PROJECT DESCRIPTION

RESTORATION ENGINEERING LLC
Aquatic Restoration and Environmental Hydraulics

Stream Restoration, Wetland Enhancement

PMD Spring Creek

Stream Restoration, Wetland & Fish Habitat Enhancement

Location: Livingston, Montana

Client: Private Client and NRCS

Key Project Elements:

- Feasibility Analysis & Concept Development
- Stream Restoration Design
- Permit Acquisition and Funding Grant Submittals
- Construction Management
- Wetland & Riparian Revegetation
- Wetland Enhancement

Project Description:

The owners of the PMD Ranch and the Nelson Spring Creek Ranch had interest in restoring a small spring creek to restore spawning and rearing habitat for Yellowstone cutthroat trout. The creek originates from three individual springs on the Nelson Spring Creek Ranch and runs through the PMD Ranch until it joins the Yellowstone River. The creek was functioning as a ditch as a result of historic manipulation of the channel to dewater a wet meadow. The stream had marginal habitat for fish and wildlife and provided very few grazing benefits. The landowners utilized the Natural Resources Conservation Service (NRCS) Wildlife Habitat Incentives Program and Montana Fish, Wildlife, & Park's (MTFWP) Future Fisheries Improvement Program to fund the project. The landowners needed a restoration design contractor that was certified as an NRCS Technical Service Provider (TSP).

RE's team members were retained to provide design and construction services for the project. The channel design solution included combining three different spring sources into one single thread channel to maximize flow rates and optimize cutthroat spawning habitat potential. Physical variability was designed and built into the new channel with associated shallow water wetlands to create trout rearing habitat and adult deep water winter refuge. TSP activities included acquisition of funding, reference reach characterization, flood frequency analysis, sediment transport modeling, design of channel geometry, hydraulic analysis, bioengineered bank design and floodplain grading.

The PMD spring creek is now a clear cold spring tributary that provides excellent trout rearing and spawning habitat to Yellowstone River fish. Each year following the restoration, increased fish observations have been made. With the habitat restored and well established, MTFWP will "seed" the stream with fertilized Yellowstone cutthroat trout eggs during the spring spawning season to imprint the fish to the stream. These fish will then return in subsequent years to spawn and should yield significant numbers of Yellowstone cutthroat trout to the Yellowstone River ecosystem.