

MINED LAND REFORESTATION: PAST, PRESENT, AND FUTURE¹

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Abstract. More than 630,000 ha (1.5 million acres) of mostly forested land have been disturbed by coal mining in the eastern United States. For the 30-year period since the implementation of the SMCRA, most have been reclaimed to grassland, wildlife habitat, or unmanaged forest post-mining land uses and abandoned from active management. Few mines were reclaimed and reforested with the intent to restore the diversity and productivity of the native forest due to inadequate technology, economic disincentives, and regulatory limitations. Long-term reforestation research programs were established in Virginia and adjacent states to develop post-SMCRA reclamation techniques for re-creating diverse, productive, native forests on mined land. These programs built upon pre-law reforestation research done in Illinois, Ohio, and Kentucky. The combined effort shows that, if properly reclaimed, forest growth and yield of post-SMCRA forests can be as productive as pre-mine forests. High quality mine soils can be created from a mix of topsoil and selected rock strata. Pre-mining forest land capability can be restored if selected topsoil substitutes are placed deep and un-compacted. Tree-compatible ground covers can control erosion while ensuring seedling survival and recruitment of desirable native plants. Our revised reclamation procedures for forestry are cost effective and met all federal and state regulatory requirements. The combination of these forestry-specific reclamation procedures is called the Forestry Reclamation Approach (FRA) to distinguish it from traditional practices commonly used for creating grasslands and other post-mining land uses. An OSM program called the Appalachian Regional Reforestation Initiative (ARRI), a broad-based agency/industry/public program working to encourage the planting of productive native forests on mined land, has adopted the FRA and promotes its use throughout the eastern coalfields (<http://www.arri.osmre.gov/>). As a result, several thousand hectares of forest land have been restored to pre-mining capability in the past 5 years for forest products, watershed control, water quality, carbon sequestration, and biodiversity. Full adoption of the FRA by the industry will help coal operators meet a number of new environmental challenges. Regulations and guidelines need adjustment in several areas in order to provide timelier bond release for coal operators, and to ensure that pre-mining forest land capability is restored as required by SMCRA.

Additional Key Words: reforestation, native hardwoods, reclamation, mine land reclamation, FRA, ARRI, SMCRA

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