Fire and Fire Surrogate Study in the Gulf Coastal Plain

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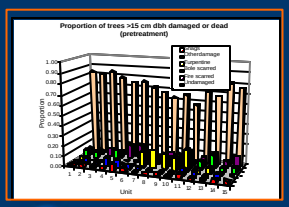
Where

The Solon Dixon Forestry Center is located south of Andalusia, Alabama. It has upland longleaf forest with an understory dominated by yaupon holly, typical of many longleaf areas in the middle and upper costal plains of the south

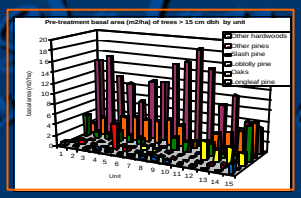
Vegetation

Longleaf communities of the middle and upper Gulf Coastal Plains historically had an overstory dominated by longleaf pine with some other southern pines and occasional hardwoods while the understory was grass dominated with lesser amounts of woody shrubs.



The Problem

Many US forests, especially those that historically burned at short-intervals, are too dense and/or have excessive quantities of fuels. Widespread treatments are needed to restore ecological integrity and reduce the high risk of uncharacteristically severe and destructive wildfires in these forests. Among possible treatments, however, the appropriate balance among cutting, mechanical fuel treatment and prescribed fire is often unclear. For improved decision making, resource managers need much better information on the consequences of alternative management practices involving fire and mechanical, i.e. fire surrogate treatments.



The Solution

To fill this knowledge gap, a team of scientists and land manage rs has designed an integrated national network of long-term research sites, with support from the U.S. Department of Agriculture and Department of Interior Joint Fire Science Program. This long-term interdisciplinary research has been implemented to quantify the consequences and tradeoffs of alternative fire and fire surrogate treatments.

Research Objective: **Develop realistic management options that will:**

1) Reduce fuel loads and thereby wildfire hazards.
2) Change the stand structure by reducing the midstory.
3) Readjust the composition and structure of the understory so grasses and forbs are dominant.
4) Accomplish fuel reductions, structural adjustments, and compositional changes without compromising long-term integrity or sustainability of the ecosystem.
5) Be economically and socially acceptable.

Research Approach: **Quantify the initial effects of fire and fire surrogate treatme nts on; vegetation, fuel and fire behavior, soils and forest floor, wildlife, forest insects and tree diseases while considering treatment costs and utilization economics.**

Treatments

1) Untreated control.
2) Prescribed fire only, with periodic reburns.
3) Initial and periodic cutting, each time followed by mechanical fuel treatment and/or physical removal of residue; no use of prescribed fire.
4) Initial and periodic cutting, each time followed by prescribed fire; fire alone could also be used one or more times between cutting.
5) Herbicide treatment followed by prescribed fire with periodic reburns.

Desired Future Condition

Typical Start Point

Trees Marked for Thinning

Vegetation Transect

Fuel Transect with Drift Fence in Foreground

Skid Trail in Thinned Unit

Cooperators

Research Coordinators

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Fire and Fire Surrogate Treatments For Ecosystem Restoration

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