Wassaw National Wildlife Refuge is a 10,053-acre refuge in the Savannah Coastal Refuges Complex (SCRC) that encompasses a barrier island and extensive salt marshes. Oak maritime forests dominate the north end of the island while virgin slash and loblolly pines dominate the south. Management objectives for the island include maintaining forest and beach communities, providing habitat for migratory birds, and protecting endangered plant and animal species. To increase understanding of Wassaw’s historical fire regime, we conducted a dendrochronological analysis of fire history using fire-scarred partial cross-sections from pines on Wassaw Island.

No fire scars were found in partial cross-sections prior to 1981, although growth rings of many samples dated back to the 1950s. The fire return interval for Wassaw was 2.10 years. Prescribed fires were ignited only during the dormant season, while most wildfires ignited during the growing season. To further interpret our fire scar record, an analysis of vegetation composition and structure will be initiated in 2012.

The characteristics of the fire record captured in our study support the adage that “absence of evidence is not evidence of absence”. Fires that burned prior to our scarred tree record began in 1981 were most likely lightning ignited. The fires were most likely small and/or patchy, due to higher moisture content of fuels during the growing season, as well as the likelihood that precipitation accompanied lightning-producing thunderstorms. If this is the case, our results suggest fires would have been less likely to scar Wassaw’s pines.

Given USFWS stated objectives of resource protection and enhancement, the short return intervals of documented wildland fires, and the fire scar record, we recommend the following for Wassaw’s pine dominated forests:

- When feasible (sufficient personnel and equipment available and climate conditions conducive to good burn results), allow wildland fires to burn.
- Conduct prescribed burning in smaller segments of the island on a 1-3 year rotation, focusing on growing season burns whenever possible.
- Carefully consider climate conditions for wildland and prescribed fire to ensure resource protection. This cycle would keep fuel loads low, protecting resources and structures from intense fire. Hardwood encroachment would be minimized, maintaining the sub-climax pine forest. Variation in burn frequency and season would create and maintain habitat patchiness, increasing plant and animal diversity.
Recent Research

Fire Reinforces Structure of Pondcypress (*Taxodium distichum* var. *imbricarium*) Domes in a Wetland Landscape


Fire periodically affects wetland forests, particularly in landscapes with extensive fire-prone uplands. Rare occurrence and difficulty of access have limited efforts to understand impacts of wildfires fires in wetlands. Following a 2009 wildfire, we measured tree mortality and structural changes in wetland forest patches. Centers of these circular landscape features experienced lower fire severity, although no continuous patch-size or edge effect was evident. Initial survival of the dominant tree, pondcypress (*Taxodium distichum* var. *imbricarium*), was high (>99%), but within one year of the fire approximately 23% of trees died. Delayed mortality was correlated with fire severity, but unrelated to other hypothesized factors such as patch size or edge distance. Tree diameter and soil elevation were important predictors of mortality, with smaller trees and those in areas with lower elevation more likely to die following severe fire. Depressional cypress forests typically exhibit increasing tree size towards their interiors, and differential mortality patterns were related to edge distance. These patterns result in the exaggeration of a dome-shaped profile. Our observations quantify roles of fire and hydrology in determining cypress mortality in these swamps, and imply the existence of feedbacks that maintain the characteristic shape of cypress domes.

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Upcoming Events


- Florida Native Plant Society 32nd Annual Spring Conference, May 17-20, 2012 in Plant City, FL. Registration is now open. For more information go to [www.fnps.org](http://www.fnps.org).


CFEOR Mission:
To develop and disseminate knowledge needed to conserve and manage Florida’s forest as a healthy, working ecosystem that provides social, ecological and economic benefits on a sustainable basis.

Upcoming Events

- **National Tree Farmer Convention, June 14-16, 2012** in Jacksonville, FL. Tree Farmers, foresters, and natural resource professionals from across the country will gather for hands-on activities and visit local Certified Tree Farms. More information at the conference website [www.treefarmsystem.org](http://www.treefarmsystem.org).

- **39th Annual Natural Areas Conference—Keeping Natural Areas Relevant and Resilient, October 9-12, 2012** in Norfolk VA. For more information go to [http://www.naturalarea.org/12conference/](http://www.naturalarea.org/12conference/).


- **The 21st International Pepper Conference, November 4-6, 2012** in Naples, FL. For more information contact the Hendry County Extension, Gene McAvoy, 1-863-674-4092 or [gmcavoy@ufl.edu](mailto:gmcavoy@ufl.edu).

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