Ethnoecology of Fire: An Experimental Approach in the Ohio Valley

Erin B. Hines[1], Jan Salick[1], Elaine Kennedy Sutherland[2], Todd F. Hutchinson[3] and Steve Sutherland[4]
[1]Department of Environmental and Plant Biology, Ohio University, Athens, OH 45701, [2]USDA Forest Service, Rocky Mountain Research Station, Forestry Sciences Laboratory, PO Box 8089, Missoula, MT 59807, [3]USDA Forest Service, Northeasterm Research Station, 359 Main Road, Delaware, OH 43015, [4]USDA Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory, P.O. Box 8089, Missoula, MT 59807

Native Americans used fire to manipulate nature and directly benefit their survival. Certain plant species, many of which were useful to Native Americans as sources of food, fiber, dye, medicine, and game browse, are adapted to survive and even thrive in post-burn environments. Evidence suggests that Native Americans intentionally set fires to encourage growth and survival of such useful species. Data from a 5-year study conducted by the U.S. Forest Service in Southeastern Ohio to track the long-term effects of prescribed fire on forest composition were used to track changes in useful plant abundance under certain fire regimes. Preliminary analyses of pre-burn data establish covariates between burn treatments and moisture indices. Split-plot block ANOVAs of the 1999 post-burn data suggest an increase in many fern and graminoid species, along with an increase in *Vaccinium* and early-successional tree species. The results from this study have implications for modern forest management and global conservation. Fire increases diversity in both botanical and zoological systems by initiating patches of early succession in plant communities, thus increasing resources available for ecosystem interactions and possible human use. By encouraging the growth of both timber and non-timber forest products, resource managers can move towards more multiple-use forest management.

Managing Red-Cockaded Woodpeckers *(Picoides borealis)* Affects Breeding Bird Communities of Pine-Oak Forests in Southeastern Kentucky

Martina Hines
Kentucky State Nature Preserves commission

Breeding bird communities were surveyed on the Daniel Boone National Forest, Kentucky, using point counts, in mid May, late May and early June 1994 and 1995. Twenty-eight stands of Appalachian pine-oak forest were surveyed, of which 14 were managed for red-cockaded woodpeckers (RCWs). Management involved removal of midstories (2.5 to 17.5 cm dbh) and repeated prescribed burns. Results indicate that these management practices appear to have effects similar to that of timber harvests on species composition and abundance of breeding birds. Prescriptions for RCWs were beneficial to several species associated with early successional and edge habitat, including at least some neotropical migrants whose numbers are decreasing in eastern North America (e.g., indigo bunting, hooded warbler, and prairie warbler). Management for RCWs appears to decrease habitat quality for other neotropical migrants, particularly those associated with forest interiors.