

Cost-Effective Strategies for the Restoration of Drastically Disturbed Sites¹

D. F. Polster²

Abstract: Cost-effective methods for the restoration of mining and other drastically disturbed sites can constrain reclamation of sites humans disturb. Natural processes have been restoring natural disturbances (glaciation, natural landslides, volcanic eruptions, riverbank erosion, etc.) for millions of years. By following the methods that these natural processes use to restore the disturbance, cost-effective strategies for the restoration of human disturbances can be developed. The first step in defining recovery strategies is to identify the filters or constraints that are preventing the natural recovery of the site. In many mining situations, elements such as steep slopes (angle of repose waste rock dumps) or compacted surfaces such as the tops of waste rock dumps and haul roads create constraints that only weeds can address. By identifying and then dealing with the constraints the natural recovery processes can be allowed to operate. In most cases, local pioneering species will move into prepared sites for free and quickly and there is no need for extensive planting programs. If the site is very large or there are not pioneering species nearby, then seeding with the seeds of suitable pioneering species is an appropriate option. Making disturbed sites rough and loose creates condition that fosters the natural establishment of pioneering species and is inexpensive compared to traditional reclamation treatments.³

Additional Key Words: Natural processes; addressing constraints; ecological solutions.

-
1. Oral paper presented at the 2019 National Meeting of the American Society of Mining and Reclamation, Big Sky, MT. Welcome Back to Montana: The Land of Reclamation Pioneers, June 3 - 7, 2019. Published by ASMR; 1305 Weathervane Dr., Champaign, IL 61821.
 2. David F. Polster (presenter), M.Sc. Restoration Ecologist, Polster Environmental Services Ltd. 6015 Mary Street, Duncan, BC Canada V9L 2G5.
 3. Work reported here was conducted in Western Canada and the Pacific NW USA from 1977 to present.