



# Montana Fish, Wildlife & Parks

1400 South 19<sup>th</sup> Avenue  
Bozeman, MT 59718

June 24, 2009

To: Governor's Office, Mike Volesky, State Capitol, Room 204, P.O. Box 200801, Helena, MT 59620-0801  
Environmental Quality Council, State Capitol, Room 106, P.O. Box 201704, Helena, MT 59620-1704  
Dept. of Environmental Quality, Metcalf Building, P.O. Box 200901, Helena, MT 59620-0901  
Dept. of Natural Resources & Conservation, P.O. Box 201601, Helena, MT 59620-1601  
Montana Fish, Wildlife & Parks:

Director's Office	Parks Division	Lands Section	FWP Commissioners
Fisheries Division	Legal Unit	Wildlife Division	Design & Construction

MT Historical Society, State Historic Preservation Office, P.O. Box 201202, Helena, MT 59620-1202  
MT State Parks Association, P.O. Box 699, Billings, MT 59103  
MT State Library, 1515 E. Sixth Ave., P.O. Box 201800, Helena, MT 59620  
James Jensen, Montana Environmental Information Center, P.O. Box 1184, Helena, MT 59624  
Janet Ellis, Montana Audubon Council, P.O. Box 595, Helena, MT 59624  
George Ochenski, P.O. Box 689, Helena, MT 59624  
Jerry DiMarco, P.O. Box 1571, Bozeman, MT 59771  
Montana Wildlife Federation, P.O. Box 1175, Helena, MT 59624  
Wayne Hurst, P.O. Box 728, Libby, MT 59923  
Jack Jones, 3014 Irene St., Butte, MT 59701  
Bruce McLeod, Spear Lazy U. 2107 Highland Ct, Bozeman MT 59715  
Jonathan Rennie Patrick, 1723 Shields River Road, Wilsall MT 59086  
Sharon Ann Rennie, 1723 Shields River Road, Wilsall MT 59086  
Muffie and Stephen Murray, PO Box 450, Green Farr CT 68380  
Joe Poteat, PO Box 400, Davidson NC 28036  
71 Ranch LP, 106 71 Ranch Road. Martinsdale MT 59053  
Montana Ranch Corp, 7670 Woodway Drive Ste, Houston TX 77063  
Michael Michelson, Porcupine Creek Ranch Corp, San Mateo CA 94403

Ladies and Gentlemen:

The enclosed Environmental Assessment (EA) has been prepared for the proposed *Upper Shields River Watershed Yellowstone Cutthroat Trout Inventory and Brook Trout Suppression* project. This project proposes that FWP, along assistance from the Gallatin National Forest, will conduct an inventory of Yellowstone cutthroat trout in the upper Shields River watershed to evaluate their distribution and status. In addition, this project will provide information on the extent of brook trout invasion into these waters. Brook trout are a primary threat to native Yellowstone cutthroat trout in headwater streams, making removal or suppression a potential conservation tool. Therefore, this EA also examines the impact of brook trout removal as a component of this proposed action. This Draft EA is available for review on FWP's Internet website: <http://www.fwp.mt.gov>.

Montana Fish, Wildlife & Parks invites you to comment on the attached proposal. The public comment period will be accepted until 5:00 pm. July 24. Comments should be sent to the following:

Scott Opitz  
Montana Fish, Wildlife & Parks  
1354 Highway 10 West  
Livingston MT 59047

Or e-mailed to: [sopitz@mt.gov](mailto:sopitz@mt.gov)

Sincerely,

Patrick J. Flowers  
Region Three Supervisor  
Attachment

# Upper Shields River Watershed Yellowstone Cutthroat Trout Inventory and Brook Trout Suppression

## Draft Environmental Assessment

June 24, 2009

### 1.0 PROPOSED ACTION DESCRIPTION

#### 1.1 *Type of Proposed Action*

This proposed action is to conduct a fish community inventory of the upper Shields River watershed and determine the current distribution of Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*). Fisheries workers will sample streams in the project area using standard electrofishing methodologies. All Yellowstone cutthroat trout captured will be measured, weighed, and returned to the stream. Tissue samples comprised of small fin clips may be taken from a subset of captured Yellowstone cutthroat trout to verify genetic status. Workers will identify other native fishes and note their relative abundance. The proposed project will include the mechanical removal of nonnative brook trout (*Salvelinus fontinalis*) that are encountered during the inventory. The objective of brook trout suppression is to reduce competition with Yellowstone cutthroat trout over the short term. The results of the fish community inventory will guide development of a more detailed conservation plan to promote long-term persistence of the upper Shields River basin's Yellowstone cutthroat trout population.

#### 1.2 *Agency Authority for 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] MCA).
- FWP signed the *Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout and Yellowstone Cutthroat in Montana* (FWP 2007). This agreement establishes the management goals for cutthroat in Montana, which are as follows:
  - Ensure the long-term, self sustaining persistence of each subspecies across their historical ranges as identified in recent status reviews (May et al. 2007)
  - 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
  - Protect the ecological, recreational, and economic values associated with each species.

#### 1.3 *Name and Location of Project*

**Upper Shields Watershed Yellowstone Cutthroat Trout Inventory and Brook Trout Suppression.**

**1.4. Name and Address of Project Sponsor**

Montana Fish, Wildlife & Parks  
 1400 South 19<sup>th</sup> Ave.  
 Bozeman, MT 59718-5496

**1.5. Estimated Commencement Date and Schedule**

This project will take place between July 1 and October 31, 2009. The actual date within this period will depend on flows, water temperature, weather, and access.

**1.6. Location Affected by Proposed Action**

The proposed action would occur in the upper Shields River watershed upstream of the confluence with Smith Creek (see Figure 1 and Table 1).

**Table 1: Township, range, and sections where proposed actions would occur.**

Township	Range	Sections
5N	9E	26, 25
5N	10E	14, 25, 26, 27, 28, 29, 30, 33, 34, 36
5N	11E	6, 7, 8, 9, 10, 15, 16, 17, 18, 20, 29, 32, 33
4N	10E	1, 2, 11, 13, 14, 24
4N	11E	6, 7, 18

**1.7. Project Size (Acres Affected)**

	Acres		Acres
(a) Developed	0	(d) Floodplain	0
Residential	0		
Industrial	0	(e) Productive	0
		Irrigated cropland	0
		Dry cropland	0
(b) Open space/Woodlands/Recreation	0	Forestry	0
		Rangeland	0
(c) Wetlands/Riparian areas	Approx. Stream Miles <sup>1</sup>	Other	0
Shields River upstream of Smith Creek	12		
South Fork Shields River	8		
Mill Creek	4		
Bennett Creek	3.7		
Serrett Creek	2.9		
Deep Creek	4.5		
Buck Creek	5.1		
Clear Creek	1.8		
Scofield Creek	1.9		
Turkey Creek	1.4		
Dugout Creek	2.7		
Crandall Creek	3.4		
Lodgepole Creek	1.7		

<sup>1</sup>Suppression would occur somewhere within these stream miles, but not all miles would necessarily be affected.

## 2.0 Map of Project Area

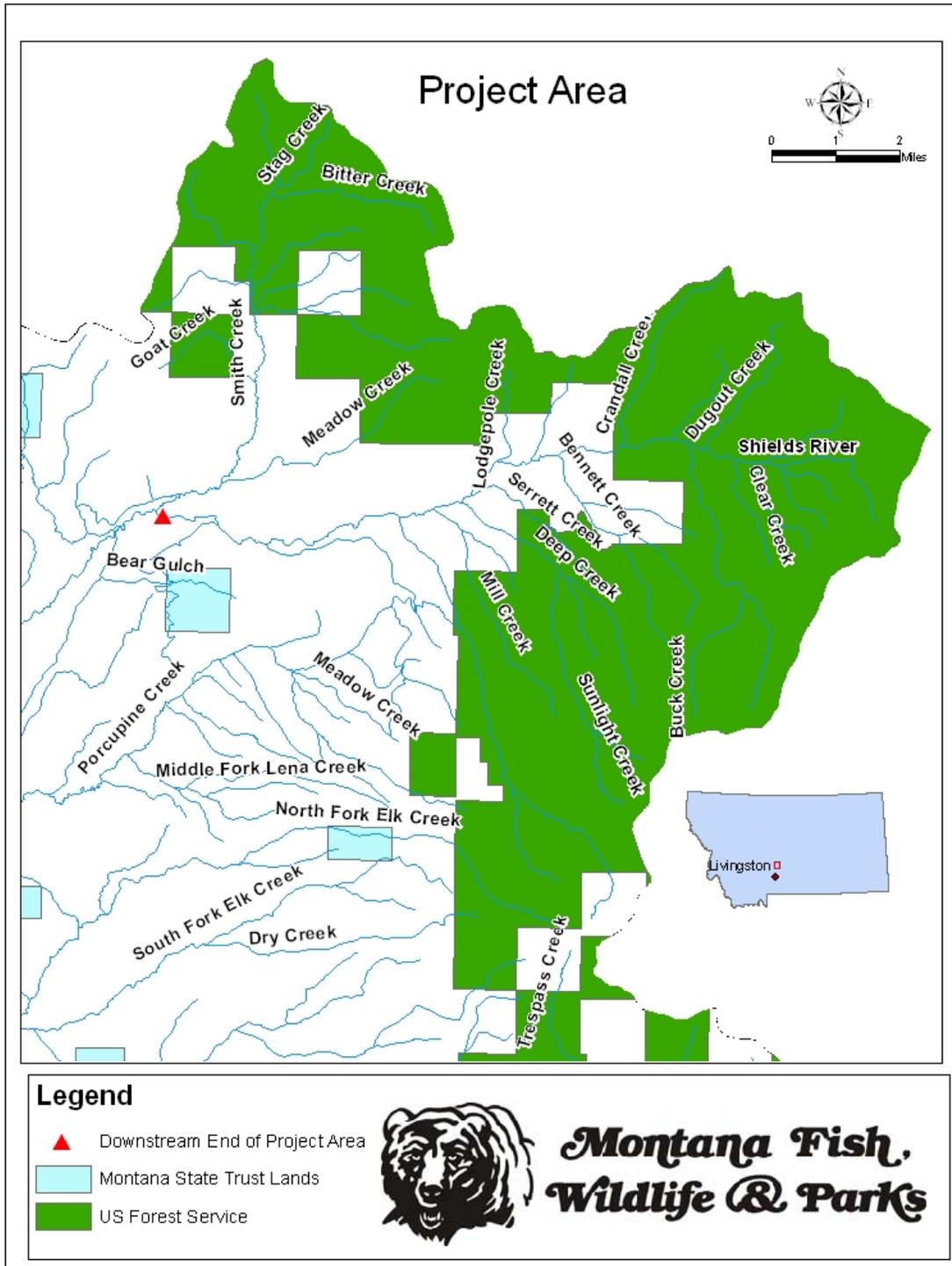


Figure 1: Map of the Shields River watershed upstream of the confluence with Smith Creek.

(a) Permits:

No permits are necessary for mechanical brook trout removal efforts.

(b) Funding:

FWP and the Gallatin National Forest would be cooperators in implementing and funding this project. Funding would include resources that are currently allocated by FWP and the Gallatin National Forest towards Yellowstone cutthroat conservation efforts.

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

Agency Name:	Gallatin National Forest
Type of Responsibility:	Management of federal lands within the upper Shields watershed.

## ***2.1. Summary of the Proposed Action and Purpose of the Proposed Action.***

### **2.1.1. Proposed Action**

Fisheries workers will conduct a fish community inventory in the upper Shields River watershed, above the confluence with Smith Creek (Figure 1), using standard electrofishing methodology. All Yellowstone cutthroat trout encountered in this effort will be netted, weighed, and measured, then returned to the stream. Tissue samples may be collected from a subset of captured Yellowstone cutthroat trout to determine genetic status. Presence and relative abundance of other native species will be recorded. All brook trout will be euthanized and left on site.

### **2.1.2. Background and Rationale**

This action is a native fish inventory and restoration project aimed at protecting pure Yellowstone cutthroat trout populations in the upper Shields River watershed (Figure 1). The Shields River watershed retains a relatively intact distribution of native Yellowstone cutthroat trout with 66% of historically occupied habitat still supporting the fish (May et al. 2007). The genetic purity of Yellowstone cutthroat trout in the project area results in this population being designated as a core population (May et al. 2007). Invasion of brook trout into the headwaters of the Shields River presents a threat to the persistence of Yellowstone cutthroat trout in these streams. Brook trout have been rapidly displacing Yellowstone cutthroat trout in the basin's headwaters, and intervention would reduce competitive pressure on the native cutthroat.

This pattern of brook trout invasion, and resulting displacement of cutthroat trout, has had a profound effect on headwater populations of native cutthroat in the Intermountain West (Dunham et al. 2002). Fisheries biologists in the Shields watershed predict that brook trout will eventually invade all accessible streams with unfortunate consequences for the native cutthroat (Shepard 2004). Suppression of nonnatives is among the tools used to secure and protect native cutthroat trout and is the preferred alternative analyzed in this environmental assessment.

An understanding of the status of Yellowstone cutthroat trout provides substantial justification for implementing conservation projects to protect the species. The Yellowstone cutthroat trout is native to Montana and several neighboring states: Wyoming, Idaho, Utah, and Nevada. In Montana, Yellowstone cutthroat trout historically occupied accessible streams and lakes in the

Yellowstone River watershed having suitable habitat, water quality, and thermal regime. Like many native cutthroat, Yellowstone cutthroat trout have experienced dramatic declines in abundance and range. Conservation populations of Yellowstone cutthroat trout (> 90% genetically pure) now occupy about 34% of their historic range in Montana (May et al. 2007) with the western portion of the Yellowstone River basin being the stronghold. East of Springdale, Yellowstone cutthroat trout become increasingly rare (Figure 2). Remaining populations tend to be isolated, and many co-occur with nonnative species. Both factors present considerable threats to the persistence of these populations.

Reductions in Yellowstone cutthroat trout populations are the result of several perturbations including habitat degradation, dewatering, disease, and habitat fragmentation. Introduction of nonnative fishes is perhaps the greatest threat to Yellowstone cutthroat trout (Gresswell 1995, Kruse et al. 2000). Brown trout and brook trout have displaced native cutthroat trout, including Yellowstone cutthroat trout, throughout the western United States (Behnke 1992). Rainbow trout (*O. mykiss*) hybridize with Yellowstone cutthroat trout resulting in a loss of genetic integrity (Allendorf and Leary 1988, Henderson et al. 2000), and hybridization is a leading cause of loss of Yellowstone cutthroat trout populations (Kruse and Hubert 2004). Actions that secure populations from the threats of hybridization, competition, and predation are critical tools in cutthroat trout conservation efforts.

Because of reductions in range and abundance of Yellowstone cutthroat trout, state and federal agencies have assigned special status ratings to Yellowstone cutthroat trout which guide management activities to promote conservation and restoration of this species. Montana lists Yellowstone cutthroat trout within its borders as an S2 species of special concern. This ranking applies to species with limited or declining numbers or shrinking distribution, putting these species at risk of global extinction or extirpation (MNHP and FWP 2008). Likewise, the US Forest Service (USFS) considers Yellowstone cutthroat trout to be a sensitive species. The USFS applies sensitive status to species that the Regional Forester has determined concerns exist for population viability within the state relating to a significant current or predicted downward trend in population or habitat. As considerable portions of the upper Shields River watershed lies within national forest, the USFS would be a collaborator on these actions as their resources allow.

Concerns over the status of Yellowstone cutthroat trout have prompted advocacy groups to petition the US Fish and Wildlife Service (USFWS) to list this subspecies as a threatened or endangered species. In two decisions, the USFWS found listing Yellowstone cutthroat trout to be unwarranted, and the presence of stable, viable, and self-sustaining populations throughout its historic range was justification for this determination (USFWS 2001, USFWS 2006). Nonetheless, plaintiffs submitted a notice of intent to sue in 2006 indicating legal challenges are likely. In the interim, FWP and its conservation partners are dedicated to implementing projects such as this proposed action to decrease the justification for including Yellowstone cutthroat trout on the endangered species list.

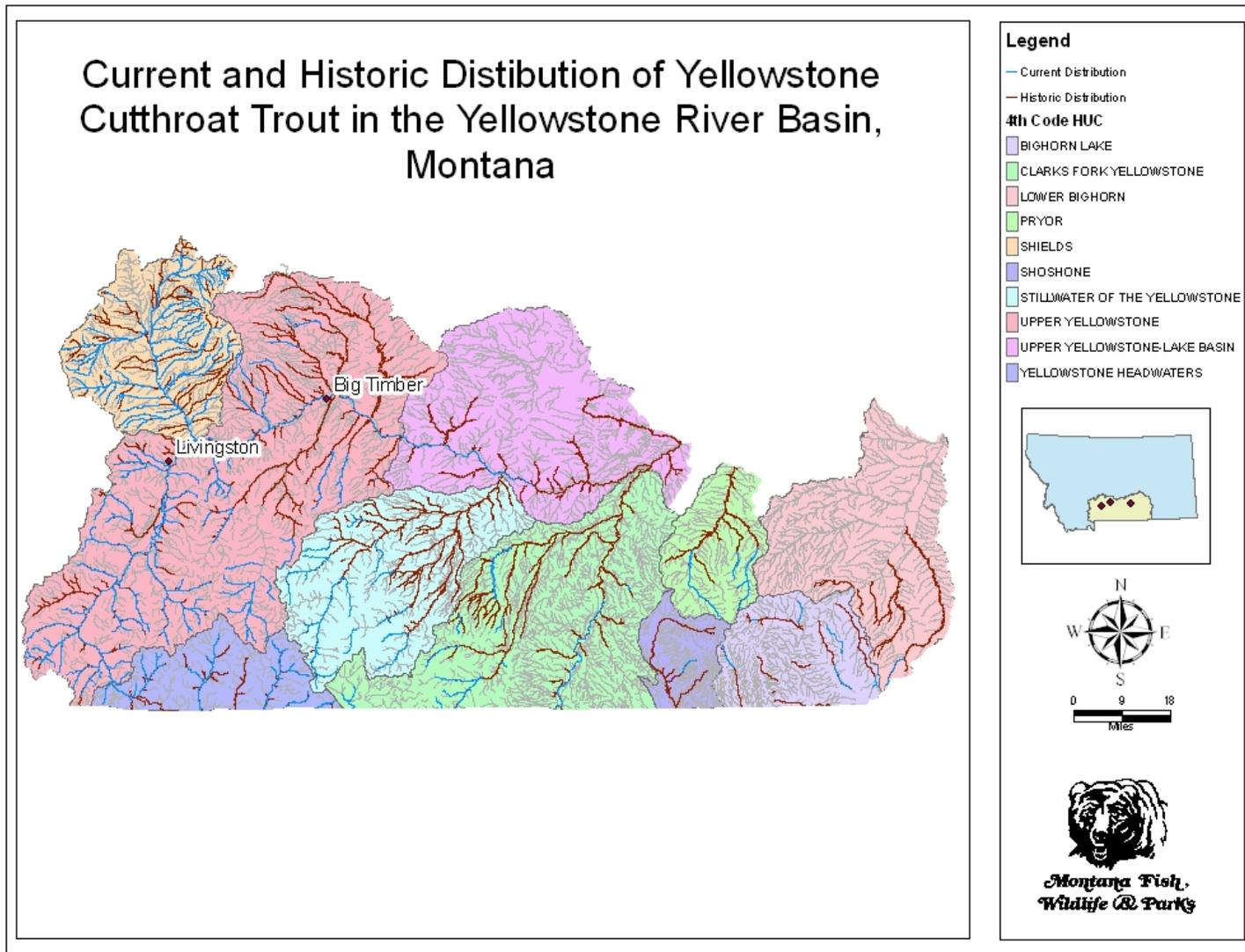


Figure 2: Current and historic distribution of Yellowstone cutthroat trout in the Yellowstone River basin, Montana.

Currently FWP, along with partner agencies both state and federal, is developing a conservation strategy to conserve Yellowstone cutthroat trout within the Shields River watershed and ensure its persistence over the long-term. Conservation priorities, in order of importance, are as follows:

1. Identify, protect, and secure genetically unaltered populations.
2. Reintroduce genetically unaltered populations into reclaimed streams.
3. Introduce genetically unaltered populations into historically fishless waters.
4. Protection of hybridized populations.

The proposed actions would address the first conservation priority resulting in considerable benefit to Yellowstone cutthroat trout.

### **2.1.3. Upper Shields River Watershed Fisheries**

An understanding of fish population dynamics in the upper Shields River watershed is valuable in evaluating the need for intervention and the merits of the proposed project. Fisheries investigations in the upper Shields River watershed include fish population monitoring conducted by the USFS and FWP personnel. This section describes population monitoring in the project area and Smith Creek, a neighboring tributary watershed (Figure 1).

Smith Creek lies outside of the project area but presents a case study of the consequences of not intervening when brook trout invade Yellowstone cutthroat trout streams. Fish surveys in the 1970s found Yellowstone cutthroat trout substantially outnumbered brook trout near the mouth of Smith Creek. In subsequent decades, sampling in Smith Creek found brook trout dominated the catch at assessed reaches, often by a substantial margin.

Fisheries investigations in tributaries of Smith Creek in 2003 and 2006 found even greater dominance of brook trout (USFS unpublished data). In 2003, brook trout accounted for 100% of the trout captured near culverts at 4 out of 5 tributary sampling locations. Likewise in 2006, no Yellowstone cutthroat trout were found in tributaries East Fork Smith, Stag, or Bitter creeks, and brook trout comprised 70% of trout captured in Smith Creek (USFS, unpublished data). The dominance of brook trout in Smith Creek, and apparent extirpation of Yellowstone cutthroat trout in its tributaries, in a few decades is an alarming trend that should not be allowed to occur in other streams in the upper Shields River watershed.

In the Shields River drainage upstream of Smith Creek, Yellowstone cutthroat trout still dominate in most streams but brook trout are making inroads. Forest Service fish surveys associated with road crossings found Yellowstone cutthroat trout were the dominant or only species at locations with fish. A single brook trout was found at one of the nine sampling stations indicating recent invasion has occurred.

The South Fork of the Shields River is an apparent exception in terms of fish community composition for streams in the Shields River basin upstream of Smith Creek (Shepard 2004). FWP personnel sampled at two locations and found Yellowstone cutthroat trout, brown trout, and brook trout. Brook trout were numerically dominant in both sampling reaches comprising

65 to 70% of the catch. Brown trout were also present, but at low numbers. Yellowstone cutthroat trout accounted for between 25 to 30% of trout captured in South Fork Shields River.

Genetic status of fish in the upper Shields River basin is another consideration in evaluating the merits and need for this project. All samples collected in the upper Shields River and its tributaries within the project area have tested as pure Yellowstone cutthroat trout (Table 2). As a pure population of Yellowstone cutthroat trout, these streams have considerable conservation value and results in designation as a core conservation population (May et al. 2007). Moreover, as protecting remaining pure populations of Yellowstone cutthroat trout is the highest conservation priority, intervention to prevent displacement by nonnatives, if possible, is imperative.

**Table 2: Genetic analyses of Yellowstone cutthroat trout captured in streams in the project area.**

<i>Stream</i>	<i>Sample Size</i>	<i>Target Species</i>	<i>Percent</i>	<i>Collection Date</i>
SF Shields	10	YCT	100	8/10/1992
Mill	11	YCT	100	7/27/1990
Deep	10	YCT	100	7/27/1990
Bennett	10	YCT	100	8/16/1990
Shields	25	YCT	100	7/28/1990
Shields	22	YCT	100	10/28/1988
Shields	25	YCT	100	9/7/1989
Scofield	10	YCT	100	8/16/1990
Turkey	13	YCT	100	8/1/1986
Lodgepole	4	YCT	100	8/1/1986
Dugout	5	YCT	100	7/27/1992

## **2.2. Agencies Consulted during Preparation of the EA**

- Montana Fish, Wildlife & Parks, Bozeman, and Livingston
- Gallatin National Forest, Bozeman and Livingston
- Montana Natural Heritage Program (website)

### 3.0 ENVIRONMENTAL REVIEW

This chapter examines potential risks to human health and the environmental that would occur with implementation of the proposed alternative, mechanical removal of nonnatives in the upper Shields River watershed above the confluence with Smith Creek. See 4.0 ALTERNATIVES for a description of all alternatives considered.

#### 3.1. Physical Environment

##### 3.1.1. Land Resources

Land Resources	Impact				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Would the proposed action result in:</b>						
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				

##### 3.1.2. Air

Air	Impact				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
<b>Would the proposed action result in:</b>						
a. Emission of air pollutants or deterioration of ambient air quality?		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. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				

### 3.1.3. Water

Water	Impact			Potentially Significant	Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor			
<b>Would the proposed action result in:</b>						
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?						
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. Would the project affect a designated floodplain?		X				
m. Would the project result in any discharge that would affect federal or state water quality regulations? (Also see 2a)		X				

### 3.1.4. Vegetation

Vegetation	Impact			Potentially Significant	Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor			
<b>Would the proposed action result in:</b>						
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		YES	4e
f. Would the project affect wetlands, or prime and unique farmland?		X				

**COMMENT 4e: Establishment or spread of noxious weeds  
Alternative 1: Proposed Action**

Trucks and four wheelers transporting gear and personnel have potential to spread noxious weeds from seeds transported in the undercarriage. To mitigate and reduce the risk of invasion or spread of noxious weeds, all vehicles would be cleaned before arrival on site which will include an undercarriage wash.

### 3.1.5. Fish and Wildlife

Fish and Wildlife Would the proposed action result in:	Impact			Potentially Significant	Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor			
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				
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			5b
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?		X				
h. Would the project be performed in any area in which T&E species are present, and would the project affect any T&E species or their habitat? (Also see 5f)			X			5f
i. Would the project introduce or export any species not presently or historically occurring in the receiving location?		X				

#### Comment 5b: Changes in the diversity or abundance of game animals or bird species?

##### Alternative 1: Preferred Action

The proposed action is expected to result in an increase in native Yellowstone cutthroat abundance and a decrease in nonnative brook trout abundance in the upper Shields River watershed. This is considered a minor impact because brook trout will continue to be present in numerous other streams in the Shields River basin. The influence on Yellowstone cutthroat trout would be positive with an increase the abundance of Yellowstone cutthroat. Yellowstone cutthroat trout are currently protected by catch-and-release regulations in most streams in the central fish district including those of the upper Shields watershed. Efforts like the proposed action are intended to increase overall Yellowstone cutthroat abundance which may result in greater fishing opportunities for and harvest of this rare native species.

#### Comment 5f: Adverse effects on any unique, rare, threatened, or endangered species

##### Alternative 1: Preferred Action

The Yellowstone cutthroat trout is a species of special concern in Montana and throughout its native range. Implementation of this project on Yellowstone cutthroat trout would be beneficial as it will reduce competitive pressure associated with the recent invasion of brook trout into this stronghold. In addition, this action is consistent with conservation priorities agreed to by Yellowstone cutthroat trout conservation partners (FWP 2007).

Currently, Yellowstone cutthroat trout are not included for protection under the Endangered Species Act. However, plaintiffs filed a notice of intent to sue in 2006, suggesting a lawsuit pushing for this listing is likely. Implementing projects that protect Yellowstone cutthroat trout within their native range decrease the justification for including the fish on the endangered species list.

### 3.2. Human Environment

#### 3.2.1. Noise and Electric Effects

Would 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 serve 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				

#### 3.2.2. Land Use

Would 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				

#### 3.2.3. Risks/Health Hazards

Would 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. Would any chemical piscicides be used?		X				

### 3.2.4. Community Impact

Would the proposed action result in:	Impact					Comment Index
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	
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				

### 3.2.5. Public Services/Taxes/Utilities

Would the proposed action result in:	Impact					Comment Index
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	
a. Would 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. Would the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Would 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. Would the proposed action result in increased used of any energy source?		X				
e. Define projected revenue sources					NO	10e
f. Define projected maintenance costs		X				

**Comment 10e:** This project would be part of the larger Yellowstone cutthroat conservation program in FWP Region-3 and would be primarily implemented by FWP staff dedicated to such efforts. As part of the Gallatin National Forest fisheries program, personnel from the USFS would participate in the inventory of Yellowstone cutthroat trout distribution and the brook trout removal efforts. Expected labor demands for this effort would be 25–75 person-days.

### 3.2.6. Aesthetics/Recreation

Aesthetics/Recreation Would the proposed action result in:	Unknown	Impact			Potentially Significant	Can Impact Be Mitigated	Comment Index
		None	Minor				
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. Would any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (Also see 11a, 11c)		X					

**Comment 11c:** Angling and harvest opportunities for brook trout would be reduced in the upper Shields River watershed. However, brook trout will still be common in other portions of the Shields River basin. Anglers will still be permitted to fish for Yellowstone cutthroat in the project area but are currently required to release captured Yellowstone cutthroat. Restoration efforts like the proposed action are intended to increase overall Yellowstone cutthroat abundance which may result in greater fishing opportunities and harvest for this rare, native species; therefore, the impact would be minor and temporary.

### 3.2.7. Cultural/Historical Resources

Cultural/Historical Resources Would the proposed action result in:	Unknown	Impact			Potentially Significant	Can Impact Be Mitigated	Comment Index
		None	Minor				
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. Would the project affect historic or cultural resources?		X					

### 3.2.8. Summary Evaluation of Significance

Would the proposed action, considered as a whole:	Impact			Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor		
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 would be proposed?		X			
e. Generate substantial debate or controversy about the nature of the impacts that would be created?			X	YES	13e
f. Is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e)			X	YES	See 13e
g. List any federal or state permits required.					

#### Comment 13e: Potential for debate or controversy

##### Alternative 1: Proposed Action

Fish suppression using lethal means has potential to draw controversy from the public. However, to date, actions using lethal mechanical removal have not met with significant opposition. Educating the public on the importance of the proposed action in terms of benefit to Yellowstone cutthroat trout, combined with discussion of the expense and lack of ecological benefit to nonlethal suppression, would mitigate risks of opposition to this component of the proposed action. 4.2.1 Alternative 3: Non-lethal Suppression of Brook Trout in the Upper Shields River Watershed details the disadvantages of nonlethal suppression.

## 4.0 ALTERNATIVES

Three alternatives received consideration during preparation of the environmental assessment. The proposed alternative (Alternative 1) and no action (Alternative 2) were evaluated in detail. The third alternative was eliminated from full consideration as it would entail considerable expense but no commensurate ecological benefit.

#### ***4.1. Alternatives Given Detailed Study***

##### **4.1.1. Alternative 1: Yellowstone Cutthroat Distribution inventory and Nonnative Fish Suppression**

The preferred action would be a detailed inventory of distribution of Yellowstone cutthroat and would involve mechanical removal of nonnative brook trout encountered within the project area. Fish would be captured using electrofishing. Native Yellowstone cutthroat trout would be returned to the stream while nonnative brook trout would be euthanized and left on site.

##### **4.1.2. Alternative 2: No action.**

The no action alternative would entail not implementing any activities to protect the remaining pure Yellowstone cutthroat trout in the upper Shields River watershed which would have several consequences. The remaining Yellowstone cutthroat trout population would continue to be exposed to competition with nonnative brook trout. Over the long term, this would likely result in the ultimate elimination of Yellowstone cutthroat trout populations in the headwaters of the Shields River. Such losses threaten the species as a whole and increase justification for providing Yellowstone cutthroat trout protection under the Endangered Species Act.

#### ***4.2. Alternatives Considered but Not Given Detailed Study***

##### **4.2.1. Alternative 3: Non-lethal Suppression of Brook Trout in the Upper Shields River Watershed**

Under this alternative, brook trout would be physically removed from the treated streams and moved elsewhere. Removing nonnative brook trout would benefit Yellowstone cutthroat trout in the project streams. However, several factors limit the cost-effectiveness and feasibility of fish transfer. This alternative would be considerably more expensive given the need to hold and transport live fish. Moving fish downstream would not be effective as no barrier exists that would prevent fish from returning. This alternative would also require expensive disease testing before fish could be transferred to another location. No ecological benefit would be realized from transferring fish in the receiving water as it would likely be near, or at, its carrying capacity.

## **5.0 ENVIRONMENTAL ASSESSMENT CONCLUSION SECTION**

### **5.1.1. Evaluation of Significance Criteria and Identification of the Need for an EIS**

Evaluation of potential impacts on the physical and human environment in 3.0 ENVIRONMENTAL REVIEW provides the basis for determining the need for an environmental impact statement (EIS) which is a more rigorous evaluation of potential impacts to human health and the environment from the proposed action. If evaluation of these significance criteria suggests the proposed action would result in significant impacts, an EIS would be required.

This environmental review demonstrates that the impacts of this proposed project are not significant. The proposed action would benefit Yellowstone cutthroat trout in upper Shield River watershed with minimal impact on the physical, biological, or the human environment.

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. Therefore, the impacts are appropriately addressed through an Environmental Assessment. The primary impact associated with the project is reduced abundance and distribution of nonnative brook trout in the upper Shields River watershed which is the intended consequence of the action.

### **5.1.2. Level of Public Involvement**

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: Scott Opitz, Montana Fish, Wildlife & Parks, 1354 Highway 10 West, Livingston, MT 59047, or email: [sopitz@mt.gov](mailto:sopitz@mt.gov). Comments on the EA will be accepted until 5:00 pm, July 24, 2009. Please include name and address with any comment. A public meeting will be held in Wilsall on July 11, 2009 at 6:00 at the Wilsall Fire Department. This level of public involvement is believed adequate for the proposed project, as similar and recent efforts with westslope cutthroat trout in the Dillon Area and the Elkhorn Mountains near Helena, have produced no significant issues or controversy.

### **5.1.3. Public Comments**

The public comment period will extend from June 24, 2009 through July 24, 2009.

Send comments to:  
Scott Opitz  
Montana Fish, Wildlife & Parks

1354 Highway 10 West  
Livingston, MT 59047  
[sopitz@mt.gov](mailto:sopitz@mt.gov)

#### **5.1.4. Parties Responsible for Preparation of the EA**

Carol Endicott  
Montana Fish, Wildlife, and Parks  
1354 Highway 10 West  
Livingston, MT 59047  
(406) 222-3710  
[cendicott@mt.gov](mailto:cendicott@mt.gov)

## **6.0 Literature Cited**

- Allendorf, F.W., and R.F. Leary. 1988. Conservation and distribution of genetic variation in a polytypic species, the cutthroat trout. *Conservation Biology* 2:170-184.
- Behnke, R.J. 1992. Native trout of western North America. American Fisheries Society Monograph 6, Bethesda, Maryland.
- 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 their potential impacts on inland cutthroat trout in western North America. *Reviews in Fish Biology and Fisheries* 12:373-391.
- FWP. 2007. Memorandum of understanding and conservation agreement for westslope cutthroat trout and Yellowstone cutthroat trout in Montana. Helena, Montana
- Gresswell, R. E. 1995. Yellowstone cutthroat trout. Pages 36-54 in M. K. Young, technical editor. Conservation assessment for inland cutthroat trout. U.S. Forest Service General Technical Report RM-GTR-256.
- Henderson, R., J.L. Kershner., and C.A. Toline. 2000. Timing and location of spawning by nonnative rainbow trout and native cutthroat trout in the South Fork Snake River, Idaho, with implications for hybridization. *North American Journal of Fisheries Management* 20:584-596.
- Kruse, C. and W.A. Hubert. 2000. Status of Yellowstone cutthroat trout in Wyoming waters. *North American Journal of Fisheries Management* 20:693-705
- Kruse, C. G., W. A. Hubert, and F. J. Rahel. 2000. Status of Yellowstone cutthroat trout in Wyoming waters. *North American Journal of Fisheries Management* 20: 693-705.
- Leary, Robb, 1987, Genetic Divergence Among Yellowstone Cutthroat Trout Populations In The
- May, B.E., S.E. Albeke, and T. Horton. 2007. Range-wide status assessment for Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*): 2006. Report prepared for the Yellowstone Cutthroat Trout Interagency Coordination Group. Wild Trout Enterprises, LLC. Bozeman, Montana.
- MNHP and MFWP. 2008. Animal species of special concern. Helena, Montana

- Shepard, B.B. 2004. Fish surveys of the Shields River tributaries; 2001 through 2003. Montana Department of Fish, Wildlife, and Parks, and Montana Cooperative Fisheries Research Unity. Montana State University, Bozeman.
- U.S. Fish and Wildlife Service. 2001. Endangered and threatened wildlife and plants: 90-day finding for a petition to list the Yellowstone cutthroat trout as threatened. Federal Register 66: 11244-11149.
- U.S. Fish and Wildlife Service. 2006. Endangered and threatened wildlife and plants: 12-month finding for a petition to list the Yellowstone cutthroat trout as threatened. Federal Register 71: 8818-8831.