

Some thoughts on planting native tree species in mineland reforestation¹

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Abstract: Successful reforestation of reclaimed minelands requires planting a variety of native tree species. The Forestry Reclamation Approach (FRA) recommends using a mixture of early successional and high value hardwood species to achieve ground cover/stabilization goals and to ensure economic value in the long run. Other considerations can perhaps be added as goals, including control of species diversity, reintroduction of native species extirpated by pathogens or mismanagement, increasing genetic integrity and ensuring important ecosystem services. In this talk, I discuss opportunities to use tree planting to address these and other goals. I will highlight opportunities particularly for incorporating American elm, American chestnut, and other species. Due to Dutch elm disease (DED), American elm can be rare in some landscapes. However there exist some DED- tolerant trees and research is ongoing to identify survivor trees which may be resistant to the disease. In 2013 and 2014, DED-tolerant seedlings were planted at 14 sites in the Appalachian coal fields from Alabama to Pennsylvania. Elevations ranged from 220 m to more than 900 m, and sites included FRA sites, legacy mine sites (sites that had previously been reclaimed under SMCRA between 1992-2005), and AML (abandoned mine land) and bond forfeiture lands. Survival, diameter, and height were measured on 7 of these sites over the first 2 growing seasons following establishment. Survival after 2 years on most of the sites exceeded 75% with one exception, that being a site with significant browsing by deer and elk, where survival dropped to 65%. After two years, the average height of the DED-tolerant American elm seedlings was 61.6 cm, and was nearly identical to that of yellow poplar, another early successional species. Nor were there large differences between the 2 species in vigor class or survival.

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