Womack Creek/Tates Hell Wetlands Restoration Annual Monitoring Report (2009)
Nationwide Permits – 200200233 (NW-JWS), 200205045 (NW-JWS) &
200205047 (NW-JWS) issued 2/6/2003, and 200205672 (NW-JWS) issued 5/2/2003

Impacts: I 10 bridge @ Little River in Gadsden County, 0.44 acre of river floodplain. Three bridges in Wakulla County (US 319 @ Little Tide Creek, US 319 @ Curtis Mill Creek, and Roberts Landing Road @ Silver Lake Creek), 0.56 acre of bottomland hardwood forest.

Mitigation: Womack Creek/Tates Hell
Monitoring Date: November 5, 2009

SCOPE

Bridge repair and construction at four sites have resulted in impacts that are being mitigated at this site. The Womack Creek/Tates Hell wetlands restoration site is located on the Ochlockonee River along the eastern side of State Road (SR) 67 in Tates Hell Swamp, Liberty County, Florida (Figure 1) at approximately 30◦1.5'N and 84◦35'W in Section 2, Township 6S, Range 4W. It is part of the 200,000 acres (>300 miles^2) Tates Hell Swamp, which is low-lying, poorly drained land between the Apalachicola and Ochlockonee rivers. Although this area historically was dominated by a variety of wetland types including wet savanna, wet flatwoods, cypress strands and hardwood swamps, much of the swamp was converted to slash pine (*Pinus elliotii*) plantation during the 1960s and 1970s. Since 1993, the NWFWMD, working with Florida Division of Forestry (DOF), has conducted restoration of portions of Tates Hell Swamp. A long-term vision is eventual restoration of the natural communities of the entire swamp. This mitigation project complements these ongoing efforts by focusing on an area not previously slated for restoration activities.

PROPOSED MITIGATION

To mitigate for 1.0 acre of wetland impact related to the four bridge projects, a 70-acre tract in the Womack Creek drainage of Tates Hell Swamp (Figure 2) was selected for restoration activities. The site is directly adjacent to the Ochlockonee River and consists of approximately 50 acres that will be restored to bottomland hardwood forest with about 20 acres of existing wetlands (Figure 3). The restoration areas were clear cut in the early 1990's and not replanted. These areas were left fallow, allowed to regenerate and were dominated by 6 to 20-foot laurel oaks, live oaks, water oaks, sweet gum, maple and titi.

Restoration Activities

The project was divided into two phases with all site preparation activities (mechanical reduction and burning) included in phase one and vegetation planting in phase two. Phase 1 was completed from 2005-2007 and Phase 2 was completed in 2008. Due to the vagaries of the weather no burning was carried out in the area until Fall 2007 when an unsuccessful partial burn was attempted, just prior to planting. Only partial success was noted with both burns because of the limited amount of fuel on site. Re-planting is scheduled for Winter 2010/2011.

Annual monitoring of the restoration site was carried out on 5 November 2009 (Figures 4-6). A series of transects was walked over the site noting vegetation present. Fifty-seven plant species were observed (Table 1). The dominant species were FAC and FACW species. There were numerous sweetgum seedlings at the site (FACW), which is a good indicator of latent site hydrology. The herbaceous and shrub species were primarily FAC species, so it will be important to ensure an effective burn is completed, preferably in the growing season. With the degree of wetness being experienced this year, there is a very good likelihood of progress toward project goals if an effective burn and spot treatment of cogon grass is achieved.

WORK SCHEDULE

Coordination with Florida Division of Forestry (Tates Hell State Forest): **communication ongoing**

Wiregrass planted on approximately 20 acres of site: **completed 01/18/08**

Annual monitoring performed: **completed 11/11/08**

Herbicide treatment for cogon grass: **Spring 2010**

Annual monitoring performed: **completed 11/05/09**

Re-planting: **Proposed for Winter 2010/2011**

SUCCESS CRITERIA

Mechanical reduction and burn: mechanical reduction of shrub and overstory was carried out by walkdown (May 2005), roller chop (August 2005), and gyrotrack (December 2007); a partial burn was carried out (September 2007) followed by a more successful second burn (December 2007). **Completed & Met**

Supplemental planting of 20 acres with wiregrass plugs on 3-ft centers: planting was completed in January 2008. **Completed & Met**

Vegetative cover shall be at least 85% with jurisdictional wetland vegetation for a period of one year: annual monitoring indicated that wetland vegetation coverage was 60-75% depending on site location. Dominant vegetation in restoration area was FAC and FACW.

Survival of the planted wiregrass shall be 85%: annual monitoring indicated that wiregrass survival was 40-45%. Planting of additional materials will occur in winter 2010/2011.

Nuisance exotic species shall be controlled and kept to less than 5% of the total percent cover: annual monitoring indicated less than 5% cover of exotic species. A small patch of cogon grass was noted on the eastern side of the tract and will be treated with herbicide in Spring 2010.

Figure 1. General location of the Womack Creek mitigation site along the Ochlockonee River in the northeastern portion of Tates Hell State Forest.

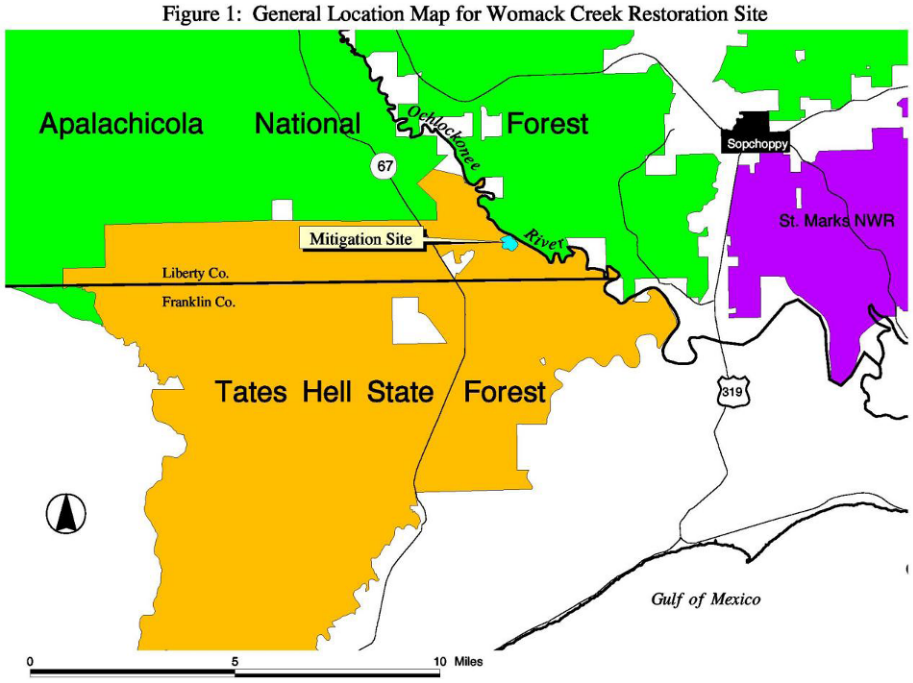

Figure 2. Site location indicating proximity to the Ochlockonee River and Womack Creek.

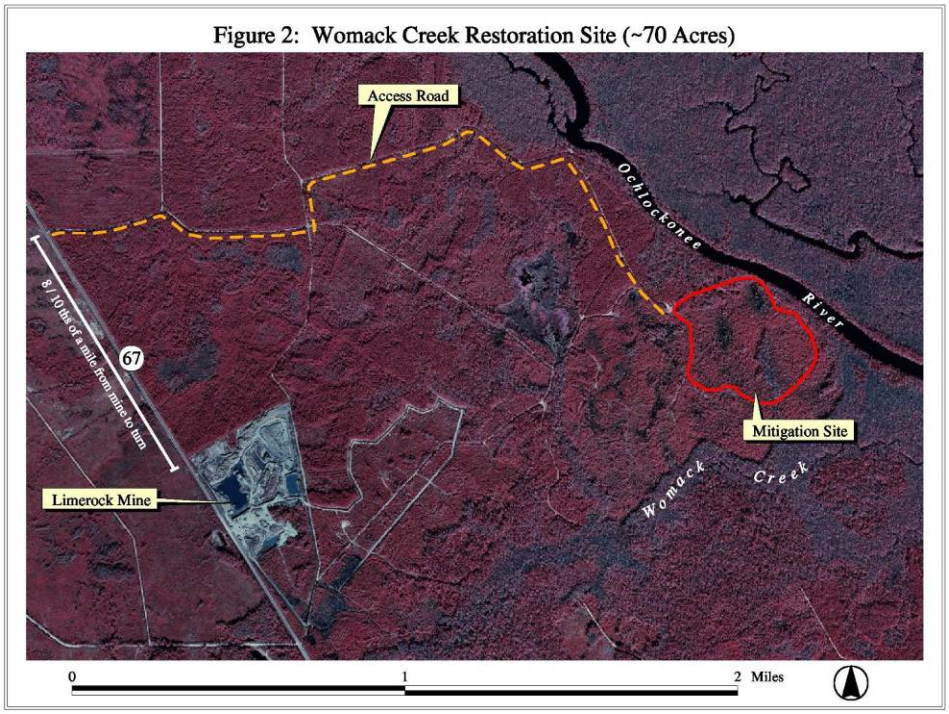

Figure 3. Aerial photograph of the site indicating locations of wetlands (darker, elongated patches in central and northern portions of site).

Figure 4. Typical appearance of restoration portion of site. Photo was taken facing west.

Figure 5. Typical appearance of replanted portion of site – ground cover.

Figure 6. Typical appearance of natural portion of site.

Table 1. Vegetation species list observed during the annual monitoring of the Womack Creek mitigation site on 05 November 2009.

Scientific Name	Common Name	2008	2009	Dominant	Form
Andropogon virginicus	Broom sedge	X	X	X	Tree
Aristida stricta	Wire grass	X	X		Tree
Baccharis halmifolia	Groundsel tree		X		Shrub
Callicarpa americana	Beauty berry	X	X		Tree
Carex sp.	Caric sedge	X	X		Tree
Centella asiatica	Centella	X			Tree
Cliftonia monoplylla	Black titi	X			Tree
Cyperus sp.	Sedge	X			Tree
Dicanthelium spp.	Witch grass	X			Tree
Dichanthelium aciculare	Needleleaf witchgrass	X	X		Shrub
Diospyros virginiana	Persimmon	X			Shrub
Eragrostis elliottii	Elliott lovegrass	X			Shrub
Eupatorium capillifolium	Dog fennel	X	X	X	Shrub
Euthamia caroliniana	Flat-topped goldenrod	X			Shrub
Fuirena squarrosa	Lake-rush	X			Shrub
Hypericum gentianoides	Orange grass	X	X		Shrub
Hypericum sp.	St. Johns wort		X		Shrub
Hyptis alata	Musk mint	X			Shrub
Ilex coriaceae	Tall gall berry	X			Shrub
Ilex glabra	Gall berry	X			Shrub
Ilex opaca	American holly	X			Shrub
Ilex vomitoria	Yaupon	X			Shrub
Jasmine vine	Jasmine vine		X		Vine
Juncus effusus	Soft rush	X			Vine
Juncus megacephalus	Large headed rush	X			Vine
Juncus sp.	Rush		X		Herb
Liquidambar styraciflua	Sweet gum	X	X	X	Herb
Ludwigia sp.	Seedbox	X	X		Herb
Lycopodium aloperuroides	Fox clubmoss	X			Herb
Magnolia grandiflora	Southern magnolia	X	X		Herb
Magnolia virginiana	Silver bay	X	X		Herb
Myrica cerifera	Wax myrtle	X	X		Herb
Osmunda cinnamomea	Cinnamon fern	X	X		Herb
Pinus glabra	Spruce pine	X	X		Herb
Pluchea foetida	Camphor weed	X	X		Herb
Poylgonum sp.	Smartweed		X		Herb
Polypremum procumbens	Rustweed	X	X		Herb
Pteridium aquilinum	Bracken fern	X	X		Herb
Quercus hemisphaerica	Diamond oak	X	X		Herb
Rhapidophyllum hystrix	Needle palm	X	X		Herb
Rhexia mariana	Pale meadow beauty	X			Herb
Rubus argutus	Black berry	X	X	X	Herb
Rubus trivialis	Dew berry	X			Herb
Sabal minor	Bluestem palm	X	X		Herb
Sabal palmetto	Sabal palm	X	X		Herb
Saururus cernuus	Lizard's tail	X			Herb
Scirpus cyperinus	Wool-grass	X			Herb
Scleria sp	Nut sedge	X	X		Herb
Smilax sp.	Greenbriar		X		Vine
Smilax laurifolia	Greenbriar	X	X		Herb
Solidago fistulosa	Pine barrens goldenrod	X	X	X	Herb
Vaccinium corymbosum	Highbush blueberry	X	X		Herb
Viburnum dentatum	Arrowwood	X			Herb
Viola lanceolata	Bog white violet	X			Herb
Vitis rotundifolia	Muscadine grape	X	X		Herb
Woodwardia areolata	Netted chain fern	X	X		Herb
Xyris sp.	Yellow-eyed grass	X			Herb

Site Inspection Field Form	
Project: Womack Creek	Date: 11/5/09
Name(s) of Data Collectors: Ann Redmond	Weather: 50°F/Partly Cloudy
Environmental Description: Photo #'s	
Polygon: GPS Location: Time: 07:45	

Qualitative Assessment

1. Mechanical reduction and burn: mechanical reduction of shrub and overstory was carried out by walkdown (May 2005), roller chop (August 2005), and gyrotrack (December 2007); a partial burn was carried out (September 2007)) followed by a more successful second burn (December 2007).
2. Supplemental planting of 20 acres with wiregrass plugs on 3-ft centers: planting was completed in January 2008.
3. Vegetative cover shall be at least 85% with jurisdictional wetland vegetation for a period of one year: annual monitoring indicated that wetland vegetation coverage was 60-75% depending on site location.
4. Survival of the planted wiregrass shall be 85%: annual monitoring indicated that wiregrass survival was 40-45%; a second planting to insure proper survival will be done in Fall 2009.
5. Nuisance exotic species shall be controlled and kept to less than 5% of the total percent cover: annual monitoring indicated less than 5% cover of exotic species. A small patch of cogongrass was noted on the eastern side of the tract and will be treated with herbicide in Fall 2009.

On at least a yearly basis, the site will be inspected as follows:

A: Perimeter for signs of trespassing, fencing and signage integrity and infestation by exotic or nuisance vegetation;

Signage intact along western boundary; eastern boundary open to public access (no gate).

B: Internal Roads (Both public and maintenance) for signs of dumping or trespassing, erosion, bridges and road integrity, and exotic or nuisance species infestations;

Internal road grown over with severe hog damage along all roads.

C: All construction areas for stabilization and re-vegetation, structure, operation, and integrity;

Seem fine.

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

Wetland areas seem to be appropriately hydrated. Vegetation appropriate for community; edges too dense and fire suppressed. Walk down area predominately andropogon, dog fennel, and sweet gum. Sow some wiregrass levies, but not much. Needs prescribed burn.

Vegetation Assessment Field Form Qualitative Assessment: Womack Creek
Date: 11/05/09
Name(s) of Data Collectors: Joe Busalacchi Weather: 50°F/Partly Cloudy
Environmental Description: Photo #'s
Polygon: GPS Location: Time:
Nuisance Species: Fuel Load: Minor fire suppression. Abundance of sweet gum seedlings and andropogon.
Wildlife Observations: Water depth: Is the community observed along the walk path representative of the community being measured? To what degree is the restoration in this area trending towards success? Potential Problems and solutions:

Plant Species observed:

Scientific Name	Common Name	2008	2009	Dominant	Form
Andropogon virginicus	Broom sedge	X	X	X	Tree
Aristida stricta	Wire grass	X	X		Tree
Baccharis halmifolia	Groundsel tree		X		Shrub
Callicarpa americana	Beauty berry	X	X		Tree
Carex sp.	Caric sedge	X	X		Tree
Centella asiatica	Centella	X			Tree
Cliftonia monoplylla	Black titi	X			Tree
Cyperus sp.	Sedge	X			Tree
Dicanthelium spp.	Witch grass	X			Tree
Dichanthelium aciculare	Needleleaf witchgrass	X	X		Shrub
Diospyros virginiana	Persimmon	X			Shrub
Eragrostis elliottii	Elliott lovegrass	X			Shrub
Eupatorium capillifolium	Dog fennel	X	X		Shrub
Euthamia caroliniana	Flat-topped goldenrod	X			Shrub
Fuirena squarrosa	Lake-rush	X			Shrub
Hypericum gentianoides	Orange grass	X	X		Shrub
Hypericum sp.	St. Johns wort		X		Shrub
Hyptis alata	Musk mint	X			Shrub
Ilex coriaceae	Tall gall berry	X			Shrub
Ilex glabra	Gall berry	X			Shrub
Ilex opaca	American holly	X			Shrub
Ilex vomitoria	Yaupon	X			Shrub
Jasmine vine	Jasmine vine		X		Vine
Juncus effusus	Soft rush	X			Vine
Juncus megacephalus	Large headed rush	X			Vine
Juncus sp.	Rush		X		Herb
Liquidambar styraciflua	Sweet gum	X	X	X	Herb
Ludwigia sp.	Seedbox	X	X		Herb
Lycopodium aloperuroides	Fox clubmoss	X			Herb
Magnolia grandiflora	Southern magnolia	X	X		Herb

Scientific Name	Common Name	2008	2009	Dominant	Form
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Myrica cerifera	Wax myrtle	X	X		Herb
Osmunda cinnamomea	Cinnamon fern	X	X		Herb
Pinus glabra	Spruce pine	X	X		Herb
Pluchea foetida	Camphor weed	X	X		Herb
Poylgonum sp.	Smartweed		X		Herb
Polypremum procumbens	Rustweed	X	X		Herb
Pteridium aquilinum	Bracken fern	X	X		Herb
Quercus hemisphaerica	Diamond oak	X	X		Herb
Rhapidophyllum hystrix	Needle palm	X	X		Herb
Rhexia mariana	Pale meadow beauty	X			Herb
Rubus argutus	Black berry	X	X	X	Herb
Rubus trivialis	Dew berry	X			Herb
Sabal minor	Bluestem palm	X	X		Herb
Sabal palmetto	Sabal palm	X	X		Herb
Saururus cernuus	Lizard's tail	X			Herb
Scirpus cyperinus	Wool-grass	X			Herb
Scleria sp	Nut sedge	X	X		Herb
Smilax sp.	Greenbriar		X		Vine
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Solidago fistulosa	Pine barrens goldenrod	X	X	X	Herb
Vaccinium corymbosum	Highbush blueberry	X	X		Herb
Viburnum dentatum	Arrowwood	X			Herb
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Woodwardia areolata	Netted chain fern	X	X		Herb
Xyris sp.	Yellow-eyed grass	X			Herb