

NRCS CONSERVATION WORK

St. Joe & St. Maries Rivers
2009-2014

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Stream Bank Protection: Area Covered

NRCS has treated 11.4 miles of eroding river banks on the St. Joe & St. Maries Rivers since 2009

- Most projects focused on the lower 50 miles of the St. Joe River & the lower 7 miles of the St. Maries River
- 57 miles + 57 miles = 114 miles of bank (both sides of river)
- NRCS treated approximately 10% of the 114 miles of river banks = 11.4 miles
- The average cost per foot of bank treated is \$45/foot



This photo was taken during Spring runoff 7 months after work was completed. The willows, barbs and rootwads are under water at this time but the grass/legume planting has taken off!

Stream Bank Protection: Amount of Sediment Reduction

We used an average of 1 foot per year of lateral erosion and average bank height of 7 feet to determine how many cubic yards of soil were reduced from entering the watersheds. (Each site is unique)

- $1 \text{ ft./yr} \times 7 \text{ ft. bank height} \times 60,192 \text{ ft. (11.4 miles} \times 5280 \text{ ft./mile)} = 421,344 \text{ cubic feet}$
- $421,344 \text{ cubic feet} / 27 \text{ cubic feet per cubic yard} = 15,605 \text{ cubic yards of soil erosion}$
- $15,605 \text{ cubic yards} / 12 \text{ cubic yards per dump truck} =$

1,300 dump truck loads
of sediment!!!



STREAMBANK PROTECTION

Eroding Bank Example



Treated vs Not Treated at
Landowner Property Line



STREAMBANK PROTECTION

Before Treatment



5 Years After Treatment



Willows and grass have almost fully established along protected bank.

STREAMBANK PROTECTION

Before Treatment



4 Years After Treatment



Willows have grown 6 feet in 4 years!

STREAMBANK PROTECTION

Before Treatment



Sloughing banks during Spring runoff. Bank erosion pins showed up to 15ft of bank was lost in some areas!

During Construction



Banks shaped to a 2:1 slope, rootwads/logs placed every 50ft, willow bundles planted every 5ft.

STREAMBANK PROTECTION

8 Years After Treatment



Eroding banks were sloped to 2:1, Willows/Dogwood were planted every 5ft. and 12" - rock was placed.

8 Years After Treatment



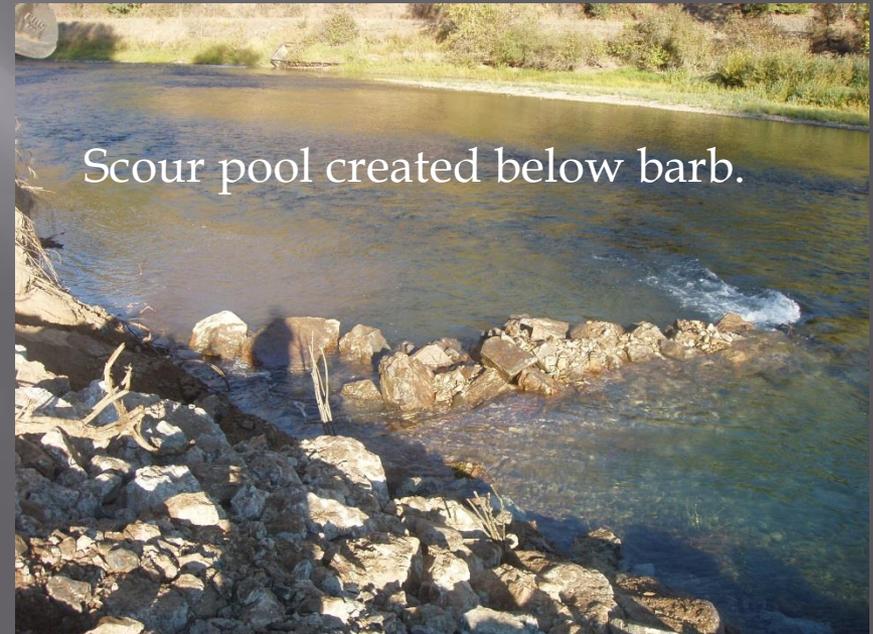
Planted vegetation & grass has almost entirely covered the rock and no erosion has occurred since treatment.

STREAMBANK PROTECTION

Rootwads/Logs Example



Rock Barb Example



Techniques used to redirect water away from banks and provide in-stream aquatic habitat.

Riparian Forest Buffer

NRCS installed about 35 acres of riparian forest buffer along the St. Joe & St. Maries Rivers.

Planted around 300 trees/acre.

$35 \text{ acres} \times 300 \text{ trees/acre} = 10,500 \text{ trees.}$

This includes gallon size stock of native trees, tree protectors & site preparation.



Riparian forest buffers reestablish flood plain riparian zones which will improve habitat, provide shade and help protect banks.

Riparian Livestock Exclusion Fence

NRCS has installed approximately 47,748 feet of exclusion fencing along the St. Joe & St. Maries Rivers

This includes both 4 strand wire (wildlife friendly) and electric livestock exclusion fence



Access Control

This practice helps landowners manage the use of an area to mitigate resource loss

NRCS installed 52.2 acres of access control along the St. Joe & St. Maries Rivers to protect erosion susceptible areas



Access Control is the temporary or permanent exclusion of animals, people, vehicles or equipment from an area susceptible to erosion.

Benefits

- ▣ Reduced sediment & nutrient loads in the St. Joe and St. Maries Rivers
- ▣ Improved water quality
- ▣ Improved fish habitat
- ▣ Helped restore riparian zones along rivers
- ▣ Improved floodplain functionality

For more information on NRCS programs please contact your local NRCS office or go to our web site:

<http://www.nrcs.usda.gov/wps/portal/nrcs/site/id/home/>