

# MITIGATING CUTTHROAT TROUT HABITAT LOSSES USING CONSTRUCTED SPAWNING BEDS IN A WYOMING SPRING CREEK<sup>1</sup>

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**Abstract.** Artificial spawning beds and adjacent pools with cover were constructed to increase the available spawning habitat and adult holding water for Snake River cutthroat (*Oncorhynchus clarki*) on Three Channel Spring Creek in Jackson, Wyoming. Three Channel Spring Creek is a perennial spring creek with an average baseflow of 1.42 cubic meters per second (50 cfs) and is a tributary to the Gros Ventre River at its confluence with the Snake River. Constructed levies throughout the Snake River drainage in Jackson Hole have cut off the historic flood plain and have reduced the available spawning habitat. In 2001, a total of eight spawning beds were constructed throughout a 500 m stretch of lower Three Channel Spring Creek. Spawning beds were constructed using 2.5 cm – 5 cm washed, quarried gravel at a ratio of two parts 5 cm to one part 2.5 cm. Spawning beds were constructed by placing gravels directly onto the existing substrate in areas where the average velocity exceeded 0.04 cubic meter per second (1.5 cfs) and the average post-construction depth exceeded 15 cm. Pools were excavated downstream of each constructed spawning bed to an average depth of 1.06 m. Native cottonwood logs were submerged in each of the pools by driving them into the banks with an excavator. Redd and fish counts conducted by the Wyoming Game and Fish Department before and after the construction of the project reflected an increase in the cutthroat utilization throughout the project area. The number of redds within the constructed area increased by 60% and the estimated number of spawning fish increased by 50%. All of the constructed beds were utilized by multiple spawning pairs in the first year post-construction. We concluded that artificial spawning beds are an effective tool to increase cutthroat production in spring creeks with existing populations.



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