RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

Shoreline Erosion Control Projects at Lake Cascade

Before the publication of the Lake Cascade Resource Management Plan in 1991, no standards were in place to ensure the structural integrity or aesthetic quality of retaining walls at Lake Cascade. Many of the existing retaining walls are now deteriorating and exacerbating the shoreline erosion problem.

Landowners need to be aware that permits may be needed from Reclamation, the Corps, and the state of Idaho before making any major improvements to existing erosion control structures or starting new construction.

Also, please note that ownership of private land near the lake or adjoining government property does not convey any exclusive rights to use of the lake or the adjoining public lands.

Erosion Control Measures

In order to obtain your permits, begin by submitting a site description and detailed engineering drawings or photos of your proposed erosion control structure to the Reclamation's Cascade Field Station.

Reclamation staff will then conduct a site visit and evaluate your project to determine if erosion control is needed. If so, you will be referred to the Corps to begin the permitting process.

Natural resource impacts and the construction materials you plan to use will be considered as part of the permitting process. Preferred erosion control structures are no longer than 500 linear feet, with no more than 1 cubic yard per linear foot of discharge, faced with a mix of rock 6 inches in diameter or greater.

Corps Permits

For information on obtaining the Corps permit contact the Boise Regulatory Office at (208) 345-2154 or go to:

http://www.nww.usace.army.mil/html/offices/op/rf/permits_overview.asp

Corps authorization is subject to Water Quality Certification from the Idaho Department of Environmental Quality and other state requirements.

Retaining wall using large boulders and vegetation.

Reclamation Permits

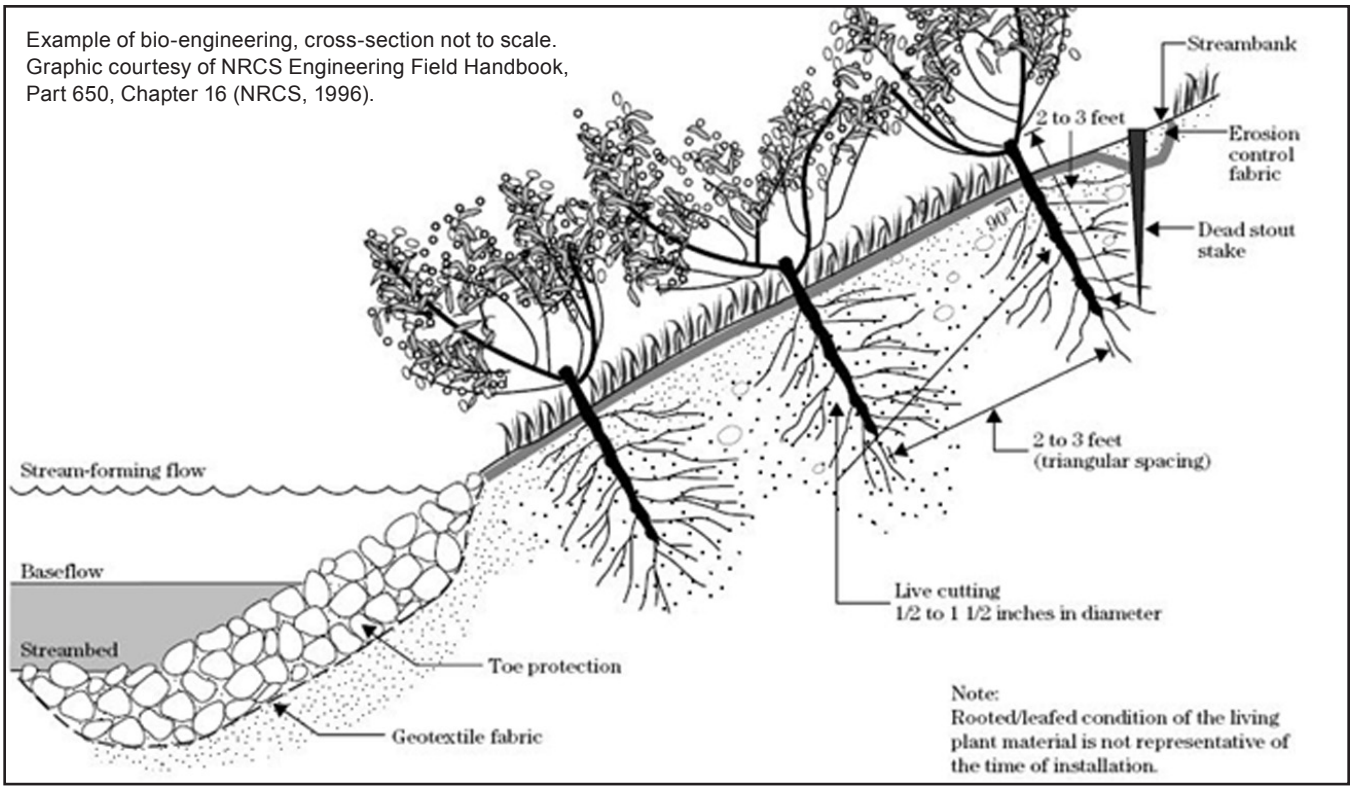
Following receipt of the Corps's approval of the 404 Permit, the applicant will then apply for a Special Use Authorization Permit for Erosion Control Structures from Reclamation.

Potential for obtaining Special Use Authorization for shoreline restoration and protection will be prioritized as 1) threat to private structures, 2) threat to private land, 3) replacement of existing stabilization measures, and 4) threatened federal land.

File the completed and signed application (SF-299), including the $100 nonrefundable application fee, with Reclamation. Permits are issued on a one-time-only basis.

Reclamation will periodically inspect the structures to ensure that necessary maintenance is being conducted. Major improvements or new construction will require review by the Corps and a new permit from either the Corps or Reclamation, or in some cases both.

Reclamation reserves the right to refuse to authorize any use deemed incompatible with the administration of federal land in the public interest.



Example of bio-engineering, cross-section not to scale. Graphic courtesy of NRCS Engineering Field Handbook, Part 650, Chapter 16 (NRCS, 1996).

Preferred Erosion Control Measures

Bio-Engineering

Bio-engineering is defined to include either vegetation establishment alone or in combination with rip-rap protection measures. Benefits include wave energy dissipation, soil-holding root systems, induced sediment deposition, reduced abrasion due to long-shore sediment transport, aesthetic appeal, and fish and wildlife habitat. Protection using only rock will degrade with time, shoreline protection with live plants will improve with time.

Example of stone rip-rap revetment.

Stone Rip-Rap Revetment

Stone rip-rap revetment combines dissipation of wave energy with soil stabilization. Filter fabric (geotextile) and/or gravel bedding is placed over the stable (3:1) graded slope to hold the underlying soil in place. Angular rock of the appropriate size and thickness is placed to armor the slope.

This type of shoreline protection often includes toe protection, an overtopping apron, and flanking protection at the ends of the revetment. The appearance and habitat function of stone revetments can be enhanced by planting vegetation into joints between the rocks.

For More Information

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