

THIRTY-YEAR POST HARVEST SURVEY OF A RELICT CHESTNUT OAK STAND IN SOUTHERN ILLINOIS

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Chestnut oak (*Quercus prinus*) is common from Maine to Georgia and reaches its northwestern distribution limits in southern Illinois occurring in a few fragmented populations. In 1973 a silvicultural clearcut and post-harvest herbicide treatment was performed on one of the few chestnut oak stands located in southern Illinois, approximately 240 hectares. Prior to the harvest, a survey was taken of the stand identifying stand structure and composition. Fifty-two permanent plots were established using the posi-plot method. Post harvest surveys of the stand were performed using the same plots at 1, 3, and 18 years after the clearcut. In the summer of 2003, the 30-year post harvest survey was conducted. Using the existing plots, all trees ≥ 6.60 cm dbh were measured and identified by species within a radius of 11.35 m (0.04 ha) of plot center. Saplings ($2.54 \text{ cm} \leq X < 6.60$ dbh) within 11.35 m of plot center and seedlings (< 2.54 cm dbh) within a radius of 3.6 m (0.004 ha) of plot center were counted and tallied by species. Calculating density and basal area will summarize tree data from each plot. As a result of permanent plots, pre- and 30-year post-harvest stand composition can be related on an individual plot basis. Since little research has been done documenting the long-term effects of clearcutting from preharvested conditions this study is important for recording the successional patterns after a major disturbance. It is also valuable in showing the reproduction response of chestnut oak at the edge of its range and the regeneration success of other valuable timber species after harvest. Coarse woody debris was also inventoried to serve as a baseline for later research.

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