

Installing a Cedar Revetment

Here is the HRWA improved cedar revetment technique which may also be combined with tree planting and bank terracing. The goal is to help the stream rebuild its bank the way nature intended all along – a stable, vegetated bank with small terraces that allow the river to expand in steps with the rising water. Here's how it works:

Materials must first be accumulated on site. Materials needed include:

- ◆ Cedar Trees (cut)
- ◆ Jute (like burlap)
- ◆ Duck bills
- ◆ Wire (1/16 to 1/8 th inch)
- ◆ Gripples to match wire

Tools must be accumulated on site. Tools needed include:

- ◆ Wire cutter
- ◆ Hand held sledge (12 pounder)
- ◆ Rebar (3')
- ◆ Come-a-long or other winch type devices
- ◆ Rope and lots of it
- ◆ Chainsaw or handsaw
- ◆ Tarp and cordage
- ◆ First Aid Kit

Cedar trees bundled in jute (similar to burlap) are anchored to the stream bank to bring the toe of a bank back in toward the center of the stream.

1. Place 5-8 trees (depends on size), with trunks alternating end to end, wrap in jute like a burrito. Repeat until entire tree length is rolled in jute. Each cedar roll is now ready to be anchored.
2. Cedar tree rolls are placed on the top of the bank above the area where they are to be installed.
3. Install duck bill anchors at the upstream end of the project. Place a piece of rebar into the end of the duck bill anchor, point the duck bill into the bank and pound in until only about 4" (only the loop) of the cable remain. Remove the rebar and pull on the cable until you feel the anchor set. Repeat in two offset rows about 1 ½ to 2 feet apart. The bottom row should be as close to the streambed as possible or in the streambed if possible.
4. When you have two rows of anchors in (parallel to the streambed), lower a cedar roll into place and run wire in a zigzag pattern across the cedar roll between the two rows of anchors, using gripples to secure and tighten. Be sure to pull the wire as tight as possible each time you secure a gripple. Use two to three separate pieces of wire, so if one should break, you still have one or two holding the cedar roll in place.

5. Use a gripple to secure the end of the wire to itself, pulling as tight as possible. Have several people lean on the cedar roll to push it into the bank and then tighten the gripple, removing the slack from the wire.
6. Retrieve more duckbill anchors and drive them into the bank, just downstream of the first.
7. Position a second cedar roll downstream of the previous with some overlap (1 – 2 feet) so that a constant barrier is formed in front of the bank.
8. Once the lower tree rolls are in place, the second level of trees is added in the same method as steps 3-8.

The top of the bank may be tilled or shoveled to allow the loosened soil to be moved down to the top of the cedar revetment. This helps develop terraces in the eroding bank.

The revetment is the new toe and the top of the bank is now farther back, kind of like a line of steps up from the stream. The top of the cedar revetment (with all this new soil) is planted with water loving native trees and shrubs that grow fast or seeded and covered with an erosion control mat to keep the soil in place until everything starts growing in the spring.

As the cedar revetment traps sediment inside the jute and between branches, the new trees send roots down to stabilize the new soil

IMPORTANT – make sure that the revetment is tight against the bank – if water gets behind the tree it can do more damage than good. WHEN TIGHTENING AND SECURING THE WIRE, YOU WILL PULL the cedar tree revetment into and tight against the bank . This will increase the effectiveness of the structure in buffering the water's force on the bank and thereby reduce erosion and sedimentation.