



## **Vegetated Riprap Installation Techniques for Steambank Protection, Fish and Wildlife Habitat Creation**

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### **ABSTRACT**

Vegetated riprap is a cost effective alternative to conventional riprap erosion protection. Terra Erosion Control has experimented with the vegetation of riprap over the past ten years. As a result we have adapted a technique that can successfully establish vegetation during the installation of riprap structures. This presentation will demonstrate innovative ways of installing vegetated riprap for the protection of access roads on industrial sites and urban infrastructure such as storm water outfalls, bridge approaches and pedestrian pathways within public areas. This vegetation will provide additional bank protection, soften the rock appearance and enhance fish, wildlife and urban habitat along the shoreline.

Vegetated riprap incorporates a combination of rock and native vegetation in the form of live cuttings. These are planted in conjunction with the placement of rock used to armour the banks of watercourses. Establishment of native vegetation will improve fish habitat by creating shade, cover and an input of small organic debris to stream banks. In most cases it will negate the need for the regulator (Canadian Department of Fisheries and Oceans) to require habitat alteration compensation. It will also provide added bank protection through the development of root mass. Adding vegetation to riprap provides a softer, more natural appearance to the installed rocks.

This presentation will detail the processes involved in the installation of vegetated riprap such as the harvesting and soaking of live material, site preparation of the stream bank, placement of riprap in conjunction with live material and the use of burlap/coir fabric and soil amendments. It will also discuss the innovative method of using wooden boards to protect live cuttings during construction and to direct precipitation and/or irrigation water to the root zone during the establishment phase of the vegetation. These boards will eventually biodegrade within the rock. This approach was applied over the past seven years to the stream banks of eleven different sites on large and medium sized rivers in three Provinces of Canada.

To date, the survival and growth of vegetated riprap brush layers installed along riverbanks has been assessed as good to excellent, resulting in the substantial creation of fish, wildlife and urban habitat. The survival and growth, along with early results of an excavation trial, will be presented.