

PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project West Fisher Watershed Restoration	
BPA project number	20005
Contract renewal date (mm/yyyy)	N/A
Multiple actions? (indicate Yes or No)	N/A
Business name of agency, institution or organization requesting funding USDA - Forest Service, Kootenai National Forest - Libby Ranger District	
Business acronym (if appropriate)	USFS
Proposal contact person or principal investigator:	
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NPPC Program Measure Number(s) which this project addresses 2.2A - Support Native Species in Native Habitat 10.5 - Bull Trout Mitigation 11.2E - Wildlife Mitigation	
FWS/NMFS Biological Opinion Number(s) which this project addresses Bull Trout (62 FR 32268), Kootenai Forest Plan (6-1-85-F-010) Checkerboard Land Exchange (M.19 KNF (I))	
Other planning document references USFWS Grizzly Bear Recovery Plan - Part 3 Cabinet/Yaak (1993) Montana Westslope Cutthroat - Threatened (6/98)	
Short description Enhancement of the West Fisher watershed will accomplish numerous goals towards the recovery of endangered species. The watershed is a priority bull trout and westslope cutthroat trout recovery basin in the middle Kootenai region. Grizzly bears, mule deer, elk, and bald eagles also inhabit the watershed. Road obliteration, stream channel stabilization, ecosystem burning, cavity habitat creation, and land acquisition will be the	

preferred methods of enhancement. Various levels of road obliteration will be used to reduce existing fine sediment sources, lower road densities, and increase the amount of core habitat for grizzly bears. Stream channel stabilization projects will reestablish a stable lowflow channel for migratory bull trout. One channel stabilization project has already been completed and is meeting the goals of the project. A maximum of 800 acres could be treated through ecosystem burning over a 3 year period. These burns are needed to enhance forage production for grizzly bear, elk, and mule deer. Tree girdling/inoculation is proposed to create cavity habitat, and perch trees for bald eagles. Approximately 3,500 acres of private lands could be acquired through land exchange with Plum Creek Timber Company. This acquisition will allow management of the watershed to be better coordinated for the recovery effort.

Target species

Bull trout, Westslope Cutthroat trout, Torrent sculpin, Grizzly bear, Bald eagle, elk, and Mule deer

Section 2. Sorting and evaluation

Subbasin

Kootenai

Evaluation Process Sort

CBFWA caucus		CBFWA eval. process		ISRP project type	
X one or more caucus		If your project fits either of these processes, X one or both		X one or more categories	
	Anadromous fish	X	Multi-year (milestone-based evaluation)		Watershed councils/model watersheds
X	Resident Fish		Watershed project eval.		Information dissemination
X	Wildlife			X	Operation & maintenance
					New construction
					Research & monitoring
				X	Implementation & mgmt
				X	Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
	N/A	

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1996	USFS acquired 21,422 acres in numerous watersheds, including the West Fisher to provide for recovery of the grizzly bear.	Yes
1997	USFS and PCTC complete 3,500 feet of stream channel stabilization to help lower fine sediment inputs and stabilize the channel at the major access road crossing.	Yes

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Land acquisition for grizzly bear recovery	a	complete NEPA analysis for land exchange
2	Fine sediment reduction for native aquatic species habitat enhancement.	a	Road obliteration
		b	Stream channel stabilization
3	Forage/habitat enhancement	a	Tree girdling for cavity habitat creation
		b	ecosystem burning for forage production
4	Grizzly bear monitoring	a	hair sampling/DNA analysis

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	10/2000	9/2003	Complete NEPA process for land exchange	Yes in 2003	46.8%
2	6/2000	9/2002	Complete 15 miles of road obliteration	Yes	12%
2	6/2000	11/2001	Complete stream channel stabilization projects	Yes 1 in 2000 1 in 2001	37.7%
2	6/2002	10/2003	Complete 15 miles of road improvement work to reduce sediment sources	Yes - later years	
3	10/2001	9/2003	Complete 800 acres of ecosystem burning, girdle/ innoculate 350 trees	Yes - later years	
4	6/2000	9/2004	minimum number of bears in sampled area	Yes - 2004	3.5%
				Total	100%

Schedule constraints

Either an Environmental Analysis or EIS will be required for the land exchange objective. This process usually requires three years. The burning objective will be covered under a separate analysis. The stream channel work, tree girdling, and road objectives have been partially examined in other project documents but will require a decision memo to complete the work.

Completion date

2004

Section 5. Budget

FY99 project budget (BPA obligated):	\$ N/A
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FY2000 budget by line item

Item	Note	% of total	FY2000 (\$)
Personnel	Project CORs, 5 technicians	7.7	22,000
Fringe benefits			
Supplies, materials, non- expendable property			
Operations & maintenance			
Capital acquisitions or improvements (e.g. land,			

buildings, major equip.)			
NEPA costs	District NEPA team	30.5	88,000
Construction-related support	1 stream channel stabilization project and complete 7 miles of road obliteration	43.4	125,000
PIT tags	# of tags:		
Travel			
Indirect costs	Forest Service overhead	14.5	41,862
Subcontractor			
Other	Contract preparation and administration, stream project design, lab fees, vehicle, wire, attractant	3.9	11,250
TOTAL BPA REQUESTED BUDGET			288,112

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
USFS	Facilities, supplies, materials, and computer support	14.7	50,000
Total project cost (including BPA portion)			338,112

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	261,000	151,000	25,000	12,500

Section 6. References

Watershed?	Reference
X	Yount , J. D., and G.J. Niemi. 1990. Recovery of Lotic communities and ecosystems from disturbance - a narrative review of case studies. Environmental Management 14: 547-570.
X	USDA. 1995. Inland Native Fish Stragety - Recommendations for Habitat Components needed for the recovery of native species. Attachment A: 17pp.
	Reiter M. And L. Beschta. 1995. The effects of forest practices on water. COPE Report Volume 8, No.2: 11 pp.

X	King, J.G., 1989. Streamflow responses to road building and harvesting: a comparison with the Equilavent Clearcut Area Procedure. USDA-Forest Service, Intermountain Research Station. INT-401, 13 pp.
X	Harper, R. M. And E. Lider, 1998. Aquatic Ecosystem Restoration at the watershed scale. Land and Water, May/June : 27-30.
	Rosgen, D.L. 1994. River Restoration Utilizing Natural Stability Concepts. Land and Water, July/August: 36-41.
X	Rosgen, D.L. 1996. Applied River Morphology. Printed Media Companies, Minneapolis, MN. 343 pp.
	USDA. 1996. Kootenai National Forest- Checkerboard Land Exchange- Final Environmental Impact Statement. 280 pp.
	USDA. 1987. Kootenai National Forest - Land and Resource Management Plan. Vol. 1. 210 pp.
	USFWS. 1993. Grizzly Bear Recovery Plan. (Part 3 - Cabinet/Yaak), Missoula, MT. 181 pp.
	Waits, L. 1998. Molecular genetic applications for bear research. Inter. Conf. Bear Res. and Mang. Gatlinburg, TN.
	Kendall, K. Et. al. 1998. Using DNA to monitor bear populations in Glacier National Park. Inter Conf. Bear Res. and Mang. Gatlinburg, TN.
	Troendle, C. A. And W.K. Olsen. 1993. Potential effects of timber harvest and water management on streamflow dynamics and sediment transport. Sustainable ecological systems: implementing an ecological approach to land managemnet, July 12-15, Flagstaff, AZ.

PART II - NARRATIVE

Section 7. Abstract

The West Fisher watershed is located in the Kootenai subbasin of the upper Columbia subregion. Rooding and mining began in the 1880's and culminated in the 1940's with 7 stamp mills in operation. In 1910, eighty percent of the watershed was impacted by intense wildfires.

There have been 3 flood events (25 to 100 year return interval events) in the past decade in the watershed. The road system has experienced failures in the past seven years. The elevated sediment supplies have created a "press" disturbance regime (Yount & Niemei, 1990) to the aquatic ecosystem. The elevated water and sediment yields from cummulative harvest and rooding disturbances has resulted in changes to channel morphology and stability. Channel surveys show that 45% of the sites do not meet the Inland Native Fish Stragety (USDA, 1995) recommendations for pool habitat and large woody debris concentrations.

NPPC program measures 2.2A, 10.5, and 11.2E deal with the support of native species.

FWS/NMFS biological options for Bull trout (62 FR 32268) and Grizzly bear (6-1-85-F-010) support actions for recovery of these species. The project includes approximately 15 miles each of road obliteration and road improvement work, two stream restoration projects, 800 acres of forage enhancement projects, and acquisition of approximately 3,500 acres. It is planned that all work can be accomplished in 5 years. Monitoring of redds, aquatic habitat components, instream sediment, and grizzly use (through DNA- hair analysis) will document progress towards project goals.

Section 8. Project description

a. Technical and/or scientific background

The West Fisher watershed has been adversely affected by human and natural disturbances. The watershed is a tributary to the Fisher River which is a tributary to the Kootenai River below Libby Dam. The Kootenai National Forest is located in the Pacific-maritime climatic regime, and the West Fisher watershed has its headwaters situated on the east slopes of the Cabinet Mountains wilderness area. Mining, timber harvest, and the construction of a permanent road network have all played a part in the destabilization of the watershed and its stream corridor.

Mining has occurred in all of the headwater tributaries and some mid-basin placer mining has also been verified. Large amounts of mercury were used in the seven known stamp mills to refine the gold and silver ore. Timber harvest began in the early 1950's through spruce logging and has continued to this day, with regeneration harvesting the most widely used method of vegetation removal. These harvest units "collect" and store snowfall which then becomes available for runoff (Reiter and Beschta, 1995, Troendle and Olsen, 1993). The road network in the majority of the watershed acts to intercept and concentrate both surface and subsurface flows into areas that previously were not scoured by overland flow (King, 1989).

In the past decade, natural weather occurrences such as rain-on-snow precipitation events have generated return interval flows ranging between 25 and 100 year floods. These high flows when augmented by the cumulative human disturbances have generated an increase in the amount of both fine sediments and bedload sediments in all the channel systems. These increases of inchannel sediments have caused the mainstem channel to decrease in mean water depth and dramatically increase in width. This combination has resulted in loss of stable pool and spawning habitat and extreme shifts in channel location on a periodic basis.

The development of road access in the watershed has decreased the amount of viable grizzly bear habitat. Twelve percent of the watershed is located in the Cabinet Mountains Wilderness, and 95% of the watershed is located in the Cabinet/Yaak Grizzly bear recovery area (USFWS, 1993. USDA, 1987., USDA, 1996).

Harper (1998) discusses restoration at an ecosystem scale. The type of work documented in his project is similar to the type of work planned for this restoration project. It is felt that the addition of inchannel stream stabilization projects are needed to help create a stable lowflow bull trout migratory channel. One such project has been completed in a joint effort with Plum Creek Timber Company. In 1997 over 3,500 feet of the mainstem of the West Fisher was restored using geomorphic principles (Rosgen, 1994 and 1996) Numerous road restoration/obliteration projects

have been carried out in the last 3 years. These projects have met objectives of sediment reduction, restoration of natural hydrologic function, and increasing grizzly bear core areas.

The use of ecosystem burning to enhance forage will not only benefit grizzly bears but will also help meet the 1994 Fish and Wildlife Program (FWP) Section 11.2E priority of enhancing the shrub-steppe habitat type for mule deer. Tree girdling/innoculation will help to create cavity habitat and perch trees which will also partially help meet the FWP objectives for riparian/river habitat types for bald eagles.

b. Rationale and significance to Regional Programs

Section 2 of the 1994 FWP describes the systemwide goals and framework. Subsection 2.2A discusses how the program is to support and rebuild native species in native habitats. Importance is placed on protecting remaining and weak populations of native fish and wildlife, especially their habitats. The proposed project would help to meet all the above goals through direct habitat acquisition and restoration. Section 10 deals with resident fish while subsection 10.3B discusses mitigation for the Libby Dam Project. The resident fish section discusses priorities for restoration activities, highest priority should be given to weak but recoverable native populations and projects that also provide benefits for wildlife.

Five watersheds have been designated for bull trout recovery by a taskforce comprised of members from the Montana Department of Fish, Wildlife and Parks, The Montana Bull Trout Restoration Team, and the USDA Forest Service as priority watersheds in the middle Kootenai River region. The Montana Bull Trout Recovery Team has determined that 5 meta populations are needed in the middle Kootenai River priority area. The Fisher River comprises 60 percent of the drainage area in the middle Kootenai Region. The West Fisher Watershed is the closest tributary on the mainstem of the Fisher River with documented bull trout use.

Section 11 of the FWP discusses impacts to wildlife from hydropower facilities and related landscape changes caused by their construction. Although the project area is located 21 air miles from Libby Dam, direct effects on wildlife and fisheries use from the rerouting of the railroad up the Fisher River are within 12 miles of the watershed. A recent land exchange project (USDA, 1996) was completed which included the acquisition of 12,000 acres within the project watershed for grizzly bear recovery. The lands suggested for acquisition through this proposal were originally covered in the Checkerboard Project but were eventually dropped due to value differences between parcels. This land acquisition would also allow for removal of problem road segments that produce fine sediments and have experienced mass failures in recent years.

c. Relationships to other projects

The USDA Forest Service- Libby Ranger District is currently involved in numerous watershed restoration projects. The most recent dealt with the obliteration and stabilization of roads in the West Fork of Quartz Creek to facilitate bull trout recovery in the highest priority bull trout recovery stream in the middle Kootenai Region. One stream restoration project has been recently completed in the West Fisher watershed to stabilize 3,500 feet of the mainstem channel. Several sites on the mainstem of the Fisher River have also been stabilized using geomorphic principles (Rosgen, 1994 and 1996) To help stabilize the channel and enhance its use as a migratory channel.

All in-channel work requires permits. A 404 permit is required from the Army Corps of Engineers, a FG124 permit is required from the Montana FWP, and a 3A Permit is required from the Montana Dept. of Environmental Quality. The Libby Ranger District has a good working relationship with all these agencies. The completion of this project is not expected to be in conflict with any known projects in the middle Kootenai River region.

d. Project history (for ongoing projects)

N/A

e. Proposal objectives

The project proposes 2 main objectives:

- 1) The acquisition of approximately 3,500 acres in the West Fisher watershed for Grizzly bear and other TES recovery.
- 2) Native fish habitat enhancement through fine sediment reduction. This will be accomplished through road obliteration/restoration and stream channel stabilization projects.

The final outcome of the first proposal will be the completion of a NEPA document (EA or EIS) to authorize a land exchange to acquire 3,500 acres of private lands in the West Fisher watershed. The second objective would be monitored by the amount of road stabilization completed per year and the completion of two stream channel stabilization projects. These projects will be monitored through photos, field surveys, and sediment monitoring where possible. It is proposed that yearly reports will be completed on the progress of each objective until project completion, then the report cycle would drop to 5 years between reports. This long term tracking is needed to review the effectiveness of the completed work on a long term (20 years) timeframe.

f. Methods

The methods used to accomplish the acquisition of lands in the West Fisher watershed will be the completion of a NEPA document (EA or EIS) prepared by the Libby Ranger District. Because the lands proposed for acquisition have been surveyed and studied in 2 previous EIS's (Checkerboard Land Exchange and Wayup Mine/ Fourth of July Road Access) a majority of the initial ground work has already been completed. Even though some "pre-work" is already accomplished it is still expected to require 3 years for the project to be completed. The Wayup Mine/ Fourth of July Road Access EIS contains a Watershed Assessment that helps to define attributes outside the range of natural variability in this watershed.

Tasks used to complete road restoration and obliteration will vary widely depending upon the site conditions. The objectives of the road work are to reduce sediment sources, stabilize road fills, and reestablish upslope hydrologic drainage patterns. This work will be completed through a combination of partial to complete road recontouring, culvert removal of scoured channel stream crossings (including channel stabilization of the "new" channel with rock step/pools and large woody debris structures), and seeding and fertilizing of all disturbed ground with either native seeds or short-lived species that allow rapid recolonization by native plants.

NEPA Costs	8 person team (\$1,600/day) - 55 days to begin land exchange project and complete ecosystem burn analysis.	\$88,000
Forest Service Overhead		\$41,862
Construction related support	contracts 3,500' Stream project (\$26/foot) 7 miles road obliteration (\$5000/mile)	\$125,000
Other	Contract preparation and administration, stream project design Wire, attractant, vehicle, and lab fees	\$11,250

The costs proposed for this project have been determined from recent projects completed on the Libby Ranger District for similar types of work.

Section 9. Key personnel

The principle investigator/ field project manager will be the District Hydrologist for the field portion of the project. Project work will occupy approximately 100 days of his work budget. He will be responsible for the COR (Contracting Officer's Representative) duties for on-the-ground activities. He will also be a member of the NEPA team for the land exchange portion of the project. The Interdisciplinary Team will be lead by a NEPA specialist with the following additional personnel: Silviculturalist, Wildlife Biologist, Fisheries Biologist, Botanist, Archeologist, Engineer. Support staff will include a computer specialist.

The present District Hydrologist is Steven J. Wegner, BS degree in Watershed Management - University of Wisconsin-Stevens Point, 1982. He is a professional Hydrologist who currently works for the USDA-Forest Service. He has also worked for the BLM and USGS as a hydrologist for 8 years. While employed with the Forest Service he has attended the majority of River short courses through Wildland Hydrology (Rosgen) including river restoration and natural channel design. He has completed numerous stream restoration projects, the largest of which included designing and supervising the reconstruction of 3,500 feet of the mainstem of the West Fisher Creek in 1996. He has also presented the results of his projects and their monitoring to various groups. The most recent presentation was to the National Riparian and Wetland Restoration Conference in Missoula, MT. April, 1998.

Section 10. Information/technology transfer

New information learned from this project will be distributed in numerous ways. Project processes and results will be discussed through bi-monthly meetings of the Kootenai National Forest - Watershed Working Group. Project monitoring results will be published annually through the KNF - Forest Plan Monitoring Report. All aspects of the project proposal, design, implementation, and results will be presented at the USDA- Forest Service, Region 1, Hydrology workshop. It is hoped that if this process proves successful that other Forest Service Ranger Districts in the Columbia and Snake River watersheds will take the time to apply for funding of other important projects.