Montana Fish, Wildlife & Parks

Notice of Decision

Environmental Assessment of the Construction of a Fish Barrier and Removal of Non-Native Fishes with Electrofishing or Rotenone in Elkhorn Creek (Beartooth Wildlife Management Area)

June 10, 2011

Project Proposal:

Montana Fish, Wildlife & Parks propose construction of a fish barrier on Elkhorn Creek (EC; Beartooth Wildlife Management Area) and removal of non-native fishes upstream of the barrier with electrofishing techniques or piscicides. Genetic samples collected in 2009 from the headwaters of Elkhorn Creek revealed that WCT are less than 1% hybridized in the uppermost ½ to 1 mile of stream. These very slightly hybridized WCT 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 to unacceptable levels since the last genetic testing in 2008 (> 1%); then complete eradication of hybrid trout and brook trout would be considered. A total of approximately 9 miles of stream would be affected by this project. In the event complete eradication is necessary, non-hybridized WCT (live fish or eyed-eggs) would be transferred from a separate drainage.

Justification:

EC 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. EC currently supports hybridized westslope cutthroat trout (rainbow trout X westslope cutthroat trout crosses) and brook trout.

In 1972, Montana Fish, Wildlife & Parks (FWP) constructed a gabion fish barrier in the lower reaches of Elkhorn Creek (Figure 1). Rotenone was used to remove WCT hybridized with rainbow trout from approximately three miles of stream above the constructed barrier. The treated reach of stream naturally re-colonized from a source of non-hybridized WCT remaining in the headwaters of Elkhorn Creek (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 gabion fish barrier. A sample collected from the same area in 2008 revealed that the every individual fish in

the WCT 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). 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 EC and the Missouri River would have supported native populations of WCT. Non-hybridized WCT 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 WCT include competition and hybridization with non-native rainbow trout and competition with brook trout. Projects which restore WCT to historically occupied habitats or protect existing populations of WCT are necessary to prevent extinction of WCT. In addition, efforts to stabilize and increase WCT populations would likely prevent a future listing of WCT under the Endangered Species Act. The prevention of an ESA listing would help avert potential additional federal regulatory restrictions.

Environmental and Social Impacts of Project:

Funding for construction of the fish barrier on EC was obtained through competitive grants, including, Future Fisheries of Montana, PPL Montana, and the Missouri River RAC (USFS). The Elkhorn Creek trailhead and trail are popular with hikers, horsemen, hunters, and anglers. The trailhead is approximately one mile upstream of the proposed barrier construction site. Access to the trail could be limited during construction of the barrier for short periods of time when heavy equipment are accessing the site (infrequently over two to six week's time). Construction activities (excavator operation, dewatering, etc.) would have some impact on recreational aesthetics. If treatment with rotenone is necessary, the trailhead would be closed for several days; with the period of the closure dependent on the amount of time the treated reach remained toxic to fish. The label for CFT Legumine states that detoxification should be terminated when replenished fish survive and show no signs of stress for at least four hours. We would expect the treated water to be non-toxic to fish in 24 to 48 hours after the application of rotenone. Therefore, it can reasonably be expected that the trail closure would last 4 to 7 days total. The Beartooth Wildlife Management Area is a popular and high value hunting area for deer, elk, and bighorn sheep. To limit impacts to recreational hunting, every attempt would be made to limit piscicide treatments and construction to periods of non-hunting use. The fish barrier would be constructed during low stream flow periods. Since the barrier site is located next to a vehicle access road, impacts to hunters should be minimal. At proposed treatment levels, stream water would not be toxic to wildlife or livestock. However, to limit any potential conflict, the treatment would be planned when livestock are pastured

elsewhere or livestock would be temporarily moved to adjacent pastures during the treatment period. Electrofishing efforts would occur during summer and early fall. Electrofishing efforts would cease prior to the beginning of big game archery season.

Rotenone is a naturally occurring substance derived from the roots of several tropical and sub-tropical plants in the bean family. All piscicides kill through biochemical processes at the cellular level which make it impossible for the fish to use oxygen absorbed in the blood and needed in the release of energy during cellular respiration. Rotenone naturally degrades within 1- 8 weeks through hydrolysis and exposure to sunlight and would likely degrade in less than two weeks in this application. Rotenone applied to EC would be neutralized with potassium permanganate. FWP expects the impacts to non target invertebrates within the project area to be minimal with ample source areas for re-colonization of invertebrates lost during the treatment. FWP also expects minimal impacts to amphibians and reptiles as a result of this project by implementing the project when larval life stages are less likely to be present in the area. FWP expects this project to have little or no adverse effect on mammals or birds that use the area. Ample research has shown that rotenone is not toxic to mammals and birds at the fish killing concentrations that will be used for this project. This project is also not likely to cause displacement of local populations of birds or mammals; project personnel activity on EC during the construction project and during piscicide treatment will briefly be more intense than existing recreational use (approximately three weeks during construction and one week during piscicide treatment). The risk that rotenone will enter and be mobile in groundwater is minimal. Tests have shown that rotenone does not transport through sediments. FWP will follow the manufacturer's label recommendations that advise using sentinel fish to ensure the product has adequately degraded prior to re-stocking of cutthroat trout or cessation of potassium permanganate detoxification. Risks to applicators are substantially greater than risks to the general public because of the necessity of handling the compounds at full strength. Measures to reduce risks to applicators include training in the proper handling of piscicides, and the use of safety equipment listed on the product labels such as respirators, goggles, and gloves. At least one, and most likely several, Montana Department of Agriculture certified pesticide applicator(s) would supervise and administer the project. Rotenone and potassium permanganate would be transported, handled, applied, and stored according to the label specifications to reduce the probability of human exposure or spill. Health risk to project personnel will be minimized through the use of proper planning, preparation, and the use of personal protective gear. Prior to piscicide treatment, a Department of Environmental Quality 308 permit will be acquired (authorization for short term exemption of surface water quality standards for the purpose of applying a fish toxicant).

There would be a temporary loss of angling opportunity in upper EC between the time of fish removal and for several years after restoration with WCT. EC upstream of the proposed fish barrier should be fully colonized with WCT within 5 years of project implementation. In most cases cutthroat trout fisheries in streams in Montana are catch and release only. After colonization of upper EC FWP would evaluate whether the fishery could support limited harvest. If possible, regulations would be changed to allow anglers the option of harvesting WCT for consumption. After recolonization of WCT the

EC fishery would continue to provide an extremely unique opportunity to fish for Montana's state fish in a relatively pristine location on the Beartooth Wildlife Management Area.

Cumulative Effects:

A separate barrier native WCT restoration project was completed in 2010 on Cottonwood Creek, an adjacent drainage 6 road miles from Elkhorn Creek. Because of the distance between these projects and span of time between them, potential impacts would not be cumulative. There are no other WCT restoration projects planned for the Beartooth Wildlife Management Area

Public Involvement:

In compliance with the Montana Environmental Policy Act, an Environmental Assessment was prepared and circulated for public comment on March 23, 2010. Copies of the EA were made available at the State Library in Helena, the FWP Region 4 Headquarters in Great Falls, and the FWP internet web site. Two comments were received via e-mail on the proposed project prior to the closing of the comment period (4/22/2011). Comments are reproduced here in bolded type, responses are in normal type:

4/14/2011
"I am writing in opposition to the poisioning [sic] of Elkhorn Creek with rotenone. This is a destructive practice with deadly consequences to aquatic life besides fish. It will also take the creek out of fishing commission for some time to come. If the Department wants to encourage westslope cutthroat populations, I believe it can do so by far less destructive means. Such as liberal limits on or even requiring that fishermen keep other species cought [sic]. Simply going to catch and release only has brought the cutthroat back strong in places like the East Fork of the Bitterroot."

Response: As stated in the EA, piscicides do impact gilled invertebrates but these invertebrates are highly resilient and biomass will recover rapidly through downstream colonization by drift and aerial dispersal. Longer term changes in the composition of aquatic invertebrate communities can be expected in rotenone treatments. However, long term changes in the species composition of aquatic invertebrate communities have also been observed in systems impacted by natural disturbances such as fire. Rotenone treatments would be conducted when amphibian species are not at vulnerable life stages.

Liberal fishing limits would likely not be helpful in reducing hybridization in Elkhorn Creek. All of the WCT in Elkhorn Creek are hybridized and hybridization is at levels high enough that to be successful, every fish would need to be harvested from the lower reaches of stream.

4/11/2011
"I think you should leave these fish alone, save some money and put it to a worthwhile project that might effect more sportsmen than this little creek. This has already been done once and failed, why would it be any different the next time."

Response: Much of the funding for this project was acquired through competitive grants. This is a very popular recreational area and many sportsman will benefit from the opportunity to catch native WCT in an area managed for the benefit if fish and wildlife resources. The original restoration project was successful for nearly 20 years. Advances in knowledge on fish barrier design and the selection of appropriate sites will ensure that this project will be successful over the long term.

Decision:

Based on the Environmental Assessment, public comment, and the current high risk of extinction of WCT in the Upper Missouri Drainage, it is my decision to proceed with Alternative 2, the proposed action. Alternative 2 involves construction of a fish barrier on Elkhorn Creek and removal of upstream existing fish populations of hybridized trout. Removals will involve either the use of electrofishing equipment or piscicides; this will depend on the level of hybridization of WCT in the headwaters of Elkhorn Creek as verified by genetic testing. The Draft Environmental Assessment, together with this decision notice, will serve as the final document for this proposal. This alternative provides the best opportunity to benefit the conservation and restoration of WCT, helps relieve ESA listing pressure and also serves to illustrate the State's commitment to perpetuating native fish species. This project will help preserve WCT in the Upper Missouri River Drainage by protecting and expanding a slightly hybridized population of WCT or, if necessary, replication of a WCT population obtained from a separate drainage. I find there to be no significant impact on the human or physical environment associated with this project, except to help ensure the long-term persistence of pure, locally adapted WCT in the Missouri River Drainage. Therefore, I conclude the Environmental Assessment is the appropriate level of analysis, and that an Environmental Impact Statement is not required.

Gary Bertellotti
Region 4 Supervisor
Great Falls, Montana

Date: 12/12/2011

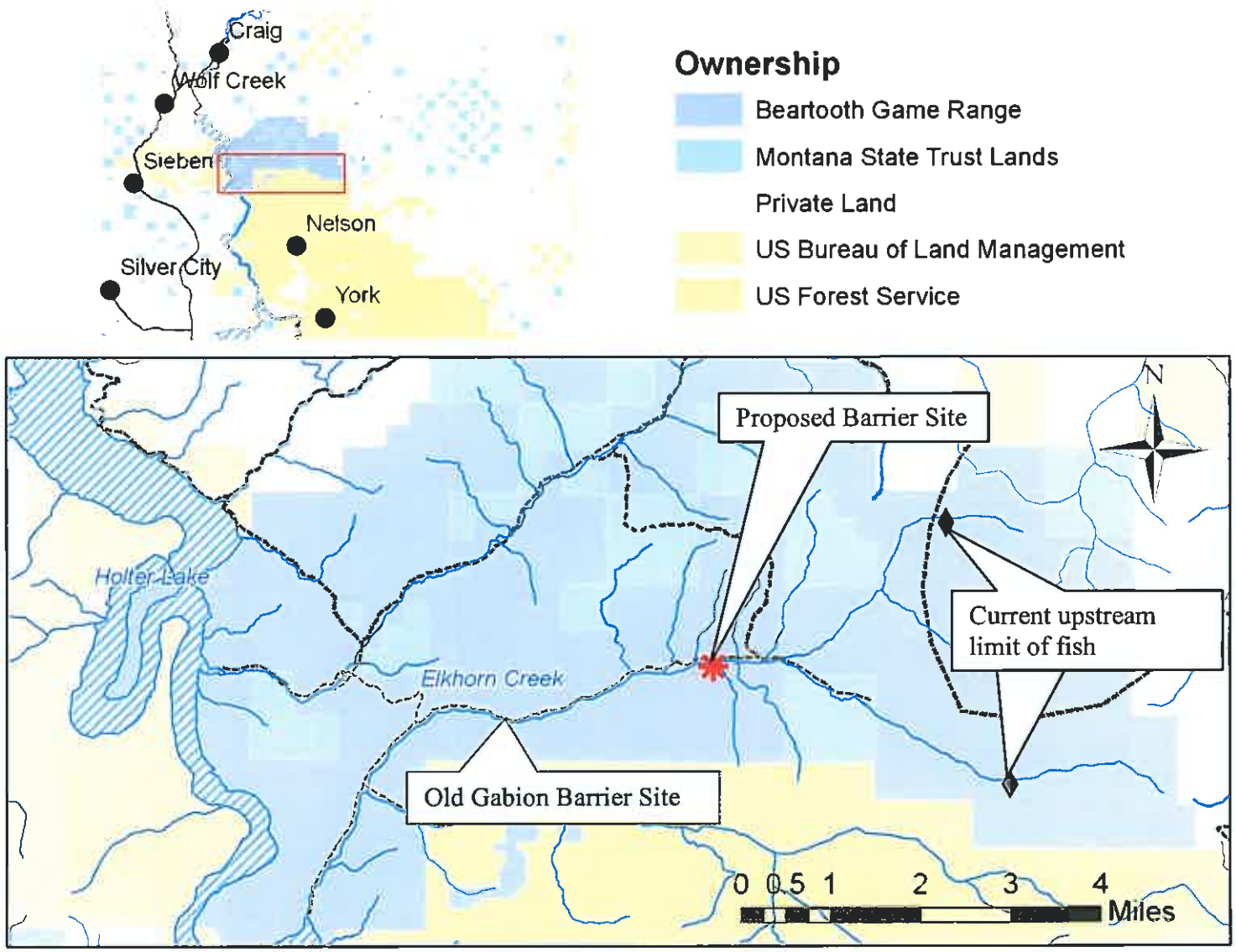

Figure 1. Map of the project area