

## JOHN M. BETHEA STATE FOREST (Baker County)

**Initial State Acquisition:** *April, 2001*

**Area:** 37,736 Acres

**Primary Watershed(s):** *Suwannee River; St. Mary's River*

**Current Number of DEP *FERI* Database Listings:** *0 Projects*

### **Previous Restoration Activities -**

In 2005, in response to concerns of an adjacent landowner, the John Bethea State Forest (JMBSF) management team installed earthen ditch plugs on old firelines and re-located several culverts on Road 21 and others to restore natural sheet flow towards the St. Mary's River in the northeastern part of the forest.

Except for restoration and rehabilitation work conducted on the forest after the swamp fires of 2004, no formal wetland restoration activities had previously been implemented on JMBSF. Post-fire activities focused on improvement of primary access roads involving the replacement of damaged/inadequate culverts with either new culverts or low-water crossings, depending on the situation. Re-habilitation was also done on major firebreaks that impacted natural drainage and/or wetland vegetation communities on the forest (**see Figure 1**). In certain areas these activities enhanced surface drainage on the forest, though to what extent is uncertain.



**JMBSF Figure 1:** Old Fireline in wetland, trapping and diverting surface flow near the north forest boundary line.

### **Current/Planned/Proposed Restoration Activities-**

The **Basin Marsh Project** was proposed in 2005 and involves mechanical and fire treatments on approximately 300 acres within an existing slash pine plantation to restore basin marsh plant communities. The hydroperiod of the site has been altered as a result of ditching and past land management activities. As of this writing no work has been done on this project.

### **Wetland Restoration Needs Assessment –**

In April, 2007 field data was collected on the northern part of the John Bethea State Forest that extends from State Highway 2 to the Georgia line. This area represents approximately 10,000 acres of the entire Forest.

**One hundred and thirty** assessment points were established during this time, covering approximately **80%** of the roads, trails, and firelines in that portion of the JMBSF.

In July, 2007 another hydrological assessment was conducted on the forest as part of a larger, more comprehensive assessment. The goal of this assessment was to determine the restoration needs as a result of the “Bugaboo Wildfire” which occurred in May, 2007. The wildfire burned approximately 79% of the forest, including much of the northern portion of the forest that had been assessed previously. Although between both visits most of the forest was covered, the intensity of the assessment was limited by the time and personnel available.

Nevertheless, between the two assessments over **350** site points were established and **60 %** of the roads, trails and firelines were evaluated. The assessment evaluated **61** improved and unimproved low water crossings, **56** culverted crossings, **49** cross-drain culverts, **86** fireline sections, including “potato patch” and major pushed lines, **18** ditches, and **54** service roads that appeared to impact surface drainage. The following items were considered significant findings as a result of the assessments. Additional information about post-fire restoration plans and implementation is available upon request from the Division of Forestry.

1. Several areas of the forest have been protected by a fireline construction technique referred to as “potato patching”, in which narrow firelines are established between planted rows within a pine stand. Oftentimes these plowlines are connected to road ditches or other plowlines which increases the potential of accelerating surface drainage from an area, or diverting it away from wetlands to which it would naturally flow (**see Figure 2**). As a result of the post “Bugaboo” fire assessment DOF is in the process of rehabilitating these areas
2. The few areas on JMBSF identified as **basin marshes** in FNAI’s Historic Community Type Inventory have been altered as a result of intensive forest management practices on the property in the past. The DOF is interested in restoring as many of these areas to their natural state as possible.



**JMBSF Figure 2:** “Potato Patching” firelines in pine stands on JMBSF sometimes tie into road ditches, which may result in accelerated surface drainage of some areas on the forest.

3. Hydrological restoration has been identified as crucial to making JMBSF more resistant to devastating wildfires such as the “Bugaboo”.
4. Large pushed firelines and their resultant berms established during the “Bugaboo” fire suppression effort are to be rehabilitated and stabilized as resources can be committed.
5. Surface drainage is impeded by above-grade roads and accelerated by below-grade roads and firelines in many places throughout the forest. Strategic placement of culverted or low-water crossings and earthen “plugs” is imperative to restore the natural hydrology across the landscape.
6. As in the case of any State Forest that shares property lines with private land owners, there is concern for off-site hydrological impacts resulting from restoration activities on the JMBSF. Every effort should be made to avoid such off-site impacts on all State Forests.