

The National Fire and Fire Surrogate Study: Ecosystem Responses to Fuel Reduction in the Piedmont and Southern Appalachians

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Forested ecosystems across the United States have changed dramatically over the past century due to fire exclusion and changes in land use. Ecosystems that were once dominated by frequent natural or anthropogenic fires are now dense with small trees and have excessive loading of fuels. The result has been the loss or deterioration of many ecosystem types and the increased risk of wildfire. There is general agreement that fuels must be treated in these ecosystems but the ecological consequences of various methods of fuel reduction are unknown.

The Fire and Fire Surrogate study is a national program, funded by the Joint Fire Sciences Program, to quantify the ecological and economic consequences of prescribed fire and mechanical fuel-reduction treatments. Thirteen ecosystems have been selected across the United States that were once maintained by frequent fire. At each site, a strict set of measurement protocols is being used to study ecosystem structure, vegetation, fuels, small mammals, herpetofauna, avifauna, soils, entomology, pathology, economics, and utilization. Two of these sites are in the Piedmont and Southern Appalachian Mountains. The Piedmont site was installed in 2000 and 2001. It is representative of many non-industrial private forests of the region, which tend to be unmanaged and have heavy fuel loads. The Appalachian site will be installed in 2001 and 2002. Sites will be selected on ridgetops and south-facing slopes where fire was once common. On these sites wildfire risk is high where cover of mountain laurel and/or rhododendron is high.

The poster will describe the objectives and protocols of the National Fire and Fire Surrogate Study and the status of study sites in the Piedmont and Southern Appalachian Mountains.