

## BELLAMY MITIGATION SITE THIRD ANNUAL MONITORING REPORT (2010)

### Bellamy Property Jackson County

**Impact: Calhoun County Airport Expansion Offsite Mitigation, SAJ-2007-6119 (IP-DEB)**

**Mitigation: Bellamy Property**  
**Monitoring Date: October 22, 2010**

#### SCOPE

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The purpose of this project is to provide a partial offset for wetland impacts caused by expansion of the Calhoun County Airport. Per Corps permit, approximately 7.18 acres of palustrine forested wetlands are directly impacted by the Airport expansion, with additional direct and secondary impacts to other waters of the United States. Compensatory mitigation for the Airport expansion is being implemented at three locations (onsite, Atkins Park, and the Bellamy Site). Mitigation at the Bellamy Property consists of preservation and enhancement of 50 acres of forested floodplain along the Chipola River (48 acres palustrine forested wetlands; 2 acres forested upland buffers). The NFWFMD is responsible only for mitigation at the Bellamy Site and bears no responsibility whatsoever for the implementation, success, or monitoring of the onsite mitigation or Atkins Park mitigation projects.

#### MITIGATION PROJECT

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As part of its mission to protect water resources in the Florida Panhandle, the NFWFMD owns and manages for ecological integrity 7,377.27 acres of floodplain wetlands and associated upland buffers along the upper Chipola River north of Florida Caverns State Park. Fee-simple acquisition of the 338.70-acre Bellamy Property from the International Paper Company (IP) was completed to increase the protected acreage to 7,715.97 acres and is part of a larger goal of bringing some 14,000 acres within the Chipola basin under NFWFMD-ownership and ecological stewardship. Located in a karst area of Jackson County and adjacent to the Chipola River, the Bellamy tract consists of high-quality bottomland forest, tupelo/cypress floodplain sloughs, a 2nd order magnitude spring, small sinkholes on the floodplain, and limited transitional mesic forested upland buffers. It is bounded by the Chipola River and existing NFWFMD lands to the west and the Arborgen Bellamy Seed Orchard to the east. A 50-acre portion of this property will be dedicated as offsetting mitigation for impacts associated with the Calhoun County Airport.

This mitigation area is primarily high-quality bottomland wetland forest (48 acres), a high-quality, 2nd order magnitude spring, several small sinkholes within the floodplain, and limited upland buffers (1 acre of transitional, mesic slope forest and 1 acre of degraded upland mixed woodland community with offsite sand pine, spruce pine and cedar). There are minor occurrences of exotic and/or invasive species in the wetland and upland buffers (e.g., *Lygodium japonicum*, *Ligustrum sinense*, *Melia azedarach*, and *Lonicera japonica*). Relict cypress stumps suggest logging along the Chipola River in the distant past. The mitigation project entails preservation, enhancement, and implementation of ecological management of bottomland hardwood wetland forest within the Chipola River watershed, a major tributary to the Apalachicola River.

#### MITIGATION ACTIVITIES

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The site is preserved in perpetuity in a natural state as part of the NFWMD Chipola River Water Management Area (WMA). Exotic/invasive species have been observed along the upland periphery (*Lygodium japonicum*, *Ligustrum sinense*, *Melia azedarach*, and *Lonicera japonica*) have been treated with appropriate wetland approved herbicides. Management of exotic/invasive plant species and nuisance faunal species (e.g., feral pig and beaver) will be perpetual. Quarterly reports will be generated for feral pig and beaver control and included in the annual report. Land ownership signage has been clearly posted along the property boundaries. Prescribed fire will be implemented, in adjacent upland buffers on a 3-5 year burn regime.

Mitigation commenced with acquisition of the Bellamy Property in March, 2009, and all performance standards are currently met. Exotic control of exotic and invasive species found on the upland periphery (<1% exotics and <5% invasives) implemented in 2009.

The site is being actively maintained by NFWMD lands management personnel as part of an extensive conservation land management program within the Chipola River WMA. This site is expected to be largely self-sustaining.

#### WORK SCHEDULE

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- Acquisition: **Completed in March 2009**
- Exotic control with herbicides: **Completed in 2009**
- Continuing exotic control: **Ongoing**
- Beaver and feral pig control: **Ongoing**
- Prescribed fire of upland buffers: **planned for 2012-2014 timeframe**

#### SUCCESS CRITERIA

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The project's success criteria are:

Performance Standard	Condition Met?
≥ 90% cover by appropriate wetlands species (i.e., FAC+ or wetter) suitable for target plant community.	Yes
Invasive species cover ≤ 5% and exotic species cover ≤ 1% (pursuant to the most current list established by the Florida Exotic Pest Plant Council).	Yes
Desired species showing evidence of stable or increasing coverage.	Yes
Increase or stable appropriate species diversity.	Yes
Kind and total coverage of species appropriate for management goals and target natural community.	Yes
Kind and total coverage of herbaceous species appropriate for management goals and target natural community.	Yes
Kind and total coverage of tree species appropriate for management goals and target natural community.	Yes
Maintain the ecological conditions so that the mitigation UMAM scores are met for each of the specified community types.	Yes

During the most recent site inspection (10/25/10), all performance standards were found to be met.

#### Conclusions:

The site consists of high-quality bottomland wetland forest (48 acres) with limited upland buffers on the periphery (1 acre of transitional, mesic slope forest and 1 acre of degraded upland mixed woodland community with offsite sand pine, spruce pine and cedar). A high-quality, 2<sup>nd</sup> order magnitude spring and several small sinkholes within the floodplain also occur.

Despite minor occurrences of exotic and invasive species along the periphery of the property (e.g., *Lygodium japonicum*, *Ligustrum sinense*, *Sapindus saponaria*, *Lonicera japonica*), the percent cover of

these species is below the 1% exotic and 5% invasive species cover threshold in both the upland and wetland communities. There is evidence throughout the bottomland hardwood forest of native, desirable wetland species reproduction and seedling recruitment. At the time of the survey the bottomland hardwood forest was not inundated.

This area is of high conservation value with large intact stands of bottomland forest tree species and appropriate shrub and herb cover and composition. It also supports populations of the state-threatened rare plant species *Lobelia cardinalis* that was flowering/fruitleting at the time of the 2010 survey. This area should remain intact as long as the probability of invasion is reduced by treating existing invasive species on site, especially the small infestation of *Lygodium japonicum* on the upland edge of the bottomland forest. There is some erosion of an old road that runs north to south through the property, but this is minor.

The upland buffers exhibit disturbance from moderate invasive exotic species infestations and a prevalence of grassy, early successional groundcover in Polygon C. A re-introduction of fire in these uplands would maintain an open, herb-dominated community. However, the closed canopy mesic slope forest (Polygon C) would not have naturally burned very often and currently the medium and fine fuel load is moderate to high.

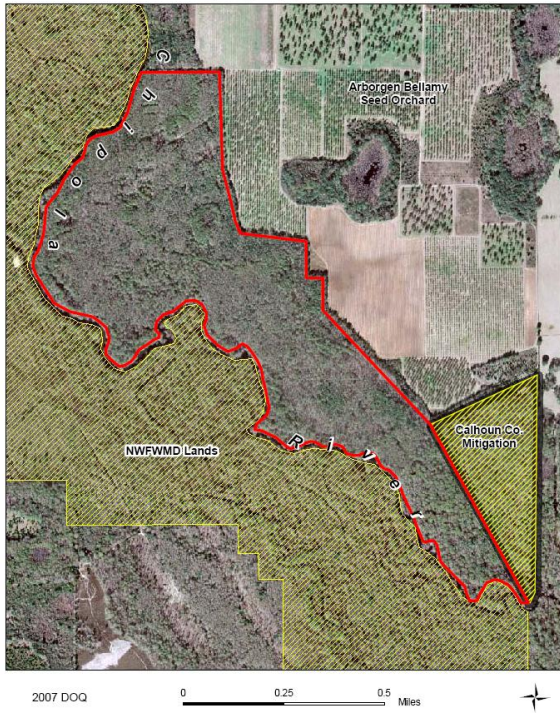
The area designated as sandhill (Polygon D) may have historically been upland mixed hardwood forest, rather than sandhill. This is based on the high clay content in the soil and the presence of characteristic upland mixed woodland species such as *Quercus velutina*, *Quercus falcata*, and *Quercus alba*, among others (FNAI Guide to the Natural Communities of Florida 2010, <http://www.fnai.org>). Upland mixed woodland can develop in an ecotone between sandhill and upland hardwood forests, which may be the case at Bellamy. This change in classification would also explain the lack of wiregrass (*Aristida stricta*) in the Polygon D. If upland mixed woodland classification is used the frequency of fire would naturally be lower than in a sandhill community, thereby allowing an oak canopy to develop and regenerate. Recent research suggests that this upland mixed woodland community would have naturally burned every 2-10 years both supporting a diverse herbaceous understory while maintaining a moderate hardwood/pine canopy. Sand pine, however, would not be an important component of this community and could be removed.

Management recommendations are to re-treat the exotics in the upland buffer and landward edges of the wetlands, implement fire as planned, and continue feral hog control.

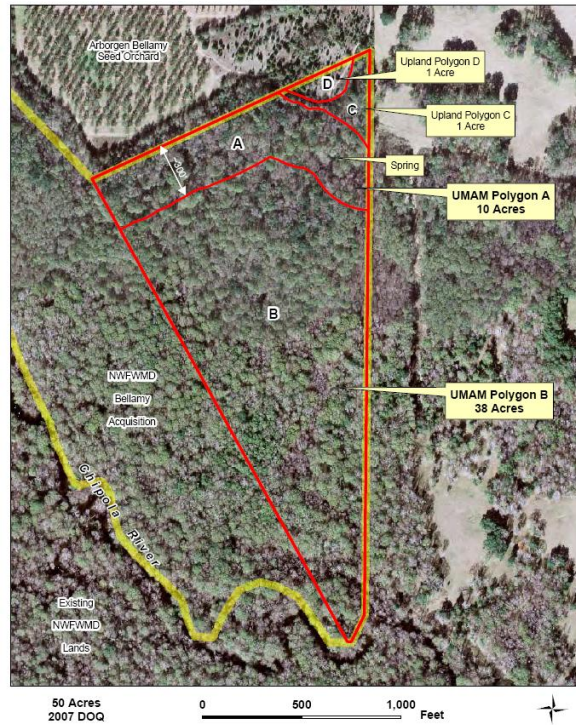
Location of Bellamy Property



Bellamy Property (288.7 +/- Acres)



UMAM Polygons





Bellamy 2<sup>nd</sup> Order Magnitude Spring, Polygon A



Bellamy Bottomland, Polygon A



Bellamy Bottomland, Polygon B



Bellamy Upland Forest, Polygon C



Bellamy Upland buffer, Polygon D

## Plant Species Observed in 2010.

Scientific Name	Common Name	Polygon A	Polygon B	Polygon C	Polygon D
<i>Acer floridanum</i>	Florida maple	X	X	X	
<i>Acer rubrum</i>	Red maple	X	X	X	
<i>Acer saccharinum</i>	Silver maple				
<i>Aesculus pavia</i>	Red buckeye				
<i>Agalinis fasciculatum.</i>	False fox glove				X
<i>Arnoglossum sulcatum</i>	Georgia Indian plantain		X		
<i>Arisaema dracontium</i>	Green dragon				
<i>Arisema triphyllum</i>	Jack-in-the- pulpit				
<i>Aristolochia serpentaria</i>	Virginia snakeroot	X			
<i>Arundinaria gigantea</i>	Giant cane	X	X	X	
<i>Asplenium platyneuron</i>	Ebony spleenwort		X		
<i>Bignonia capreolata</i>	Cross vine			X	
<i>Botrychium virginianum</i>	Rattlesnake fern		X		
<i>Boehmeria cylindrica</i>	Falsenettle	X	X		
<i>Callicarpa Americana</i>	Beauty berry				X
<i>Campsis radicans</i>	Trumpet vine	X	X		
<i>Carex gigantea</i>	Sedge		X		
<i>Carpinus caroliniana</i>	Ironwood	X	X	X	
<i>Carya tomentosa</i>	Mockernut hickory			X	
<i>Carya aquatic</i>	Water hickory		X		
<i>Castanea pumila</i>	Chinquapin				X
<i>Carya cordiformis</i>	Bitternut hickory	X		X	
<i>Celtis laevigata</i>	Sugarberry	X		X	
<i>Cephalanthus occidentalis</i>	Button bush	X			
<i>Cercis Canadensis</i>	Red bud	X		X	
<i>Chaerophyllum procumbens</i>	Spreading chervil				
<i>Chasmanthium nitidum</i>	Shiny woodoats	X	X		
<i>Chrysogonum virginianum</i>	Green N gold				
<i>Colocasia esculenta***</i>	Wild taro		X		
<i>Cornus florida</i>	Flowering dogwood			X	
<i>Cornus foemina</i>	Swamp dogwood		X		
<i>Cladonia sp.</i>	Reindeer lichen				X
<i>Crataegus aestivalis</i>	May haw		X		
<i>Crataegus marshallii</i>	Parsley haw		X		
<i>Crinum sp.</i>	Swamplily		X		
<i>Crotolaria rotundifolia</i>	Round leaved rattlebox				X
<i>Dichanthelium acuminatum</i>	Tapered witchgrass				X
<i>Dichanthelium dichotomum</i>	Cypress witchgrass	X	X		
<i>Dichanthelium sp.</i>	Witch grass	X	X		X
<i>Diospyros virginiana</i>	Persimon				X
<i>Eupatorium compositifolium</i>	Yankeeweed				X
<i>Fagus grandifolia</i>	American beech	X			
<i>Fraxinus pennsylvanica</i>	Green ash	X	X		
<i>Galium tinctorium</i>	Stiff marsh bedstraw	X	X		
<i>Gelsemium rankinii</i>	Swamp jessamine		X		
<i>Gelsemium sempervirens</i>	Florida jessamine			X	X
<i>Gleditsia aquatic</i>	Water locust		X		
<i>Halesia dipteral</i>	Two-winged silver bells				
<i>Hydrocotyle verticillata</i>	Swamp pennywort		X		
<i>Hymenocallis sp.</i>	Spider-lily		X		
<i>Hypericum sp.</i>	St. Johns wort	X	X	X	X



Scientific Name	Common Name	Polygon A	Polygon B	Polygon C	Polygon D
<i>Ilex opaca</i>	American holly			X	
<i>Ilex vomitoria</i>	Yaupon holly			X	X
<i>Iris sp.</i>	Iris		X		
<i>Juncus gymnocarpus</i> *	Coville's rush				
<i>Juniperus virginiana</i>	Red cedar	X		X	
<i>Kummerowia striata</i>	Japanese clover				X
<i>Ligustrum sinense</i> ***	Chinese privet			X	
<i>Liquidambar styraciflua</i>	Sweet gum	X	X	X	X
<i>Liriodendron tulipifera</i>	Tuliptree			X	
<i>Lonicera japonica</i> ***	Japanese honey suckle				
<i>Ludwigia sp.</i>	Rattlebox		X		
<i>Lygodium japonicum</i> ***	Japanese climbing fern	X	X		
<i>Magnolia grandiflora</i>	Southern magnolia	X		X	
<i>Melia azedarach</i> ***	Chinaberry tree			X	
<i>Menispermum canadense</i>	Moonseed	X	X		
<i>Mitchella repens</i>	Partridgeberry	X	X		
<i>Monarda punctata</i>	Spotted beebalm			X	
<i>Nyssa ogechee</i>	Ogeechee tupelo		X		
<i>Nyssa sylvatica</i> var. <i>biflora</i>	Black gum		X		
<i>Onoclea sensibilis</i>	Sensitive fern				
<i>Ostrya virginica</i>	Hop hornbeam	X	X		
<i>Panicum sp.</i>	Panic grass				X
<i>Persea borbonia</i>	Red bay	X	X	X	
<i>Phanopyrum gymnocarpon</i>	Savanna panicum		X		
<i>Pinus clausa</i>	Sand pine				X
<i>Pinus glabra</i>	Spruce pine				X
<i>Pinus taeda</i>	Loblolly pine	X	X		X
<i>Pityopsis graminifolia</i>	Narrowleaved silkgrass				X
<i>Planera aquatic</i>	Planar tree	X	X		
<i>Platanus occidentalis</i>	Sycamore	X			
<i>Pluchea odorata</i>	Camphorweed	X	X		
<i>Polygala sp.</i>	Smart weed				
<i>Prunus angustifolia</i>	Chickasaw plum				X
<i>Prunus caroliniana</i>	Cherry laurel	X			
<i>Prunus serotina</i>	Black cherry			X	X
<i>Quercus alba</i>	White oak				X
<i>Quercus falcate</i>	Southern red oak				X
<i>Quercus hemisphaerica</i>	Diamond oak				X
<i>Quercus laurifolia</i>	Laurel oak	X	X	X	
<i>Quercus lyrata</i>	Overcup oak	X	X		
<i>Quercus michauxii</i>	Basket oak	X			
<i>Quercus nigra</i>	Water oak	X	X	X	
<i>Quercus velutina</i>	Black oak				X
<i>Quercus virginiana</i>	Live oak	X		X	
<i>Ruellia caroliniensis</i>	Carolina wild petunia	X	X		
<i>Rhapidophyllum hystrix</i>	Needle palm	X	X		
<i>Rhus copallinum</i>	Winged sumac				X
<i>Rubus argutus</i>	Sawtooth blackberry	X		X	
<i>Rubus cuneifolius</i>	Sand blackberry				X
<i>Rubus trivialis</i>	Dewberry	X	X	X	
<i>Saccharum alopecuroides</i>	Silver plumegrass				X
<i>Sabal minor</i>	Bluestem palm	X	X		

Scientific Name	Common Name	Polygon A	Polygon B	Polygon C	Polygon D
<i>Sabatia calycina</i>	Coastal rosegentian				
<i>Samolus ebracteatus</i>	Water pimpernel				
<i>Sapindus saponaria</i> ***	Soap berry				
<i>Sebastiania fruticosa</i>	Sebastian bush				
<i>Smilax bona-nox</i>	Green briar	X	X	X	X
<i>Smilax ecirrhata</i>	Upright carrion flower	X	X	X	X
<i>Smilax glauca</i>	Cat greenbriar				
<i>Smilax laurifolia</i>	Laurel greenbriar	X	X		
<i>Solidago caesia</i>	Bluestem goldenrod				X
<i>Solidago rugosa</i> ssp. <i>aspera</i>	Wrinkle-leaf goldenrod				X
<i>Spiranthes ovalis</i>	October ladiestresses				
<i>Symphytotrichum</i> sp.	Blue eyed grass				X
<i>Symplocos tinctoria</i>	Horse sugar	X	X	X	
<i>Taxodium distichum</i>	Bald cypress		X		
<i>Thyrsanthella difformis</i>	Climbing dogbane	X	X		
<i>Tilia americana</i> var. <i>caroliniana</i>	Carolina basswood	X	X		
<i>Toxicodendron radicans</i>	Poison ivy	X	X		
<i>Trichostema setaceum</i>	Narrow –leaved blue curls				X
<i>Trillium decipiens</i>	Chattahoochee river wakerobin				
<i>Ulmus alata</i>	Winged elm				
<i>Ulmus Americana</i>	American elm	X	X		
<i>Ulmus rubra</i>	Slippery elm	X	X		
<i>Vaccinium arboretum</i>	Sparkleberry				X
<i>Vaccinium corymbosum</i>	High bush blueberry	X	X		
<i>Vaccinium elliotii</i>	Elliott’s blueberry	X	X		
<i>Vaccinium staminium</i>	Deerberry				X
<i>Verbena brasiliensis</i>	Brazillian vervain				X
<i>Viburnum dentatum</i>	Arrow wood	X	X		
<i>Viburnum obovatum</i>	Walter’s viburnum	X			
<i>Viola affinis</i>	Florida violet		X		
<i>Viola walteri</i>	Walter’s violet				
<i>Vitis rotundifolia</i>	Wild muscadine	X		X	X
<i>Yeatesia viridiflora</i>	Green-flowered yeatesia				
<i>Yucca filamentosa</i>	Adam’s needle				X

\* State Endangered , \*\*State Threatened, \*\*\* Nuisance exotic

Wildlife observed:

Crayfish Chimney  
 Catbird  
 Red-Shouldered Hawk  
 Cardinal  
 Oak Snake

<b>Site Inspection Field Form</b>	
Project: Bellamy	Date: 10/25/10
Name(s) of Data Collectors: Caitlin Elam, Alex Barth	Weather: sunny, 70's-80's
Environmental Description:	Photo #'s
Polygon:	GPS Location: Time: 9 am-12:50 pm CT
Qualitative Assessment: Performance Standard	Condition Met?
≥ 90% cover by appropriate wetlands species (i.e., FAC+ or wetter) suitable for target plant community.	Yes
Invasive species cover ≤ 5% and exotic species cover ≤ 1% (pursuant to the most current list established by the Florida Exotic Pest Plant Council).	Yes
Soils show signs of periodic inundation (12.5-25% of growing season)	Yes
Desired species showing evidence of stable or increasing coverage.	Yes
Increase or stable appropriate species diversity.	Yes
Kind and total coverage of species appropriate for management goals and target natural community.	Yes
Kind and total coverage of herbaceous species appropriate for management goals and target natural community.	Yes
Kind and total coverage of tree species appropriate for management goals and target natural community.	Yes
Maintain the ecological conditions so that the mitigation UMAM scores are met for each of the specified community types.	Yes
<p><b>On at least a yearly basis, the site will be inspected as follows:</b></p> <p>A: Perimeter for signs of trespassing, fencing and signage integrity and infestation by exotic or nuisance vegetation;</p> <p>No signs of trespassing or recent anthropogenic disturbance, and fencing is intact where present. Invasive species infestations are relegated to upland polygon C near the perimeter.</p> <p>B: Internal Roads (Both public and maintenance) for signs of dumping or trespassing, erosion, bridges and road integrity, and exotic or nuisance species infestations;</p> <p>Overall the remnant internal roads are intact. The old north/south road through polygon A shows some signs of light erosion in the form of ruts carved by moving water. A small infestation of <i>Lygodium japonicum</i> is located at the boundary of polygons A and C.</p> <p>C: All construction areas for stabilization and re-vegetation, structure, operation, and integrity;</p> <p>NA</p>	

D: Representative polygons for each UMAM community for fuel load, exotic or nuisance species, planted material survival, groundcover, and shrub condition.

Polygon A: bottomland forest with small rises/knolls throughout; small *Lygodium japonicum* infestation on upland edge and occasional plants in the interior; native wetland herbs, shrubs, and trees are prevalent and appear healthy; native species reproduction and recruitment is evident; fuel load is moderate (primarily leaf litter, downed trees, and palmetto fronds).

Polygon B: Same condition as polygon A; slightly higher.

Polygon C: Transition zone dominated by bottomland hardwood species, upland hardwood species, and cane (*Arundinaria gigantea*); exotic species are common and include *Lygodium japonicum*, *Ligustrum sinense*, *Melia azedarach*, and *Lonicera japonica*.

Polygon D: Upland pine oak woods species composition which is in keeping with the most probable historical natural community; moderate fuel load from herbaceous vegetation; dead shrubs and leaf litter; many young native oak species and dense herbaceous groundcover dominated by native characteristic and/or weedy upland species.

E. Work accomplished this past year- observations.

No recent management activity.

Vegetation Assessment Field Form Qualitative Assessment: Bellamy	
Project: Date: 10/25/10	
Name(s) of Data Collectors: Caitlin Elam, Alex Barth	Weather: Mostly Sunny
Environmental Description: The bottomland and floodplain forests are high quality plant communities with appropriate plant species cover and composition; adjacent upland polygons consist of mesic hammock and what was historically pine/oak woods.	
Polygon: A-C	Time: 12:50 CT
Nuisance Species: <i>Melia azederach</i> ; <i>Lonicera japonica</i> ; <i>Ligustrum sinense</i> ; <i>Colocasia esculenta</i>	
Fuel Load: Low in bottomlands and floodplain and moderate to high in uplands	
<ul style="list-style-type: none"> <li>Wildlife Observations: Crayfish Chimney; Catbird; Red-Shouldered Hawk; Cardinal; Oak Snake</li> <li>Water depth: None of the plant communities were inundated during the survey.</li> <li>Is the community observed along the walk path representative of the community being measured? Yes to A, B, and C. Polygon D may be misidentified as a former sandhill, it exhibits the characteristic vegetation assemblages of a former pine/oak woods based on the soils and the current species composition.</li> <li>To what degree is the restoration in this area trending towards success? The maintenance of the high quality natural communities at this site is very successful.</li> <li>Potential Problems and solutions: Some downhill erosion on old road bed through Polygon A, not an area of significant concern.</li> </ul>	

Scientific Name	Common Name	Polygon A	Polygon B	Polygon C	Polygon D
<i>Acer floridanum</i>	Florida maple	X	X	X	
<i>Acer rubrum</i>	Red maple	X	X	X	
<i>Acer saccharinum</i>	Silver maple				
<i>Aesculus pavia</i>	Red buckeye				
<i>Agalinis fasciculatum.</i>	False fox glove				X
<i>Arnoglossum sulcatum</i>	Georgia Indian plantain		X		
<i>Arisaema dracontium</i>	Green dragon				
<i>Arisema triphyllum</i>	Jack-in-the- pulpit				
<i>Aristolochia serpentaria</i>	Virginia snakeroot	X			
<i>Arundinaria gigantea</i>	Giant cane	X	X	X	
<i>Asplenium platyneuron</i>	Ebony spleenwort		X		
<i>Bignonia capreolata</i>	Cross vine			X	
<i>Botrychium virginianum</i>	Rattlesnake fern		X		
<i>Boehmeria cyllindrica</i>	Falsenettle	X	X		
<i>Callicarpa americana</i>	Beauty berry				X
<i>Campsis radicans</i>	Trumpet vine	X	X		
<i>Carex gigantea</i>	Sedge		X		
<i>Carpinus caroliniana</i>	Ironwood	X	X	X	
<i>Carya tomentosa</i>	Mockernut hickory			X	
<i>Carya aquatica</i>	Water hickory		X		
<i>Castanea pumila</i>	Chinquapin				X
<i>Carya cordiformis</i>	Bitternut hickory	X		X	
<i>Celtis laevigata</i>	Sugarberry	X		X	
<i>Cephalanthus occidentalis</i>	Button bush	X			
<i>Cercis canadensis</i>	Red bud	X		X	
<i>Chaerophyllum procumbens</i>	Spreading chervil				
<i>Chasmanthium nitidum</i>	Shiny woodoats	X	X		
<i>Chrysogonum virginianum</i>	Green N gold				
<i>Colocasia esculenta</i> ***	Wild taro		X		

Scientific Name	Common Name	Polygon A	Polygon B	Polygon C	Polygon D
<i>Cornus florida</i>	Flowering dogwood			X	
<i>Cornus foemina</i>	Swamp dogwood		X		
<i>Cladonia</i> sp.	Reindeer lichen				X
<i>Crataegus aestivalis</i>	May haw		X		
<i>Crataegus marshallii</i>	Parsley haw		X		
<i>Crinum</i> sp.	Swamp lily		X		
<i>Crotalaria rotundifolia</i>	Round leaved rattlebox				X
<i>Dichanthelium acuminatum</i>	Tapered witchgrass				X
<i>Dichanthelium dichotomum</i>	Cypress witchgrass	X	X		
<i>Dichanthelium</i> sp.	Witch grass	X	X		X
<i>Diospyros virginiana</i>	Persimon				X
<i>Eupatorium compositifolium</i>	Yankeeweed				X
<i>Fagus grandifolia</i>	American beech	X			
<i>Fraxinus pennsylvanica</i>	Green ash	X	X		
<i>Galium tinctorium</i>	Stiff marsh bedstraw	X	X		
<i>Gelsemium rankinii</i>	Swamp jessamine		X		
<i>Gelsemium sempervirens</i>	Florida jessamine			X	X
<i>Gleditsia aquatica</i>	Water locust		X		
<i>Halesia diptera</i>	Two-winged silver bells				
<i>Hydrocotyle verticillata</i>	Swamp pennywort		X		
<i>Hymenocallis</i> sp.	Spider-lily		X		
<i>Hypericum</i> sp.	St. Johns wort	X	X	X	X
<i>Ilex opaca</i>	American holly			X	
<i>Ilex vomitoria</i>	Yaupon holly			X	X
<i>Iris</i> sp.	Iris		X		
<i>Juncus gymnocarpus</i> *	Coville's rush				
<i>Juniperus virginiana</i>	Red cedar	X		X	
<i>Kummerowia striata</i>	Japanese clover				X
<i>Ligustrum sinense</i> ***	Chinese privet			X	
<i>Liquidambar styraciflua</i>	Sweet gum	X	X	X	X
<i>Liriodendron tulipifera</i>	Tuliptree			X	
<i>Lonicera japonica</i> ***	Japanese honey suckle				
<i>Ludwigia</i> sp.	Rattlebox		X		
<i>Lygodium japonicum</i> ***	Japanese climbing fern	X	X		
<i>Magnolia grandiflora</i>	Southern magnolia	X		X	
<i>Melia azedarach</i> ***	Chinaberry tree			X	
<i>Menispermum canadense</i>	Moonseed	X	X		
<i>Mitchella repens</i>	Partridgeberry	X	X		
<i>Monarda punctata</i>	Spotted beebalm			X	
<i>Nyssa ogechee</i>	Ogeechee tupelo		X		
<i>Nyssa sylvatica</i> var. <i>biflora</i>	Black gum		X		
<i>Onoclea sensibilis</i>	Sensitive fern				
<i>Ostrya virginica</i>	Hop hornbeam	X	X		
<i>Panicum</i> sp.	Panic grass				X
<i>Persea borbonia</i>	Red bay	X	X	X	
<i>Phanopyrum gymnocarpon</i>	Savanna panicum		X		
<i>Pinus clausa</i>	Sand pine				X
<i>Pinus glabra</i>	Spruce pine				X
<i>Pinus taeda</i>	Loblolly pine	X	X		X
<i>Pityopsis graminifolia</i>	Narrowleaved silkgrass				X
<i>Planera aquatica</i>	Planar tree	X	X		
<i>Platanus occidentalis</i>	Sycamore	X			
<i>Pluchea odorata</i>	Camphorweed	X	X		

Scientific Name	Common Name	Polygon A	Polygon B	Polygon C	Polygon D
<i>Polygala sp.</i>	Smart weed				
<i>Prunus angustifolia</i>	Chicka saw plum				X
<i>Prunus caroliniana</i>	Cherry laurel	X			
<i>Prunus serotina</i>	Black cherry			X	X
<i>Quercus alba</i>	White oak				X
<i>Quercus falcata</i>	Southern red oak				X
<i>Quercus hemisphaerica</i>	Diamond oak				X
<i>Quercus laurifolia</i>	Laurel oak	X	X	X	
<i>Quercus lyrata</i>	Overcup oak	X	X		
<i>Quercus michauxii</i>	Basket oak	X			
<i>Quercus nigra</i>	Water oak	X	X	X	
<i>Quercus velutina</i>	Black oak				X
<i>Quercus virginiana</i>	Live oak	X		X	
<i>Ruellia caroliniensis</i>	Carolina wild petunia	X	X		
<i>Rhapidophyllum hystrix</i>	Needle palm	X	X		
<i>Rhus copallinum</i>	Winged sumac				X
<i>Rubus argutus</i>	Sawtooth blackberry	X		X	
<i>Rubus cuneifolius</i>	Sand blackberry				X
<i>Rubus trivialis</i>	Dewberry	X	X	X	
<i>Saccharum alopecuroides</i>	Silver plumegrass				X
<i>Sabal minor</i>	Bluestem palm	X	X		
<i>Sabatia calycina</i>	Coastal rosegentian				
<i>Samolus ebracteatus</i>	Water pimpernel				
<i>Sapindus saponaria***</i>	Soap berry				
<i>Sebastiania fruticosa</i>	Sebastian bush				
<i>Smilax bona-nox</i>	Green briar	X	X	X	X
<i>Smilax ecirrhata</i>	Upright carrion flower	X	X	X	X
<i>Smilax glauca</i>	Cat greenbriar				
<i>Smilax laurifolia</i>	Laurel greenbriar	X	X		
<i>Solidago caesia</i>	Bluestem goldenrod				X
<i>Solidago rugosa ssp. aspera</i>	Wrinkle-leaf goldenrod				X
<i>Spiranthes ovalis</i>	October ladiestresses				
<i>Symphyotrichum sp.</i>	Blue eyed grass				X
<i>Symplocos tinctoria</i>	Horse sugar	X	X	X	
<i>Taxodium distichum</i>	Bald cypress		X		
<i>Thyrsanthella difformis</i>	Climbing dogbane	X	X		
<i>Tilia americana var. caroliniana</i>	Carolina basswood	X	X		
<i>Toxicodendron radicans</i>	Poison ivy	X	X		
<i>Trichostema setaceum</i>	Narrow -leaved blue curls				X
<i>Trillium decipiens</i>	Chattahoochee river wakerobin				
<i>Ulmus alata</i>	Winged elm				
<i>Ulmus americana</i>	American elm	X	X		
<i>Ulmus rubra</i>	Slippery elm	X	X		
<i>Vaccinium arboretum</i>	Sparkleberry				X
<i>Vaccinium corymbosum</i>	High bush blueberry	X	X		
<i>Vaccinium elliotii</i>	Elliott's blueberry	X	X		
<i>Vaccinium staminium</i>	Deerberry				X
<i>Verbena brasiliensis</i>	Brazilian vervain				X
<i>Viburnum dentatum</i>	Arrow wood	X	X		
<i>Viburnum obovatum</i>	Walter's viburnum	X			
<i>Viola affinis</i>	Florida violet		X		
<i>Viola walteri</i>	Walter's violet				
<i>Vitis rotundifolia</i>	Wild muscadine	X		X	X

Scientific Name	Common Name	Polygon A	Polygon B	Polygon C	Polygon D
<i>Yeatesia viridiflora</i>	Green-flowered yeatesia				
<i>Yucca filamentosa</i>	Adam's needle				X

\* State Endangered , \*\*State Threatened, \*\*\* Nuisance exotic

Wildlife observed:

- Crayfish Chimney
- Catbird
- Red-Shouldered Hawk
- Cardinal
- Oak Snake