

# STANDARD AND SPECIFICATIONS FOR TREE REVETMENT



## **Definition**

A tree revetment consists of a tree trunk and branches, without root wad, cabled to an earth anchor, which is buried in the streambank.

## **Purpose**

To reduce streambank erosion by absorbing energy and reducing velocity, capturing sediment, and enhancing conditions for planting or colonization of native species.

## **Conditions Where Practice Applies**

This practice is appropriate for streambanks that are eroded or undercut. It should not be used near bridges or other structures where there is a potential for downstream damage if a revetment dislodges. Their use should be limited to non-flashy streams where the needs for future maintenance are not important.

## **Design Criteria**

1. Trees shall be sound, recently felled spruce or fir of 6" or greater diameter and at least 20 feet in length.
2. Trees are placed initially at the base flow elevation with the butt end upstream. Multiple tree revetments shall be overlapped by 25% of their length, working from downstream to upstream.
3. Each tree shall have their branches trimmed off on the bank side and have two anchors, one near the butt end and the other at 3/4 distance up the trunk.
4. The tree shall be fastened with galvanized cable to the anchors, which will be commercially manufactured earth anchoring systems. The butt end cable shall also be attached to the stem of the next tree at 3/4 the distance from the base, as it is placed to the outside of the previous tree.
5. Excavate and backfill as necessary to fit the tree revetment to the site.

## **Maintenance**

Due to the susceptibility of plant materials to the physical constraints of the site, climate conditions, and animal populations, it is necessary to inspect installations frequently. This is especially important during the first year or two of establishment. Plant materials missing or damaged should be replaced as soon as possible. Sloughs or breaks in drainage pattern should be reestablished for the site as quickly as possible to maintain stability.

**Figure 4.7  
Tree Revetment**

