

# Management and Prediction of Red Oak Decline in the Missouri Ozarks

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Abstract: In 1990, 72, 0.50-acre permanent plots were laid out and tree and regeneration data was collected on four sites which showed evidence of red oak decline in the Missouri Ozarks. In the fall of 1990, three treatments were applied; a control, selection cutting, and clearcutting.

Using logistic regression, probability of individual tree survival was modelled for black and scarlet oaks. Using dendrochronology, the effect of decline on tree growth was examined.

Results showed that increased competition decreased tree survival. Also, increased tree age and soil depth increased tree survival. An important finding was that red oak growth rates were related to level of visible crown dieback.

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