



University of Florida Conservation Area Land Management Plan
Natural Areas Teaching Lab – East
(Surge Wetland)

Introduction

The NATL-east Conservation Area (formerly Surge Wetland Conservation Area) is a 10.9-acre tract adjacent to the Surge Area north of Archer Road on the southwest quadrant of the main campus. In the spring of 2005 this area was made part of the Natural Area Teaching Laboratory (NATL).

Consequently, the Natural Area Advisory Committee (NAAC) has developed recommendations as to how the area should be managed. This site occupies a depression basin that receives water from surrounding areas on campus and from neighboring Archer Road. The central marsh is surrounded by and grades into a shrub wetland/hydric hammock, and, farther up slope, a mesic mixed hardwood hammock. The boundaries of these plant communities are not clearly defined and fluctuate depending on rainfall patterns. NATL-east is relatively intact and for the most part is undisturbed by invasive exotic plants.

This Conservation Area was recommended for preservation in the 1987 Stormwater Management Master Plan due to its hydrological sensitivity and its proximity to NATL. The 2000-2010 Campus Master Plan identified upland portions of this area as Preservation Area 2.

Natural Areas Inventory

Water Resources

According to watershed analysis work completed by Causseaux and Ellington, NATL-east Conservation Area is in a depression basin. This area receives stormwater from the surrounding campus lands and from Archer Road. Water exits this conservation area via an intermittent drainage canal that drains into a sinkhole pond adjacent to Archer Road in the southeast area of the Natural Areas Teaching Lab Conservation Area. Surge Area Drive, the road between the southern portion of these two Conservation Areas, floods when large rainfall events occur, which blocks off access to and from Archer Road. Future stormwater improvements may be necessary on site with two potential options including raising the elevation of the road or creating more storage in the wetland. Any stormwater improvements should be coordinated with the Department of Transportation, which is responsible for some of the water entering the conservation area.



NATL-east Interior



Surge Area Drive Flooding

Natural Communities

NATL-east is comprised of primarily two natural community types. The center of the Conservation Area is composed of a shrub wetland that appears to transition from a marsh to shrub based on rainfall over time. When rainfall is heavy and persistent the shrubs die back and marsh vegetation takes over, whereas during drought years shrubs and hardwoods encroach into the interior. Moving up slope, a small area of bottomland forest rings the shrub wetland areas. Moving farther up slope, bottomland areas transition into an upland forest comprised primarily of a mesic / upland-mixed hardwood forest. A variety of native plant species are found here, with the highest diversity occurring in the mesic hammock. Mesic forests typically support significant wildlife and plant diversity, which result from the nutrient rich nature of hardwood forests and flowering and fruiting plants. The following plants species have been documented on site.

Plant Species

The canopy of the mesic hammock is dominated by *Carya glabra* (Pignut Hickory), *Liquidambar styraciflua* (Sweetgum), *Ostrya virginiana* (Eastern Hophornbeam), *Pinus taeda* (Loblolly Pine), *Quercus hemisphaerica* (Upland Laurel Oak), *Quercus nigra* (Water Oak), *Tilia americana* var. *caroliniana* (Carolina Basswood) and *Ulmus alata* (Winged Elm). Also present are *Acer negundo* (Boxelder), *Acer rubrum* (Red Maple), *Celtis laevigata* (Hackberry), *Chionanthus virginicus* (White Fringetree), *Diospyros virginiana* (Common Persimmon), *Fraxinus americana* (White Ash), *Juniperis virginiana* (Red Cedar), *Magnolia grandiflora* (Southern Magnolia), *Morus rubra* (Red Mulberry), *Prunus caroliniana* (Carolina Laurelcherry), *Prunus umbellata* (Black Cherry), *Quercus geminata* (Sand Live Oak), *Quercus michauxii* (Basket Oak) and *Quercus virginiana* (Live Oak).

The understory associated with the mesic hammock is quite diverse and dominated by a variety of native species. Low shrubs, herbaceous plants and vines documented in this area include *Asimina parviflora* (Smallflower Pawpaw), *Asplenium platyneuron* (Ebony spleenwort), *Bignonia capreolata* (Crossvine), *Callicarpa americana* (American beautyberry), *Campsis radicans* (Trumpet creeper), *Crateagus uniflora* (Dwarf Hawthorne), *Dioscorea floridana* (Florida Yam), *Erythrina herbacea* (Coralbean), *Euonymus americanus* (American Strawberrybush), *Eupatorium capillifolium* (Dogfennel), *Gelsemium sempervirens* (Yellow Jessamine), *Lonicera sempervirens* (Coral Honeysuckle), *Mitchella repens* (Partridgeberry), *Myrica cerifera* (Wax Myrtle), *Parthenocissus quinquefolius* (Virginia Creeper), *Phytolacca americana* var. *rigida* (American Pokeweed), *Rubus trivialis* (Southern Dewberry), a variety of *Smilax* (Greenbriar) species, *Toxicodendron radicans* (Poison Ivy), *Vaccinium arboreum* (Sparkleberry), *Vernonia gigantea* (Giant Ironweed), *Vitis aestivalis* (Summer Grape) and *Yucca filamentosa* (Adam's Needle).

Dominant trees and shrubs observed in the wetland areas include *Acer rubrum*, (red maple), *Celtis laevigata* (Hackberry), *Cephalanthus occidentalis* (Common Buttonbush), *Liquidambar styraciflua* (Sweetgum), *Myrica cerifera* (Wax Myrtle), *Nyssa sylvatica* var. *biflora* (Swamp Tupelo) and *Salix caroliniana* (Carolina willow). Also present are *Diospyros virginiana* (Common Persimmon), *Quercus laurifolia* (Diamond Leaf Oak), *Quercus nigra* (Water Oak), *Rhus copallina* (Winged Sumac) and *Sambucus nigra* subsp. *canadensis* (Elderberry). Herbaceous plants, vines, and ferns common in the wetter areas include *Aplos americana* (Groundnut), *Decumaria barbara* (Climbing Hydrangea), *Hydrocotyle umbellata* (Manyflower Marshpennywort), *Osmunda cinnamomea* (Cinnamon fern), *Osmunda regalis* var. *spectabilis* (Royal Fern), *Pontederia cordata* (Pickerelweed), *Thelypteris kunthii* (Southern Shield Fern) *Thelypteris palustris* var. *pubescens* (Marsh Fern), *Woodwardia areolata* (Netted Chain Fern) and *Woodwardia virginica* (Virginia Chain Fern).

Uncommon and rare species growing in NATL-east include *Arisaema dracontium* (Green Dragon, an uncommon species, occasional), *Dioscorea floridana* (Florida Yam, an uncommon species) and *Matelea* sp. (Milkvine, not yet identified, must wait for it to flower).

Invasive Non-Native Plant Species

Overall the woods appear to be in good shape and not overly dominated by exotic species. However, *Colocasia esculenta* (Wild Taro), *Myriophyllum aquaticum* (Parrotfeather Water Milfoil), and *Eichhornia crassipes* (Common Water Hyacinth) are common in the wet areas. *Broussonetia papyrifera* (Paper Mulberry), *Ludwigia peruviana* (Peruvian Primrosewillow) and *Salvinia minima* (Water Spangles) were occasionally encountered. The most problematic invasive exotic observed in the mesic hammock was *Ardisia crenata* (Scratchthroat). Only occasionally found in the majority of the woods, this species becomes abundant in the extreme northwestern corner of the mesic hammock (north and west of the wetlands), particularly along the northern fence. Other non-native species occasionally observed in the mesic hammock include *Dioscorea bulbifera* (Air Potato, present on the eastern edge of the property), *Eriobotrya japonica* (Loquat, occasional throughout), *Lantana camara* (Lantana, at property edges), *Ligustrum lucidum* (Glossy Privet, occasional throughout), *Ligustrum sinense* (Chinese Privet, throughout), *Ruellia tweediana* (Britton's Wild Petunia, at western edge) and *Syngonium podophyllum* (American Evergreen, at east edge).

Animal Species

The following animals have been documented on site Brown Anole, Common Ground Skink, Spring Peeper, American Crow, American Goldfinch, American Robin, Blue-Gray gnatcatcher, Brown-headed cowbird, Blue-headed Vireo, Boat-tailed Grackle, Carolina Chickadee, Carolina Wren, Cedar Waxwing, Common Grackle, Downy Woodpecker, Eastern Phoebe, Eastern Tufted Titmouse, Fish Crow, Great Crested Flycatcher, Gray Catbird, Hermit Thrush, House Sparrow, House Wren, Little Blue Heron, Mourning Dove, Northern Cardinal, Northern Mockingbird, Northern Parula Warbler, Osprey, Pine Warbler, Pileated Woodpecker, Red-bellied Woodpecker, Ruby-crowned Kinglet, Red-eyed Vireo, Red-Shouldered Hawk, Ruby-throated Hummingbird, Red-winged Blackbird, Summer Tanager, Turkey Vulture, Yellow-rumped Warbler, Yellow-throated Vireo, Raccoon, Gray Squirrels, Feral Cat.



NATL-east

Soils Inventory

The following soil information for on-site soils was gathered from the Soil Survey of Alachua County (1985).

Bonneau Fine Sand

This gently sloping, moderately well drained soil is in small to relatively large areas on uplands. Slopes are generally convex. Typically, the surface layer is dark gray fine sand about 9 inches thick. The subsurface layer is brownish yellow fine sand to a depth of 29 inches. The Bonneau soil has a water table that is at a depth of 40 to 60 inches for 1 to 3 months and at a depth of 60 to 72 inches for 2 to 3 months during most years. Surface runoff is slow. Permeability is moderately slow to moderate in the upper part of the subsoil and very slow to slow in the lower part.

Lochloosa Fine Sand

This gently sloping, somewhat poorly drained soil is in small and large areas on the rolling uplands. Typically, the surface layer is dark gray fine sand about 7 inches thick. The subsurface layer is yellowish brown loamy sand or sand to a depth of 31 inches. This soil has a water table that is about 30 to 40 inches below the surface for 1 to 4 months during most years. Surface runoff is slow. The available water capacity is low to medium in the sandy surface and subsurface layers and medium in the subsoil.

Monteocha Loamy Sand

This nearly level, very poorly drained soil is in wet ponds and shallow depressional areas in the flat woods. Slopes are less than 2 percent. Typically, the surface layer is black loamy sand about 12 inches thick. The subsurface layer is light brownish gray sand to a depth of 18 inches. The Monteocha soil has a water table that is within 10 inches of the surface for more than 6 months during most years.

Cultural and Passive Recreational Resources

NATL-east does not have any public access or associated amenities. There are no known archeological or historic sites within the Conservation Area.

Future Improvements

The NATL-east is considered an Academic Preserve, with teaching /research, public education and physical improvements overseen by the Natural Area Advisory Committee (NAAC).

In the spring of 2005, the Natural Area Advisory Committee (NAAC) recommended improvements for NATL-east in order to begin its use as an outdoor teaching laboratory. (Please note that because CALM plans are updated only annually, NAAC may have modified its recommendations. For its current recommendations see <http://natl.ifas.ufl.edu/NATLlrPlans.htm>.). The committee recommends that NATL-east have two entrances. An existing, north entrance is on Natural Area Drive, across the street from and slightly south of the academic entrance to NATL-west. A south entrance would be across the street from the southeast portion of NATL-west, where a new entrance into NATL-west would facilitate passage between NATL's two conservation areas. Each entrance will have signs stating that the areas are for academic use only and directing would-be users to the public area of NATL-west and to rules posted on the NATL website. At NATL-east's north entrance a kiosk, out of sight from the road and with a trash can, will provide an introduction to the area's habitats and rules for use. A foot trail west of the central marsh will run between the north and south entrances. Fencing is a major concern, and NAAC recommends that an existing corral-type fence be extended along Natural Area/Surge Area Drive south to the UF housing compound and from the compound south to Archer Road. Additionally, it

recommends that hurricane fences be erected along the eastern and southern sides of the Conservation Area (along with a trash trap at the DOT drainage outfalls) and that the field fence along the northern boundary be removed (leaving an existing hurricane fence).

The committee recommends a number of improvements needed to promote academic uses in line with ongoing activities in NATL-west. These include extensions of NATL-west's 50-meter grid (surveyed by the Student Geomatics Association), its grid-based soil survey (by Soil and Water Science personnel), and its grid-based photographic record of vegetation (photographs in the four cardinal directions at each grid stake, first taken in NATL-west in January 1997). Because there will be no grid stakes in the central pond, photographs should be taken at specific stations around the pond to record the pond's features. Similarly the biotic surveys of NATL-west should be expanded to include NATL-east.

NAAC is concerned about the noise emanating from the carpentry shop blower in Housing's adjacent work compound. It plans to investigate means to reduce the noise but has not settled on a specific recommendation. After the entrances and trail have been created, the committee plans to have a grand opening that will also serve as an opportunity to recruit volunteers to help clean up trash that has built up in the area over the years.

Finally, a Stormwater Agreement between the University and Emmer Development was approved by Lakes, Vegetation and Landscaping at its 12 Jan 2004 meeting. This agreement identified potential means that could be used to improve the quality of water flowing from the Surge Wetland into a sinkhole in NATL-west and were listed in the minutes of this meeting (<http://www.facilities.ufl.edu/lvl/minutes/LVL%20Minutes%201-12-04FINAL.pdf>), but the final design is pending

Maps on the following pages:

1. Aerial Photo
2. Water Resources
3. Natural Communities
4. Soils



Figure 19 -1

NATL - East (Surge Wetland)
Conservation Area

■ Conservation Area
--- Master Plan Boundary



0 45 90 180 270
Feet

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This map is intended for planning purposes only.

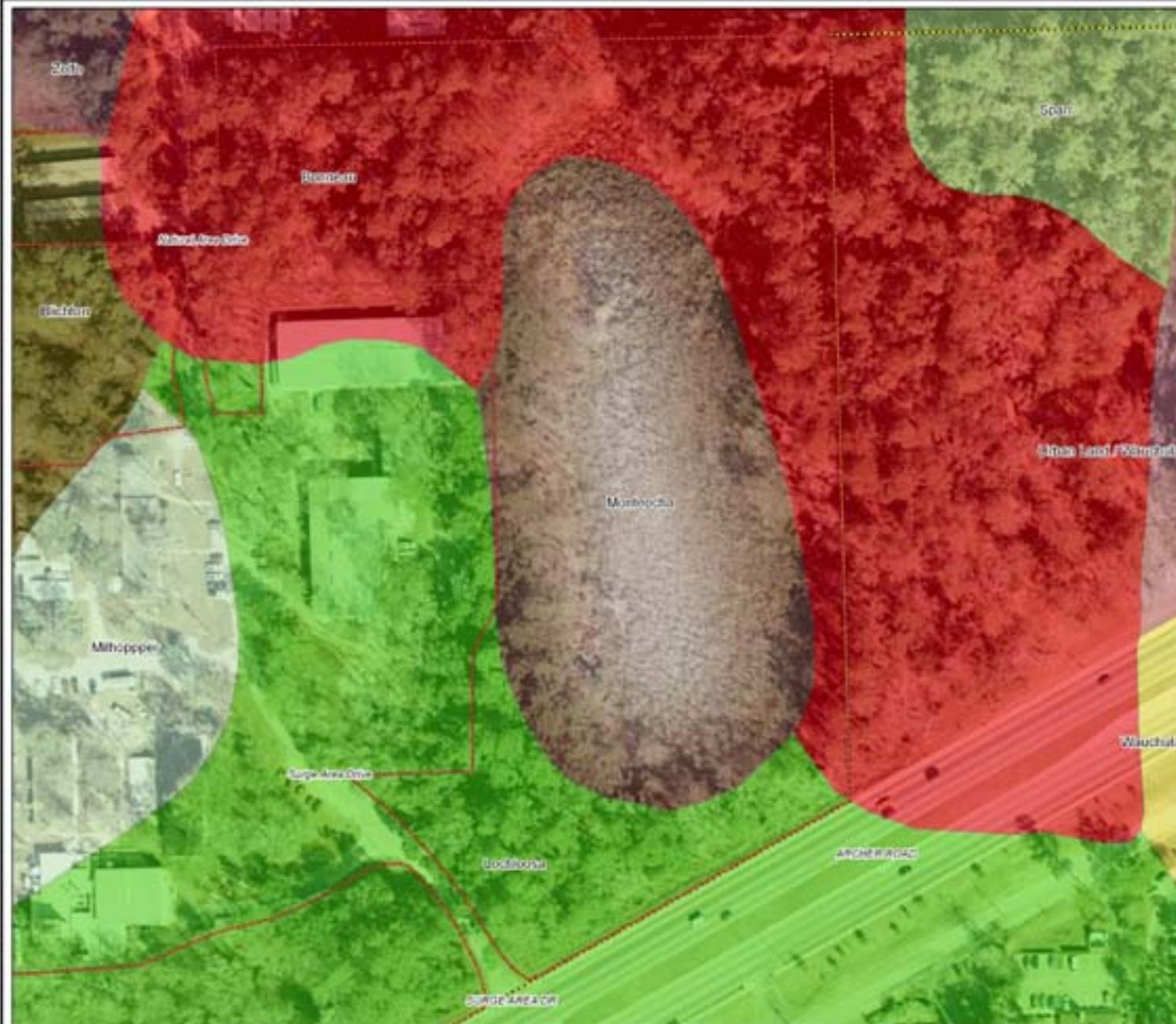


Figure 19 - 2

Soils

NATL - East (Surge Wetland)
Conservation Area

- Conservation Area
- Bickton
- Bonneau
- Kendrick
- Lochloosa
- Milhopper
- Monteochea
- Sparr
- Urban Land / Wauchula
- Wauchula
- Zolfo
- Master Plan Boundary



0 45 90 180 270
Feet

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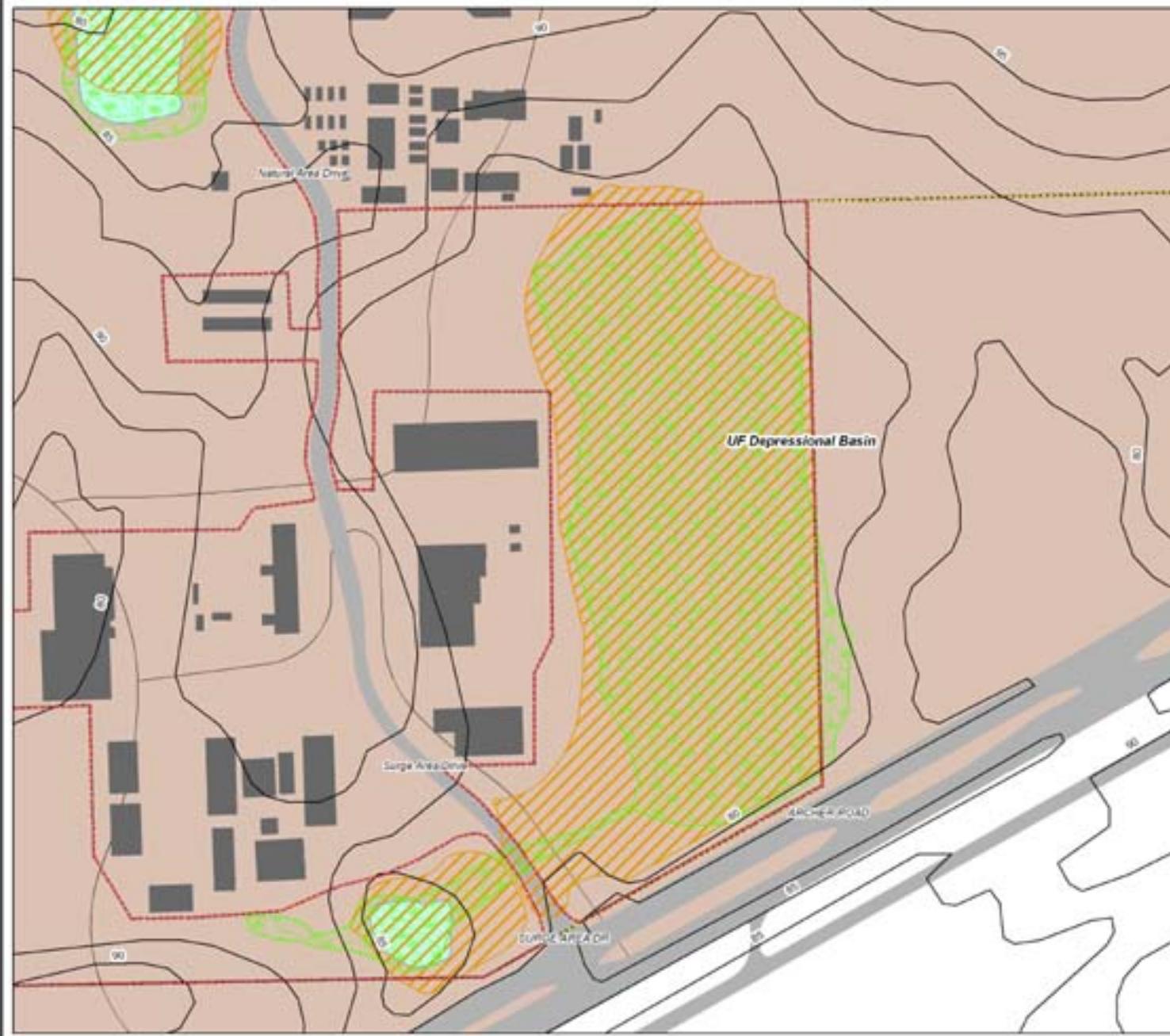


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Figure 19 - 3

Water Resources
NATL - East (Surge Wetland)
Conservation Area



- Conservation Area
- Lake Alice Watershed
- Bivens Arm Watershed
- Hogtown Creek Watershed
- UF Depressional Watershed
- Wetland
- 100-year floodplain
- UF building
- Water
- Contour
- UF boundary
- Creek



0 55 110 220 330 Feet

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Figure 19 - 4

Natural Communities
NATL - East (Surge Wetland)
Conservation Area

- Conservation Area
- Pasture and Grass
- Freshwater Marsh
- Upland Mixed Forest
- Mesic Flatwoods
- Water
- Bottomland Forest
- Shrub Wetland - Basin Marsh
- Emergent Aquatic - Marsh Lake
- Urban
- Utilities
- Master Plan Boundary



0 55 110 220 330 Feet

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