

Critical Area Stabilization

Description

Critical area stabilization is applied to land that is highly susceptible to erosion, through the implementation of vegetative or structural best management practices (BMP), which are cited throughout this document. Critical areas are defined as:

- Soils that are highly erodible, droughty, excessively wet, very acidic, or very alkaline.
- Slopes that are long or steep, or immediately adjacent to rivers, lakes, or wetlands.
- Fill areas.
- Areas subject to concentrated flows.

Critical area stabilization is also sometimes referred to as either high-risk erosion area stabilization, or critical area seeding.

Pollutants Controlled

Protecting critical areas is one of the most effective means of preventing sediment from entering surface waters. Properly established vegetation used to protect critical areas also helps absorb nutrients and reduce flows from steep slopes.

Location

Critical area stabilization is applicable to all land uses. This practice is particularly important on critical soil types described above, or on exposed soils which are subject to erosion even during light to moderate rainfalls. Apply this BMP on any areas which are difficult to stabilize.

Planning

Identify critical erosion areas during the planning stage of a project or proposed earth change activity. Take all possible measures to not disturb these areas. If disturbance of these areas is unavoidable, give immediate attention to protecting them through the proper application of critical area stabilization.

For vegetative practices:

1. Protect all critical areas from pedestrian access using [Construction Barriers](#).
2. If possible, divert concentrated flows away from critical areas, at least until vegetation is established. Follow specifications in the [Diversions](#) BMP.

3. Select and apply legume and other seed according to specifications in the [Seeding](#) BMP. Select plant species that are suited to the site conditions.
4. Mulch seeded areas according to specifications in the [Mulching](#) BMP.
5. To stabilize areas quickly, follow the [Rolled Erosion Control Products](#) BMP in conjunction with the [Seeding](#) BMP. [Sodding](#) may be used as an option for quick stabilization, but may not be effective unless watering is available. Stabilization does not occur until vegetation is fully re-established in these areas, although the placement of rolled erosion control product, and/or the partial re-establishment of vegetation does provide additional erosion control in these areas in the interim.
6. Stabilize dune/sand areas following specifications in the [Dune/Sand Stabilization](#) BMP.
7. Select and plant trees, shrubs, and ground covers based on the [Trees, Shrubs and Ground Covers](#) BMP. Note that Natural Resource Conservation Service soil surveys recommend species that thrive in each given soil texture.

For structural practices:

1. Consider using [Grade Stabilization Structures](#) to convey concentrated flows from one elevation to another.
2. Consider using [Riprap](#) on slopes adjacent to watercourses and wetlands, and [Slope/Shoreline Stabilization](#) on steep slopes, and slopes adjacent to cut and fill slopes. The [Slope/Shoreline Stabilization](#) BMP includes information on seawalls/retaining walls, revetments, and gabions.
3. Consider using terraces or benches to slow runoff velocities.
4. Consider using [Riparian Buffers](#) to control erosion resulting from sheet flow.
5. [Subsurface Drains](#) may be needed where water movement may cause seeps or soil slippage. [Grassed Waterways](#) may need to be tilled to ensure the vegetation is established.

Site Preparation

For vegetative practices:

1. Sample and test the soil to determine its nutrient content and pH. Depending on the results of soil tests, [Soil Management](#) may be necessary to adjust the soil pH to between 6.5 and 7.0 (for most conditions). Address all other soil deficiencies following the [Soil Management](#) BMP.
2. Follow the site preparation sections from the appropriate BMPs being used for vegetative establishment.

For structural practices, follow the site preparation sections in the selected BMPs.

Design and Implementation

Design and implement all critical area stabilization BMPs according to the specifications in the selected BMPs.

Maintenance

For vegetative practices, schedule periodic inspections to ensure the vegetation is maturing sufficiently, and staying in place.

Once the vegetation is well established:

1. Consider removing [Construction Barriers](#). In other areas, it may be beneficial to leave barriers in place.
2. Continue watering vegetation, when appropriate, to a uniform depth of one inch into the sod bed. Refer to the [Lawn Maintenance](#) BMP.
3. Mow vegetation according to its intended use, following the mowing specifications in the [Lawn Maintenance](#) BMP.
4. Conduct periodic soil sample testing to determine if the soil requires additional fertilizer or lime. Follow specifications in the [Soil Management](#) BMP.
5. Use pesticides only following specifications in the [Pesticide Management](#) BMP.
6. Spot seed as needed on small damaged areas.

For structural practices, follow the procedures in the Maintenance section of each appropriate BMP.