

Fish Habitat Restoration Methods Concept Specification

Brush Mats (Sediment Traps)

Purpose:

- To stabilize point bars, eroding banks and tidal mud flats adjacent to river channels.

Conditions Where Applicable:

- Instream location and size must be approved by an Adopt-A-Stream Biologist.
- In streams with a high-silt bed load.
- Low gradient streams
- On intertidal mud flats adjacent to the river channel.

Habitats Created:

- Captures silt on point bars and along banks reducing siltation.
- Helps develop thalweg and pools.
- Stabilizes channel.

Advantages:

- Cost effective.
- Uses local materials.
- Traps silt and helps build banks and reduce erosion.

Disadvantages:

- Manpower intensive.
- Limited life span if the area does not vegetate.

Design Criteria:

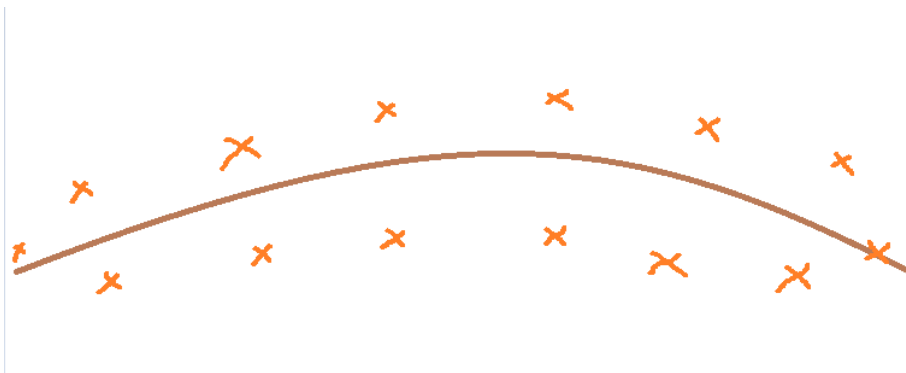
Equipment

- Brush axe
- Brush cutters
- Hand saw
- Bailing twin
- Maul

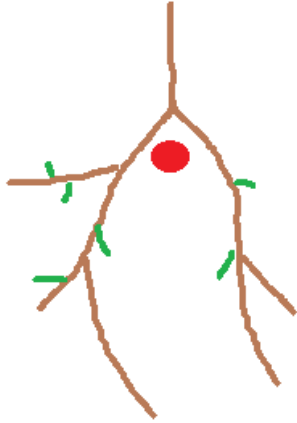
- Knife (or some kind of cutting device)
- Stakes (if coming from an outside source)
- Evergreen branches approximately 2 m long or small trees.
- Stake down and secure in place.
- Place stump end upstream and branch parallel to the flow.

Implementation Steps:

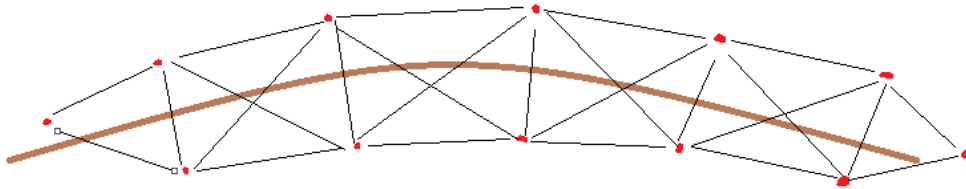
- Cut alders in surrounding area. Priority goes to the ones that are stuck in the stream (although leave some for cover) and then work your way out. Since it was hard to walk through the stream that we flagged, I would also focus on cutting down alders that will ultimately give you a pathway along the bank to walk so it is easier to get in and out of your site.
- Cut about half a meter off the base of the alder and sharpen the end, this will be used for the stakes.
- The stakes should be placed in the order as the figure below. Pound in stakes until they are stable. The bottom stakes (the ones that will be on the bank) should be just about at the bank height. The top stakes should be about .4m into the water. The spacing between stakes should be about a meter apart. This does not have to be exact
- There should be a leading and last stake as seen below.



- Fill in the inside area with brush, with the butt end of the branches pointing upstream. The branches that are in the water, if possible, should be anchored by hooking the Y in the branch around a stake.



- Tie down the mat using the bailer twine. As shown in the figure below. Tying knots at each stake. If necessary apply second layer of brush!



References:

Katherine Taylor Personal Communication and sketches

Lea Murphy, DFO Charlottetown Area Office. Personal Communication.

T. Dupuis, D. Guignon, R. MacFarlane and R. Redmond. 1994. A Technical Manual for Stream Improvement on Prince Edward Island. Canada/PEI Cooperation Agreement for Sustainable Economic Development. Morell River Management Cooperative Inc.: vii + 176p.

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