

Cost-effective Strategies for the restoration of large disturbances¹

David Polster²

Abstract: Ecological restoration is defined internationally as the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed (SER 2004). This suggests that the best we can do is to help (process of assisting) what will happen naturally. But how can we help? The first step is to define what might be preventing recovery (the filters). Polster (2015) lists eight abiotic and six biotic filters that might be limiting the recovery of the ecosystem. On industrially disturbed sites (mines, well sites, etc.) compaction and steep slopes are the most common abiotic filters while competition (with seeded grasses and legumes) and herbivory (with hyper-abundant ungulates) are the most common biotic filters. Restoration strategies that avoid creation of these filters and assist the recovery of the degraded ecosystem is the most cost-effective way of restoring large disturbances (Polster 2016). Since these are relatively simple problems, the solutions are similarly simple. Steep slopes can be dealt with by regrading and compaction can be addressed by making the restoration area “rough and loose” (Polster 2015). Since rough and loose ground reduces the risk of erosion by allowing rainwater and snowmelt to soak into the ground, there is no need for grass and legume seeding (traditionally used to control erosion). Without a competing grass and legume cover, herbivory is less of a problem. Adding woody debris to the rough and loose ground can help control erosion and enhance the establishment of biota (Craig et al. 2014; Vinge and Pyper 2012). By using a waste material to enhance recovery, the use of woody debris provides an excellent way to assist the recovery of disturbed sites. This paper explores the use of natural processes to let nature do the work of restoring drastically disturbed sites.

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Additional Key Words: Natural processes, succession, cost-effective.

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² David Polster, Polster Environmental Services Ltd. 6015 Mary Street, Duncan, BC, Canada, V9L 2G5, d.polster@telus.net.