

REIMAGINING A SUSTAINABLE FUTURE FOR MINE-SCARRED LANDS

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1 ABSTRACT

Surface mining has historically dominated the economy and landscape of West Virginia and Central Appalachia. While coal mining remains an important industry to the area's economy, it is no longer the major employer and has left the region with a degraded and polluted landscape. Processes associated with mining have led to increased stormwater runoff, soil degradation, contamination of streams, accumulation of airborne toxins, and loss of biodiversity. These processes and their impacts pose serious risks to environmental and human health. Faculty and students are working on an EPA funded research project to envision a sustainable future for a 600-acre former coal mine in McDowell County, West Virginia. Plans for the site will provide a green energy industry alternative to coal through sustainable development initiatives, while restoring, to the extent possible, ecosystem services adversely impacted during mining operations. Community engagement focus group meetings and a multi-disciplinary environmental assessment were used to build a framework that demonstrates the viability of alternative energy and green infrastructure practices that respond to a local need for mixed-use development. Using cultural vernacular, recreation, housing, commerce and transportation will blend practices such as biomass, solar, and wind energy production. The site will not only generate local economic growth through the development of renewable technologies, but will restore ecosystem services that foster ecological and social benefits within the community. The visioning for this space may become a model for sustainable energy and low impact re-development on mine-scarred brownfield landscapes throughout West Virginia and the Appalachia Region.

1.1 Keywords

mine reclamation, green infrastructure, renewable energy, ecological succession, ecological design