Stream Function Restoration

Stream Function Restoration are methods which may restore the natural hydrology of a stream including slope stabilization, in-stream controls, bank armor, and river training measures.

The transportation project may require more or less than one acre of stewardship, affecting the total cost of the stewardship type. Each cost includes the total initial capital costs and the maintenance costs annualized for one acre of the stewardship type.

Stormwater Benefits (Water Quantity/Quality of Runoff)

Stream function restoration measures may provide a small benefit by improving water quality. Improved water quality can be the result of reduced stream flow speed and increased deposition of contaminants. Improved water quality might reduce stormwater treatment and infrastructure management costs.

Enhanced water quality can also provide qualitative value in several other ways including:

- Human health and wellbeing from drinking water and household water supplies.
- Improved recreational and aesthetic values to people who live, work, shop, and play near streams, rivers, and other waterbodies.

Support for habitat and species dependent on clean water. This directly increases the intrinsic value to people of species and habitat. This indirectly supports commercial and recreational fisheries and other wildlife-dependent activities.

Aesthetic Benefits

Depending on the design, stream function restoration may provide a small aesthetic benefit by increasing the greenness or presence of waterbodies in an area. Waterbodies have the potential to provide aesthetic value to nearby residents, businesses, and visitors.

Habitat Value

Restoring stream function to its natural state has a moderate habitat benefit. Improving water quality by reducing the speed and magnitude of flow may reduce erosion and habitat degradation of aquatic and riparian habitats.

Species also have intrinsic value, or their value outside of human uses. These are generally non-anthropocentric values such as existence value, the value of conservation for future generations, or natural historical value. These may provide mental, spiritual, and social wellbeing to humans, but are often individual to each person. By acknowledging the intrinsic value of species and protecting them, human wellbeing may also naturally increase. *1

Recreation

Depending on the design and access, stream function restoration may have a small recreation benefit by increasing the greenness or aesthetic attractiveness of the stream.
Avoided Flooding

Stream function restoration may provide a small avoided flooding benefit. The largest effect of transportation projects is the facilitation (indirect effect) of increased development in a drainage basin. Although the direct effect from a single transportation project may not be consequential, stream function restoration may provide a small benefit by helping to reduce peak flows and localized and downstream flooding, therefore reducing the associated damage costs. Reducing high-volume runoff and high-flow speed runoff can also reduce degradation of riparian and aquatic habitat.