

**TIGER BAY STATE FOREST** (Volusia County)**Initial State Acquisition:** *March, 1979***Area:** *27,331 Acres***Primary Watershed(s):** *Middle St. Johns River***Current Number of DEP *FERI* Database Listings:** *1 Project***Previous Restoration Activities -**

In the spring and early summer of 1998 intense wildfires burned a large amount of the standing timber on parts of the Tiger Bay State Forest (TBSF). Consequently, many of the primary and secondary roads were severely damaged by the unusually large volume of logging traffic during salvage operations after the fires. Over the next several years the DOF Road Crew made improvements to TBSF roads, involving re-shaping road beds and shoulders, placing, replacing, and/or relocating culverts and low-water crossings at hydrologically strategic locations. These activities restored surface drainage that had been impounded to varying extents by many of the roads on the forest.

Over 20 years ago the St Johns River Water Management District (SJRWMD), in an effort to avoid or mitigate impacts from groundwater withdrawals by the Daytona/Ormond Beach area, began evaluating the benefits of augmenting surface water in nearby wetlands for re-hydration and recharge. **Bennett Swamp**, a 2,200-acre swamp located on the east side of the Rima Ridge Tract of TBSF, was selected as a pilot project site because biological indicators of altered hydrology were observed there.

The natural hydrology of Bennett Swamp had been significantly affected by human activity for many years. **Thayer Canal**, one of many mosquito control structures constructed in the area prior to 1980, drains the swamp to the east. In January, 2004 the SJRWMD installed an adjustable weir on Thayer Canal, with the purpose of increasing the hydroperiod of the swamp, thereby reducing stormwater flows and improving groundwater recharge.

Volusia County is responsible for operation and maintenance of the weir; SJRWMD is responsible for monitoring the effects of the increased water levels within Bennett Swamp; and DOF is responsible for evaluating the biological effects of the restoration on the timber stands within TBSF, using 5 permanent tenth-acre monitoring plots.

SJRWMD monitoring ended in 2007, showing positive effects on wetland functions and wetland communities within Bennett Swamp. DOF will complete a 5-year monitoring program in 2008. As of this writing the data collected thus far by DOF has been inconclusive as to any effect on timber stand development within the project area.

**Current/Planned/Proposed Restoration Activities –**

In May, 2005 some restoration activities were initiated on the Clark Bay Tract, owned previously by Plum Creek Timberlands, LP and purchased by SJRWMD in July 2002 under the “Florida Forever” Program and later added to the Tiger Bay State Forest in 2004. Two damaged 12-inch culverts located on **Clark Bay Road** were removed and

replaced with three 48-inch arch culverts as part of a larger plan for hydrological restoration of the **Clark Bay Swamp**, within the Clark Bay Tract of the TBSF.

In other parts of the swamp the TBSF management team is restoring wetland areas damaged in recent fires with cypress tree planting and other activities (**see Figure 1**)

The swamp is approximately 345 acres in size and is impacted by culverted above-grade forest roads surrounding it. Historically, surface drainage in the bay itself flowed in a west-southwest direction towards Little Haw Creek. Surface flow from the rest of the tract that didn't feed Clark Bay generally flowed in a north-northeast direction into Tiger Bay, ultimately feeding the Tomoka River.

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**TBSF Figure 1:** Part of a wet depression replanted in 2007 in an effort to restore the plant community lost in recent wildfires

Restoration would involve replacing defective culverts and installing culverts and/or low-water crossings to increase flow. However, restoration activities may be constrained by

several factors. First, a long-term timber lease is still in affect with Plum Creek for the timber rights until 2017; also, private residences adjacent to the swamp area to the north west may be affected by hydrological changes of the wetland; finally, a major Florida Power & Light (FP&L) transmission right-of-way involving numerous culverted crossings traverses the swamp and will require cooperation and involvement by the power company.

### **Wetland Restoration Needs Assessment -**

No restoration needs assessment work has been conducted on Tiger Bay State Forest as of this writing.