

TATE'S HELL STATE FOREST (Franklin/Liberty Counties)**Initial State Acquisition:** *February, 1994***Area:** *202,437 Acres***Primary Watershed(s):** *Apalachicola; New; Ochlockonee***Current Number of DEP *FERI* Database Listings:** *12 Projects***Previous Restoration Activities -**

Restoration efforts on Tate's Hell State Forest (THSF) began in 1998 with federal funding from EPA as a Section 319 Non-Point Source Management Program Grant. Restoration activities on the forest have generally followed guidelines provided in the 1999 Northwest Florida Water Management District (NFWWMD) document, "Hydrologic Restoration of East Bay Basin and Associated Wetlands (Tate's Hell Swamp)". NFWWMD provides technical oversight as a major cooperater with DOF in hydrological restoration work on the Forest.

During the 40-year period of private ownership prior to the state's acquisition in 1994, over 800 miles of forest roads and ditches were constructed on the property to accommodate intensive forest management operations. These roads and their associated ditches were designed to provide year-round access to operations. Equipped with culverts and flashboard risers, water levels could be controlled according to site conditions and timber management needs. The extensive network of roads and ditches crisscrossed numerous drainages throughout the property, interrupting natural surface flow and impacting wetland functions.

As indicated, wetland restoration on THSF is conducted in cooperation with NFWWMD. Restorative practices employed thus far on the forest have involved, but are not limited to, road section removal, bridge and culvert installation, and the installation of ditch plugs and various types of water control structures with the objective of restoring the hydrology and hydroperiod of the landscape (see **Figures 1 and 2, and the Project Summary Table on page 45**).

Since public acquisition, over **80,000 acres** of over-stocked slash pine plantations have been thinned on THSF. More than **10,000 acres** of these plantations are to be restored to their natural historic community types, approximately **4,000 acres** of which were once open savannas and wet prairies. In the process, DOF has chopped, or "walked down", over **9,000 acres** and burned over **70,000 acres** for plant community and habitat improvement.



THSF Figure 1: A flashboard riser on John Allen Road allows water level manipulation during the year to accommodate forest management activities.

Approximately **9,400 acres**, mostly former slash plantations, have been converted by following the aforementioned activities with longleaf and wiregrass plantings. By the same token, in open areas with moderately drained soils, slash pine has been re-planted or allowed to re-seed naturally where suitable seedbeds have been created by land-clearing and/or burning.

Current/Planned/Proposed Restoration Activities –

To date over 15 restoration projects have been initiated on THSF. **Ten** of the original fourteen projects listed on DEP’s *FERI* web site have been initiated, several on-going, involving over a third of the forest. At least **ten** projects thus far initiated on THSF have been completed. The **table on page 45** lists the restoration projects and their current status on THSF since state ownership in 1994. As can be seen by the summary

data found in the table, the projects vary in complexity and scope.



THSF Figure 2: A low-water hard-surface crossing installed on Deep Creek Road as part of the Doyle Creek Mitigation Project.

Project monitoring on THSF is on-going. The purpose is to evaluate progress of the work and to generally assess the immediate and short-term effectiveness of restoration efforts on the target wetland. Monitoring conducted on the completed projects provides data on water flow, water quality, and hydroperiod changes. Both the DOF and NFWMD conduct project monitoring on the forest.

Because silviculture has been such an important historical land use in the state, timber management remains as one of the top utilization goals for most state forests, including Tate’s Hell. However, ecological and wetland restoration on Tate’s Hell State Forest continues on a large scale as part of a comprehensive effort to restore the Apalachicola Bay Estuarine system that has historically been so important to northwest Florida’s shellfish industry. This effort involves a multi-faceted approach and requires the cooperation of DOF and our partnering agencies.

As development continues along the Northwest Florida Coast there will be more opportunities for mitigation projects. Following are examples of recent THSF projects implemented by the NFWMD with mitigation funding:

The **Trout Creek Dwarf Cypress Project** was one of the first restoration projects to be implemented on THSF. This project benefited approximately 500 acres and involved the removal of approximately 7,000 feet of above-grade forest road in 1999 and the construction of an interpretive boardwalk/observation tower in 2001.

The **Gator Creek/Gully Branch Enhancement/Restoration Project**, initiated in 2003, was completed in the fall of 2005 and involved the replacement of badly damaged culverts with two 70-foot steel bridges. The project restored wetland community functions and values to approximately 12,000 acres of the forest, and natural flow to 4 and 6 miles of Gully Branch and Gator Creek, respectively.

Other restoration activities within the project area in 2003 and 2004 involved two treatments of single-drum chopping and prescription burning in historic flatwoods and wet prairies to restore sheet flow and encourage re-establishment of the native groundcover. Slash pine was re-planted under DOF supervision as a natural component of the flatwoods portion of this project area in the winter of 2004 as well.

In 2004 and 2005 activities continued with the removal of 1,700 feet of road segments and the installation of 4 hardened low-water crossings, 3 48-inch culverts – one with a flashboard riser, and 22 ditch plugs.

The **Doyle Creek Project** was initiated in 2005 and completed in 2007. The project was funded through the FDOT mitigation program to offset impacts on 2.27-acres of wetlands due to the widening of SR 65 in Liberty County, near the western boundary of THSF. The project involved the removal of approximately 18,000 feet of road and associated ditches in the Doyle Creek Drainage Basin on the forest. The road and adjacent ditches were restored to natural grade by pushing the road fill into the adjacent ditches. The road footprints were then planted with wiregrass (*Aristida stricta*) and Cypress (*Taxodium spp.*).



THSF Figure 3: Road removal as part of the Doyle Creek Restoration Project, implemented through NFWFMD with FDOT mitigation funds.

Additionally, three low-water hard-surface crossings and two 24-inch metal culverts were installed on adjoining service roads south of the road removal site (see **Figure 3**). The project potentially benefits up to 1,800 acres of hydric pine flatwoods/wet savanna/cypress flats.

The **Womack Creek Mitigation Project** began in 2003 but was delayed because of extremely wet conditions due to the 2004 and 2005 hurricane seasons. Work resumed in 2006 and was completed in 2007. Paid for through Florida DOT mitigation funds, the project will restore approximately 50 acres of mixed forested wetlands which converted to mesic hardwood shrub after a clearcut site had been abandoned almost 20 years ago. The shrub subsequently choked out most of the native wetland plant species. Techniques involved “walking the vegetation down” with heavy equipment rigged with a “V-blade” and roller-drum choppers filled with water.

The **Lower Trout Creek Carrabelle Ventures Mitigation Project**, in the southern portion of the forest, was completed in 2006. The project objective was to restore the natural flow of a tributary to the New River and to restore natural wetland vegetation that had been impacted by road construction and ditching in the 1960s. Restoration activities involved removing two sections of road, installing two ditch plugs, a flashboard riser on Car Body Road, and five 36-inch culverts on Dry Bridge Road.

Within the Lower Trout Creek restoration area, as with other project areas on THSF, DOF is managing the existing vegetation and timber in context with accomplishing the overall ecological goals unique to THSF. Ecological timber management activities include clearcutting to restore off-site pine plantations to stands of original pine species, thinning to facilitate prescribed burning, and mechanically clearing understory to restore ground cover conditions in wet prairies and savannas.

Many of the even-aged slash pine plantations are being restored to uneven-aged forest systems. Where applicable, DOF timber management activities involve restoring off-site slash pine plantations to longleaf-wiregrass communities and wet savannas. The Division has re-introduced an aggressive fire regime to control the encroachment of woody shrub species such as gallberry (*Ilex glabra*) and "titi" (*Cyrilla racemiflora*) into wetlands. In burn areas where the hydrology can be manipulated by using a combination of ditch plugs equipped with flashboard risers, this effort has been very successful.

Wetland Restoration Needs Assessment –

NFWFMD initiated work on a Comprehensive Hydrological Restoration Plan in the summer of 2007. The Plan will include data from a variety of sources, including FNAI, FFWCC, DOF, USFWS, and others. As of this writing, criteria have been developed, though not finalized, for prioritizing wetland restoration within and between watersheds. Also, *Lidar* elevations have been taken for the entire forest, which will help in the determination of actual flow patterns and subsequent restoration activities. However, deliverables for the plan are not expected until perhaps 2009.

A DOF wetland restoration needs assessment has been initiated, but not completed for Tate's Hell State Forest as of this writing. Therefore, no findings are available at this time.

Florida Division of Forestry
TATE'S HELL STATE FOREST
Hydrological Restoration Project Summary
As of July 1, 2008

THSF Table A

Ref No	PROJECT NAME	YEAR INIT'D	LOC./ TRACT	TYPE OF PROJECT				TYPE OF FUNDING						ACRES ** (Act. & Est.)	COST		YEAR COMPL
				Wtld Enhcm't	Wtld Rest'n	Up-land	Other	COE/ DEP Mit	SWIM	Other NFWF MD	FDOT Mit	Fed. Grant	DOF/ FWC		Estimated	Actual	
1	Big Slough Branch	1998	NW		X				X					4,100	\$300,000		1999
2	Coastal Scrub	1999	S			X						X		(2,500)	Undetermined		On-Going
3	Comprehensive Hydro. Rest. Plan	2007	All				X			X				(200,000)	Undetermined		On-Going
4	Doyle Creek	2006	SW		X						X			1,820	\$195,500	\$118,050	2007
5	Franklin Co. School	2007	SW	X				X						300	\$8,000		
6	Gator Creek/Gully Branch	2005	NE		X				X					9,750		\$520,000	2006
7	Gully Branch Savanna	2006	NE		X			X						4,000	\$100,000		2007
8	High Bluff Creek	2000	SW	X				X						3,200	Undetermined		2000
9	Hog Branch Watershed *	1996	NW				X				X			(6,850)		Undetermined	*
10	Longleaf/Wiregrass Ecosystem	1999	Var.	X		X						X		(23,300)	Undetermined		On-Going
11	Lower Trout Creek	2005	S	X				X						500	\$12,000		2005
12	New River Corridor		Ctrl.	(X)				X						(1,800)	\$10,000		
13	Pine Log Lakes(Langwood Ind)	2000	NE	X				X						8,750		\$10,000	2000
14	RCW Habitat	1999	Var.		X							X		(200,000)	Undetermined		On-Going
15	South Creek (Carrabelle Rock, LLC)	2003	NE	X				X						1,500	\$20,000		
16	Sumatra Savannas		NW		(X)			X		X		X		3,600	\$30,000		
17	THSF Watershed Survey *	1996	All				X				X			(250,000)	Undetermined		*
18	Trout Creek/Dwarf Cypress	1999	SW		X				X					500	\$35,000		2000
19	Whiskey George Creek (SuperHoldings, LLC)	2007	SW	X				X						10		\$10,000	2007
20	Womack Creek/3 Bridges	2007	NE		X	X				X		X		70	\$25,000	\$52,565	2007
21	Yent's Bayou		S	(X)				X			X			970	Undetermined		

SUBTOTALS

\$735,500.00 \$710,615.00

TOTALS

39,070 Ac.**

\$1,446,115.00

* Project was abandoned

(X) = Project proposed but not yet initiated

** Acres in () not added to total
Items/Figures in BOLD provided by NFWFMD