Montana Department of Fish, Wildlife & Parks

1420 E. 6th Ave, Helena, MT 59620

***Draft* Environmental Assessment**

Introduction of Westslope Cutthroat Trout Into Bar None Pond For Conservation Purposes

PART 1. PROPOSED ACTION DESCRIPTION

Project Title: Introduction of Westslope Cutthroat Trout Into Bar None Pond for Conservation Purposes

Project Location: Bar None Ranch, Toston, Gallatin County, Montana. T4N, R3E, S2

Description of Project:

Background and Need:

Westslope Cutthroat Trout Status: Westslope cutthroat trout have declined in abundance and distribution throughout Montana, and in the Missouri River Basin pure populations are relatively rare (Shepard et al. 1997). Major factors contributing to this decline include competition with nonnative trout (brook, brown, and rainbow trout) that were first introduced to Montana in the 1890's, hybridization with rainbow and Yellowstone cutthroat trout, habitat changes, over-exploitation, and isolation to small headwater streams. Most WCT populations in the Missouri River drainage are considered to have a low likelihood of long-term persistence (100 years) under current conditions.

In 1999 the State of Montana, along with several federal agencies and non-government organizations, signed a Memorandum of Understanding (MOU) and Conservation Agreement for WCT (FWP 1999a) to provide direction in conserving WCT populations throughout their historic range in Montana. In addition, FWP, the U.S. Forest Service, and the Bureau of Land Management signed an MOU (FWP 1999b) to manage existing populations within the Elkhorn Mountains, and are cooperatively implementing the Elkhorn Mountains Cutthroat Trout Restoration Program (FWP 1999c). The goal of both agreements is to ensure the continued persistence of WCT in the Missouri River Basin and the Elkhorn Mountains by securing and expanding remaining pure WCT populations. Expansion of populations would occur by introduction of WCT into streams where nonnative trout were first removed, or into streams that were previously fishless. The current conservation strategy for these introductions is to use gametes (eggs and sperm) or live fish from local WCT populations that have adapted to habitat conditions in the upper Missouri River drainage; by this means, the introduced populations will have a better chance for long-term persistence, and will perpetuate locally adapted genetic characteristics. In order to provide a strong genetic structure for the new populations eggs or

sperm from 50 different fish, or 50 fish that are not closely related, need to be introduced. Due to the low abundance of many local WCT populations, collection of the minimum number of individuals for introductions is difficult over a short period of time (3- 5 years).

Proposed Action:

The proposed project is to use an existing private pond on the Bar None Ranch to rear wild WCT for conservation purposes. The pond would be stocked with progeny from local WCT populations. Once these fish reach sexual maturity (3 – 5 years), they would provide an additional source of gametes for WCT conservation efforts in the upper Missouri River basin. This source of gametes would allow expansion of the WCT introduction program when streams become available for such efforts, and would reduce the efforts that are currently required to collect gametes from wild fish. In addition, this project would create a genetic reserve for "at risk" populations within the upper Missouri River Basin.

Timeframe and specific strategies:

1. *Collect eggs from local WCT populations.* Gametes will be collected during June and July 2003, in donor WCT streams. Fish will be captured by electrofishing or trapping at known spawning locations. In an effort to duplicate the genetic diversity of the donor populations, we will collect gametes from random adult fish without regard to their appearance (e.g., spotting pattern or coloration). When possible, females from one stream may be fertilized with males from other streams to help increase genetic variation. Prior to being returned live to the stream, donor fish will be marked with an adipose fin-clip so they are not used as donors in following years. To lessen the chance that egg-takes will adversely affect the donor populations, only 5 – 15 females will be collected each year from donor populations for egg-take purposes. We anticipate the gamete collection effort for the pond will be one year; however, if we are unable to collect an adequate number of gametes the first year, then one additional year would be required.

   The foremost goal of the proposed project is to preserve characteristics of locally adapted WCT populations. Four WCT populations are currently being considered as donor sources for the proposed project, these include Ray Creek in the Big Belt Mountains, and Dutchman, Hall, and Prickly Pear creeks – all in the Elkhorn Mountains (Figure 1). If unexpected events (e.g., presence of disease) prevent collection of an adequate number of eggs or fish from these four populations, or if new knowledge indicates it is important to preserve characteristics of other local populations, then additional WCT populations in the upper Missouri River Basin would be evaluated for introduction purposes. Because of annual fluctuations in abundance it is difficult to predict prior to initiating the project the relative contribution of fish or eggs from any donor population. These populations are also currently being used as donor sources for other introduction efforts in the Elkhorn Mountains, thus only part of the collected eggs will be allotted for the Bar None Pond effort.

Any WCT population that is used as a donor source will first be evaluated for genetic purity and presence of pathogens. A minimum of 50 genetic and 55 health samples from different fish have been or are currently being analyzed for each of the likely donor streams. Only fish or eggs from pure populations, and populations that do not test positive for important pathogens will be used to stock the pond. All potential donor populations have been or will be evaluated to ensure abundance is great enough so that egg or fish removal will not significantly reduce population viability.

2. *Egg and fry incubation – Sun Ranch Fish Hatchery.* Fertilized eggs will be immediately moved to the Sun Ranch Fish Hatchery (near Ennis, MT) for rearing. This private hatchery was built in 2002 specifically for WCT restoration projects. Eggs allotted to the Bar None Pond effort will be allowed to hatch at the Sun Ranch facility. Fry will be reared about 8 weeks, then introduced to the Bar None Pond in October.

3. *Bar None Pond.* Fry would rear in the Bar None Pond for 2 – 4 years until they are sexually mature. At that time, gametes would be collected for stocking into restoration streams. We will attempt to cross the eggs from the pond WCT with wild WCT males in an effort to further increase the genetic variability of introduced population.

<u>Additional Information</u>

Bar None Pond: The man-made pond is 1.5-acres in size, and receives water from Sixteen Mile Creek (Figure 1) through a pump system (an existing water right is in place for this purpose). Fish ingress into the pond is considered unlikely through the pump. The possibility of fish egress from the pond will be reduced with a screening system. Rainbow trout have previously been stocked in the pond; however, they are believed absent now. The pond would be drained prior to the project to ensure no fish other than those stocked are present. An agreement will be made with the Bar None Ranch (Turner Enterprises, Inc.) stipulating that WCT stocked in the pond are for conservation purposes and that recreational harvest of these fish is not permitted.

Other groups or agencies contacted or which may have overlapping jurisdiction:

- The Montana Fish, Wildlife & Parks Fish Health Committee reviewed fish health aspects of the proposal.
- Bar None Ranch (Turner Enterprises, Inc.)
- Sun Ranch, LCC

PART 2. ENVIRONMENTAL REVIEW

Table 1. Potential impact on physical environment.

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Unique, endangered, fragile, or limited environmental resources				X		
2. Terrestrial or aquatic life and/or habitats			X		No	See comment 1.2
3. Introduction of new species into an area			X		No	See comment 1.3
4. Vegetation cover, quantity and quality				X		
5. Water quality, quantity and distribution (surface or groundwater)				X		
6. Existing water right or reservation				X		
7. Geology and soil quality, stability and moisture				X		
8. Air quality or objectionable odors				X		
9. Historical and archaeological sites				X		
10. Demands on environmental resources of land, water, air & energy				X		
11. Aesthetics				X		

Comments

(A description of potentially significant, or unknown, impacts and potential alternatives for mitigation must be provided.)

Comment 1.2. Aquatic invertebrates and amphibians that colonize the pond are likely to be preyed upon by stocked fish; however, it is unlikely any rare species would be impacted in the man-made pond.

Comment 1.3. WCT would be stocked into a man-made pond that is currently barren of fish, which is the intent of the action. WCT were historically present throughout the Sixteen Mile Creek drainage, however, they are now rare and generally limited to the headwater streams in the drainage. Screens will be placed on the pond outlet to ensure that stocked WCT do not access Sixteen Mile Creek and wild trout populations.

A potential impact of transferring wild eggs and hatchery-reared fish is the introduction of fish pathogens to the pond and Sixteen Mile Creek. To address this concern fish samples were collected from potential donor populations – these samples have been or are currently being tested for the presence of bacterial kidney disease (BKD), enteric redmouth, whirling disease, furunculosis, infectious hematopoietic necrosis virus, infectious pancreatic necrosis virus, and viral hemorrhagic septicemia. Previous tests of donor WCT populations have been positive for *Renibacterium salmoninarum*, the bacteria that causes BKD, using an enzyme-linked immunosorbent assay (ELISA); however, confirmatory tests on the same populations using the polymerase chain reaction (PCR) method have been negative. Likely, the differing results of the tests indicate that *R. salmoninarum* is present in the donor streams, but fish are not highly infected. Positive tests for *R. salmoninarum* have been found in wild trout populations throughout Montana, and would not be considered a significant threat in this introduction as it is a fairly common bacterium. Positive results for other pathogens are unlikely; however, these would be evaluated by the FWP Fish Health Committee for importance. Donor fish populations that test positive for important pathogens (e.g., whirling disease) would not be used for this effort.

Table 2. Potential impacts on human environment.

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Social structures and cultural diversity				X		
2. Changes in existing public benefits provided by wildlife populations and/or habitat			X		Yes	See Comment 2.2
3. Local and state tax base and tax revenue				X		
4. Agricultural production				X		
5. Human health				X		
6. Quantity and distribution of community and personal income				X		
7. Access to and quality of recreational activities				X		
8. Locally adopted environmental plans & goals (ordinances)				X		
9. Distribution and density of population and housing				X		
10. Demands for government services				X		
11. Industrial and/or commercial activity				X		

Comments

(A description of potentially significant, or unknown, impacts and potential alternatives for mitigation must be provided as comments.)

Comment 2.2. Gametes will be taken from wild WCT trout populations for the introduction effort. This is not expected to be a significant impact as the donor WCT populations are considered large enough to sustain the limited egg takes that are proposed, and no decrease in the abundance of the donor populations are expected. WCT in the donor streams are currently protected by catch and release regulations.

Does the proposed action involve potential risks or adverse effects that are uncertain but extremely harmful if they were to occur?

No

Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?

No

Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action when alternatives are reasonably available and prudent to consider. Include a discussion of how the alternatives would be implemented:

As it relates to WCT conservation, the only other alternative is to not use the Bar None Pond as a rearing facility. This would allow the landowner to possibly stock, if desired, the pond with other trout species, but an opportunity to use an existing pond as a WCT conservation facility would be lost.

Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

By agreement with the landowner, FWP will provide progeny of wild WCT for stocking of the pond, and will manage the pond as a brood source. The landowner will not be permitted to harvest WCT from the pond.

Describe the level of public involvement for this project if any and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?

Public involvement for this project included Legal notification of this EA in the Boulder Monitor, Helena Independent Record, Townsend Star, Montana City Courier and Whitehall Ledger. The EA was mailed to local landowners and individuals and organizations that previously indicated interest in WCT projects in the Elkhorn Mountains. The EA was also available on the FWP web page (http://www.fwp.state.mt.us). Public comments can be given at the FWP web page, in writing at the address below, or at public open houses where questions regarding these projects can be addressed; these will be held at the Montana City School Library on May 13, 2003, between 6 and 8 pm, and at the USDA Service Center in Townsend on May 15, 2003, 6 – 8 pm. Please address any comments or questions to: Lee Nelson, Montana Fish, Wildlife & Parks, 415 South Front Street, Townsend, MT 59644, (406) 266-3425. Comments on the EA's will be accepted until 5:00 pm, June 2, 2003. This level of public involvement is believed adequate for the proposed project.

Duration of comment period:

The public comment period for this proposal is from May 2, 2003, to June 2, 2003.

Written comment can be mailed to:

Lee Nelson
Montana Fish, Wildlife & Parks
Townsend, MT 59644
leenelson@fs.fed.us

EA prepared by:

Lee Nelson
Fisheries Biologist
Montana Fish, Wildlife & Parks
Townsend, MT 59644
406-266-3425

Date Completed: April 29, 2003

References

FWP. 1999a. Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout in Montana. Montana Fish, Wildlife and Parks, Helena, Montana.

FWP. 1999b. Memorandum of Understanding and Conservation Agreement for the Westslope Cutthroat Trout Restoration Program in the Elkhorn Mountains. Montana Fish, Wildlife and Parks, Helena, Montana.

FWP. 1999c. Environmental Assessment: Elkhorn Mountains Westslope Cutthroat Trout Restoration Program, Mountain Range Programmatic Assessment. Prepared by Ron Spoon and Jodie Canfield, Montana Fish, Wildlife and Parks, Region 3, Bozeman, Montana.

Shepard, B. B., B. Sanborn, L. Ulmer and D.C. Lee. 1997. Status and risk of extinction for westslope cutthroat trout in the upper Missouri River Basin. North American Journal of Fisheries Management 17:1158-1172.
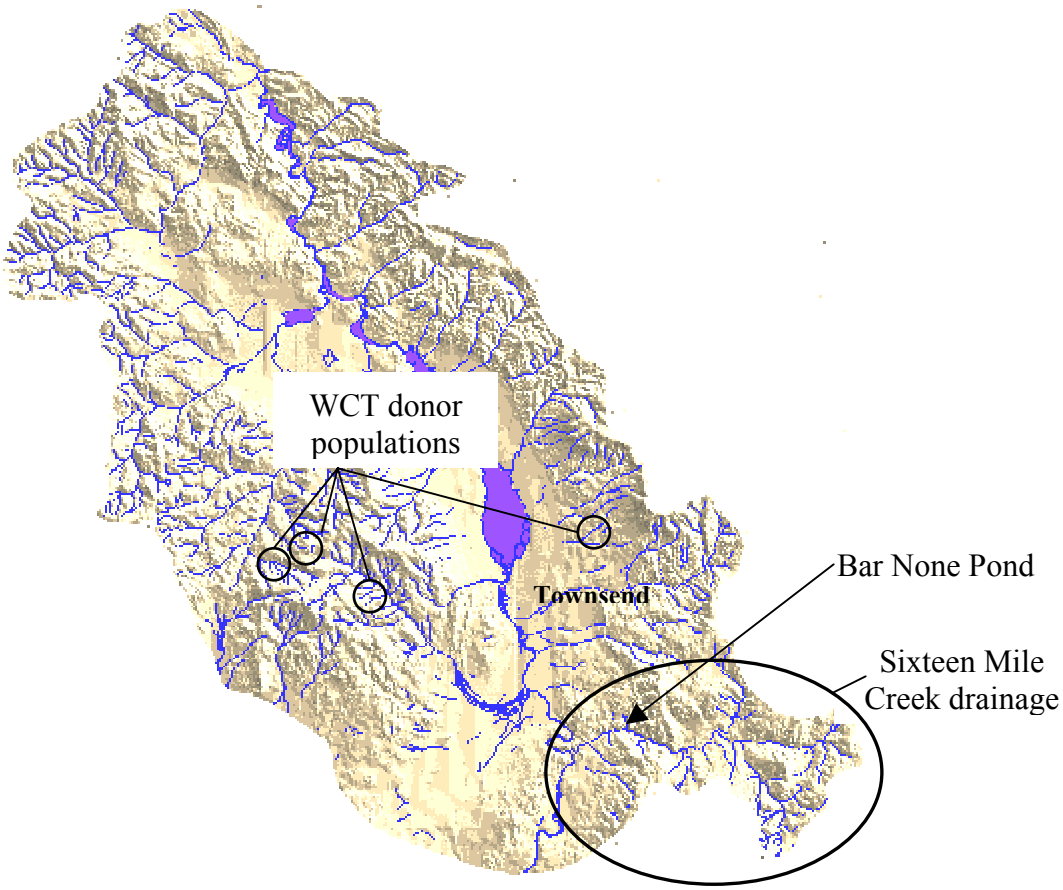
Figure 1. This figure illustrates the Upper Missouri River sub-basin, including the location of Sixteen Mile Creek drainage, Bar None Pond, and of likely donor WCT populations.