

## Natural processes for the restoration of drastically disturbed sites

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**David F. Polster, R.P. Bio. #148** is a plant ecologist with over 35 years of experience in vegetation studies, reclamation and invasive species management. He graduated from the University of Victoria with an Honours Bachelor of Science degree in 1975 and a Master of Science degree in 1977. He has developed a wide variety of reclamation techniques for mines, industrial developments and steep/unstable slopes as well as techniques for the re-establishment of riparian and aquatic habitats. He is the past-president (third term) of the Canadian Land Reclamation Association. He is the treasurer for the Western Canada Chapter of the Society for Ecological Restoration and is the NW Regional Representative on the board of the international Society for Ecological Restoration (SER). He was recently awarded the prestigious John Rieger Award from SER. He serves as the alternate mining representative on the board of the Invasive Species Council of B.C.



Dave Polster has provided on-site design and direction in the development of reclamation and bioengineering systems for restoration of severely damaged ecosystems. He served as the environmental supervisor for CP Rail's massive Roger's Pass Project. He was responsible for developing the bioengineering systems that have successfully revegetated a portion of the Point Grey cliffs at UBC. Dave has prepared reclamation plans for numerous mines, quarries and gravel pits in

Canada. He pioneered the concept of successional reclamation where the aim of the reclamation program is the re-integration of the disturbed site into the natural processes of vegetation succession. He has applied his knowledge in ecology to solving problems of unwanted and invasive vegetation. He has authored numerous papers and teaches graduate level courses on these topics.

### Workshop summary:

Natural processes have been “restoring” natural disturbances since the advent of terrestrial vegetation 400 million years ago. This workshop will explore how these natural processes, systems and functions can be used to restore sites that humans have disturbed such as large mines, industrial disturbances, landslides, shorelines and other disturbed sites. We will look at how natural systems address filters to recovery such as erosion and steep, unstable slopes and how we can design restoration treatments that address these filters. We will explore the natural processes that provide nutrients and nutrient cycling capacity to ecosystems and how these can be re-established on drastically disturbed sites. In many cases restoration treatments based on

these natural processes can be used to restore anthropogenic disturbances more easily and at a lower cost than traditional reclamation treatments.

The workshop will be a half day (08:00 to noon with one break) and will cover:

- A brief review of ecosystem formation processes (assembly rules);
- The use of a successional model to inform restoration design;
- The role of nitrogen fixing pioneering species in restoration systems;
- Erosion processes and solutions;
- Restoration of difficult sites (introduction to Soil Bioengineering)
- Implementation, maintenance and monitoring of restored sites.

This course will be of interest to those engaged in the restoration of disturbed sites.