

CULTURAL RESOURCES PLANTINGS OF WHITE OAK FOR CHEROKEE BASKETRY

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Abstract—White oak trees (*Quercus alba*) are declining in the eastern forests due to high rates of mesophyte invasion due to fire suppression and overpopulation of deer. White oak is vitally important in the Southern Appalachians for wood products, food for wildlife, and as a cultural resource for Cherokee basket making. From a Cherokee cultural perspective, a challenge is to produce certain wood properties important to artisans for basket making. These properties are usually found in slow growing white oaks in the forest understory. We evaluated an 11-year old white oak progeny test, planted on the Qualla Boundary in North Carolina using a variety of tree shelter sizes to increase apical dominance and limit branching. Overall survival was 65.6 percent and was significantly impacted by initial seedling height (P -value = 0.045) and number of first-order lateral roots (P -value < 0.001). The tallest 3 m shelter had the lowest survival (47 percent). While seedlings in the 2.3 m shelters had 55 percent survival, seedlings in the 1.8 m (76 percent) and the 1.5 m shelters had the highest survival (81 percent). Survival across open-pollinated half-sibling genetic families lines ranged from 31 percent to 81 percent (P -value = 0.008). Average height was 5.4 m (max 9.3 m) and the average root-collar diameter was 10.7 cm (max 22.3 cm). Cherokee basket makers determined most white oaks were too fast growing to be desirable for baskets. Additional plantings on more xeric sites at various densities may provide the cultural resources needs for the Cherokee.

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