

YELLOWSTONE CUTTHROAT RESTORATION IN GOOSE CREEK

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Goose Creek is a tributary to the Stillwater River in Park County north of Cooke City, Montana. Goose Lake, located at the head of the creek, has recently become the wild brood source of Yellowstone cutthroat trout (*Oncorhynchus clarkii bouvieri*; YCT) for the Montana hatchery system. A small cascade that is not a complete barrier to fish passage has to date precluded brook trout (*Salvelinus fontinalis*) from colonizing Goose Lake. Brook trout dominate the creek downstream from this cascade. Three lakes are present on a tributary stream to Goose Creek and these lakes also harbor brook trout populations. There is approximately 6 mi of stream between the cascade barrier and the confluence with the Stillwater River. Near the confluence there is a series of three natural waterfalls that isolate Goose Creek from the rest of the drainage. In August of 2007, Goose Creek and the three lakes were treated with rotenone in the formulation CFT Legumine to remove brook trout. The goal of the treatment was to prevent brook trout from colonizing Goose Lake and to expand the range of YCT in the drainage. Rotenone was applied at a rate between 1.5 and 3 parts/million (ppm) to the lakes and 1 ppm in the stream. Rotenone was applied to the lakes using an outboard powered boat and a trash pump system. Drip station and backpack sprayers were used to treat the stream and associated backwaters. A helicopter was used to transport equipment and personnel into and out of the site. The success of the project has yet to be determined. The area will be treated a second time in 2008 to insure a 100 percent kill of brook trout was accomplished.