

Assessing woody plant colonization on reclaimed anthracite mines in the Wyoming Valley

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Past surface mining for anthracite coal has destroyed thousands of acres of forest land throughout the eastern United States. Since the late 1970s, governmental agencies and mine owners have tried to fix the problem by using a reclamation approach that involved regrading the land and growing a mix of grasses and herbs from seed. Such reclaimed sites now support meadows that have higher ecological value than the unreclaimed mineland. However, some people are questioning the wisdom of this approach, because the dense grasses and compacted soils appear to inhibit the development of native forests on those sites. Within the past five years, a movement to change reclamation methods to promote planting trees instead of seeding with grasses is now emerging from Pennsylvania to Tennessee.

Research on reclamation in northeastern Pennsylvania is limited to several studies conducted by Wilkes Senior Projects students between 2001 and 2004. More recently, some of the minelands in the Wyoming Valley are showing natural colonization by black locust, which is considered to be an invasive tree.

Earlier this summer, a team of Wilkes Biology majors started a project to determine whether the black locust is actually promoting or inhibiting the colonization by mature-site species like oaks, ash, birch, and maple. While they made good progress in beginning to investigate the problem, more study is needed.

Therefore, we are looking to organize a Senior Project team to continue and complete the study initiated during the summer. Students on this project will conduct field visits, set up experiments, and collect and analyze data. They will contribute to two invited papers that will be presented at regional meetings in Pittsburgh and elsewhere during the spring.