

## **RAINBOW TROUT AND BROWN TROUT POPULATIONS BEFORE AND AFTER A STREAM RESTORATION PROJECT ON BIG SPRING CREEK, MONTANA<sup>AFS</sup>**

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A high profile stream restoration project was completed on a 2600-ft reach of Big Spring Creek at the Brewery Flats Fishing Access Site from 1998 to 2001. This project replaced an entrenched reach with a meandering riffle pool stream channel and floodplain. Stream length was increased by 1400 ft. Initial findings indicated the project was successful. The restored reach successfully passed a flood event in 2003 and trout numbers appear to have increased. Big Spring Creek is a 100-cfs (base flow) trout stream that originates from a 52 °F spring south of Lewistown, Montana. Population data were collected with mobile electrofishing on the restored section and two other reaches of Big Spring Creek from 1995 to 2004. Mean number of combined rainbow trout and brown trout ( $\geq 10$  inches) ranged from 500 to 2200/ mi depending on the section. Total trout/mi ( $\geq 10$  in) averaged 36 percent higher during the 4 yrs immediately after the project in the restored section, compared to increases of 22 and 0.9

percent in the other two sections. The 1400-foot increase in length at Brewery Flats meant trout numbers ( $\geq 10$  inches) in the section increased by 90 percent after restoration. From 2002 to 2004 Brewery Flats showed a 66-percent increase in trout/mi compared to declines of 36 and 23 percent in the other two sections. Small rainbow trout declined to 33 percent of the pre-project numbers at Brewery Flats but were 42 percent of the pre-project average at the