DRAFT ENVIRONMENTAL ASSESSMENT

TRANSFER OF WESTSLOPE CUTTHROAT TROUT FROM SIDNEY CR. TO WOODS CR. WITHIN THE TWO MEDICINE DRAINAGE

I. Description of proposed action

A. Description of water body and action.

Receiving Water:

Name: Woods Cr.
Location: 48.2963°N, 113.2096°W
County: Pondera

Donating Water:

Name: Sidney Creek
Location: 48.2625°N, 113.1979°W
County: Pondera

Montana Fish, Wildlife & Parks (MFWP) propose transferring non-hybridized juvenile and adult westslope cutthroat trout (WCT) *(Oncorhynchus clarkii lewisi)* to currently fishless Wood Creek from Sidney Creek (Two Medicine Drainage; Lewis and Clark National Forest). A significant falls fish barrier was discovered near the mouth of Woods Creek in 2011 (Figure 1). Approximately 1.5 miles of Woods Creek is capable of supporting a viable population of WCT (Figure 2).

Juvenile and adult WCT would be collected from Sidney Creek and transferred to upper Woods Creek. No more than 10% of the total population of WCT in Sidney Creek would be transferred in any one year. We expect that transfers would be completed over a 5 to 7 year period.

The South Fork Two Medicine River was part of the historical range of WCT until the early 20th century. Records indicate that non-native trout (rainbow trout and Yellowstone cutthroat trout) were stocked from 1931 to 1989. Currently, the S. Fk. Two Medicine River supports hybrids and rainbow trout. Historically, the S. Fk. Two Medicine River would have held native WCT in approximately 70 miles of stream. Currently, Sidney Creek is the only known pure WCT population in the S. Fk. Two Medicine River drainiage. Sidney Creek was genetically tested as non-hybridized in 2001 (25 fin clips) and 2002 (24 fin clips). Prior to any transfer of Sidney Creek fish, additional genetic sampling would be initiated to verify that Sidney Creek is truly non-hybridized.

B. Need for Action:

WCT are ranked as S2 (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. Non-hybridized WCT are thought to occupy about 8% of their historical range in the western United States (Shepard et al. 2003) and about 14% of their historical range within the Two Medicine River Drainage (MFWP 2011). Major threats to WCT include competition and hybridization with non-native rainbow trout (Leary et al. 1995; Hitt et al. 2003), competition with brook trout (Dunham et al. 2002; Peterson et al. 2004), and isolation of remaining non-hybridized populations above barriers in short headwater sections of stream. These small isolated populations are at risk of extinction from catastrophic events (e.g. fire, drought) and may eventually suffer negative consequences of inbreeding (Wang et al. 2002). Translocations and transfers have been commonly used to augment established populations, create refuge populations, and re-establish historic populations (Stockwell and Leberg 2002). In addition, one of the restoration actions specifically referenced in the WCT Conservation Agreement (MFWP 2007) is translocation of non-hybridized populations into new habitats. In the event of a catastrophic loss of the Sidney Creek donor population, Woods Creek WCT could be used to re-found the population, or vice-versa. Though populations will not be identical because of adaptations to the new environment in Woods Creek, replication should preserve some of the allelic diversity that is common in individual populations of WCT (Allendorf and Leary 1988).

II. Impacts of the proposed action

Please review the attached checklist on pages 7 and 8. The impacts of this action are included in the Environmental Assessment checklist. The following text addresses the impacts.

A. Impacts to the Physical Environment

1) Terrestrial and Aquatic Habitat

The proposed project will involve transfer of WCT from Sidney Creek to approximately 1.5 miles of currently fishless habitat in Woods Creek. Live fish transfers have been used to successfully establish WCT cutthroat populations in the past in northcentral and southwest Montana. Several measures will be taken to reduce potential impacts to the aquatic habitat.

Wild Fish Transfer Policy: The MFWP wild fish transfer policy will be followed and WCT will not be transferred until approved by the MFWP Fish Health Committee.

Genetic Analyses: Forty-nine genetic samples were collected from Sidney Creek upstream of a fish barrier in 2001 and 2002 (Leary 2002-2003). All fish were processed and analyzed using PCR methods. Thus far, genetic results indicate the Sidney Creek

population is non-hybridized. An additional 25 genetic samples will be collected in 2012. Results from these samples will be analyzed prior to any transfers of live fish.

Aquatic Invertebrates and Amphibians: Amphibian survey will be completed prior to any transfers of WCT. All amphibians that could be in the project area have co-evolved in the presence of salmonids. There is no reason to expect that a transfer of WCT would affect the viability of amphibian populations. Aquatic invertebrates that reside in Woods Creek would also typically have co-evolved in the presence of salmonid species. Typically, diversity indices in aquatic invertebrate communities in the presence of salmonids are higher because of predation by fish on dominant invertebrate predatory taxa (e.g. predatory stoneflies). Moreover, habitat in Woods Creek is typical of other streams in the upper Two Medicine. Woods Creek does not exhibit extremes in habitat (i.e. water temperature, glacial sources, spring sources) that would indicate the potential presence of rare or threatened invertebrate species.

2) Unique, endangered, fragile or limited environmental resources.

None identified.

B. Impacts to the Human Environment

1) Access to and Quality of Recreational Activities

Access to the reaches of Woods Creek on Lewis and Clark National Forest is limited to overland travel.

2) Demands on Government Services

This action will be undertaken by fisheries staff as part of normal field operations. It is anticipated that the work will require three trips by a three person fisheries for two days for the initial reconnaissance and fish transfer. Subsequent transfers would require one three person crew for 2 day per year over the next five to seven years.

III. Discussion of Reasonable Alternatives

1) No Action:

Woods Creek would remain fishless. Under this alternative, WCT in Sidney Creek would not be replicated and could face extinction because of genetic introgression, or catastrophic events (fire and drought). Sidney Creek is the only known non-hybridized WCT populations remaining in the S. Fk. Two Medicine River drainage.

2) Proposed Action:

Westslope cutthroat trout would be transferred from Sidney Creek to Woods Creek. The total miles of stream inhabited by genetically non-hybridized WCT in the S. Fk. Two Medicine River drainage would double in size from approximately 1 to 3 miles. Sidney Creek WCT would be replicated, reducing the risk of extinction in the event of a catastrophic wildfire, disease, drought, or unforeseen hybridization with non-native fishes.

IV. Environmental Assessment Conclusion Section

1) Is an EIS required? No, the action is expected to be minor and beneficial.

References

Allendorf, F. W. and R. F. Leary. 1988. Conservation and distribution of genetic variation in a polytypic species, the cutthroat trout. Conservation Biology. 2 (2):170-184.

Dunham, J.B., S.B. Adams, R.E. Schroeter, and D.C. Novinger. 2002. Alien invasions in aquatic ecosystems: toward an understanding of brook trout invasions and potential impacts on inland cutthroat trout in western North America. Reviews in Fish Biology and Fisheries. 12: 373-391.

Hitt, N.P., C.A. Frissell, C.C. Muhlfeld, and F.W. Allendorf. 2003. Spread of hybridization between native westslope cutthroat trout, *Oncorhynchus clarki lewisi*, and nonnative rainbow trout, *Oncorhynchus mykiss*. Canadian Journal of Fisheries and Aquatic Sciences. 60:1440-1451.

Leary, R. F. 2002-2003 Genetic report to MFWP dated 12/16/2002 and 3/17/2003. University of Montana Trout and Salmon Genetics Laboratory, Missoula, MT

Leary, R. F., F. W. Allendorf and G. K. Sage. 1995. Hybridization and introgression between introduced and native fish. American Fisheries Society Symposium, American Fisheries Society, 15: 91-103.

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Peterson, D.P., K.D. Fausch, G.C. White. 2004. Population ecology of an invasion: effects of brook trout on native cutthroat trout. Ecological Applications. 14(3):754-772.

Shepard, B.B., B.E. May and W. Urie. 2003. Status of westslope cutthroat trout *(Oncorhynchus clarki lewisi)* in the United States: 2003. Westslope Cutthroat Interagency Conservation Team. 94 pp.

Stockwell, C.A. and P.L. Leberg. 2002. Ecological genetics and the translocation of native fishes: emerging experimental approaches. Western North American Naturalist. 62(1):32-38.

Wang, S., J.J Hard, and F. Utter. 2002. Salmonid inbreeding: a review. Reviews in Fish Biology and Fisheries. 11:301-319.

Montana Department of Fish, Wildlife and Parks
1420 E. 6th Ave P.O. Box 200701, Helena, MT 59620 -0701

Environmental Assessment Checklist

Project: Transfer of live fish from Sidney Creek to Woods Creek (Two Medicine River Drainage)
Division: Fisheries Bureau, Fish and Wildlife Division
Description of Project: Juvenile and adult WCT would be transferred using backpacks or horses.

A. PHYSICAL ENVIRONMENT

1. LAND RESOURCES **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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				
2. WATER **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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. Will the project affect a designated floodplain?		X				
m. Will the project result in any discharge that will affect federal or state water quality regulations? (Also see 2a)		X				
3. AIR **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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. Will the project result in any discharge, which will conflict with federal or state air quality regulations?		X				
4. VEGETATION **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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. Will the project affect wetlands, or prime and unique farmland?		X				
5. FISH/WILDLIFE **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?		X				
c. Changes in the diversity or abundance of non-game species?				X Beneficial		p. 3
d. Introduction of new species into an area?				X Beneficial		p. 2
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				
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?		X				

h. 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. Will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d)		X				

HUMAN ENVIRONMENT

6. NOISE/ELECTRICAL EFFECTS **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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				
7. LAND USE **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict 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				
8. RISK/HEALTH HAZARDS **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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. Will any chemical toxicants be used?		X				
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				
f. Define projected maintenance costs		X				
11. AESTHETICS/RECREATION **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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				
d. Will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (Also see 11a, 11c)		X				
12. CULTURAL/HISTORICAL RESOURCES **Will the proposed action result in:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
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. Will the project affect historic or cultural resources?		X				
13. SUMMARY EVALUATION OF SIGNIFICANCE **Will the proposed action, considered as a whole:**	**IMPACT Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources, which 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. Is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e)		X				
g. List any federal or state permits required.						

Other groups or agencies contacted or which may have overlapping jurisdiction: United States Forest Service.

List of Individuals or groups contributing to this EA: George Liknes, MFWP, Great Falls, MT; Kendall Cikanek, USFS, Great Falls, MT.

List of all agencies and individuals who have been notified of this proposed transfer: Public notification via the FWP Web Site (http://fwp.mt.gov/news/publicNotices/).

Recommendation concerning preparation of EIS: No EIS Required. Action expected to be minor.

EA prepared by: David Moser, Fisheries Biologist, MFWP, Great Falls, MT. Date: May 10, 2012
Comments will be accepted until: 5:00 PM August 20, 2012.

Comments should be sent to: David Moser, 4600 Giant Springs Rd., Great Falls, MT 59405; dmoser@mt.gov

Figure 1. Fish barrier on Woods Creek.

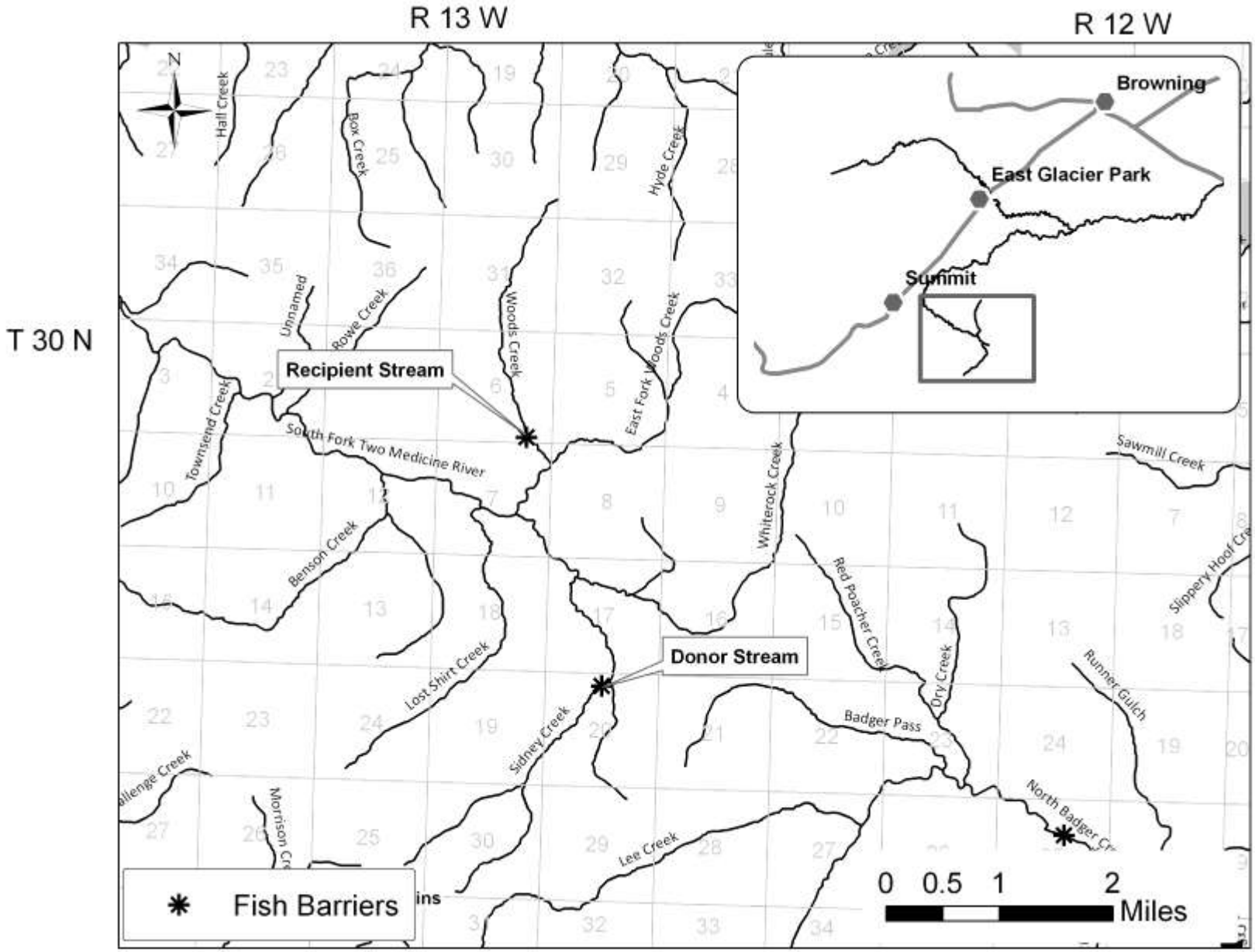

Figure 2. Woods Creek and Sidney Creek stream sites and general location.