

Facts About...

Shoreline Stabilization

Maintaining Your Shoreline Stabilization Practice

Erosion and sedimentation (the deposition of sediment) are natural processes, but often are in conflict with our use of the shoreline. The most noticeable problem created by erosion is the loss of waterfront property. Waterfront property values are high, so many owners spend considerable time and money protecting their shoreline from erosion.

There are numerous types of shoreline stabilization projects that a landowner may select to prevent erosion. Non-structural shore erosion control projects include marsh creation, beach nourishment, and slope grading and terracing to restore a natural environment. Structural shore erosion control includes revetments, groins, and bulkheads that use stone, wood, steel or other materials to anchor the shoreline. Regardless of the type, any shore erosion control structure is subject to failure. The likelihood of success and greater longevity of any project depends on proper practice selection, installation and maintenance.

Maintenance for Different Shoreline Stabilization Practices

Beach Nourishment

Periodic replenishment of the beach using appropriate size sand will help maintain the beach. The need to replenish the beach depends upon the rate of erosion at the particular site. Although the original cost of the addition of sand may be low, the cost of periodic replenishment may rival a more permanent solution. Beach nourishment should be considered only where natural beaches have existed at the site and there is a natural source of sand to help sustain the site.



Photo: Team SWAMP, University of Maryland

Slope Grading and Terracing

Periodic grading and replanting may be necessary depending upon the erosion rate. The use of additional material may also be necessary to maintain the proper slope. Slope stabilization is often necessary to support a marsh creation project, as eroding sediment from the bank may smother the plants.

Marsh Creation

Plants that are removed or die during the early stages of growth must be replaced immediately to insure the undisturbed growth of the remaining plants. The selective pruning of trees is also a good maintenance



Photo: Team SWAMP, University of Maryland

practice, as plants need sunlight. After significant growth has occurred only periodic inspections may be necessary. Protection measures, such as fencing, must be taken to keep waterfowl from eating the young plants. Proper maintenance will help ensure that the marsh creation project remains successful at preventing erosion and providing wildlife habitat. Maintenance suggestions:

- 1) Remove debris and trash.
- 2) Do not mow vegetation.
- 3) Limit use of lawn fertilizers.
- 4) Re-plant as necessary.

Revetment

Periodic maintenance may be necessary to fill holes and restore the height and width of the revetment. These maintenance activities are required because the individual stones comprising the revetment may be subject to movement and settling.

The protection should be monitored on a regular basis. The steeper a revetment the more frequently it should be inspected because the toe is likely to erode more quickly. Other types of erosion control should be considered in areas where movement of the structure may occur because of unstable slopes.



Photo: MD Department of Natural Resources



Photo: MD Dept. of Natural Resources

Bulkheads

Construction of new or failed bulkheads is generally prohibited. Sheet pile bulkheads should be inspected regularly to check for sheet failure and possible loss of soil behind them. Failures may be caused by freezing and thawing, direct wave impact, or debris impact. The protective coatings on the hardware, sheeting, and pile tops of timber bulkheads should be maintained. Splits in the wood need to be mended on aging bulkheads. Soil washing out from behind the bulkhead should be replaced.

Jetties and Groins

The maintenance requirements for groins are essentially the same as discussed for those of revetments and bulkheads. In addition, the area between groins in a groin field should be monitored for sand loss. The addition of sand, if necessary, into the area between groins will protect upland areas and decrease the amount of time required for the area between the groins to fill naturally.

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Is More Information Available?

The guidance documents and fact sheets are available, free, from the Water Management Administration, Tidal Wetlands Division, 1800 Washington Blvd., Baltimore, MD 21230 (410) 537-3837
http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/documents_information/index.asp

- Shore Erosion Control Guidelines for Waterfront Property Owners
- Shoreline Stabilization: How to Select a Contractor
- Shoreline Stabilization: How to Select a Shoreline Stabilization Practice
- Shoreline Stabilization: Maintaining Your Shoreline Stabilization Practice
- Shoreline Stabilization: Marsh Creation
- Shore Erosion Control Guidelines: Marsh Creation
- Marsh Creation Sample Drawings

