

CONSERVATION OF WESTSLOPE CUTTHROAT TROUT BY REMOVAL OF BROOK TROUT USING ELECTROFISHING^{AFS}

Bradley B. Shepard, Montana Department of Fish, Wildlife and Parks, Montana Cooperative Fishery Research Unit, 1400 South 19th, Bozeman, MT 59718, bshepard@montana.edu

Lee Nelson, Montana Department of Fish, Wildlife and Parks, Townsend, MT 59644

We evaluated removal and relocation of non-native brook trout from about 14 km of stream in Cottonwood, Craver, Muskrat, Spring, and Staubach creeks to conserve sympatric populations of native westslope cutthroat trout. We successfully eliminated brook trout from treatment reaches in Cottonwood, Muskrat, and Staubach creeks. While we successfully suppressed brook trout in Spring and Craver creeks, we were unable to eradicate them due to dense riparian vegetation, beaver dams, and abundant woody debris in these channels.

Eradication cost about \$3000-\$4000 (\$US)/ km. Electrofishing eradication costs were similar to estimated costs for two antimycin piscicide treatments, but slightly more than estimated costs for two rotenone treatments. However, electrofishing eradication is preferred in locations where native fish are in sympatry with non-native fish because more native fish can be saved during removal efforts. It took at least six removal treatments of two to three passes/ treatment to effectively eliminate brook trout from most treatment reaches. We recommend conducting: 1) six removal treatments within three years; 2) the first two removal treatments prior to spawning by nonnative fish and removing mature adults; 3) one removal treatment during spawning and trampling nonnative fish redds; and 4) some removal treatments in the late fall or early winter. It is important to realize that smaller, younger nonnative fish (age-0 and age-1) will be more difficult to capture, so plan on eradicating these fish after adults have been eliminated. Our data, and other studies, have shown that native cutthroat trout populations will respond positively to removal of nonnative brook trout. This response may take two to three years and appears related to elimination of competition and/or predation that oRecent radio-telemetry studies in the upper Clark Fork Basin (1999-2004) indicated