

## Silviculture Study at W. Kerr Scott Dam & Reservoir

Article provided by Park Ranger Johnny E. Jones with contribution from NRM Rangers David Bolick and Grace Trimble, W. Kerr Scott Reservoir

In March 2022, USACE personnel from W. Kerr Scott Dam and Reservoir along with personnel from The American Chestnut Foundation (TACF) and Appalachian State University (ASU) Biology Department planted nearly 300 American Chestnut, Red Oak, and White Oak trees at Ft. Hamby Wildlife Management Area (WMA) as part of a silviculture study.



According to David Bolick, the Park Ranger in charge of W. Kerr Scott's Natural Resources program, the purpose of this study is to observe differences in American Chestnut survival, blight resistance, and long-term competition with co-occurring species (Oaks). This project will include two sites. The first is located on Fort Hamby WMA at W. Kerr Scott Reservoir in Wilkesboro, NC, and the second is located at a higher elevation on a research property

owned by ASU in Boone, NC. Both locations will feature three different treatments: an old field (open site), pine forest (with release planned in 2-3 years), and shelterwood (50% leaf basal area +/- 10% with release planned in 2-3 years).

At these locations is a mix of American Chestnut hybrids (BC1F2 and BC2F2), large surviving American Chestnuts, Red Oaks, and White Oaks all planted randomly throughout the treatment areas. Height and diameter will be measured at the end of each growing season along with mortality and blight resistance once natural blight infections become visible. The results of this study will be utilized to analyze the differences in establishing oak and chestnut species inside of a hardwood or pine overstory. Additionally, results will be used to develop silviculture strategies to establish self-sustaining chestnut populations while minimizing the vegetation management efforts required for open sites.

The trees were donated to W. Kerr Scott as a contribution from TACF with personnel performing volunteer services



through an ASU Biology Department volunteer group agreement. This partnership is a continuing relationship which started in 2016 when W. Kerr Scott was awarded a Handshake Partnership Agreement for a chestnut research project. TACF and ASU along with Friends of W. Kerr Scott Lake, West Wilkes High School Agriculture Program, and North Carolina Department of Agriculture Forest Service partnered in the research project. “The project is designed to learn more about blight resistance of trees developed through three decades of backcross breeding, help learn which forest planting techniques work best and help restore the American Chestnut within its natural range”, said Tom Saielli, TACF mid- Atlantic region science coordinator. In March 2017, partners planted 650 hybrid chestnut trees in open field and overstory plots at Ft. Hamby WMA. Mortality assessments were conducted in 2017. Though there was high mortality, TACF and ASU biologists and W. Kerr Scott staff decided survival rate was sufficient enough to collect valuable data and to continue the research project. In March 2018, another 100 chestnut trees were planted. In February 2021, W. Kerr Scott staff members planted native persimmon and plum trees in the open field to increase the flora diversity of the plot. Additional plantings will take place in the coming weeks with a smaller sampling of trees planted at Smithey’s Creek WMA.