

Environmental Coordination Committee Funding Policy for Streambank Stabilization Projects

The Bear River Environmental Coordination Committee (ECC) annually receives numerous requests for funding a variety of projects related to enhancing Bonneville Cutthroat Trout (BCT) populations and water quality. Projects to date have included irrigation diversion fish passage and screening, watershed treatment, habitat improvement, and water quality improvement projects. While most proposed projects aim to improve BCT habitat, limited funding and the potential for some streambank stabilization projects to create negative impacts requires additional evaluation of bank stabilization proposals to provide the best cost-benefit ratio and overall habitat improvement possible.

Most projects are fairly straightforward; however, streambank stabilization projects can provide some site-specific benefits while also potentially negatively (or positively) affecting up- and downstream conditions. Additionally, although localized habitat benefits and water quality improvements may result from reduced streambank erosion, a short reach of bank that is stabilized among many miles of unstable bank may not provide readily measureable improvements to overall water quality and/or BCT abundance. This is of particular importance in numerous locations on the mainstem Bear River, where BCT use presently is very low/transient and habitat and water quality improvements would require reach-scale restoration projects to impart measureable effects.

The overarching goal of any ECC-funded stabilization project is to maintain or return waterways to **stable form and function and have a resulting positive impact on existing or potential BCT populations and aquatic ecosystems**. This includes relatively stable meander and sediment transport patterns. Therefore, it is necessary for meandering alluvial streams to continue to meander; however, adequate resistance (enhanced by riparian area plant root structure) prevents *excessive* erosion and sediment addition. Each streambank stabilization project will be evaluated relative to its contribution to suitable form and function on the reach for which it is proposed. Projects will also be assessed for site-specific merit and potential off-site effects. Depending on the stream type, appropriate methods for stabilization can include streambank buffer establishment, use of riparian fencing, riparian plantings, erosion control fabric combined with soil lifts, and angular rock. Natural streams have varying degrees of inherent stability. Streams confined in narrow, rocky canyons will tend to remain in the same location over time, whereas alluvial streams in relatively low gradient valleys meander and migrate over time. The goal of stabilization projects should be to restore form and function to degraded streams – *not* to prevent any future movement or changes from occurring. The majority of stability-related problems evident in alluvial streams are caused by channelization, down-cutting, loss of riparian vegetation, and flow-regime changes.

The goal of ECC-funded stream/river projects shall be stabilization and restoration of channel reaches to properly functioning conditions. For example, restoration of an alluvial stream should allow for some future channel migration, while a project on a

confined channel may not need to allow for such movement. Therefore, streambank stabilization proposals for which the primary purpose is to stop property (boundary) loss or shifts resulting from channel migration will likely not be considered for ECC funding. Additionally, numerous problems are caused by lack of floodplain access for streams. In sections of the Thatcher reach, for example, the river is confined to the channel and cannot access the floodplain. Adding permanent rock to banks in these areas may: 1) cause the bed to erode – increasing fine sediment in the system by local erosion and headward cutting until bed slope equilibrium is reached; 2) reduce the amount of area available for vegetative growth; and/or 3) re-direct erosive energy to other, non-hardened banks.

Current and future proposals will be evaluated based on a variety of factors; however, designs appropriate to the geomorphology of the stream type being treated will be a critical component of each project. An additional rating criterion (below), already in use, will continue to be utilized for stream stabilization projects.

14) Appropriateness of project goals to maintain or improve overall waterway form and function. (20 points)

Project implementation will maintain, improve, or have no effect on geomorphic form and function over at least 20 years (with either a positive or no impact on adjacent reaches due to project implementation)	0 points
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Project implementation will result in localized stability that may negatively impact adjacent reaches Project implementation will reduce floodplain access, may cause further downcutting and prevent lateral migration from occurring in reaches where such channel adjustment is normal	- 20 points
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