



## Mined Land Reclamation and Wetlands Construction Monongahela National Forest, Elkins, WV October, 2015

EcoGro was hired to build high altitude wetlands that serve as both a natural filter for runoff and habitat for a diversity of aquatic and semi-aquatic species (such as salamanders, toads and frogs). The overall goal of this project is to improve the watershed health and water quality in Lambert Run for stream inhabitants (such as native brook trout). Clusters of over 100 vernal wetlands and numerous water bars were built with available materials to slow water and stabilize its flow path. Additional steps were taken to decommission unused mining roads as well as address unstable/eroding drainage swales and ditches.



A lesson learned from previous experiences was that prepared design plans held less value than an experienced equipment operator and observed site conditions. Because the landscape had been altered so drastically through historical mining and logging, sub-surface conditions for building wetlands were unpredictable. Finding puddles or running water, advantageous drainage patterns, wetland vegetation, or sufficiently clay soils were visible indicators for soil excavation and evaluation of potential wetland sites. Large boulders and abundant woody debris from exotic conifers were also utilized as water bars to direct flow, as structural elements to stabilize soils, as well as buried to enhance soil moisture and nutrients for roots. A GPS point was taken at each potential wetland or drainage feature for monitoring and evaluating both the construction technique and ecological response.

This high-elevation site was historically a red spruce-northern hardwood ecosystem prior to mining and logging activities. The red spruce ecosystem of the Central Appalachians is characterized by exceptionally high biodiversity and is a priority for conservation and restoration. The secondary goal was to bring back this rare ecosystem. Each wetland is within the footprint of broader site preparation activities associated with forest regeneration (e.g. soil ripping and exotic species controls). By retaining water with wetlands, it becomes more available for young seedlings and small plants to establish. Green Forests Work will coordinate volunteer red spruce planting. American chestnut seedlings provided by The American Chestnut Foundation will represent a historically significant forest species. Because of past successes and effective partnerships at Lambert Run, we foresee successfully realizing our goals. Wetlands created in 2013 and 2014 are retaining precipitation or groundwater and trapping sediment. Several species of frogs and salamanders are already taking advantage of the created habitat.

**Project Partners:** Univ. of KY Dept. of Forestry, Green Forests Work, USFS Monongahela National Forest, US Office of Mining Reclamation and Enforcement, USDA-NRCS Plant Materials Center, Ridgewater

**Key Features:**  
● Design/build  
● Wetlands

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