

BALSAM FIR CONSERVATION AND RED SPRUCE ECOSYSTEM RESTORATION INITIATIVES IN THE WEST VIRGINIA HIGHLANDS

Corey A. Bonasso and David W. Saville¹

The West Virginia Highlands Conservancy has been working for more than a decade to protect, conserve, and restore the spruce-fir forests in West Virginia. Beginning in the mid 1990s an effort was initiated to conserve balsam fir in West Virginia where it reaches its southern most extent in North America. This work led to further efforts which have focused on the restoration of the broader red spruce ecosystem that was once prevalent in the West Virginia Highlands.

The project initially sought to protect the genetic diversity of the various stands of balsam fir around the state that were coming under threat from the exotic insect pest the balsam woolly adelgid. Research by Ohio State University and others suggested that there were significant genetic trait differences between West Virginia stands and with those of balsam fir located further north. Conservation actions ensued to protect this diversity by fostering regeneration of existing stands of balsam fir. Volunteers were organized to collect cones from each of the known stands of balsam fir in West Virginia. Seed was extracted and stored separately at the NRCS Plant Materials Center in Alderson, WV.

Stand regeneration in many areas was not occurring because of heavy deer browse. Through cooperative efforts with state and federal land managers, as well as private land owners, numerous deer exclosures are being constructed in natural balsam stands to allow both natural regeneration and careful restoration activities using seed and seedlings grown from the locally collected cones. Seedlings have since been grown annually for over 10 years for use in restoration projects.

Efforts have been undertaken to restore the red spruce forests and the ecosystem associated with it. Once covering as much as 500,000 acres of the West Virginia Highlands they provide a unique habitat for numerous rare, threatened and endangered species. Logging, fires and development have significantly reduced and fragmented these forests. Cones have been collected and seed banked at the NRCS Plant Materials Center. Landscape-scale restoration plans have been developed focusing on the expansion and connection of patches of red spruce forest. Over 100,000 red spruce seedlings have been planted implementing these plans in numerous restoration and reclamation projects across the highlands. The Highlands Conservancy has also been working on an educational outreach program to build awareness of the historical as well as the current and future ecological importance of the high elevation red spruce forests in West Virginia.

¹ Corey A. Bonasso and David W. Saville, West Virginia Highlands Conservancy. Corresponding author: Corey Bonasso, PO Box 306, Charleston, WV 25321; 304-284-9548; Email: daves@labyrinth.net