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Edgefield Gardens and Golf Course

Drainage Ditch Stabilization Project

Troutdale, Oregon; Summer 2007

Project background

In 1997, a residential development was built upslope from this golf course drainage ditch. It began to erode, but because the ditch was filled with invasive species such as Blackberry and Reed Canary Grass, the erosion was not visible.

When the non-native plants were removed to create a new golf course hole, the erosion was evident – in some places more than four feet deep, all the way down to the hard clay bottom.

Problem

Sediment: Even the smallest rain events deposit large amounts of sediment in the watercourse. This watercourse discharges into wetlands, which filter out much of the sediment; but if infiltration occurred at the source it would improve the water quality in the wetlands.



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Solution

The Envirolok Vegetated Retaining Wall system was used for both the sides and bottom of the ditch. It was installed and woven together with bag stabilizer fabric to prevent rushing water from compromising the structure.

The use of foundation bags in the bottom of the channel provided the 'anchor' to hold all the bags together. The anchor bags were embedded to minus 8".

The entire system was hydroseeded.



Environmental Review and Follow-up

The ability of the Envirolok Vegetated Retaining Wall System to withstand flashy storm events solved a persistent and costly erosion control issue. Storm event erosion is absolutely zero since the installation.

The new ecosystem is growing desirable native species that provide habitat for birds, butterflies and animals. The native vegetation also improves the aesthetics of the golf course. The benefits of the low-maintenance vegetation are both ecological and financial.

Everyone associated with this project is very pleased with the results, and anticipates installing more systems in 2008.



Site Construction Supervision



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NOTE: Do not burn native vegetation growing on the Envirolok system. The bag fabric is flammable. When fully vegetated, bags retain their integrity up to 200 years, depending on conditions.

NOTE: Advice from an engineer is recommended when building walls more than 4' in height, or when site conditions include unusual erosion or weak soil conditions.



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