

# EFFECT OF TIME ELAPSED AFTER PRESCRIBED BURNING IN LONGLEAF PINE STANDS ON POTENTIAL PREY OF THE RED-COCKADED WOODPECKER

James L. Hanula and Kirsten C. New

U.S. Department of Agriculture, Forest Service, Southern Research Station, 320 Green Street, Athens, GA 30602

## ABSTRACT

The effects of dormant- and growing-season prescribed burns on the potential arthropod prey of the red-cockaded woodpecker (*Picoides borealis*) were studied in longleaf pine (*Pinus palustris*) stands on the upper Coastal Plain of South Carolina. Sampling was conducted 0, 1, 2, or 3 years postburn. Stands were burned once during the winters of 1991, 1992, 1993, and 1994 or in the summer of 1992. Four types of traps sampled arthropods in the litter layer, the herbaceous understory, and on the bole of pine trees. Woodpecker prey abundance and biomass were sampled continuously from 30 June 1993–30 June 1994. Overall arthropod diversity was sampled seasonally in June, October, January, and April of the same year.

The different trap types had similar arthropod diversity and evenness, but most had low faunal overlap, which indicates that they effectively sampled different parts of the arthropod community. When captures from all trap and prey types were combined for each plot, no significant differences were found among winter-burned plots or between winter- and summer- burned plots. However, certain prey types were affected by burning. Among stands burned in winter, spider abundance was highest in samples from the soil/litter layer of stands burned 3 years prior to sampling. Comparison of stands burned in winter 1992 to those burned in the summer showed that the winter 1992 burns had higher spider and ant (Hymenoptera: Formicidae) biomass on the tree boles. Spiders appeared to be the only group affected by winter burning. Spiders and ants were affected by the summer burning. In general, time since the prescribed burns were applied had little effect on the primary arthropod prey of the red-cockaded woodpecker.

*Citation:* Hanula, J.L., and K.C. New. 2000. Effect of time elapsed after prescribed burning in longleaf pine stands on potential prey of the red-cockaded woodpecker. Page 157 in W. Keith Moser and Cynthia F Moser (eds.). Fire and forest ecology: innovative silviculture and vegetation management. Tall Timbers Fire Ecology Conference Proceedings, No. 21. Tall Timbers Research Station, Tallahassee, FL.