EFFECTS OF STREAM CHANNEL CHANGES

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Rechanneling streams and bank cover removal along streams in the course of highway and other road construction has had a very drastic effect on the fish population in many of our trout streams.

Experiments done by Marvin F. Boussu, for a Master of Science Thesis at Montana State College have shown for Trout Creek in the Gallatin Valley that removal of brush alone, without making any other change in the stream, reduced the population of trout by 58 percent in the face of a general 36 percent increase in the population of the stream.

Removal of undercut banks alone, without making any other change in the stream, reduced the population by 33 1/3 percent in the face of a general 20 percent increase in the population of the stream.

Effects of channel changing a 300-foot section of Flint Creek near Philipsburg by the Highway Department in 1956 are shown in the following table.

CATCHABLE TROUT CAPTURED DURING POPULATION CENSUS FROM A 300-FOOT SECTION OF FLINT CREEK, MONTANA

Year of Sample	1955	1956	1957	1961	1962
Trout 6" and over	75	69	6	23	23

As seen in the table, the prechannel change catchable trout population was down 91 percent the year following construction. The population was still 67 percent below the preconstruction population in 1961 and 1962.

A study on the fish population on Prickley Pear Creek (Wolf Creek Canyon) showed there was only 40 percent as many catchable-size fish in stretches which had been straightened many years earlier as there were in unaltered sections. In addition, observations with the standpipe indicate the stream-bottom gravel in the straightened sections is less permeable (i.e. not as good for trout spawning) than in the natural sections. This indicates the stream's trout rearing potential was affected by the heavy sediment resulting from railroad and highway construction as well as from the loss of cover.

Among our more important waters, channel changes due to highway construction are soon to be, or have been completed in recent years, on Beaverhead River ($2\frac{1}{2}$ miles) Yellowstone River in Yankee Jim Canyon (1100 feet), Madison River at Three Forks (1700 feet), West Gallatin River, Missouri River above Great Falls, Prickley Pear Creek in Wolf Creek Canyon (approx. 6 miles) Rocky Creek, near Bozeman, (about 2 miles), Prickley Pear Creek, above East Helena, Otter Creek, near Belt, and Sheep Creek, near White Sulphur Springs.