## GENETIC RESOURCE CONSERVATION OF TABLE MOUNTAIN PINE IN CENTRAL AND SOUTHERN APPALACHIAN MOUNTAINS

**Robert Jetton[1], Barbara Crane[2], Andrew Whittier[1], and Bill Dvorak[1]**

Table Mountain pine (*Pinus pungens* Lambert) was historically a widespread pine species native to the central and southern Appalachian Mountains, but its current natural distribution has been reduced to less than 12,000 ha in recent decades. Reasons for this decline include wildfire suppression programs of the early 20th century, southern pine beetle outbreaks, and recent climate fluctuations. Part of the effort to mitigate this decline is a 5-year, cooperative, genetic-resource conservation effort being conducted by Camcore (International Tree Breeding and Conservation, North Carolina State University) and the U.S. Department of Agriculture (USDA), Forest Service, Southern Region National Forest System. The goal of the project was to target seed collections from up to 300 mother trees in 30 populations distributed across the natural range of the species. During five field seasons, cones were collected from a total of 262 mother trees in 38 populations distributed across the geographic range of the species. Collections represent 5 of 8 ecoregions, 5 of 6 plant hardiness zones, and all 4 seed zones occupied by the species. A total of 390,530 seeds were collected for conservation that have been distributed to the USDA Agriculture Research Service-National Center for Genetic Resources Preservation for long-term storage (55,828 seeds), the USDA Forest Service Ashe Nursery Facility for seed orchard and reforestation activities (193,395 seeds), and the Camcore Seed Bank for research and field plantings (135,361 seeds). Collectively, the seed stored at these three facilities represent the largest genetic resource of Table Mountain pine that exists outside of natural stands. Ongoing research on Table Mountain pine population genetics using microsatellite markers will compare the genetic diversity in natural stands to that of the seed sample to evaluate the effectiveness of this genetic resource conservation effort in capturing a representative sample of the species. A summary of this project is available in Jetton et al. 2015. *Tree Planters' Notes* 58(1): 42-52.

[1] Camcore, Department of Forestry and Environmental Resources, North Carolina State University, Raleigh, NC

[2] Southern Region, National Forest System, USDA Forest Service, Atlanta, GA