

# Department of Transportation and Works

Erosion Prevention Using Hydroseeding.

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# Projects undertaken by DTW

- New highway/road construction
- Highway/Road upgrades
- Infrastructure maintenance
- Weather-induced emergency repairs.

# Potential Problems

- With the disturbance of soils at the project site, there exists the potential for surface water sedimentation.
- Silt-laden waters leaving the project site can eventually enter fish-bearing streams.
- Environmental impacts can include loss of fish habitats and loss of fish.

# Preventative Approach

- To prevent potential adverse effects of siltation DTW is committed to ensuring sedimentation events are minimized.
- Exposed slopes are stabilized to reduce rilling and rutting.
- Ditches are stabilized to capture loose sediments and retain fines.



# Slope Stabilization

- Slopes are stabilized using either riprap or hydroseeding, or a combination of both.
- Riprap is used when supplies and quantities of rock are available.
- Hydroseeding is used when it is not feasible to use riprap.



# Hydroseeding

- When it becomes evident hydroseeding is needed, DTW looks to use seed species that readily grow in disturbed sites but not in natural areas.
- A mix of species is used to quickly stabilize the exposed soils and to rapidly enrich the nutrient-poor, organic-deficient exposed material.



# Species Utilized

- The hydroseeding mix used by DTW may include the following species:
  - Annual Rye Grass
  - Canada Blue Grass
  - Creeping Red Fescue (Boreal)
  - Hard Fescue
  - Tall Fescue
  - Timothy Grass
  - Wild White Clover
  - Birdsfoot Trefoil (Leo)

# Annual Rye Grass



# Canada Bluegrass



# Creeping Red Fescue



**Creeping red fescue**

# Hard Fescue



**Hard fescue**

# Tall Fescue



Tall fescue

# Timothy Grass



# White Clover





# Birdsfoot Trefoil



# Rationale for Species Mix

- The species mix works well for slope stabilization.
- Annual Rye grows very quickly, sending out fibrous roots to bind the soil, preventing rilling.
- Slower growing grasses and legumes can then become established within the protection of the rye grass

# Evolution of Slope Colonization

- Annual Rye grass is short-lived, lasting only one growing season. It covers the slopes effectively and doesn't self-seed in this Province's climate.
- Slower growing, self-seeding fescue, bluegrass, clover, and trefoil are established in the organics over the next two years or so in the stable soil left by the rye.
- Native species of colonizers begin to establish



# Succession of Slope Colonization

- Once organics are in place and the slopes have been stabilized, native colonizers very rapidly move in. Initial native colonizers include Goldenrod species, Pearly Everlasting, Fireweed, Raspberry, Northeastern Wild Rose, and the ubiquitous Speckled Alder.

# What happens to Hydroseed Mix?

- Once aggressive native species move into the hydroseeded site the original hydroseed species becomes out-competed due to overcrowding and changes to the composition of the organic detritus.



