

**Bonneville Power Administration  
Fish and Wildlife Program FY99 Proposal**

**Section 1. General administrative information**

**Stabilize Blowout Creek (South Fork of Meadow Creek)**

**Bonneville project number, if an ongoing project** 9051

**Business name of agency, institution or organization requesting funding**  
U.S.D.A. Forest Service

**Business acronym (if appropriate)** USFS

**Proposal contact person or principal investigator:**

Name	<u>Mary Faurot</u>
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**Subcontractors.**

<b>Organization</b>	<b>Mailing Address</b>	<b>City, ST Zip</b>	<b>Contact Name</b>
Contractors	to be determined		

**NPPC Program Measure Number(s) which this project addresses.**

7.6C & D, 7.7, 7.8A & B

**NMFS Biological Opinion Number(s) which this project addresses.**

Biological Opinion, USFS and US Army Corps of Engineers. National Marine Fisheries Service. Authorizations for Stibnite Mining, Inc. Commercial Road Use Permits and Garnet Pit Mining. June 29, 1995.

Biological Opinion Amendment to above re: West End Extension Project. National Marine Fisheries Service. July 23, 1996.

**Other planning document references.**

Watershed Analysis of the East Fork South Fork Salmon River, USFS, 1997. High priority recommendation action.

Watershed Improvement Needs Inventory, Payette National Forest. High priority project for sediment reduction in South Fork Salmon River watershed.

South Fork Salmon River Restoration Strategy, USFS, 1989. Objective/Strategic Design, general reference to sediment reduction projects in South Fork Salmon River and tributaries.

Payette National Forest Land Resource Management Plan, USFS, 1988. South Fork Salmon River Area of Special Concern, general reference to sediment reduction projects in South Fork Salmon River and tributaries..

Wy-Kan-Ush-Mi Wa-Kish-Wit. CRITFC, 1995. General reference to Recommended Actions for the Salmon River System.

South Fork Salmon River TMDL (Total Maximum Daily Load), USDI EPA 1992, and 303d, Idaho Dept. Environmental Quality, sediment reduction projects in South Fork Salmon River and tributaries.

Stibnite Mining Project, Final Environmental Impact Statement for Gold Mine and Mill, USFS, 1981.

Biological Assessment for South Fork Salmon River Watershed Improvement Projects and associated Letter of Concurrence from NMFS, USFS 1994.

**Subbasin.**

South Fork Salmon River (17060208)

**Short description.**

Reduce sediment delivery from an unstable tributary (Blowout Creek) to anadromous fish habitat in the East Fork South Fork Salmon River. Instability was caused by historic failure of a hydroelectric dam, and would be rectified by converting the channels to a more stable configuration.

**Section 2. Key words**

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	+	Construction	X	Watershed
+	Resident fish		O & M		Biodiversity/genetics
+	Wildlife		Production		Population dynamics

<input type="checkbox"/>	Oceans/estuaries	<input type="checkbox"/>	Research	<input type="checkbox"/>	Ecosystems
<input type="checkbox"/>	Climate	<input type="checkbox"/>	Monitoring/eval.	<input type="checkbox"/>	Flow/survival
<input type="checkbox"/>	Other	<input checked="" type="checkbox"/>	Resource mgmt	<input type="checkbox"/>	Fish disease
		<input type="checkbox"/>	Planning/admin.	<input type="checkbox"/>	Supplementation
		<input type="checkbox"/>	Enforcement	<input type="checkbox"/>	Wildlife habitat en-
		<input type="checkbox"/>	Acquisitions	<input type="checkbox"/>	hancement/restoration

**Other keywords.**

Fish habitat restoration, sediment reduction, channel restoration, TMDL

**Section 3. Relationships to other Bonneville projects**

Project #	Project title/description	Nature of relationship
NA		

**Section 4. Objectives, tasks and schedules**

***Objectives and tasks***

Obj 1,2,3	Objective	Task a,b,c	Task
1	Reduce sediment production and delivery from stream in meadow area	a	Convert unstable stream channels to more stable configurations
		b	Stabilize new channel types with structures, riparian planting
2	Restore wetland character to meadow	a	Elevate water table with new channels
		b	Construct ponds
3	Develop sediment reduction plan for stream in canyon	a	Collect survey data
4	Complete NEPA requirements	a	Conduct Environmental Analysis

***Objective schedules and costs***

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	10/1998	10/2000	40%
2	10/1998	10/2000	40%
3	10/1998	12/1998	10%
4	10/1998	6/1999	10%

**Schedule constraints.**

NEPA, contract preparation, and awarding process by the USFS.

**Completion date.**

2000

**Section 5. Budget**

***FY99 budget by line item***

<b>Item</b>	<b>Note</b>	<b>FY99</b>
Personnel	site survey, contract prep & admin, planting	45,336
Fringe benefits		
Supplies, materials, non-expendable property	Native plants & seed, geotech cloth,	2,600
Operations & maintenance	Vehicles	3,381
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		2,500
Indirect costs		
Subcontracts	Stream channel stabilization contract	251,300
Other	NEPA	30,000
<b>TOTAL</b>		<b>335,117</b>

***Outyear costs***

<b>Outyear costs</b>	<b>FY2000</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>
Total budget	18,590	3,590		
O&M as % of total				

**Section 6. Abstract**

The proposed project area has been identified in numerous planning and environmental documents as a sediment source to fish habitat in the South Fork Salmon River and its tributaries. The failure of a hydroelectric dam in 1965 has caused chronic instability and sediment production in Blowout Creek channels. The purpose of the project is to reduce current erosion from the unstable channels, decrease sediment delivery to fish habitat in the South Fork Salmon River, and restore the wetland character that is disappearing from upper Blowout Creek. The project relates to CRB FWP measures 7.6C, D and 7.7 by implementing restoration actions identified in a Watershed Analysis that was completed

cooperatively by the USFS, adjacent landowners and other agencies; to measure 7.8A by initiating actions needed for recovery where federal land management plan objectives for fish habitat are not being met, and measure 7.8B by implementing erosion control Best Management Practices. The benefit of the project is improvement of habitat for chinook salmon, steelhead, bull trout, and cutthroat trout. Channel stabilization work would be accomplished using widely accepted restoration techniques based on the Rosgen methods such as channel relocation, pond and step pool construction, check dam installation, and riparian planting. The project would be implemented in summer/fall 1999. Monitoring would consist of post-project channel configuration measurement at project sites, evaluation of sediment deposition in fish habitat downstream, and measurement of turbidity downstream, and re-evaluation of fish habitat parameters.

## **Section 7. Project description**

### **a. Technical and/or scientific background.**

The proposed project addresses anadromous fish habitat improvement within the South Fork Salmon River drainage of the Salmon River subbasin of the Columbia River. The project area is located in what is commonly known as the Idaho Batholith, known for its erodible properties. The SFSR and its tributaries are important areas for anadromous salmonids and contain about 500 miles of spawning and rearing habitat. The SFSR summer chinook run has historically been one of the largest runs of summer chinook salmon in Idaho. The SFSR summer steelhead are unique in that their average size is the largest of any other wild summer steelhead population in the Columbia River Basin (Seyedbagheri et al 1987). Both chinook and steelhead are listed as threatened under the Endangered Species Act in the SFSR. The SFSR also supports resident bull trout, proposed to be listed as threatened under the Endangered Species Act, and cutthroat trout, a USFS Region 4 sensitive and management indicator species. The SFSR is one of the few subbasins with a remaining assemblage of these four salmonid species.

Many of the hillslopes in the SFSR are steep and erode readily (Gonsior and Garner 1971). Weather events in the winter of 1964-65 led to severe erosion, especially in areas which were destabilized by logging roads, and large amounts of sediments made their way into the SFSR. Since that time, management actions have been restricted in the SFSR to allow sediment conditions to improve. The Payette National Forest Plan (USFS 1988) and SFSR Restoration Strategy (USFS 1989) highlight the severity of the sediment conditions of SFSR fish habitat, direct a reduced land management activity schedule, list a number of specific sediment-reduction activities to be completed, commit to an aggressive program of other sediment reduction projects within the SFSR, and prescribe an intensive monitoring program.

The SFSR is currently listed as a Water Quality Limited Waterbody (303d) by the State of Idaho and has an approved Total Maximum Daily Load (TMDL), for the parameter of sediment (USDI-EPA 1992). The proposed project is consistent with the approved TMDL because it should improve water quality to fully comply with state and Federal

standards.

The proposed project is a logical component of the conceptual framework of sediment reduction in the SFSR to benefit fish habitat. Many projects to reduce sediment in the SFSR are underway, have been completed, or are in planning stages. The goal of this project is to mitigate losses of fish habitat quality due to sedimentation from unstable channels in Blowout Creek.

The proposed project is also a logical application of channel stabilization techniques publicized by D. Rosgen, who is known for similar projects in the northwestern USA (personal communication with Rosgen 8/4/1994, Rosgen 1997). The Blowout Creek situation was presented to Rosgen for his advice on how best to reduce sediment production from the unstable channels. He advocated methodology which he has applied successfully to similar situations, and which has been applied successfully in other SFSR streams by Payette National Forest personnel (Cabin Creek). Methodology is outlined below in Section E.

The Blowout Creek (South Fork Meadow Creek) project is located within the South Fork of the Salmon River (SFSR) drainage on the Payette National Forest, about 15 miles southeast of Yellow Pine, Idaho, and just south of the Stibnite Mining Area (R9E, T18N, Sect. 22).

In 1930, hydroelectric power was provided to Stibnite Mine and mining camps by major diversion of Blowout Creek. A 40-foot high dam was constructed at the lower end of the Blowout Creek meadow. The dam catastrophically failed in 1965, scouring the stream channel below the dam to a depth of 100 feet, and depositing a major debris flow at the confluence of Meadow Creek with the East Fork South Fork (EFSF) Salmon River (USFS 1965 flood report). Sediments deposited in the old lake bed, as well as from the scoured area of the dam and channel below, are still contributing major amounts of sediment to the EFSF Salmon River channel (USFS 1997). Above the dam, the failure reduced the hydrologic datum and began to incise and headcut the valley floor, and below the dam, it destabilized (Ablew out≅) the channel and caused oversteepened banks. Lateral headcutting, an upstream-migrating Anick point≅, and erosion are chronic in this area.

The upper Blowout Creek meadow area is now characterized by a broad, fairly level opening in the forest canopy approximately 60 acres in size (3000 feet long by 800 feet wide). Stream length of upper Blowout Creek is approximately 5000 feet. The uppermost section emanating from the forest, which was unaffected by the reservoir, exhibits stable banks, well-developed meanders, and an AE≅ channel configuration (Rosgen 1997). The middle section, historically within the reservoir body, is actively degrading, laterally headcutting, exhibits raw, sloughing, unvegetated streambanks, and is classically indicative of an unstable channel. Chronic erosion has resulted in a AG≅ channel configuration. This instability has lowered the water table of the meadow and is Adrying out≅ the associated wetland.

Lower Blowout Creek is characterized by 2000 feet of deeply incised pool and drop stream morphology, flanked by approximately 38 acres of steep slopes with little vegetation. The unconsolidated soils erode rapidly as little or no buffering exists between the slopes and the stream.

The proposed project would stabilize the section of stream in the meadow which is actively cutting and producing sediment. Previous work history in the project area related to this project includes a fish habitat and snorkel survey of Blowout Creek based on Hankin and Reeves (1989) methodology (USFS, Krassel District files, 1994), stabilization of some canyon sideslopes and removal of overhanging Aeyebrow≡ structures, water quality monitoring downstream, and general survey of channel cross sections and stream elevations.

The East Fork South Fork Salmon River Watershed Analysis (USFS 1997) was directed cooperatively by the USFS, Stibnite Mine, Idaho Dept. of Fish and Game, US Fish and Wildlife Service, National Marine Fisheries Service, and Idaho Dept. Environmental Quality. The document identified the restoration of Blowout Creek as a priority project for the watershed. Two Biological Opinions from the National Marine Fisheries Service (NMFS 1995,1996) regarding the ongoing operations at Stibnite Mine also direct the proposed project. The Biological Opinions identify a potential reduction of an estimated 110 tons annually from this project.

The project relates to CRB FWP (FWP 1994) measure 7.6C by implementing restoration actions identified in a Watershed Analysis that was completed cooperatively by the USFS, adjacent landowners and other agencies; to measure 7.6D by improving water quality and sediment conditions; to measure 7.7 by coordination of this watershed improvement project with other restoration activities in the SFSR; to measure 7.8A by initiating actions needed for sediment reduction and improved water quality where federal land management plan objectives for fish habitat are not being met, and to measure 7.8B by using best management practices to control erosion at the project location and during project implementation.

**b. Proposal objectives.**

**Specific objectives**

- 1.0** - Reduce sediment production/delivery from stream in meadow area by stabilizing stream channels
- 2.0** - Restore wetland character to meadow by raising water table
- 3.0** - Develop sediment reduction plan for stream in canyon
- 4.0** - NEPA

**Measurable outcomes, goals and products that would result from the project**

**Objective 1.0 Reduce sediment production/delivery from stream in meadow area**

### **by stabilizing stream channels**

Monitoring of sediment deposition downstream of the proposed project should indicate sediment reduction from the project. The goal for percent embeddedness at stations downstream of the proposed project is a five-year mean of no more than 32% with no individual year to exceed 37% embeddedness, and a demonstrated improvement in sediment conditions (Nelson et al 1997, USFS 1988).

Measurable products as a result of the project include approximately 3,000 feet of unstable channel restored to functional stability, 8-10 instream gradient control structures, conversion of unstable AG≅ channel types (Rosgen 1997) to a natural AE≅ channel types, 4 - 5 small ponds (20' by 50') connected to the new channel, restoration of channel elevation to specific desired increased elevations, an approximate sediment reduction of 4,600 cubic yards over a 20 year period, and an annual monitoring report for several years following project implementation..

### **Objective 2.0 Restore wetland character to meadow by raising water table**

Measurable products as a result of the project include approximately 60 acres of meadow restored to functional wetland, elevation of the water table within the meadow to a specific desired level, 4 - 5 small ponds (20' by 50') connected to the new channel, and an annual monitoring report for several years following project implementation.

### **Objective 3.0 Develop sediment reduction plan for stream in canyon**

A measurable product as a result of the project includes a database of channel cross section and elevational data from the Blowout Creek canyon, collected toward the goal of developing a site plan for channel stabilization in this area.

### **Objective 4.0 NEPA**

A measurable product as a result of the project includes a NEPA document (Environmental Analysis) that analyzes the proposed actions, issues and effects of the and discloses them to the public.

#### **c. Rationale and significance to Regional Programs.**

The project relates to CRB FWP (FWP 1994) measure 7.6C by implementing restoration actions identified in a Watershed Analysis that was completed cooperatively by the USFS, adjacent landowners and other agencies; and to measure 7.7 by coordination of this watershed improvement project with other restoration activities in the SFSR. The proposed project is one of many that was identified in the EFSF Salmon River Watershed Analysis to benefit watershed conditions and/or fish habitat. Many of these projects, including the proposed project, regard remediation of historical and/or current mining impacts to streams. These projects are in varying stages of completion and are being conducted by private landowners, state, and federal agencies. Some of these projects are:

Isolation of Meadow Creek from historic mine tailings - Stibnite Mine, USFS and EPA  
Site characterization and remediation plan - Idaho DEQ, Stibnite Mine, Hecla, Mobil Oil  
Road maintenance to prevent erosion from access roads - Stibnite Mine, Valley County

Mining pit reclamation - Idaho Dept. Lands, Stibnite Mine  
Riparian planting - Stibnite Mine, USFS  
Enforcement of road use to minimize erosion and toxic spills - USFS  
Reconstruct road segments which are actively eroding - USFS, Stibnite Mine  
Monitor fish abundance trends - Idaho Dept. Fish and Game  
Close and reclaim non-used roads and recreational access - USFS and Stibnite Mine

The project design and goals are consistent with CRB FWP (FWP 1994) measure 7.6D because they should improve water quality and sediment conditions; and with measure 7.8B because best management practices will be used to control erosion at the project location and during project implementation.

The proposed project relates to CRB FWP measure 7.8A by initiating actions needed for recovery where federal land management plan objectives for fish habitat are not being met. The project initiates actions for sediment reduction in the SFSR, where sediment is an acknowledged limiting factor for fish habitat, and where federal land management objectives for fish habitat are not being met (USFS 1988, Nelson et al 1997). Several other proposals are being submitted to BPA by the Boise National Forest toward the goal of sediment reduction in the SFSR (Klein Mt. Road, Ice Hole fish habitat structures). Projects that have been identified toward this goal, and that are in varying stages of completion are listed in the SFSR Restoration Strategy (USFS 1989) and the SFSR TMDL (USDI EPA 1992). Several of these identified projects were completed in the past with funding provided by BPA/NWPPC. One large project, the restoration of the natural mainstem SFSR by stabilization of the Oxbow Breach, is awaiting the completion of a land exchange, and will do much toward recovering damaged fish habitat.

**d. Project history**

This project is a new project that is submitted as a watershed project.

**e. Methods.**

**Objective 1.0 - Reduce sediment production/delivery from stream in meadow area by stabilizing stream channels**

A specific database of survey elevations, channel cross sections, and project dimensions would be developed by USFS engineers, soil scientists, and fishery biologists in the upper Blowout Creek meadow area. This information would be used to develop a detailed site plan to be included in a construction contract to be awarded to a subcontractor to actually implement the project.

A critical assumption for the proposed project is that the short term disturbance caused by the stabilization techniques (access across the meadow, channel excavation) will be negligible when compared to the sediment reduction achieved by completing the project. Access from the existing undeveloped road, across the meadow, and to the affected channels would be constructed using an extremely light touch on the land. A temporary

Acorduroy≡ road consisting of PVC pipes or portable aircraft landing pad material would be used to access the stream channel, and would be removed upon project completion. A new, higher elevation destination channel would be excavated in an existing, abandoned, remnant AE≡ type channel. A lightweight trackhoe excavator would be used to minimize compaction and damage to wetland soils and vegetation. Excavated material would be used to divert the existing channel into the destination channel. The new destination channel would join the old channel just above the old dam site, just before the plunge into the canyon. At this juncture, 8-10 gradient control structures would be installed within the channel to Astep down≡ the gradient into the canyon. Willows and native plants would be used to revegetate and stabilize new streambanks. The success of the stability of the new channel would be evaluated by measuring new channel cross sections and elevations and by photo-point effectiveness monitoring. The effect on fish habitat would be evaluated by re-inventorying stream reaches that were inventoried pre-project. The success of the sediment reduction would be measured by conducting turbidity and sediment deposition monitoring (cobble embeddedness, free matrix) at downstream locations.

**Objective 2 - Restore wetland character to meadow by raising water table**

Sections of the old channel would be constructed (using excavated material from the new channel) into 4 or 5 small ponds (20' by 50' each), and connected with several small AE≡ channels to the new main channel. This would allow a natural subsurface flow across the meadow into the new channel, to raise the water table of the entire meadow to pre-disturbance levels. Disturbed meadow areas would be revegetated using plugs of existing sod grass. The success of the meadow/wetland restoration would be monitored by measuring the water table throughout the meadow in successive years after project completion, and by photo-point monitoring of vegetative species recovery.

**Objective 3 - Develop sediment reduction plan for stream in canyon**

A specific database of survey elevations, channel cross sections, and project dimensions would be developed by USFS engineers, soil scientists, and fishery biologists in the lower Blowout Creek canyon area. This information would be used to develop a detailed site plan to eventually be included in a future proposal.

**Objective 4 - NEPA**

A NEPA analysis will be prepared for this project, consisting of an Environmental Analysis which identifies the proposed action, issues, and effects to the public.

**f. Facilities and equipment.**

None requested.

**g. References.**

Columbia River Intertribal Fish Commission. 1995. Wy-Kan-Ush-Mi Wa-Kish-Wit.

Columbia River Anadromous Fish Restoration Plan. Volume II.

Gonsior, M>J, and R.B. Garner. 1971. Investigation of slope failures in the Idaho batholith. Res. Paper INT-97. USDA-FS Intermountain Research Station, Ogden, UT.

Hankin, D.G., and Reeves, G.H. 1988. Estimating total fish abundance and total habitat area in small streams based on visual estimation methods. CJFAS 45: 834-844.

National Marine Fisheries Service. 1995, 1996. Biological Opinions on Mining Activities at Stibnite Mine. Payette National Forest, McCall, ID.

Nelson, R.L. et al. 1996. Trends in Cobble Embeddedness, free matrix particles, and surface fines in relation to mining areas in the East Fork South Fork Salmon River and Big Creek watersheds. Payette National Forest, McCall, ID.

Northwest Power Planning Council. 1994. Columbia River Basin Fish and Wildlife Program. Portland, OR.

Rosgen, D. 1996. Applied River Morphology. Wildland Hydrology.

Seyedbagheri, K.A., M.L. McHenry, and W.S. Platts. 1987. An annotated bibliography of the hydrology and fishery studies of the South Fork Salmon River. Gen. Tech. Report INT-235. Ogden, UT: USDA Forest Service, Intermountain Research Station.

US Forest Service. 1988. Payette National Forest Land Resource Management Plan. McCall, Idaho.

US Forest Service. 1989. South Fork Salmon River Restoration Strategy. Payette and Boise National Forests, Intermountain Research Station.

US Forest Service. 1994. Blowout Creek Fish Habitat Inventory. Krassel Ranger District files, Payette National Forest, McCall, ID.

US Forest Service. 1994. Biological Assessment for Watershed Improvements in the South Fork Salmon River, Volume 5. Payette National Forest, McCall, ID.

US Forest Service. 1995. Upper SFSR and Johnson Creek Watershed Analysis. Boise National Forest, Cascade Ranger District, Cascade, ID.

US Forest Service. 1997. Watershed Analysis for the East Fork South Fork Salmon River. Payette National Forest, McCall, ID.

USDI Environmental Protection Agency. 1992. South Fork Salmon River Total Maximum Daily Load. USDI-EPA Region 10, Seattle, WA.

## Section 8. Relationships to other projects

The Blowout Creek Project is related to all other efforts within the SFSR that reduce sediment delivery to the river and maintain and improve fish habitat (USFS 1988, 1989)..

In 1989, the SFSR Restoration Strategy identified sediment sources within the watershed (USFS 1989). Formal TMDL identified similar sites to be treated to restore fish habitat and improve water quality (USDI EPA 1992). The EFSF Salmon River Watershed Analysis recommended activities specific to the EFSF Salmon River to improve watershed and fish habitat conditions (USFS 1997). The National Marine Fisheries Service Biological Opinions on Stibnite Mine Operations (NMFS 1995,1996) directed over 150 actions related to habitat improvement specific to historical or current mining operations. The Upper SFSR and Johnson Creek Watershed Analysis (USFS 1995) reviewed the completion of projects identified in the Restoration Strategy and the TMDL. Ongoing consultation regarding Stibnite Mine reviewed the status of the actions identified in the Stibnite Biological Opinions (Payette National Forest, Krassel District files).

## Section 9. Key personnel

**Mary Faurot**, Krassel District Fisheries Biologist, Payette National Forest, McCall, ID (current position held since 1993). **Principal investigator and proposed project fishery biologist/co-manager**. B.S. Biological Science Florida State University 1979, M.S. Fish and Wildlife Management Montana State University 1985. **Previous employment:** Tiller District Fisheries Biologist, Umpqua National Forest, US Forest Service, 1990-1993. Fisheries Biologist, Kenai Fisheries Assistance Office, US Fish and Wildlife Service, Kenai, AK, 1985-1990. Research fishery biologist, Confederated Salish and Kootenai Tribes, Pablo, MT, 1983-1985. **Expertise in:** evaluating effects of federal actions on anadromous fish habitat, coldwater fish biology and habitat, environmental education, technical writing, effects of mining on fish habitat. 17 years experience as a fishery biologist and/or environmental educator.

**Dennis Gordon**, Krassel District Soil Scientist, Payette National Forest, McCall, ID (current position held since 1992). **Proposed project manager**. B.S. Soil Science Montana State University 1976. **Previous employment:** Soil Scientist, Boise National Forest, Idaho, 1990-1992. Soil Scientist, Bitterroot National Forest, Montana, 1980-1990. **Expertise in:** watershed restoration for National Forests; stream channel design and construction projects; project coordination, planning, design and implementation; contract preparation; on-site contract administration; monitoring. 22 years experience as a watershed management specialist with Soil Conservation Service (3 years) and US Forest Service (19 years).

## Section 10. Information/technology transfer

Results of the project will be published in the Payette National Forest Annual Monitoring Report, and presented at state and professional society meetings.

