

## IMPACTS OF OAK DECLINE ON SPECIES COMPOSITION AND STAND STRUCTURE IN NORTHERN ARKANSAS: FOUR CASE STUDIES

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Oak decline has caused moderate to severe damage to red oaks throughout the Ozark Mountains of Arkansas and Missouri. In northern Arkansas, four mature oak forests severely damaged by oak decline were selected as case studies to describe changes in species composition and stand structure and to assess regeneration potential of oaks and non-oak species. In summer 2003, 36 plots are being established in each of four stands located on the Ozark-Saint Francis National Forest. Plots consist of one BAF 10 overstory/midstory plot in which all living, dying, and dead trees > 5.0 in. dbh are being tallied by species, tree condition, and dbh. A series of smaller plots are nested within each prism plot. These include: three 0.005-ac sapling plots in which all living trees 1.0-5.0 in. dbh are being recorded by species and dbh; and three 0.001-ac regeneration plots in which we are measuring tree seedlings less than 1.0 in. dbh and taller than 1.5 ft by species and 1-ft height class. Portions of the four study areas will be prescribed burned in fall 2003 and spring 2004 to assess the role of fire in restoring oak forests severely impacted by oak decline in the Ozark Mountains.

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