1400 South 19th Avenue, Bozeman MT, 59718

Draft Environmental Assessment

Range Expansion of Westslope Cutthroat Trout in Twelvemile Creek, Big Hole River Drainage

PART I. PROPOSED ACTION DESCRIPTION

1. Type of Proposed State Action:

Montana Fish, Wildlife and Parks (FWP) proposes to transfer native westslope cutthroat trout (WCT; *Oncorhynchus clarki lewisi*) into a currently fishless reach of Twelvemile Creek in the Big Hole River drainage near Wise River, MT. Transfer of genetically pure WCT from the lower reaches of Twelvemile Creek to the fishless upper reach would reduce current threats to the population including small population size, limited distribution, and non-native brook trout.

2. Agency Authority for the Proposed Action

- FWP is required by law to implement programs that manage sensitive fish species in a manner that assists in the maintenance or recovery of those species, to prevent the need to list the species under 87-5-107 or the federal Endangered Species Act. Section 87-1-201(9)(a), M.C.A.

- FWP signed the *Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout and Yellowstone Cutthroat Trout in Montana* (FWP 2007) which states: "The management goals for cutthroat trout in Montana are to: 1) ensure the long-term, self-sustaining persistence of each of the subspecies distributed across their historical ranges, 2) maintain the genetic integrity and diversity of non-introgressed populations, as well as the diversity of life histories represented by remaining cutthroat trout populations, and 3) protect the ecological, recreational, and economic values associated with each subspecies."

3. Project Name

The title of the project: Range Expansion of Westslope Cutthroat Trout in Twelvemile Creek, Big Hole River Drainage

4. Anticipated Timeline:

Estimated Construction/Commencement Date: Autumn 2012

Estimated Completion Date: 2013 – 2015

5. Location Affected by Proposed Action (county, township and range)

Twelvemile Creek, Deerlodge County (T3N R12W), 19 miles northwest of Wise River, MT.

6. Project Size: Number of estimated acres directly affected:

1. Developed/ residential – 0 acres
2. Industrial – 0 acres
3. Open space – 0 acres
4. Wetland/ riparian – 0 acres
5. Floodplain – 0 acres
6. Irrigated cropland – 0 acres
7. Dry cropland – 0 acres
8. Forestry – 0 acres
9. Rangeland – 0 acres
10. Other – genetically pure WCT would be introduced into 2.5 miles of stream

7. Map/site plan: See Figure 1.

8. Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction:

The U.S. Forest Service (Beaverhead-Deerlodge National Forest) manages lands within the Twelvemile Creek drainage (Figure 1). The Forest Service and FWP are cosigners of a Memorandum of Understanding and Conservation Agreement (MOU; FWP 2007) that outlines the agreement between agencies regarding conservation and restoration of WCT in Montana. Management measures outlined in the MOU include the introduction or reintroduction of genetically pure WCT where necessary to aid in their conservation.

(a) **Permits:** N/A

(b) **Funding:**

This project would be implemented by existing FWP Region-3 and US Forest Service fisheries staff and would require no additional funding.

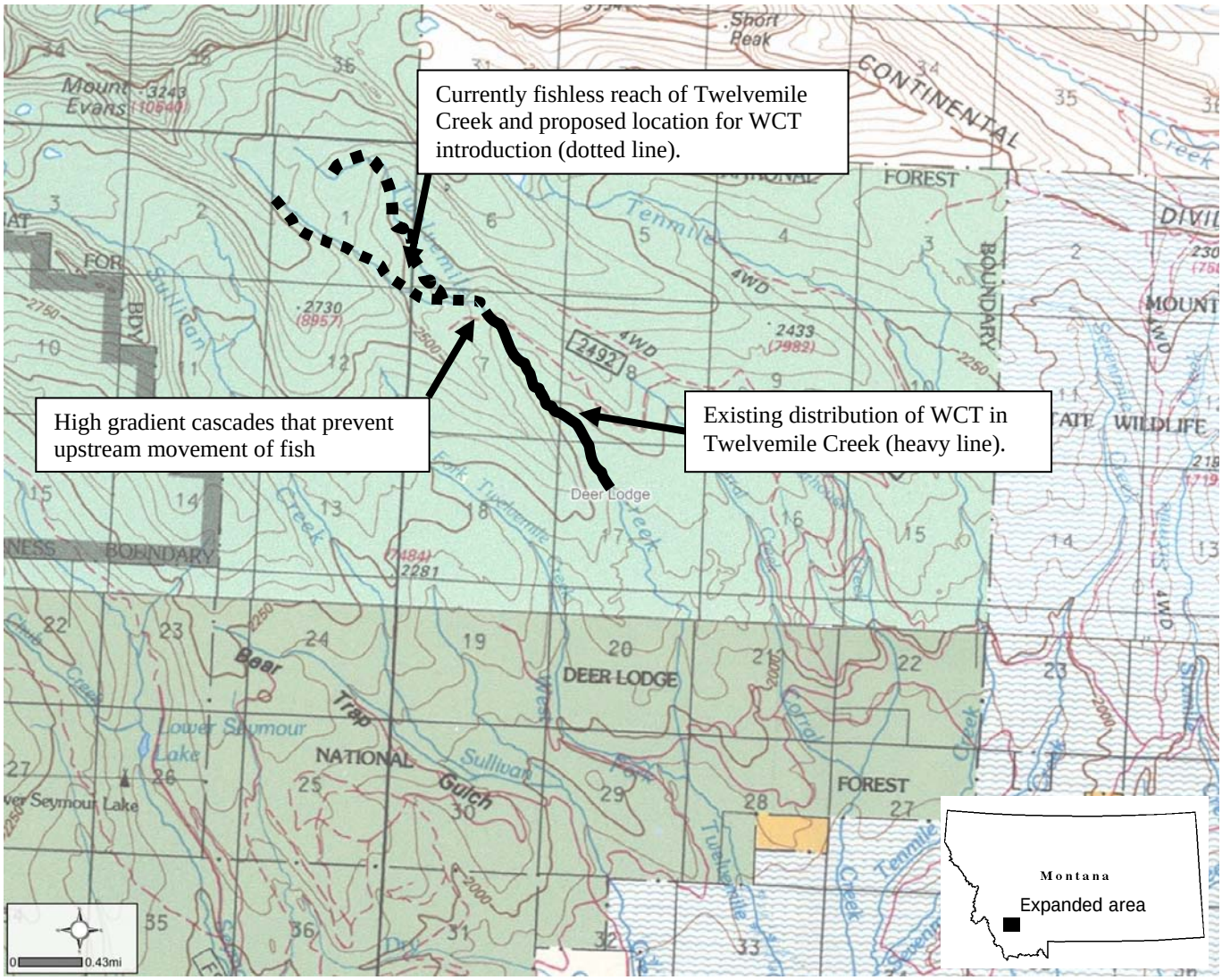

Figure 1. Map depicting the location of Twelvemile Creek, current distribution of WCT (heavy line), and currently fishless reach proposed for WCT introduction (dotted line).

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

Agency Name	Type of Responsibility
U.S. Forest Service, Beaverhead-Deerlodge National Forest	Management of federal lands within the Twelvemile Creek drainage

9. Narrative summary of the proposed action or project including the benefits and purpose of the proposed action:

Background

Westslope cutthroat trout, Montana's state fish, have declined in abundance, distribution, and genetic diversity throughout its native range (Shepard et al. 2003). Reduced distribution of WCT in Montana is particularly evident in the upper Missouri River basin where genetically "pure" (i.e., not crossed with hybridizing nonnative species) populations are estimated to reside in about 5% of habitat they historically occupied. Genetically pure WCT occupy about 104 miles of stream, or about 6% of their historic range (1,750 miles) in the proposed Big Hole River project drainage. Twenty-nine individual genetically pure populations have been identified in the Big Hole. Of these, twenty-four are considered "at-risk," with long-term persistence doubtful unless threats are addressed.

Major factors contributing to the decline of WCT 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 remaining WCT populations in the upper Missouri River basin are considered to have a low likelihood of long-term persistence (<100 years) due to continued threats unless conservation actions are implemented (Shepard et al. 1997).

Long-term conservation of WCT in the upper Missouri River basin will require projects that preserve existing WCT populations in their native streams and projects that establish new WCT populations in secure habitats where they face no threats from introduced nonnative trout. These efforts, in theory, will serve to create "genetic reserves" for populations that may disappear from their native habitat by using existing populations as a donor source for establishing new populations.

Location of the Proposed Project

Twelvemile Creek is a second order stream that flows southeast from its headwaters in the Anaconda Mountain Range to its confluence with Deep Creek (Big Hole River basin; Figure 1). The drainage (including the mainstem, West Fork, and an unnamed tributary) consist of about 14 miles of perennial streams. A series of natural, high-gradient cascades (Figure 2) at river mile 6.8 on the mainstem prevents upstream fish movement. Though currently fishless, a 2.5 mile reach of stream above the cascade barrier is considered suitable fish habitat. In fact the habitat, particularly spawning habitat, upstream of the cascade is substantially better than downstream of the cascade. The stream gradient is much less upstream of the cascade leading to higher quality and more frequent pools with abundant spawning gravels. Electrofishing surveys of the Twelvemile Creek drainage indicate that nonnative brook trout occupy the entire drainage up to the cascade barrier while native WCT (genetically pure) only occupy about 1.2 miles of stream immediately below the cascade (Figure 1).

Figure 1. Cascade on Twelvemile Creek that prevents upstream fish passage.

Description, Purpose and Benefits of the Proposed Project

The purpose of the proposed project is to establish WCT in the currently fishless reach (2.5 mile length) of upper Twelvemile Creek. Introduced WCT would be collected from the population currently established below the cascade barrier. The trout would be captured with electrofishing and introduced above the barrier over a several year period. As many fish as can be captured from downstream of the cascade would be moved upstream. Based on recent electrofishing in Twelvemile Creek in 2010, there are approximately 100-150 WCT remaining in Twelvemile Creek. Genetic samples collected in 2010 verified that the WCT in Twelvemile Creek are non-hybridized.

The primary purpose of the proposed effort is to expand the range of an "at-risk" WCT population into habitat where there is no competition from nonnative brook trout. Competition from brook trout has resulted in the loss of numerous WCT populations and is the likely reason for the much reduced distribution of WCT in the Twelvemile Creek drainage. Sampling in 2005 downstream of the cascade barrier indicated that WCT greatly outnumbered brook trout (more than 4:1); however, by 2010 when the stream was sampled again in the same location the proportion had flip-flopped to where brook trout outnumbered WCT (>2:1). The proposed effort would result in an increased likelihood of WCT persisting in the drainage in the near term, but in the long-term efforts to expand the distribution of WCT and limit the distribution of brook trout in the lower reaches of Twelvemile Creek would be necessary to ensure long-term WCT presence. It is expected that failure to reduce or eliminate the current impacts of brook trout on the WCT population would likely result in loss of the population in the foreseeable future (i.e., next 10 years). Transfer of WCT to the currently fishless reach would be a relatively simple and cost effective conservation effort.

WCT from downstream of the cascade would be captured using electrofishing. Captured WCT would be transported upstream of the cascade and released. Fish may be marked prior to release either with a tag or a fin clip so fish that migrate back downstream can be identified. This process will be repeated for a minimum of three years to maximize the number of fish moved upstream of the falls. One potential risk of moving fish farther upstream is that headwaters can be too cold to support spring spawning trout like WCT. WCT generally spawn during the receding limb of the hydrograph in early summer. Spawning likely occurs in July in upper Twelvemile Creek with the exact timing dependent on snow pack and stream temperature. Egg incubation time in stream gravels is temperature dependent. If summer temperatures are too cold, eggs may not hatch until fall and juveniles have little time to build energy reserves to last the winter. While this is a concern in Twelvemile Creek, evidence from recent electrofishing suggests that successful spawning is occurring immediately downstream of the cascade fish barrier. We assume, therefore, that temperatures are adequate for successful spawning immediately upstream in the fishless reach. The success of the fish introduction would be monitored by electrofishing in the years subsequent to fish introduction.

For several reasons, Twelvemile Creek is an excellent location for this type of conservation effort. Foremost, a portion of the stream is currently fishless thereby providing an immediate opportunity to introduce WCT. A similar type of restoration project in a stream currently occupied by nonnative fish would require multiple-year efforts to eradicate the unwanted species

using chemical or mechanical removal methods and may require a costly fish migration barrier (generally $25,000 - $100,000) to prevent reinvasion. Naturally fishless reaches are common in many headwater streams, but habitat conditions in most are not suitable for viable WCT populations (e.g., the water is too cold or the stream is too small). Twelvemile Creek is unique in that the stream is relatively large (5-10 cfs), has excellent habitat, and could potentially support an estimated 200 to 400 resident trout. Possible impacts to native fauna, like amphibians and aquatic invertebrates, are important considerations when FWP proposes fish introductions to currently fishless streams, and in the case of Twelvemile Creek no significant impacts to sensitive species would be expected (see additional comments on page 8 and 9). An aquatic invertebrate sample was collected in 2011 from Twelvemile Creek, and one potential species of concern was collected (*Sericostriata surdickae*). This caddis fly is present only in high elevation streams and is generally found in high gradient cascade reaches. The introduction of WCT to the stream, however, poses little threat to this species as it is not in high abundance and is not likely to be an important prey item for fish (D. Stagliano, Montana Natural Heritage, personal communication). *Sericostriata surdickae* additionally coexists with native WCT populations in other parts of the state. All invertebrates collected in the sample were those common to mountain streams both with and without fish. A review of the Natural Heritage database of sensitive species in the area suggested there are no sensitive aquatic invertebrates identified in Twelvemile Creek. The presence of *Sericostriata surdickae* represents the first documented finding of the species in the area. Tailed frog tadpoles are present in Twelvemile Creek both upstream and downstream of the cascade reach. There was no apparent difference in density of tadpoles upstream (fishless) versus downstream (fish present). The two native species coevolved and coexist in many streams; therefore, we would not anticipate any significant impacts to tailed frog populations as a result of fish introduction.

Finally, the successful establishment of WCT in Twelvemile Creek could result in a valuable donor source for future WCT restoration efforts. Though no specific projects have been developed, it is anticipated that there will be additional proposals for WCT restoration projects in the Big Hole River drainage. A Twelvemile Creek WCT population could be developed as a local donor source for such projects thereby reducing the need to exploit other more imperiled populations. Potential of a Twelvemile Creek WCT population as an egg donating source is enhanced by ease of access to the stream (accessible by ATV) and habitat quality (i.e., high quality pools and abundant spawning gravels).

Summary of Project Benefits

With the successful establishment of a WCT population in the upper reaches of Twelvemile Creek, the specific benefits of the project would include:

- Conserving the non-hybridized population of WCT in Twelvemile Creek.
- Increasing the stream miles occupied by genetically pure WCT populations in the Big Hole drainage.
- Establishing a source of genetically pure WCT that could be used to assist in additional WCT restoration efforts.
- Helping to achieve the management goal for cutthroat trout in Montana of long-term, self-sustaining persistence across the species historic range.

10. List of agencies consulted during preparation of the EA:

- U.S.D.A. Forest Service, Beaverhead-Deerlodge National Forest, Wise River

PART II. ENVIRONMENTAL REVIEW

A. PHYSICAL ENVIRONMENT

1. LAND RESOURCES **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. **Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil which would reduce productivity or fertility?		X				
c. **Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?		X				
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other:						

2. AIR **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. **Emission of air pollutants or deterioration of ambient air quality? (also see 13 (c))		X				
b. Creation of objectionable odors?		X				
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. ***For P-R/D-J projects, will the project result in any discharge, which will conflict with federal or state air quality regs? (Also see 2a)		X				
f. Other:						

3. WATER **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. *Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?		X				
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. ****For P-R/D-J, will the project affect a designated floodplain? (Also see 3c)		X				
m. ***For P-R/D-J, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a)		X				
n. Other:						

4. VEGETATION **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?		X				
b. Alteration of a plant community?		X				
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?		X				
f. ****For P-R/D-J, will the project affect wetlands, or prime and unique farmland?		X				
g. Other:						

**** 5. FISH/WILDLIFE** **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X		No	5b
c. Changes in the diversity or abundance of nongame species?			X		No	5c
d. Introduction of new species into an area?			X		No	5d, 5b
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?	X					5f
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?		X				
h. ****For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f)		X				
i. ***For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d)			X		No	5b, 5d
j. Other:						

Comment 5b. The proposed project would increase the abundance and range of non-hybridized WCT, a rare game fish with limited distribution in the Big Hole River drainage. This is a minor

impact because no displacement of other game fish is expected, and the distribution of a game fish (WCT) would increase. An overall increase in angling opportunities is expected in the long term with this project. Westslope cutthroat trout are currently protected by catch-and-release regulations in streams in the Big Hole River drainage, but restoration efforts like the proposed action are intended to increase overall WCT abundance to allow future harvest of the species in this and other streams.

Comment 5c: The proposed action will introduce WCT into a stream that is currently barren of fish. A potential impact of any fish introduction into a fishless stream is on resident aquatic invertebrates and amphibians. The introduction of WCT to Twelvemile Creek could cause changes in the abundance of some aquatic macroinvertebrate taxa as WCT are opportunistic foragers. To determine if WCT would impact any unusual, sensitive, threatened or endangered species, macroinvertebrate samples were collected in 2011 from Twelvemile Creek and analyzed. Of the 25 macroinvertebrate taxa identified in the collection, only *Sericostriata surdickae* was considered a potential species of special concern. The introduction of WCT to the fishless reach of Twelvemile Creek is not expected to have an impact on this species because it naturally exists at low abundance and is found in other streams sympatric with WCT. The introduction of WCT into Twelvemile Creek is also unlikely to have significant impacts on native amphibians. Amphibians sensitive to fish introductions, like the Columbia spotted frog, reproduce in lakes or ponds and would not be affected by the proposed WCT introduction. The only stream breeding species common to the area, the western toad and the tailed frog, co-evolved and co-exist elsewhere with WCT.

Comment 5d: This project would introduce WCT to a stream that is currently barren of fish. While WCT are native to the Big Hole River drainage, it is unknown if they historically occupied the upper reaches of Twelvemile Creek above the current natural barrier. As described in Comment 5b, the introduction of WCT to the fishless reaches of Twelvemile Creek is expected to benefit the long-term persistence of the Twelvemile population of WCT.

Comment 5f. It is possible that the movement of many of the remaining WCT in the lower reaches of Twelvemile Creek could negatively impact the existing WCT population in the stream because the outcome of the transfer of fish upstream of the falls is not certain. It is possible, albeit unlikely, that the habitat upstream of the cascade is not suitable for WCT and the introduction fails. It is possible that the WCT population in the currently occupied habitat could be substantially impacted because FWP intends to move as many WCT as possible from downstream of the cascade. As described above, however, the WCT population in Twelvemile Creek is in immediate jeopardy due to brook trout, and if conservation actions are not taken the population will likely be eliminated within a short time period. The outcome of a failed introduction, therefore, would likely be similar to the no action alternative.

FWP, in consideration of all the issues listed above, has determined that the potential negative impacts are not significant for WCT or recreational fisheries management, and any potential impacts would likely be beneficial to the conservation of WCT occupying the lower reaches of Twelvemile Creek.

B. HUMAN ENVIRONMENT

6. NOISE/ELECTRICAL EFFECTS **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. Increases in existing noise levels?		X				
b. Exposure of people to severe or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:						

7. LAND USE **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflicted with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other:						

8. RISK/HEALTH HAZARDS **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. ***For P-R/D-J, will any chemical toxicants be used? (Also see 8a)		X				
e. Other:						

9. COMMUNITY IMPACT Will the proposed action result in:	IMPACT Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				

10. PUBLIC SERVICES/TAXES/UTILITIES Will the proposed action result in:	IMPACT Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased used of any energy source?		X				
e. **Define projected revenue sources			X			10e
f. **Define projected maintenance costs.			X			10f
g. Other:						
f. Other:						

Comment 10e. This project would be part of the larger WCT conservation program in FWP Region 3, and would be primarily implemented by FWP and US Forest Service staff dedicated to such efforts. The WCT conservation program is funded through state (FWP) and federal (Fish and Wildlife Service, Forest Service, and Bureau of Land Management) dollars. Fisheries personnel from the Forest may participate in some aspects of the project as part of the Beaverhead Deerlodge National Forest fisheries program. Based on similar previous sampling

efforts in Twelvemile Creek, labor demands would be expected to be between three and six person/days (one person for one day) per year for three years to complete the introduction and three man-days per year in subsequent years to monitor the fish upstream of the cascade until a self-sustaining population is established (three to five years).

Comment 10f. Maintenance costs would be minimal with successful establishment of a self-sustaining WCT population after the three to five year period of introductions. FWP anticipates the population will become self-sustaining and will require no further maintenance.

**** 11. AESTHETICS/RECREATION** **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?		X				
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. **Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach Tourism Report)			X			11c
d. ***For P-R/D-J, will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (Also see 11a, 11c)		X				
e. Other:						

Comment 11c: Recreational opportunities to angle for wild, native trout will be increased as a result of this project. The fishless reach of Twelvemile Creek is a moderate sized stream (baseflows 5-10 cfs) with good habitat and good potential to support angling. Although it is not likely to have significant angling pressure, the introduction of WCT to this reach will represent an additional location for anglers to catch wild trout.

12. CULTURAL/HISTORICAL RESOURCES **Will the proposed action result in:**	**IMPACT**				**Can Impact Be Mitigated**	**Comment Index**
	Unknown	**None**	**Minor**	**Potentially Significant**		
a. **Destruction or alteration of any site, structure or object of prehistoric historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. ****For P-R/D-J, will the project affect historic or cultural resources? Attach SHPO letter of clearance. (Also see 12.a)		X				
e. Other:						

SIGNIFICANCE CRITERIA

13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. ***For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e)						
g. ****For P-R/D-J, list any federal or state permits required.						

PART II. ENVIRONMENTAL REVIEW, CONTINUED

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

1) No Action Alternative

The predicted consequences of the "No Action" alternative are:

- About 2.5 miles of habitat suitable for WCT conservation would remain fishless.
- Likelihood of the loss of WCT in Twelvemile Creek through competition and predation from brook trout
- An opportunity to conserve an "at-risk" WCT population would not be achieved unless additional restoration projects are developed.
- A potential source of genetically pure WCT that could be used to assist in additional WCT restoration efforts would not be established.
- No costs associated with the introduction efforts.

2) Preferred Alternative: Introduction of pure WCT to Twelvemile Creek (proposed action)

The predicted consequences of the Preferred Alternative were detailed and discussed in Part I and Part II.

3) Establish a fish barrier in Twelvemile Creek and use piscicides to remove brook trout upstream of the fish barrier.

This alternative would include the construction of a fish migration barrier in Twelvemile Creek somewhere downstream of the existing cascade barrier and removing brook trout from the stream using an approved piscicide such as rotenone. Remaining WCT would be captured and held in Twelvemile Creek in cages upstream of the cascade barrier prior to brook trout removal. The salvaged WCT, post brook trout removal, would be released back into the stream. This viable option for long-term conservation of WCT in Twelvemile Creek is not feasible to perform at this time. Fish barrier construction ideally occurs in a reach of stream that is moderate to high gradient with a bedrock geomorphology. Generally, the stream valley bottom is confined and there is good access via existing roads. If such locations are not available, constructing a fish barrier is generally cost prohibitive. No suitable locations have been identified to construct a fish barrier in the Twelvemile Creek drainage. Fish barrier construction is often expensive (> $100,000) and it can take several years to obtain adequate funding to complete the construction. If long-term conservation of the Twelvemile Creek population of WCT in its native habitat is to occur, Alternative 3 would need to be implemented because introduction above the falls will still result in a small, but secure, population that will be vulnerable to natural disasters such as fire. Large scale restoration, however, is not feasible at this time due to a lack of funds and the need for further inventory of the drainage. Larger populations of WCT are much more resistant and able to recover following a catastrophic event such as fire. Movement of WCT above the cascade barrier, in the interim, provides the best potential for short-term conservation of WCT in Twelvemile Creek.

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

None

PART III. NARRATIVE EVALUATION AND COMMENT

Addressed in Part I and Part II.

PART IV. EA CONCLUSION SECTION

1. Is an EIS required based on the significance criteria evaluated in this EA, (YES/NO)? If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.

No. An Environmental Impact Statement (EIS) is not required under the Montana Environmental Policy Act (MEPA) because the project lacks significant impacts to the physical or human environment. The impacts, therefore, are appropriately addressed through an Environmental Assessment (EA). The primary impact associated with the project is increased abundance and distribution of WCT in the Big Hole River drainage, which is the intended consequence of the action.

2. 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?

   The public will be notified of this EA through local newspapers and contact with local sports groups and others who have previously indicated interest in similar projects. This EA will also be published on the Montana Fish, Wildlife & Parks web page (http://fwp.mt.gov/default.html). Public comments will be accepted for a minimum of 30 days. This level of public involvement is believed adequate for the proposed project as similar and recent efforts in FWP Region 3 have produced no significant issues or controversy. If significant concerns are raised concerning this EA, a public open house to discuss the issues will be scheduled.

3. Public comment period and correspondence information:

   There is a 30 day comment period for this EA. Written comments can be mailed or emailed to the address below, and must be received by 5:00 pm, June 18, 2012.

   Jim Olsen
   Montana Fish Wildlife and Parks
   1820 Meadowlark Lane
   Butte, MT 59701
   Email: jimolsen@mt.gov
   Phone: 406-533-8451

4. Name, title, address and phone number of the person(s) responsible for preparing the EA:

   Jim Olsen
   Montana Fish Wildlife and Parks
   1820 Meadowlark Lane
   Butte, MT 59701
   Email: jimolsen@mt.gov
   Phone: 406-533-8451

References

FWP. 2007. Memorandum of Understanding and Conservation Agreement for Cutthroat Trout in Montana. Montana Fish, Wildlife and Parks, Helena, 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.

Shepard, B. B., B.E. May and W. Urie. 2003. Status of Westslope Cutthroat Trout in the United States: 2002. Montana Fish, Wildlife and Parks for the Westslope Cutthroat Trout Interagency Conservation Team, Helena, Montana.