

ECOSYSTEM RESTORATION: A CRITICAL COMPONENT OF SUSTAINABLE MINING AND RECLAMATION¹

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Abstract: In 1999, the International Institute for Environment and Development (IIED) was commissioned to undertake a project called Mining, Minerals and Sustainable Development (MMSD) on behalf of the World Business Council for Sustainable Development (WBCSD). The project was initiated globally to develop ways for the mining industry to become sustainable. In the final report called *Breaking New Ground*, the MMSD group couched sustainable mining and reclamation within the “triple bottom line” used by other industries. A mine project is sustainable *economically* if the viability of the project is assured, and if the community will be better off as a result; it is sustainable *ecologically* if pre-mining capability is restored and ecosystem services are recovered; and it is sustainable *socially* if people’s well-being is maintained or improved. The major organizations representing the mining industry in developed countries have subscribed to sustainability principles, but putting principle to practice for the ecological component of sustainability has been challenging. A holistic restoration approach (ecosystem restoration) is needed that includes landscape geomorphic design, stream reconstruction, soil replacement, restoration of the original flora and fauna by replacing seed pools, creating micro and macro habitat, and by planting and seeding selected native species. A preliminary analysis shows that this ecosystem restoration approach (ERA) can be done in the context of current regulations and at little or no extra cost to the coal operator. Benefits include greater land value for the owner including tax incentives in some states, potential for carbon credits, enhanced relationships with business partners, better watershed protection and quality, and greater levels of services provided to local communities. Operating with a sustainable mining and reclamation philosophy is becoming the rule for corporations involved in extractive and other natural resource industries. Creating a confluence of interests between improved industry profitability and the provisions of sustainable development aligns mining industry’s values with those of the societies in which it operates. Restoring native ecosystems after mining is a critical component of the sustainability process.

Additional Key Words: Ecosystem Restoration, Coal Mine Reclamation, Mine Reforestation,

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