

Presented Info

Bio-engineered Stream Bank Stabilization Using Wetland Sod on the Teton River: A Case Study

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Abstract: Wetland Sod in combination with erosion control fabric was used to re-construct and stabilize an eroding stream bank on the Teton River. The Teton River is located in southeast Idaho and has an average baseflow of 5.67 cubic meters per second (200 cfs) and average peak flow of 34 cubic meters per second (1200 cfs). Above and throughout the study area the Teton River is a predominantly ground water fed, free flowing system with a moderate spring run-off. Conditions at the study site pre-construction included an average bank height of 1.07 m, an average bank slope of 2:1 and dominant bank vegetation consisting of introduced grasses. The dominant soil type was a silty clay loam.

Photos taken over the course of 4 days pre and post construction.



The existing bank was reconstructed by first excavating the bank down to the base-flow water line to a width of 3.66 m. Two layers of long-term erosion control fabric were staked onto the base of the excavated bank using 20 cm wire staples. Soil was compacted onto the erosion control fabric layers to a depth of 0.30 m. Approximately 1 m of the erosion control fabric was wrapped up onto the compacted soil to build the initial toe of reconstructed bank. The remaining soil was sloped back to create a bank with an average slope of 3:1. Mature wetland sod TM pre-grown with native sedges and rushes was installed in two rows onto the constructed toe and remaining bank to a width of 1.83 m. A total of 77 m of eroding bank was reconstructed in 2 days at a cost of \$100 per linear meter. In 2.5 weeks post construction the wetland sod material was fully rooted and could not be displaced by human or livestock disturbance.

- 1. Remove sod and topsoil.*
- 2. Build soil terraces w/ erosion control fabric.*
- 3. Install wetland sod.*

