

### Pyramid Slide

Following a landslide in June 2012, a section of Highway 5 between Kamloops and Valemount was threatened with failure as its shoulder slid over 50cm towards the North Thompson River. The Ministry of Transportation commissioned DWB Consulting to stabilize the banks and restore valuable riparian habitat. Repairs to the highway and stream bank occurred in spring of 2013, and although inherently detrimental to the environment, best practices used to restore the "Pyramid Slide" ensured that natural and social values were optimized.









Bank stabilization was accomplished with rip rap, a permanent solution to protect Highway 5 from mass wasting. On top of the boulders, biologists placed a horizontal brush layer of willows, a bioengineering method which will continue to grow, stabilizing the soil and adding organic material to the riparian zone. Willows extending over the stream will provide cover and allochthonous energy to the aquatic environment.

To encourage ecological succession, more live willow stakes were installed vertically every meter squared above the brush layer and soil. Willows add biomass to the site, both above and below ground, and are a natural pioneer species helping set the site for recovery. Finally, agronomic grasses were seeded to provide ground cover. Although not ideal for succession, grass species add nutrients to the soil while protecting it from erosion. They will eventually be succeeded by cedars and other native plants.

Fish habitat in the North Thompson was created by the addition of angular rock and large wood structures to the main channel. Trees cut during construction were recycled, and cabled to the banks in clumps, creating ten large woody debris clusters. These features provide cover and create hydraulic eddies, benefiting rearing and migrating fish. During construction, sedimentation of the river was controlled with the treatment of straw and poly tarps on exposed slopes, while water bars lined with fabric intercepted runoff water.





Two years after the incident, the highway is stable, the banks are vegetated, and the site is on the road to recovery.

