SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
Crawford Creek Rehabilitation and Native Salmonid Reintroduction
April 19, 2012

Previous Action

Surveys in 2003 documented the presence of a small population of pure native westslope cutthroat trout (WCT) above a waterfall barrier in the headwaters of Crawford Creek (Figure 1). Downstream of this headwater fish barrier Crawford Creek supported brook trout and hybridized WCT trout (approximately 1.5 miles of stream). In 2003, a potential site for barrier construction was identified approximately 0.20 miles upstream from the confluence of Crawford Creek and Belt Creek. A local contractor was hired in 2005 to pour a two foot slab of concrete on top a small existing drop. In 2006, approximately 1.5 miles of Crawford Creek upstream of the constructed fish barrier was treated with rotenone (EA 5/16/2006; DN 8/28/2006). In 2007 and 2008 a total of 196 live juvenile and adult WCT were transferred from O'Brien Creek, a neighboring drainage, to the newly fishless habitat in Crawford Creek. Surveys in 2009 indicated that a few rainbows and hybrid trout (no brook trout) had passed the fish barrier. Potential causes of barrier failure were assessed with the most likely cause being the lack of an adequate hydraulic analysis and assessment of barrier effectiveness at all flows. One of the goals of the original constructed barrier was to keep costs down by having much of the design and construction completed by Montana Fish, Wildlife & Parks (MFWP) personnel. The original barrier was constructed for less than $4,000. Typically, comprehensive hydraulic analysis, engineering, and construction on a fish barrier would cost $80,000 to $110,000. Monies for previous successful barrier projects have come from a limited number of competitive granting agencies, including, PPL Montana, Future Fisheries Montana, and the National Fish and Wildlife Federation.

Summary of the Proposed Action

In 2010, the Lewis and Clark National Forest identified a road crossing and culvert 0.10 miles downstream of the current failing fish barrier (Figure 1). MFWP requested that the USFS design the culvert as a fish barrier. In 2010, a culvert was designed that met requirements of both the USFS and stringent criteria for a fish barrier using USFS program funds. In addition, funds were obtained from Future Fisheries Montana to cover 25% of construction costs of the culvert barrier. The remainder of construction funds would come from the USFS.

Thus far, non-native fishes that have passed the old fish barrier have not traveled all the way into the headwaters of Crawford Creek. We propose using rotenone to remove hybridized fish from the lower reaches of Crawford Creek (1 to 1.5 miles of stream) after replacement of the old and inadequate culvert with the new culvert/fish barrier. Non-hybridized WCT remaining in the headwaters of Crawford Creek would then naturally re-populate the lower reaches of stream. Crawford Creek is a relatively productive stream. When Crawford Creek is fully re-populated MFWP may consider revising current fishing regulations from "catch and release" only to a limited amount of harvest.

The proposed action is nearly identical to the selected action described in the original EA (EA 5/16/2006; DN 8/28/2006). Under the proposed action, approximately 0.10 miles of additional

downstream habitat would be treated with rotenone. Only the length of stream supporting non-native fishes would be treated. Non-hybridized WCT may currently occupy the headwaters of previously treated areas of Crawford Creek. These headwater areas would be assessed and eliminated from treatment plans.

Non-native fishes in Crawford Creek would be removed using the EPA-registered piscicide rotenone (CFT Legumine™). Rotenone kills fish by blocking respiration at the cellular level. Rotenone would be applied to the waters of the project area at concentrations of 0.25 to 1 parts per million (ppm) registered product, or the lowest effective concentration.

Treatment using rotenone (CFT Legumine™) would involve placing drip stations at intervals of between 0.25 miles to 1 mile (i.e. 2 to 8 drip stations in Crawford Creek). The interval would depend on water speed in the stream as well as results of bioassays. Backpack sprayers would be used in areas of standing water and in springs and seeps on the stream margins. Treatments would continue until all non-native fishes are removed – typically two treatments. Additional treatments would not commence until after the rotenone naturally detoxifies and remaining fish have returned to typical holding areas of the stream (i.e. pools) from stream margins, springs, and seeps. Rotenone typically degrades within 14 days. Piscicides would be neutralized downstream of the constructed barrier by application of potassium permanganate at 1-6 ppm. The concentration of potassium permanganate necessary for neutralization would be determined through bioassays completed prior to treatment and according to piscicide label recommendations.

Purpose and Need for the Proposed Action:

The westslope cutthroat trout is ranked as imperiled because of rarity or because of other factors demonstrably making it very vulnerable to extinction throughout its range by the Natural Heritage Network and the State of Montana. Genetically pure WCT are thought to occupy about 8% of their historical range in the western United States (Shepard et al. 2003) and less than 3% of their historical range in northcentral Montana within the Missouri River Drainage (Moser et al. 2009). Current survey and inventory work has documented about 30 stream miles and 14 populations of pure WCT in the Belt Creek Drainage (Moser et al. 2009). Major threats to WCT include competition and hybridization with non-native rainbow trout (Leary et al. 1995; Hitt et al. 2003) and competition with brook trout (Dunham 2002; Peterson et al. 2004). In addition, small isolated populations are at risk of extinction from catastrophic events (e.g. fire, drought) and may eventually suffer negative consequences of genetic inbreeding (Wang et al. 2002).

Benefits of the Project:

This project is intended to increase the amount of stream occupied by genetically pure WCT. There are currently approximately 30 miles of stream that hold non-hybridized WCT in the Belt Creek Drainage. The proposed project would increase the total miles of stream holding non-hybridized WCT by approximately 5 percent in the Belt Creek Drainage. If implemented, this project would protect and expand/replicate a unique pure population of westslope cutthroat trout and lower the overall risk of extinction of westslope cutthroat trout in the Belt Creek Drainage. This project would also help achieve the goals and objectives listed in the statewide Conservation Agreement (2007) for

the restoration of westslope cutthroat trout. Projects which restore WCT to their historical habitat will help prevent future listing under the Endangered Species Act and any connected imposition of federal regulatory restrictions. This project would also provide a unique opportunity for anglers to fish for native trout in an accessible area of Lewis and Clark National Forest.

Environmental Policy Act Process

Montana Fish, Wildlife & Parks is required to assess potential impacts of the proposal to the human and physical environment. Prior to the previous rotenone treatment, in compliance with requirements of the Montana Environmental Policy Act (MEPA), an Environmental Assessment (EA) was completed by MFWP and released for public comment (May 15th to June 30th, 2006).

Public comments on the original project implemented in 2006 were taken for 47 days in 2006. The EA was mailed to 97 individuals that had a residence within 100 ft. of Belt Creek for a distance of 10 miles downstream from the confluence of Crawford Creek (including residents of Monarch, Montana). News releases and Legal Notices, which announced the availability of the EA, were published twice in the Great Falls Tribune in 2006. Also, the permittees of two grazing allotments on National Forest lands adjacent to the treatment area were notified of the proposed treatment. Construction of the culvert barrier will be analyzed for environmental impacts by the United States Forest Service.

The scope of this re-treatment of Crawford Creek with rotenone is nearly identical to the selected alternative described in the Environmental Assessment completed in 2006. The level of environmental and human impacts described and addressed in the original EA are essentially unchanged.

Summary of Issues Addressed in the Original Environmental Assessment

The original EA lists the issues in detail and is available through the following link:

http://fwp.mt.gov/news/publicNotices/environmentalAssessments/restorationAndRehab/pn_0050.html

These issues include:

- Threats to native species (Westslope cutthroat trout).
- Current distribution of WCT in the Upper Missouri Basin.
- Effects of rotenone on non-target organisms and humans.
- Recreational fishing opportunities.
- Effects on livestock operations.

Alternatives

Three alternatives were considered during preparation of this Supplemental Environmental Assessment.

Alternative 1 - No Action.

The "No Action" alternative would involve not re-treating Crawford Creek. Currently, the concrete fish barrier is partially blocking upstream movement of non-native fishes and may slow down rates and extent of hybridization. In addition, the partial fish barrier has thus far completely blocked brook trout from accessing the middle and upper reaches of Crawford Creek. However, restored WCT upstream of the failing fish barrier would continue to hybridize with rainbow trout. Lewis and Clark National Forest would still move forward with replacement of the inadequate culvert on Crawford Creek. The "No Action" alternative does not protect or restore non-hybridized WCT in the majority of Crawford Creek and does not meet goals of the 2007 Conservation Agreement.

Alternative 2 - Proposed Action

The proposed action includes removing the existing non-native fish in Crawford Creek upstream of a constructed culvert barrier.

The predicted benefits of Alternative 2 include:

- Increase in total miles of pure WCT inhabited stream in the Belt Creek drainage from 30 to 31.5 miles (5% increase).
- Protection and increase in long term survivability of current pure WCT population in the headwaters of Crawford Creek.
- Protection and increase in robustness of current pure WCT population in the headwaters of Crawford Creek.
- This project supports the overall goal of WCT management in Montana as stated in the Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout in Montana (MFWP 2007) is: "…to ensure the long-term, self sustaining persistence of the subspecies within each of the five major river drainages they historically inhabited in Montana, and to maintain genetic diversity and life history strategies represented by the remaining local populations."
- Projects like this help prevent future listing of WCT under the Endangered Species Act.

Alternative 3 - Mechanical Removal

Removal of fish from Crawford Creek could potentially be accomplished using backpack electrofishing equipment. Complete removal of fishes using backpack electrofishing equipment may be impossible and would require years of repeated efforts. Electrofishing is far more labor intensive and costly than application of piscicides.

Environmental Assessment Conclusion Section

A) Is an EIS required? No

This supplemental environmental review demonstrates that the impacts of this proposed project are not significantly different from those already proposed and adopted in 2006 (DN 8/28/2006). The proposed action would benefit westslope cutthroat trout in the Belt Creek drainage with minimal impact on the physical, biological, or the human environment.

B) Public Involvement.

This EA will be posted on the MFWP internet site (http://fwp.mt.gov/publicnotices/), and mailed directly to interested persons. Any interested citizen is encouraged to contact MFWP to make substantive comments on the proposed project.

C) Duration of the comment period?

The comment period is 30 days. Public comment will be accepted through May 20, 2012.

D) Name, title, address, and telephone number of the Person Responsible for Preparing the EA Document.

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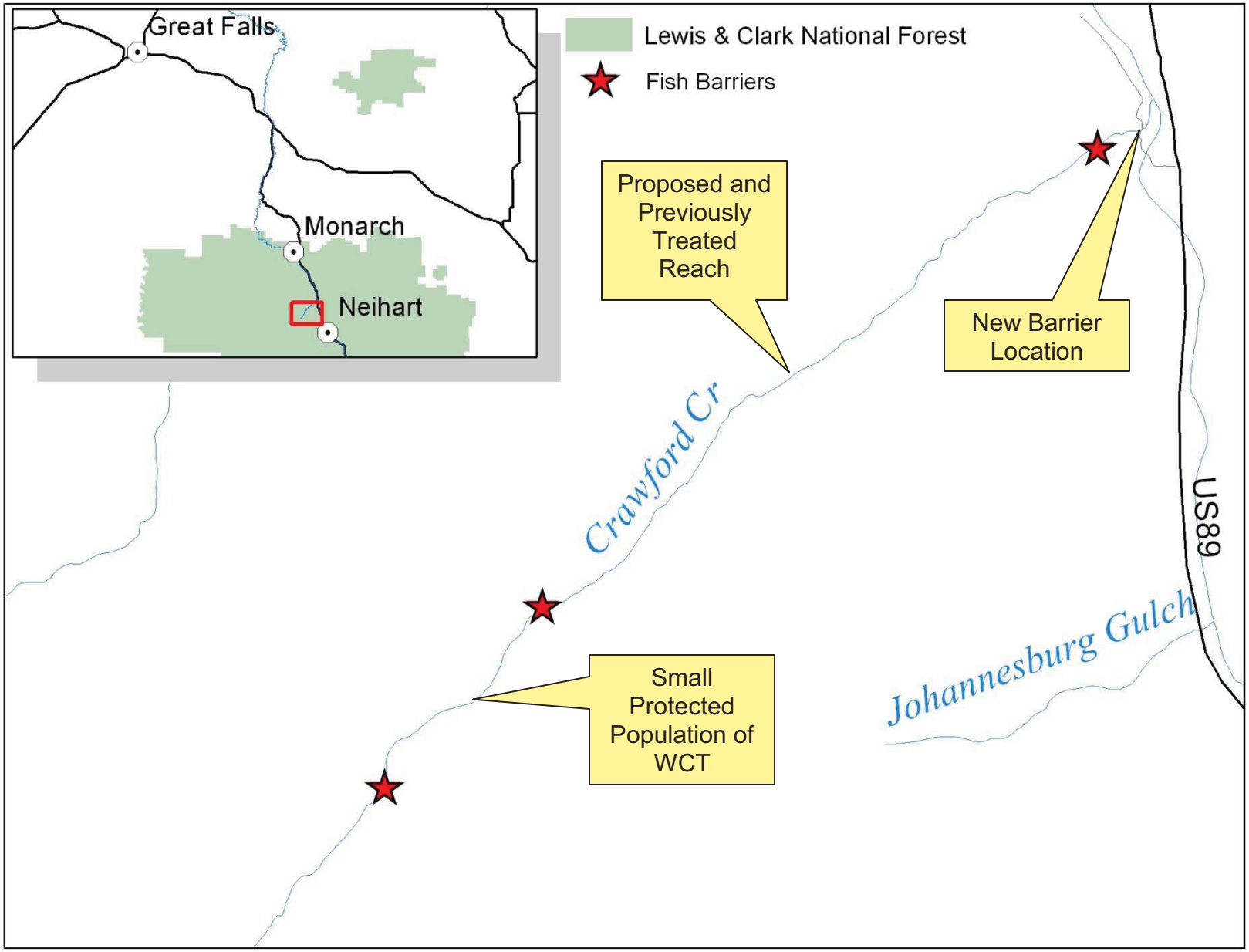

Figure 1. Map of Crawford Creek showing protected population of westslope cutthroat trout, existing and proposed barrier locations, and the proposed and previously treated stream reach.