Montana Department of Fish, Wildlife & Parks

1420 E. 6th Ave, Helena, MT 59620

Draft Environmental Assessment

Westslope Cutthroat Trout Conservation through the Mechanical Removal of Non-Native Trout in Three Streams of Southwest Montana

PART I. PROPOSED ACTION DESCRIPTION

1. Type of Proposed State Action:

The proposed action is to remove non-native trout by mechanical methods from the South Fork North Fork Divide Creek upstream of and including South Fork Reservoir, Bostwick Creek, and Beehive Basin Creek including Egg Lake. The mechanical means proposed for fish collection and removal include electrofishing the streams, netting the lakes, and draining of South Fork Reservoir. The removal of non-native trout would serve to secure several of the few remaining native westslope cutthroat trout (WCT) (*Oncorhynchus clarki lewisi*) populations in the Big Hole River and Gallatin River drainages by eliminating competition and hybridization from non-native trout.

2. Agency Authority for the Proposed Action

- Montana Fish, Wildlife & Parks (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, and that prevents 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 is a signatory to the Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout in Montana (FWP 1999, 2007) which states: "The management goal for WCT in Montana 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."

- According the FWP Statewide Fisheries Management Plan, the restoration goal for WCT east of the Continental Divide (Upper Missouri River Basin upstream from and including the Judith River) is to restore secure conservation populations of WCT to 20 percent of the historic distribution (FWP 2012). Populations of WCT are considered secure by FWP when they are isolated from non-native fishes, typically by a physical fish passage barrier, have a population size of at least 2,500 fish, and occupy sufficient (five to six miles) habitat to assure long-term persistence. WCT currently occupy approximately five percent of their historic habitat.

3. Name of Project

Westslope Cutthroat Trout Conservation through the Mechanical Removal of Non-Native Trout in Three Streams of Southwest Montana

4. Project Construction and Completion/Estimated Commencement Date

- Initial removal of non-native trout would begin in the summer of 2013. It is anticipated that it would take between two and six years to completely remove non-native trout from the streams, lake, and reservoir.

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

South Fork North Fork Divide Creek is located in Silver Bow County, T1N R9W Sec 7, 8 and T1N R10W Sec 1, 12, 13. The project area includes lands administered by the USFS and land owned by Butte-Silver Bow County.

Bostwick Creek is located in Gallatin County, T1S R6E; Sec 5-6 and T1N R6E Sec 26-28, 32-34. The project area includes lands administered by the Gallatin National Forest and private lands

Beehive Basin Creek is located in Madison County, T6S R2E Sec 5-8, 17, 20. The project area includes lands administered by the Gallatin National Forest and private lands

6. Project Size: number of acres that would be directly affected that are currently:

1. Developed/ residential – 0 acres
2. Industrial – 0 acres
3. Open space – 0 acres
4. Wetland/ riparian – 9.2 stream miles (1.2 S. Fk. N. Fk. Divide Creek, 4 miles Bostwick Creek and 4 miles Beehive Basin Creek.
5. Floodplain – 0 acres
6. Irrigated cropland – 0 acres
7. Dry cropland – 0 acres
8. Forestry – 0 acres
9. Rangeland – 0 acres
10. Other – 3.6-acre South Fork Reservoir and 3-acre Egg Lake

7. Map/site plan: See figures below.

8. Local, State or Federal Agencies that have overlapping or additional jurisdiction.

The USDA Forest Service (USFS), Beaverhead-Deerlodge National Forest Butte Ranger District and Butte-Silver Bow County manage lands adjacent to the proposed project reach on the South Fork North Fork Divide Creek. The USFS, Gallatin National Forest, and multiple private citizens own and/or manage lands along Bostwich and Beehive Basin creeks. Along with FWP, the USFS is a cosigner of a Memorandum of Understanding and Conservation Agreement

(MOU; FWP 1999) that outlines measures necessary for conservation of WCT in Montana. The MOU states that cosigners agree to "protect all genetically pure WCT populations," and that conservation action may include isolation from, and suppression or eradication of, introduced species that compete or hybridize with or prey on WCT.

(a) Permits:

Mechanical removals would be performed by FWP personnel in cooperation with the US Forest Service. No permits are required for mechanical non-native trout removal efforts.

(b) Funding:

FWP and the USFS would be cooperators in implementing and funding this project. No additional funding is required to complete this project. There are no resources or expenses (i.e., construction, equipment, or supplies) that are necessary to complete this project. The only expenses for this project would be personnel time and operational expenses involved in getting to and from project sites. Incurred expenses would only be those that are currently allocated by FWP and the USFS to WCT conservation efforts.

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

Name	Type of Responsibility
US Forest Service, Beaverhead-Deerlodge National Forest	Management of federal lands within the S. Fk. N. Fk. Divide Creek drainage
US Forest Service, Gallatin National Forest	Management of federal lands within the Bostwick and Beehive Basin creeks

9. Summary of the proposed action

Need for the Proposed Action

Westslope cutthroat trout, Montana's state fish, has declined in abundance, distribution, and genetic diversity throughout its native range (Shepard et al. 2003). Reduced distribution of WCT is particularly evident in the Missouri River drainage of Montana where genetically pure populations are estimated to persist in about five percent of habitat they historically occupied. Major factors contributing to this decline include competition with non-native brook, brown (*Salmo trutta*), and rainbow trout (*O. mykiss*), hybridization with rainbow and Yellowstone cutthroat trout (*O. c. bouvieri*), habitat changes, and isolation to small headwater streams. Due to these threats, most remaining WCT populations in the Missouri River drainage are considered to

have a low likelihood of long-term (100 years) persistence unless conservation actions are implemented (Shepard et al. 1997).

South Fork North Fork Divide Creek

Divide Creek is a tributary to the Big Hole River near the town of Divide. The North Fork Divide Creek drains from Fleecer Mountain and Fleecer Ridge, and the South Fork North Fork Divide Creek drains the east face of Fleecer Mountain (Figure 1). The South Fork North Fork is part of the Butte Municipal water supply. A dam and reservoir are present on the stream, and the water from the reservoir is piped to the supply line from the Big Hole River that feeds into the Feely Water Treatment Plant. There is no public access to the reservoir or stream on property owned by Butte-Silver Bow County, but public access is present upstream on National Forest lands. The inlet of the reservoir is a perched culvert that drains from an adjacent sediment basin (Figure 2). The fishery in the stream and reservoir consists of both brook trout and non-hybridized WCT. Brook trout are more abundant than WCT in the reservoir and the stream immediately upstream. Only WCT are present, however, in the South Fork North Fork Divide Creek to its headwaters and in an unnamed tributary to the south (Figure 1) within 1.3 miles of the reservoir. There are no barriers to fish passage identified in the mainstem creek upstream of the reservoir or the currently occupied habitat in the unnamed tributary. A high gradient cascade in the unnamed tributary located upstream of the present fish distribution precludes all upstream fish passage, and no fish are present in this stream upstream of this location (Figure 1). Suitable habitat is present in the unnamed tributary upstream of the cascade. No other fish species are present in the drainage, but spotted frogs are present. The potential for brook trout expansion in the South Fork North Fork is high because of the lack of fish barriers, and it is possible that brook trout could eventually out-compete and replace WCT in the stream similar to what has occurred in the adjacent North Fork Divide Creek.

FWP, in cooperation with the Beaverhead-Deerlodge National Forest, is proposing to use mechanical means to remove brook trout from the South Fork North Fork Divide Creek and South Fork Reservoir. Electrofishing would be the primary method to capture and remove brook trout from the project area. Electrofishing is a common fish collection technique where battery or generator produced electricity is applied to a stream or lake to stun and collect fish. Electrofishing has been used in several WCT conservation efforts in Montana to eradicate brook trout from streams similar in size to the South Fork North Fork Divide Creek (Shepard and Nelson 2004). Specifically, brook trout removal efforts would include one to three, three-man crews using backpack electrofishing equipment to capture fish. The entire project reach would be electrofished over a one to two day period, and one to four times per year depending on the number of brook trout captured. Removal efforts would typically occur during late summer or fall after WCT have spawned and fry have emerged. All captured WCT would be returned to the stream, but brook trout would be either transported downstream of the dam or killed and removed. Removals efforts are expected to be highly efficient because the South Fork North Fork Divide Creek is relatively small, typically five to seven feet in width, and brook trout abundance should be significantly reduced (> 90%) within one or two years. Removal efforts would continue until brook trout are eradicated from the project reach, likely within three to six years. It takes multiple years to completely remove fish despite high expected capture efficiencies because capture efficiency is generally significantly less on juvenile fish, and it takes

several years for these smaller fish to grow and recruit to larger size classes where capture efficiency is greater.

Removal of brook trout from the reservoir and adjacent settling pond will require coordination with the Butte Public Works personnel who regulate the water. The reservoir at full pool is 3.6 surface acres. While all of the flow of the South Fork North Fork Divide Creek is captured in South Fork Reservoir, the reservoir is generally kept at full pool because the stored water is used as a backup should anything happen with the main source of water which is the Big Hole River. Maintaining this full pool elevation is necessary most of the summer due to the higher demand

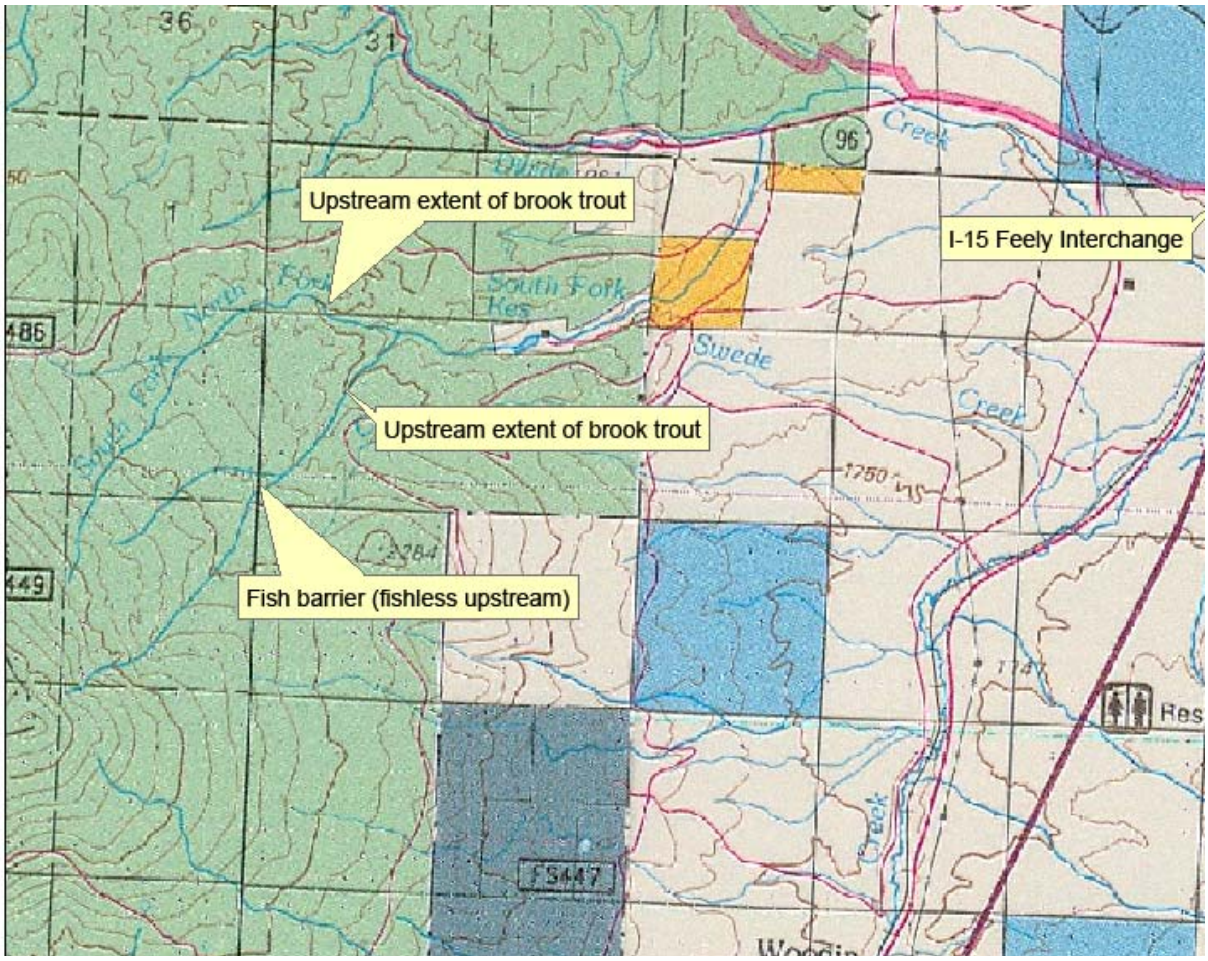

Figure 1. South Fork North Fork Divide Creek showing the location of the reservoir and extent of brook trout distribution in the stream.

for water during this time of the year. Brook trout are present in the reservoir and the settling basin, and they would be difficult to capture and completely remove using electrofishing and netting. It would therefore be necessary to remove brook trout from the reservoir using drawdown and desiccation. Butte Public Works Department, once water demand lessens in the fall, can lower and even completely drain the reservoir because other sources of water are adequate to serve as a backup (i.e., Moulton Reservoir and Basin Creek reservoirs). A diversion channel exists on the north side of South Fork Reservoir that bypasses the reservoir and

discharges to the reservoir spillway below (Figure 2, Bypass Channel 1). The water could be diverted through this channel, bypassing the reservoir, and the reservoir could be drained thus removing all fish.

For electrofishing removal to be successful in the South Fork North Fork Divide Creek, it will be necessary to prevent fish passage from the reservoir to the stream upstream while the reservoir is kept at full pool. This would be necessary because it will likely take several years to remove brook trout from the stream with electrofishing, but it will likely only take one or two drawdown to completely eliminate fish from the reservoir. If fish passage is present from the reservoir to the stream, it is likely that each year fish from the reservoir will migrate into the stream and spawn thus reducing the likelihood that electrofishing removal will be successful. Preventing fish passage from the reservoir to the stream while keeping the reservoir at full pool can be done through a second diversion channel of the stream (Figure 2, Bypass Channel 2) that bypasses the

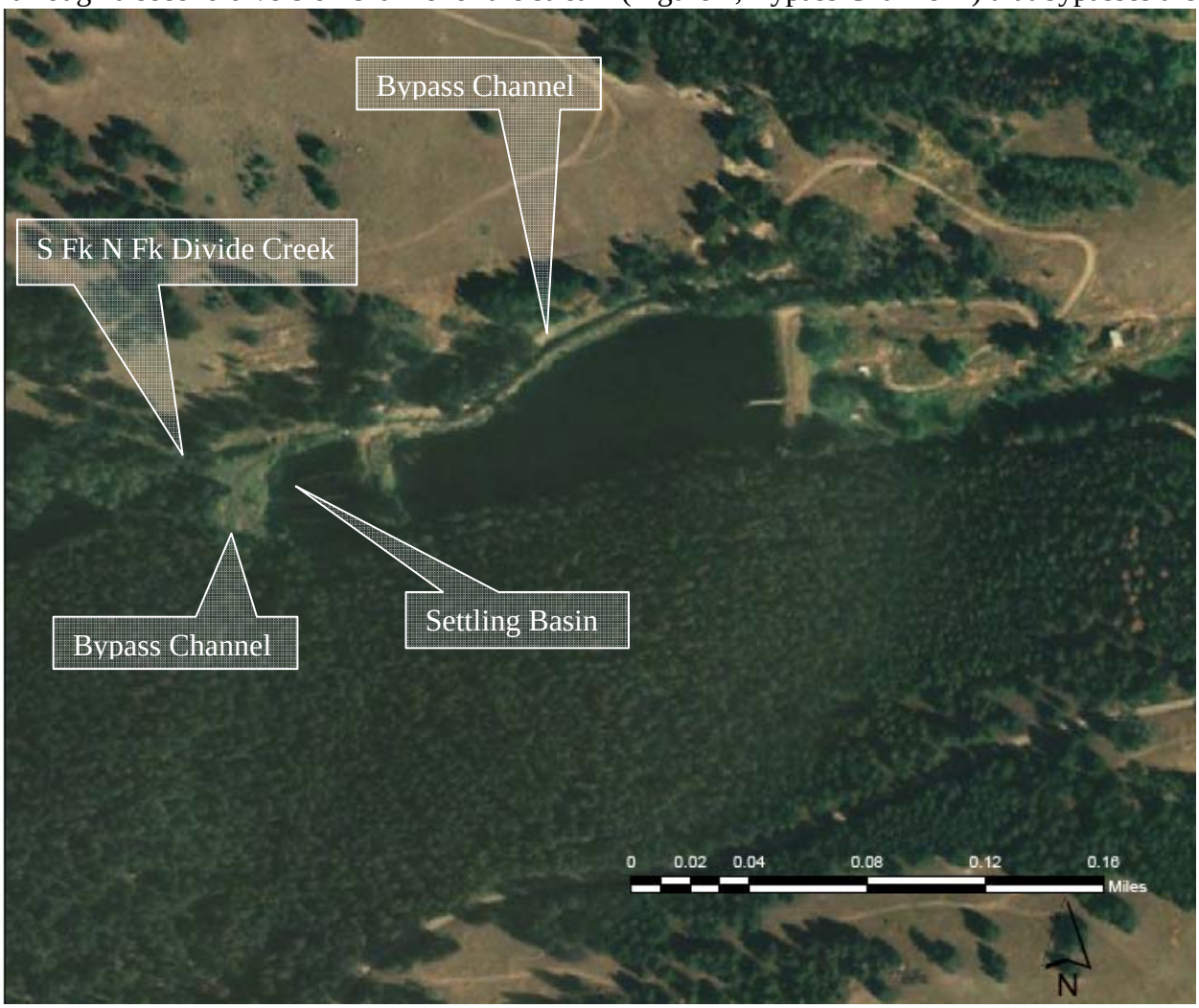

Figure 2. Aerial view of South Fork Reservoir on the South Fork of the North Fork of Divide Creek.

settling basing and discharges directly to the pond on the south shore. The discharge point into the reservoir consists of a small building with a three foot metal culvert perched approximately six feet above the surface of the water. The stream would be diverted down this bypass channel after high water when the sediment load in the stream is less (likely in mid July) and before electrofishing removal of brook trout would commence. This action would prevent fish passage from the reservoir to the stream while still maintaining flows into the reservoir, and it would likely dry up the settling basin and remove any brook trout in this area. Flows would be maintained in the channel through the fall and winter to prevent brook trout from migrating from the reservoir to the stream during spawning.

The South Fork North Fork Divide Creek immediately upstream of the reservoir for approximately one third mile is low to moderate gradient with some reaches having abundant willows. These willows are so dense in some locations and proximate to the stream that it is very difficult for personnel with large backpack electrofishers, nets, and buckets to access the stream and effectively capture fish. FWP is therefore proposing to prune woody vegetation that is immediately in the stream or across the stream that would prevent access by electrofishing crews. No wood that is important for pool formation, bank stability, stream function, or other habitat would be removed from the stream. A pathway adequate for a single person to pass through would be cut through the more dense patches of willows. Much of the vegetation that impedes electrofishing in the stream is dead willow. This material would be removed and discarded along the floodplain of the stream. No disturbance of the roots or ground around the vegetation proposed for removal would occur, so there should be no change in the stability of the stream channel. It would be very difficult to remove brook trout using electrofishing without the creation of a pathway to access the stream through some of the more densely willowed reaches. Upstream of this low gradient reach, the stream riparian species become dominated by large spruce trees that do not obstruct electrofishing access. Some pruning of vegetation may occur upstream of the lower one-third mile where access is impeded, but these areas are limited and pruning should be minor.

Bostwick Creek

Bostwick Creek is a tributary to Trout Creek which drains into the East Gallatin River. It is a second order stream at the Forest boundary with a base flow discharge estimated at 3.0 to 5.0 cfs (Figure 3). Bostwick Creek is the only stream in the Bridger Mountains north of Bozeman, Montana, that has genetically pure WCT. Brook trout and WCT are sympatric in 3.7 miles of stream habitat from near the Forest Service Boundary to near the headwaters. Non-native brook trout outnumber native WCT approximately 6:1. Rainbow trout have also invaded this drainage within the last one to two generations. FWP and Gallatin National Forest (GNF) personnel have initialed identification of hybrids in the lower reaches of the stream by collecting, uniquely tagging, and genetically testing each cutthroat, rainbow, or hybridized fish encountered. Sixty-five percent of the fish captured last year were determined to be non-hybridized WCT with the remaining 35% being first or second generation hybrids. Electrofishing removal in Bostwick Creek would consist of a similar effort to that proposed in the South Fork North Fork Divide Creek except only individually tested and verified non-hybridized cutthroat would be released back to the stream. All rainbow trout, brook trout, and hybridized fish would be removed from

the stream. It will likely take between three and five years to remove brook trout from the stream and establish a permanent fish barrier.

All hybridized trout and brook trout encountered during electrofishing removals would be removed. Additional genetic testing will likely be necessary to ensure that hybridized fish are removed and non-hybridized fish are released back to the stream. There is currently no fish passage barrier on Bostwick Creek. The private landowner at the mouth of the canyon, however, recently constructed an irrigation diversion dam which has the potential to function as a fish barrier. Both agencies have inquired about the possibility of modifying this private structure to become a permanent upstream fish block that would prevent brook trout and rainbow trout from recolonizing the stream during and after electrofishing removals. This landowner is willing to let fisheries crews access upper Bostwick Creek above his private land.

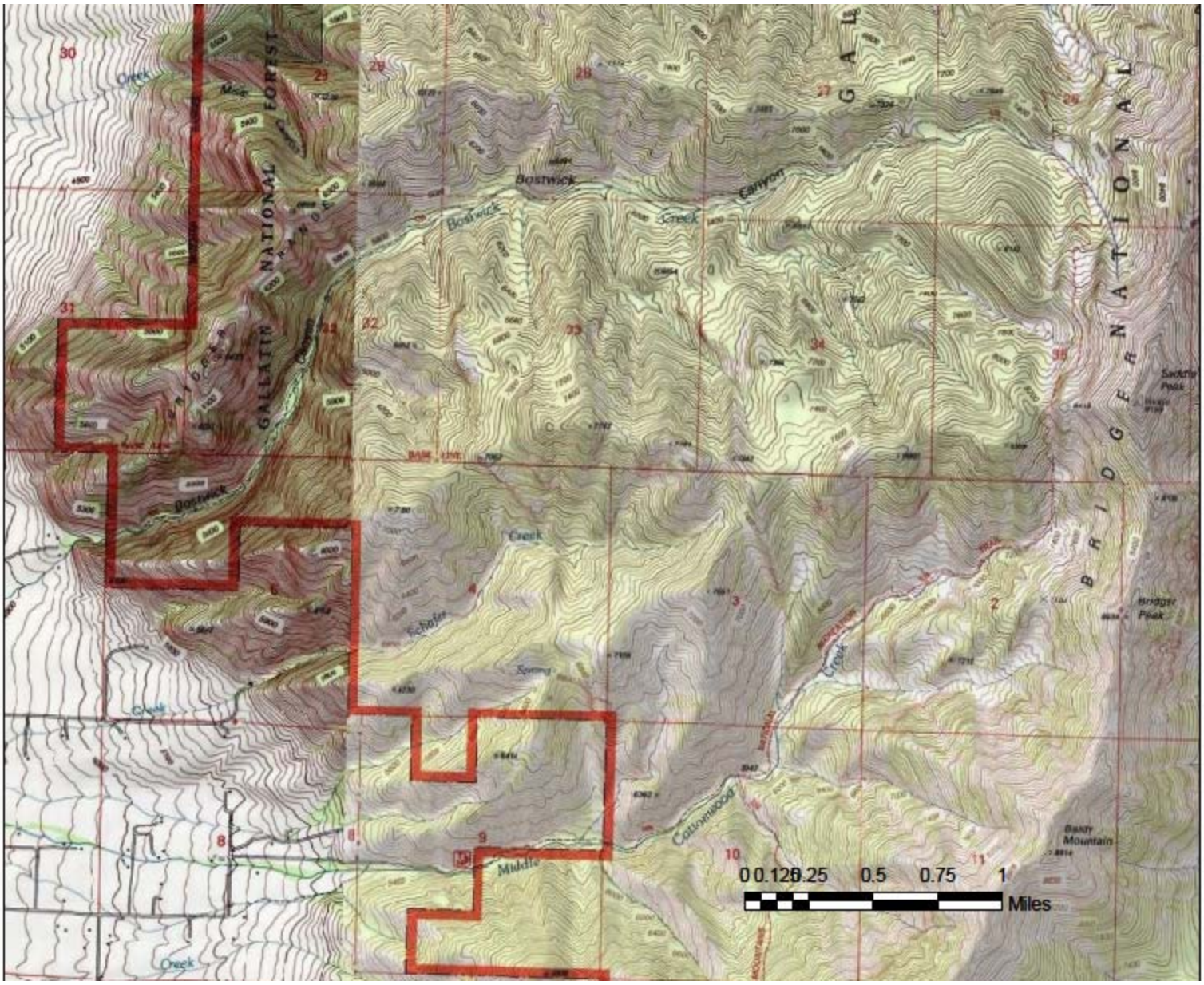

Figure 3. Map of Bostwick Creek showing area proposed for non-native fish removal.

Beehive Basin Creek

Beehive Basin Creek is a second order stream draining the south side of the Spanish Peaks located approximately one mile east of Big Sky, Montana (Figure 4). Base flow is estimated at three to four cfs. The majority of WCT in the stream are located on private land downstream of the forest boundary within the Summit View Subdivision. Land along most of the stream is managed under an existing Nature Conservancy conservation agreement. WCT and brook trout are sympatric in approximately 2.5 miles of stream habitat upstream Highway 64. Recent genetic testing indicate that these westslope cutthroat trout are slightly hybridized (< 1%) with

rainbow trout. There are three steeply installed culverts (one at Highway 64 and two along a subdivision road) that are presently being studied to determine if they function as fish barriers. Brook trout would be removed from the stream upstream of the Highway 64 culvert through private property and onto the GNF using electrofishing over multiple years. The effort and techniques used will be similar to those proposed for the South Fork North Fork Divide Creek. It is expected that the WCT population will expand and be more likely to persist into the future once competition from brook trout is removed.

A small unnamed lake (locally known as Egg Lake) located the headwaters of Beehive Basin harbors a small population of self-sustaining cutthroat trout of unknown origin. Egg Lake is in the Lee Metcalf Wilderness (Spanish Peaks Unit). The fish in this lake phenotypically appear to be Yellowstone cutthroat trout (YCT), and results from genetic samples collected in 2012 are expected back in the spring of 2013 which will verify this. FWP has no records of the lake ever being stocked, and it is not known how long these fish have been present. The presence of a self-sustaining population of apparent YCT upstream of a WCT population poses a significant hybridization threat, and therefore the cutthroat trout in Egg Lake are being proposed for mechanical removal. Egg Lake is approximately three acres with a maximum depth of eight feet with a very uniform shoreline and bottom. It is proposed that joint crews between the USFS and FWP gill net the lake to remove adult YCT and electrofish the inlet and outlet streams to remove juvenile fish. It is estimated a majority of the YCT population could be removed in one week of intensive effort simply because of the simplicity of habitat in Egg Lake and associated stream habitat. It is likely that it will take multiple years to completely remove YCT from the lake, waiting for juveniles to grow and recruit to older age classes that can then be captured in gill nets or by electrofishing. The removal of YCT from Egg Lake will eliminate the potential of a hybridizing species migrating downstream and interbreeding with the WCT in Beehive Basin Creek. WCT from farther downstream in Beehive Basin, from non-hybridized sources with the Gallatin River drainage, or from other nearby drainages, would be introduced to the lake once the YCT in the lake are removed. It is anticipated that the introduced WCT will become self-sustaining and require no further stocking.

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

Three alternatives were considered during the preparation of this EA

1) <u>No Action</u>

The predicted consequences of the “No Action” alternative are:

- Competition and hybridization from non-native trout would continue in the South Fork North Fork Divide, Bostwick, and Beehive Basin creeks, and the possibility of a genetically pure, local WCT population being extirpated due to this and associated threats would remain high.
- No costs associated with brook trout removal efforts.

- Non-native harvestable fisheries would remain present in the proposed streams. No angling data is available for the streams proposed for WCT restoration, but given their small size and relatively remote nature, little angling likely occurs.

This alternative is not the preferred alternative as it yields no benefit to severely imperiled WCT populations and impacts to the recreational public are limited.

2) **Preferred Alternative:** Removal of non-native brook trout from the proposed project reach in the South Fork North Fork Divide Creek, Bostwick Creek. and Beehive Basin Creek including Egg Lake (proposed action).

Benefits of the Proposed Project

The primary purpose of this project is to help achieve the goal of ensuring the long-term, self-sustaining presence of WCT in the upper Missouri River drainage by securing WCT population in the South Fork North Fork Divide Creek, Bostwick Creek, and Beehive Basin Creek. The benefits of successfully removing non-native brook trout, YCT, and hybridized trout would include:

- Securing a rare, upper Missouri River WCT population. The South Fork North Fork of Divide Creek would be expected to increase from current population of fewer than 200 fish to 500 to 1000 fish with the eradication of brook trout. WCT would further be able to colonize the reservoir and return to the stream to spawn creating an adfluvial population. The Bostwick Creek population would also likely increase in numbers, and it would be protected from hybridizing species found downstream. Conservation of the WCT in Bostwick Creek would prevent the loss of the only remaining non-hybridized WCT population in the Bridger Mountain Range. Beehive Basin Creek WCT would also likely increase in number and would be protected from introgression from YCT in Egg Lake. A new WCT fishery would further be created in the lake and could serve as source of WCT in the headwaters of the basin.
- Fulfilling the State's obligation to protect all genetically pure WCT populations (FWP 2007) and those populations with less than 10% introgression.
- Preserving genetically pure WCT populations that may be used as donor sources to help establish WCT in additional streams.
- Securing native WCT populations in three streams across a relatively wide geographic area which is also in accordance with the management plan (MFWP 2012), and also fulfilling the recent Statewide Fisheries Management Plan (MFWP 2012) which specifies a goal of restoring WCT to 20% of historically occupied habitat in the upper Missouri River basin.
- Reducing threats that may encourage requests for listing WCT under the Endangered Species Act.

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

3) Chemical Removal of Non-Native Trout

Another alternative to mechanically removing non-native trout in the proposed streams is to use a fish toxicant such as rotenone to remove non-native fish. Rotenone is a highly effective piscicide that is effective at very low doses. There are no impacts to other wildlife or plants that consume water or dead fish. Rotenone does impact non-target aquatic invertebrates and larval amphibians, however, but these impacts are generally short term and minor. The use of piscicides in the proposed streams would require the salvage of any remaining WCT in the streams prior to treatment with rotenone. Fish salvage would be performed by electrofishing the stream, capturing WCT, and transporting them to untreated waters while the non-native fish were removed. It would be very difficult to capture all WCT prior to rotenone treatment, so it is likely that some WCT would be inadvertently killed. Piscicides are more commonly used in streams where electrofishing removal would not likely be successful at removing all non-native fish due to complex habitat or a large number of stream miles to treat. Mechanical removal in this case is a viable option to restore native fish, however, because the streams under the proposed action are four miles or less and have habitat that is relatively simple. The preferred alternative would avoid impacts to non-target aquatic invertebrates and it would avoid the potential public concern of putting rotenone in a stream associated with a public drinking water supply even though the use of piscicides to remove non-native fish requires less manpower and time than mechanical removal. This alternative, however, was removed from further consideration because electrofishing-mediated fish removals in these streams is impractical, and in the case of the South Fork North Fork Divide Creek it is impractical to use rotenone in a public water supply.

PART II. ENVIRONMENTAL REVIEW

1. Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

A. PHYSICAL ENVIRONMENT

1. LAND RESOURCES Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated*	Com-ment 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		Yes	1d.
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other: N/A						

Comment 1d. Minor pruning of willows along and over the stream channel and removal of some overhanging logs would occur to permit better access to the stream and increase electrofishing efficiency in the South Fork North Fork Divide Creek. The roots of vegetation removed would not be disturbed, and logs that are clearly associated with channel stability (i.e., keyed into stream bed or bank) or fish habitat would not be removed. Riparian species such as willow are generally resilient, and removed cover would likely regenerate in a short period of time (one to two growing seasons).

2. AIR Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated	Com-ment Index
	Unknown *	None	Minor *	Potentially Significant		
a. **Emission of air pollutants or deterioration of ambient air quality? (also see 13 (c))			X			2a
b. Creation of objectionable odors?			X			2a
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: N/A						

Comment 2a. A gasoline chainsaw may be used to prune vegetation that impedes electrofishing crews from accessing the South Fork North Fork Divide Creek. The saw would emit exhaust that would produce a temporary and local reduction of air quality. These impacts are expected to be minor and temporary and have little to no impact on overall air quality or odor. It is likely that the pruning would be completed in one to two days of work.

3. WATER **Will the proposed action result in:**	**IMPACT ∗**				**Can Impact Be Mitigated∗**	**Com-ment 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: N/A						

4. VEGETATION Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Com-ment 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				4a.
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: N/A						

Comment 4a. Minor pruning of brush along and over the stream channel and removal of some overhanging logs would permit better access to the stream and increase electrofishing efficiency. No vegetation would be killed, and logs that are clearly associated with channel stability (i.e., those keyed into stream bed or bank) would not be removed. Pruning would occur primarily in the South Fork North Fork Divide Creek within the first one-third mile upstream of the reservoir. Access to the remaining stream channel upstream is not significantly impeded by vegetation.

** 5. FISH/WILDLIFE Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Com-ment Index
	Unknown *	**None**	**Minor ***	**Potentially Significant**		
a. Deterioration of critical fish or wildlife habitat?			X		No	5a
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				5c
d. Introduction of new species into an area?		X				
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. ****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				
j. Other: N/A						

Comment 5a. Removal of some over-hanging logs and pruning of woody vegetation is proposed to increase electrofishing efficiency for removal of non-native trout. This is anticipated to be a minor and short-term impact to fish and wildlife for several reasons: vegetation removal will be limited to a small area adjacent to the stream and it will rapidly re-grow. Logs associated with the channel will not be removed, and the stream will remain shaded from trees not impacted by woody vegetation pruning.

Comment 5b. The proposed action is expected to result in an increase in native WCT abundance and a decrease in non-native trout abundance in the South Fork North Fork Divide, Bostwick, and Beehive Basin Creeks. This is considered a minor impact because non-native trout would continue to be abundant in numerous streams in the Big Hole and Gallatin River drainages including the North Fork Divide Creek. The project is intended to increase the abundance and range of WCT, a rare and unique resource with limited distribution in the Missouri River drainage. Westslope cutthroat trout are currently protected by catch-and-release regulations in most streams in the central fish district including the streams proposed for non-native trout removal. Restoration efforts like the proposed action are intended to increase overall WCT abundance which may result in greater fishing opportunities and eventual harvest for this rare native species.

Comment 5c. Electrofishing has temporary effects on aquatic invertebrates and amphibians present in the water. These effects include temporary immobilization when the electrical current is present as well as increased drift. Immobilization often causes invertebrates to release from the stream substrate and drift in the stream current. Aquatic invertebrates and amphibians recover their locomotive ability and swim back to the bottom after the electricity is removed from the water. The electrical current is generally only present in a given location for five to twenty seconds when electrofishing is performed in a stream. There are no documented significant impacts on invertebrates from repeated electrofishing.

B. HUMAN ENVIRONMENT

6. NOISE/ELECTRICAL EFFECTS **Will the proposed action result in:**	**IMPACT ∗**				**Can Impact Be Mitigated ∗**	**Com-ment Index**
	Unknown ∗	**None**	**Minor ∗**	**Potentially Significant**		
a. Increases in existing noise levels?			X			6a
b. Exposure of people to serve or nuisance noise levels?		X				6a
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: N/A						

Comment 6a. The use of a chainsaw will create noise. However, given the remote location of the area and the limited amount of use of the saw, increased noise is expected to be temporary and minor. It is likely that the pruning work would be completed in 1-2 days.

7. LAND USE **Will the proposed action result in:**	**IMPACT ∗**				**Can Impact Be Mitigated ∗**	**Com-ment 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: N/A						

8. RISK/HEALTH HAZARDS **Will the proposed action result in:**	**IMPACT ∗**				**Can Impact Be Mitigated ∗**	**Com-ment 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: N/A						

9. COMMUNITY IMPACT **Will the proposed action result in:**	**IMPACT ∗**				**Can Impact Be Mitigated ∗**	**Com-ment Index**
	Unknown ∗	**None**	**Minor ∗**	**Potentially Significant**		
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				
f. Other:						

10. PUBLIC SERVICES/TAXES/UTILITIES Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Com-ment Index
	Unknown *	None	Minor *	Potentially Significant		
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		Yes	10c
d. Will the proposed action result in increased used of any energy source?		X				
e. **Define projected revenue sources			X		No	10e
f. **Define projected maintenance costs.			X		No	10e
g. Other:						

Comment 10c. The success of South Fork North Fork Divide Creek project depends on the ability to remove brook trout from South Fork Reservoir. The proposed action includes draining the reservoir in order to accomplish this removal. Draining the reservoir will result in a temporary reduction of the amount of water that is available for the Butte water supply. This impact can be mitigated by performing the reservoir drawdown during non-peak demand times of the year (i.e., late fall). The reduction in water from the reservoir would have to be mitigated by temporarily drawing more water from other sources to the Butte water supply including the Big Hole River, Moulten Reservoir, and/or Basin Creek Reservoir. Drawing more water from the Big Hole River should not create a significant impact if it occurs later in the fall when irrigation demand is less and river water temperatures are low. It is likely that an additional 1-3 cfs of water from the Big Hole or other sources would have to be pumped to make up the difference in water that would typically be obtained from South Fork Reservoir. It is anticipated that the reservoir will take 1-4 weeks to drain. Once drained and fish removed, all water would be again diverted into the reservoir and immediately available for use. All reservoir drawdowns would be coordinated with and performed by the Butte Silver Bow county water manager.

Comment 10e. The proposed projects would be part of the larger WCT conservation program in FWP Region 3, and would be primarily implemented by FWP and USFS staff dedicated to such efforts. Expected labor demands for the removal efforts would be 25 to 75 man-days per year per stream until non-native trout are eradicated from the project reaches which is anticipated in 3 to 5 years.

** 11. AESTHETICS/RECREATION Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Com-ment 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		Yes	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. Angling and harvest opportunities for brook trout would be reduced in the upper reaches of the South Fork North Fork Divide Creek, Bostwick Creek, and Beehive Basin Creek. There is no public access to South Fork Reservoir or the stream immediately upstream, but there is public access to the stream on the Beaverhead-Deerlodge National Forest. Non-native trout harvest opportunities would also be reduced in Bostwick and Beehive Basin creeks. Non-native brook trout, rainbow trout, and Yellowstone cutthroat trout will still be common in surrounding streams and lakes, however. High quality brook trout fisheries are also common in the Big Hole River basin. All three streams proposed for WCT restoration are small and likely receive little if any angling pressure. Anglers will still be permitted to fish for WCT in the South Fork North Fork Divide, Bostwick, and Beehive Basin creeks, but they will not be allowed to harvest WCT. Restoration efforts like the proposed action are intended to increase overall WCT abundance which may result in greater fishing opportunities and eventual harvest for this rare native species. The impact therefore is minor and temporary.

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)		X				
g. ****For P-R/D-J, list any federal or state permits required.		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (Attach additional pages of narrative if needed):

There are no anticipated secondary or cumulative impacts of this project. Impacts listed above are minor and temporary in nature and ultimately beneficial to the conservation of WCT.

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

No additional mitigations or control measures beyond those already identified are necessary.

3. Agencies consulted during preparation of the EA:

- Montana Fish, Wildlife & Parks, Bozeman and Butte

- U.S. Forest Service, Beaverhead-Deerlodge and Gallatin National Forests, Butte, Wise River, Bozeman

PART III. EA CONCLUSION SECTION

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

No. An EIS is not required under the Montana Environmental Policy Act (MEPA) because the project lacks significant impacts to the physical or human environment. Only minor and temporary impacts are anticipated, which can be mitigated below significance. The impacts therefore are appropriately addressed through an Environmental Assessment. The primary impact associated with the project is reduced abundance and distribution of non-native trout in a two mile reach of the South Fork North Fork Divide Creek, 3.7-mile reach of Bostwick Creek, 2.5-mile reach of Beehive Basin Creek, and Egg Lake 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 through local newspapers and through 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 can be given in writing to: Jim Olsen, Montana Fish, Wildlife and Park, Butte, MT 59701 or at jimolsen@mt.gov. Comments on the EA will be accepted until 5:00 pm, May 31, 2013. Please include name and address with any comment. This level of public involvement is believed adequate for the proposed project, as similar and recent efforts 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. Duration of comment period

The public comment period for this proposal is from May 2, 2013, to May 31, 2013. Written comment can be mailed to:

Jim Olsen
Montana Fish Wildlife and Parks
1820 Meadowlark Lane
Butte, MT 59701

Or emailed to:

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

References

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

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

FWP. 2012. Statewide Fisheries Management Plan and Environmental Assessment. Montana Fish, Wildllife and Parks. P.O. Box 200701, Helena, MT 59620.

Leary, R.F., B.B. Shepard, B.W. Sanborn, W. P. Dwyer, J.A. Brammer, R.A. Oswald, A. Tews, D. Kampwerth, M. Enk, R. Wagner, L. Kaeding. 1998. Genetic Conservation of Westslope Cutthroat Trout in the Upper Missouri River Drainage. Prepared by: The Upper Missouri Westslope Cutthroat Trout Committee. 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.

Shepard, B.B and L. Nelson. 2004. Conservation of Westslope Cutthroat Trout by Removal of Brook trout Using Electrofishing. Report to Montana Fish, Wildlife and Parks Future Fisheries Improvement Program, Helena, Montana.