
O'DELL CREEK HEADWATERS – FIVE YEARS OF STREAM AND WETLAND RESTORATION

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Since 2005, River Design Group, Inc., has collaborated with resource agencies and landowners to develop and implement comprehensive stream and wetland restoration strategies in the O'Dell Creek Headwaters Wetland Complex southeast of Ennis, Montana. An important spring creek tributary to the Madison River, historical land management practices resulted in the degradation and loss of wetland habitats and physical changes to O'Dell Creek including channel downcutting and incision, bank erosion, and simplification of instream aquatic habitat. Projects have included reclaiming over 3.0 mi of irrigation and diversion ditches, reconstructing over 6.7 mi of spring creek, restoring 254 ac of prior converted wetlands, and improving the function of an additional 256 ac of wetland habitat in the project area. These activities have significantly improved habitat conditions for target fish species including brown trout and rainbow trout. Aquatic habitat improvements included modifying the channel geometry to a lower width-to-depth ratio configuration with riffle, run, pool and glide features. Coarse wood habitat structures and large roughness elements included roughened riffles were incorporated to diversity channel habitats. Wildlife habitat improvements enhanced existing and created additional palustrine emergent and scrub shrub wetlands throughout the project area, with emphasis on breeding, migration and stop-over habitats for neo-tropical migrant birds. In summary, this multi-year restoration effort has improved aquatic habitat complexity, reduced the supply of sediment loading to O'Dell Creek and the Madison River, re-established functional wetlands, and increased the quality and availability of habitat for a variety of migratory bird species.