

Pentz-Smith Diversion Repair 2016-2018

Client: Trout Unlimited

Owner: Pentz Smith Diversion Co.

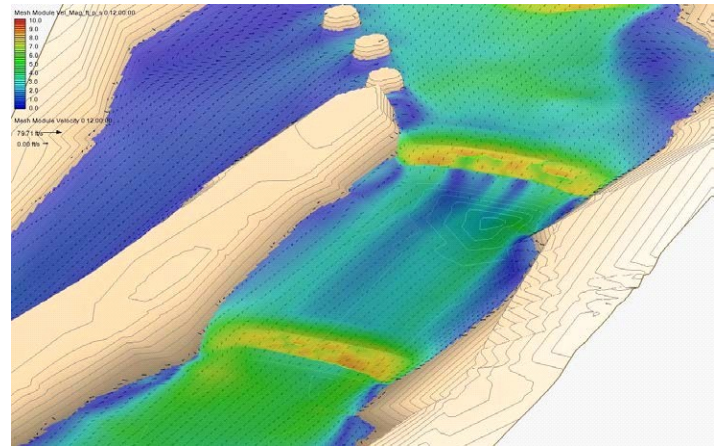
Project Location: Morgan, UT (Weber River)

Name of Project Manager/Engineer: Quinn Donnelly, PE

Brief description of project: For this Trout Unlimited managed project, RiverRestoration led the design of improvements to a diversion structure on the Weber River downstream of Morgan, Utah. Goals of the project included fish passage for trout and bluehead sucker, particularly bluehead sucker and trout, as well as downstream boat passage for recreational users. The project also intended to reduce in-channel maintenance and improved functionality of the diversion. The project consisted of two boulder grade control structures and bank improvements to meet the project goals. In addition to the fish and boat passage, the changes altered hydraulics to reduce debris and sedimentation collection at the diversion inlet. RiverRestoration conducted the bathymetric survey, designed the hydraulics using 1D HEC- RAS and 2D SRH-2D, authored a floodplain compliance memo, produced construction documents, and performed construction oversight for the project. The success of the project will be a catalyst for future dam modifications on the Weber River in the vicinity of Morgan. Currently Trout Unlimited has RiverRestoration working on conceptual design for three major diversions on the Weber River upstream of the Pentz-Smith Project.



Pentz-Smith fish passage improvements after restoration include two grade control structures to reduce vertical drop over diversion structure and maintain upstream pool elevations



2D model of Pentz Smith diversion project in SRH-2D



Pentz-Smith irrigation diversion structure before restoration. The grade control created either too large a head drop or high velocities that blocked upstream aquatic movement.



Close up view of the bottom rock-ramp structure at Pentz-Smith