounds Department generally uses a hands-off approach to managing the Conservation Areas, which has contributed to a proliferation of invasive species on the edges and within these natural areas, reduced site lines into and out of these spaces, and decreased restoration efforts. While minimal maintenance and a more unkempt appearance may be desirable in some larger Conservation Areas on campus (i.e. the south bank of Lake Alice), the relatively small size of many Conservation Areas on campus in conjunction with creeks makes them vulnerable to invasives establishment from upstream in the watershed or adjacent land uses. Active and ongoing maintenance is

expected to be important in many of these areas to support a healthy and balanced ecosystem while also maintaining trails and amenities that visitors enjoy. Clearly stated management procedures and goals, must be developed and communicated so that stakeholders understand "the why" for planned maintenance activities before they happen. For example, it is desirable to remove fallen trees along the northwest side of Lake Alice to maintain the site lines and promote passive recreation but fallen trees on the south bank may be left as basking logs for turtles. Transparency is key to building trust with stakeholders so proactively communicating the rationale behind planned maintenance activities, both before and during implementation, can reassure the public.

To further build trust and empowerment within the Grounds team, this report recommends that one or more members of the Grounds staff have a background, or receive training in, and be licensed as a pesticide applicator with certifications in both aquatic and natural areas weed management. With this expertise, each Conservation Area can be actively monitored to determine which areas require more immediate enhancement or restorative action. Conservation Areas requiring enhancement should be managed according to a generalized management plan developed for each natural community type (see Sections 5.1-5.6), and site-specific management plans specific to each Conservation Area. It is further recommended that these management plans be developed in close coordination with the Grounds Department which will be largely responsible for their implementation and ongoing maintenance. By coordinating and agreeing on a suitable management plan for each Conservation Area the Grounds Department will be empowered to complete required work proactively in a way that reduces required effort and improves ecosystem outcomes.

Ecological engineering is "the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both" (Mitsch, 2012). Five common principles of ecological engineering are provided in Table 6.

Table 6. Five Principles of Ecological Engineering (Mitsch, 2012)

Number	Principle	Description
1	Self-Design	Nature should contribute as much or more (than the human designer) to the ecosystem design.
2	Acid-Test	Use ecological restoration as a tool to reveal inadequacies and weaknesses in current ecological theory and advise future endeavors.
3	System Thinking	For the creation and restoration of ecosystems, prioritize an ecosystem approach to assess the system as a whole instead of as individual parts.
4	Natural Energy Use	Prioritize the use of sustainable energy sources (often solar, wind, and water) over non-renewable source.
5	Ecosystem Conservation	Avoid eliminating and or disturbing natural ecosystems unless absolutely necessary.

The integration of ecological engineering principles into all Conservation Area Management Plans is recommended to:

- Preserve (through the mitigation of impacts) existing ecosystem services of the Conservation Areas and the benefits to wildlife,
- Enhance ecosystem services of the Conservation Areas and the benefits to wildlife to the greatest extent practicable, and
- Generate new ecosystem services within the Conservation Areas through new projects that are also designed to benefit wildlife.

At a minimum, management plans for each natural community should include the following:

- The requirement for new projects that will impact or are adjacent to a Conservation Area to produce an alternatives analysis to minimize physical disturbances, protect native plant populations, and minimize the establishment of non-native species.
- An outline of possible impacts and thresholds at which management actions should be initiated.
- An on-going vegetation monitoring plan to identify, map, and recommend treatment areas for non-native vegetation to minimize impacts to community structure.
- An educational outreach program to engage and educate the public on the ecological importance of the natural communities included in the Conservation Areas on campus.

Additional recommendations include coordination with student groups or community groups to complete invasives removal. Following non-native plant removal, native plantings should be used to bolster native plant regeneration and reduce the risk of invasive species recruitment or re-establishment. The following sections describe common (Florida Natural Areas Inventory, 2010) and observed impacts for each of the natural community types surveyed (except mesic hammock) in the Conservation Areas of the Lake Alice Watershed and discuss methods to mitigate impacts to these natural systems.

5.1 Basin Marsh

Two basin marsh communities lie within the Lake Alice Watershed located in the Digital Design Wetland and Lake Alice Conservation Areas.

5.1.1 Impacts

The primary threat to basin marshes in Florida is hydrologic alteration (Florida Natural Areas Inventory, 2010). Stabilized water levels and increased nutrient levels have been shown to promote the expansion of exotics and invasives such as Cuban bulrush and water hyacinth, respectively. The Florida Department of Environmental Protection (FDEP) currently lists Lake Alice (WBID 2719A) as impaired for total phosphorus (TP) concentrations and Lake Alice Outlet (WBID 2719) as impaired for nutrients (TP and chlorophyll-a), dissolved oxygen (DO), and fecal coliform (FC). Both basin marshes are located within the Lake Alice Outlet boundary which includes the Lake Alice Watershed, exclusive of the open water lake. The basin marsh in the Lake Alice Conservation Area was historically dominated by water hyacinth (FISC Cat I), used to provide treatment to wastewater discharges and heating plant effluent from campus facilities (Mitsch, 1976)(Figure 73). The December 2023, site visit revealed that the basin marsh in the Digital Design Wetland Conservation Area was dominated by Paragrass (FISC Cat I). The elevated nutrient levels within the Lake Alice Watershed along with stabilized basin marsh water levels have likely caused the historic and current impacts to basin marsh vegetation structure.

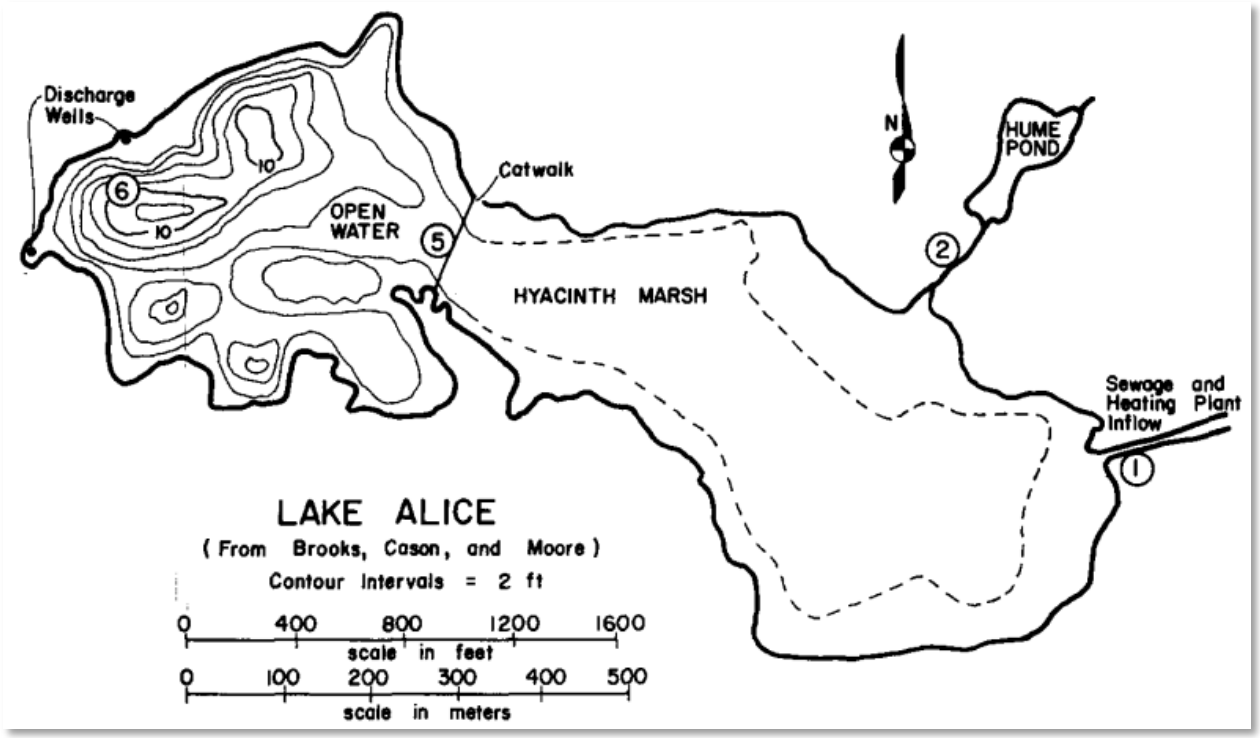

Figure 73. Lake Alice Basin Marsh Showing the Water Hyacinth Treatment Marsh (Mitsch, 1976)

The lowering of basin marsh water tables alters the vegetation structure by dampening the natural fluctuations of water levels within the system. Lowered water tables also allow shrubby species such as Carolina willow to invade basin marsh habitat, shading out herbaceous vegetation. The exclusion of fire along with depressed water levels can result in the formation and expansion of dense Carolina willow stands. Carolina willow is a woody shrub or tree native to the southeastern coastal plain but the complete replacement of herbaceous species by Carolina willow is undesirable as it reduces landscape heterogeneity, biodiversity, and ecological and economic values (Quintana-Ascencio et al., 2013). Currently, the Lake Alice Conservation Area basin marsh is dominated by Carolina willow, likely due to fire suppression and water level fluctuations controlled by the drainage wells on the western edge of the lake.

5.1.2 Recommendations for Enhancement

In addition to the minimum criteria outlined in Section 5.0, basin marsh management plans should include:

- An outline describing the monitoring frequencies for vegetation and water quality sampling within basin marsh communities and for water quality sampling within surface waterbodies discharging to basin marsh communities.
- A description of how hydroperiod will be monitored within the basin marsh.
- Criteria (native vs. non-native plant cover, plant species diversity and abundance, and stratification of vegetation) to determine when and what type of corrective action (maintenance, enhancement, or restoration) should be initiated.

- Criteria for success to determine if corrective action is successful (and or driving the system towards the structure of a higher-quality basin marsh).
- Water quality sampling to, at a minimum, identify elevated concentrations of nutrients such as total nitrogen (TN), TP, and total suspended solids (TSS) within the marsh and surface waterbodies discharging to the marsh. Field parameters (temperature, pH, specific conductance, and dissolved oxygen) should also be collected as a part of all water quality sampling.
- Sedimentation effects should be monitored based on survey or visual assessment within basin marsh communities during routine monitoring events to prevent the degradation of basin marsh water environments and mitigate impacts to the vegetation structure.

5.2 Bottomland Forest

Bottomland forest communities are present within ten of the Conservation Areas in the Lake Alice Watershed (Table 1).

5.2.1 Impacts

The FNAI lists three main impacts to bottomland forest communities. The first includes impacts due to tree harvesting: "*Nearly all bottomland forest have suffered from timber operations*". This frequently leaves long-lasting scars due to soil disturbance and replaces old-growth canopies with second-growth forests of lesser ecological function. Generally, second-growth canopies are undesirable as they produce smaller trees with diminished pit and mound microtopography which is "*an important structural component of most forests, influencing soil processes and habitat diversity*" (Plotkin et al., 2017). The importance of pit and mound topography is described as follows: "*The forest process of uprooting and erosion mixes the soil and initiates new episodes of soil formation, alters ecosystem processes such as soil respiration, and diversifies microhabitats for tree regeneration and ground-layer plants, as well as many other organisms*" (Plotkin et al., 2017).

The second impact includes the establishment and spread of exotic and invasive species, especially surrounding developed areas. Most bottomland forests in the Conservation Areas (with the exception of Lake Alice South) had an upland hardwood forest buffer separating the bottomland forest from bordering development. On average, bottomland forests buffered from development included less total percentage cover by non-native plant species (with the exception of Reitz Ravine Woods) than bottomland forests adjacent to development. The most frequently observed and abundant non-native species were FISC Cat 1 invasives. The most frequently observed (present in the greatest number of bottomland forest communities) and most abundant species in the surveyed bottomland forest community canopies and subcanopies were Chinese tallowtree (FISC Cat I) and glossy privet (FISC Cat I), respectively. The most frequently observed species in the groundcover was taro (FISC Cat I) and the most abundant groundcover included coral ardisia (FISC Cat I) and small-leaf spiderwort (FISC Cat I).

The third impact includes alterations to bottomland forest hydroperiods. Bottomland forest canopies are susceptible to the impoundment of water caused by dikes and dams (both natural and anthropogenic) as they are not adapted to long periods of inundation (Florida Natural Areas Inventory, 2010).

Additional impacts observed on campus include the loss of bottomland forest habitat due to erosion.

5.2.2 Recommendations for Enhancement

In addition to the minimum criteria outlined in Section 5.0, bottomland forest management plans should include:

- An outline describing the monitoring frequencies for vegetation sampling within bottomland forest communities and for water quality sampling within surface waterbodies discharging to bottomland forest communities.
- A plan for monitoring hydroperiod within the bottomland forest.
- Criteria (native vs. non-native plant cover, plant species diversity and abundance, and stratification of vegetation) to determine when and what type of corrective action (maintenance, enhancement, or restoration) should be initiated.
- Criteria for success to determine if corrective action is successful (and or driving the system towards the structure of a higher-quality bottomland forest).
- Water quality sampling to, at a minimum, identify elevated concentrations of nutrients such as TN and TP and TSS within surface waterbodies discharging to the forest. Field parameters should also be collected as a part of all water quality sampling.
- Effects of erosion and sedimentation should be monitored within bottomland forest communities to prevent habitat loss due to soil erosion (observed in the Diamond Creek Conservation Area) and mitigate impacts due to sedimentation (observed in Bottomland Forest 1 in the Lake Alice Conservation Area).

Overall, bottomland forest management should include strategies to maintain, enhance, or restore an appropriate hydrologic regime and vegetation structure and prevent further impacts to these ecosystem components due to erosion, sedimentation, non-native plant material, prolonged hydroperiods caused by an unnatural impoundment of water, and water quality issues related to stormwater.

5.3 Mesic Hammock

Mesic hammock communities are present within the Lake Alice Watershed intermixed between drier portions of bottomland forest and the wetter portions of upland hardwood forests. Delineating boundaries between these similar (overlapping vegetation, hydrology, and soil biogeochemistry) natural communities was outside of the scope of this project. As a result, vegetation that occurred in mesic hammock habitats was included in species lists for upland hardwood forest and/or bottomland forest habitats.

5.3.1 Impacts

This section includes management considerations for mesic hammock natural areas taken from the 2010 *Guide to the Natural Communities of Florida* (Florida Natural Areas Inventory, 2010), presented below:

> *"Past and ongoing disturbance leaves hammocks vulnerable to invasion by a wide variety of exotic invasive plants which compete with native plants and often become the dominant ground or vine cover. Rosary pea (Abrus precatorius), coral ardisia (Ardisia crenata), air-potato (Dioscorea bulbifera), Japanese climbing fern (Lygodium japonicum), melaleuca (Melaleuca quinquenervia), skunk vine (Paederia foetida), guava (Psidium guajava), Brazilian pepper (Schinus terebinthifolius), tropical soda apple (Solanum viarum), bowstring hemp (Sansevieria hyacinthoides), wedelia (Sphagneticola*

trilobata), and Caesar's weed (Urena lobata) are common exotic pest plants that invade mesic hammocks."

"Because mesic hammocks are often associated with wetlands, either occurring as a matrix with hydric communities or as a transition to uplands, hammocks are sensitive to hydrologic alteration in the landscape. An increase in flooding frequency and/or duration can kill most characteristic mesic hammock tree species. Lowered water tables can result in a shift in vegetation to more xeric species or allow intense fires to burn and destroy the hammock."

5.3.2 Recommendations for Enhancement

In addition to the minimum criteria outlined in Section 5.0, mesic hammock management plans should include:

- An outline describing the monitoring frequencies for vegetation sampling within mesic hammock communities.
- Criteria (native vs. non-native plant cover, plant species diversity and abundance, and stratification of vegetation) to determine when and what type of corrective action (maintenance, enhancement, or restoration) should be initiated.
- Criteria for success to determine if corrective action is successful (and or driving the system towards the structure of a higher-quality upland hardwood forest).

Overall, mesic hammock management should include strategies to maintain, enhance, or restore an appropriate hydrologic regime and vegetation structure and prevent further impacts to these ecosystem components due to non-native plant material and/or prolonged hydroperiods caused by an unnatural impoundment of water.

5.4 River Floodplain Lake

The only Conservation Area including a natural community classified as a river floodplain lake community is the Lake Alice Conservation Area (Table 1). A majority of the impacts and recommendations made in this section apply to the man-made pond communities located in the Graham Pond Conservation Area as were not categorized as a natural community type.

"Swamp Lakes and River Floodplain Lakes are important breeding areas for many terrestrial and semi-aquatic amphibians. They are frequently very important feeding areas for many wading birds, ducks, and reptiles. They are also important nursery grounds and habitats for several species of fish." (Florida Natural Areas Inventory, 2010)

5.4.1 Impacts

Floodplain lakes exhibit vulnerability to deforestation and timber extraction activities within proximate swamps or adjacent upland areas. Such upland interventions typically exacerbate sediment deposition, whereas swamp-based activities may elevate solar radiation penetration, modify nutrient concentrations, and, particularly in the context of floodplain lakes, amplify the impacts of flood-induced erosion (Florida Natural Areas Inventory, 2010). Although the forested areas surrounding Lake Alice are protected by its designation as a Conservation Area, sediment deposition is a cause for concern due to stormwater runoff in the Lake Alice Watershed.

5.4.2 Recommendations for Enhancement

In addition to the minimum criteria outlined in Section 5.0, river floodplain lake management plans should include:

- An outline describing the monitoring frequencies for vegetation and water quality sampling within river floodplain lake communities and for water quality sampling within surface waterbodies discharging to river floodplain lake communities.
- A description of how hydroperiod will be monitored within the river floodplain lake.
- Criteria (native vs. non-native plant cover, plant species diversity and abundance, and stratification of vegetation) to determine when and what type of corrective action (maintenance, enhancement, or restoration) should be initiated.
- Criteria for success to determine if corrective action is successful (and or driving the system towards the structure of a higher-quality river floodplain lake).
- Comprehensive watershed management strategies to control nutrient inflow and prevent eutrophication.
- Water quality sampling to, at a minimum, identify elevated concentrations of nutrients such as total nitrogen (TN) and TP and total suspended solids (TSS) within the marsh and surface waterbodies discharging to the marsh. Field parameters should also be collected as a part of all water quality sampling.
- Sedimentation effects should be monitored within river floodplain lake communities during routine monitoring events to prevent the degradation of river floodplain lake water environments and mitigate impacts to the vegetation structure of these systems.
- Preservation of surrounding wetland and floodplain areas to maintain natural water filtration processes and buffer zones that mitigate the impacts of floods and droughts.
- Minimization of agricultural runoff, urban stormwater, and wastewater discharges into these lakes to reduce water level fluctuations and nutrient loads.

Overall, river floodplain lake management should include strategies to maintain, enhance, or restore an appropriate hydrologic regime and vegetation structure and prevent further impacts to these ecosystem components due to erosion, sedimentation, non-native plant material, prolonged hydroperiods caused by an unnatural impoundment of water, water level drawdowns, and water quality issues related to stormwater.

5.5 Sinkhole and Sinkhole Lake

Sinkholes are fragile ecosystems that require careful management to preserve their environmental conditions and to protect downstream connected water resources. Sinkhole communities are present within six of the Conservation Areas in the Lake Alice Watershed (Table 1). All but one of these sinkholes (Newins-Ziegler Sink) includes a sinkhole lake community.

5.5.1 Impacts

Key management considerations include mitigating impacts of surrounding land use activities on sinkhole microclimate and hydrology to avoid disrupting the sensitive balance of the system (Florida Natural Areas

Inventory, 2010). Clearing canopy vegetation can increase solar radiation and sedimentation. Similarly, soil disturbances in adjacent uplands can disrupt crucial seepage water sources. Since sinkholes are directly connected to underlying aquifers, this makes them highly vulnerable to the effects of chemical applications, waste disposal, and spills in the surrounding landscape. Invasive species, such as coral ardisia and skunk vine can also invade the shaded, humid environments of sinkholes.

A sinkhole that maintains a water-filled basin for the majority of the year, only drying down during exceptional drought conditions, is considered to have an "included sinkhole lake" (Florida Natural Areas Inventory, 2010). This type of sinkhole ecosystem is characterized by a persistent water body within the depression, which is a key feature distinguishing it from sinkholes that are only seasonally inundated or completely dry for extended periods (Newins-Ziegler Sink). The presence of a sinkhole lake indicates a stable, long-term hydrological regime, where the sinkhole's connection to groundwater sources ensures the retention of water even during drier climatic periods. This consistent hydroperiod supports a unique assemblage of aquatic flora and fauna adapted to the sinkhole's specialized environment. Sinkhole lakes are considered endangered in Florida (Florida Natural Areas Inventory, 2010). Erosion of surrounding vegetation and pollution to connected aquifers are major threats to the health of these ecosystems.

5.5.2 Recommendations for Enhancement

In addition to the minimum criteria outlined in Section 5.0, sinkhole and sinkhole lake management plans should include:

- An outline describing the monitoring frequencies for vegetation sampling within the sinkhole or sinkhole lake community and for water quality sampling within surface waterbodies discharging to the sinkhole or sinkhole lake community,
- A description of how hydroperiod will be monitored within sinkhole lake communities,
- Criteria (native vs. non-native plant cover, plant species diversity and abundance, and stratification of vegetation) to determine when and what type of corrective action (maintenance, enhancement, or restoration) should be initiated, and
- Criteria for success to determine if corrective action is successful (and or driving the system towards the structure of a higher-quality sinkhole/sinkhole lake).
- Water quality sampling to, at a minimum, identify elevated concentrations of nutrients such as TN and TP and TSS within sinkhole lakes and surface waterbodies discharging to sinkhole lakes. Field parameters should also be collected as a part of all water quality sampling.
- A prohibition on the dumping of refuse, application of chemicals, and other forms of pollution that could contaminate the sinkhole, its associated groundwater resources, or degrade the plant community in its associated sinkhole lake.

5.6 Upland Hardwood Forest

Upland hardwood forest communities are present within fourteen of the Conservation Areas in the Lake Alice Watershed (Table 1).

5.6.1 Impacts

Upland hardwood forests often occur near creeks. Common disturbances to these natural communities include logging, development, and foot or vehicular traffic (Florida Natural Areas Inventory, 2010). All

upland hardwood forests in the Lake Alice Watershed Conservation Areas had observable impacts to vegetation community structure due to either foot traffic, development along the natural community boundary, or both. Soil disturbance caused by these impacts have permitted the establishment and spread of significant exotic and invasive plant populations in these natural communities.

Refuse, which is frequently observed in upland hardwood forests, can bury or damage vegetation and impact creek water quality (Florida Natural Areas Inventory, 2010). Large amounts of trash were observed during the visit to the Fraternity Wetlands Conservation Area (Figure 17 and Figure 18).

Additional impacts observed on campus include the loss of upland hardwood forest habitat due to stormwater erosion.

5.6.2 Recommendations for Enhancement

In addition to the minimum criteria outlined in Section 5.0, upland hardwood forest management plans should include:

- An outline describing the monitoring frequencies for vegetation sampling within upland hardwood forest communities,
- Criteria (native vs. non-native plant cover, plant species diversity and abundance, and stratification of vegetation) to determine when and what type of corrective action (maintenance, enhancement, or restoration) should be initiated, and
- Criteria for success to determine if corrective action is successful (and or driving the system towards the structure of a higher-quality upland hardwood forest).

Overall, upland hardwood forest management should include strategies to maintain, enhance, or restore an appropriate hydrologic regime and vegetation structure and prevent further impacts to these ecosystem components due to non-native plant material. Surrounding wetland habitats that influence upland hardwood forest water table elevations should be monitored to prevent impacts due to water quantity.

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Appendix A

Detailed Vegetation Data

Bartram-Carr Woods Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	15%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	5%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	5%
Platanus occidentalis	American Sycamore	Upland Hardwood Forest	Canopy	Native	5%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	3%
Quercus hemisphaerica	Upland Laurel Oak	Upland Hardwood Forest	Canopy	Native	3%
Fraxinus americana	White ash	Upland Hardwood Forest	Canopy	Native	3%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Canopy	Native	2%
Acer saccharum subsp. floridanum	Florida Maple	Upland Hardwood Forest	Canopy	Native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	2%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Canopy	Native	1%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	1%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Canopy	Native	1%
Taxodium distichum	Bald Cypress	Upland Hardwood Forest	Canopy	Native	1%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Canopy	Non-native	2%
Ehretia acuminata	Kodo	Upland Hardwood Forest	Canopy	Non-native	2%
Melia azedarach	Chinaberrytree	Upland Hardwood Forest	Canopy	Non-native	1%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Canopy	Non-native	1%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Subcanopy	Native	2%
Fraxinus americana	White ash	Upland Hardwood Forest	Subcanopy	Native	2%
Morus rubra	Red mulberry	Upland Hardwood Forest	Subcanopy	Native	1%
Tilia americana var. caroliniana	Carolina Basswood	Upland Hardwood Forest	Subcanopy	Native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	3%
Ehretia acuminata	Kodo	Upland Hardwood Forest	Subcanopy	Non-native	3%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Subcanopy	Non-native	2%
Melia azedarach	Chinaberrytree	Upland Hardwood Forest	Subcanopy	Non-native	1%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Subcanopy	Non-native	1%
Viburnum odoratissimum	Sweet Viburnum	Upland Hardwood Forest	Subcanopy	Non-native	1%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Oplismenus sp.	Basketgrass	Upland Hardwood Forest	Groundcover	Native	5%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	5%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	3%
Stenotaphrum secundatum	St. Augustinegrass	Upland Hardwood Forest	Groundcover	Native	3%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Groundcover	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Groundcover	Native	2%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Groundcover	Native	2%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	2%
Nekemias arborea	Peppervine	Upland Hardwood Forest	Groundcover	Native	2%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Groundcover	Native	1%
Callicarpa americana	American Beautyberry	Upland Hardwood Forest	Groundcover	Native	1%
Ilex vomitoria	Yaupon	Upland Hardwood Forest	Groundcover	Native	1%
Eupatorium sp.	Thoroughwort	Upland Hardwood Forest	Groundcover	Native	1%
Cocculus carolinus	Carolina Coralbead	Upland Hardwood Forest	Groundcover	Native	1%
Urochloa maxima	Guineagrass	Upland Hardwood Forest	Groundcover	Non-native	10%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	6%
Dioscorea bulbifera	Air Potato	Upland Hardwood Forest	Groundcover	Non-native	5%
Ipomoea cairica	Mile-a-minute Vine	Upland Hardwood Forest	Groundcover	Non-native	3%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	2%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Groundcover	Non-native	2%
Euphorbia heterophylla	Mexican Fireplant	Upland Hardwood Forest	Groundcover	Native	2%
Oxalis debilis	Pink Woodsorrel	Upland Hardwood Forest	Groundcover	Non-native	2%
Ruellia blechum	Green Shrimp Plant	Upland Hardwood Forest	Groundcover	Non-native	2%
Ruellia caroliniensis	Carolina Wild Petunia	Upland Hardwood Forest	Groundcover	Native	1%
Oxalis corniculata	Common Yellow Woodsorrel	Upland Hardwood Forest	Groundcover	Native	1%
Tradescantia fluminensis	Small-leaf Spiderwort	Upland Hardwood Forest	Groundcover	Non-native	1%
Lygodium japonicum	Japanese Climbing Fern	Upland Hardwood Forest	Groundcover	Non-native	1%
Lantana strigocamara	Shrubverbena	Upland Hardwood Forest	Groundcover	Non-native	1%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	1%
Euphorbia cyathophora	Paintedleaf	Upland Hardwood Forest	Groundcover	Native	1%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Groundcover	Non-native	1%
Urena lobata	Caesarweed	Upland Hardwood Forest	Groundcover	Non-native	1%

Dairy Pond Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Quercus virginiana	Live Oak	Sinkhole	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Sinkhole	Canopy	Native	5%
Liquidambar styraciflua	Sweetgum	Sinkhole	Canopy	Native	2%
Betula nigra	River Birch	Sinkhole	Canopy	Native	2%
Carya glabra	Pignut Hickory	Sinkhole	Canopy	Native	2%
Quercus shumardii	Shumard Oak	Sinkhole	Canopy	Native	2%
Quercus laurifolia	Swamp Laurel Oak	Sinkhole	Canopy	Native	2%
Viburnum odoratissimum	Sweet Viburnum	Sinkhole	Subcanopy	Non-native	5%
Ulmus alata	Winged Elm	Sinkhole	Subcanopy	Native	2%
Fagus grandifolia	American Beech	Sinkhole	Subcanopy	Native	2%
Ligustrum lucidum	Glossy Privet	Sinkhole	Subcanopy	Non-native	2%
Liquidambar styraciflua	Sweetgum	Sinkhole	Subcanopy	Native	1%
Bidens alba	Beggarticks	Sinkhole	Groundcover	Native	5%
Dolichandra unguis-cati	Catclawvine	Sinkhole	Groundcover	Non-native	5%
Paederia foetida	Skunkvine	Sinkhole	Groundcover	Non-native	5%
Digitaria sp.	Fingergrass	Sinkhole	Groundcover	Native	5%
Plumbago auriculata	Cape Leadwort	Sinkhole	Groundcover	Non-native	3%
Crotalaria incana	Shakeshake	Sinkhole	Groundcover	Non-native	3%
Callicarpa americana	American Beautyberry	Sinkhole	Groundcover	Native	2%
Mikania scandens	Climbing Hempvine	Sinkhole	Groundcover	Native	2%
Tripsacum dactyloides	Fakahatcheegrass	Sinkhole	Groundcover	Native	2%
Lantana strigocamara	Shrubverbena	Sinkhole	Groundcover	Non-native	2%
Vitis aestivalis	Summer Grape	Sinkhole	Groundcover	Native	2%
Vitis rotundifolia	Muscadine Grape	Sinkhole	Groundcover	Native	2%
Morella cerifera	Waxmyrtle	Sinkhole	Groundcover	Native	2%
Nekemias arborea	Peppervine	Sinkhole	Groundcover	Native	1%
Triadica sebifera	Chinese Tallow Tree	Sinkhole	Groundcover	Non-native	1%
Sabal palmetto	Cabbage Palm	Sinkhole Lake	Canopy	Native	5%
Quercus nigra	Water Oak	Sinkhole Lake	Canopy	Native	2%
Colocasia esculenta	Taro	Sinkhole Lake	Groundcover	Non-native	2%
Cephalanthus occidentalis	Buttonbush	Sinkhole Lake	Groundcover	Native	2%
Ludwigia octovalvis	Mexican Primrosewillow	Sinkhole Lake	Groundcover	Native	2%

Diamond Creek Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	8%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	5%
Quercus shumardii	Shumard Oak	Upland Hardwood Forest	Canopy	Native	5%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Canopy	Non-native	5%
Fraxinus americana	White ash	Upland Hardwood Forest	Canopy	Native	3%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	3%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	3%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Canopy	Non-native	3%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	1%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Canopy	Non-native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	20%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Subcanopy	Non-native	3%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Subcanopy	Native	2%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Subcanopy	Native	2%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Subcanopy	Native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Subcanopy	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	2%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	2%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Subcanopy	Non-native	2%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Groundcover	Non-native	15%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Groundcover	Native	10%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	3%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	3%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	3%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	2%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Groundcover	Non-native	2%
Persea borbonia var. borbonia	Red Bay	Upland Hardwood Forest	Groundcover	Native	1%
Clematis virginiana	Virginsbower	Upland Hardwood Forest	Groundcover	Native	1%
Syngonium podophyllum	American evergreen	Upland Hardwood Forest	Groundcover	Non-native	1%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	1%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Groundcover	Non-native	1%

Digital Design Wetland Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Salix caroliniana	Carolina Willow	Bottomland Forest	Canopy	Native	40%
Morella cerifera	Waxmyrtle	Bottomland Forest	Canopy	Native	10%
Acer negundo	Box elder	Bottomland Forest	Canopy	Native	5%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Canopy	Native	1%
Acer rubrum	Red maple	Bottomland Forest	Canopy	Native	1%
Triadica sebifera	Chinese Tallow Tree	Bottomland Forest	Canopy	Non-native	1%
Morella cerifera	Waxmyrtle	Bottomland Forest	Subcanopy	Native	25%
Salix caroliniana	Carolina Willow	Bottomland Forest	Subcanopy	Native	2%
Ampelaster carolinianus	Climbing Aster	Bottomland Forest	Groundcover	Native	5%
Salix caroliniana	Carolina Willow	Bottomland Forest	Groundcover	Native	2%
Urochloa mutica	Paragrass	Freshwater Marsh	Groundcover	Non-native	60%
Zizaniopsis miliacea	Giant Cutgrass	Freshwater Marsh	Groundcover	Native	10%
Ampelaster carolinianus	Climbing Aster	Freshwater Marsh	Groundcover	Native	5%
Ludwigia peruviana	Peruvian primrosewillow	Freshwater Marsh	Groundcover	Non-native	5%
Salix caroliniana	Carolina Willow	Freshwater Marsh	Groundcover	Native	2%
Hydrocotyle sp.	Pennywort	Freshwater Marsh	Groundcover	Native	2%
Colocasia esculenta	Taro	Freshwater Marsh	Groundcover	Non-native	1%
Sambucus nigra	Elderberry	Freshwater Marsh	Groundcover	Native	1%
Salvinia minima	Water Spangles	Freshwater Marsh	Groundcover	Non-native	1%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	15%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	10%
Acer negundo	Box elder	Upland Hardwood Forest	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	3%
Quercus laurifolia	Swamp Laurel Oak	Upland Hardwood Forest	Canopy	Native	3%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	2%
Juniperus virginiana	Red Cedar	Upland Hardwood Forest	Canopy	Native	1%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Canopy	Native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Canopy	Non-native	1%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	5%
Quercus laurifolia	Swamp Laurel Oak	Upland Hardwood Forest	Subcanopy	Native	3%
Bidens alba	Beggarticks	Upland Hardwood Forest	Subcanopy	Native	3%
Phyllostachys aurea	Golden Bamboo	Upland Hardwood Forest	Subcanopy	Non-native	1%
Quercus nigra	Water oak	Upland Hardwood Forest	Subcanopy	Native	1%
Acer negundo	Box elder	Upland Hardwood Forest	Subcanopy	Native	1%
Phyllostachys aurea	Golden Bamboo	Upland Hardwood Forest	Groundcover	Non-native	10%
Hedera helix	English Ivy	Upland Hardwood Forest	Groundcover	Non-native	10%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	10%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	5%
Arundinaria gigantea	Switch Cane	Upland Hardwood Forest	Groundcover	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	3%
Parthenocissus quinquefolia	Virginia Creeper	Upland Hardwood Forest	Groundcover	Native	3%
Urochloa maxima	Guineagrass	Upland Hardwood Forest	Groundcover	Non-native	3%
Oxalis debilis	Pink Woodsorrel	Upland Hardwood Forest	Groundcover	Non-native	3%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	3%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Groundcover	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Groundcover	Native	2%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Groundcover	Native	2%
Quercus laurifolia	Swamp Laurel Oak	Upland Hardwood Forest	Groundcover	Native	2%
Sabal minor	Dwarf Palmetto	Upland Hardwood Forest	Groundcover	Native	2%
Morella cerifera	Waxmyrtle	Upland Hardwood Forest	Groundcover	Native	2%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Groundcover	Native	1%
Juniperus virginiana	Red Cedar	Upland Hardwood Forest	Groundcover	Native	1%
Toxicodendron radicans	Eastern Poison Ivy	Upland Hardwood Forest	Groundcover	Native	1%
Quercus nigra	Water oak	Upland Hardwood Forest	Groundcover	Native	1%
Acer negundo	Box elder	Upland Hardwood Forest	Groundcover	Native	1%
Albizia julibrissin	Silktree Mimosa	Upland Hardwood Forest	Groundcover	Non-native	1%
Ipomoea cairica	Mile-a-minute Vine	Upland Hardwood Forest	Groundcover	Non-native	1%
Sonchus asper	Spiny Sowthistle	Upland Hardwood Forest	Groundcover	Non-native	1%
Stenotaphrum secundatum	St. Augustinegrass	Upland Hardwood Forest	Groundcover	Native	1%
Lantana strigocamara	Shrubverbena	Upland Hardwood Forest	Groundcover	Non-native	1%
Melilotus albus	White Sweetclover	Upland Hardwood Forest	Groundcover	Non-native	1%
Pleopeltis michauxiana	Resurrection fern	Upland Hardwood Forest	Groundcover	Native	1%
Mikania scandens	Climbing Hempvine	Upland Hardwood Forest	Groundcover	Native	1%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Groundcover	Non-native	1%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	1%

Fraternity Wetland Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Carpinus caroliniana	American hornbeam	Bottomland Forest	Canopy	Native	5%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Canopy	Native	5%
Pinus taeda	Loblolly pine	Upland Hardwood Forest	Canopy	Native	5%
Ostrya virginiana	Eastern hophornbeam	Bottomland Forest	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Bottomland Forest	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	5%
Nyssa biflora	Swamp tupelo	Bottomland Forest	Canopy	Native	5%
Quercus nigra	Water oak	Bottomland Forest	Canopy	Native	5%
Acer rubrum	Red Maple	Bottomland Forest	Canopy	Native	5%
Quercus michauxii	Swamp Chestnut Oak	Bottomland Forest	Canopy	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	2%
Celtis laevigata	Sugarberry	Bottomland Forest	Canopy	Native	2%
Carpinus caroliniana	American hornbeam	Upland Hardwood Forest	Canopy	Native	2%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	2%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	2%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Canopy	Native	2%
Ostrya virginiana	Eastern hophornbeam	Upland Hardwood Forest	Canopy	Native	2%
Juniperus virginiana	Red Cedar	Upland Hardwood Forest	Canopy	Native	1%
Quercus shumardii	Shumard Oak	Upland Hardwood Forest	Canopy	native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Canopy	Non-native	5%
Ligustrum lucidum	Glossy Privet	Bottomland Forest	Canopy	Non-native	5%
Arecaceae	Palm Family	Upland Hardwood Forest	Canopy	Non-native	2%
Carpinus caroliniana	American hornbeam	Bottomland Forest	Subcanopy	Native	5%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Subcanopy	Native	5%
Quercus nigra	Water oak	Upland Hardwood Forest	Subcanopy	Native	5%
Ostrya virginiana	Eastern hophornbeam	Bottomland Forest	Subcanopy	Native	3%
Sambucus nigra	Elderberry	Bottomland Forest	Subcanopy	Native	3%
Carpinus caroliniana	American hornbeam	Upland Hardwood Forest	Subcanopy	Native	2%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Subcanopy	Native	2%
Ostrya virginiana	Eastern hophornbeam	Upland Hardwood Forest	Subcanopy	Native	2%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	2%
Eriobotrya japonica	Loquat	Upland Hardwood Forest	Subcanopy	Non-native	2%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	2%
Ligustrum lucidum	Glossy Privet	Bottomland Forest	Subcanopy	Non-native	2%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Subcanopy	Non-native	2%
Ehretia acuminata	Koda wood	Upland Hardwood Forest	Subcanopy	Non-native	1%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Thelypteris sp.	Maiden fern	Bottomland Forest	Groundcover	Native	5%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	5%
Arisaema triphyllum	Jack in the Pulpit	Upland Hardwood Forest	Groundcover	Native	3%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	3%
Arundinaria gigantea	Switch Cane	Upland Hardwood Forest	Groundcover	Native	3%
Sabal minor	Dwarf Palmetto	Bottomland Forest	Groundcover	Native	2%
Sabal minor	Dwarf Palmetto	Upland Hardwood Forest	Groundcover	Native	2%
Callicarpa americana	American beautyberry	Upland Hardwood Forest	Groundcover	Native	2%
Asimina parviflora	Smallflower pawpaw	Upland Hardwood Forest	Groundcover	Native	2%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	2%
Sapindus saponaria	Soapberry	Upland Hardwood Forest	Groundcover	Native	2%
Ostrya virginiana	Eastern hophornbeam	Upland Hardwood Forest	Groundcover	Native	1%
Ostrya virginiana	Eastern hophornbeam	Bottomland Forest	Groundcover	Native	1%
Morella cerifera	Waxmyrtle	Upland Hardwood Forest	Groundcover	Native	1%
Euonymus americanus	American strawberrybush	Upland Hardwood Forest	Groundcover	Native	1%
Itea virginica	Virginia sweetspire	Upland Hardwood Forest	Groundcover	Native	1%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	10%
Tradescantia fluminensis	Small-leaf Spiderwort	Upland Hardwood Forest	Groundcover	Non-native	10%
Syngonium podophyllum	American evergreen	Upland Hardwood Forest	Groundcover	Non-native	5%
Tradescantia fluminensis	Small-leaf Spiderwort	Bottomland Forest	Groundcover	Non-native	5%
Epipremnum aureum	Pothos	Upland Hardwood Forest	Groundcover	Non-native	5%
Ardisia crenata	Scratchthroat	Bottomland Forest	Groundcover	Non-native	3%
Arisaema dracontium	Greendragon	Upland Hardwood Forest	Groundcover	Native	2%
Arisaema triphyllum	Jack-In-The-Pulpit	Upland Hardwood Forest	Groundcover	Native	2%
Dioscorea bulbifera	Air potato	Upland Hardwood Forest	Groundcover	Non-native	2%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	2%
Colocasia esculenta	Taro	Bottomland Forest	Groundcover	Non-native	1%
Ehretia acuminata	Koda wood	Upland Hardwood Forest	Groundcover	Non-native	1%

Gator Pond Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Liquidambar styraciflua	Sweetgum	Open Water	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Open Water	Canopy	Native	5%
Cephalanthus occidentalis	Buttonbush	Open Water	Subcanopy	Native	5%
Liquidambar styraciflua	Sweetgum	Open Water	Subcanopy	Native	2%
Triadica sebifera	Chinese Tallow Tree	Open Water	Subcanopy	Non-native	2%
Liquidambar styraciflua	Sweetgum	Open Water	Groundcover	Native	2%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	15%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	10%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	10%
Morus rubra	Red Mulberry	Upland Hardwood Forest	Canopy	Native	10%
Quercus laurifolia	Swamp Laurel Oak	Upland Hardwood Forest	Canopy	Native	3%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	3%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Canopy	Native	3%
Carya tomentosa	Mockernut Hickory	Upland Hardwood Forest	Canopy	Native	2%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Canopy	Non-native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	2%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Subcanopy	Native	2%
Morus rubra	Red Mulberry	Upland Hardwood Forest	Subcanopy	Native	2%
Morella cerifera	Waxmyrtle	Upland Hardwood Forest	Subcanopy	Native	2%
Ligustrum sinense	Chinese Privet	Upland Hardwood Forest	Subcanopy	Non-native	2%
Albizia julibrissin	Silktree Mimosa	Upland Hardwood Forest	Subcanopy	Non-native	2%
Lagerstroemia indica	Crape myrtyle	Upland Hardwood Forest	Subcanopy	Non-native	1%
Arundinaria gigantea	Switch Cane	Upland Hardwood Forest	Groundcover	Native	10%
Rhododendron sp.	Azalea (Non-native)	Upland Hardwood Forest	Groundcover	Non-native	5%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	3%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Groundcover	Native	2%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Groundcover	Native	2%
Morus rubra	Red Mulberry	Upland Hardwood Forest	Groundcover	Native	2%
Erythrina herbacea	Coralbean	Upland Hardwood Forest	Groundcover	Native	2%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	2%
Ilex vomitoria	Yaupon	Upland Hardwood Forest	Groundcover	Native	2%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	2%
Dichanthelium sp.	Witchgrass	Upland Hardwood Forest	Groundcover	Native	2%
Parthenocissus quinquefolia	Virginia Creeper	Upland Hardwood Forest	Groundcover	Native	2%
Digitaria sp.	Fingergrass	Upland Hardwood Forest	Groundcover	Non-native	2%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Groundcover	Non-native	2%
Paederia foetida	Skunkvine	Upland Hardwood Forest	Groundcover	Non-native	2%
Axonopus sp.	Carpetgrass	Upland Hardwood Forest	Groundcover	Native	2%
Stenotaphrum secundatum	St. AugustineGrass	Upland Hardwood Forest	Groundcover	Native	2%
Hydrangea quercifolia	Oakleaf Hydrangea	Upland Hardwood Forest	Groundcover	Native	1%
Acer rubrum	Red Maple	Upland Hardwood Forest	Groundcover	Native	1%
Cornus foemina	Swamp Dogwood	Upland Hardwood Forest	Groundcover	Native	1%
Morella cerifera	Waxmyrtle	Upland Hardwood Forest	Groundcover	Native	1%

Graham Pond Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Populus deltoides	Eastern cottonwood	**Bottomland Forest**	Canopy	Native	15%
Acer rubrum	Red maple	**Bottomland Forest**	Canopy	Native	10%
Pinus elliottii	Slash pine	**Bottomland Forest**	Canopy	Native	10%
Quercus virginiana	Live oak	**Bottomland Forest**	Canopy	Native	10%
Quercus michauxii	Swamp chestnut oak	**Bottomland Forest**	Canopy	Native	5%
Taxodium distichum	Small-leaf Spiderwort	**Bottomland Forest**	Canopy	Native	3%
Stenotaphrum secundatum	St. Augustinegrass	**Bottomland Forest**	Groundcover	Native	15%
Tradescantia fluminensis	Small-leaf Spiderwort	**Bottomland Forest**	Groundcover	Non-native	15%
Sabal palmetto	Cabbage Palm	**Bottomland Forest**	Groundcover	Native	5%
Hydrocotyle sp.	Pennywort	**Bottomland Forest**	Groundcover	Native	5%
Oplismenus sp.	Basketgrass	**Bottomland Forest**	Groundcover	Native	5%
Centella asiatica	Spadeleaf	**Bottomland Forest**	Groundcover	Native	5%
Ludwigia peruviana	Peruvian primrosewillow	**Bottomland Forest**	Groundcover	Non-native	5%
Phyllanthus urinaria	Chamber bitter	**Bottomland Forest**	Groundcover	Non-native	5%
Trifolium repens	White Clover	**Bottomland Forest**	Groundcover	Non-native	3%
Acer negundo	Box elder	**Bottomland Forest**	Groundcover	Native	2%
Bidens alba	Beggarticks	**Bottomland Forest**	Groundcover	Native	2%
Celtis laevigata	Sugarberry	**Bottomland Forest**	Groundcover	Native	2%
Phyla nodiflora	Frogfruit	**Bottomland Forest**	Groundcover	Native	2%
Dolichandra unguis-cati	Catclawvine	**Bottomland Forest**	Groundcover	Non-native	2%
Commelina diffusa	Common dayflower	**Bottomland Forest**	Groundcover	Non-native	2%
Lantana strigocamara	Shrubverbena	**Bottomland Forest**	Groundcover	Non-native	2%
Cyperus sp.	Flatsedge	**Bottomland Forest**	Groundcover	Native	1%
Bacopa monnieri	Herb of Grace	**Bottomland Forest**	Groundcover	Native	1%
Urochloa maxima	Guineagrass	**Bottomland Forest**	Groundcover	Non-native	1%
Taxodium distichum	Bald Cypress	**Open Water**	Canopy	Native	3%
Ludwigia peruviana	Peruvian primrosewillow	**Open Water**	Groundcover	Non-native	5%
Hydrocotyle sp.	Pennywort	**Open Water**	Groundcover	Native	2%
Xanthosoma sagittifolium	Arrowleaf elephant's ear	**Open Water**	Groundcover	Non-native	2%
Ludwigia octovalvis	Mexican primrosewillow	**Open Water**	Groundcover	Native	1%
Itea virginica	Virginia sweetspire	**Open Water**	Groundcover	Native	1%
Bacopa monnieri	Herb of Grace	**Open Water**	Groundcover	Native	1%
Colocasia esculenta	Taro	**Open Water**	Groundcover	Non-native	1%

Graham Woods Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Sabal palmetto	Cabbage Palm	Bottomland Forest	Canopy	Native	20%
Celtis laevigata	Sugarberry	Bottomland Forest	Canopy	Native	5%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Canopy	Native	5%
Nyssa biflora	Swamp tupelo	Bottomland Forest	Canopy	Native	5%
Acer rubrum	Red Maple	Bottomland Forest	Canopy	Native	5%
Magnolia grandiflora	Southern Magnolia	Bottomland Forest	Canopy	Native	3%
Quercus michauxii	Swamp Chestnut Oak	Bottomland Forest	Canopy	Native	2%
Fraxinus americana	White ash	Bottomland Forest	Canopy	Native	2%
Morus alba	White Mulberry	Bottomland Forest	Canopy	Native	2%
Hedera helix	English Ivy	Bottomland Forest	Canopy	Non-native	1%
Carpinus caroliniana	American hornbeam	Bottomland Forest	Subcanopy	Native	3%
Ligustrum lucidum	Glossy Privet	Bottomland Forest	Subcanopy	Non-native	3%
Cephalanthus occidentalis	Buttonbush	Bottomland Forest	Subcanopy	Native	2%
Tradescantia fluminensis	Small-leaf Spiderwort	Bottomland Forest	Groundcover	Non-native	5%
Sabal minor	Dwarf Palmetto	Bottomland Forest	Groundcover	Native	3%
Nephrolepis exaltata	Sword fern	Bottomland Forest	Groundcover	Native	2%
Sabal minor	Dwarf Palmetto	Bottomland Forest	Groundcover	Native	2%
Ehretia acuminata	Koda wood	Bottomland Forest	Groundcover	Non-native	1%
Ligustrum sinense	Chinese Privet	Bottomland Forest	Groundcover	Non-native	1%
Xanthosoma sagittifolium	Arrowleaf elephant's ear	Bottomland Forest	Groundcover	Non-native	1%
Ludwigia peruviana	Peruvian primrosewillow	Bottomland Forest	Groundcover	Non-native	1%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	20%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	10%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Canopy	Non-native	10%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	5%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Canopy	Non-native	5%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Canopy	Native	3%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	2%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Canopy	Non-native	2%
Melia azedarach	Chinaberrytree	Upland Hardwood Forest	Canopy	Non-native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	10%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Subcanopy	Non-native	2%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	10%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	5%
Ehretia acuminata	Koda wood	Upland Hardwood Forest	Groundcover	Non-native	5%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Groundcover	Non-native	5%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	2%
Vitis aestivalis	Summer Grape	Upland Hardwood Forest	Groundcover	Native	2%
Stenotaphrum secundatum	St. Augustinegrass	Upland Hardwood Forest	Groundcover	Native	2%
Hedera helix	English Ivy	Upland Hardwood Forest	Groundcover	Non-native	2%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	2%
Tradescantia fluminensis	Small-leaf Spiderwort	Upland Hardwood Forest	Groundcover	Non-native	2%
Urochloa maxima	Guineagrass	Upland Hardwood Forest	Groundcover	Non-native	2%
Trachelospermum jasminoides	Confederate jasmine	Upland Hardwood Forest	Groundcover	Non-native	2%
Erigeron sp.	Fleabane	Upland Hardwood Forest	Groundcover	Native	1%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	1%
Sphagneticola trilobata	Creeping Oxeye	Upland Hardwood Forest	Groundcover	Non-native	1%
Dioscorea bulbifera	Air potato	Upland Hardwood Forest	Groundcover	Non-native	1%

Green Pond Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Liquidambar styraciflua	Sweetgum	Open Water	Canopy	Native	2%
Acer rubrum	Red maple	Open Water	Canopy	Native	2%
Taxodium distichum	Bald Cypress	Open Water	Canopy	Native	2%
Ostrya virginiana	Eastern Hophornbeam	Open Water	Canopy	Native	2%
Carpinus caroliniana	American hornbeam	Open Water	Subcanopy	Native	1%
Ludwigia peruviana	Peruvian primrosewillow	Open Water	Groundcover	Non-native	5%
Cyperus sp.	Flatsedge	Open Water	Groundcover	Non-native	2%
Cephalanthus occidentalis	Buttonbush	Open Water	Groundcover	Native	1%
Sabal sp.	Palmetto	Open Water	Groundcover	Native	1%
Colocasia esculenta	Taro	Open Water	Groundcover	Non-native	1%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	15%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	10%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Canopy	Non-native	10%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	5%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Canopy	Native	5%
Tilia americana var. caroliniana	Carolina Basswood	Upland Hardwood Forest	Canopy	Native	5%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	5%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Canopy	Native	5%
Sabal sp.	Palmetto	Upland Hardwood Forest	Canopy	Native	5%
Fraxinus americana	White ash	Upland Hardwood Forest	Canopy	Native	3%
Populus deltoides	Eastern cottonwood	Upland Hardwood Forest	Canopy	Native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	1%
Magnolia virginiana	Sweetbay	Upland Hardwood Forest	Canopy	Native	1%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	1%
Cercis canadensis	Eastern Redbud	Upland Hardwood Forest	Canopy	Native	1%
Albizia julibrissin	Silktree Mimosa	Upland Hardwood Forest	Canopy	Non-native	1%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Subcanopy	Native	5%
Quercus hemisphaerica	Upland Laurel Oak	Upland Hardwood Forest	Subcanopy	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Subcanopy	Native	5%
Viburnum odoratissimum	Sweet Viburnum	Upland Hardwood Forest	Subcanopy	Non-native	2%
Ulmus alata	Winged Elm	Upland Hardwood Forest	Subcanopy	Native	1%
Magnolia virginiana	Sweetbay	Upland Hardwood Forest	Subcanopy	Native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	1%
Arundinaria gigantea	Switch Cane	Upland Hardwood Forest	Groundcover	Native	10%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	3%
Wisteria sinensis	Chinese wisteria	Upland Hardwood Forest	Groundcover	Non-native	3%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	2%
Tilia americana var. caroliniana	Carolina Basswood	Upland Hardwood Forest	Groundcover	Native	2%
Sambucus nigra	Elderberry	Upland Hardwood Forest	Groundcover	Native	2%
Rhus copallina	Winged Sumac	Upland Hardwood Forest	Groundcover	Native	2%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	2%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Groundcover	Native	2%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Groundcover	Non-native	2%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Groundcover	Native	1%
Fraxinus americana	White ash	Upland Hardwood Forest	Groundcover	Native	1%
Morella cerifera	Waxmyrtle	Upland Hardwood Forest	Groundcover	Native	1%
Serenoa repens	Saw Palmetto	Upland Hardwood Forest	Groundcover	Native	1%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	1%
Parthenocissus quinquefolia	Virginia Creeper	Upland Hardwood Forest	Groundcover	Native	1%
Dichanthelium sp.	Witchgrass	Upland Hardwood Forest	Groundcover	Native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Groundcover	Non-native	1%
Ipomoea cairica	Mile-a-minute Vine	Upland Hardwood Forest	Groundcover	Non-native	1%
Albizia julibrissin	Silktree Mimosa	Upland Hardwood Forest	Groundcover	Non-native	1%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	1%

Harmonic Woods Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	25%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Canopy	Native	10%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	5%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	5%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	2%
Carpinus caroliniana	American hornbeam	Upland Hardwood Forest	Canopy	Native	1%
Acer rubrum	Red Maple	Upland Hardwood Forest	Canopy	Native	1%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Canopy	Native	1%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	1%
Sabal minor	Dwarf Palmetto	Upland Hardwood Forest	Canopy	Native	1%
Morus rubra	Red mulberry	Upland Hardwood Forest	Canopy	Native	1%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Subcanopy	Native	7%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Subcanopy	Native	5%
Quercus nigra	Water oak	Upland Hardwood Forest	Subcanopy	Native	3%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Subcanopy	Native	2%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Subcanopy	Native	2%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	2%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	10%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	5%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Groundcover	Native	3%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Groundcover	Native	2%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Groundcover	Native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Groundcover	Native	2%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	2%
Pleopeltis michauxiana	Resurrection fern	Upland Hardwood Forest	Groundcover	Native	2%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	2%
Crataegus pulcherrima var. pulcherrima	Beautiful Hawthorn	Upland Hardwood Forest	Groundcover	Native	2%
Chasmanthium laxum	Slender woodoats	Upland Hardwood Forest	Groundcover	Native	2%
Gelsemium sempervirens	Carolina jessamine	Upland Hardwood Forest	Groundcover	Native	1%
Callicarpa americana	American Beautyberry	Upland Hardwood Forest	Groundcover	Native	1%
Sambucus nigra	Elderberry	Upland Hardwood Forest	Groundcover	Native	1%
Erythrina herbacea	Coralbean	Upland Hardwood Forest	Groundcover	Native	1%
Euonymus americanus	American Strawberrybush	Upland Hardwood Forest	Groundcover	Native	1%
Oplismenus sp.	Basketgrass	Upland Hardwood Forest	Groundcover	Native	1%
Ilex vomitoria	Yaupon	Upland Hardwood Forest	Groundcover	Native	1%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	10%
Trachelospermum jasminoides	Confederate jasmine	Upland Hardwood Forest	Groundcover	Non-native	7%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	3%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	2%
Carex spp.	Sedges	Upland Hardwood Forest	Groundcover	Native	2%
Dioscorea bulbifera	Air Potato	Upland Hardwood Forest	Groundcover	Non-native	1%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Groundcover	Non-native	1%
Nandina domestica	Heavenly Bamboo	Upland Hardwood Forest	Groundcover	Non-native	1%
Urena lobata	Caesar's weed	Upland Hardwood Forest	Groundcover	Non-native	1%

Hume Creek Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Acer negundo	Box elder	Bottomland Forest	Canopy	Native	50%
Celtis laevigata	Sugarberry	Bottomland Forest	Canopy	Native	5%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Canopy	Native	5%
Platanus occidentalis	American Sycamore	Bottomland Forest	Canopy	Native	5%
Triadica sebifera	Chinese Tallow Tree	Bottomland Forest	Canopy	Non-native	5%
Arecaceae	Palm Family	Bottomland Forest	Canopy	Non-native	3%
Sabal palmetto	Cabbage Palm	Bottomland Forest	Canopy	Native	2%
Celtis laevigata	Sugarberry	Bottomland Forest	Subcanopy	Native	2%
Sambucus nigra	Elderberry	Bottomland Forest	Subcanopy	Native	2%
Vitis sp.	Grape	Bottomland Forest	Groundcover	Native	5%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	10%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Canopy	Non-native	10%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	5%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Canopy	Non-native	5%
Acer saccharum subsp. floridanum	Florida Maple	Upland Hardwood Forest	Canopy	Native	3%
Ulmus parviflora	Chinese Elm	Upland Hardwood Forest	Canopy	Non-native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	5%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	5%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Subcanopy	Non-native	5%
Ulmus parviflora	Chinese Elm	Upland Hardwood Forest	Subcanopy	Non-native	3%
Stenotaphrum secundatum	St. Augustinegrass	Upland Hardwood Forest	Groundcover	Native	40%
Vitis sp.	Grape	Upland Hardwood Forest	Groundcover	Native	10%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	3%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	3%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	2%
Tradescantia fluminensis	Small-leaf Spiderwort	Upland Hardwood Forest	Groundcover	Non-native	2%
Syngonium podophyllum	American evergreen	Upland Hardwood Forest	Groundcover	Non-native	2%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	1%

Jennings Creek Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	10%
Quercus hemisphaerica	Upland Laurel Oak	Upland Hardwood Forest	Canopy	Native	5%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	5%
Quercus shumardii	Shumard Oak	Upland Hardwood Forest	Canopy	Native	5%
Fraxinus americana	White ash	Upland Hardwood Forest	Canopy	Native	5%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Canopy	Non-native	5%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	3%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Canopy	Non-native	3%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Canopy	Non-native	3%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	2%
Quercus laurifolia	Swamp Laurel Oak	Upland Hardwood Forest	Canopy	Native	2%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	2%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	2%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Canopy	Native	1%
Morus rubra	Red mulberry	Upland Hardwood Forest	Canopy	Native	1%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Canopy	Non-native	1%
Family Arecaceae	Exotic Palms	Upland Hardwood Forest	Canopy	Non-native	1%
Acer saccharum subsp. floridanum	Florida Maple	Upland Hardwood Forest	Canopy	Native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	20%
Quercus hemisphaerica	Upland Laurel Oak	Upland Hardwood Forest	Subcanopy	Native	3%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Subcanopy	Non-native	3%
Quercus nigra	Water oak	Upland Hardwood Forest	Subcanopy	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	2%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	2%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Subcanopy	Non-native	2%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Subcanopy	Native	1%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Subcanopy	Native	1%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Subcanopy	Non-native	1%
Viburnum odoratissimum	Sweet Viburnum	Upland Hardwood Forest	Subcanopy	Non-native	1%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	3%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Groundcover	Non-native	3%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	3%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	2%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	2%
Quercus hemisphaerica	Upland Laurel Oak	Upland Hardwood Forest	Groundcover	Native	1%
Quercus laurifolia	Swamp Laurel Oak	Upland Hardwood Forest	Groundcover	Native	1%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Groundcover	Native	1%
Ulmus alata	Winged Elm	Upland Hardwood Forest	Groundcover	Native	1%
Ulmus crassifolia	Cedar Elm	Upland Hardwood Forest	Groundcover	Native	1%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Groundcover	Native	1%
Sapindus saponaria	Soapberry	Upland Hardwood Forest	Groundcover	Native	1%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Groundcover	Native	1%
Pleopeltis michauxiana	Resurrection fern	Upland Hardwood Forest	Groundcover	Native	1%
Gelsemium sempervirens	Carolina jessamine	Upland Hardwood Forest	Groundcover	Native	1%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	1%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	1%
Urochloa maxima	Guineagrass	Upland Hardwood Forest	Groundcover	Non-native	1%
Jasminum sp.	Exotic Jasmine	Upland Hardwood Forest	Groundcover	Non-native	1%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Groundcover	Non-native	1%
Ilex glabra	Galberry	Upland Hardwood Forest	Groundcover	Native	1%
Ilex vomitoria	Yaupon	Upland Hardwood Forest	Groundcover	Native	1%

Lake Alice Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Taxodium distichum	Bald Cypress	Freshwater Marsh 1	Canopy	Native	3%
Salix caroliniana	Carolina Willow	Freshwater Marsh 1	Subcanopy	Native	40%
Acer rubrum	Red maple	Freshwater Marsh 1	Subcanopy	Native	2%
Morella cerifera	Waxmyrtle	Freshwater Marsh 1	Subcanopy	Native	1%
Osmunda regalis	Royal Fern	Freshwater Marsh 1	Groundcover	Native	25%
Zizaniopsis miliacea	Giant Cutgrass	Freshwater Marsh 1	Groundcover	Native	5%
Colocasia esculenta	Taro	Freshwater Marsh 1	Groundcover	Non-native	5%
Ludwigia peruviana	Peruvian primrosewillow	Freshwater Marsh 1	Groundcover	Non-native	2%
Hydrocotyle sp.	Pennywort	Freshwater Marsh 1	Groundcover	Native	2%
Myriophyllum aquaticum	Parrot Feather Watermilfoil	Freshwater Marsh 1	Groundcover	Non-native	2%
Ampelaster carolinianus	Climbing Aster	Freshwater Marsh 1	Groundcover	Native	2%
Itea virginica	Virginia Sweetspire	Freshwater Marsh 1	Groundcover	Native	1%
Acer negundo	Box elder	Freshwater Marsh 1	Groundcover	Native	1%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	10%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	10%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	5%
Fraxinus americana	White ash	Upland Hardwood Forest	Canopy	Native	5%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Canopy	Native	3%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	3%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	3%
Morus rubra	Red mulberry	Upland Hardwood Forest	Canopy	Native	2%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Canopy	Native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	2%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Canopy	Native	1%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	10%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Subcanopy	Non-native	2%
Morus rubra	Red mulberry	Upland Hardwood Forest	Subcanopy	Native	1%
Fraxinus americana	White ash	Upland Hardwood Forest	Subcanopy	Native	1%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Subcanopy	Native	1%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Groundcover	Native	5%
Oxalis debilis	Pink Woodsorrel	Upland Hardwood Forest	Groundcover	Non-native	5%
Tradescantia fluminensis	Small-leaf Spiderwort	Upland Hardwood Forest	Groundcover	Non-native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Urochloa maxima	Guineagrass	Upland Hardwood Forest	Groundcover	Non-native	5%
Arundinaria gigantea	Switch Cane	Upland Hardwood Forest	Groundcover	Native	3%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Groundcover	Non-native	3%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	3%
Oplismenus sp.	Basketgrass	Upland Hardwood Forest	Groundcover	Native	3%
Stachys floridana	Florida Betony	Upland Hardwood Forest	Groundcover	Native	3%
Dichanthelium sp.	Witchgrass	Upland Hardwood Forest	Groundcover	Native	2%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	2%
Carex sp.	Sedge	Upland Hardwood Forest	Groundcover	Native	2%
Salvia lyrata	Lyreleaf Sage	Upland Hardwood Forest	Groundcover	Native	2%
Lantana strigocamara	Shrubverbena	Upland Hardwood Forest	Groundcover	Non-native	2%
Juniperus virginiana	Red Cedar	Upland Hardwood Forest	Groundcover	Native	1%
Morus rubra	Red mulberry	Upland Hardwood Forest	Groundcover	Native	1%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	1%
Tradescantia ohiensis	Ohio Spiderwort	Upland Hardwood Forest	Groundcover	Native	1%
Nekemias arborea	Peppervine	Upland Hardwood Forest	Groundcover	Native	1%
Thelypteris sp.	Maiden fern	Upland Hardwood Forest	Groundcover	Native	1%
Parthenocissus quinquefolia	Virginia Creeper	Upland Hardwood Forest	Groundcover	Native	1%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	1%
Toxicodendron radicans	Eastern Poison Ivy	Upland Hardwood Forest	Groundcover	Native	1%
Urena lobata	Caesarweed	Upland Hardwood Forest	Groundcover	Non-native	1%
Callicarpa americana	American Beautyberry	Upland Hardwood Forest	Groundcover	Native	1%
Quercus nigra	Water oak	Upland Hardwood Forest	Groundcover	Native	1%
Wisteria sinensis	Chinese wisteria	Upland Hardwood Forest	Groundcover	Non-native	1%
Campsis radicans	Trumpet Creeper	Upland Hardwood Forest	Groundcover	Native	1%
Centella asiatica	Spadeleaf	Upland Hardwood Forest	Groundcover	Native	1%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	1%
Medicago sp.	Medick	Upland Hardwood Forest	Groundcover	Non-native	1%
Rubus sp.	Blackberry	Upland Hardwood Forest	Groundcover	Native	1%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Groundcover	Native	1%

Lake Alice Conservation Area List of Observed Plant Species (Continued)

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Acer rubrum	Red maple	Bottomland Forest 1	Canopy	Native	30%
Nyssa biflora	Swamp Tupelo	Bottomland Forest 1	Canopy	Native	20%
Salix caroliniana	Carolina Willow	Bottomland Forest 1	Canopy	Native	10%
Quercus laurifolia	Swamp Laurel Oak	Bottomland Forest 1	Canopy	Native	5%
Triadica sebifera	Chinese Tallow Tree	Bottomland Forest 1	Canopy	Non-native	3%
Morella cerifera	Waxmyrtle	Bottomland Forest 1	Canopy	Native	2%
Saururus cernuus	Lizard's Tail	Bottomland Forest 1	Canopy	Native	1%
Acer rubrum	Red maple	Bottomland Forest 1	Subcanopy	Native	5%
Morella cerifera	Waxmyrtle	Bottomland Forest 1	Subcanopy	Native	5%
Sambucus nigra	Elderberry	Bottomland Forest 1	Subcanopy	Native	2%
Sabal palmetto	Cabbage Palm	Bottomland Forest 1	Groundcover	Native	3%
Colocasia esculenta	Taro	Bottomland Forest 1	Groundcover	Non-native	2%
Sambucus nigra	Elderberry	Bottomland Forest 1	Groundcover	Native	2%
Acer rubrum	Red maple	Bottomland Forest 2	Canopy	Native	30%
Quercus laurifolia	Swamp Laurel Oak	Bottomland Forest 2	Canopy	Native	10%
Liquidambar styraciflua	Sweetgum	Bottomland Forest 2	Canopy	Native	5%
Quercus nigra	Water oak	Bottomland Forest 2	Canopy	Native	5%
Taxodium distichum	Bald Cypress	Bottomland Forest 2	Canopy	Native	2%
Acer rubrum	Red maple	Bottomland Forest 2	Subcanopy	Native	10%
Carpinus caroliniana	American hornbeam	Bottomland Forest 2	Subcanopy	Native	5%
Quercus laurifolia	Swamp Laurel Oak	Bottomland Forest 2	Subcanopy	Native	5%
Quercus nigra	Water oak	Bottomland Forest 2	Subcanopy	Native	2%
Sambucus nigra	Elderberry	Bottomland Forest 2	Subcanopy	Native	1%
Ostrya virginiana	Eastern Hophornbeam	Bottomland Forest 2	Subcanopy	Native	1%
Zizaniopsis miliacea	Giant Cutgrass	Bottomland Forest 2	Groundcover	Native	10%
Colocasia esculenta	Taro	Bottomland Forest 2	Groundcover	Non-native	3%
Oshuna crassipes	Water Hyacinth	Bottomland Forest 2	Groundcover	Non-native	3%
Crinum americanum	Swamp Lily	Bottomland Forest 2	Groundcover	Native	2%
Acer saccharum subsp. florida	Florida Maple	Bottomland Forest 3	Canopy	Native	5%
Taxodium distichum	Bald Cypress	Bottomland Forest 3	Canopy	Native	5%
Celtis laevigata	Sugarberry	Bottomland Forest 3	Canopy	Native	3%
Carpinus caroliniana	American hornbeam	Bottomland Forest 3	Canopy	Native	3%
Quercus nigra	Water oak	Bottomland Forest 3	Canopy	Native	3%
Quercus michauxii	Swamp chestnut oak	Bottomland Forest 3	Canopy	Native	2%
Morus rubra	Red mulberry	Bottomland Forest 3	Canopy	Native	2%
Sabal palmetto	Cabbage Palm	Bottomland Forest 3	Canopy	Native	1%
Acer rubrum	Red maple	Bottomland Forest 3	Canopy	Native	1%
Magnolia grandiflora	Southern Magnolia	Bottomland Forest 3	Canopy	Native	1%
Morus rubra	Red mulberry	Bottomland Forest 3	Subcanopy	Native	2%
Ligustrum lucidum	Glossy Privet	Bottomland Forest 3	Subcanopy	Non-native	2%
Carpinus caroliniana	American hornbeam	Bottomland Forest 3	Subcanopy	Native	1%
Quercus nigra	Water oak	Bottomland Forest 3	Subcanopy	Native	1%
Clinopodium brownei	Browne's Savory	Bottomland Forest 3	Groundcover	Native	7%
Sabal palmetto	Cabbage Palm	Bottomland Forest 3	Groundcover	Native	5%
Oxalis debilis	Pink Woodsorrel	Bottomland Forest 3	Groundcover	Non-native	5%
Tradescantia fluminensis	Small-leaf Spiderwort	Bottomland Forest 3	Groundcover	Non-native	3%
Salvia lyrata	Lyreleaf Sage	Bottomland Forest 3	Groundcover	Native	3%
Medicago sp.	Medick	Bottomland Forest 3	Groundcover	Non-native	3%
Acer saccharum subsp. florida	Florida Maple	Bottomland Forest 3	Groundcover	Native	2%
Calyptocarpus vialis	Straggler Daisy	Bottomland Forest 3	Groundcover	Non-native	2%
Dichanthelium sp.	Witchgrass	Bottomland Forest 3	Groundcover	Native	2%
Centella asiatica	Spadeleaf	Bottomland Forest 3	Groundcover	Native	2%
Bidens alba	Beggarticks	Bottomland Forest 3	Groundcover	Native	2%
Ludwigia peruviana	Peruvian primrosewillow	Bottomland Forest 3	Groundcover	Non-native	2%
Stachys floridana	Florida Betony	Bottomland Forest 3	Groundcover	Native	2%
Celtis laevigata	Sugarberry	Bottomland Forest 3	Groundcover	Native	1%
Solidago spp.	Goldenrods	Bottomland Forest 3	Groundcover	Native	1%
Xanthosoma sagittifolium	Arrowleaf elephant's ear	Bottomland Forest 3	Groundcover	Non-native	1%
Acer rubrum	Red maple	Bottomland Forest 3	Groundcover	Native	1%
Morus rubra	Red mulberry	Bottomland Forest 3	Groundcover	Native	1%
Youngia japonica	Oriental False Hawksbeard	Bottomland Forest 3	Groundcover	Non-native	1%
Cinnamomum camphora	Camphortree	Bottomland Forest 3	Groundcover	Non-native	1%
Euonymus americanus	American Strawberrybush	Bottomland Forest 3	Groundcover	Native	1%
Tradescantia ohiensis	Ohio Spiderwort	Bottomland Forest 3	Groundcover	Native	1%
Smilax sp.	Greenbriar	Bottomland Forest 3	Groundcover	Native	1%
Thelypteris sp.	Maiden fern	Bottomland Forest 3	Groundcover	Native	1%
Vitis rotundifolia	Muscadine Grape	Bottomland Forest 3	Groundcover	Native	1%
Syngonium podophyllum	American evergreen	Bottomland Forest 3	Groundcover	Non-native	1%
Toxicodendron radicans	Eastern Poison Ivy	Bottomland Forest 3	Groundcover	Native	1%
Carpinus caroliniana	American hornbeam	Bottomland Forest 3	Groundcover	Native	1%
Quercus nigra	Water oak	Bottomland Forest 3	Groundcover	Native	1%
Oplismenus sp.	Basketgrass	Bottomland Forest 3	Groundcover	Native	1%
Urochloa maxima	Guineagrass	Bottomland Forest 3	Groundcover	Non-native	1%
Sisyrinchium rosulatum	Annual Blue-Eyed Grass	Bottomland Forest 3	Groundcover	Non-native	1%
Hydrocotyle sp.	Pennywort	Bottomland Forest 3	Groundcover	Native	1%
Colocasia esculenta	Taro	Bottomland Forest 3	Groundcover	Non-native	1%

Lake Alice South Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Sabal palmetto	Cabbage Palm	Bottomland Forest	Canopy	Native	30%
Acer rubrum	Red maple	Bottomland Forest	Canopy	Native	10%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Canopy	Native	5%
Salix caroliniana	Carolina Willow	Bottomland Forest	Canopy	Native	5%
Acer negundo	Box elder	Bottomland Forest	Canopy	Native	5%
Celtis laevigata	Sugarberry	Bottomland Forest	Canopy	Native	2%
Quercus michauxii	Swamp chestnut oak	Bottomland Forest	Canopy	Native	2%
Lagerstroemia indica	Crape myrtyle	Bottomland Forest	Canopy	Non-native	2%
Quercus laurifolia	Swamp Laurel Oak	Bottomland Forest	Canopy	Native	2%
Sambucus nigra	Elderberry	Bottomland Forest	Subcanopy	Native	3%
Celtis laevigata	Sugarberry	Bottomland Forest	Subcanopy	Native	2%
Acer rubrum	Red maple	Bottomland Forest	Subcanopy	Native	2%
Thelypteris kunthii	Widespread Maiden Fern	Bottomland Forest	Groundcover	Native	10%
Colocasia esculenta	Taro	Bottomland Forest	Groundcover	Non-native	10%
Ardisia crenata	Scratchthroat	Bottomland Forest	Groundcover	Non-native	5%
Dolichandra unguis-cati	Catclawvine	Bottomland Forest	Groundcover	Non-native	3%
Ampelaster carolinianus	Climbing Aster	Bottomland Forest	Groundcover	Native	2%
Saururus cernuus	Lizard's Tail	Bottomland Forest	Groundcover	Native	2%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	5%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Canopy	Non-native	5%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	2%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	2%
Juniperus virginiana	Red Cedar	Upland Hardwood Forest	Canopy	Native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	10%
Quercus nigra	Water oak	Upland Hardwood Forest	Subcanopy	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Subcanopy	Native	1%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	20%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	5%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	5%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	5%
Thelypteris kunthii	Widespread Maiden Fern	Upland Hardwood Forest	Groundcover	Native	5%
Lantana strigocamara	Shrubverbena	Upland Hardwood Forest	Groundcover	Non-native	1%
Ligustrum sinense	Chinese Privet	Upland Hardwood Forest	Groundcover	Non-native	1%

Law School Woods Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	10%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Canopy	Non-native	10%
Quercus hemisphaerica	Upland Laurel Oak	Upland Hardwood Forest	Canopy	Native	5%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Canopy	Native	5%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Canopy	Non-native	3%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	2%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Canopy	Non-native	2%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	1%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Canopy	Native	1%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	1%
Pinus elliottii	Slash Pine	Upland Hardwood Forest	Canopy	Native	1%
Prunus serotina	Black Cherry	Upland Hardwood Forest	Canopy	Native	1%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Canopy	Native	1%
Quercus nigra	Water oak	Upland Hardwood Forest	Canopy	Native	1%
Melia azedarach	Chinaberrytree	Upland Hardwood Forest	Canopy	Non-native	1%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Subcanopy	Non-native	5%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	2%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Subcanopy	Native	2%
Tilia americana var. caroliniana	Carolina Basswood	Upland Hardwood Forest	Subcanopy	Native	1%
Ulmus alata	Winged Elm	Upland Hardwood Forest	Subcanopy	Native	1%
Prunus serotina	Black Cherry	Upland Hardwood Forest	Subcanopy	Native	1%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	1%
Trachelospermum jasminoides	Confederate jasmine	Upland Hardwood Forest	Groundcover	Non-native	20%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	15%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Groundcover	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	5%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	5%
Clerodendrum sp.	Glorybower	Upland Hardwood Forest	Groundcover	Non-native	3%
Arundinaria gigantea	Switch Cane	Upland Hardwood Forest	Groundcover	Native	3%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	2%
Gelsemium sempervirens	Carolina Jessamine	Upland Hardwood Forest	Groundcover	Native	2%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	2%
Dioscorea bulbifera	Air Potato	Upland Hardwood Forest	Groundcover	Non-native	2%
Koelreuteria elegans subsp. formosana	Flamegold	Upland Hardwood Forest	Groundcover	Non-native	2%
Tradescantia fluminensis	Small-leaf Spiderwort	Upland Hardwood Forest	Groundcover	Non-native	2%
Oplismenus burmannii	Burmann's Basketgrass	Upland Hardwood Forest	Groundcover	Non-native	1%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	1%
Callicarpa americana	American Beautyberry	Upland Hardwood Forest	Groundcover	Native	1%
Eriobotrya japonica	Loquat	Upland Hardwood Forest	Groundcover	Non-native	1%
Family Zingiberaceae	Exotic Ginger	Upland Hardwood Forest	Groundcover	Non-native	1%
Lygodium japonicum	Japanese climbing fern	Upland Hardwood Forest	Groundcover	Non-native	1%

McCarty Woods Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	15%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Canopy	Native	15%
Fraxinus americana	White ash	Upland Hardwood Forest	Canopy	Native	15%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Canopy	Native	15%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	5%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Canopy	Native	5%
Ulmus alata	Winged Elm	Upland Hardwood Forest	Canopy	Native	2%
Tilia americana var. caroliniana	Carolina Basswood	Upland Hardwood Forest	Canopy	Native	2%
Crataegus uniflora	Dwarf Hawthorn	Upland Hardwood Forest	Canopy	Native	1%
Persea borbonia var. borbonia	Red Bay	Upland Hardwood Forest	Canopy	Native	1%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Canopy	Native	1%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Subcanopy	Native	2%
Chionanthus virginicus	White Fringetree	Upland Hardwood Forest	Subcanopy	Native	2%
Ulmus alata	Winged Elm	Upland Hardwood Forest	Subcanopy	Native	1%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Subcanopy	Native	1%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Subcanopy	Native	1%
Ilex vomitoria	Yaupon	Upland Hardwood Forest	Subcanopy	Native	1%
Persea borbonia var. borbonia	Red Bay	Upland Hardwood Forest	Subcanopy	Native	1%
Petiveria alliacea	Guinea Hen Weed	Upland Hardwood Forest	Groundcover	Native	20%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Phytolacca americana	American Pokeweed	Upland Hardwood Forest	Groundcover	Native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Groundcover	Native	2%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	2%
Ilex vomitoria	Yaupon	Upland Hardwood Forest	Groundcover	Native	2%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	2%
Euphorbia cyathophora	Paintedleaf	Upland Hardwood Forest	Groundcover	Native	2%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	2%
Fraxinus americana	White ash	Upland Hardwood Forest	Groundcover	Native	1%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Groundcover	Native	1%
Callicarpa americana	American Beautyberry	Upland Hardwood Forest	Groundcover	Native	1%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	1%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Groundcover	Native	1%
Quercus shumardii	Shumard Oak	Upland Hardwood Forest	Groundcover	Native	1%
Vernonia gigantea	Giant Ironweed	Upland Hardwood Forest	Groundcover	Native	1%
Ruellia caroliniensis	Carolina Wild Petunia	Upland Hardwood Forest	Groundcover	Native	1%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	5%
Urochloa maxima	Guineagrass	Upland Hardwood Forest	Groundcover	Non-native	1%
Lantana strigocamara	Shrubverbena	Upland Hardwood Forest	Groundcover	Non-native	1%

Newins-Ziegler Sink Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Celtis laevigata	Sugarberry	Sinkhole	Canopy	Native	5%
Cinnamomum camphora	Camphortree	Sinkhole	Canopy	Non-native	5%
Sabal palmetto	Cabbage Palm	Sinkhole	Canopy	Native	3%
Fraxinus americana	White ash	Sinkhole	Canopy	Native	3%
Ligustrum lucidum	Glossy Privet	Sinkhole	Canopy	Non-native	3%
Quercus austrina	Bluff Oak	Sinkhole	Canopy	Native	3%
Quercus michauxii	Swamp chestnut oak	Sinkhole	Canopy	Native	2%
Quercus nigra	Water oak	Sinkhole	Canopy	Native	2%
Quercus virginiana	Live Oak	Sinkhole	Canopy	Native	2%
Sapindus saponaria	Soapberry	Sinkhole	Canopy	Native	1%
Ulmus crassifolia	Cedar Elm	Sinkhole	Canopy	Native	1%
Prunus caroliniana	Carolina laurelcherry	Sinkhole	Canopy	Native	1%
Magnolia grandiflora	Southern Magnolia	Sinkhole	Canopy	Native	1%
Prunus serotina	Black Cherry	Sinkhole	Canopy	Native	1%
Lagerstroemia indica	Crape myrtyle	Sinkhole	Canopy	Non-native	1%
Quercus shumardii	Shumard Oak	Sinkhole	Canopy	Native	1%
Celtis laevigata	Sugarberry	Sinkhole	Subcanopy	Native	3%
Prunus caroliniana	Carolina laurelcherry	Sinkhole	Subcanopy	Native	3%
Liquidambar styraciflua	Sweetgum	Sinkhole	Subcanopy	Native	1%
Carya glabra	Pignut Hickory	Sinkhole	Subcanopy	Native	1%
Quercus lyrata	Overcup Oak	Sinkhole	Subcanopy	Native	1%
Oplismenus burmannii	Burmann's Basketgrass	Sinkhole	Groundcover	Non-native	15%
Hydrocotyle sp.	Pennywort	Sinkhole	Groundcover	Native	5%
Ludwigia peruviana	Peruvian primrosewillow	Sinkhole	Groundcover	Non-native	5%
Sabal palmetto	Cabbage Palm	Sinkhole	Groundcover	Native	3%
Cinnamomum camphora	Camphortree	Sinkhole	Groundcover	Non-native	3%
Liriope spicata	Monkey Grass	Sinkhole	Groundcover	Non-native	2%
Maclura sp.	Hedge Apple	Sinkhole	Groundcover	Non-native	2%
Prunus caroliniana	Carolina laurelcherry	Sinkhole	Groundcover	Native	1%
Thelypteris kunthii	Widespread Maiden Fern	Sinkhole	Groundcover	Native	1%
Persea borbonia var. borbonia	Red Bay	Sinkhole	Groundcover	Native	1%
Petiveria alliacea	Guinea Hen Weed	Sinkhole	Groundcover	Native	1%
Urochloa maxima	Guineagrass	Sinkhole	Groundcover	Non-native	1%
Koelreuteria elegans subsp. formosana	Flamegold	Sinkhole	Groundcover	Non-native	1%
Dolichandra unguis-cati	Catclawvine	Sinkhole	Groundcover	Non-native	1%
Vitis rotundifolia	Muscadine Grape	Sinkhole	Groundcover	Native	1%
Parthenocissus quinquefolia	Virginia Creeper	Sinkhole	Groundcover	Native	1%
Nephrolepis cordifolia	Tuberous swordfern	Sinkhole	Groundcover	Non-native	1%
Oxalis debilis	Pink Woodsorrel	Sinkhole	Groundcover	Non-native	1%

Ocala Pond Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Taxodium distichum	Bald Cypress	Open Water	Canopy	Native	5%
Acer rubrum	Red Maple	Open Water	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Open Water	Canopy	Native	5%
Albizia julibrissin	Silktree Mimosa	Open Water	Canopy	Non-native	3%
Quercus shumardii	Shumard Oak	Open Water	Canopy	Native	2%
Liquidambar styraciflua	Sweetgum	Open Water	Subcanopy	Native	5%
Cephalanthus occidentalis	Buttonbush	Open Water	Groundcover	Native	5%
Hydrocotyle sp.	Pennywort	Open Water	Groundcover	Native	5%
Liquidambar styraciflua	Sweetgum	Open Water	Groundcover	Native	2%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	10%
Quercus virginiana	Live Oak	Upland Hardwood Forest	Canopy	Native	5%
Pinus taeda	Loblolly Pine	Upland Hardwood Forest	Canopy	Native	5%
Morus rubra	Red Mulberry	Upland Hardwood Forest	Canopy	Native	5%
Acer saccharum subsp. floridanum	Florida Maple	Upland Hardwood Forest	Canopy	Native	5%
Ilex opaca	American Holly	Upland Hardwood Forest	Canopy	Native	3%
Albizia julibrissin	Silktree Mimosa	Upland Hardwood Forest	Canopy	Non-native	3%
Lagerstroemia indica	Crape myrtyle	Upland Hardwood Forest	Canopy	Non-native	3%
Ostrya virginiana	Eastern hophornbeam	Upland Hardwood Forest	Canopy	Native	2%
Diospyros virginiana	Common Persimmon	Upland Hardwood Forest	Canopy	Native	2%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Subcanopy	Non-native	5%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	5%
Ilex opaca	American Holly	Upland Hardwood Forest	Subcanopy	Native	3%
Morus rubra	Red Mulberry	Upland Hardwood Forest	Subcanopy	Native	2%
Albizia julibrissin	Silktree Mimosa	Upland Hardwood Forest	Subcanopy	Non-native	2%
Arundinaria gigantea	Switch Cane	Upland Hardwood Forest	Groundcover	Native	15%
Morella cerifera	Waxmyrtle	Upland Hardwood Forest	Groundcover	Native	5%
Nekemias arborea	Peppervine	Upland Hardwood Forest	Groundcover	Native	5%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	5%
Sphagneticola trilobata	Creeping Oxeye	Upland Hardwood Forest	Groundcover	Non-native	5%
Family Zingiberaceae	Exotic Ginger	Upland Hardwood Forest	Groundcover	Non-native	5%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Groundcover	Native	2%
Pleopeltis michauxiana	Resurrection fern	Upland Hardwood Forest	Groundcover	Native	2%
Stenotaphrum secundatum	St. AugustineGrass	Upland Hardwood Forest	Groundcover	Native	2%
Bidens alba	Beggarticks	Upland Hardwood Forest	Groundcover	Native	2%
Centella asiatica	Spadeleaf	Upland Hardwood Forest	Groundcover	Native	2%
Ilex vomitoria	Yaupon	Upland Hardwood Forest	Groundcover	Native	1%
Fagus grandifolia	American Beech	Upland Hardwood Forest	Groundcover	Native	1%

Reitz Ravine Woods Conservation Area List of Observed Plant Species

Latin Name	Common Name	Natural Community Type	Strata	Native Status	Cover
Celtis laevigata	Sugarberry	Bottomland Forest	Canopy	Native	20%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Canopy	Native	20%
Acer negundo	Box elder	Bottomland Forest	Canopy	Native	10%
Acer rubrum	Red maple	Bottomland Forest	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Bottomland Forest	Canopy	Native	5%
Nyssa biflora	Swamp Tupelo	Bottomland Forest	Canopy	Native	2%
Acer negundo	Box elder	Bottomland Forest	Subcanopy	Native	10%
Quercus michauxii	Swamp chestnut oak	Bottomland Forest	Subcanopy	Native	10%
Acer rubrum	Red maple	Bottomland Forest	Subcanopy	Native	5%
Celtis laevigata	Sugarberry	Bottomland Forest	Subcanopy	Native	5%
Liquidambar styraciflua	Sweetgum	Bottomland Forest	Subcanopy	Native	5%
Acer saccharum subsp. floridanum	Florida Maple	Bottomland Forest	Subcanopy	Native	3%
Syngonium podophyllum	American evergreen	Bottomland Forest	Groundcover	Non-native	20%
Tradescantia fluminensis	Small-leaf Spiderwort	Bottomland Forest	Groundcover	Non-native	15%
Nephrolepis cordifolia	Tuberous swordfern	Bottomland Forest	Groundcover	Non-native	10%
Itea virginica	Virginia sweetspire	Bottomland Forest	Groundcover	Native	1%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Canopy	Native	15%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Canopy	Native	15%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Canopy	Non-native	10%
Acer negundo	Box elder	Upland Hardwood Forest	Canopy	Native	5%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Canopy	Native	5%
Quercus michauxii	Swamp chestnut oak	Upland Hardwood Forest	Canopy	Native	5%
Sabal palmetto	Cabbage Palm	Upland Hardwood Forest	Canopy	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Canopy	Native	3%
Acer rubrum	Red maple	Upland Hardwood Forest	Canopy	Native	2%
Acer saccharum subsp. floridanum	Florida Maple	Upland Hardwood Forest	Canopy	Native	2%
Fraxinus americana	White ash	Upland Hardwood Forest	Canopy	Native	2%
Morus rubra	Red mulberry	Upland Hardwood Forest	Canopy	Native	2%
Quercus hemisphaerica	Upland Laurel Oak	Upland Hardwood Forest	Canopy	Native	2%
Ligustrum lucidum	Glossy Privet	Upland Hardwood Forest	Subcanopy	Non-native	10%
Carya glabra	Pignut Hickory	Upland Hardwood Forest	Subcanopy	Native	5%
Acer saccharum subsp. floridanum	Florida Maple	Upland Hardwood Forest	Subcanopy	Native	5%
Cinnamomum camphora	Camphortree	Upland Hardwood Forest	Subcanopy	Non-native	5%
Liquidambar styraciflua	Sweetgum	Upland Hardwood Forest	Subcanopy	Native	5%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Subcanopy	Native	5%
Acer negundo	Box elder	Upland Hardwood Forest	Subcanopy	Native	2%
Acer rubrum	Red maple	Upland Hardwood Forest	Subcanopy	Native	2%
Broussonetia papyrifera	Paper mulberry	Upland Hardwood Forest	Subcanopy	Non-native	2%
Celtis laevigata	Sugarberry	Upland Hardwood Forest	Subcanopy	Native	2%
Magnolia grandiflora	Southern Magnolia	Upland Hardwood Forest	Subcanopy	Native	2%
Ulmus alata	Winged elm	Upland Hardwood Forest	Subcanopy	Native	2%
Ostrya virginiana	Eastern Hophornbeam	Upland Hardwood Forest	Subcanopy	Native	2%
Syngonium podophyllum	American evergreen	Upland Hardwood Forest	Groundcover	Non-native	20%
Tradescantia fluminensis	Small-leaf Spiderwort	Upland Hardwood Forest	Groundcover	Non-native	10%
Nephrolepis cordifolia	Tuberous swordfern	Upland Hardwood Forest	Groundcover	Non-native	10%
Dolichandra unguis-cati	Catclawvine	Upland Hardwood Forest	Groundcover	Non-native	8%
Prunus caroliniana	Carolina laurelcherry	Upland Hardwood Forest	Groundcover	Native	5%
Vitis rotundifolia	Muscadine Grape	Upland Hardwood Forest	Groundcover	Native	5%
Ipomoea cairica	Mile-a-minute Vine	Upland Hardwood Forest	Groundcover	Non-native	3%
Bignonia capreolata	Crossvine	Upland Hardwood Forest	Groundcover	Native	2%
Ardisia crenata	Scratchthroat	Upland Hardwood Forest	Groundcover	Non-native	2%
Dioscorea bulbifera	Air Potato	Upland Hardwood Forest	Groundcover	Non-native	1%
Callicarpa americana	American Beautyberry	Upland Hardwood Forest	Groundcover	Native	1%
Eriobotrya japonica	Loquat	Upland Hardwood Forest	Groundcover	Non-native	1%
Hedera helix	English Ivy	Upland Hardwood Forest	Groundcover	Non-native	1%
Smilax sp.	Greenbriar	Upland Hardwood Forest	Groundcover	Native	1%