STATE: **MONTANA**
GRANT TITLE: **SOUTHWEST MONTANA NATIVE FISH SURVEY, INVENTORY, RESEARCH AND CONSERVATION PROGRAM**
GRANT NUMBER: **T - 26, Amendment #1**

This amendment is requested in order to provide funds necessary to expand our efforts with survey and inventory of westslope cutthroat trout, burbot and lake trout, evaluation of Arctic grayling, and to expand the project's scope to include population monitoring of native fish, conservation and restoration of native fish species of concern, and protection of their habitat in the Big Hole, Beaverhead, and Ruby River watersheds.

ENVIRONMENTAL CONSIDERATIONS

An environmental assessment of activities covered in this project was deemed unnecessary under the National Environmental Policy Act (NEPA) since the nature and scope of the activities fall within the guidelines for Categorical Exclusion as published by the U.S. Fish and Wildlife Service (USFWS) in Volume 62, Number 11 of the Federal Register dated January 16, 1997, page 2381, Section 1.4.B(1) – "Research, inventory, and information collection activities directly related to the conservation of fish and wildlife resources which involve negligible animal mortality or habitat destruction, no introduction of contaminants, or no introduction of organisms not indigenous to the affected ecosystem."

The exceptions to categorical exclusion as listed in Department of Interior Manual 516, DM 2, Appendix 2, dated September 26, 1984, were considered and it was determined that there are no conflicts and they do not preclude use of the categorical exclusion. An updated NEPA Compliance Checklist (FWS Form 3-2185 08/00) is attached as *Appendix A.*

In arriving at the decision for categorical exclusion, the following items were considered. Except where otherwise noted, determinations were made by Bob Snyder, Montana Fish, Wildlife & Parks, (FWP) Native Species Program Manager, Fisheries Division, Helena MT, phone 406-444-1563 (bsnyder@state.mt.us). Please note that no construction or other potentially ground disturbing activities will occur as a result of proposed grant activities.

For the purposes of proposed Grant Amendment #1, and as determined in the original grant, and updated as necessary for this amendment, grant activities will not adversely impact the following

1. **Floodplain Management, E.O. 11988**

2. **Protection of Wetlands, E.O. 11990**

3. **Farmland Protection Policy Act, P.L.97098**

4. **Historical and Cultural Preservation (National Historic Preservation Act of 1966, 16 U.S.C. 470)**

5. Endangered Species Act of 1973

THREATENED, ENDANGERED AND CANDIDATE SPECIES IN MONTANA
Endangered Species Act – Updated November 2005

ENDANGERED (E) - Any species that is in danger of extinction throughout all or a significant portion of its range.

THREATENED (T) - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

CANDIDATE (C) - Those taxa for which the Service has sufficient information on biological status and threats to propose to list them as threatened or endangered. We encourage their consideration in environmental planning and partnerships, however, none of the substantive or procedural provisions of the Act apply to candidate species.

NON-ESSENTIAL EXPERIMENTAL POPULATION (XN) - A population of a listed species reintroduced into a specific area that receives more flexible management under the Act.

CRITICAL HABITAT (CH) - The specific areas (i) within the geographic area occupied by a species, at the time it is listed, on which are found those physical or biological features (I) essential to conserve the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by the species at the time it is listed upon determination that such areas are essential to conserve the species.

COMMON NAME	SCIENTIFIC NAME	STATUS	RANGE - MONTANA
Black-footed Ferret	*Mustela nigripes*	E/XN	Prairie dog complexes; Eastern Montana
Gray Wolf	*Canis lupus*	E/XN	Forests; Western Montana
Whooping Crane	*Grus americana*	E	Wetlands; migrant statewide
Least Tern	*Sterna antillarum*	E	Yellowstone, Missouri River sandbars, beaches; Eastern Montana
Pallid Sturgeon	*Scaphirhynchus albus*	E	Bottom dwelling; Missouri, Yellowstone Rivers
White Sturgeon (Kootenai River population)	*Acipenser transmontanus*	E	Bottom dwelling; Kootenai River
Grizzly Bear	*Ursus arctos horribilis*	T	Alpine/subalpine coniferous forest; Western Montana
Bald Eagle	*Haliaeetus leucocephalus*	T	Forested riparian; statewide
Piping Plover	*Charadrius melodus*	T CH	Missouri River sandbars, alkali beaches; northeastern Montana Alkali lakes in Sheridan County; riverine and reservoir shoreline in Garfield, McCone, Phillips, Richland, Roosevelt and Valley counties
Water Howellia	*Howellia aquatilis*	T	Wetlands; Swan Valley, Lake and Missoula Counties
Ute Ladies'-tresses	*Spiranthes diluvialis*	T	River meander wetlands; Jefferson, Madison, Beaverhead, Gallatin Counties

COMMON NAME	SCIENTIFIC NAME	STATUS	RANGE - MONTANA
Bull trout (Columbia River basin and St. Mary - Belly River populations)	*Salvelinus confluentus*	T CH	Clark Fork, Flathead, Kootenai, St. Mary and Belly river basins; cold water rivers & lakes Potions of rivers, streams, lakes and reservoirs within Deer Lodge, Flathead, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli and Sanders counties
Canada lynx (contiguous U.S. population)	*Lynx canadensis*	T Proposed CH	Western Montana - montane spruce/fir forest Potions of Flathead, Glacier, Granite, Lake, Lewis & Clark, Lincoln, Missoula, Pondera, Powell, and Teton counties
Spaldings Campion (or catchfly)	*Silene spaldingii*	T	Upper Flathead River and Fisher River drainages; Tobacco Valley - open grasslands with rough fescue or bluebunch wheatgrass
Arctic grayling (fluvial population)	*Thymallus arcticus*	C	Big Hole River and other tributaries to upper Missouri River
Warm spring zaitzevian riffle beetle	*Zaitzevia thermae*	C	Gallatin County - warm springs
Slender (or linearleaf) moonwort	*Botrychium lineare*	C	Glacier, Lake Counties - meadows in conifer forests
Yellow-billed cuckoo (western population)	*Coccyzus americanus*	C	Population west of the Continental Divide; riparian areas with cottonwoods and willows

The work described in the amendment to T-26 consists primarily of expansion of already ongoing activities directed towards conservation of native fish in southwestern Montana. The Grant Agreement and Amendment were reviewed by Bob Snyder, FWP Native Fish Coordinator, and Arnold Dood, FWP Endangered Species Biologist. There is concurrence that implementation of this project, as described in the Grant Agreement as amended, will have no negative impact on threatened, endangered, or candidate plant or animal species. The intent of the project is enhancement and conservation of Arctic grayling, westslope cutthroat trout and other native native fauna, which this project should achieve.

The following endangered, threatened, and candidate species occur in the project area affected by State Wildlife Grants Project T-26, as amended. None of the activities projected to be completed as part of this grant will negatively impact these species, as described below.

Arctic grayling (*fluvial population)* are native to the Big Hole River in western Montana. Recovery efforts are ongoing on the Big Hole River and reintroduction efforts are

proceeding in the Ruby, Sun, Madison, Beaverhead, and upper Missouri River drainages. This project will assist conservation effort for Arctic grayling, and will not have detrimental affects on the grayling population.

Bald eagles can be found in the area of activity of this project, although none of the activities of this project will be conducted in a manner that would have any negative impact on this species.

Whooping crane have been observed in western Montana, where they have spent summers at Red Rock Lakes National Wildlife Refuge. None of the activities of this project will be conducted in a manner that would have any negative impact on this species.

Canada lynx occur in forested areas of the western third of Montana and would not be impacted by grant activities.

Gray wolf and Grizzly bear - None of the activities of this project are conducted in a manner that would have any negative impact on this species.

6. Environmental Justice, E.O. 11987

7. State Clearinghouse, E.O. 12372

8. Assurances

9. Additional Environmental Considerations

10. Exotic Organisms (EO 11987)

11. Animal Welfare Act of 1985

PROJECT STATEMENT

I. **Needs** (Changes in Bold)

Westslope Cutthroat Trout

Since the late 1980's, Montana Fish, Wildlife and Parks personnel have collected data on the genetic purity, distribution, and relative abundance of native westslope cutthroat trout populations within the Red Rock, Ruby, Beaverhead, and Big Hole River drainages. This study has revealed genetically pure populations that appear to be abundant enough to serve as brood sources. The study has also revealed streams that appear to provide potential cutthroat trout habitat in the absence of fish or other salmonid species. This combination could represent opportunities to expand westslope cutthroat trout populations into select streams within their historic native range.

This proposal represents an effort to gather the required information to identify brood sources and identify streams for reintroduction. Prior studies have also identified streams where competition with nonnative salmonid species such as brook trout represent a threat to the existence of native westslope cutthroat populations. This study will also focus on evaluation of methods such as barrier installation and nonnative removal efforts as tools to aid in the conservation and perpetuation of native cutthroat trout stocks. Failure to move forward with the above-described efforts would ignore existing risk sources to unique cutthroat trout populations and gene pools and ignore a potential to expand native cutthroat trout distribution and abundance.

Lake Trout and Burbot

Recent research efforts have confirmed the existence of two unique glacial relict populations of native lake trout in the Big Hole and Red Rock River drainages. These isolated populations represent a unique genetic haplotype and a southern extreme in range distribution in the northern Rocky Mountains. Both of these unique populations are accompanied by native populations of burbot that also represent a sympatric species of the post-glacial lacustrine community. Our research has revealed lake trout populations of very low densities resulting from poor annual recruitment.

The weak recruitment has been associated with a genetic "bottleneck" caused and maintained by very low numbers of breeding individuals within the populations. Much more research of the current status of these unique populations is required in order to understand reasons for poor recruitment, habitat requirements of the lake trout, and relationships with other native and nonnative species within both systems.

Additional threats to the existence of the lake trout represented by development proposals or current management of sport fisheries or surrounding habitat should also be analyzed. In order to fully understand lake trout population dynamics, it is believed that an understanding of burbot populations should represent important companion research. Failure to address these research needs could lead to increased risk for persistence of these unique lake trout populations.

Arctic Grayling

The only remaining population of fluvial Arctic grayling occurs in the Big Hole River. The fluvial form is currently considered a Candidate Species for ESA listing, and a listing decision is expected by April 2007. Extensive monitoring and restoration efforts are planned or underway to secure and expand this unique population of fluvial Arctic grayling. Additional efforts are necessary to alleviate the conditions that warrant listing.

The present, native distribution of lacustrine or adfluvial Arctic grayling is currently limited to a single population in Upper Red Rock Lake and its tributaries in the Centennial Valley of southwest Montana. This population is under threat due to extremely shallow depths and continued geologic aging of the lake as well as recent severe drought episodes. A neighboring population in Elk Lake was eliminated due to drought affects on its single spawning tributary in the 1990's.

Recent efforts have sought to establish brood stocks in Rogers Lake in northwest Montana and in an artificial pond in the Red Rock River drainage. The Rogers Lake brood is outside of the native range of distribution for the species. Both of these efforts have met with limited success in the past. Continued efforts to fully establish the broods via gamete collections in the wild, maintenance of genetic diversity in the brood, and establishment of multiple year classes of breeding individuals require annual effort and additional research.

Formation of the brood sources is directed at future plants of adfluvial Arctic grayling in specified lakes and ponds within the upper Red Rock drainage and other waters deemed appropriate within the native range. This project would evaluate different options and techniques for development of a brood source for future conservation reintroductions. Failure to address brood stock needs would represent an increased threat to the persistence of the adfluvial Red Rock Arctic grayling population.

Fisheries Biologist

To date, work on the above needs has occurred on a limited basis as FWP resources have allowed. Under this proposal, additional FTE will be hired to more intensively focus on conservation and monitoring efforts for native fish in the Big Hole, Ruby, and Beaverhead watersheds in parts or all of Beaverhead, Madison, Silver Bow, and Deer Lodge Counties in southwestern Montana, with emphasis on species of concern (Tier 1 species in the Comprehensive Fish and Wildlife Conservation Strategy).

II. Objectives (Changes in Bold)

The objective of this project is to increase native fish species (fluvial and adfluvial Arctic grayling, westslope cutthroat trout, lake trout, burbot, and mountain whitefish) monitoring, survey and inventory, and conservation in the Big Hole, Beaverhead, and Ruby River watersheds, by focusing additional personnel to address a variety of native fish conservation issues, including:

1. **Population Monitoring: Monitor populations of native fish, with emphasis on Tier 1 species.**
2. **Brood Stock Development: Identify appropriate source streams or lakes and quantify spawning populations for the production of westslope cutthroat trout gametes or fry.**
3. **Native species Population Reintroduction: Reintroduce adfluvial Arctic grayling into Elk Lake and identify streams for potential reintroduction of westslope cutthroat trout via certification of fishless condition and measurement of physical parameters.**
4. **Nonnative Species Control: Where feasible and deemed necessary, through and maintenance of upstream barriers to prevent invasion of nonnative salmonids and hybridized cutthroat trout into native westslope cutthroat trout habitats, in addition to removal of nonnative brook trout from habitats occupied or recently occupied by westslope cutthroat trout via electrofishing or dewatering.**

III. Expected Results and Benefits

The results of accomplishing the stated needs will be the conservation and expansion of populations of native fishes of special concern. If successful, efforts of this project will reduce threats to the target species and reduce the possibility of listing under ESA. Results of this project will be communicated to agencies and publics via written reports and public presentations. Results of these studies will be used to direct species reintroductions and habitat improvement efforts to benefit sportsmen, public land management agencies, and private landowners through the conservation of native species of concern.

IV. Approach (Changes in Bold)

The objectives will be obtained **through hiring of additional fisheries professionals to implement** the application of different methodologies for each of the species involved. Efforts will be directed primarily under the supervision of Richard Oswald, FWP Area Fisheries Management Biologist. **Funding will be used to hire additional FTE to assist with and expand efforts as described below.** Additional assistance will be provided by FWP seasonal technicians, fish health specialists, and hatchery personnel. SWG funding will be used specifically for increased field technician time to assist with the project and approaches described below.

Efforts to conserve westslope cutthroat trout will primarily be directed at population studies, genetic testing, and disease testing of potential brood populations. Survey and collection methods will largely emphasize electrofishing techniques. Identification of suitable habitats for population restoration will involve electrofishing, and survey of existing fish populations (or lack thereof), in addition to herpetological and macroinvertebrate surveys. It will also necessitate descriptive habitat inventory to include stream flow and thermal data as well as water quality data if deemed necessary. Conservation projects evaluating installation of barriers and removal of nonnative salmonid species will necessitate descriptive habitat surveys to identify potential barrier locations and electrofishing data to describe distribution and abundance of fish species.

Efforts to conserve native lake trout and burbot populations will be primarily directed at research efforts to gain an understanding of population dynamics, life history, habitat requirements, and interactions with other species in order to define limiting factors and make management recommendations. Initial efforts will center around non-lethal methods of sampling to include trap net samples, hydro-acoustics, and use of tagging methodologies. Future efforts will include use of radio telemetry and SCUBA as funding becomes available.

Efforts to evaluate techniques to establish the adfluvial arctic grayling brood will center around collection of gametes from the Red Rock Lake and Rogers Lake populations via trapping and electrofishing of spawning adults. These collection efforts will be accompanied by disease testing as required. Fertilized gametes will be hatched within FWP hatchery facilities or at remote site incubators. Efforts to establish the Red Rock Reservoir brood will emphasize non-lethal sampling of the developing population as well as other fish species in the pond through the use of trap nets.

Additional steps will be taken to meet the grant's objectives through the following avenues:

Public Outreach and Education: Actively participate in educational forums and presentations for schools, service groups and other interest groups to increase public awareness of the status of native species and their habitats.

Collaboration with Interest Groups: Actively participate in a collaborative framework with: Federal Agencies (USFS, USFWS, USBLM, USBOR, USNRCS, USEPA, USACE, etc.); State Agencies (DNRC, DEQ, MDOT, etc); local County and municipal governments; established sportsmen's groups (Trout Unlimited, Skyline Sportsmen, Anaconda Sportsmen, Beaverhead

Outdoors Association, etc); Watershed Committees (Big Hole, Beaverhead, and Ruby Rivers); and private interest groups (Turner Foundation, Big Hole River Foundation, American Fisheries Society etc.) to protect and enhance native species habitats.

Conversion and Establishment of Stocked Native Species Sport Fisheries in Lakes: Complete analysis and convert stocked mountain lake sport fisheries to native westslope cutthroat trout where appropriate to protect native stocks of westslope cutthroat trout in adjacent drainages. Adjust 5 year Planting Program accordingly and evaluate comparative performance of westslope cutthroat trout.

Preparation of Environmental Assessments: In all applicable cases concerning fish plants or removals, habitat enhancement, barrier installations, take lead or assist in the preparation of required EA's as defined under MEPA requirements.

Native Species Habitat Enhancement Projects: Identify, collect data, describe potential projects and take lead in or assist in obtaining funding for potential projects to enhance habitats for the target native species. Projects would improve or protect habitat niche in westslope cutthroat trout and Arctic grayling tributary and mainstem habitats but might also include development of tributary spawning streams for Arctic grayling reintroduction in the lower Beaverhead River system.

Native Species Habitat Protection: Identified native species habitats will be emphasized for the highest level of protection under legal venues to include: active review and issuance of Stream Protection Act Permits to public agencies; active participation in the review of Natural Streambed and Land Preservation Act Permit Applications in concert with the Beaverhead, Ruby Valley, Mile High, and Deer Lodge Valley Conservation Districts; review, comment, and/or objection to new water right applications and applications for change; inspection and review of Private Pond License Applications; and intensive review and commentary on a wide variety of subjects to include: subdivision planning, timber sale proposals, grazing allotment management plans; watershed analyses; discharge permits, water quality projects, mine plans, etc.

V. **Funding** (Changes in Bold)

Approved Funding (Total for Five Years)

The non-federal share of funding will come from state license revenue, projects 3828 or 3830.

Planning (25% non-federal match)

		2004	2005	2006	2007*	2008*	Total
Direct	Federal	$7,500.00	$7,500.00	$7,500.00	$8,000.00	$8,000.00	$38,500.00
	Non-Fed	$2,500.00	$2,500.00	$2,500.00	$2,666.67	$2,666.67	$12,833.33
Subtotal		$10,000.00	$10,000.00	$10,000.00	$10,666.67	$10,666.67	$51,333.33
Indirect	Federal	$1,342.50	$1,342.50	$1,350.00	$1,440.00	$1,440.00	$6,915.00
	Non-Fed	$447.50	$447.50	$450.00	$480.00	$480.00	$2,305.00
Subtotal		$1,790.00	$1,790.00	$1,800.00	$1,920.00	$1,920.00	$9,220.00
Total		$11,790.00	$11,790.00	$11,800.00	$12,586.67	$12,586.67	$60,553.33

**Amounts for 2007 and 2008 reflect an estimated 6.7% increase in costs, in anticipation of inflationary and cost of living increases.*

Original Estimated Costs Per Segments

Salary and benefits	$ 7,100
Lodging and travel	$ 1,000
Supplies and equipment	$ 1,900
TOTAL DIRECT	$10,000

Revised Budgets:

Planning (25% non-federal match)

Direct	**CY**	2004	2005	**2006**	**2007**	**2008**	**Total**
	Federal	$7,500.00	$7,500.00	**$51,250.00**	**$51,250.00**	**$40,000.00**	**$157,500.00**
	Non-Fed	$2,500.00	$2,500.00	**$17,083.33**	**$17,083.33**	**$13,333.33**	**$52,499.99**
Subtotal		$10,000.00	$10,000.00	**$68,333.33**	**$68,333.33**	**$53,333.33**	**$209,999.99**
Indirect	**Federal**	$1,342.50	$1,342.50	**$9,260.88**	**$9,260.88**	**$7,228.00**	**$28,434.76**
	Non-Fed	$447.50	$447.50	**$3,086.96**	**$3,086.96**	**$2,409.33**	**$9,478.25**
Subtotal		$1,790.00	$1,790.00	**$12,347.84**	**12,347.84**	**$9,637.33**	**$37,913.01**
Total		$11,790.00	$11,790.00	**$80,681.17**	**$80,681.17**	**$62,970.66**	**$247,913.00**

* Shaded columns reflect proposed Segment 3 costs.

Indirect rates were calculated at 17.9% for 2004 & 2005, and at 18.07% for 2006-2008.

Estimated Direct Costs Per Segment 3 (CY 2006-07) and Segment 4 (CY 2008)

Salary and benefits	**$ 97,033**	**37,867**
Lodging and travel	**$ 13,667**	**5,333**
Supplies and equipment	**$ 25,967**	**10,133**
TOTAL	**$ 136,667**	**$ 53,333**

V. Location (Changes in Bold)

The primary locations for the project are the Big Hole, Beaverhead, and Ruby River watersheds, located in Beaverhead and Madison Counties in southwest Montana.

Specific locations of target species:

- **Arctic grayling – Big Hole River and upper Ruby River**
- **Westslope cutthroat trout – selected streams and lakes**
- **Native lake trout – Elk and Twin Lakes**
- **Burbot – Elk Lake, Twin Lake, and Clark Canyon Reservoir**
- **Mountain whitefish – lower Beaverhead River**

VI. Schedule

This project is planned as an ongoing effort calculated to make strides toward completing the objectives on an annual basis. Activities will occur throughout the calendar year as appropriate to accomplish the objectives. For example, activities directed toward the collection of westslope cutthroat trout gametes would occur in May and June while efforts to locate and define native lake trout spawning habitats would likely occur in September and October. Start-up of the Project is planned for July 1, 2004. Seasonal work periods will be defined as ending December 31 with annual written reports describing the work performed, complete with data analysis filed by March 31 of the next year. Initial efforts planned for the summer – fall of 2004 include: analysis of at least one or two potential westslope cutthroat trout reintroduction streams and one brood source donor stream; analysis of one fishless mountain lake for potential stocking with westslope cutthroat trout; trap net samples of Red Rock grayling brood pond; stocking of the Red Rock grayling brood pond with fry from the Rogers Lake brood source; hydroacoustic sampling of lake trout populations; trap net samples of potential lake trout spawning habitats; and other projects as opportunities arise.

Obtain USFWS approval of Grant	June 2004
Complete Field Work	March - November
Prepare Annual Report	December - March
Submit Annual Report	March 31
Grant close-out	December 2008
Reports to USFWS	March 2009

VII. Project Personnel

Name	Title	Phone	Email
Adam Brooks	Federal Aid Program Manager	406-444-3032	abrooks@mt.gov
Dick Oswald	Management Biologist	406-683-9310	oswalddick@mt.gov
Ken McDonald	Management Bureau Chief	406-444-7409	kmcdonald@mt.gov

VIII. Relation to Other Federal Projects

F-113-R	Statewide Fisheries Survey and Inventory
E-6	Endangered Wildlife Program
W-154-R	Statewide Wildlife Management Program.

APPENDICES

A - Updated NEPA Compliance Checklist (FWS Form 3-2185 08/00)