



Location:

The Thompson Falls Reservoir is formed by the Thompson Falls Dam on the Clark Fork River outside of Thompson Falls, Mont. The dam has been in operation since 1915 and is owned and operated by NorthWestern Energy.



Thompson Falls Reservoir Bank Stabilization Pilot Project



Addressing Erosion

Banks along the edges of reservoirs (manmade waterbodies resulting from dam construction) are often susceptible to excessive erosion due to water elevation changes and wave action.

This erosion can reduce water quality and aquatic habitat, as well as limit recreational access to the reservoir. Stabilization efforts are often desired to provide structure and prevent continued erosion.

This project's goal was to address severe bank erosion and create recreational access, while also promoting native vegetation and improving aquatic habitat.



A This widely used method of stabilizing reservoir banks features sloping bank down to a placed rip rap toe. While effective, this method provides little instream habitat.

B The pre-project condition of the reservoir bank featured 8-to-10-foot vertical eroding banks with minimal protection from erosion.

C The completed project, nine months after construction, features sloping banks down to a toe of wood, roots and shrubby vegetation, such as willow and red osier dogwood. The slope is planted with currant, chokecherry, Woods' rose, and cottonwood. A level bench provides suitable water access and dock anchor points.



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Bank Design with Nature in Mind

Natural streams, rivers and lakes are typically bordered by diverse structure and vegetation. Stability is provided not only by rock, but also woody debris, roots from vegetation and soil.

While the reservoir is an altered environment, we can promote a “natural” solution that is resilient and diverse while still achieving bank stabilization and access goals.

200 feet of eroding bank were identified for this project.



20 conifers from on site were used to construct a stable toe, protect from wave action, and provide fish habitat.

Level bench just above bankfull provides suitable water access and dock anchor points.



Planted
75 golden currant
100 chokecherry
30 cottonwood
25 Woods' rose

1,400 willow and dogwood cuttings were installed in the toe of the bank to provide living stability and improved aquatic habitat.