Elkhorn Creek Westslope Cutthroat Restoration Efforts

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A report submitted to WNTI
by
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Summary:

During the summer of 2012, Montana Fish, Wildlife & Parks constructed a fish barrier on Elkhorn Creek (Figures 1, 4 & 5). Elkhorn Creek is a tributary to Willow Creek which drains into Holter Reservoir. The project area is located entirely within the bounds of the Beartooth Wildlife Management Area. Elkhorn Creek currently supports hybridized westslope cutthroat (Figure 3) and brook trout. Funding for construction of the fish barrier was obtained from Future Fisheries Montana, Western Native Trout Initiative (WNTI), Missouri River Resource Advisory Committee (RAC), Montana Fish, Wildlife & Parks, and PPL Montana.

Plans for 2013 include removal of hybridized westslope cutthroat trout and brook trout. Elkhorn Creek supports westslope cutthroat trout that are less than 1% hybridized in the uppermost 1/2 to 1 mile of stream. These very slightly hybridized westslope cutthroat trout would not be removed and would serve as the source of colonists for downstream reaches of Elkhorn Creek where fish removals would occur.

If hybridization has increased in upstream reaches to unacceptable levels (> 1%); then complete eradication of hybrid trout and brook trout would be considered. In the event complete eradication is necessary, non-hybridized westslope cutthroat trout (live fish or eyed-eggs) would be transferred from a separate drainage. A total of approximately 6 miles westslope cutthroat trout inhabited stream will be protected from continued hybridization with rainbow trout and displacement by non-native brook trout (Figure 1).

Background and Justification:

In 1972, Montana Fish, Wildlife & Parks constructed a gabion fish barrier in the lower reaches of Elkhorn Creek (Figure 1). Rotenone was used to remove westslope trout that had hybridized with rainbow trout from approximately three miles of stream above the constructed barrier (Figure 2). The treated reach of stream naturally re-colonized from a source of non-hybridized westslope cutthroat trout remaining in the headwaters of Elkhorn Creek. This project protected a westslope population in a total of 12 miles of stream. Genetic samples collected in 1996 indicated that the Elkhorn Creek population was still non-hybridized. In 2002, genetic samples indicated a recent hybridization event had occurred; likely because of a failure of the downstream gabion fish barrier. A sample collected from the same area in 2008 revealed that every individual fish in the westslope population in Elkhorn Creek was hybridized. In addition, a single brook trout was captured upstream of the gabion fish barrier during genetic collections in early 2008.

Site visits were made by restoration biologists and a design engineer to evaluate the potential for a retrofit or rebuilding of the old gabion barrier. It was determined that site characteristics, primarily lack of incisement and beaver activity, precluded this site from consideration for barrier repair or replacement. An alternate barrier site was identified approximately three miles upstream of the old barrier (Figure 1 and 2). The new barrier site features bedrock control points and a narrow incised channel. A barrier design and cost opinion was developed with funding from PPL Montana.

Historically Elkhorn Creek and the Missouri River would have supported native populations of westslope cutthroat trout. Non-hybridized westslope cutthroat trout occupy only about 8% of their historical range in the western United States and less than 4% of their historical range in northcentral Montana within the Missouri River Drainage. Primary threats to westslope cutthroat trout include competition and hybridization with non-native rainbow trout and competition with brook trout. Projects which restore westslope cutthroat trout to historically occupied habitats or protect existing populations of westslope cutthroat trout are necessary to prevent extinction of westslope cutthroat trout. In addition, efforts to stabilize and increase westslope cutthroat trout populations would likely prevent a future listing of westslope cutthroat trout under the Endangered Species Act. The prevention of an ESA listing would help avert potential additional federal regulatory restrictions.

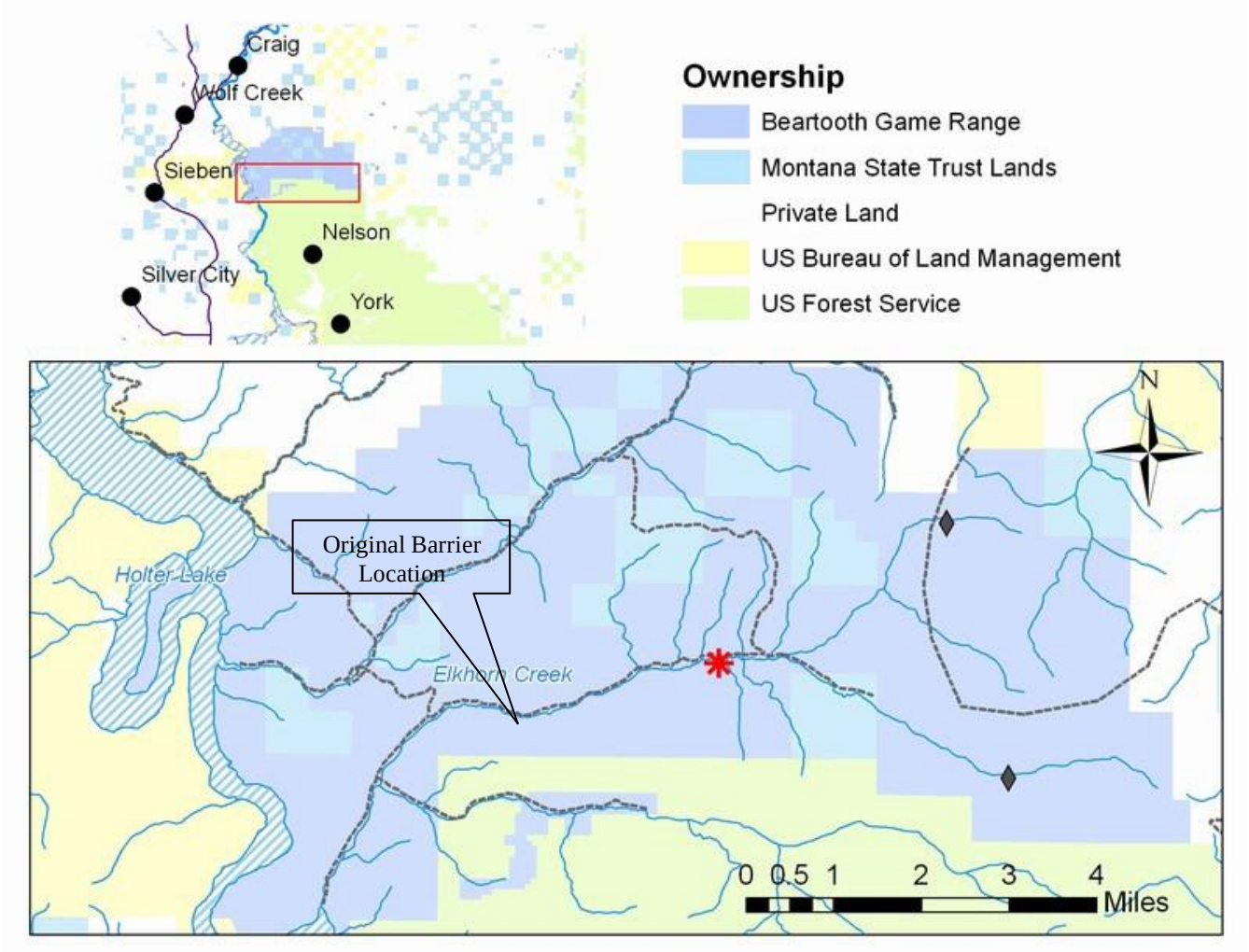

Figure 1. Elkhorn Creek barrier location (red asterisk), old barrier location, and extent of WCT population, gray diamonds.

Figure 2. Original piscicide treatment, circa 1972

Figure 3. Westslope cutthroat trout hybrid, Elkhorn Creek, 2012

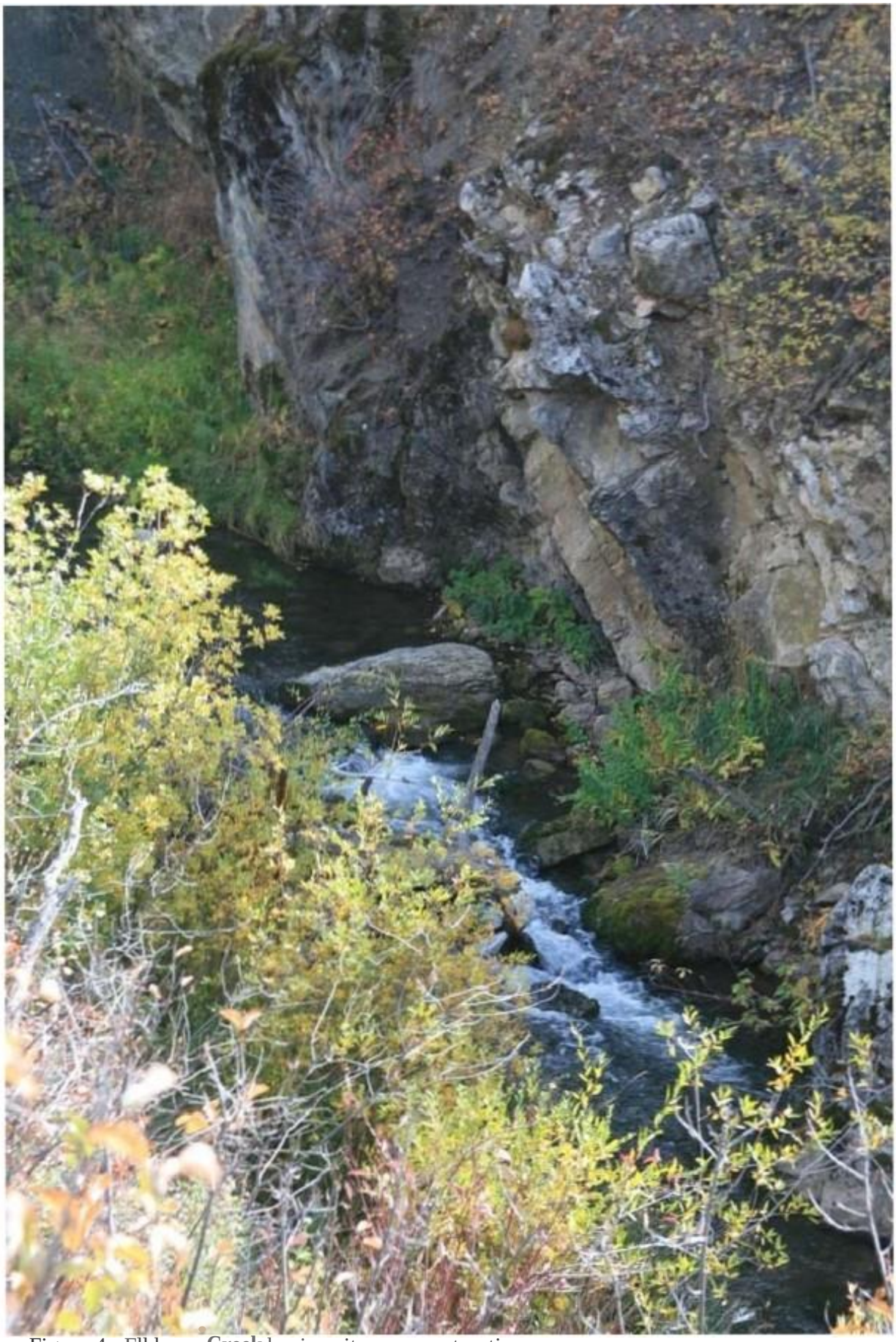

Figure 4. Elkhorn **Creek** banier site pre-construction.

Figure 5. Completed Elkhorn Creek fish barrier September, 2012.

Budget and Funding Sources:

As per the attached budget summary sheet, the total cost of the project was approximately $156,306 which included approximately $16,200 for surveying, design, and engineering and $129,086 for construction. Oversight included a contract with a design engineer ($9600) and in-kind oversight from the Design and Construction Bureau of MFWP. The majority of costs were split between Future Fisheries Montana ($59,057) and the PPL Montana Missouri River fisheries protection, mitigation and enhancement program ($49,039). Additional funding was acquired from Montana Fish, Wildlife & Parks ($12,000) Western Native Trout Initiative (WNTI - $25,000), and the Missouri River Resource Advisory Committee (RAC – 10,000).

Item	Paid by PPL to MFWP D&C	Paid by MFWP to MFWP D&C	Paid by WNTI to MFWP D&C	Paid by FF to MFWP D&C	Paid by Mo. RAC to MFWP D&C	Totals Line Item
Project construction by Antila Construction	$ 23,239	$ 12,000	$ 25,000	$ 59,057	$ 10,000	$ 129,296
Design Pioneer Technical	$ 16,200					$ 16,200
Oversight Pioneer Technical	$ 9,600					$ 9,600
Printing and advertising costs for bidding					$ 210	$ 210
Archeological Services G.C.M.				$ 1,000		$ 1,000
Total Paid by PPL	**$ 49,039**					
Grand Total Project Cost	**$ 156,306**					$ 156,306

*Note: The total project cost (D&C financial re-cap) was slightly less than the grand total at $ 154,344. This discrepancy is due to a small amount of overhead charged to incoming funds.