Finding of
No Significant Impact
and
Programmatic
Environmental Assessment

for Implementing Fish Habitat Improvement Measures
in Four Mountain Snake Province Subbasins
under Action 149 of the December 2000
National Marine Fisheries Service
Federal Columbia River Power System Biological Opinion

U.S. Bureau of Reclamation
Pacific Northwest Region
Snake River Area Office
Boise, Idaho

April 2003

This page left blank intentionally, for double sided printing.

FINDING OF NO SIGNIFICANT IMPACT
PN FONSI 03 – 03
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR THE IMPLEMENTATION OF ACTION 149
FISH HABITAT IMPROVEMENT MEASURES
In Four Mountain Snake Province Subbasins, Idaho

Introduction

The National Marine Fisheries Service (NMFS) issued the Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp) on December 21, 2000. NMFS concluded that the continued operations of the FCRPS would constitute jeopardy under the Endangered Species Act (ESA) for 8 of the 12 listed Evolutionarily Significant Units (ESUs) of salmon and steelhead, unless their Reasonable and Prudent Alternative (RPA) was implemented. The RPA included 199 actions that must be implemented by Federal agencies, including Reclamation, to avoid a jeopardy decision. Action 149 required Reclamation to do habitat improvements as off-site mitigation for the effects of the main stem Columbia River dams. Habitat improvements implemented under Action 149 are expected to result in overall, long-term benefits to ESA-listed and other anadromous and resident fish.

Implementation of Action 149 is a Federal action and Reclamation is required to follow procedures of the National Environmental Policy Act (NEPA). To comply with NEPA, Reclamation has prepared a Programmatic Environmental Assessment (PEA) which addresses the potential impacts associated with fish habitat improvement measures in four of the 15 subbasins considered in Action 149: the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins. Habitat improvement measures will take place on private lands with willing participants. Because the specific locations and numbers of participants are not known, and the choice of specific measures cannot be determined at this time, the EA was prepared at a programmatic level. The PEA addressed the broad range of implementation measures proposed to comply with Action 149.

Alternatives Considered

The two alternatives considered are described below:

- **No Action Alternative** - The No Action Alternative is represented by Reclamation's level of involvement in the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins prior to issuance of the 2000 FCRPS BiOp. Since 1999 and before the FCRPS BiOp was issued, Reclamation has

provided technical assistance for certain irrigation-related projects to help protect and restore ESA-listed anadromous fish. Reclamation provided technical assistance in both the Upper Salmon and Lemhi Subbasins, but has not been involved with any projects in the Little Salmon or Middle Fork Clearwater Subbasins. Consistent with the No Action Alternative, Reclamation would continue to provide technical assistance only in the Lemhi and Upper Salmon Subbasins at generally the same scope of involvement that occurred before the FCRPS BiOp was issued, depending on available funding.

- **Proposed Action** - The Proposed Action is the implementation of Reclamation's responsibilities under Action 149 of the 2000 FCRPS BiOp in the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins. Reclamation is specifically required to implement Action 149 to conserve listed species under the ESA.

Recommended Alternative

Reclamation proposes to implement the Proposed Action, which would implement the NMFS BiOp Action 149 within the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins.

Reclamation will complete its involvement related to the FCRPS BiOp in each subbasin within 10 years and will not maintain further commitments related to the FCRPS BiOp after this point. Consequently, project operation and maintenance (O&M) will be the responsibility of the landowner, and long-term O&M oversight, if appropriate, would become the responsibility of a third party (such as a watermaster or State agency).

The Proposed Action would improve flows, eliminate instream passage barriers, and correct fish screen deficiencies on private lands that are related to irrigation. Activities related to flow improvements may include water acquisition or leasing. Activities related to instream barriers may include the consolidation of irrigation diversions to reduce the number of instream barriers or the removal of individual gravel push-up dams and replacement with diversion structures that provide for fish passage. Activities related to fish screens may include screening unscreened irrigation diversions or replacing obsolete screens with screens that meet NMFS criteria.

Environmental Commitments

Because the specific choice of locations and the number of willing participants are not known, nor can the choice of specific projects be determined at this time, the PEA is prepared at a programmatic level and evaluates general impacts of the types of projects anticipated to be proposed for implementation.

When specific locations for projects have been determined, Reclamation would fulfill compliance requirements for each individual site-specific project. Examples of these additional requirements include:

- Surveys for the presence of listed or proposed threatened or endangered species
- Reclamation will complete ESA consultation with NMFS and USFWS before initiating any action that would result in irretrievable and irreversible commitment of resources. This includes consultation at both a programmatic level and for site specific projects.
- The Draft BMPs outlined in the PEA will be refined in a subsequent programmatic Biological Assessment (BA). All actions related to the implementation of Action 149 will be conditional to the appropriate Best Management Practices (BMPs) developed during forthcoming programmatic and site-specific consultation.
- Cultural resource surveys to determine the presence of resources eligible for listing on the National Register of Historic Places (NRHP) in locations that may be affected by construction or operation of the proposed modifications.
- Consultation with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) if NRHP-eligible resources are found.
- Any necessary permits under Section 404 of the Clean Water Act.
- State of Idaho permits for instream work.
- Initiate additional NEPA analysis for any projects that exceed the scope of the PEA.

Consultation and Coordination

Public Involvement

Reclamation has coordinated with Federal, State, and local agencies during the preparation of the PEA to gather input, provide information, and to meet NEPA and ESA regulatory requirements. This coordination was integrated with the public involvement process. Reclamation sent 80 letters to State government officials and agencies, Federal agencies, Tribal governments, and businesses and non-government organizations. Reclamation held introductory meetings to familiarize the communities with the proposed program prior to the publication of the Draft PEA. In addition, Reclamation met with local, State, and Federal agency staff to discuss the project.

National Marine Fisheries Service and U.S. Fish and Wildlife Service Coordination

Coordination on fish and wildlife issues to meet the requirements of the Fish and Wildlife Coordination Act (FWCA) and the ESA was accomplished by informal consultation with the USFWS and NMFS.

Continued coordination with NMFS and USFWS will be needed to resolve ESA issues regarding listed salmon, steelhead, and bull trout. Based on discussions with NMFS and USFWS concerning the types of flow, screen, and barrier projects to be implemented, Reclamation concluded that a "may affect, but unlikely to adversely affect" determination is anticipated for most projects. Consequently, Reclamation is developing a programmatic BA for implementation of Action 149 in Idaho and will continue to consult with NMFS and USFWS. The programmatic BA is intended to provide a basis to obtain concurrence from NMFS and USFWS on the types of projects expected to be implemented that would not require additional consultation and identify the types that would. A mitigation strategy will be developed with NMFS and USFWS for each type of project. For some types of projects no additional consultation will be required beyond the terms and conditions specified in the BiOp developed in response to the programmatic BA; other types of projects will require individual consultation and could include preparation of a site-specific BA with an associated BiOp that could include site-specific terms and conditions.

National Historic Preservation Act

Information has been obtained from the Idaho SHPO to prepare the PEA and to facilitate compliance with the National Historic Preservation Act and its implementing regulations (36 CFR 800). In addition, as part of Reclamation's government-to-government consultation with the Tribes (described below), Reclamation has contacted representatives from appropriate Indian tribes to identify Traditional Cultural Properties (TCPs) and Indian sacred sites. Coordination with the Idaho SHPO and the Tribes will continue as site specific projects are identified.

Tribal Consultation and Coordination

Reclamation sent letters to representatives from the Tribes explaining the EA process during the scoping phase. In a follow-up correspondence, Reclamation requested information on Indian Trust Assets (ITAs), TCPs and Indian sacred sites from the Tribes for documentation during the EA process. To date, the tribes have not responded to this request. Tribal governments contacted include the Shoshone-Paiute Tribe, Shoshone-Bannock Tribe, Northwestern Band of the Shoshone Nation, the Nez Perce Tribe, and the Burns-Paiute General Council.

Indian Trust Assets

There is no universally accepted understanding as to the specific treaty rights to hunt and fish in the vicinity of the subbasins since there has not been a settlement with the Nez Perce Tribe, Shoshone-Bannock Tribes, or Northwestern Band of the Shoshone Nation as to the extent and nature of their off-reservation hunting and fishing treaty rights. Thus,

the ITAs considered are tribal hunting and fishing rights that may exist. There would be no adverse impacts to rights that may exist for tribes to hunt, fish, and gather. It is expected that there would be an increase in anadromous salmonid populations representing a beneficial impact.

Sacred Sites

Executive Order 13007 defines sacred sites as any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian Tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion. There are likely positive impacts on sacred sites from the removal of barriers, the replacement of screens, and stream flow improvement due to improved habitat and resultant increase in number of salmon

Public Comment Summary

The comment period for the Draft Programmatic EA for Implementation of Acton 149 extended from November 22 through December 31, 2002. Comments were received from the USFWS, U.S. Forest Service, the Idaho Soil Conservation Commission, U.S. Army Corps of Engineers, Idaho State Historical Society, and the Nez Perce Tribe. Most of the agency comments dealt with minor inconsistencies or errors of factual information in the document and suggested revisions for the text or map data. The Idaho State Historical Society emphasized the need for surveys prior to ground-disturbing activity, noting that important archaeological resources may be present even in agricultural settings.

The USFWS provided some additional information regarding the occurrence of bull trout in the Little Salmon Subbasin. USFWS also expressed concern for the project's effects to wetlands that may be supported by leakage in existing irrigation conveyance systems. If a particular proposed project potentially affects a wetland, Reclamation will assess alternatives to prevent or mitigate adverse impacts and consult with USFWS to develop an appropriate solution. In addition, USFWS also requested greater detail on the potential effects to bull trout. Subsequently, Reclamation met with NMFS and USFWS both of whom were particularly concerned with the potential effects from implementation of larger in-stream projects, such as the removal and replacement of push-up dams. Consequently, Reclamation is developing a programmatic BA with NMFS and USFWS to meet ESA obligations as described earlier in this document

The Nez Perce Tribe comments requested more information regarding potential effects to fishing and hunting rights and to expand the analysis to an Environmental Impact Statement. Because all projects would be implemented on private land, they would not adversely affect Tribal fishing and hunting rights. Based upon input from State and Federal resource management agency staff, Nez Perce and Shoshone-Bannock Tribes resource staff, and members of the public, Reclamation managers determined that a PEA

was the appropriate NEPA document for addressing implementation of Action 149 in Idaho. The Tribe also suggested that Reclamation consult with them on the choice of subbasins for future project implementation and that Reclamation should expand its responsibilities outside the project constraints listed in the PEA. Reclamation notes in the PEA that NMFS has specified those subbasins under Reclamation responsibility and the corresponding constraints and that the choice of subbasins and project constraints is not at Reclamation's discretion.

Changes in the Final EA

Other than minor editorial adjustments, the primary change in the Draft PEA was in the section regarding Consultation and Coordination. After extended coordination with NMFS and the USFWS, Reclamation has determined that additional documentation will be needed to meet the requests of these agencies regarding Endangered Species Act, Section 7 consultation. The change in the narrative of the Draft PEA reflects the outcome of recent discussions with the USFWS and NMFS and the agreed need for additional coordination and consultation as described earlier in this document.

Findings

Environmental Impacts

Potential impacts to natural, cultural, and social resources are summarized below, based on the full analysis presented in the PEA. Implementation of Action 149 is expected to result in overall, long-term benefits to ESA-listed and other anadromous and resident fish.

Air Quality

There would be no effects to air quality and National Ambient Air Quality Standards would not be affected from implementation of the Proposed Action.

Noise

Construction activity would cause short-term increases in noise where heavy machinery is needed. These effects would be limited to the immediate construction zone and would not affect the usual noise patterns in the surrounding vicinity.

Hydrology and Water Quality

Any water leasing and/or acquisition would be implemented under existing Idaho State law. These or other methods to provide adequate streamflow for the various life-history stages of anadromous fish would result in improved access by adults to spawning areas

and improved conditions for downstream migration by juveniles. Removal of individual gravel push-up dams to improve fish passage would eliminate periodic stream disturbances caused by dam maintenance. Minor impacts to water quality would be expected during push-up dam removal, but these effects would be minimized by using Best Management Practices (BMPs) which were introduced in the PEA and are to be refined in programmatic and site-specific consultation with NMFS and USFWS. Increased efficiency of water withdrawal systems is expected to provide long-term benefits to surface water hydrology and water quality in the subbasins.

Vegetation

Modifying headgates or installing fish screens would have minimal effects to vegetation because these features are generally in disturbed settings. Removal and replacement of push-up dams would have a greater potential to disturb vegetation because of the heavy equipment that would be required. Clearing would be kept to a minimum, and vegetation disturbed during construction would be restored according to the BMPs. Improvement in stream flows would provide long-term benefits to adjacent wetland and riparian habitats.

Fish

Under the Proposed Action, fish would benefit from the habitat improvement program. The program would eliminate instream fish passage barriers, correct fish screen deficiencies associated with irrigation practices on private land, and augment and improve streamflows. These actions would improve aquatic habitat and benefit resident and andromous fish. Implementation of BMPs would minimize short-term effects to water quality and corresponding effects to fish during the construction phase.

Wildlife

Effects to wildlife from the Proposed Action would be limited to short-term disturbance from construction. Any disturbance to vegetation would be restored according to the BMPs. Projects that improve stream flow conditions for anadromous fish would benefit wildlife that utilize riparian areas. Increased populations of fish would benefit raptors and carnivores that utilize fish as a food source.

Threatened and Endangered Species

Implementation of the Proposed Action in the four subbasins would provide long-term benefits to ESA-listed salmon, steelhead, and bull trout by removing migration barriers, improving fish screens on irrigation canals, and by improving instream flows. BMPs will include provisions for protection of ESA-listed aquatic species including adherence to NMFS and USFWS work periods.

In the four identified subbasins, Action 149 will be comprised of many site-specific projects. ESA-required conferencing and consultation, as described earlier, will ensure that appropriate measures are taken to avoid adverse effects to listed species and critical

habitat from site-specific project construction. However, there could be unavoidable short-term adverse effects associated with some site-specific projects. All actions related to the implementation of the Proposed Action will be conditioned upon use of the appropriate Best Management Practices (BMPs) being developed with NMFS and FWS.

Reclamation will complete ESA consultation with NMFS and USFWS before initiating any action that would result in irretrievable and irreversible commitment of resources.

Recreation

All projects would be implemented on private land and there would be no adverse impacts to recreation. Long-term recreation benefits would be realized from improved aquatic habitat conditions and corresponding increases in fishing opportunities.

Aesthetics

Implementation of the Proposed Action would have minor effects to aesthetic resources during the construction phase but would result in no long-term effects. Disturbed vegetation would be restored following construction, and design guidelines, which blend structures with the natural landscape, would be followed.

Cultural Resources

Construction activities under the Proposed Action have the potential to disturb cultural resources. However, preconstruction surveys, which are included as part of the Proposed Action and as an Environmental Commitment in this FONSI, would be employed to address this issue. If any cultural resources are discovered during preconstruction surveys, the appropriate protection measures would be developed in coordination with the Idaho SHPO and the Tribes.

Sacred Sites and Indian Trust Assets

No Sacred Sites or ITAs have been specifically identified in the project subbasins, and no effects would occur to these resources from the implementation of the Proposed Action. There would be no effects to Tribal hunting or fishing rights, but improved aquatic habitat conditions would have a corresponding benefit for fish stocks in the subbasins.

Socioeconomics

The Proposed Action would improve aquatic habitat conditions, enhance fish stocks, and in turn expand fishing and recreation opportunities within each subbasin, allowing for a wider array of visitor-serving activities to be offered. Overall long-term socioeconomic impacts would be positive.

Land Use

All projects would be implemented on private land, and there would be no adverse effect to land use from implementation of the Proposed Action.

Environmental Justice

Impacts from the Proposed Action would be distributed relatively evenly among racial, ethnic, and economic populations in the subbasins.

Conclusion

Implementing the Proposed Action is expected to provide long-term benefits to ESA-listed and other anadromous and resident fish and will meet Reclamation's requirement under Action 149 of the NMFS 2000 FCRPS BiOp. Therefore, based on the analysis of the environmental consequences in the PEA, and consultation with potentially affected Tribes, agencies, organizations, and the general public, Reclamation concludes that implementing the Proposed Action, with the environmental commitments and changes described in the Final PEA, would not have a significant impact on the quality of the human environment or the natural and cultural resources in the project area.

This **Finding of No Significant Impact** has therefore been prepared and is submitted to document environmental review and evaluation in compliance with the National Environmental Policy Act of 1969.

Recommended:

4/3/03

Joseph Spinazola
Activity Manager

Date

Concur:

4/3/03

Jack La Rocco
Natural Resource Specialist

Date

APPROVED:

4/03/2003

Jerrold Gregg
Area Manager
Snake River Area Office
Boise, Idaho

Date

Programmatic Environmental Assessment

for Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion

U.S. Bureau of Reclamation
Pacific Northwest Region
Snake River Area Office
Boise, Idaho

April 2003

This page left blank intentionally, for double sided printing.

Table of Contents

Table of Contents
(continued)

Table of Contents
(continued)

List of Figures

List of Tables

List of Photos

Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
BiOp	Biological Opinion
BLM	Bureau of Land Management
BMP	Best Management Practice
BPA	Bonneville Power Administration
CBFWA	Columbia Basin Fish and Wildlife Authority
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
dB	decibel
DO	dissolved oxygen
DPS	Distinct Population Segment
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FCRPS	Federal Columbia River Power System
FONSI	Finding of No Significant Impact
FY	fiscal year
HABS/HAER	Historic American Building Survey/Historic American Engineering Record
HPA	Hydraulic Permit Approval
HU	Hydrologic Unit
HUC	Hydrologic Unit Code
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
IOGA	Idaho Outfitters and Guides Association
ISCC	Idaho Soil Conservation Commission
ITA	Indian Trust Asset

Acronyms and Abbreviations (continued)

IWG	Interagency Work Group
IWUA	Idaho Water Users Association
MAF	million acre-feet
MSA	Magnuson-Stevens Act
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service (recently changed to NOAA Fisheries)
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPC	Northwest Power Planning Council
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	operations and maintenance
PLIA	Public Land Interpretive Association
PCPI	per capita personal income
Reclamation	U.S. Bureau of Reclamation
RM&E	Research, Monitoring, and Evaluation
RPA	Reasonable and Prudent Alternative
RV	recreational vehicle
SHPO	State Historic Preservation Officer
SR	State Route
TCP	traditional cultural property
TES	Threatened and Endangered Species
TMDL	Total Maximum Daily Load
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USBWP	Upper Salmon Basin Watershed Project
WQLS	Water Quality Limited Segment

Chapter 1
Purpose and Need

1.1 Introduction

The U.S. Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate the potential impacts associated with fish habitat improvement measures in four subbasins of the Mountain Snake Province of Idaho – the Lemhi, Upper Salmon, Middle Fork Clearwater and Little Salmon Subbasins (Figure 1.1-1). The Mountain Snake Province is an ecological unit that includes all rivers and tributaries that flow into the mainstem Clearwater River and Salmon River. This ecological unit is used as a planning unit for the Northwest Power Planning Council (NPPC) and other agency efforts to restore endangered anadromous salmonids. The Middle Fork Clearwater Subbasin is within the larger Clearwater River basin. The remaining three subbasins lie within the larger Salmon River subbasin.

The National Marine Fisheries Service (NMFS – recently changed to NOAA Fisheries) issued the Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp) on December 21, 2000. This document analyzed the effects of the FCRPS hydroelectric projects on Federally-listed threatened or endangered anadromous salmonids within the Columbia River Basin. NMFS concluded that the continued operations of the FCRPS would constitute jeopardy under the Endangered Species Act for 8 of the 12 listed ESUs, unless their Reasonable and Prudent Alternative (RPA) was implemented. A jeopardy decision means that the continued existence of listed species is at risk or there is risk of destruction or adverse modification of critical habitat. The RPA included 199 actions that must be implemented by Federal agencies, including Reclamation, to avoid a jeopardy decision. These actions specify measures that would benefit anadromous salmonids within the NMFS-designated Evolutionarily Significant Units (ESUs) for each listed species. An ESU is a distinctive group of Pacific salmon or steelhead. ESUs were listed by NMFS in Designated critical habitat: critical habitat for 19 ESUs of salmon (chinook, chum, and coho) and steelhead in Washington, Oregon, Idaho, and California, published in the Federal Register, Vol. 65, No. 32, February 2000, pages 7764-7785. Among Reclamation's responsibilities are actions for habitat improvements as off-site mitigation for the effects of the mainstem Columbia River dams.

The measures applicable to this EA are defined under RPA Action 149:

> *Reclamation shall initiate programs in three priority subbasins (identified in the Basinwide Recovery Strategy) per year over 5 years, in coordination with NMFS, U.S. Fish and Wildlife Service (USFWS), the states, and others, to address all flow, passage, and screening problems in each subbasin over 10 years…this action initiates immediate work in three such subbasins per year, beginning in the first year with the Lemhi, Upper John Day, and Methow subbasins. Subbasins to be addressed in subsequent years will be determined in the annual and 5-year implementation plans…At the end of 5 years, work will be underway in at least 15 subbasins.*

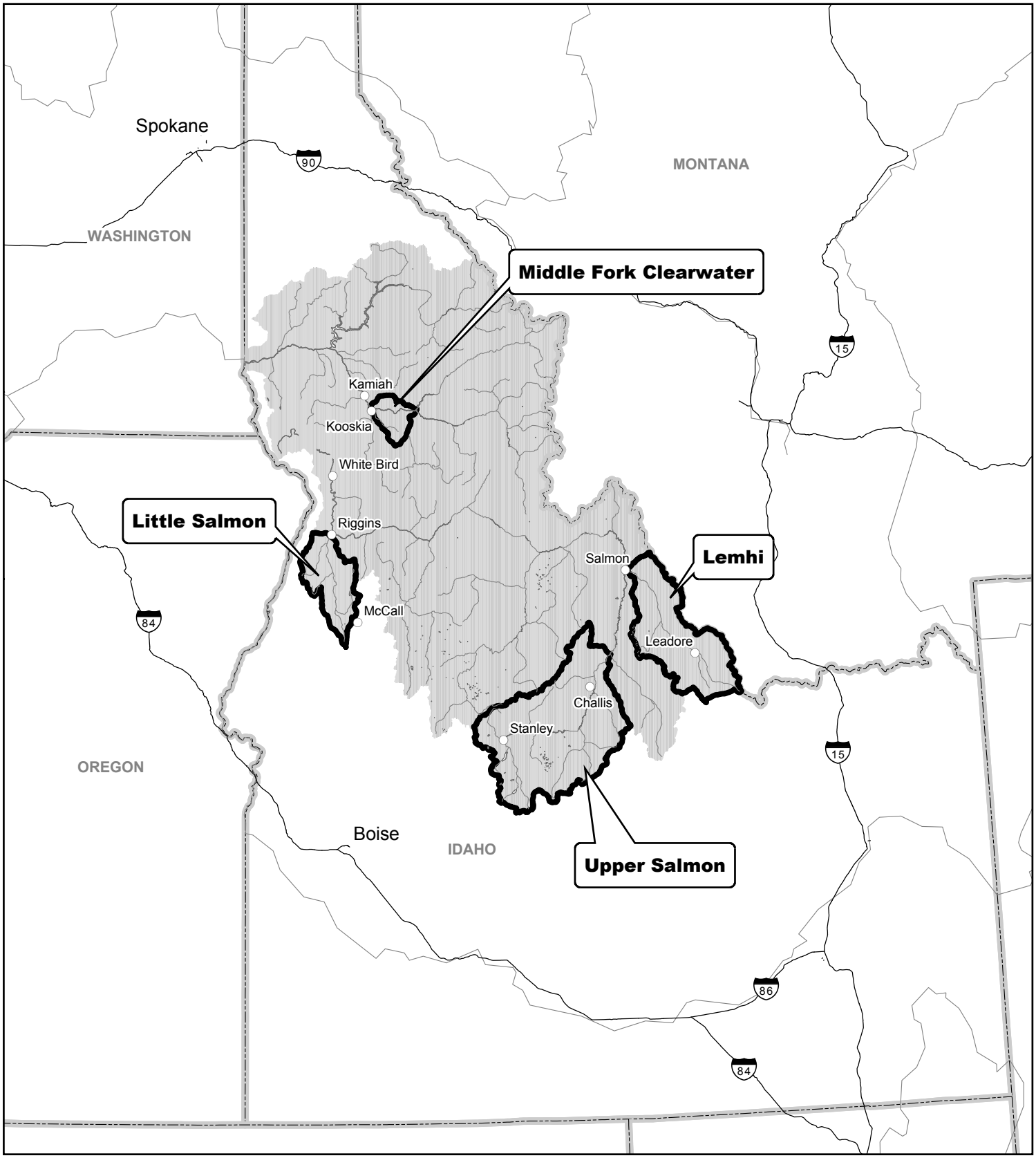
The objective of this action is to restore flows needed to avoid jeopardy to listed species, screen all diversions, and resolve all passage obstructions within each priority subbasin. Portions of Action 149 address the responsibilities of two other agencies – the Bonneville Power Administration (BPA) and the Army Corps of Engineers (Corps).

The Basinwide Recovery Strategy referenced in the RPA language identified 16 priority subbasins as Reclamation responsibilities - four in Idaho, five in Washington, and seven in Oregon. Reclamation is required to begin work in at least three priority subbasins each year for 5 years until all priority subbasins have an ongoing habitat improvement program. The BiOp allows only 10 years in each subbasin to complete all flow, screening, and passage actions. Reclamation provided its proposed annual schedule to NMFS in a Draft 5-year Implementation Plan during the summer of 2001. The work in the first four subbasins began in the spring of fiscal year 2001.

Implementation of Action 149 is a Federal action and Reclamation is required to follow procedures of the National Environmental Policy Act (NEPA). To comply with NEPA, Reclamation has prepared this Environmental Assessment to address the potential impacts associated with implementation of Action 149. Because the specific locations and numbers of participants are not known, and the choice of specific measures cannot be determined at this time, the EA is prepared at a programmatic level. This Programmatic EA addresses the broad range of implementation measures proposed to comply with Action 149.

The scope of this Programmatic EA for Reclamation's implementation of Action 149 will be constrained by the following:

- Reclamation will be responsible for activities and actions that only occur within the stream.
- Reclamation will address issues/needs that have been caused by irrigation activities.
- Reclamation will address barrier removal, flows, and/or screening issues/needs.
- All actions will take place on non-public land.
- All work will be completed with willing participants.
- Reclamation will assume no operation, replacement, or maintenance responsibilities associated with construction or other programs developed as part of Action 149 implementation.
- Fish screens will meet NMFS and USFWS criteria.
- Flow issues will be addressed in accordance with State of Idaho water laws.
- Water acquisition will occur through water purchase or lease. Water purchase will be negotiated in a manner such that ownership of the water right is in the name of the legally recognized third party.



City
Subbasin Boundary
Mountain Snake Province
State Boundary
Stream
Highway

FIGURE 1.1-1
Location of Mountain Snake Province Subbasins

0 10 20 40 Miles

Source: USBR, 2001;
IDWR, ESRI, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure1.1-1.mxd

Back of Figure 1.1-1. Location of Snake River Subbasins.

1.2 Subbasin Locations and Setting

Four NMFS ESUs are covered under this EA, Snake River Steelhead, Snake River Fall Chinook, Snake River Spring/Summer Chinook, and Snake River Sockeye Salmon (Figures 1.1-2 – 1.1-5). Table 1.2-1 summarizes the distribution of the subbasins within the NMFS ESUs. It should be noted that a listed fish species may not actually occur within one of the subbasins even though it lies within the NMFS ESU. In some cases the ESU includes critical habitat designations but the fish species is not known to occur in the subbasin at present. Refer to Section 3.5 for details on fish distribution within each subbasin.

Table 1.2-1. Distribution of the Lemhi, Upper Salmon, Middle Fork Clearwater and Little Salmon Subbasins within NMFS designated ESUs

ESU	Subbasin			
	Lemhi	**Upper Salmon**	**Middle Fork Clearwater**	**Little Salmon**
Snake River Steelhead	X	X	X	X
Snake River Fall Chinook			X	
Snake River Spring/Summer Chinook	X	X		X
Snake River Sockeye		X		

The following narrative provides a brief overview of the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins. Details on the presence of fish listed under the ESA can be found in Section 3.7, Threatened and Endangered Species. Details on the hydrology of the subbasins can be found in Section 3.3. See Figure 1.1-1 for a general orientation map of the Subbasins.

The Lemhi Subbasin extends along the Lemhi River (Hydrologic Unit [HU] 17060024) from its confluence with the Salmon River at the town of Salmon to the upper reaches of Eighteen Mile Creek at the continental divide at the Idaho/Montana border. The area is dominated by irrigated pasture in the valley, and the only other settlement is the town of Leadore near the Eighteen Mile Creek/Texas Creek confluence. Hayden Creek is another primary tributary to the Lemhi River in the subbasin.

The Upper Salmon Subbasin (HU1706021) extends upstream from the confluence of the Salmon and Lemhi Rivers, but excludes the Pahsimeroi River Basin.

The Middle Fork Clearwater subbasin (HU 17060304) extends from the mouth of the Middle Fork Clearwater near the town of Kooskia to the confluence with the Lochsa River. Clear Creek is the primary tributary to the Middle Fork Clearwater River. Highway 13 extends on a north-south axis just west of the subbasin, and Highway 12 traverses east-west in the northern half of the subbasin.

The Little Salmon Subbasin (HU 17060210) extends upstream from the confluence of the Little Salmon River and the mainstem Salmon River at the town of Riggins near the mouth of the Little Salmon River. The town of New Meadows is in the Southern part of the basin. Highway 95 traverses north-south through the subbasin. The Rapid River flows into the Little Salmon River just upstream of the town of Riggins.

1.3 Purpose and Need for Action

The purpose and need for this action is to improve migration, spawning, and rearing habitat for listed anadromous salmonids in the identified priority subbasins by working with willing partners on non-public lands, correcting passage, diversion screening, and instream flow problems as directed by RPA Action 149. The priority subbasins within the spring chinook, fall chinook, steelhead, and sockeye ESU's established by NMFS are the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater subbasins (Figures 1.1-2 through 1.1-5). Reclamation will continue to participate in habitat improvement measures within the scope of Action 149 for the duration of the 10 year program in each subbasin unless all problems within the scope of this action are completed sooner.

1.4 Scoping and Issues

1.4.1 Scoping

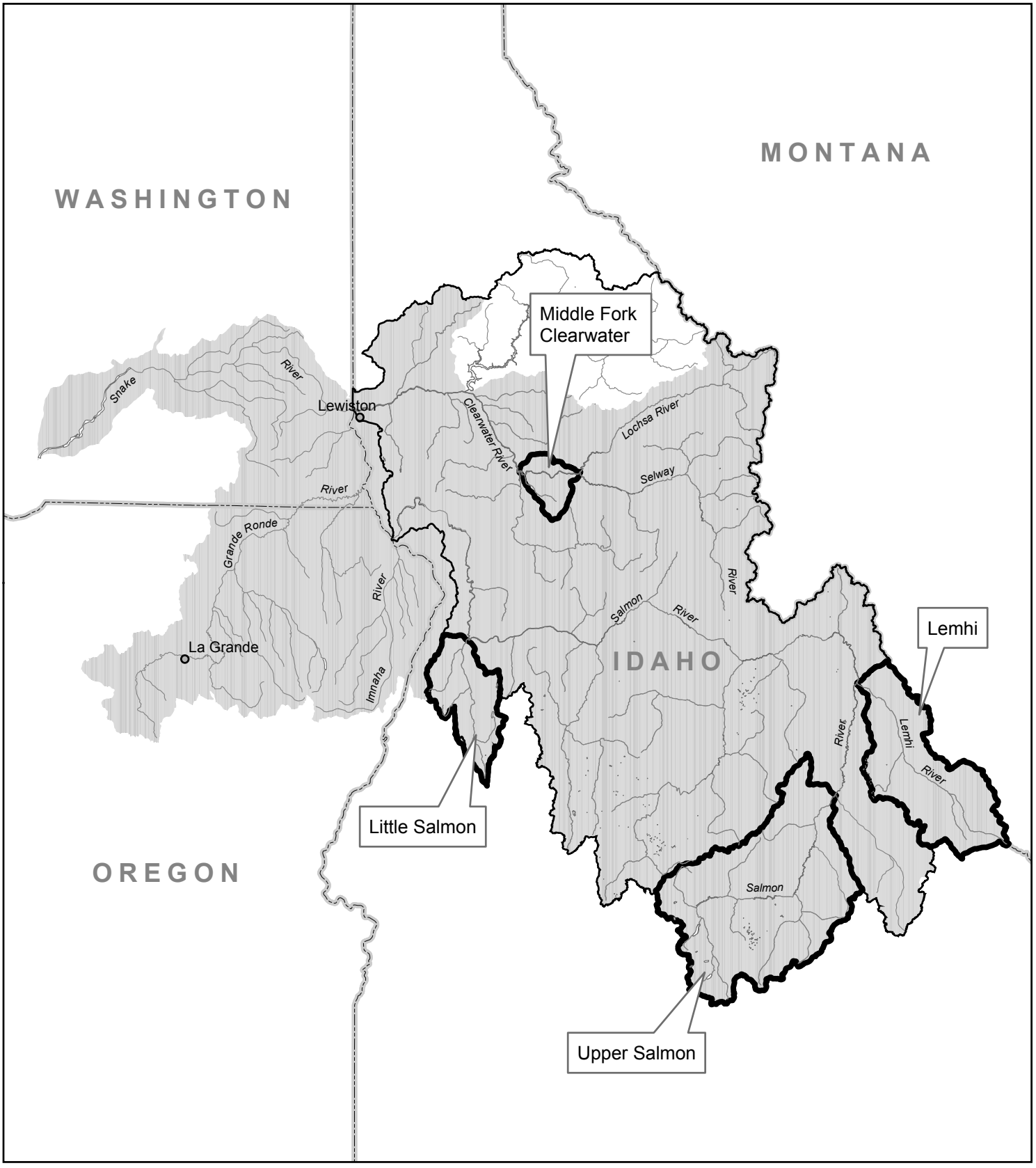
The following section describes the scoping process, summarizes the contacts made during this process, and provides a schedule of the NEPA process. Based on scoping and other contacts, a preliminary list of issues to be addressed is included.

NEPA requires that Federal agencies independently evaluate the environmental effects of their actions. Prior to this analysis, NEPA requires an early and open process for determining the scope of issues to be addressed and for identifying the significant issues to be addressed. In this case, the action to be addressed is Reclamation's proposed implementation of Action 149. This scoping process provides an opportunity for State, local, and other Federal agencies, tribes, interested organizations, and members of the public to provide input early in the NEPA process. The other purposes of the scoping process are to assist Reclamation to:

- Identify environmental and social issues associated with the Proposed Action that will be addressed in the EA;
- Determine the depth and breadth of needed analysis and significance of issues for the EA;
- Eliminate from detailed study issues and resources that do not require analysis; and
- Identify how the project would or would not contribute to cumulative impacts.

Reclamation provided letters declaring their intent to prepare a NEPA Programmatic EA for implementation of Action 149 to Federal, State, and local government agencies, businesses and organizations, Native American Tribal Governments, and local libraries. A copy of this letter and the distribution list is included in Appendix A.

Reclamation also conducted meetings with local entities. In April 2001, Reclamation established an Advance Team to assist in the first priority subbasins, including the Lemhi in Idaho. In May 2001, the Advance Team met with local organizations working in the Lemhi subbasins. Joe Spinazola, Subbasin ESA coordinator for Reclamation's Snake River Area Office, met with local groups and agencies in January and February 2002 to provide information on Reclamation's role related to the NMFS BiOp and to obtain input for the NEPA process. Meetings included:



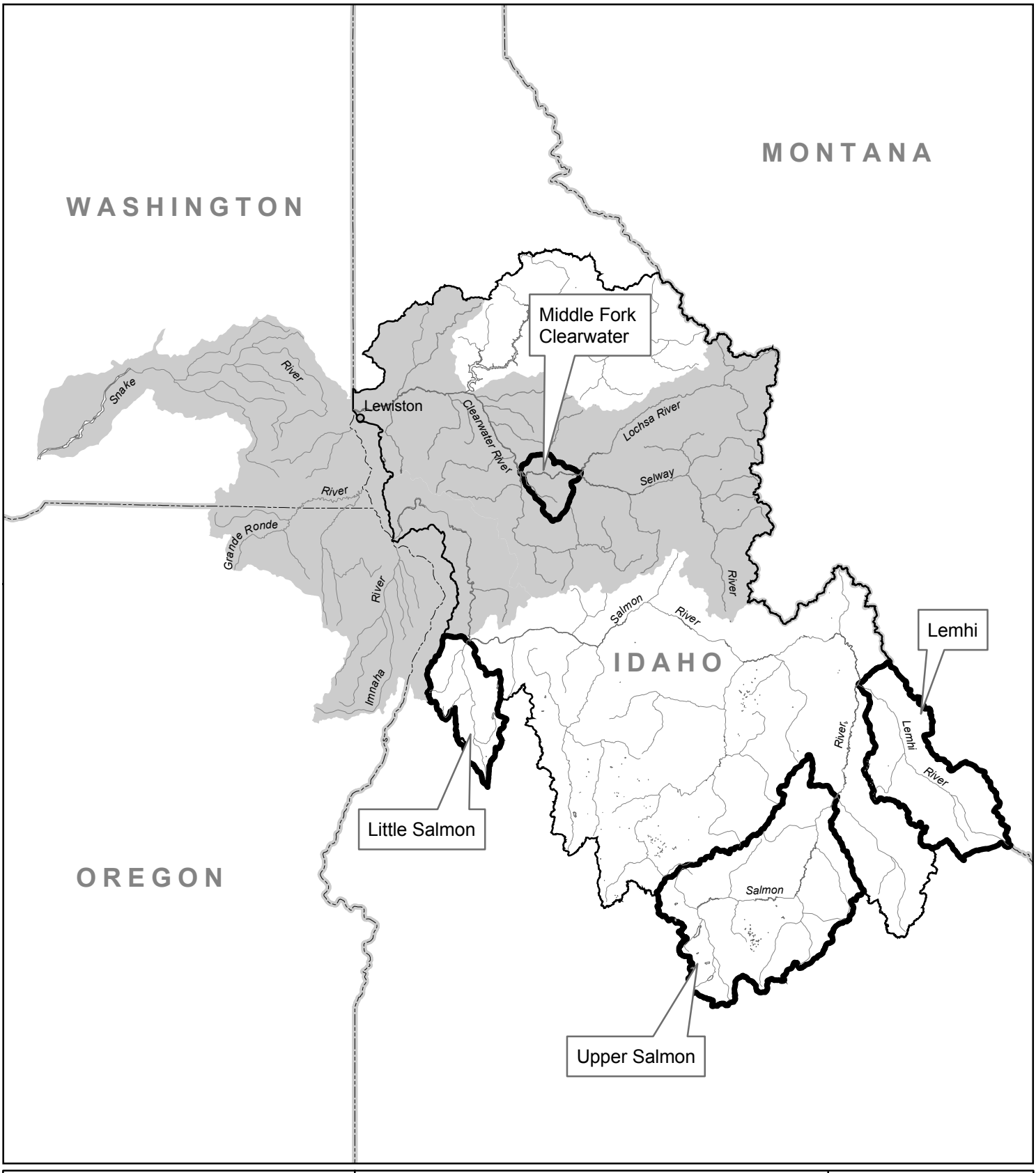
Steelhead ESU
Subbasin Boundary
Mountain Snake Province
State Boundary
Stream
Town

FIGURE 1.1-2
Snake River Basin Steelhead ESU

0 10 20 40 Miles

Source: USBR, 2001;
IDWR, ESRI, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure1.1-2.mxd

Back of Figure 1.1-2. Snake River Basin Steelhead ESU.



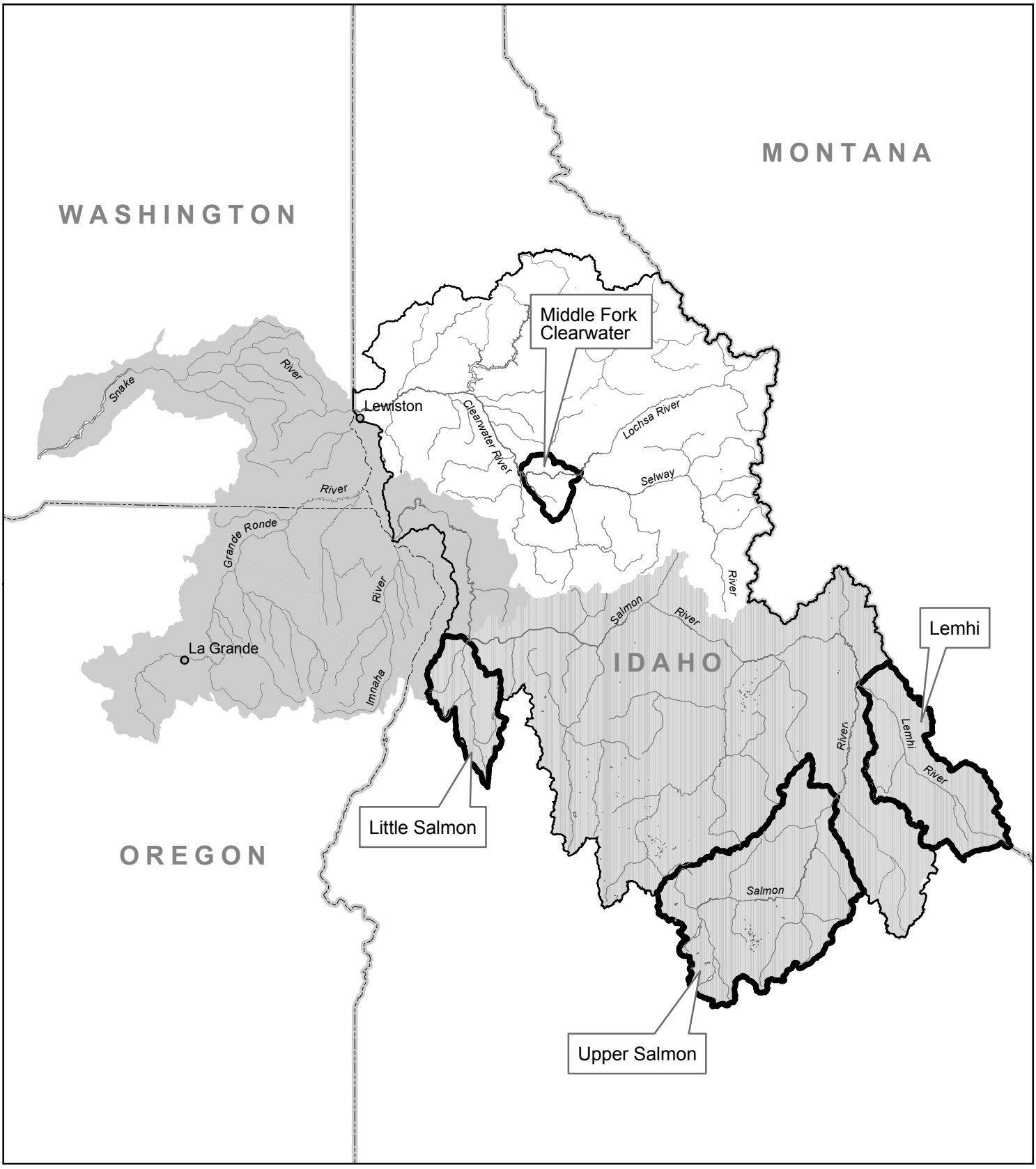
Fall Chinook ESU
Subbasin Boundary
Mountain Snake Province
State Boundary
Stream
Town

FIGURE 1.1-3
Snake River Basin
Fall Chinook Salmon ESU

0 10 20 40 Miles

Source: USBR, 2001;
IDWR, ESRI, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure1.1-3.mxd

Back of Figure 1.1-3. Snake River Basin Fall Chinook Salmon ESU.



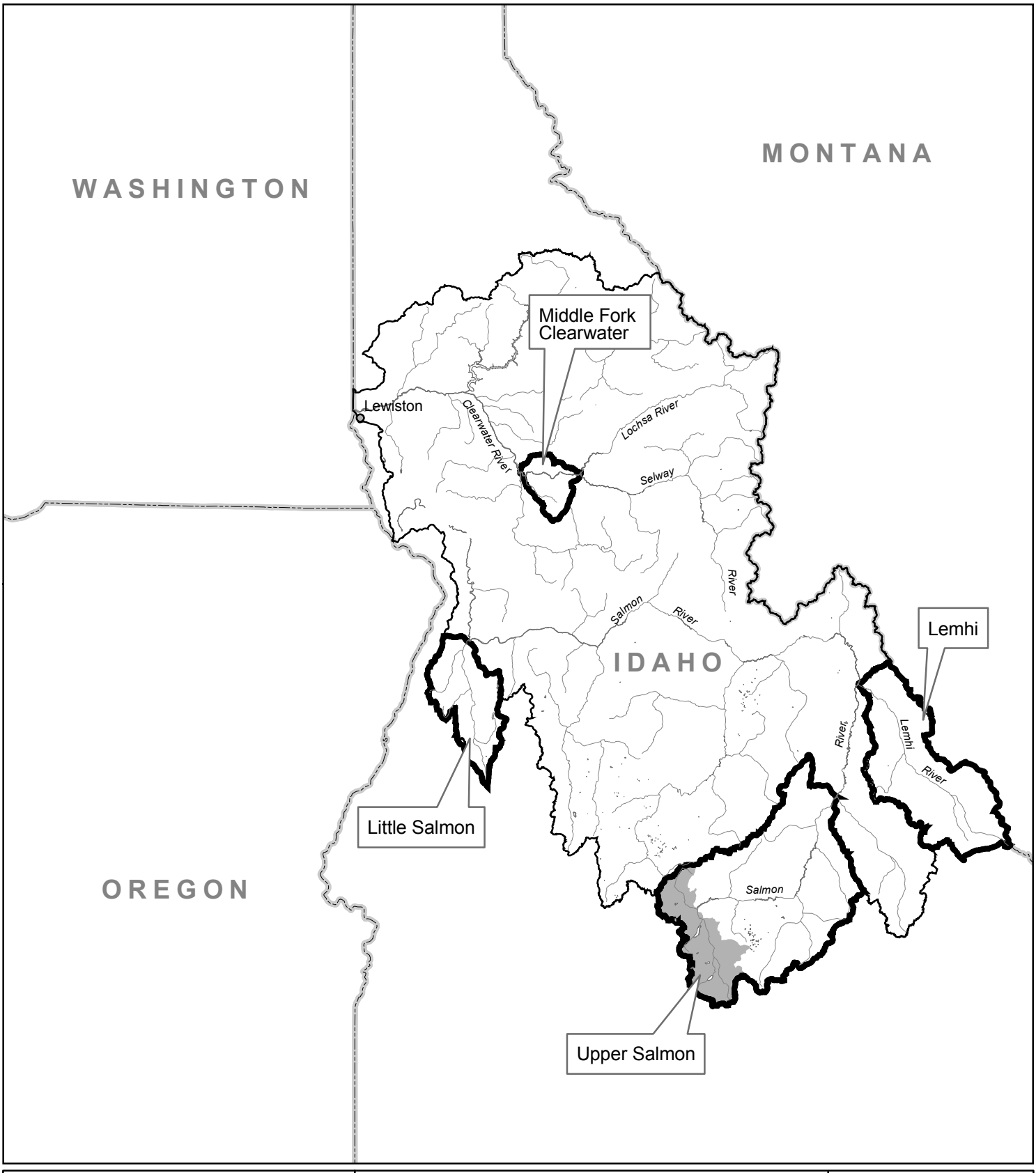
Spring/Summer Chinook ESU
Subbasin Boundary
Mountain Snake Province
State Boundary
Stream
Town

FIGURE 1.1-4
Snake River Basin
Spring/Summer Chinook Salmon ESU

0 10 20 40 Miles

Source: USBR, 2001;
IDWR, ESRI, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure1.1-4.mxd

Back of Figure 1.1-4. Snake River Basin Spring/Summer Salmon ESU.



Sockeye Salmon ESU
Subbasin Boundary
Mountain Snake Province
State Boundary
Stream
Town selection

FIGURE 1.1-5
Snake River Basin Sockeye Salmon ESU

0 10 20 40 Miles

Source: USBR, 2001;
IDWR, ESRI, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure1.1-5.mxd

Back of Figure 1.1-5. Snake River Basin Sockeye Salmon ESU

- Upper Salmon River Subbasin Watershed Project Technical Advisory Committee (includes Lemhi subbasin) on January 23, 2002.
- Clearwater Focus Watershed Policy Advisory Committee on January 30, 2002.
- Little Salmon River Subbasin, agencies and local entities (there is no organized subbasin group) on February, 12, 2002.

In addition to meeting with these local groups, Reclamation has initiated meetings with NMFS, USFWS, and other agencies to describe the programmatic nature of the EA and discuss issues regarding ESA consultation. Representatives from these agencies met on February 20, 2002, and April 18, 2002, to develop standard protocols and best management practices for construction related to flow, screens and barrier projects. Additional information concerning formal and informal consultation with NMFS and USFWS is presented in Section 4.1.1 of this report.

Primary elements of the public involvement plan include the scoping process and public review of the Draft EA. For each subbasin, elements of the public involvement and responses received during scoping are summarized in Chapter 4.

1.4.2 Issues

The following items represent both site-specific and cumulative resource issues identified in Reclamation's scoping document for this Programmatic EA. These issues were identified as a result of meetings and communications with stakeholders and analysis by Reclamation and staff.

- Air Quality and Climate
  - Short-term effects from construction projects.
- Noise
  - Short-term effects from construction projects.
- Hydrology and Water Quality
  - Need for increased surface water flows for salmon.
  - Need for reduced water temperature in streams.
  - Short-term water quality effects during construction projects.
- Vegetation and Wetlands
  - Short-term effects from disturbance during construction.
- Fish
  - Need to reduce blockages of upstream and downstream migrants.
  - Need to reduce mortality from lack of fish screens, inadequate fish screens, and irrigation intake structures.
  - Need for increased fish access to spawning and rearing habitat, and production from improved flows.
  - Short-term effects during construction projects.

- Wildlife
  - Need to enhance habitat for aquatic and semi-aquatic species with increased streamflow.
  - Short-term effects on local wildlife during construction.
- Threatened and Endangered Species
  - Need to enhance habitat for listed anadromous salmonids and bull trout.
  - Need to increase fish access and production with improved flows.
  - Need to decrease mortality with improved screens and irrigation intake structures.
  - Short-term effects on aquatic species related to changes in water quality during construction projects.
  - Potential mortality of ESA-listed fish during construction.
- Recreation
  - Long-term increases in salmon production may lead to increased fishing opportunities.
  - Short-term restrictions on recreation use in immediate vicinity of construction projects.
- Aesthetics
  - Short-term noise during construction.
  - Potential visual impact of new structures in or adjacent to river.
- Cultural Resources
  - Potential for disturbing cultural resource sites during construction.
  - Indian Trust Assets.
  - Long-term benefit to anadromous salmon with cultural significance for Native American Tribes.
  - Sacred Sites and Traditional Cultural Properties – Potential disturbance of known sites
- Socioeconomics
  - Potential short term economic benefits from construction.
  - Potential benefit to local landowner of improved water collection facility.
  - Potential long term benefit of operational stability owing to conformance with ESA requirements.
- Land Use
  - Need for consistency with local, State, and Federal comprehensive plans.
- Environmental Justice
  - Review potential for disproportionate effects.

1.5 Related Actions and Activities

A number of watershed groups, agencies, Native American Tribes, and citizen groups are actively pursuing salmon restoration efforts in the four subbasins. The level of activity and organization vary by subbasin. The following narrative summarizes actions and activities related to Reclamation's implementation of Action 149 for each of the four subbasins addressed in this EA.

In the Lemhi Subbasin, current efforts to improve instream conditions and remove barriers to salmon migration have been initiated and coordinated by IDFG, Upper Salmon Basin Watershed Project (USBWP, which includes the Lemhi, Upper Salmon, and Pahsimeroi Subbasins), the Lemhi Soil and Water Conservation District, and the Shoshone-Bannock Tribes of the Fort Hall Reservation. IDFG primarily works on screen and headgate projects and contributes to monitoring efforts and reconnecting tributaries to the mainstem Lemhi. The USBWP works through a committee and coordinates projects that range from push-up dam removal to riparian fencing, among other fish enhancements. Other partners in the subbasin with research, monitoring, and evaluation responsibilities include Idaho Department of Water Resources, U.S. Geological Survey (USGS), the Bureau of Land Management (BLM), the U.S. Forest Service (USFS), and the Idaho Department of Environmental Quality (IDEQ).

For the Upper Salmon Subbasin, many of the same entities mentioned in reference to the Lemhi Subbasin above are active. IDFG, as in the Lemhi Subbasin, is responsible for screening issues and works on monitoring efforts and reconnecting tributaries. Funding sources are similar to those described in the Lemhi Subbasin. The Custer County Soil and Water District (rather than the Lemhi) is active in the Upper Salmon restoration efforts. A comprehensive State Water Plan was recently completed for the Little Salmon River Subbasin (IDWR 2002).

The Clearwater Subbasin was selected by former Governor Phil Batt as a candidate for designation as a Focus Watershed Program under the NPPC's Columbia River Basin Fish and Wildlife Plan in 1996. The NPPC accepted the selection and recommended that BPA fund the program. The Clearwater River Focus Program is coordinated between the Idaho Soil Conservation Commission and the Nez Perce Tribe through the Tribal Fisheries-Watershed Division. Efforts concentrate on fish and wildlife habitat protection, enhancement, and restoration within the Clearwater Subbasin. No programs have been proposed to date in the Middle fork Clearwater Subbasin.

The Clearwater Policy Advisory Committee provides management and technical assistance from agencies and organizations to establish restoration priorities in the subbasin. Members of the advisory committee include IDEQ, Potlatch Cooperation, Idaho Association of Counties, IDFG, Idaho Association of Soil Conservation Districts, Nez Perce Tribe, USFWS, NMFS, USFS, and Idaho Department of Lands.

There is no organized watershed group in the Little Salmon Subbasin. The Idaho County and Adams County Soil and Water Conservation districts are likely to be active participants in Reclamation efforts to implement Action 149 in the Little Salmon Subbasin. The Little Salmon Watershed Alliance, Inc., a non-profit corporation, was organized in 1997 and is comprised of residents of the subbasin. The Alliance was instrumental in having the Idaho Water Board evaluate the Little Salmon as a State Recreation River. This group may provide valuable input to Reclamation's process.

The Bonneville Power Administration (BPA) is in the process of developing a comprehensive policy to guide the implementation and funding of its fish and wildlife mitigation and recovery efforts related to the FCRPS. BPA has prepared a Draft Environmental Impact Statement (DOE/EIS-0312, June 2001) to examine the possible environmental consequences of its decision to implement and fund a Policy Direction for fish and wildlife mitigation and recovery efforts in the Pacific Northwest.

BPA has also adopted a set of prescriptions that apply to BPA-funded watershed management projects. BPA has adopted this set of prescriptions to standardize the planning and implementation of individual watershed management programs and projects. This decision is based on consideration of potential environmental impacts evaluated in BPA's Watershed Management Program Final EIS (DOE/EIS-0265) published July 8, 1997. Based on past experience, BPA expects that future fish mitigation and watershed conservation and rehabilitation actions with potential environmental effects would include in-channel modifications and fish habitat improvement structures, riparian restoration, and other vegetation treatment techniques, agricultural management techniques for crop irritation, animal facilitates, and grazing; road management techniques; mining reclamation; and similar watershed conservation actions.

Chapter 2

Alternatives Considered

This section provides a description of the No Action and Proposed Action alternatives. The following sections provide a general summary of the problems and solutions associated with barrier, screen, and flow effects to listed anadromous salmonids.

2.1 No Action Alternative

Under NEPA, the No Action Alternative is the most likely future condition without the Proposed Action. Although the Proposed Action is mandated under the ESA through the 2000 FCRPS BiOp, the No Action Alternative is identified for comparison purposes as directed by NEPA.

The No Action Alternative is considered to be represented by Reclamation's level of involvement in the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins prior to issuance of the 2000 FCRPS BiOp. Since 1999 and before the FCRPS BiOp was issued, Reclamation has provided technical assistance for certain irrigation-related projects to help protect and restore ESA-listed anadromous fish. Reclamation provided technical assistance in both the Upper Salmon and Lemhi Subbasins, but has not been involved with any projects in the Little Salmon or Middle Fork Clearwater Subbasins at that time.

Involvement in the Upper Salmon and Lemhi Subbasins has been part of Reclamation's Federal obligation to conserve listed species under the ESA. The scope of the Reclamation involvement for this particular purpose can fluctuate at the discretion of Congress from one year to the next. Under the No Action Alternative, Reclamation would continue to provide technical assistance only in the Lemhi and Upper Salmon Subbasins at or above the same scope of involvement that occurred before the FCRPS BiOp was issued, depending on funding.

2.2 Proposed Action

The Proposed Action is the implementation of Reclamation's responsibilities under Action 149 of the 2000 FCRPS BiOp in the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins. Reclamation is specifically required to implement Action 149 to conserve listed species under the ESA.

Reclamation must secure construction authority from Congress before it can fund any construction activities. Reclamation is expecting that construction in FY 2002 and FY 2003 will be done entirely

by local interests using established processes and infrastructure. Reclamation's programs in FY 2002 and FY 2003 will be for coordination activities, technical assistance, and assistance with environmental compliance permit and ESA consultation activities to be completed on behalf of any other Federal agency that provides construction funding.

Annual work plans would be developed jointly between Reclamation and the established planning groups in each subbasin. Priorities would be determined in the work groups using the NPPC Subbasin Plans and following the guidance of the Federal Habitat Team 5-Year Plans and Research, Monitoring, and Evaluation (RM&E) plans. The annual work plans would reflect the realities of funding limitations, biological priorities, landowner willingness to participate, NEPA, ESA, permitting processes, and other issues.

The number of projects that Reclamation could accomplish is likely proportional to the number of problems in each of the subbasin. For instance there are approximately 209 dams and diversions in the Lemhi Subbasin and 165 dams and diversions in the Upper Salmon Subbasin, respectively (NPPC 2001). While there is less data available for the Clearwater and Little Salmon Subbasins there is substantially less irrigated agriculture in these basins and most diversions are likely pump systems.

Reclamation will complete its involvement related to the FCRPS BiOp in each subbasin within 10 years and cannot maintain further commitments related to the FCRPS BiOp after this point. Consequently, project operation and maintenance (O&M) must be the responsibility of the landowner, and long-term O&M oversight, if appropriate, would become the responsibility of a third party (such as a watermaster or State agency).

The Proposed Action would improve flows, eliminate instream passage barriers, and correct fish screen deficiencies on private lands that are related to irrigation. Activities related to flow improvements may include water acquisition or leasing. Activities related to instream barriers may include the consolidation of irrigation diversions to reduce the number of instream barriers or the removal of individual gravel push-up dams and replacement with diversion structures that provide for fish passage. Activities related to fish screens may include screening unscreened irrigation diversions or replacing obsolete screens with screens that meet NMFS criteria.

The following is a list of potential measures that Reclamation expects to implement or contribute to implementation. Depending on the subbasin-specific conditions, not all measures apply to all subbasins. Discretion will be used in determining which measures are appropriate in meeting the particular passage, flow, and screen deficiencies for each situation.

GOALS	POTENTIAL MEASURES
Correct passage barriers	• Consolidate diversions. • Remove push-up dams and replace with pump systems, infiltration galleries, or other permanent type structures with viable fish passage facilities.

Correct streamflow deficiencies

- Acquire water for flow during critical migration periods.
- Provide alternative irrigation diversion systems (minimize instream diversion/returns).
- Re-engineer existing diversion/wasteway configurations that permit excessive water withdrawals from the streams.
- Replace headgates

Correct screen deficiencies

- Utilize rotary drum screens that meet NMFS criteria.
- Utilize flat screen or other screen technology.
- Utilize groundwater well screens buried in river gravels/automated valve outlets.
- Utilize screen methods to protect fish from wasteway attraction flows.

Because the specific choice of locations and the number of willing participants is not known, nor can the choice of specific measures be determined at this time, the EA is prepared at a programmatic level.

When specific locations for these activities have been determined, Reclamation would fulfill other compliance requirements that are not covered by this EA. Examples of these additional requirements include:

- Cultural resource surveys to determine the presence of resources eligible for listing on the National Register of Historic Places (NRHP) in locations that may be affected by construction or operation of the proposed modifications.
- Consultation with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) if NRHP-eligible resources are found.
- Surveys for listed or proposed threatened or endangered species.
- Any necessary permits under Section 404 of the Clean Water Act.
- State of Idaho permits for instream work.
- ESA consultation with NMFS and USFWS

2.3 General Implementation Description

Reclamation will be working to correct barrier, screen, and flow deficiencies related to irrigation withdrawals within the four identified Mountain Snake Province Subbasins. The number of structures (dams, diversions, intake structures, canals) varies among the four subbasins. A complete inventory of all structures in each subbasin is not currently available. Some data are available for the Lemhi and Upper Salmon subbasins, which have larger areas of irrigated agriculture than the Middle

Fork Clearwater or Little Salmon subbasins. The Lemhi Subbasin has more than 200 diversions or dams, and the Upper Salmon River subbasin has more than 150 diversions or dams (NPPC 2001) (see Section 3.3, Hydrology and Water Quality). The large number of instream structures illustrates the potential for substantial enhancement to salmonid habitat and survival rates through improved efficiency in water withdrawals, removal of instream barriers, and improved fish screens. Working cooperatively with private landowners, Reclamation proposes to implement incremental changes within these watersheds. Changes would involve redesign and alteration of irrigation structures to meet NMFS standards for screens and fish passage.

Figure 2.3-1 is illustrative of a typical irrigation system associated with a salmon-bearing stream, and identifies some of the obstacles to fish survival that can occur due to such a system. This example depicts a stretch of river with two diversion canals. Canal 1 represents the simplest form of irrigation diversion - an open canal or ditch without any water control structures or screens. Canal 2 represents a more complex system, with an existing intake system and a fish screen.

Point A on Figure 2.3-1 identifies a point of diversion into Canal 1. A diversion weir or structure at B-1 raises the river elevation to allow gravity flow into the canal. Among the problems for fish associated with such a structure are:

- Water intake is unregulated and restricted only by the size of the canal, rather than the irrigation need, which often leads to excess water withdrawal;
- There are no screens to restrict out-migrating juvenile salmonids from entering the canal; and
- The outfall (Point H-1) can attract adults migrating upstream that may enter the canal rather than continuing upstream. This outfall may be an attractant because flow from the canal may be of greater velocity and colder than water in the mainstem of the river.

The second diversion system is more sophisticated, but also presents a number of hazards for salmonids. A diversion structure at Point B-2 diverts water, and a control structure (C-1) limits the amount of water entering the canal. Typically, this is a manually controlled headgate that meters water into the canal as the gate is raised or lowered. A bifurcation structure is located at Point C-2, where excess water is returned to the river; the excess water returns along the wasteway (Point E) and spills into the river at Point H-2. The flow at this point could be another source of attraction for upstream-migrating salmon. The stretch of the mainstem river identified by Point G could be dewatered from water withdrawal at the two upstream diversion structures. This would make the river impassable to migrating fish. Farther along the canal, a fish screen is located at Point D; the screen is intended to divert all incoming smolts along the face of the screen and into a return pipe (Point F) that carries them back to the mainstem of the river. Efficiency of the screen depends on whether appropriate design criteria are met. The water continues along the canal, is used to irrigate the fields, and then is returned to the river by the same canal. Once again, the entry point into the river (Point H-3) can attract adults.

Reclamation is tasked by Action 149 to address issues related to barriers to passage, screening, and low flows caused by diversion systems similar to those described. The actions that address each of these three issue elements are detailed more specifically in the following sections.

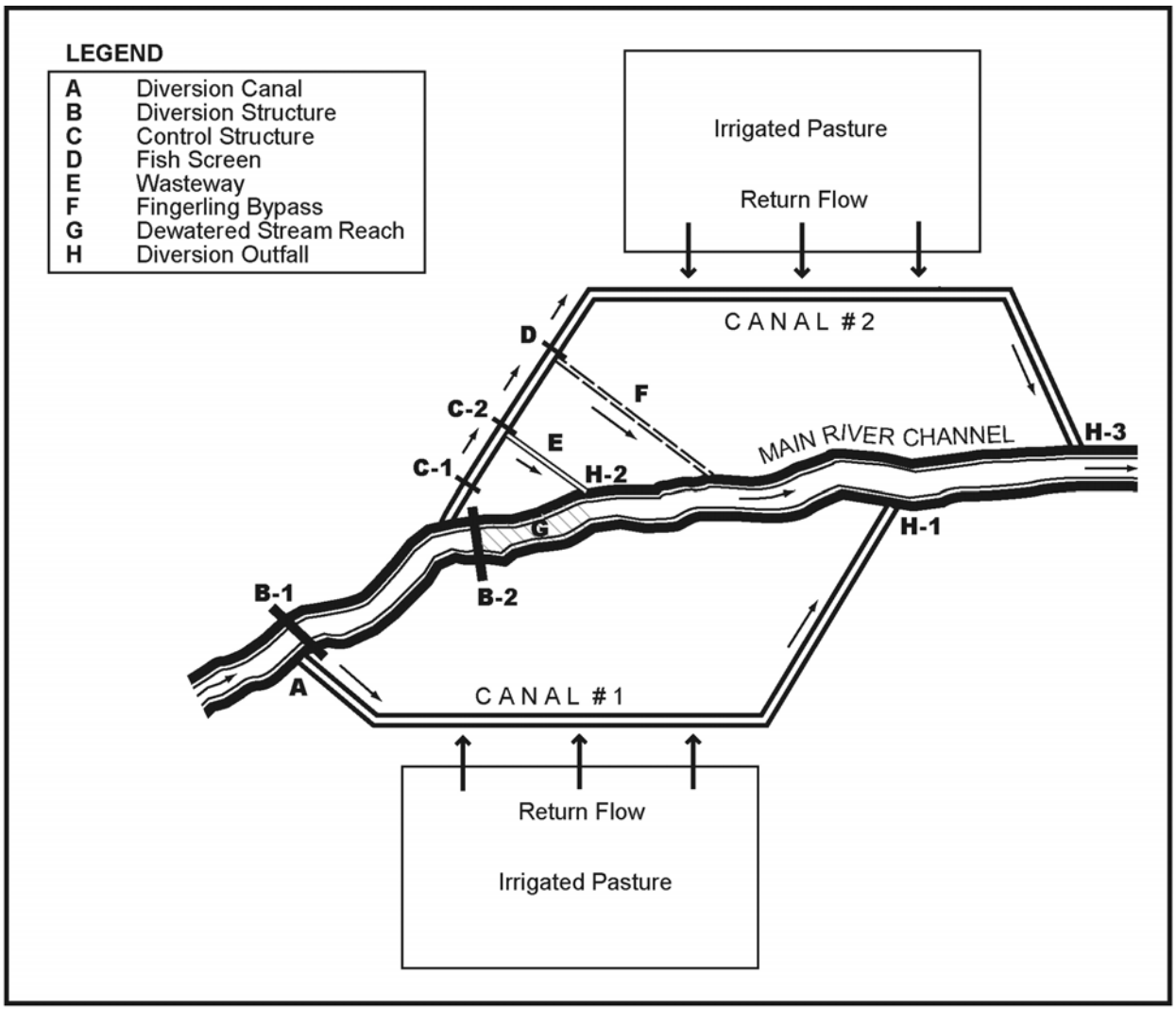


Figure 2.3-1. Typical fish hazards associated with irrigation water withdraw sy stems.

The intent of this graphic is to identify some of the many problems due to agricultural water withdrawals that salmonids encounter at many stages in their life cycle as they migrate downstream as smolts and back upstream as adults. These situations and various more are manifest in a variety of configurations throughout the subbasins. Any one irrigation facility can be associated with a combination of flow, barrier or screen deficiencies.

Table 1.4-1 summarizes the basic problems associated with each of these obstacles to the maintenance of healthy salmonid populations, the consequences of these problems, and typical solutions to be applied by Reclamation, and cooperating agencies and landowners. The solution to any one problem potentially can address any number or combination of flow, screen, or barrier issues. For example, replacement of a gravel push-up dam and uncontrolled canal inflow with a permanent, engineered diversion structure and controllable headgate may correct both a barrier and a streamflow problem. However, Reclamation must differentiate among flow, screen and barrier components of each implemented project for purposes of tracking and reporting accomplishments to meet terms of the FCRPS. These solutions constitute the specific on-the-ground actions that Reclamation will be making as a part of their response to Action 149.

2.3.1 Barriers to Fish Passage

Existing barriers to fish passage fall into two basic categories:

- Diversion structures without fish ladders that span the entire stream width and prevent upstream migration; and
- Diversion structures that do not span the entire stream width but severely alter streamflow patterns and prevent migration.

2.3.1.1 Diversion Weirs or Dams

Problem: Dams and weirs may prevent upstream fish passage because of excessive height, lack of fish ladders, or lack of an adequate downstream channel permitting adult fish passage to and beyond the diversion structure. These structures can remove 100 percent of the water from the river, dewatering a stretch of river between the structure and the downstream return channel. Often, this is due to a poor or inefficient irrigation diversion design that diverts excessive flows.

Photo 2.3-1. L6 Diversion structure on the Lemhi River.

Solution: Diversion structures can be modified to provide fish passage using NMFS-approved designs for both upstream and downstream migrants. If modification of the existing structure is not possible then replacement with a new structure with fish passage design may be necessary. Another alternative could be the use of infiltration galleries where irrigation water is collected through a perforated pipe buried in the streambed and transferred to the irrigation system by gravity or pumps. Solutions for diversion structures are often related to other system improvements such as headgate modification, replacement, or consolidation. An example is the recent L-6 diversion enhancement project on the Lemhi River, which was designed by Reclamation (Photo 2.3-1). The new diversion structure includes an adjustable weir and fish ladder that allows fish passage in all but the lowest flows (Reclamation 2000).

Table 2.3-1. Summary of Problems and Potential Solutions to Fish Passage in the Snake River ESU Subbasins.

	Barriers	Screened Diversions	Unscreened Diversions	Flows
Problems	• Water control and diversion structures within the mainstem of the river that create barriers to fish passage.	• Some existing screens do not meet current design criteria.	• Not all water diversion canals or intake pumps are screened.	• Excessive water withdrawals in streambed during critical times for upstream or downstream movement of fish can dewater streams or otherw ise prevent successful in- or out-migration. • Canals and irrigation structures that alter water flow patterns. • Return flows from irrigation canals that act as false attractants to migrating adults.
Consequences	• Upstream fish passage is blocked due to exces s height of barrier or complete water withdrawal. • Manipulation of gravels and rocks within the streambed has a negative effect on stream geomorphology which can alter riparian conditions and lead to deterioration of water temperature and water quality. • Failure of push-up dams can alter geomorphology of streams and fill the dow nstream low flow channel. • Not all associated structures, such as fish ladders, work as designed.	• Screens may not operate efficiently, failing to return all juveniles back to the mainstream of the river. • Screen bypass structures do not function as intended, leaving juveniles stranded. • Screens require excessive maintenance.	• Juveniles enter or are drawn into diversions, resulting in mortality during subsequent irrigation operations. • Juveniles can be stranded during flood irrigation operations, or sucked into pumps for spray irrigation operations.	• Adults are unable to move upstream to suitable spawning territory. • Juveniles are unable to move downstream to continue out-migration pattern. • Certain stream areas with suitable habitat for spawning go unused as spawning adult fish are unable to reach tributaries or stream reaches disconnected by dewatered areas. • Canal outfalls can serve as an attractive nuisance for upstream migrants. • Excessive w ithdrawal can dew ater streams.
Solutions	• Replace temporary pushup dams with permanent structures. • Provide upstream and dow nstream fish passage. • Where appropriate, replace barriers and intake structures with advanced alternatives, such as infiltration galleries buried in gravel, or pumps.	• Adhere to recognized design criteria for all screens, including water velocity, stream angle, structure and screen sizing, cleaning mechanisms, and other elements. • Ensure that adequate maintenance and operating mechanisms are in place for all screens. • Place appropriately designed screens in irrigation canals	• Place appropriately designed screens in irrigation canals. • Adhere to recognized design criteria for all screens, including w ater velocity, stream angle, structure and screen sizing, cleaning mechanisms, and other elements. • Ensure that adequate maintenance and operating mechanisms are in place for all screens	• Enhance efficiency of diversion structures, allow ing more water to remain in mainstem of river. • Efficiency measures, such as diversion consolidation, automated headgates, and control structures, allow more w ater to remain in the river to enhance fish passage. • Purchase permanent w ater right and transfer to a third party. • Design canal outfalls to prevent diversion of adults migrating upstream into canals.

NOTES **1.** Under Action 149, Reclamation is not responsible for improvements outside of the stream channel.
2. Under Action 149, Reclamation is not responsible for transportation-related improvements, such as culvert replacement

The following is a list of options that could be implemented by Reclamation to solve barrier problems. These are subject to the Best Management Practices (BMPs) (Appendix B) and NMFS review.

- Replace ineffective bank-to-bank gravel push-up dam with an engineered, permanent, bank-to-bank concrete diversion structure that accommodates fish passage
- Replace ineffective bank-to-bank gravel push-up dam with an engineered, permanent, bank-to-bank diversion structure that accommodates fish passage using natural materials
- Remove ineffective bank-to-bank permanent concrete diversion structure and replace with an engineered, permanent, bank-to-bank, concrete diversion structure that accommodates fish passage
- Remove ineffective bank-to-bank permanent non-concrete diversion structure and replace with an engineered, permanent, bank-to-bank diversion structure that accommodates fish passage using natural materials
- Replace ineffective bank-to-bank gravel push-up dam with an engineered, permanent concrete diversion structure that partially crosses the width of the stream and accommodates fish passage
- Replace ineffective bank-to-bank gravel push-up dam with an engineered, permanent diversion structure that partially crosses the width of the stream and accommodates fish passage using natural materials
- Remove ineffective bank-to-bank permanent concrete diversion structure and replace with an engineered, permanent, concrete diversion structure that partially crosses the width of the stream and accommodates fish passage
- Remove ineffective bank-to-bank permanent non-concrete diversion structure and replace with an engineered, permanent diversion structure that partially crosses the width of the stream and accommodates fish passage using natural materials
- Replace ineffective gravel push-up dam that partially crosses the width of the stream with an engineered, permanent concrete diversion structure that partially crosses the width of the stream and accommodates fish passage
- Replace ineffective gravel push-up dam that partially crosses the width of the stream with an engineered, permanent diversion structure that partially crosses the width of the stream and accommodates fish passage using natural materials

- Remove ineffective permanent concrete diversion structure that partially crosses the width of the stream and replace with an engineered, permanent, concrete diversion structure that partially crosses the width of the stream and accommodates fish passage

- Remove ineffective permanent non-concrete diversion structure that partially crosses the width of the stream and replace with an engineered, permanent diversion structure that partially crosses the width of the stream and accommodates fish passage using natural materials

- Barrier removal, headgate reconstruction, screen accommodation associated with surface water diversion consolidation.

General Impacts: The two primary concerns regarding replacement or modification of instream structures is the disturbance to fish habitat and the potential for harming Federally listed salmonids that occur in the subbasins. Construction must be done at the time of the year when flows are low and with the least chance that listed species may be present. Construction must use accepted practices to minimize the potential for erosion and sedimentation. Other potential impacts include the disturbance of riparian vegetation during the construction phase.

2.3.1.2 Push-Up Dams

Photo 2.3-2. Push-up dam on Lemhi River.

Problem: Push-up dams (Photo 2.3-2) are created by using heavy equipment (such as a bulldozer or excavator) to move existing or place new gravel and rock, trees, stumps, cars, and refrigerators within the river to create a diversion structure. In some instances, the dam is repaired or replaced as needed if spring runoff washes it out. In others, it is removed annually, after one irrigation season, then replaced at the beginning of the next irrigation season. Although inefficient and harmful to water quality and fish, this traditional practice is a relatively inexpensive method of water diversion. These structures often prevent fish movement, lack passage structures, and contribute to channel infill. Many years of wash-out and rebuilding of these dams can result in a build-up of gravels downstream of the dam. This gravel build-up can alter the river geomorphology, obliterate the low flow channel, and severely constrain fish passage. In addition, water may flow entirely within the porous gravels accumulated downstream of the dam, leaving no surface flow for juvenile or adult fish passage.

Solution: Push-up dams can be replaced with diversion structures that provide adult and juvenile fish passage and efficient water withdrawal. This can include permanent structures, infiltration galleries, or pumps. If a permanent structure is used, adequate means of adult fish passage must be maintained. This can be a dam or weir with a properly designed fish ladder, a weir or dam on only one side of a bifurcated channel, or a structure such as a vortex weir that combines the water retaining capacity to build enough head to divert water into a canal with adequate water bypass to create a fish passage channel. Infiltration galleries work by collecting water through a perforated

pipe buried beneath the streambed. A pump or gravity system moves water from the pipe to a conveyance system. This relatively new technology provides several benefits: because there is no diversion structure, there is no blockage of fish movement, water withdrawal is efficient, and the system involves less maintenance than other options.

A variety of fish ladder types are available. Regardless of type, the two most important design factors are fish ladder pool size and dissipation of downstream energy (Reclamation 1997). A minimum recommended pool size for fish ladders is normally 6 feet wide by 10 feet long by 6 feet deep. The pool should allow at least 0.2 cubic feet of water per pound of fish. Energy dissipation requirements often control design. Average maximum velocities between pools should not exceed 8 feet per second.

General Impacts: The general impacts for replacing pushup dams are the same as those described under diversion weirs or dams (2.3.1.1). The difference is that mounds of gravel must be removed from the streambed that were used as a diversion structure rather than a concrete or wood structure. The same general principles apply for reducing effects to fish and fish habitat but different mechanical methods would be employed to remove and/or redistribute the mounded gravel.

2.3.1.3 Irrigation Ditches as Attractive Nuisance

Problem: Return flow entering the mainstream of a smaller river such as the Lemhi or other tributaries to the Salmon River may actually be greater than the flow within the stream channel. The return flow may also be cooler due to shading or volume effects. Returning adult fish may be attracted to this return flow, mistaking the return flow channel for the mainstem river. Fish waste valuable energy attempting to navigate through canals, may become trapped, and can die.

Photo 2.3-3. Attractive nuisance flow from irrigation return.

Solution: Attractive nuisance flows (Photo 2.3-3) are often associated with other problems, such as improperly designed diversions. More accurately metering of water intake would reduce the need for return flows that could create a false attraction. In addition, necessary return flow discharges can be designed to minimize the attraction of these flows to salmon. In some cases it may be necessary to place some type of screening at the return point to eliminate access for upstream migrants.

General Impacts: Because the solutions to attractive nuisance flows are implemented outside the stream channel there is less of a concern regarding disturbance to fish habitat than with instream construction practices. Still, all construction should use accepted BMPs to minimize any sediment that enters the stream from construction or ground-disturbing activity. Proper design is a key component to ensure adequate delivery of irrigation flows while minimizing the potential for an attractive nuisance at the return point.

2.3.2 Fish Screens

Issues related to fish screens or pumps typically fall into 2 categories: (1) diversion canals or pumps that are unscreened; and (2) existing fish screens that do not meet current design criteria for fish screens, as established by NMFS (NMFS 1995).

2.3.2.1 Unscreened Diversion Ditches

Problem: Older diversion canals were typically designed simply to convey water from the river to the irrigation site. These designs did not accommodate juvenile fish migrating downstream. Juvenile fish are particularly vulnerable and may not be able to escape the velocity of the intake flow into the irrigation canal. Juvenile mortality can be high without a screening device to gather and return fish to the river. Juvenile mortality can occur from intake into irrigation pumps, flood irrigation onto fields, increased predation in a vulnerable situation, and poor water quality within the canal, among other causes.

Photo 2.3-4. New fish screen in Lemhi Subbasin.

Solution: Fish screens should be designed according to NMFS criteria and return juveniles safely back to the river (Photo 2.3-4).

General Impacts: There would be minor impacts associated with installation of NMFS screens on irrigation canals because of the disturbed nature of these sites and the distance from natural water bodies. These sites are generally previously disturbed sites in an agricultural setting. In limited cases it may be necessary to use fish screens at the point of diversion. These would require extended coordination with NMFS and IDFG. Potential impacts would be similar to those described for diversion weirs and dams (2.3.1.1) and would require similar protection measures regarding the timing of construction and instream BMPs.

Photo 2.3-5. Nonconforming wiper-style fish screen.

2.3.2.2 Non-Conforming Fish Screens

Problem: Even where fish screens exist, they may not conform to new screen criteria as devised by NMFS (NMFS 1995) (Photo 2.3-5). Old screens may exhibit a variety of problems, including excessive screen mesh size, poor screen location, cleaning and maintenance issues, high approach velocities, and problems with bypass pipe design, all of which contribute to juvenile mortality. If proper design criteria are not met, screens may not function as intended, resulting in juvenile mortality, excessive maintenance requirements, and other drawbacks. In general, newer screen design criteria result in screens that require significantly less maintenance while

minimizing juvenile mortality by sweeping young salmon efficiently back to the river through bypass features.

Solution: Modern screen criteria take into account such factors as migrational stage of fish present, screen location, both sweeping and approach water velocity, design features to ensure that screens are self-cleaning and low-maintenance, and adequate bypass design. Properly designed screens ensure that outmigrating juvenile fry and fingerlings are gathered up by the natural flow sweeping the face of the screen in a non-harmful manner, guided into a bypass pipe of sufficient size, and returned to the mainstem of the river in a location with sufficient flow velocities to minimize predation and carry them safely into the downstream current. The return pipe should meet all design criteria, including minimum and maximum flow velocities.

Options that may be implemented by Reclamation according to the BMPs and NMFS approval include:

- Standard screened surface water diversion and return
- Screened diversion intake buried in stream channel
- Screening pump diversions from stream channel

General Impacts: The vast majority of screen replacement would be implemented in irrigation canals away from the stream channel. These projects would use standard construction BMPs and would have a low potential for adverse effects to terrestrial or aquatic resources. NMFS and the Idaho Department of Fish and Game (IDFG) have developed criteria for fish screen design that will be implemented for all fish screens designed and constructed under the implementation of Action 149.

2.3.3 Low Flow Issues

The Mountain Snake Province Subbasins are located in an arid climate and fed predominantly through the melting of the snowpack in the surrounding mountain ranges. As the snowpack diminishes in late summer, low flow in the rivers can be exacerbated by irrigation withdrawals. For example, according to the Lemhi Model Watershed Plan, "Water quantity and irrigation are almost inseparable in the Lemhi River watershed. Much of the instream water flow is used at least once, and in some cases, as many as three times for irrigation purposes" (ISCC 1995).

Problem: Inadequate flow in the river results in conditions unfavorable to either upstream migration of spawning adults, or out-migration of juveniles. Intensive diversion of water for agriculture can disconnect tributaries from the mainstem river. In the Lemhi, it is estimated that fish production has been lost from at least 10 tributary creeks that previously supported anadromous fish populations (ISCC 1995), eliminating significant stretches of spawning habitat due to dewatering.

Even main river channels can be dewatered for short stretches, downstream from major diversions before any water is returned to the main channel. For example, in the past as much as a 3-mile long stretch of the lower Lemhi was vulnerable to dewatering for part of the summer during low flow years (ISCC 1995). It is not necessary for the river to be entirely dewatered for the channel to become impassable. Depending on river bottom conditions, flow can occur predominantly through river gravels during times of extremely low flow, effectively preventing fish passage.

In some river systems, much of the water flowing through tributaries is lost directly to alluvial gravels, where it sinks into underground flows. This is estimated to be the case in the Lemhi Subbasin. Of the estimated annual water yield of 1.055 million acre-feet in the subbasin, an estimated 0.875 million acre feet (MAF) are lost to evaporation, plant transpiration, and underground flows (ISCC 1995) by the time it reaches the town of Salmon at the confluence with the Salmon River.

Solution: The solution to low flow problems is complex. It is intertwined with Idaho water rights law, availability of water, the development of new technologies for water use, and Reclamation's parameters for fulfilling Action 149. One potential solution is to increase the efficiency of water use. The previously cited reconfiguration of the L-6 diversion on the Lemhi is an example of an improvement to an irrigation diversion that was intended to allow more water to remain in the river without compromising an irrigator's water right. Efficiencies to water use can come from improvements such as diversion consolidation, installation of better diversion control structures, or installation of manual and/or automated headgates. As improvements to other diversions occur along the river, it is reasonable to expect cumulative improvements to flow. Reclamation will investigate the potential for purchase of water rights with willing land owners but must operate within the constraints of Idaho water law. In addition, Reclamation must complete its obligations in each subbasin within 10 years. This would require the permanent transfer of purchased water rights to a third party that could ensure that water remains in-stream.

General Impacts: Solutions that include modifying, consolidating, or replacing headgates would require some construction adjacent to streams. While the problems associated with this stream-side construction are not as serious as construction within the stream channel, precautions are needed to minimize sediment entering the stream or the disturbance of fish habitat. Implementation of BMPs would sufficiently minimize any risk to listed salmonids. Construction also could affect riparian vegetation and there may be a need for appropriate mitigation following construction disturbance. Solutions that require the transfer of water rights would not require any construction and would have no adverse effects. These BMPs are interim guidelines that will be finalized following public comment on this EA.

Chapter 3

Affected Environment and Environmental Consequences

The following sections describe the existing character of the four subbasins by resource topic, followed by an assessment of the environmental consequences of the No Action and the Proposed Action alternatives. Reclamation has worked with NMFS and USFWS to develop a draft set of Best Management Practices (BMPs) for implementation of site-specific projects (Appendix B). These BMPs prescribe a wide range of measures from pre-construction surveys through post-construction monitoring to ensure the protection of natural and cultural resources and to minimize effects to the environment. The BMPs include specifications for when work is allowed within the stream channel of each subbasin to minimize the effects to fish habitat and ESA-listed fish species. Such work would be completed when streamflow is at the seasonal low and when it is least likely that ESA-listed fish are present. Design of all facilities will follow NMFS and IDFG standards regarding upstream and downstream fish passage for instream structures. The construction standards include provisions for sediment control plans, monitoring of construction, and required mitigation measures for disturbed streambanks. The BMPs include provisions for reporting on the progress of the project and its adherence to the BMPs to NMFS.

The draft BMPs in Appendix B were compiled to meet the production schedule for this programmatic EA. However, there are other comparable fish habitat improvement efforts underway in other parts of the Pacific Northwest that involve similar BMPs. Final BMPs developed as part of the ESA consultation and coordination described in Section 4.1.1 will be consistent with similar fish habitat improvement efforts in other parts of the Pacific Northwest. The discussion of environmental consequences assumes that BMPs would be fully implemented by Reclamation.

3.1 Climate and Air Quality

The following sections discuss the general climate and air quality of the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater Subbasins.

3.1.1 Existing Conditions

Idaho's general climatic patterns are influenced by latitude, distance from oceanic moisture sources, presence of mountain orographic barriers, prevailing wind patterns, and variations in altitude. Weather data within each subbasin can vary drastically, particularly with elevation. Because Reclamation's implementation of Action 149 would occur at lower elevations in valleys where agriculture is concentrated, the following discussion concentrates on these sites.

Idaho's major moisture source is maritime air from prevailing westerly winds. The maritime influence is strongest in Northern Idaho where air arriving through the Columbia River Gorge carries

more moisture than the prevailing westerly flow at lower latitudes. Eastern Idaho's climate is more continental in character than Western and Northern Idaho, which results in a greater range between winter and summer temperatures.

Table 3.1-1 displays climate data averages for weather stations located in each of the subbasins.

Table 3.1-1. Climate Data Summary for the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater Subbasins.

Climate Parameter	Weather Station Location			
	Salmon, Lemhi Subbasin	Challis, Upper Salmon	Riggins, Little Salmon	Kooskia, Middle Fork Clear-water
Average Max. Temp (°F)	59.6	58.1	66.3	64.3
Average Min. Temp. (°F)	31.8	30.7	41.9	36.4
Average Total Precipitation (in)	10.0	7.5	16.8	24.2

Source: Western Regional Climate Center. Period of Record: Salmon (1967-2001), Challis (1931-2001), Riggins (1940-2001), Kooskia (1908-1987).

Air quality in the subbasins is excellent as there are few industrial sources of air pollution, small populations, and a general rural character. IDEQ monitors air quality for a variety of pollutants but primarily for particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide. Particulate matter is currently the most common pollutant in Idaho because particulate sources are widespread throughout the state. Common sources include windblown dust, re-entrained road dust, smoke (residential, agricultural, and forest fires), industrial emissions, and motor vehicle emissions. Each criteria pollutant has a National Ambient Air Quality Standard (NAAQS) that is set and periodically reviewed by the U.S. Environmental Protection Agency (EPA). The NAAQS represents a threshold concentration above which adverse effects on human health may occur. The NAAQS for each criteria pollutant is different, but a violation of the NAAQS for a pollutant results in the location of the violation being designated as non-attainment of the NAAQS for that pollutant.

Idaho's ambient air monitoring network includes only one regular station in the subbasins, in the town of Salmon at the north end of the Lemhi Subbasin. All the subbasins are currently in attainment of NAAQS. IDEQ staff have performed particulate monitoring in the town of Salmon since 1990 with one exceedance in 1997. IDEQ continues to monitor based on this potential for poor air quality due to woodstoves, prescribed fire, and wildfire.

3.1.2 Environmental Consequences

3.1.2.1 No Action Alternative

Improvements to anadromous fish habitat that would occur under the direction of various subbasin groups would have no effect on air quality in the four subbasins. Even the larger individual projects, such as removal of push-up dams and construction of new diversion structures, would require limited use of a backhoe or bulldozer. Use of heavy equipment for short periods would not degrade air quality and would not approach the limits of NAAQS for pollutant levels.

Cumulative Impacts

There would be no cumulative impacts to air quality from the No Action Alternative.

3.1.2.2 Proposed Action

Work on restoration efforts would proceed at a faster pace with Reclamation construction authority than under the No Action Alternative. However, the amount of construction that would occur would be limited and site-specific. These actions would not alter air quality in the subbasins and would not affect NAAQS pollutant levels.

Cumulative Impacts

There would be no cumulative impacts to air quality associated with the Proposed Action.

3.1.3 Mitigation

No adverse impacts are anticipated to air quality and no mitigation is necessary.

3.2 Noise

3.2.1 Existing Conditions

Noise is generally defined as the intensity, duration, and character of sounds from any and all sources. The character of the four subbasins is dominated by rural farms with large areas of adjacent National Forest lands. Noise levels are primarily from farm operations, low-level traffic on local highways, and human activity in the several small towns scattered in the subbasins. These noise levels vary with the season and time of day. For instance, traffic noise is greater during the summer months when tourists venture into these rural areas. Typical day/night average sound levels for agricultural crop land is around 45 dB (EPA 1974).

Noise is measured on a logarithmic scale; a 10 decibel (dB) increase in noise is typically perceived as a doubling of loudness. Noise from localized sources typically decreases by about 6 dB with each doubling of distance from source to receptor. Outdoor receptors within 1,600 feet of construction sites with an uninterrupted view of the construction site would experience noise of about 60 dB when noise on the construction site is about 90 dB. Typical construction noise levels are listed in Table 3.2-1.

Table 3.2-1. Typical Construction Equipment Noise Levels.

Equipment	Noise Level at 50 Feet
Backhoe	85 dB
Tractor	80 dB
Truck	91 dB
Chainsaw	76 dB

Source: EPA 1971.

Noise can be a concern when projects are located near sensitive receptor sites, such as schools or hospitals. Because the No Action Alternative and Proposed Action would implement restoration efforts on private agricultural lands not adjacent to schools or hospitals, sensitive receptor sites are not an issue

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

Restoration efforts implemented by a variety of subbasin groups with technical input from Reclamation in the Lemhi and Upper Salmon Subbasins would have minor short-term effects to local noise levels. Implementation of restoration projects would involve the use of heavy equipment for short periods on the larger projects, such as removal of push-up dams and construction of new diversions. The operation of new structures or equipment such as fish screens would not affect ambient noise levels.

Cumulative Impacts

There would be no cumulative noise impacts associated with the No Action Alternative.

3.2.2.2 Proposed Action Alternative

The increased implementation pace anticipated with Reclamation's construction authority would not appreciably affect noise levels in the four subbasins. While more projects would be implemented under the Proposed Action compared to the No Action Alternative, these would occur over a 10-year period. Construction activity would be limited to the use of a backhoe or bulldozer for short time periods. The limited duration of individual restoration efforts would not substantially contribute to noise levels in the subbasins. There would be no noise effects from operation of new facilities.

Cumulative Impacts

No cumulative noise impacts would result from the Proposed Action.

3.2.3 Mitigation

Because no adverse impacts are anticipated, no mitigation measures are necessary.

3.3 Hydrology and Water Quality

3.3.1 Hydrology

3.3.1.1 Existing Conditions

Lemhi Subbasin

The Lemhi and Bitteroot Mountains flank the Lemhi River and represent the northernmost extent of basin and range terrain (IDEQ 1999). In this subbasin, high mountain peaks rise rapidly from broad, gentle valleys. Elevations range from approximately 4,100 to 11,000 feet above msl. The Lemhi River is a low-gradient, spring-fed system that flows through broad valley bottoms. The area receives approximately 3.6 to 14.8 inches of precipitation annually, mainly as snow or early spring rain (Lemhi Riparian Conservation Agreement Group 1998). The Hydrologic Unit Code (HUC) drainage area, number of major (named) streams, and stream miles for the Lemhi Subbasin are listed in Table 3.3-1.

Table 3.3-1. Drainage Areas, Numbers of Named Streams, and Total Stream Miles for the Lemhi, Upper Salmon, Middle Fork Clearwater and Little Salmon Subbasins.

Watershed	Hydrologic Unit Code (HUC)	Drainage Area (square miles)	Number of Named Streams	Total Stream Miles
Lemhi	17060204	1,270	124	1,330
Upper Salmon	17060201	2,410	219	3,251
Middle Fork Clearwater	17060304	320	Unavailable	Unavailable
Little Salmon	17060210	582	68	718

Source: NPPC (2001) and Nez Perce Tribe and NPPC (2002)

Streamflow records, including monthly and annual average flows, peak and minimum flows, periods of record, and drainage areas for three locations along the Lemhi River (Lemhi River near Lemhi, Lemhi River below L-5 Diversion, and Lemhi River at Salmon) are presented in Appendix C. The locations of these gaging stations, and all other historic active and inactive USGS gaging stations in the subbasin are shown in Figure 3.3-1. The average flow of the Lemhi River from 1955 to 2000 was 272 cfs at the gaging station location just below the mouth of Hayden Creek near the community of Lemhi. Farther downstream at the gaging station just below the L-5 Diversion, average flow of the Lemhi River was 321 cfs (1992 to 2000). At the confluence with the Salmon River, the average flow of the Lemhi River was 321 cfs (1928 to 1942). Peak flows generally occur in June, with the lowest flows in August. A hydrograph of the average monthly flow of the subbasins is provided in Figure 3.3-2.

The annual water yield for the Lemhi system has been estimated at approximately 1,100,000 acre-feet (IDEQ 1999). The average annual flow at Salmon is 180,000 acre-feet. The difference is lost to evaporation, vegetative transpiration, and underground flows. The hydrology of much of the Lemhi River has been changed dramatically since the mid-1840s because of channelization and diversion of tributary streams that resulted in a lack of connectivity to the floodplain. During irrigation season most of the water is diverted off-channel through diversion headgates and either used for flood or sprinkler irrigation. As of 1995, approximately 37,000 acres of land in the subbasin were irrigated. IDWR records indicate there are approximately 7,869 active surface water rights and water right claims in the subbasin, totaling about 4,704,500 acre-feet (IDWR March 22, 2002). IDFG has identified approximately 209 dams and diversions within the Lemhi Subbasin (IDFG 2002); locations of these dams and diversions are shown in Figure 3.3-1. In 2000, IDWR identified 83 diversions along the mainstem of the Lemhi, with measured flows ranging from less than 1 cfs to 60 cfs (IDWR 2002). Estimated return flows provide 8 to 14 cfs per mile to the Lemhi River. The Lemhi River and nearly all of its tributaries are entirely or significantly diverted for irrigation purposes between late April and the end of October (IDEQ 1999). Many of the tributaries only reach the river during spring runoff.

Upper Salmon Subbasin

The Upper Salmon Subbasin is a glacial carved mountain and valley system composed of steep, narrow drainages with V-shaped valleys (IDEQ 2002). Elevations range from 4,640 to 11,700 feet above msl. The floodplain of the Upper Salmon River itself is fairly broad in comparison to the canyonlands in the lower Salmon River farther downstream. The area receives approximately 7.4 to 14.5 inches of annual precipitation, mainly as snow or early spring rain. The HUC drainage area, number of major (named) streams, and stream miles for the Upper Salmon Subbasin are listed in Table 3.3-1.

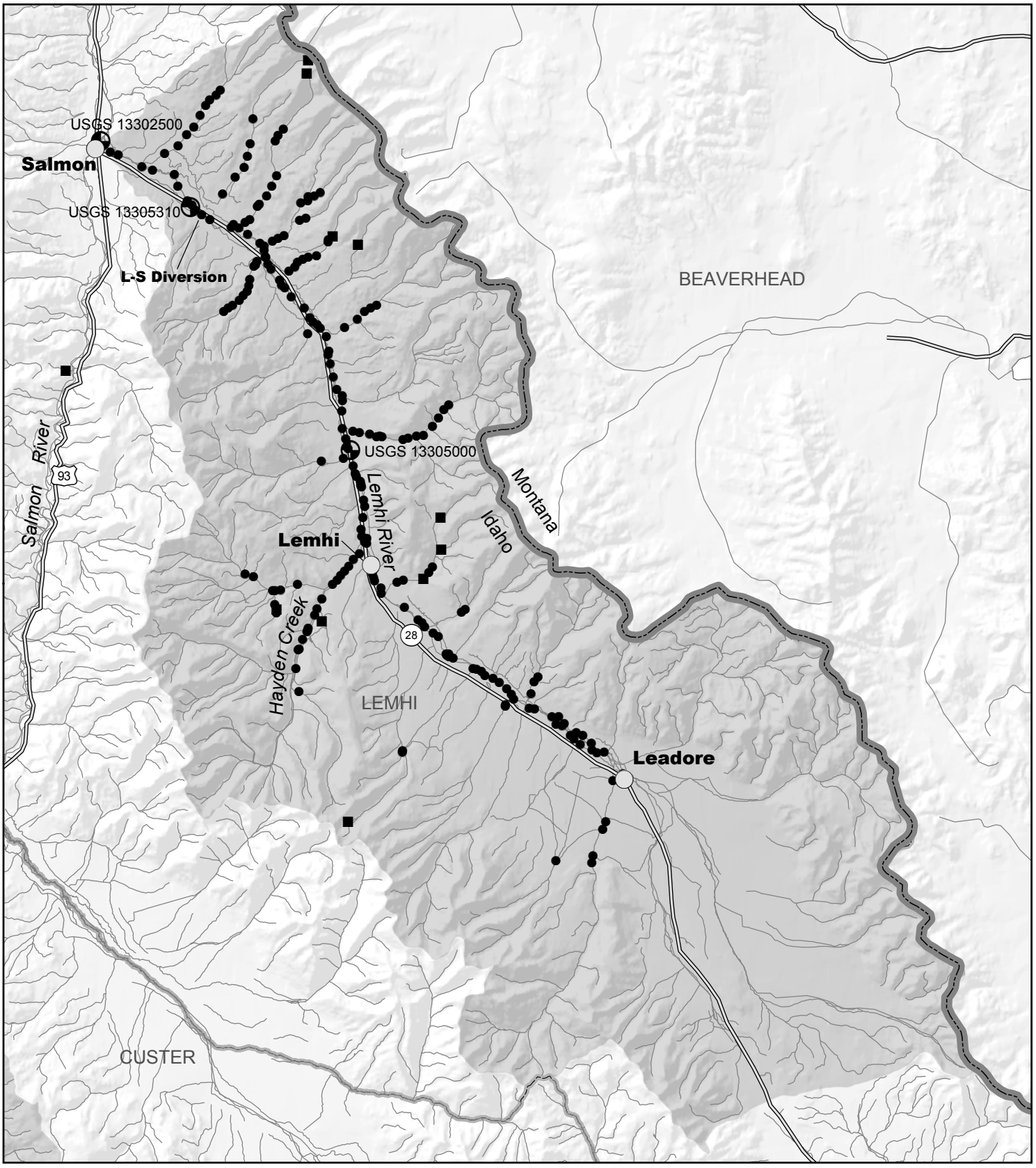
Streamflow records, including monthly and annual average flows, peak and minimum flows, periods of record, and drainage areas for three locations along Salmon River (Salmon River below Yankee Fork, East Fork Salmon River near Clayton, and Salmon River near Challis) are presented in Appendix C. The locations of these gaging stations and all other historic active and inactive USGS gaging stations in the subbasin are shown in Figure 3.3-3. The average flow of the Salmon River (1928 to 1939 and 1973 to 1981) was 532 cfs at the gaging station near Clayton. Downstream, the average flow of the Salmon River (1921 to 2000) was 977 cfs at the gaging station below Yankee Fork. Farther downstream, the average flow of the Salmon River (1928 to 1972) was 1,473 cfs at the gaging station near Challis. Near the mouth of the subbasin, average annual flows may increase to approximately 1,500 cfs (NPPC 2001). The largest contributing drainage to the Salmon River within the subbasin is the East Fork of the Salmon River, with an average flow of 235 cfs from 1928 to 1939 and 1973 to 1981 (IDEQ 2002). Streamflow regimes are typical of central Idaho mountain streams, with peak flows in late spring to early summer from snowmelt runoff. Low flow occurs in late summer through the winter. Substantial variability exists from year to year because of fluctuating precipitation and temperatures. A hydrograph of the average monthly flow for the Salmon River near Challis is provided in Figure 3.3-2.

Based on the monthly flow at the gaging station near Challis, the Upper Salmon Subbasin produces an estimated 892,000 acre-feet over the course of the irrigation season (April 15 – October 31). IDWR records indicate there are approximately 2,091 active surface water rights and water right claims in the subbasin, totaling about 1,796,000 acre-feet (IDWR 2002). As of 2000, approximately 45,000 acres of land in the subbasin were irrigated. Based on IDWR's field headgate requirements, the estimated 45,000 acres irrigated in the subbasin need 149,750 acre-feet per year (IDWR 2002). IDFG has identified approximately 165 dams and diversions within the Upper Salmon Subbasin (IDFG 2002); locations of these dams and diversions are shown in Figure 3.3-3.

Several tributaries to the Upper Salmon River are entirely or significantly diverted for irrigation purposes between late April and the end of October (IDEQ 2002).

Middle Fork Clearwater Subbasin

The Middle Fork Clearwater Subbasin generally has moderately sloping terrain, with local elevations ranging from 1,221 to 4,300 feet above mean sea level (msl) (Nez Perce Tribe and NPPC 2002). The change in elevation follows a change in topography from west to east, progressing from plateau to foothills to mountainous terrain. The area receives approximately 23 to 75 inches of annual precipitation, depending on location and elevation. Precipitation varies seasonally, with little occurring during the summer months. The vast majority of the subbasin lies below 4,000 feet in elevation, making it subject to mixed winter precipitation and the possibility of rain-on-snow events. The confluence of the Lochsa and Selway Rivers at Lowell, Idaho forms the Middle Fork Clearwater River, which flows west before joining the South Fork Clearwater at the town of Kooskia, Idaho to form the mainstem Clearwater River. The Middle Fork Clearwater River derives most of its flow from the Lochsa and Selway Rivers. The combined drainage area for the Lochsa and Selway Rivers is 3,090 square miles. The Middle Fork Clearwater Subbasin drains an additional 320 square miles. The Hydrologic Unit Code (HUC), number of major (named) streams, and stream miles for the Middle Fork Clearwater River are listed in Table 3.3-1.



Diversion
Dam
Stream Gauge
Subbasin
Town
State Boundary
County Boundary
Open Water
Stream
Highway

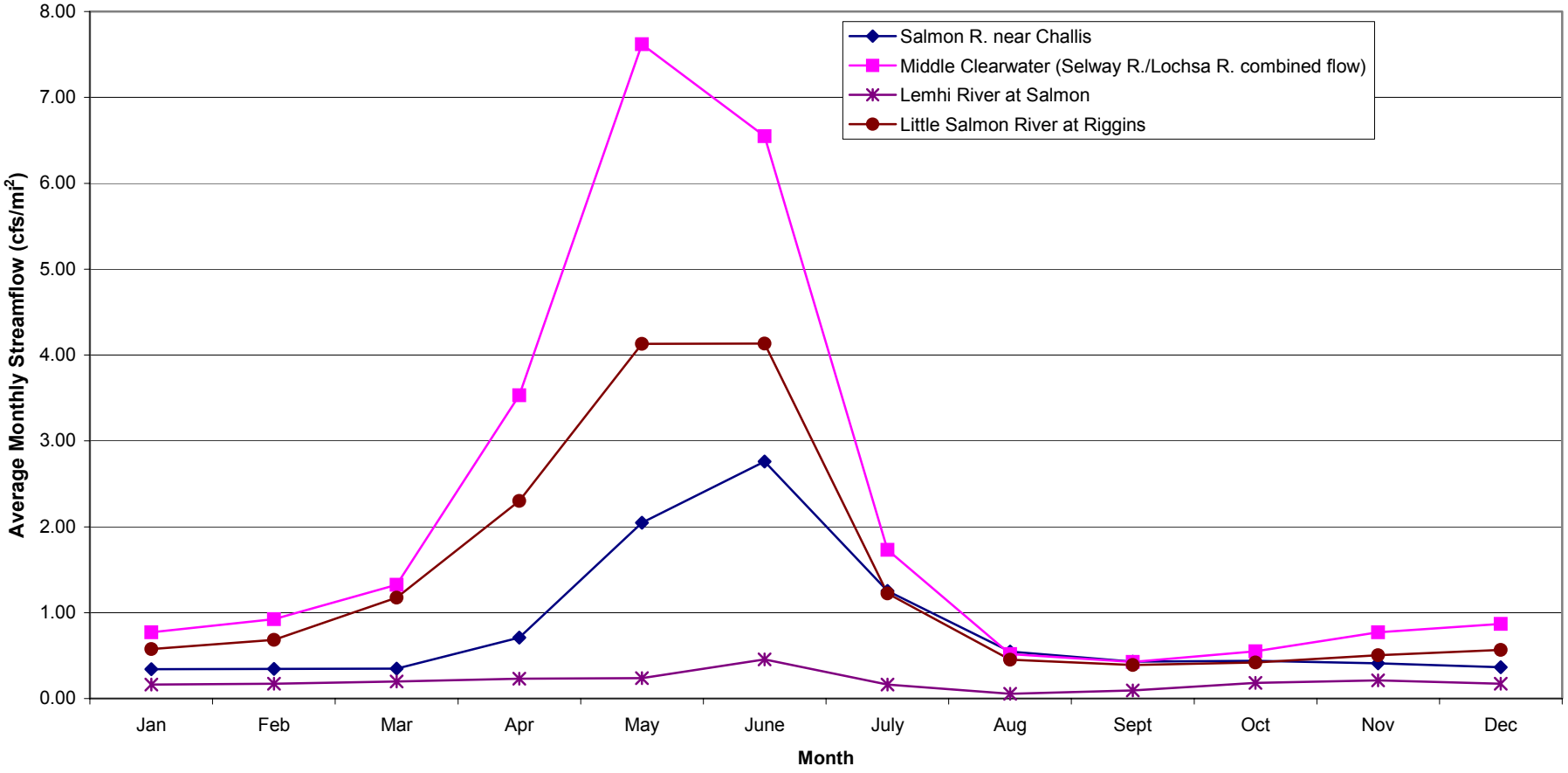
FIGURE 3.3-1
Hydrologic Features
Lemhi Subbasin

0 1 2 4 Miles

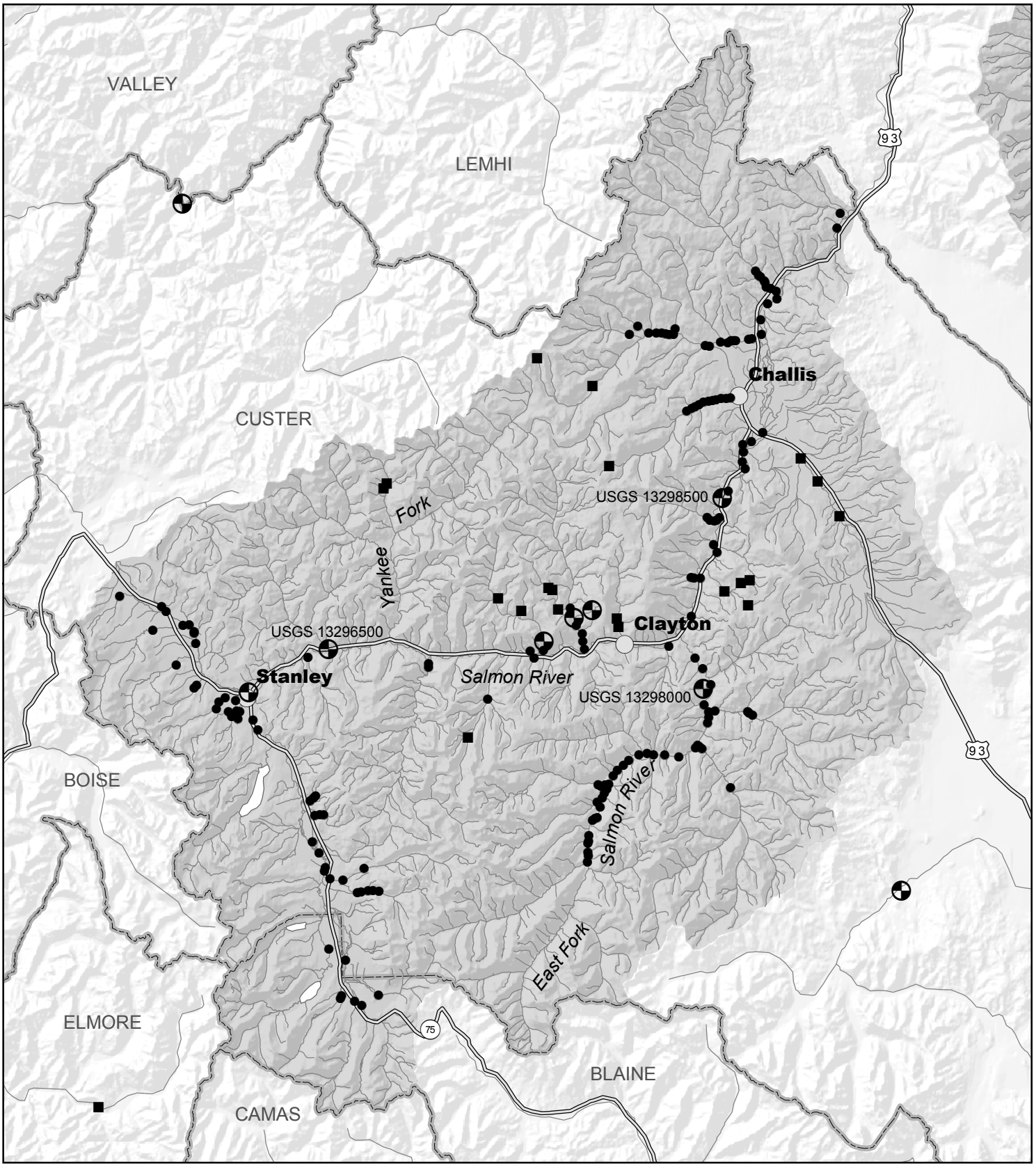
Source: IDFG, USBR, USGS, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-1.mxd

Back of Figure 3.3.1. Hydrologic Features Lemhi Subbasin

Figure 3.3-2. Hydrographs of Average Monthly Streamflow for Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins



Back of Figure 3.3-2. Hydrographs of Average Monthly Streamflow (back).



- Diversion
- Dam
- Stream Gauge
- Subbasin
- Town
- County Boundary
- Open Water
- Stream
- Highway

FIGURE 3.3-3

Hydrologic Features
Upper Salmon Subbasin

0 2 4 8 Miles

Source: IDFG, USBR, USGS, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-3.mxd

Back of Figure 3.3-3. Hydrologic Features Upper Salmon Subbasin

Streamflow records, including monthly and annual average flows, peak and minimum flows, periods of record and drainage areas for the Lochsa and Selway Rivers and the mainstem Clearwater River (downstream of the confluence with the Southfork of the Clearwater) near Kamiah, Idaho, are presented in Appendix C. The locations of these gaging stations are shown in Figure 3.3-4. No active or inactive gaging stations are located in the subbasin other than the Lochsa and Selway stations. Based on the combined flow data for the Lochsa and Selway Rivers near Lowell for 1911 to 2000, the average annual flow of the Middle Fork Clearwater River is 6,605 cfs. Records indicate that peak flows generally occur in May and June (Nez Perce Tribe and NPPC 2002). Base flows most often occur during August and September. In lower elevation areas, occasional thunderstorms occurring from late spring through summer may result in flash floods that produce annual peak flows in localized areas. A hydrograph of the average monthly flow for the Middle Fork Clearwater River based on the combined flows of the Selway and Lochsa Rivers is provided in Figure 3.3-2.

Major flood events in the Middle Fork Clearwater Subbasin have occurred in 1919, 1933, 1948, 1964, 1968, 1974, and the winter/spring of 1995/1996. Table 3.3-2 presents the flows recorded at the Lochsa and Selway gaging stations during these events, except for 1919 where no records are available.

Table 3.3-2. Discharge (in cfs) at the Lochsa and Selway Gaging Stations near Lowell, Idaho During Major Flood Events in the Clearwater River.

Location	1933	1934	1938	1948	1957	1964	1974
Selway R. near Lowell	33,800	20,500	32,800	48,900	26,500	43,400	43,100
Lochsa R. near Lowell	34,800	22,500	24,500	34,600	21,100	35,100	32,000

Source: Nez Perce Tribe and NPPC 2002.

Based on the combined monthly flow at the Lochsa and Selway gaging stations, the Middle Fork Clearwater River produces an estimated 3,910,200 acre-feet over the course of the irrigation season (April 1 – October 31). Idaho Department of Water Resources (IDWR) records indicate there are approximately 667 active surface water rights and water right claims in the subbasin that total approximately 4,550,400 acre-feet (IDWR 2002). Information on low flow conditions and the location of diversions in the Middle Fork Clearwater Subbasin were unavailable.

Little Salmon Subbasin

The topography of the Little Salmon Subbasin is characterized by relatively narrow, steep V-shaped valleys and relatively narrow ridge systems. The Little Salmon Valley constricts noticeably downstream of New Meadows. This point, known as "the falls," generally divides the upper and lower half of the subbasin. Elevations range from approximately 1,760 to 9,000 feet msl (Idaho Department of Water Resources 2001). The area receives approximately 16.5 to 24.8 inches of precipitation annually, mainly as snow or early spring rain. The HUC drainage area, number of major (named) streams, and stream miles for the Little Salmon River are listed in Table 3.3-1.

Streamflow records, including monthly and annual average flows, peak and minimum flows, periods of record, and drainage areas for three locations in the Little Salmon Subbasin (Mud Creek, Boulder Creek, and the Little Salmon River at Riggins) are presented in Appendix C. The locations of these gaging stations and all other historic active and inactive USGS gaging stations in the subbasin are shown in Figure 3.3-5. The average annual flow of the Little Salmon River for 1951 to 2000 was 798 cfs at the gaging station at Riggins. In general, peak flows in the Little Salmon River occur in

May or June, with the lowest flows in September. High flows are strongly dependent on snowmelt, and peaks are generally reached earliest in lower elevation catchments. A hydrograph of the average monthly flow for the Little Salmon River at Riggins is provided in Figure 3.3-2.

The Little Salmon Subbasin produces an average of 322,875 acre-feet over the course of the April 15 through October 31 irrigation season (Idaho Water Resources Board 2001). Approximately one-third of this water originates above the confluence of Round Valley Creek and Little Salmon River in the upper subbasin. The remainder originates downstream of the confluence of Round Valley Creek and Little Salmon River in the lower subbasin. IDWR records indicate that there are approximately 863 active surface water rights and water right claims in the subbasin, totaling approximately 452,500 acre-feet (IDWR 2002). IDFG has identified six dams within the Little Salmon Subbasin (IDFG 2002). Locations of the dams are shown in Figure 3.3-5. Information on low flow conditions and the location of diversions in the Little Salmon Subbasin were unavailable.

Approximately 92 percent (15,100 acres) of the total irrigated acres in the Little Salmon Subbasin are located in the upper subbasin, with about 8 percent (1,300 acres) of the irrigated acres located in the lower subbasin. Using the IDWR field headgate requirement of 3 acre-feet of water per acre per year of irrigation, the irrigated lands in the upper and lower basins need 45,300 acre-feet and 5,200 acre-feet per year, respectively, for a total of about 50,500 acre-feet per year in the subbasin. Some of this water, between 25 and 33 percent, is assumed to return to the system either through percolation into the groundwater or surface runoff. The majority of the 15,100 acres in the upper subbasin are irrigated with water from Twin Granite Reservoir (600 acre-feet capacity), Goose Lake Reservoir (6,550 acre-feet capacity), and Brundage Reservoir (7,330 acre-feet capacity). The reservoirs are usually filled in the spring during high flows, and water is released in the summer for irrigation when streamflows have decreased. Nearly all irrigation in the Little Salmon Subbasin is accomplished with surface water in gravity flood or gated pipe systems (Idaho Water Resources Board 2001). Other identified consumptive uses of surface water include livestock (approximately 56 acre-feet), domestic (approximately 4 acre-feet), and industrial (approximately 41.3 acre-feet).

3.3.1.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, none of the fish passage, fish screens, or streamflow improvement projects would be constructed by Reclamation. Restoration efforts would proceed at the present pace under various subbasin groups, with Reclamation's technical assistance as requested in the Lemhi and Upper Salmon Subbasin. Therefore, the benefits or impacts on hydrology of streams in the four subbasins would occur at a slower pace than under the Proposed Action. Current hydrologic conditions and trends in each subbasin would continue. Flow would continue to be inadequate for anadromous fish in many of the subbasin stream reaches due to excessive withdrawals and inefficient diversions and headgate systems.

Cumulative Impacts

Under the No Action Alternative restoration efforts would occur at a slower pace than under the Proposed Action. Because of the number of diversions in the Lemhi and Upper Salmon Subbasins, continued lack of adequate flows could cause cumulative adverse effects to ESA-listed anadromous salmonids.

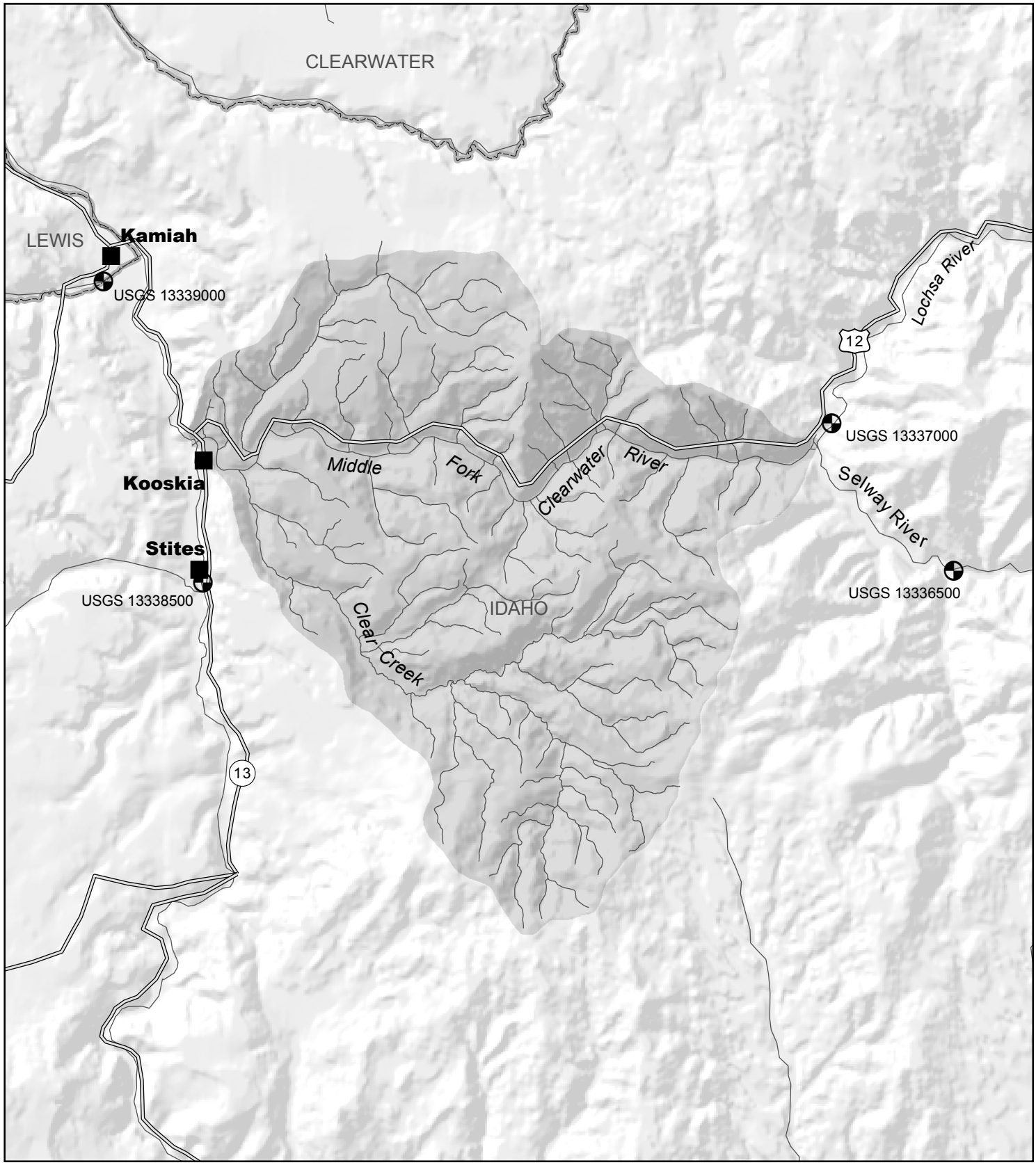


FIGURE 3.3-4
Hydrologic Features
Middle Fork Clearwater Subbasin

Source: IDFG, USBR, USGS, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-4.mxd

Back of Figure 3.3-4. Hydrologic Features Middle Fork Clearwater Subbasin

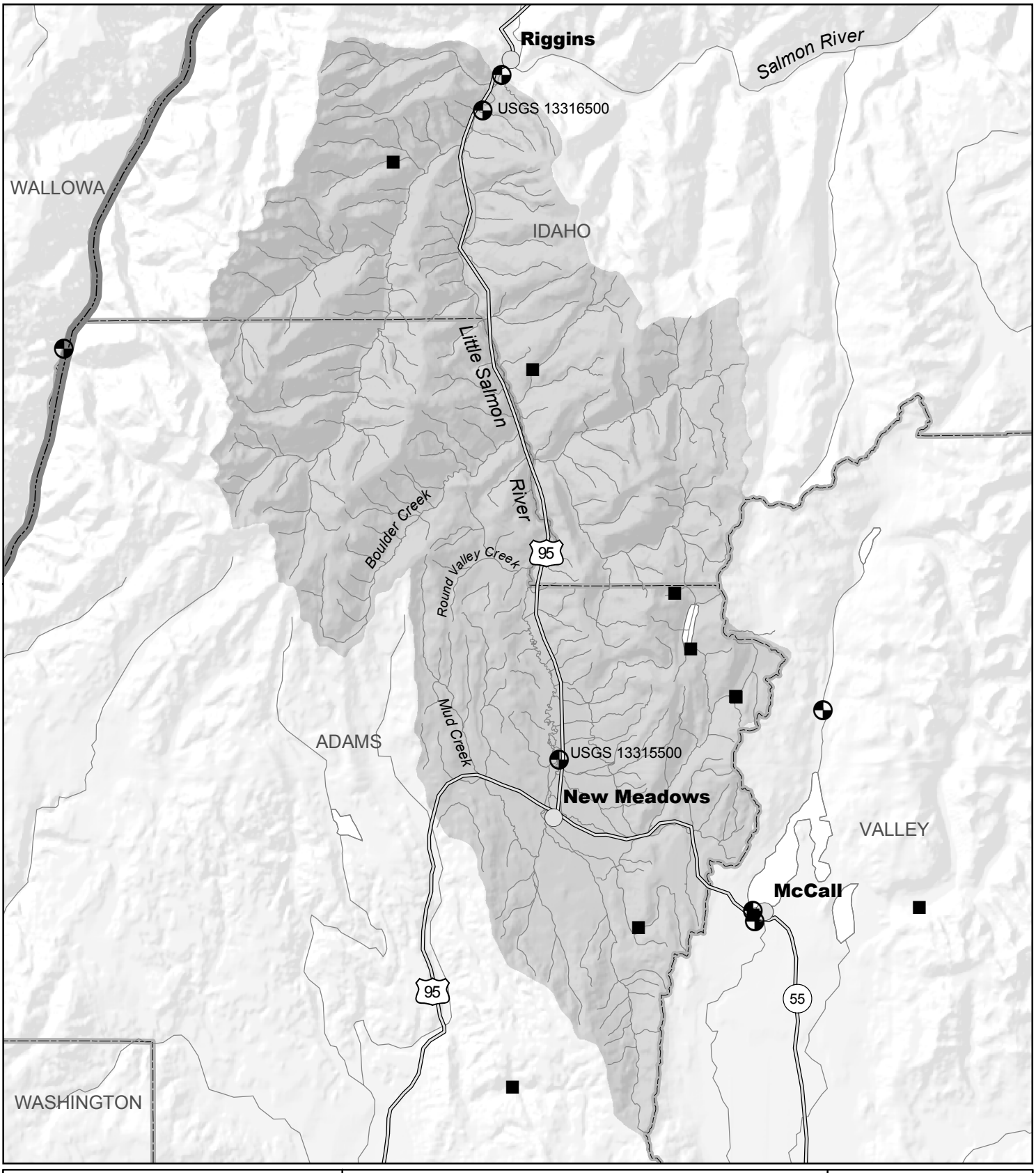


FIGURE 3.3-5
Hydrologic Features
Little Salmon Subbasin

Source: IDFG, USBR, USGS, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-5.mxd

Back of Figure 3.3-5. Hydrologic Features Little Salmon Subbasin

Proposed Action

Under the Proposed Action, the implementation of projects to protect and restore ESA-listed anadromous fish would continue in the four subbasins, with Reclamation's participation in funding and construction. Program objectives cover three categories of actions that would be implemented: (1) eliminate instream fish passage barriers, (2) correct fish screen deficiencies associated with irrigation practices on private lands, and (3) augment streamflows. The effects of each category of action on stream hydrology are described below. Because the specific types, individual locations, and number of willing participants in the habitat improvement projects within the four subbasins are not known at this time, the following discussion is programmatic in nature. Expected benefits to subbasin hydrology are noted where possible.

Fish Passage Barriers

Proposed fish passage barrier improvements that may impact stream hydrology include the consolidation of irrigation diversions, upgrade of headgates, and removal and replacement of push-up dams. Push-up dams would be replaced with new diversion structures with NMFS-approved upstream and downstream fish passage or the appropriate pump system. The potential for negative impacts which are caused by these improvements would be limited to short-term, local disturbances of the streambank and streambed during construction that could affect site-specific hydrology. Adherence to approved BMPs (e.g. sedimentation and erosion control, general construction practice) during construction would effectively minimize these disturbances.

The long-term impacts of correcting passage barriers would be positive. Removal of individual gravel push-up dams to improve passage would eliminate stream disturbances caused by dam maintenance. Push-up dams often fail during high flows and frequently require reconstruction. The repetitive failure and reconstruction of the push-up dams alter stream geomorphology and contribute to the fill-in of downstream low-flow channels. Elimination of gravel push-up dams would improve streambed stability and help maintain passable low-flow stream channels. Replacement of push-up dams with more efficient structures that provide fish passage would not affect seasonal peak flows or flooding potential. The effects of these replacements would likely increase the amount of flow during seasonal low flow periods.

Lemhi and Upper Salmon Subbasins. More than 370 dams and diversions and dewatered zones from irrigation withdrawals have been identified in the Lemhi Upper Salmon Subbasins (NPPC 2001). Consolidation of existing diversions and upgrade of headgates to improve fish passage within the affected subdrainages would improve instream flows during the irrigation season. The improved flows would reduce the number and extent of dewatered zones and would possibly reconnect stream segments. Many gravel push-up dams have also been identified in the Lemhi Upper Salmon Subbasins (NPPC 2001). Removal of these dams would improve streambed stability and help reestablish a more natural flow regime within affected streams.

Middle Fork Clearwater and Little Salmon Subbasins. The actual locations of diversions and dewatered zones within the Middle Fork Clearwater and Little Salmon Subbasins are not well documented. Recent conversations with USFS staff indicate that relative to the other subbasins, irrigated agriculture is not a widespread land use in the Middle Fork Clearwater Subbasin (pers. comm., Gerhardt, 2002). Nonetheless, the large number of surface water rights and water right claims are a good indication that many water diversions have been constructed within these subbasins. It is likely

that many of these are small pump diversions. Consolidation of existing diversions and upgrade of headgates at strategic locations within these subbasins would, in all probability, increase flows and improve instream flow conditions during the irrigation season. Removal of any gravel push-up dams would improve streambed stability and help reestablish a more natural flow regime within affected streams.

Construction during headgate installation or consolidation of headgates could cause increased sediment to reach streams and adversely affect fish habitat or alteration of stream bank configuration, which could alter local stream hydrology. Adherence to BMPs that require implementation and monitoring of construction practices, erosion and sedimentation control plans, and rehabilitation of disturbed vegetation would minimize these potential effects. Replacement of pushup dams has a greater potential for affecting stream hydrology during removal and replacement of these instream structures. Implementation of BMPs would ensure that construction would occur at the most appropriate time to reduce potential impacts and that structures are designed to accommodate the local hydrology.

Headgate Improvements

Improvements such as the consolidation of irrigation diversions and upgrade of headgates would result in regulated water withdrawals with improved efficiency. Similar to streamflow improvement, these improvements would minimize withdrawals and increase instream flows. The additional water in the stream would improve stream conditions by widening the stream perimeter; increasing base flows, stream depths, and streambed areas; and increasing the range of instream flow velocities. The additional water in the stream would also reduce the extent and number of dewatered zones, reconnect streams previously captured by irrigation canals, and help maintain passable low flow channels in the summer and fall. Regulated withdrawals would also reduce streamflow fluctuations caused by excessive withdrawals. There is the potential for increased sedimentation in the stream during the construction period but implementation of the BMPs would significantly reduce this risk. The general impacts would be similar among the subbasins, but the Lemhi and the Upper Salmon have the greatest number of diversions and have a greater potential for improvement compared to the Middle Fork Clearwater and the Little Salmon Subbasins.

Fish Screens

Typically, fish screens are constructed in an irrigation canal or ditch, away from the point of diversion when the canal or ditch is dry and the stream is under low flow conditions. The only potential construction-related disturbance to the stream from this type of installation is a small, local disturbance to the streambank during installation of the fish return. In the long term, return flow volumes are small and do not create any significant impacts to the stream.

Placement of fish screens at the point of diversion is not common. For this type of fish screen, construction would be performed using approved BMPs that limit construction-related impacts to small, localized, short-term disturbances. In the long term, the presence of a fish screen and supporting abutments at the point of diversion could modify local stream hydraulics. However, there would be a long-term beneficial effect of installation of up-to-date fish screens. Such a design may be needed for particular instances. Reclamation would coordinate with NMFS regarding the design and placement of these structures. All other fish screens would adhere to NMFS criteria and short-term impacts would be negligible.

There are no unique impacts from placement of fish screens relative to any specific subbasin.

Streamflow Improvement

Methods of streamflow improvement that may impact stream hydrology include the acquisition of water rights, re-engineering existing diversions, and installing alternative irrigation diversion systems. The negative impact of constructing/re-engineering diversions would be limited to small, short-term, local disturbances of the streambank and streambed during construction. Short-term construction impacts could include blockage and alteration of streamflow during instream construction, excess sediment entering the stream channel, or temporary modification of streambanks. Adherence to approved BMPs (e.g. erosion control plans, staging, general construction practices) during construction would effectively minimize these disturbances. Streamflow improvement by acquisition of water rights would not negatively impact a stream.

The long-term impacts of the proposed flow improvements would be positive. Acquisition of water rights would directly increase instream flows by minimizing withdrawals. Re-engineering existing diversions or installing alternative irrigation diversion systems would improve water diversion efficiency, resulting in less flow to the ditch and outfall and more water in the stream. Additional water in the stream would improve stream conditions by widening the stream perimeter; increasing base flows, stream depths, and streambed areas; and increasing the range of instream flow velocities. The resulting increased wetted perimeter of the streambed and the increased flow and velocity would provide a greater amount of available habitat and a higher quality of habitat for fish. The additional water would reduce the extent and number of dewatered zones, reconnect streams previously captured by irrigation canals, and help maintain passable low flow channels in the summer and fall. All of the proposed streamflow improvement methods would help reduce streamflow fluctuations caused by excessive withdrawals, without impacting water rights.

Lemhi and Upper Salmon Subbasins. Thousands of water rights and water right claims exist within these subbasins. Acquisition of water rights, in conformance with Idaho State Law, re-engineering existing diversions, or installing alternative irrigation diversion systems at strategic locations within the subbasins would help reestablish a more natural flow regime in the affected streams, particularly during the irrigation season. These actions would minimize withdrawals and returns and improve instream flow conditions. These actions would also reduce the number and extent of dewatered zones.

Middle Fork Clearwater and Little Salmon Subbasins. The actual locations of diversions and dewatered zones within the Middle Fork Clearwater and Little Salmon Subbasins are not well documented. Acquisition of water rights, in conformance with Idaho State Law, re-engineering existing diversions, or installing alternative irrigation diversion systems at strategic locations within the subbasins would help reestablish a more natural flow regime in the affected streams, particularly during summer and fall. These actions would minimize withdrawals and returns and improve instream flow conditions.

Cumulative Impacts

Implementation of the Proposed Project would improve streamflow, particularly in the Lemhi and Upper Salmon Subbasins would result in beneficial cumulative impacts to ESU salmon and steelhead. Adult migrating fish would have improved access to spawning areas while juveniles would

encounter reduced barriers to downstream movements, resulting in improved recruitment. As the number of projects implemented increase there would be a corresponding increase in accessibility for migrating adults and juvenile anadromous salmonids.

3.3.1.3 Mitigation

Negative impacts from the Proposed Action would be limited to the period of construction. During construction, contractors would be required to adhere to approved construction BMPs, NMFS screen criteria, and work windows to complete any improvements. Instream construction would be conducted at low flow periods and in consultation with NMFS to reduce potential impacts to ESA-listed fish. BMPs include provisions for monitoring and reporting to NMFS, restoration of disturbed areas, and appropriate staging of construction to minimize effects to the streambed and banks. These requirements would protect endangered species and establish conditions to limit or prevent disturbance to the streams. No additional mitigation is proposed.

3.3.2 Water Quality

3.3.2.1 Existing Conditions

Information on water quality issues within the four subbasins is characterized by relevant regulatory guidelines: adherence to water quality standards and the presence of impaired water bodies, the location of hazardous waste sites, and known point source discharges.

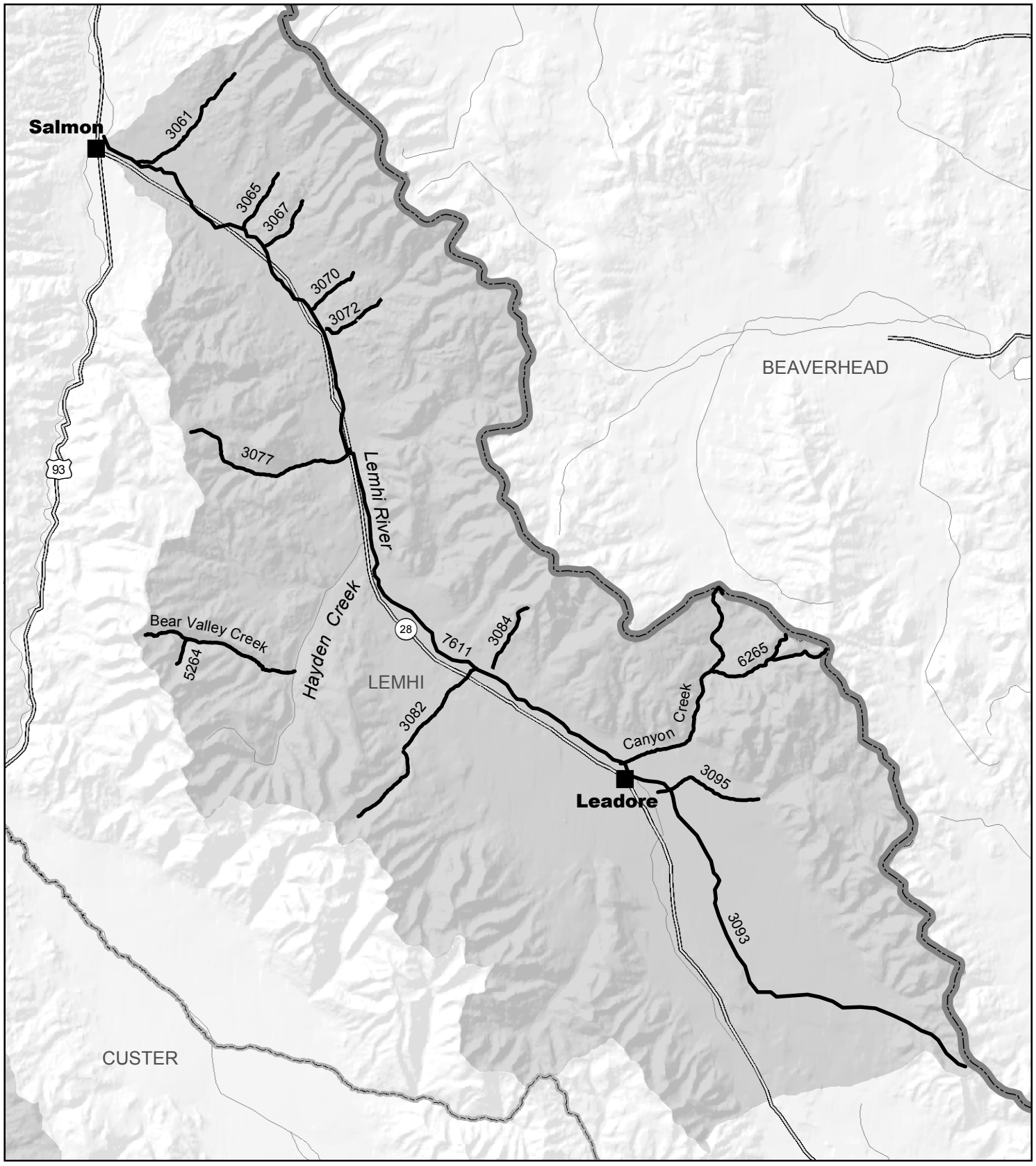
Beneficial Uses

IDEQ has the primary responsibility for water quality protection. Designated beneficial uses are presented in Idaho Administrative Code IDAPA 58.01.02.053. These designated uses for the four subbasins are presented in Appendix D. Another section of the Idaho Administrative Code (IDAPA 58.01.02.100) provides default uses to the many water bodies (stream or river segments, lakes, or ponds) that do not have designated beneficial uses. These default beneficial uses are to provide agricultural water supply, industrial water supply, and wildlife habitat. Beneficial uses for each subbasin are summarized in Table 3.3-3.

IDEQ uses State water quality criteria to ensure that beneficial uses are supported. If a stream or other water body does not meet specific water quality criteria, it is considered as not supporting its beneficial use; these streams are listed on the State's 303(d) list and require preparation of a pollution assessment called a total maximum daily load (TMDL) and a recovery or implementation plan for correcting the pollution problem.

Idaho's 1998 303(d) List

This 303(d) list/report is required by the Federal Clean Water Act (CWA) pursuant to Section 303(d). States are required to submit an updated list every 2 years to the EPA, which manages the program. This list represents a comprehensive status review of water quality in Idaho. Streams, rivers, lakes, and reservoirs are evaluated for this list. Waters on this list are termed "water quality limited" when they exceed water quality standards related to designated beneficial uses. Figures 3.3-6 through 3.3-9 show the location of 303(d) water bodies NPDES sites in the subbasins.



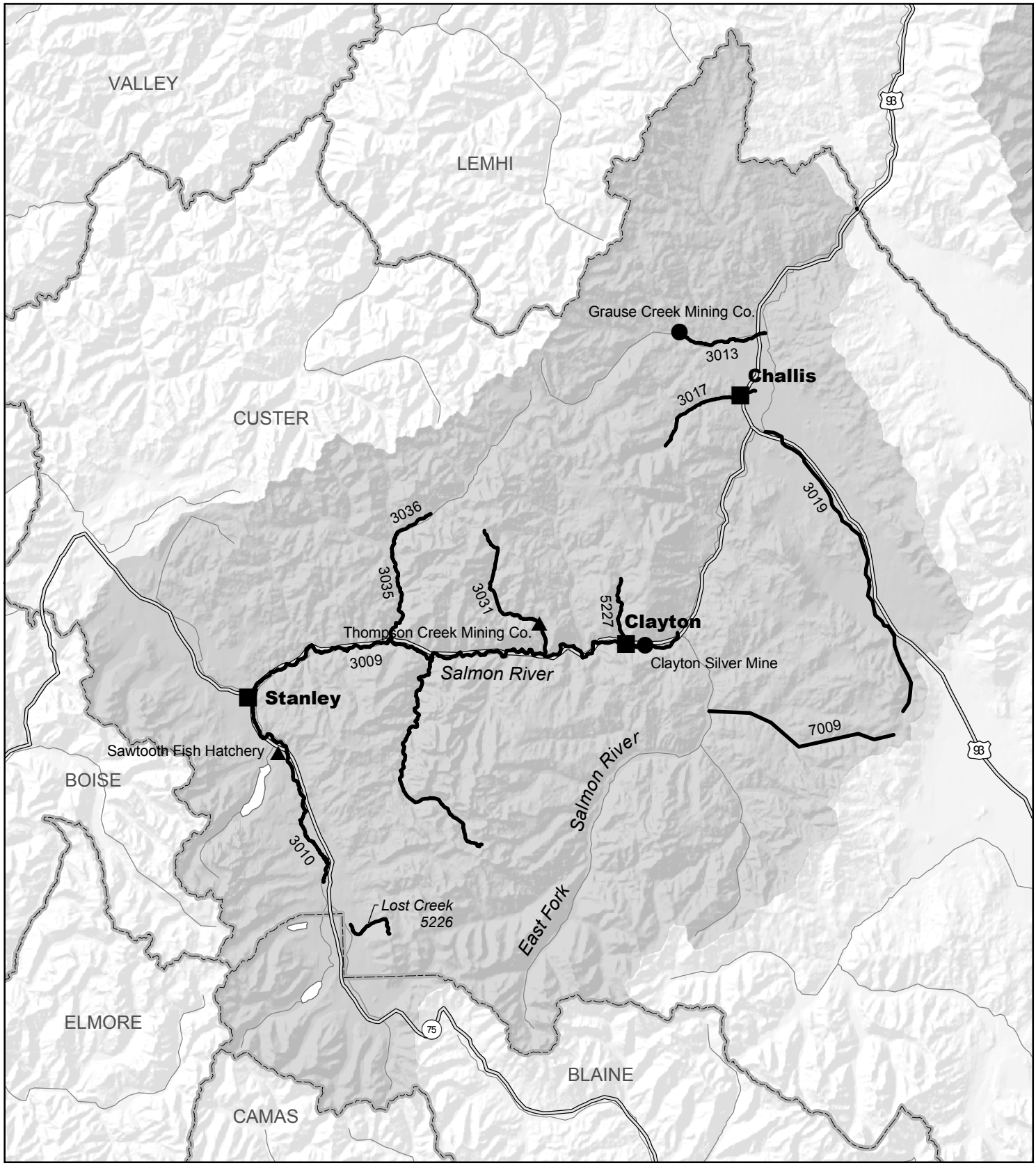
303d
Subbasin
Town
County Boundary
State Boundary
Open Water
Stream
Highway

FIGURE 3.3-6
CWA 303d Listed Water Bodies
Lemhi Subbasin

0 1 2 4 Miles

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-6.mxd

Back of Figure 3.3-6. CWA 303(d) Listed Water Bodies Lemhi Subbasin



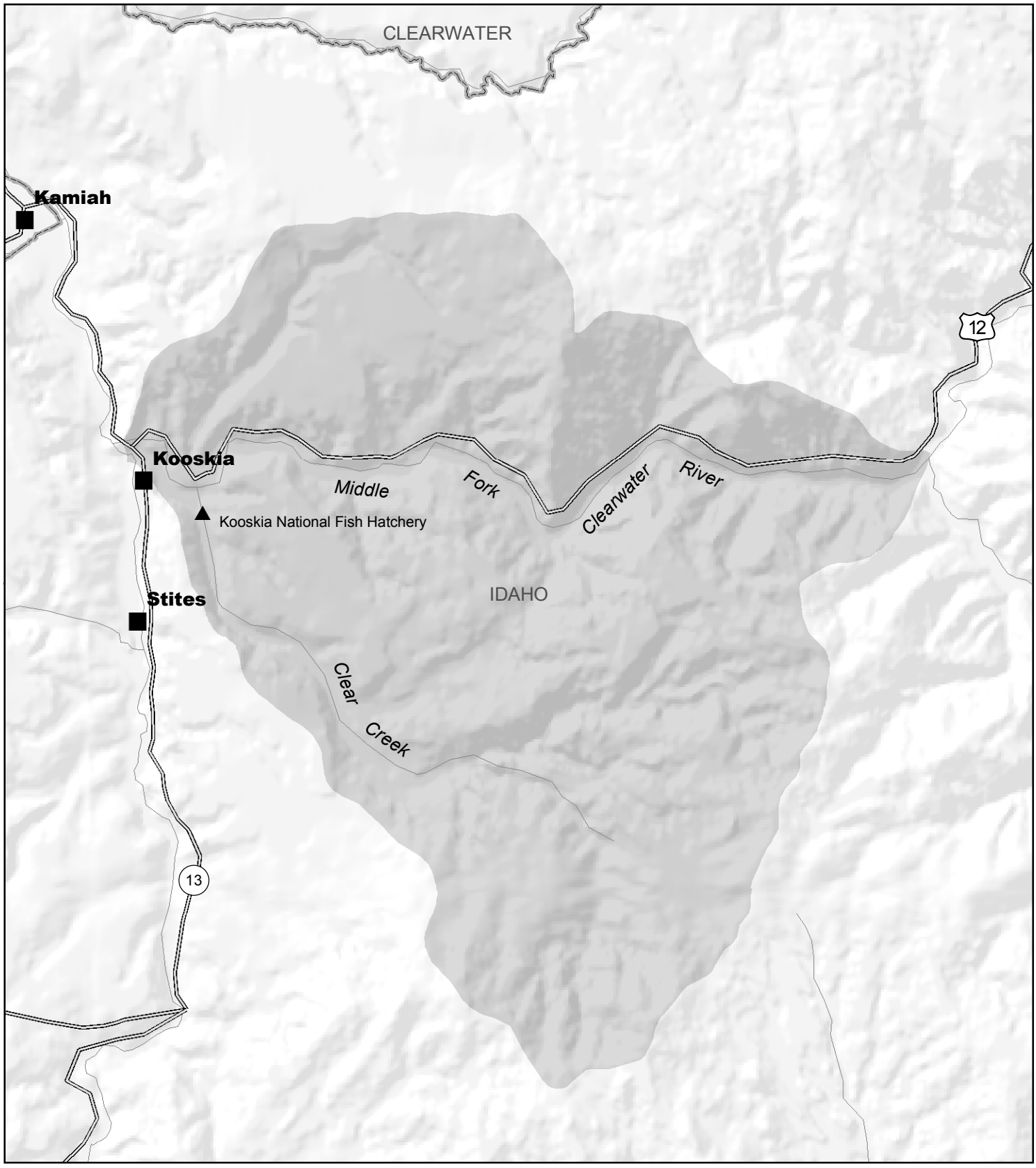
NPDES Site
CERCLA Site
303d
Subbasin
Town
County Boundary
Open Water
Stream
Highway

FIGURE 3.3-7
CWA 303d Listed Water Bodies
Upper Salmon Subbasin

0 2 4 8 Miles

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-7.mxd

Back of Figure 3.3-7. CWA 303(d) Listed Water Bodies Upper Salmon Subbasin



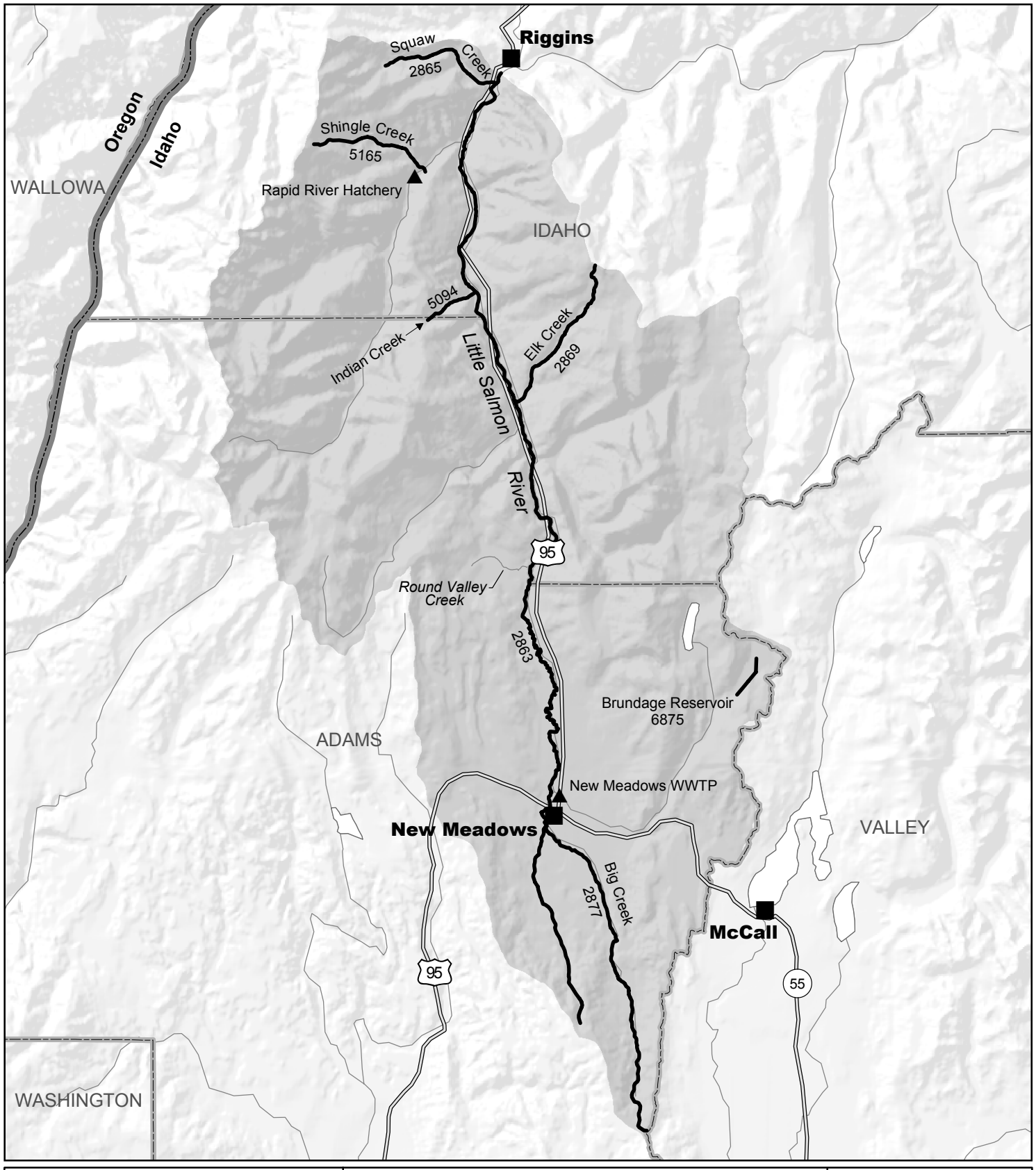
NPDES Site
Town
Subbasin
County Boundary
Open Water
Stream
Highway

FIGURE 3.3-8
NPDES Site
Middle Fork Clearwater Subbasin

0 0.5 1 2 Miles

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-8.mxd

Back of Figure 3.3-8. NPDES Site Middle Fork Clearwater Subbasin



NPDES Site
303d
Subbasin
Town
County Boundary
State Boundary
Open Water
Stream
Highway

FIGURE 3.3-9
CWA 303d Listed Water Bodies
Little Salmon Subbasin

0 1 2 4 Miles

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.3-9.mxd

Back of Figure 3.3-9. CWA 303(d) Listed Water Bodies Little Salmon Subbasin

Table 3.3-3. 303(d)-listed Water Bodies in the Lemhi, Upper Salmon, Middle Fork, Clearwater, and Little Salmon Subbasins.

Water Body	WQLS	Boundaries	Beneficial Use	Pollutant	Str. Mile
Lemhi					
Kirtley Creek	3061	Headwaters to Lemhi River		TEMP	
Bohannon Creek	3065	Headwaters to Lemhi River		TEMP	
Wimpey Creek	3067	Headwaters to Lemhi River		TEMP	
Wimpey Creek	3067	BLM boundary to Lemhi River	COLD, SS, SCR	NUT, SED	6.62
Sandy Creek	3070	Headwaters to Lemhi River		TEMP	
Kenney Creek	3072	Headwaters to Lemhi River		TEMP	
McDevitt Creek	3077	BLM boundary to Lemhi River	COLD, SS, SCR	SED	2.83
Mill Creek	3082	Forest boundary to Lemhi River	COLD, SS, SCR	QALT, NUT, SED	5.35
Little Eighteen Mile Creek	3084	Headwaters to Lemhi River		TEMP	
Eighteen Mile Creek	3093	Headwaters to Lemhi River		TEMP	
Hawley Creek	3095	First Diversion to Eighteen Mile Creek	BASE	NUT, SED	6.09
Short Creek	5264	Headwaters to Bear Valley Creek		UNKN	1.83
Cruikshank Creek	6265	Headwaters to Canyon Creek		UNKN	3.21
Lemhi River	7611	Headwaters to Salmon River		TEMP	
Lemhi River	7611	Confluence of Texas and Eighteen Mile Cr. to mouth	COLD, SS, PCR DWS, SRW	BAC	57.29
Upper Salmon					
Salmon River	3009	Redfish Lake Creek to EF Salmon River	COLD, SS, PCR DWS, SRW	SED, TEMP	44.45
Salmon River	3010	Hellsroaring Creek to Redfish Lake Creek	COLD, SS, PCR DWS, SRW	SED	13.34
Challis Creek	3013	Forest Boundary to Salmon River	BASE	QALT, NUT, SED	9.35
Garden Creek	3017	Forest Boundary to Salmon River	BASE	NUT, SED	14.39
Warm Spring Creek	3019	Headwaters to Sink	BASE	NUT, SED	21.56
Thompson Creek	3031	Scheelite Jim mill site to mouth	COLD, SS, SCR	MTU, SED	1.02
Yankee Fork	3035	Jordan Creek to Salmon River	COLD, SS, PCR DWS, SRW	HALT, SED	9.00
Yankee Fork	3036	Fourth of July Creek to Jordan Creek	COLD, SS, PCR DWS, SRW	HALT, SED	2.92
Lost Creek	5226	Headwaters to sink	BASE	UNKN	4.45
Kinnikinic Creek	5227	Sawmill Creek to Salmon River	BASE	UNKN	2.99
Road Creek	7009	Headwaters to EF Salmon River	BASE	UNKN	15.77
Middle Fork Clearwater					
No listed water bodies					
Little Salmon					
Little Salmon River	2863	Round Valley Creek to Salmon River	COLD, SS, PCR, DWS, SRW	UNKN	24.89
Squaw Creek	2865	Headwaters to Little Salmon River	COLD, SS, SCR	UNKN	5.61
Elk Creek	2869	Headwaters to Little Salmon River	BASE	SED	7.41
Big Creek	2877	Headwaters to Little Salmon River	BASE	NUT, SED, TEMP	15.12
Indian Creek	5094	Headwaters to Little Salmon River	BASE	SED	2.46
Shingle Creek	5165	Headwaters to Rapid River	BASE	SED	5.45
Brundage Reservoir	6875		BASE	TEMP	0.00

Notes:

BASE—Base Beneficial Uses
COLD—Cold Water Communities
DWS—Domestic Water Supply
EF—East Fork
PCR—Primary Contact Recreation
SCR—Secondary Contact Recreation
SRW—Special Resource Water
SS—Salmonid Spawning
BAC—Bacteria
HALT—Habitat Alteration
MTU—Metals (Unknown)
NUT—Nutrients
QALT—Flow Alteration
SED—Sediment
UNKN—Unknown
WQLS—Water Quality Limited Segment

Source: http://www2.state.id.us/deq/water/water1.htm#surface_water , EPA 2002

Table 3.3-3 lists the water bodies within the four subbasins that are water quality limited (i.e., violate State water quality standards). IDEQ has not listed many water bodies for temperature exceedences because of the State's present efforts to modify temperature criteria to more appropriately represent cold, cool, and warm water bodies throughout the State. EPA has created a list of Idaho streams that currently exceed the temperature criteria. The National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point source discharges into waters of the United States. Point sources are discrete conveyances such as pipes or human-made ditches. Common permitted dischargers include sewage treatment facilities, hatcheries, and mining facilities. Table 3.3-4 summarizes the permitted facilities by subbasin (EPA 2002).

Table 3.3-4. Summary of Permitted Facilities[1].

Subbasin	Owner	Name	NPDES #	Permit End Date[2]
Upper Salmon	Thompson Creek Mining Co	Molybdenum Mine	ID0025402	01/29/2007
Upper Salmon	IDFG	Sawtooth Fish Hatchery	ID0026441	10/21/1991
Clearwater	USFWS	Kooskia National Fish Hatchery	ID0000817	10/23/1995
Little Salmon	Idaho Power Co	Rapid River Hatchery	ID0022373	10/23/1995
Little Salmon	City of New Meadows	Wastewater Treatment	ID0023159	11/18/1991

[1]EPA 2002 (http://yosemite.epa.gov/r10/water).
[2]Facilities with permit end dates that have passed are operating under extensions.

The following is a brief summary of the water quality conditions for each of the four subbasins.

Lemhi Subbasin

The Lemhi Subbasin is comprised of 66 water body units. Beneficial uses include cold water biota, salmonid spawning, primary contact recreation, domestic water supply, secondary contact recreation, and special resource water (see Appendix D).

Fifteen stream reaches within the Lemhi Subbasin are listed as limited according to the 1998 Section 303(d) list. The mainstem of the Lemhi River is listed for bacteria exceedences and comprises 57 miles of the approximate 83 linear streams miles listed as polluted in the subbasin. The remaining 26 miles are composed of six smaller side drainages to the Lemhi and have excessive sedimentation, high levels of nutrients, or both. The Mill Creek Subbasin also is listed for having excessive flow alterations (see Table 3.3-3). EPA included eight Lemhi subbasin water bodies for exceeding Idaho's cold water temperature criteria (see Table 3.3-3).

Upper Salmon Subbasin

The Upper Salmon Subbasin is comprised of 135 water body units. Beneficial uses include cold water biota, salmonid spawning, primary contact recreation, secondary contact recreation, domestic water supply, and special resource water (Appendix D). Twelve water bodies are listed as limited according to the 1998 Section 303(d) list. The mainstem of the Upper Salmon River constitutes 44 miles of the approximate 139 linear miles of stream listed as polluted. The most common pollutant is sedimentation. Other criteria exceedences in the subbasin include nutrients, habitat alteration, and flow alteration. See Table 3.3-3 for names of specific reaches and their listed pollutants.

EPA has listed Squaw Creek for exceeding Idaho's cold water temperature criteria (See Table 3.3-3). There are two NPDES permitted sites in the subbasin (Table 3.3-4, Figure 3.3-7): the Thompson Creek Mine and the IDFG Sawtooth Hatchery.

Two Superfund sites are located within the Upper Salmon Subbasin: Grouse Creek Mining, Inc., and Clayton Silver Creek Mine and Associates Properties. No sites were identified within the other three subbasins. Water quality of adjacent tributaries is adversely affected by these sites.

Middle Fork Clearwater Subbasin

The Middle Fork Clearwater River is comprised of 11 water body units (Appendix D). Beneficial uses include cold water biota, salmonid spawning, primary contact recreation, domestic water supply, and special resource water. None of the water bodies are listed as water quality limited according to the 1998 Section 303(d) list. The Kooksia National Fish Hatchery is the only NPDES permitted site in the subbasin.

Little Salmon Subbasin

The Little Salmon Subbasin is comprised of 16 water body units. Beneficial uses include cold water biota, salmonid spawning, primary contact recreation, domestic water supply, and special resource waters (Appendix D). Seven water bodies are listed as water quality limited according to the 1998 Section 303(d) list; the most common water quality issue is excessive sedimentation. The mainstem of the Little Salmon River is listed for an unknown pollutant and constitutes 25 miles of the approximate 61 linear miles of stream listed in the subbasin. Big Creek is also listed for having high levels of nutrients. Brundage Reservoir is one of the few water bodies listed by the State for temperature exceedences (see Table 3.3-3).

EPA has listed Big Creek for exceeding Idaho's cold water temperature criteria (Table 3.3-3). There are two NPDES permitted sites in the subbasin (Table 3.3-4, Figure 3.3-9): the Idaho Power Company Rapid River Hatchery and the City of New Meadows wastewater treatment facility.

3.3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, it is assumed that fish barrier, screening, or streamflow improvement projects would be implemented by local entities with technical assistance from Reclamation, particularly in the Lemhi and Upper Salmon Subbasins. Therefore, the current water quality issues and trends would continue based on present land practices. Improvements in water quality would occur at a slower pace than under the Proposed Action. This assumes that IDEQ's 303(d) related actions and TMDL activities would be the primary focus to resolve water quality problems.

Cumulative Impacts

There would be no cumulative impacts from the No Action Alternative. Because of the slower pace of restoration efforts under the No Action Alternative compared to the Proposed Action, there would be a corresponding lag in improvements to water quality in the subbasins.

Proposed Action

Fish Passage Barriers

Push-Up Dams. Replacement of push-up dams would have some positive and negative impacts. The long-term benefit would be the elimination of the seasonal disturbance of stream sediments by in-stream heavy equipment creating the push-up dams. This would also reduce repeated sediment impacts on spawning gravels and macroinvertebrates. Short-term, one-time construction-related impacts would occur at the new permanent diversion sites that replace the push-up dams. Heavy equipment shaping the diversion channel would remove bank vegetation, disturb soils, and disturb streambed sediments. This disturbance, typically below the normal high water mark, would be insignificant in relation to push-up dam maintenance. Push-up dam maintenance can occur several times within the irrigation season. Each time maintenance is done overall water quality within the stream deteriorates from measured sediment mobilization. Overall stream sediments increase, disrupting cold-water biota and salmonid spawning.

Headgate Improvements

Improvements such as the consolidation of irrigation diversions and the upgrade of headgates would improve the amount of streamflow, which would have positive effects on water quality. Construction activity would occur at the margin of the stream and would have a relatively low potential for reducing water quality during construction. Reclamation would implement BMPs during construction that include provisions for a soil and erosion plan, limits on clearing and grading, seasonal work windows, and restoration of disturbed areas. There likely would be greater increase in water quality in the Lemhi and Upper Salmon Subbasins because of the number of diversions that are present compared to the Middle Fork Clearwater and Little Salmon Subbasins.

Fish Screens

Placing fish screens on water diversions would have no long-term impacts on water quality. Fish screens would be placed in irrigation canals away from the stream channel. There would be a negligible disturbance to vegetation from installation of smolt-return pipes, and no water quality effects.

Streamflow Improvement

Over the long term, water quality would improve proportionate to the increase in instream flows as a result of augmenting summer flows. The benefits would include reduced daytime summer water temperatures, reduced sediment and nutrients, increased dissolved oxygen (DO) levels, reduced algae production, improved cold water biota (macro-invertebrates), and improved salmonid spawning.

Water temperatures would be reduced with the deeper pools and increased stream velocities. Sediment, nutrients, and bacteria would be reduced by the curtailment of agricultural return flows. DO levels would increase with reduced temperatures and increased water velocities. Algae production would be reduced as a result of lower water temperatures and less nutrient loading from agricultural return flows. Cold water biota would improve by increasing macroinvertebrate species diversity and abundance. Species diversity and abundance are known to increase with lower water temperatures, reduced sediment and nutrients, and maintained minimum streamflows. Salmon spawning would be

improved by higher redd survival as a result of improved DO levels, lower sedimentation, and lower water temperatures.

Subbasins with stream reaches violating State water quality standards would likely see measurable water quality improvements with streamflow improvement. Benefits from streamflow improvement for the streams on the State's 303(d) list could enable the streams to be removed from this list. Table 3.3-5 indicates stream reaches in the subbasins with the greatest potential benefits from stream augmentation. There is one stream reach in the Lemhi and one in the Upper Salmon Subbasin that specifically listed for "flow alteration" (Table 3.3-5) that augmentation would directly address. Other listed reaches would also benefit.

There would be no long-term or short-term adverse impacts resulting from augmenting summer flows.

Table 3.3-5. 303d Listed Water Bodies with Greatest Potential Benefits from Flow Augmentation.

		Water Body	
Lemhi	**WQLS**	**Boundaries**	**Pollutant**
Kirtley Creek	3061	Headwaters to Lemhi River	*TEMP
Bohannon Creek	3065	Headwaters to Lemhi River	*TEMP
Wimpey Creek	3067	BLM boundary to Lemhi River	NUT, SED *TEMP
Sandy Creek	3070	Headwaters to Lemhi River	*TEMP
Kenney Creek	3072	Headwaters to Lemhi River	*TEMP
McDevitt Creek	3077	BLM boundary to Lemhi River	SED
Mill Creek	3082	Forest boundary to Lemhi River	QALT, NUT, SED
Little Eighteen Mile Creek	3084	Headwaters to Lemhi River	*TEMP
Eighteen Mile Creek	3093	Headwaters to Lemhi River	*TEMP
Hawley Creek	3095	First Diversion to Eighteen Mile Creek	NUT, SED
Lemhi River	7611	Confluence of Texas & Eighteen Mile Cr. to mouth	BAC
Lemhi River	7611	Headwaters to Salmon River	*TEMP
Upper Salmon			
Salmon River	3009	Redfish Lake Creek to E. F. Salmon River	SED, TEMP
Salmon River	3010	Hellsroaring Creek to Redfish Lake Creek	SED
Challis Creek	3013	Forest Boundary to Salmon River	QALT, NUT, SED
Garden Creek	3017	Forest Boundary to Salmon River	NUT, SED
Warm Spring Creek	3019	Headwaters to Sink	NUT, SED
Thompson Creek	3031	Scheelite Jim mill site to mouth	MTU, SED
Yankee Fork	3035	Jordan Creek to Salmon River	HALT, SED
Yankee Fork	3036	Fourth of July Creek to Jordan Creek	HALT, SED
Squaw Creek	6265	Headwaters to mouth	*TEMP
Middle Fork Clearwater			
No listed water bodies			
Little Salmon			
Elk Creek	2869	Headwaters to Little Salmon River	SED
Big Creek	2877	Headwaters to Little Salmon River	NUT, SED, *TEMP
Indian Creek	5094	Headwaters to Little Salmon River	SED
Shingle Creek	5165	Headwaters to Rapid River	SED

Notes:
BAC—Bacteria
NUT—Nutrients
QALT—Flow Alteration
SED—Sediment
WQLS—Water Quality Limited Section
* pollutants added to 1998 IDEQ's 303(d) list by EPA

Source: http://www2.state.id.us/deq/water/water1.htm#surface_water

Cumulative Impacts

Water quality improvements in the subbasins associated with the Proposed Action would likely have positive cumulative impacts to aquatic resources in the subbasins. The opportunities for improvement are particularly high in the Lemhi and the Upper Salmon Subbasins, which have a high number of irrigation diversions.

As individual actions are implemented there would be incremental increases in water quality including increased flows, higher stream velocities, increased dissolved oxygen, reduced water temperatures, and increased populations of cold water invertebrates. These improvements to water quality would have corresponding, direct benefits to anadromous salmonids in the subbasins. Improvements in streamflow would be particularly beneficial in those stream reaches identified as water quality or temperature limited.

3.3.3 Mitigation

In general, negative effects to water quality from the Proposed Action would be localized, short-term, and limited to the period of construction. During construction, contractors would be required to adhere to approved construction BMPs, NMFS screen criteria, and work windows to complete any improvements. BMPs specifically require the implementation and monitoring of an erosion and sedimentation control plan that would minimize sediment input to the stream from construction practices. The BMPs also specify limits on excavation and fill, footprint size, and riparian buffer disturbances. In addition, disturbed areas would be rehabilitated to the original contour and planted with native vegetation if needed. Any instream construction would be completed during the low flow period with minimally invasive practices to minimize the potential for increasing sedimentation and reducing water quality. The BMPs also specify that Reclamation consult with NMFS regarding project-specific in-water construction periods. These requirements would protect endangered species and establish conditions to limit or prevent disturbance to the streams. No additional mitigation is proposed.

3.4 Vegetation/Wetlands/Floodplains

3.4.1 Existing Conditions

The native flora of the Mountain Snake Province subbasins are composed of a diverse array of vegetative communities. The climates of the subbasins have great influence on the vegetation associations. The Little Salmon and Middle Fork Clearwater are located farther west than the other subbasins and therefore are more heavily influenced by the Pacific maritime climate. The Upper Salmon and Lemhi Subbasins are generally drier and experience colder winters. In addition, the plant communities of each subbasin reflect the moisture and elevation combinations throughout the basins. There are approximately 14 different vegetation associations (including rock) among the Mountain Snake Province subbasins (Table 3.4-1). In addition to native vegetation associations, irrigated agriculture lands (primarily pastures) are prevalent in the valleys of the subbasins. Across all the subbasins, evergreen forests and shrublands are the most abundant vegetative communities (NPPC 2001).

The Upper Salmon and Lemhi Subbasins have forested lands which are dominated by scrub and shrublands. Wyoming big sagebrush (*Artemisia tridentate wyomingensis*) and mountain big sagebrush (*Artemisia tridentate vaseyana*) are common shrubs in both subbasins. The Upper Salmon has the least amount of forest, especially Douglas-fir, which is an important component of the mid-elevations of the other subbasins (NPPC 2001, 2002). Additionally, the Upper Salmon is largely evergreen shrublands, lodgepole pine forests, and higher elevational communities such as subalpine evergreen woodland and mixed subalpine forests (NPPC 2001). Evergreen shrubland and evergreen dwarf-shrublands make up the majority of the vegetation communities in the Lemhi (NPPC 2000).

Table 3.4-1. Vegetation Associations found in the Mountain Snake Province Subbasins, Idaho.

Vegetation Association	Lemhi	Upper Salmon	Middle Fork Clearwater	Little Salmon
Alpine Meadow	X	X	X	
Bluebunch Wheatgrass Grassland			X	X
Douglas-fir Forest	X	X	X	X
Grand Fir Forest		X	X	X
Idaho Fescue Grassland			X	X
Low Sagebrush Dwarf-Shrubland		X		
Mountain Big Sagebrush Shrubland	X	X		X
Ponderosa Pine Woodland				X
Rock	X		X	
Subalpine Fir Forest		X	X	X
Subalpine Fir Forest and Woodland	X	X	X	X
Whitebark Pine-Limberpine Forest and Woodland	X	X		
Wyoming Big Sagebrush-Mountain Big Sagebrush Shrubland	X	X		

Source: NPPC 2001

The Middle Fork Clearwater is also heavily forested, with about 75 percent forest cover (NNPC 2002). The Middle Fork Clearwater is similar to the Little Salmon in terms of having a diverse mix of forested communities, including Douglas-fir, ponderosa pine, grand fir (*Abies grandis*), lodgepole pine (*Pinus contorta*), and western redcedar (*Thuja plicata*) (NPPC 2002).

The Little Salmon Subbasin is the most forested, with 91 percent of the land area in forested habitat (Hamm et al. 1997). These forests are composed primarily of ponderosa pine (*Pinus ponderosa*), a forest type that does not occur in the Lemhi or Upper Salmon (NPPC 2001). Mixed subalpine and Douglas-fir (*Pseudotsuga menziesii)* forests make up the majority of the other vegetative communities in the Little Salmon Subbasin (NPPC 2001). The Little Salmon Subbasin has the largest area of bluebunch wheatgrass (*Agropyron spicatum*) and Idaho fescue (*Festuca idahoensis*) communities among the Mountain Snake Province subbasins.

Wetlands cover small portions of the Mountain Snake Province subbasins areas but are important in terms of vegetative diversity. Wetlands occur in association with small ponds filled by spring run-off, wet meadows, springs, seeps, bogs, small lakes, and riparian areas. Wetlands in the Middle Fork Clearwater Subbasin are habitat to the Clearwater phlox (*Phlox idahonis*), which is endemic to only a few wet meadows within this subbasin (NPPC 2002).

Noxious weeds are widespread throughout the subbasins, with about 19 species considered a threat to the vegetative communities of the Mountain Snake Province subbasins (NPPC 2001, 2002). Common species include cheatgrass (*Bromus tectorum*), yellow starthistle (*Centaurea solistitialis*),

spotted knapweed (*Centaurea maculosa*), and common crupina (*Crupina vulgaris*). Spotted knapweed is the most widespread and is found in all Mountain Snake Province subbasins.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Under the No Action Alternative, ongoing restoration efforts would continue in the subbasins with technical assistance provided by Reclamation in the Lemhi and Upper Salmon Subbasins. Disturbance to riparian vegetation would be expected in the larger projects that included the use of heavy equipment such as backhoes or bulldozers. In most cases, there is some access to push-up dams because ranchers must periodically maintain these structures. Where vegetative clearing would occur, it would be kept to a minimum. The effects of vegetation removal and subsequent restoration would be relatively short term and minor. Long-term effects to vegetation would be beneficial. Riparian vegetation and streamside wetlands would benefit from increased streamflow due to more efficient water withdrawal systems. Replacement of push-up dams would preclude the need to use heavy equipment in the stream for dam maintenance and eliminate repeated vegetation disturbance associated with this practice.

Cumulative Impacts

There would be no cumulative impacts to vegetation from the No Action Alternative.

3.4.2.2 Proposed Action

Implementation of restoration efforts under the Proposed Action would have similar effects to those described under the No Action Alternative, but the pace and scope of implementation would be greater under the Proposed Action. Modifying headgates or installing fish screens would have minimal effects to vegetation because these features are generally in disturbed settings. Any vegetation removal or disturbance would be restored. Reclamation would be able to implement a greater number of restoration efforts in the subbasins, which would result in higher levels of short-term riparian vegetation disturbance, particularly for push-up dam removal. However, Reclamation, in consultation with NMFS and USFWS, has developed BMPs to minimize the amount of vegetative clearing, restore disturbed areas with native vegetation, and monitor these sites to protect endangered species and ensure restoration success. In addition, the faster pace of implementation under the Proposed Action would provide greater long-term benefits to riparian vegetation and streamside wetlands by increasing streamflow, removing push-up dams and reducing the need for instream maintenance and the corresponding vegetation disturbance.

Cumulative Impacts

No cumulative impacts to vegetation are anticipated from the Proposed Action.

3.4.3 Mitigation

Because the BMPs for limiting vegetation disturbance and for restoration are incorporated into the project and no adverse impacts are anticipated, no mitigation is necessary.

3.5 Fish

3.5.1 Existing Conditions

A variety of resident and anadromous fish are present in the four subbasins addressed in this EA. Table 3.5-1 lists the fish taxa present, the subbasins in which they reside, and any special-status designations. There are 24 taxa of fish inhabiting the Middle Fork Clearwater Subbasin, 19 in the Little Salmon Subbasin, 24 in the Upper Salmon Subbasin, and 19 in the Lemhi Subbasin. None of the species discussed in this section are ESA-listed when they occur in Mountain Snake Province subbasins. Species listed under the Federal Endangered Species Act (ESA) are addressed in Section 3.7, Threatened and Endangered Species, and are not addressed in this section. Threatened and endangered species include: Snake River spring/summer chinook salmon (*Oncorhynchus tshawytscha*) ESU except in the Middle Fork Clearwater River; Snake River fall chinook salmon ESU; Snake River sockeye salmon (*O. nerka*) ESU; Snake River steelhead (*O. mykiss*) ESU; and Columbia River Basin bull trout (*Salvelinus confluentus*) distinct population segment (DPS). Bull trout critical habitat is also described in Section 3.7. The spring/summer chinook stock for the Middle Fork Clearwater River is addressed in this section because it is not a Federally listed stock under the ESA. Distributions of west-slope cutthroat trout and ESA-listed species are shown in Figures 3.5-1 through 3.5-4.

Major threats to anadromous and other fisheries include watershed management activities such as logging, road building, agriculture, and streamside development that result in higher temperature, base flow limitations, flow variation, sedimentation, lack of instream cover, and connectivity/passage problems. Every potential threat mechanism is not applicable to every species; therefore, threats to individual species are listed under each species' discussion.

Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Act (MSA) required heightened consideration of a fish habitat in resource management decisions. EFH is defined in Section 3 of the MSA as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." NMFS interprets EFH to include aquatic areas and their associated physical, chemical, and biological properties used by fish that are necessary to support a sustainable fishery and the contribution of the managed species to a healthy ecosystem. The MSA and its implementing regulations at 50 CFR 600.920(j) require that before a Federal agency may authorize, fund, or carry out any action that may adversely effect EFH, it must consult with NMFS and, if requested, the appropriate Regional Fishery Management Council. The purpose of consultation is to develop a conservation recommendation that addresses all reasonably foreseeable adverse effects to EFH.

Further, the action agency must provide a detailed response in writing to NMFS and the appropriate Council within 30 days after receiving an EFH conservation recommendation. The response must include measures proposed by the agency to avoid, minimize, mitigate, or offset the impact of the activity on EFH. If the response is inconsistent with conservation recommendations of NMFS, the agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, or mitigate such effects.

Only certain species are addressed in this section in detail based on six criteria: (1) they are of special importance because of listing by state or Federal agencies as species of concern; (2) they have

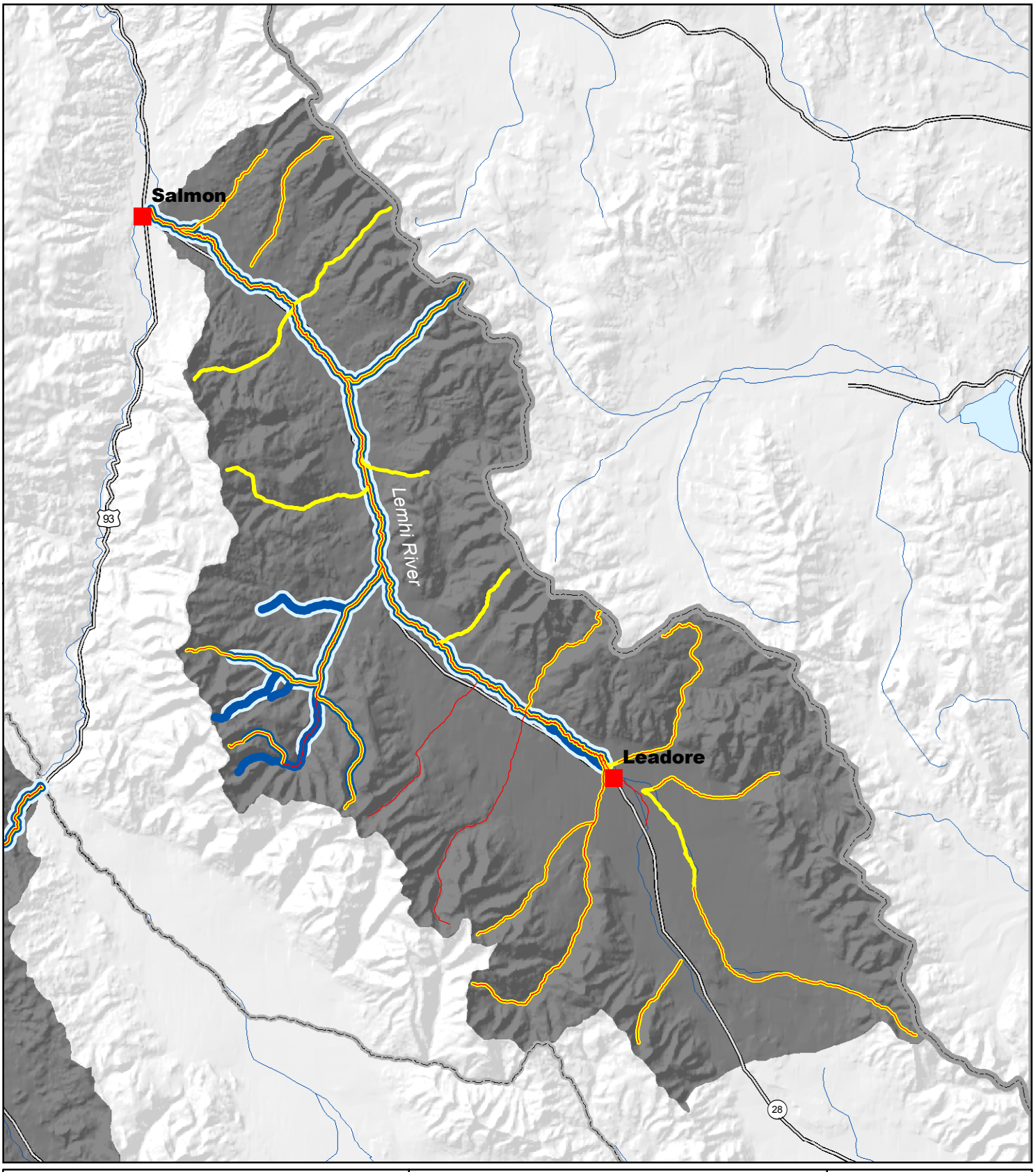
Table 3.5-1. Fish Species Present in the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins.

Species Common Name	Scientific Name	Special Status [1]	Anadromous (A) or Resident (R)	Native (N), Exotic (E), or Reintroduced (R)	Presence by Subbasin			
					Lemhi	Upper Salmon	Middle Fork Clearwater	Little Salmon
Pacific lamprey	*Lampetra tridentata*	SE	A	N	X [5]	X	X	
Chinook salmon (spring/summer) ESU[2]	*Oncorhynchus tshawytscha*	FT, ST	A	N/R	X	X	X [3,4]	X
Sockeye salmon ESU[2]	*Oncorhynchus nerka*	FE, SE	A	N		X		
Kokonee salmon	*Oncorhynchus nerka kennerlyi*		R	E		X		
Steelhead ESU[2]	*Oncorhynchus mykiss*	FT, SSOC	A	N	X	X	X	X
Redband trout	*Oncorhynchus mykiss*	SSOC	R	N	X	X	X	X
Rainbow trout	*Oncorhynchus mykiss*		R	E	X	X	X	X
Coho salmon	*Oncorhynchus kisutch*		A	R			X[4]	
Westslope cutthroat trout	*Oncorhynchus clarki lewisi*	FSOC, SSOC	R	N	X	X	X	X
Bull trout	*Salvelinus confluentus*	FT, SSOC	R	N	X	X	X	X
Brook trout	*Salvelinus fontinalis*		R	E	X	X	X	X
Golden trout	*Salmo aguabonita*		R	E		X		
Lake trout	*Salvelinus namaycush*		R	E		X		
Arctic grayling	*Thymallus arcticus*		R	E	X	X	X	
Mountain whitefish	*Prosopium williamsoni*		R	N	X	X	X	X
Chiselmouth	*Acrocheilus alutaceus*		R	N	X		X	
Peamouth	*Mylocheilus caurinus*		R	N			X	
Longnose dace	*Rhinichthys cataractae*		R	N	X	X	X	
Speckled dace	*Rhinichthys osculus*		R	N	X	X	X	X
Leopard dace	*Rhinichthys falcatus*		R	N				X
Redside shiner	*Richardsonius balteatus*		R	N	X	X	X	
Largescale sucker	*Catostomus machrocheilus*		R	N	X	X	X	X
Bridgelip sucker	*Catostomus columbianus*		R	N	X	X	X	X
Mountain sucker	*Catostomus platyrhynchus*		R	N		X		X
Sandroller	*Percopsis transmontana*	SSOC	R	N			X	
Mottled sculpin	*Cottus bairdi*		R	N	X	X	X	X
Shorthead sculpin	*Cottus confusus*		R	N	X	X	X	X
Paiute sculpin	*Cottus beldingi*		R	N			X	X
Torrent sculpin	*Cottus rhotheus*		R	N		X	X	X
Slimy sculpin	*Cottus cognatus*		R	N				X
Northern pikeminnow	*Ptychocheilus oregonensis*		R	N	X	X		X

[1] FE = Federal Endangered
FT = Federal Threatened
FSOC = Federal Species of Concern
SE = State of Idaho Endangered
ST = State of Idaho Threatened
SSOC = State of Idaho Species of Concern

[2] Unless specified otherwise, this species is a member of a Snake River ESU.
[3] Excluded from the ESU encompassing the Snake River spring/summer chinook ESU in the Snake River Basin
[4] Reintroduced
[5] Occurred historically, but current status is unknown

Source: NPPC 2001



Bull Trout
Westslope Cutthroat
Steelhead
Spring/Summer Chinook
Stream

* Line thickness does not represent quantity

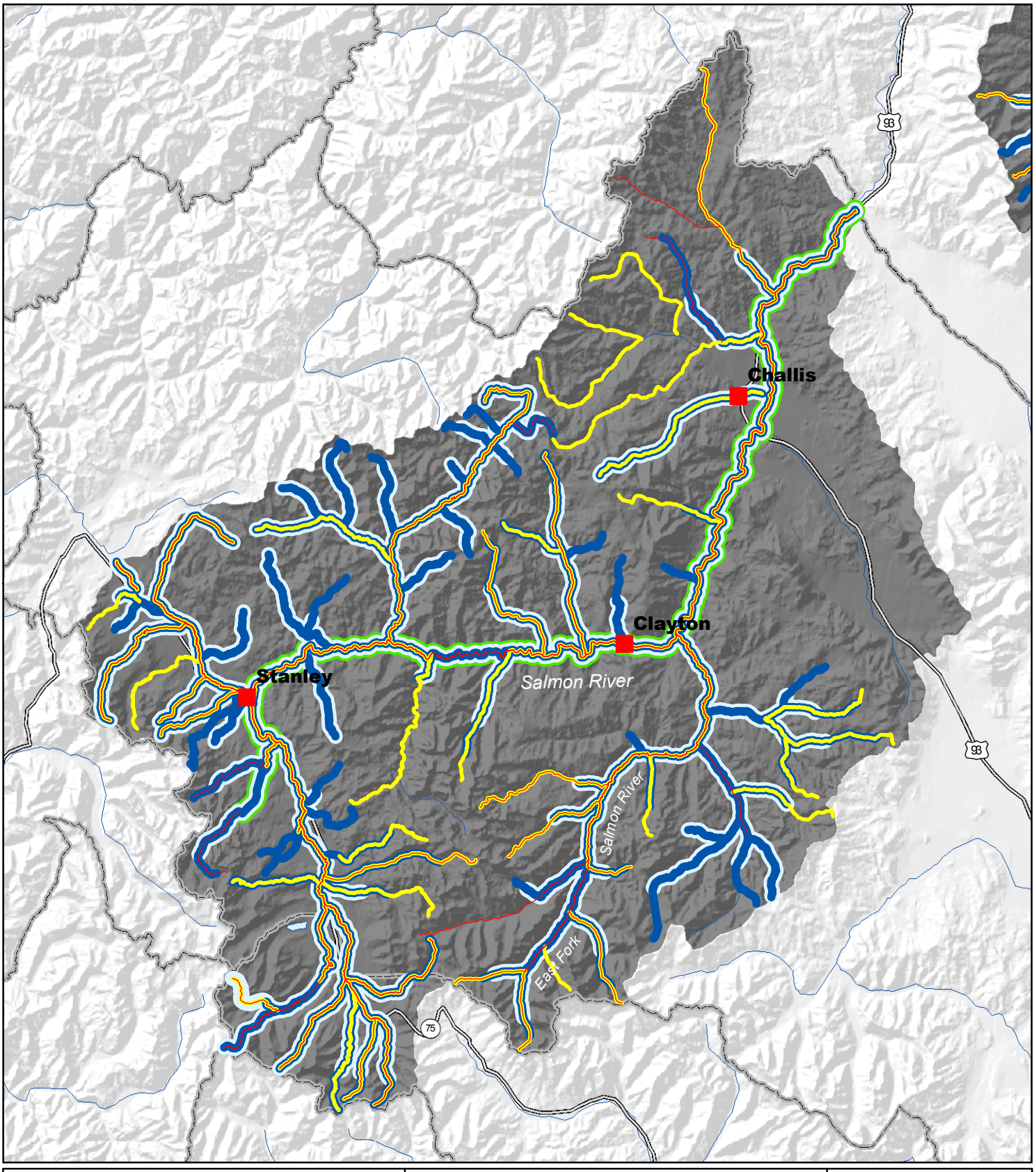
Subbasin
Open Water
State Boundary
County Boundary
Highway
Town

FIGURE 3.5-1
Selected Fish Species Distribution
Lemhi Subbasin

0 1 2 4 Miles

Source: USBR, IDFG, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.5-1.mxd

Back of Figure 3.5-1. Selected Fish Species Distribution Lemhi Subbasin



Bull Trout
Westslope Cutthroat
Steelhead
Spring/Summer Chinook
Sockeye
* Line thickness does not represent quantity

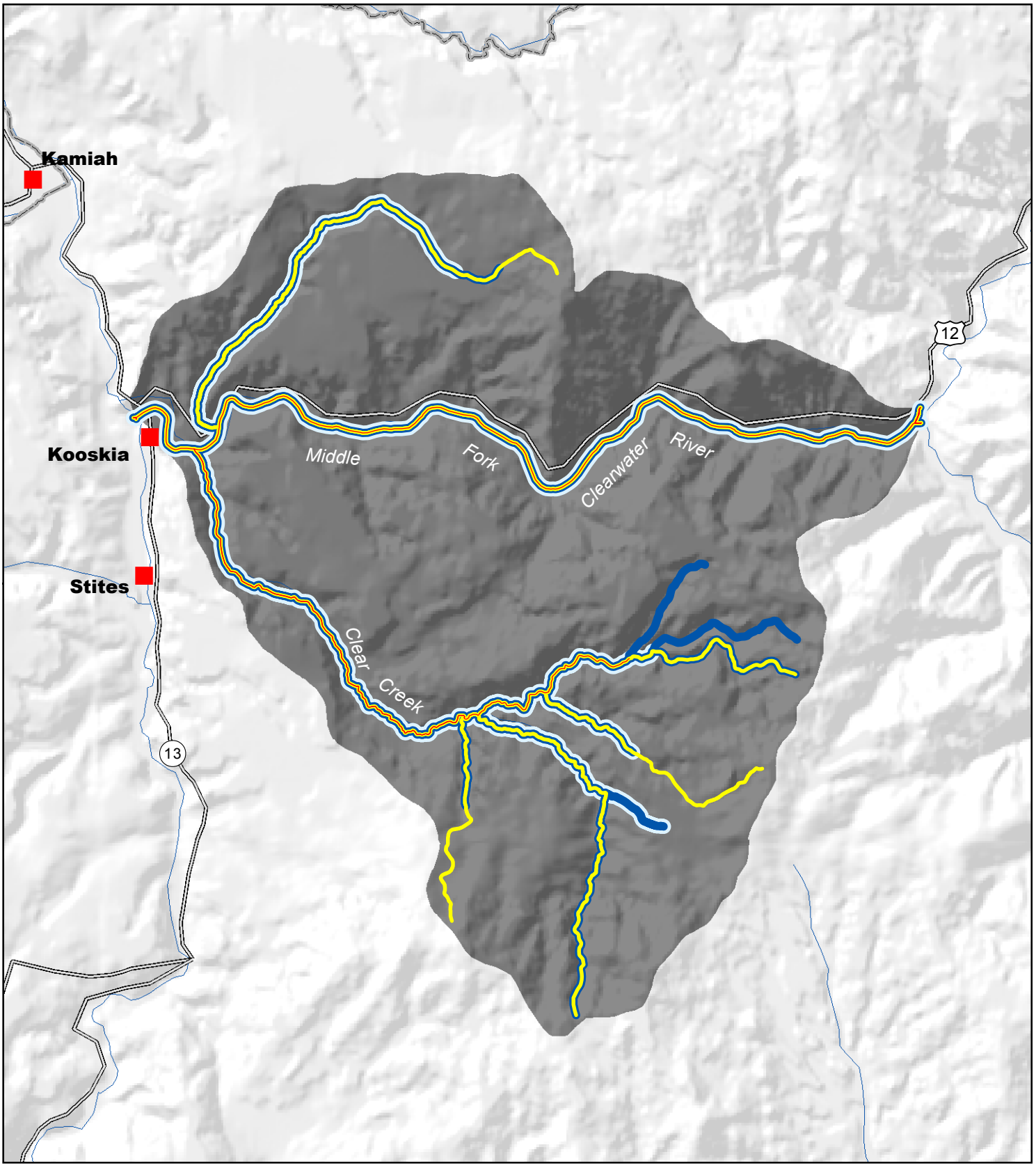
Stream
Subbasin
Open Water
County Boundary
Highway
Town

FIGURE 3.5-2
Selected Fish Species Distribution
Upper Salmon Subbasin

0 2 4 8 Miles

Source: USBR, IDFG, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.5-2.mxd

Back of Figure 3.5-2. Selected Fish Species Distribution Upper Salmon Subbasin



Bull Trout
Westslope Cutthroat
Steelhead
Spring/Summer Chinook
Stream

Subbasin
Open Water
County Boundary
Highway
Town

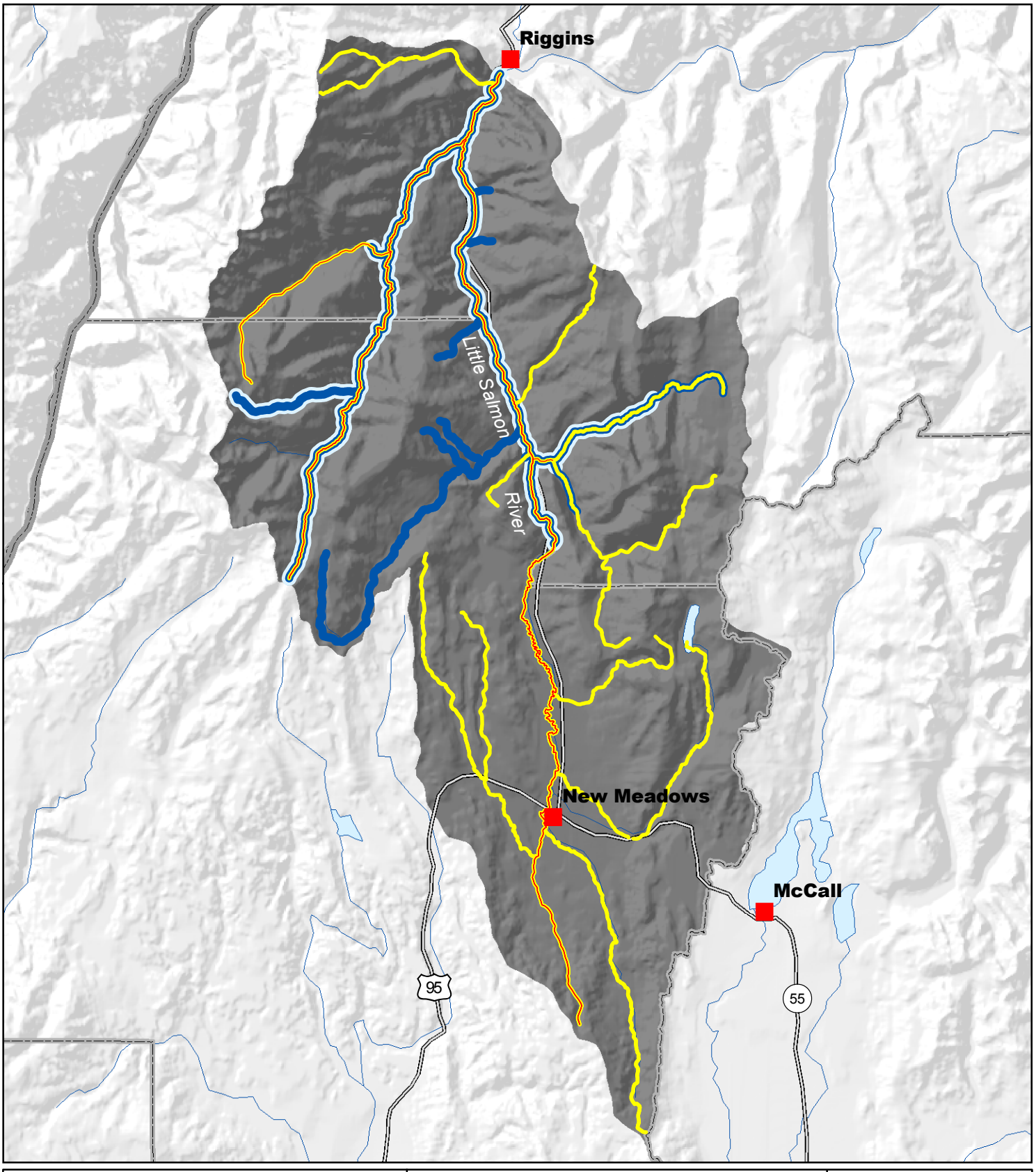
* Line thickness does not represent quantity

FIGURE 3.5-3
Selected Fish Species Distribution
Middle Fork Clearwater Subbasin

0 0.5 1 2 Miles

Source: USBR, IDFG, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.5-3.mxd

Back of Figure 3.5-3. Selected Fish Species Distribution Middle Fork Clearwater Subbasin



Bull Trout
Westslope Cutthroat
Steelhead
Spring/Summer Chinook
Stream

* Line thickness does not represent quantity

Subbasin
Open Water
State Boundary
County Boundary
Highway
Town

FIGURE 3.5-4
Selected Fish Species Distribution
Little Salmon Subbasin

0 1 2 4 Miles

Source: USBR, IDFG, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.5-4.mxd

Back of Figure 3.5-4. Selected Fish Species Distribution Little Salmon Subbasin

the potential to negatively impact other selected species; (3) adequate data are available to aid future decision-making; (4) historical dominance in the watershed; (5) social value; or (6) a general association with higher quality habitats. Species meeting one or more of these criteria that are addressed include coho salmon (*O. kisutch*), spring/summer chinook salmon in the Middle Fork Clearwater Subbasin, westslope cutthroat trout (*O. clarki lewisi*), brook trout (*Salvelinus fontinalis*), redband trout (*O. mykiss*), pacific lamprey (*Lampetra tridentata*), non-native rainbow trout (*O. mykiss*), and mountain whitefish (*Prosopium williamsoni*).

Only subbasins in which a particular species are found are discussed within each species section below.

3.5.1.1 Coho Salmon

Coho salmon in the Middle Fork Clearwater Subbasin are hatchery-derived fish and, as such, have no special status. Coho salmon historically migrated to and spawned in the subbasin. Poor fish passage facilities at Lewiston Dam, constructed in 1927, are generally accepted as the factor resulting in extirpation of this species from the subbasin (Nez Perce Tribe and IDFG 1990). Coho salmon were officially declared extinct throughout the Snake River Basin in 1986. Reintroduction efforts were conducted by IDFG between 1962 and 1968 but were abandoned because of lack of success. The Nez Perce Tribe began reintroduction efforts in 1995. Reintroduced coho salmon have spawned in Lolo Creek of this subbasin.

3.5.1.2 Spring/Summer Chinook Salmon

The Middle Fork Clearwater Subbasin is not part of the Snake River spring/summer chinook ESU. This is because spring/summer chinook salmon were extirpated and then reintroduced into this subbasin. However, this species does represent an important effort to restore an indigenous species to its former range and habitat. Spring/summer chinook are distributed relatively continuously through the subbasin (NPPC 2002) (Figure 3.5-3). Populations are classified as present-depressed. Spring/summer chinook enter the Middle Fork Clearwater Subbasin in April through July (Nez Perce Tribe and IDFG 1990). Spawning occurs in August and September, with emergence completed by April (Table 3.5-2). Juveniles migrate to the ocean in their second year, usually from March through June (USFWS 1999).

Major factors limiting use for this species include steep stream gradients, high water temperature, sedimentation, poor instream cover, and dewatering.

3.5.1.3 Westslope Cutthroat Trout

This species is listed as a State of Idaho and Federal species of concern and has been proposed for Federal ESA listing in some areas of its range. It is listed as a sensitive species by the BLM and the U.S. Forest Service (USFS).

Westslope cutthroat spawn in April and May, with emergence in June and July (Table 3.5-2). Migration occurs seasonally to locate spawning or wintering habitat (Bjornn and Mallett 1964). Overwintering survival is highly dependant on deep pools or crevices and interstitial spaces in substrate in streams without deep pools (Paradis et al. 1999a).

Table 3.5-2. Timing of Key Life History Stages of Anadromous and Selected Resident Fish Species in Project Area Drainages.[1]

	Month											
Species	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Anadromous Fish												
Spring/Summer Chinook Salmon												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult			X	X	X	X	X	X	X	X		
Spawning								X	X	X		
Fall Chinook Salmon												
Life stage: Juvenile [2]				X	X	X	X	X				
Adult								X	X	X	X	X
Spawning										X	X	X
Steelhead												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult	X	X	X	X	X				X	X	X	X
Spawning		X	X	X	X							
Coho Salmon												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult									X	X		
Spawning										X		
Sockeye Salmon												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult							X	X	X	X	X	
Spawning										X		
Pacific Lamprey												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult	X	X	X	X	X	X	X	X	X	X	X	X
Spawning			X	X								
Resident Fish												
Bull Trout												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult	X	X	X	X	X	X	X	X	X	X	X	X
Spawning									X	X		
Westslope Cutthroat Trout												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult	X	X	X	X	X	X	X	X	X	X	X	X
Spawning				X	X							
Redband and Rainbow Trout												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult	X	X	X	X	X	X	X	X	X	X	X	X
Spawning		X	X	X	X	X						
Mountain Whitefish												
Life stage: Juvenile	X	X	X	X	X	X	X	X	X	X	X	X
Adult	X	X	X	X	X	X	X	X	X	X	X	X
Spawning										X	X	X

[1] Includes Federal ESA listed species.
[2] Cold water temperatures may result in some juveniles rearing an extra year in the river before migration to the ocean.

Source: NPPC 2002

Other species introductions, angling mortality, and habitat disruption have been identified as the main contributors to this species' decline (USFS 1997). Hybridization with Yellowstone cutthroat trout is the largest threat, although no Yellowstone cutthroat have been stocked since the late 1970s.

Westslope cutthroat trout are distributed throughout the Lemhi, Upper Salmon, and Little Salmon subbasins, although populations are restricted compared to historical conditions (Rieman and Apperson 1989) (Figures 3.5-1 – 3.5-4). Some populations have been isolated because of habitat fragmentation due to barriers.

Populations in the Middle Fork Clearwater Subbasin may prove important to recovery efforts (NPPC 2002). Historically, westslope cutthroat were likely abundant in the headwaters of the Middle Fork, but populations are now defined as present-depressed (Clearwater National Forest 1997). They are found in all major drainage systems (Figure 3.5-3).

3.5.1.4 Brook Trout

Brook trout are an eastern North America species. Brook trout hybridize with bull trout and displace westslope cutthroat trout, particularly in low-gradient streams. Spawning occurs in late September and October with emergence during April and May. Redds are constructed in gravel but may be constructed in sand or silt if groundwater upwelling occurs (Meehan and Bjornn 1991).

Brook trout are present throughout the Lemhi, Upper Salmon, and Little Salmon Subbasins. They were first introduced in 1913 and have spread throughout the Salmon River system. They are no longer being stocked by IDFG to avoid interaction with bull trout.

In the Middle Fork Clearwater Subbasin, brook trout have been stocked since the 1930s, although none have been stocked since 1984 (Nez Perce National Forest 1998).

3.5.1.5 Redband Trout

Redband trout are an Idaho species of concern and a BLM and USFS sensitive species. Redband trout are thought to be resident steelhead trout where they coexist with anadromous steelhead (Behnke 1992). Their distribution is not well understood in these areas because of the difficulty of differentiating juvenile steelhead from redband trout.

Redband trout spawn in February through June when water temperatures exceed 35 to 39^{o}F (Table 3.5-2) (Stolz and Schnell 1991). Fry take several years to mature. Hybridization with non-native rainbow trout poses the greatest threat to this species.

Redband trout are distributed throughout the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins. However, few data are available to describe their status.

3.5.1.6 Pacific Lamprey

This species is listed as endangered by the State of Idaho. Pacific lamprey were present in all subbasin drainages historically, but the current population is considered extremely depressed (CBFWA 1999).

Adult lamprey migrate into fresh water from May through September, spawning the following March or April (Table 3.5-2). Hatching occurs 2 to 3 weeks following fertilization, after which the

ammocoetes burrow into mud. The ammocoetes transform into adults 5 or more years later, at which time they migrate to the ocean (Simpson and Wallace 1982).

Lamprey are vulnerable to water quality degradation, which limits diatom production, and to sedimentation from land management (Paradis et al. 1999b). Additional threats include low flows and poor riparian conditions, with resultant high water temperatures (Close 2000).

The population status for the Lemhi and Little Salmon Subbasins are unknown. Very small numbers are thought to reside in the Upper Salmon Subbasin (NPPC 2001).

For the Middle Fork Clearwater Subbasin, individuals are limited to larger, accessible tributaries (BLM 2000).

3.5.1.7 Non-Native Rainbow Trout

Stocking of non-native rainbow trout began in the 1910s, particularly in streams along roads. Extensive stocking of alpine lakes has also occurred. Current IDFG policy is to stock only sterile rainbow trout (IDFG 2001). Life history for this species is similar to that described for redband trout in Section 3.5.1.5. This species can cross-breed with native salmonids and reduce the native fish's genetic integrity. This species is found throughout all four subbasins.

3.5.1.8 Mountain Whitefish

Mountain whitefish have no special Federal or State status. They are regulated primarily through State law as a game fish.

Little is known about mountain whitefish life history specific to the subbasins. In general, mountain whitefish migrate within stream systems over the course of a year. They migrate from smaller streams in the summer where they are feeding to larger streams during fall, where they spawn from October through early December. They then migrate to deep water pools to overwinter (Davies and Thompson 1976). Emergence occurs in March and April. Younger juveniles inhabit shallow, slow moving water, side channels, and pools, and larger juveniles and adults prefer bottom habitat in mainstem pools and runs.

Threats to mountain whitefish include increasing water temperature and sediment loads that fill spawning gravel. It prefers cold mountain streams and rivers.

This species is well-distributed throughout the northern two-thirds of the Lemhi Subbasin. This species is well distributed throughout the Middle Fork Clearwater Subbasin. This species is well distributed throughout the northern half of the Little Salmon Subbasin and the central and northern parts of the Upper Salmon Subbasin.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

Under the No Action Alternative, Reclamation would continue to provide technical assistance in the Lemhi and Upper Salmon Subbasins at the same level of involvement that occurred before the FCRPS BiOp was issued. Reclamation would not provide technical assistance in either the Little Salmon or Middle Fork Clearwater Subbasins, and Reclamation would not directly fund or imple-

ment any of the habitat improvement projects in the Middle Fork Clearwater, Little Salmon, Upper Salmon, or Lemhi Subbasins that are described below for the Proposed Action. Instream habitat and riparian conditions and the status of anadromous and resident fish species present in these subbasins would generally be similar to existing conditions, and current trends would likely continue. Habitat improvements and anticipated benefits to fish would occur but at a slower pace than described below for the Proposed Action.

No EFH would be adversely affected from implementation of the No Action Alternative. There would be long-term benefits to EFH from the No Action Alternative but these would accumulate at a slower pace than as described under the Proposed Action.

Cumulative Impacts

Continued problems with barriers, screens, and streamflow in the subbasins and the slower implementation of restoration efforts in the Lemhi and Upper Salmon Subbasins in the No Action Alternative would result in cumulative adverse impacts to resident and anadromous fish in the subbasins. Anadromous salmonids would continue to encounter multiple barriers to downstream and upstream migration, low streamflows and the ensuing problems of water quality, and juveniles would encounter unscreened diversions or inadequate fish screens. Because of the high number of diversions in the Lemhi and Upper Salmon Subbasins cumulative adverse effects would likely disproportionately affect fish stocks in these drainages.

3.5.2.2 Proposed Action

Anadromous and resident fish species and their habitat in the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins would benefit from Reclamation's fish habitat improvement program under the Proposed Action. Program objectives cover three categories of actions that would be implemented to eliminate instream fish passage barriers, correct fish screen deficiencies associated with irrigation practices on private lands, and augment and improve streamflows. The effects of each category of action on fisheries resources are described in the following text. Because the specific types, individual locations, and number of willing participants in the habitat improvement projects within the four subbasins are not known at this time, lack of specific information requires the discussion to be programmatic in nature. Expected benefits to subbasins and fish species are noted where possible.

Fish Passage Barriers

Activities related to fish passage barriers may include the consolidation of irrigation diversions to reduce the number of instream barriers to fish, removal of false attraction from return flow, removal of individual gravel push-up dams, and replacement of these temporary structures with permanent diversions that allow upstream and downstream fish passage. These actions would benefit local movements of resident species and the longer migrations of anadromous species by reopening migratory corridors and allowing access to portions of currently inaccessible but suitable mainstem and tributary habitat. Historic spawning and rearing habitat would once again be accessible and should increase production by resident and anadromous species within the different subbasins. Other direct and indirect passage-related impacts on fish, such as stress, injury, and delayed (or blocked) migrations by juveniles and adults at diversion dams, would be eliminated under the Proposed Action. In addition, the one-time construction of permanent diversions with fish passage facilities would avoid

the potential for adversely affecting aquatic habitat and resources during the instream reconstruction of temporary facilities each year. The overall effect of removing fish passage barriers would benefit resident and anadromous species alike. Non-listed species would be affected under the umbrella of safeguards for listed species. Construction windows vary; Reclamation will schedule in-stream construction activities in consultation with fish biologists from IDFG, NMFS, USFS to avoid adversely affecting resident and anadromous fish.

The same set of BMPs would be followed as during the construction of channel enhancements and construction of diversion dams and fish passage facilities. Because of these very precautionary practices and procedures, no long-term, substantive adverse effects on anadromous or resident fish species or their habitat would be expected. If adverse effects did occur, they would be expected to be temporary, localized, and minor in nature and not result in adverse impacts on aquatic habitat or species. Similarly, if any fish were displaced by noise or human activities during construction, the effect would be temporary and localized and would not result in substantive adverse impacts.

Fish migration barriers and habitat fragmentation problems were described for the Middle Fork Clearwater, Lemhi, Upper Salmon, and Little Salmon Subbasins in discussions of existing conditions. The reduction or elimination of fish passage barriers in all four of the subbasins would result in several of the same kinds of fisheries benefits as streamflow improvement. These benefits include greatly improved fish passage and habitat connectivity, but would also include the occupation and use of previously inaccessible stream reaches for spawning and rearing, as well as year-round habitat. Benefits would accrue to the same fish species and in the same subbasins as described for flow improvements. The magnitude of benefits would ultimately depend on the number and location of diversion dam projects that are implemented under the Proposed Action, and the quantity and quality of previously inaccessible stream habitat that would then become available. Habitat suitability in these new stream reaches would vary by fish species according to factors such as stream depth and width, water velocity, instream and overhead cover, substrate composition, and a variety of other factors. Smaller resident species with cold water preferences (such as westslope cutthroat trout) may benefit most from access to headwater tributaries, while species such as redband trout that are more tolerant of warmer water temperatures may benefit from increased access to lower elevation drainages. Larger species such as reintroduced populations of spring/summer chinook salmon and coho salmon may benefit more from access to upstream reaches of mainstem drainages.

Headgate Improvements

Improvements to headgates that would increase water withdrawal efficiency and other improvements such as consolidation of headgates would improve fish habitat by increasing flows and removing nuisance attractants. Habitat improvement would include a widened stream perimeter, improved water depth, and associated improvements to water quality. Because headgate improvement construction would be limited to the margin of the stream there is a small risk of decreased water quality and disturbance to fish habitat during the construction phase. Implementation of the BMPs (Appendix B) would significantly reduce the potential for adversely affecting fish habitat or water quality.

Fish Screens

Activities related to fish screens may include screening unscreened irrigation diversions or replacing obsolete screens with screens that meet NMFS criteria. This action would reduce mortalities of primarily juvenile and smaller fish species that are entrained through or impinged on improperly oper-

ating fish screens, as well as mortalities of juveniles and adults that are lost to irrigation ditches and canals at unscreened diversions. Benefits would include increased survival of resident and anadromous fish species, especially of smaller juveniles that have recently emerged from spawning gravels near diversions during the irrigation season and are not strong enough to escape intake flow velocities. Some increased production of resident and anadromous species would be expected in those drainages where mortalities of these species from unscreened or improperly screened diversions have been high. This effect would benefit all fish species occurring in these subbasins.

No long-term, substantive adverse effects on anadromous or resident fish species or their habitat would be expected from screening irrigation diversions. The same BMPs and construction window as previously described (see Water Quality Section 3.3 and Appendix B) would be used to prevent or minimize the occurrence of adverse effects during construction. Any adverse effects (such as increased water turbidity) would be temporary, localized, and minor in nature and would not result in adverse impacts on aquatic habitat or species.

Benefits from properly functioning fish screens would accrue to the same fish species and in the same Subbasins as described for fish passage barriers and flow improvements. Benefits may be greatest in the Lemhi Subbasin where many irrigation diversions on lower reaches of tributaries are not screened to protect migrating fish. The magnitude of benefits would ultimately depend on the number and location of fish screen projects that are implemented under the Proposed Action and the current losses various species are experiencing at unscreened or improperly screened diversions. Benefits from reduced entrainment and/or impingement mortalities should be greatest in those areas with numerous irrigation diversions that also provide important spawning and rearing habitat for anadromous and/or resident fish species.

Streamflow Improvement

Streamflow augmentation and improvement associated with water acquisition, water leasing, and/or channel enhancements would benefit all life stages of resident and anadromous fish species. This would be especially important during late summer and early fall, often a critical time for aquatic species because streamflows are naturally low and the demand for crop irrigation can be high. Expected benefits of streamflow improvement include increases in the amount, quality, suitability, and diversity of instream habitat. Examples include a widened stream perimeter and increased streambed area, increased water depths, a greater range of water velocities required by various life stages of fish, and an increased diversity of habitat types (such as riffles, runs, pools, and pocket water) used by different life stages of fish. The resulting increased wetted perimeter of the streambed and the increased flow and velocity would provide a greater amount of available habitat and a higher quality of habitat for fish. These habitat improvements would contribute to increased spawning and rearing success, provide higher quality holding and over-wintering habitat, and eliminate migratory barriers to anadromous and resident species caused by shallow water depths during summer and fall. They would also help eliminate the potential for fish stranding and mortalities in reduced-flow and dewatered stream reaches. Improved corridor connectivity would benefit both upstream and downstream migrations by resident species in their local movements and by anadromous spawning adults and juvenile outmigrants in their long-distance migrations.

Increased streamflows also would flush and perhaps reduce the amount of sediment that can accumulate among stream substrate interstices. Reduction of streambed sediment would improve spawning and early rearing success of all salmonid species. In addition, improved streamflows may im-

prove water quality by reducing the percentage of streamflows contributed by irrigation return flows, which can contribute to increased nutrient levels, elevated water temperatures, and, on occasion, nuisance algal growths in the receiving stream. Reduced stream water temperatures during summer would be especially beneficial to salmonids, such as resident westslope cutthroat trout and reintroduced populations of anadromous spring/summer chinook salmon and coho salmon, which prefer cold water. The abundance and diversity of aquatic insects, which are important food items for salmonids, also would be expected to increase as a result of streamflow improvement and increased instream habitat quantity and quality.

Improvements to streamflow that result from construction projects, such as headgate automation, headgate consolidation, or barrier removal would have the potential for adverse effects as previously described under the removal of barriers. Construction practices would be controlled by the BMPs, which specify limits for clearing, timing of construction, rehabilitation of the site, and limits of in-water construction. Implementation of the BMPs would minimize the potential for disturbance to fish habitat.

Increased streamflows and decreased seasonal fluctuation in flow volume and streambed shoreline, especially during warmer months of the year, would benefit riparian zone vigor and function. Improved riparian conditions would, in turn, directly and indirectly benefit fish through increased canopy cover, increased input of insects to the stream from overhanging cover, improved bank stability/structure and hiding cover for fish, increased recruitment of woody debris that provides instream cover for fish, and reduced sediment delivery to streams because of the filtering effect of riparian vegetation. Riparian cover can also moderate the effects of extreme air temperatures by shading and cooling streams during summer and insulating streams during winter. Overall, streamflow improvement would be expected to improve fish access, enhance habitat, and increase fish production in mainstem drainages and tributaries of the four subbasins. These benefits would extend to all of the anadromous and resident species that use these subbasins.

No adverse effects on juvenile or adult anadromous or resident fish species or their habitat would be expected to result from streamflow improvement.

Various threats or limiting factors currently faced by anadromous and resident species in the four subbasins, as described under existing conditions discussions, would be reduced or diminished in severity as a result of streamflow improvement. Expected improvements of current problems would include lower water temperatures, increased base flows, reduced flow fluctuations, reduced sedimentation, increased instream cover, improved habitat connectivity and fish passage, and possibly improved riparian conditions. Flow improvements in portions of the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins where these problems are most severe would result in the greatest benefits to resident and anadromous species. Based on their present distributions, recreationally important and/or sensitive (but not Federally listed) fish species that would benefit from one or more of these habitat improvements include westslope cutthroat trout, redband trout, rainbow trout, brook trout, and mountain whitefish in all four of the subbasins; reintroduced populations of spring/summer chinook salmon and coho salmon in the Middle Fork Clearwater Subbasin; possibly Pacific lamprey in the Middle Fork Clearwater and Upper Salmon Subbasins; and possibly sandroller in the Middle Fork Clearwater Subbasin. Other fish and aquatic resources without special protected or recreational status but which are an important part of the aquatic ecosystem in these subbasins would also benefit from flow improvements. The magnitude of benefits in each of the four

subbasins and to each of these fish species would ultimately depend on the number and location of flow improvement projects that are implemented under the Proposed Action.

Essential Fish Habitat

The implementation of the Proposed Action for improving fish passage barriers and streamflow would benefit EFH in the four subbasins. As described above under each component, there would be short-term construction related disturbances to EFH from barrier removal and replacement, headgate improvements and consolidation. The BMPs listed in Appendix B were developed in consultation with NMFS and would protect EFH during the construction phase of projects. These BMPs may change following further consultation with NMFS. The Proposed Action would provide long-term benefits for EFH in the subbasins by removing barriers and increasing streamflow. Installation of new fish screens or upgrading existing ones would not affect EFH.

Cumulative Impacts

Improvements in barriers, fish screens, and streamflow in the subbasins would result in beneficial cumulative impacts particularly when considering the additive effect of other efforts within the subbasins. Improvements in these factors would likely improve recruitment in fish stocks in the subbasins.

3.5.3 Mitigation

During construction, contractors would be required to adhere to approved construction BMPs, NMFS screen criteria, and work windows to complete any improvements. These requirements are part of the Proposed Action and would establish conditions to protect endangered species and limit or prevent disturbance to the streams; thus, no mitigation is proposed.

3.6 Wildlife

3.6.1 Existing Conditions

The Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins provide an array of habitats that support a wide variety of wildlife species.

A number of amphibians and reptiles use the Mountain Snake Province subbasin habitats. Widespread amphibians include western toad (*Bufo boreas*), Pacific treefrog (*Hyla regilla*), bullfrog (*Rana catesbeiana*), Columbia spotted frog (*Rana luteiventris*), and long-toed salamander (*Ambystoma macrodactylum*). Tailed frogs (*Ascaphus truei*) are found in mountainous streams in the Little Salmon, Middle Fork Clearwater, and Lemhi Subbasins (IDFG 2002). Idaho giant salamander (*Dicamptodon aterrimus*) is found in cold stream and pond habitats in the Little Salmon and Middle Fork Clearwater Subbasins (IDFG 2002).

Widespread reptiles include rubber boa (*Charina bottae*), racer (*Coluber constrictor*), gopher snake (*Pituophis catenifer*), common garter snake (*Thamnophis sirtalis*), western terrestrial garter snake (*Thamnophis elegans*), and western rattlesnake (*Crotalus viridis*). The painted turtle (*Chrysemys picta*), the only native turtle in Idaho, is thought to exist in the lower Lemhi Subbasin (IDFG 2002). This turtle species is found in ponds and slow-moving streams (Storm et al. 1995). The short-horned

lizard (*Phrynosoma douglassii*) is known in the open forests and sagebrush habitats of the Lemhi and Upper Salmon Subbasins (IDFG 2002). The sagebrush lizard (*Sceloporus graciosus*) is found in the dry shrublands of Lemhi Subbasin (IDFG 2002). The western fence lizard (*Sceloporus occidentalis*) and western skink (*Eumeces skiltonianus*) are found in the rock talus and open forest habitats of the Little Salmon Subbasin (IDFG 2002). Night snake (*Hypsiglena torquata*) is thought to exist in the rocky lowlands in the Little Salmon Subbasin (IDFG 2002).

More than 70 bird species have been documented in the subbasins (NPPC 20001a) (Table 3.6-1). Federally protected species are discussed in Section 3.7. Sensitive and rare species that are not Federally listed include northern goshawk (*Accipter gentiles*), boreal owl (*Aegolius funereus*), upland sandpiper (*Bartramia longicauda*), peregrine falcon (*Falco peregrinus*), northern pygmy-owl (*Glaucidium gnoma*), loggerhead shrike (*Lanius ludovicianus*), long-billed curlew (*Numerius americanus*), mountain quail (*Oreortyx pictus*), sage grouse (*Centrocercus urophasianus*), flammulated owl (*Otus flammeolus*), white-headed woodpecker (*Picoides albolarvatus*), black-backed woodpecker (*Picoides arcticus*), three-toed woodpecker (*Picoides tridactylus*), pygmy nuthatch (*Sitta pygmaea*), and great gray owl (*Strix nebulosa*).

Mammal species are widespread in the subbasins and include many game species. Elk (*Cervus canadensis*) and deer are found in all subbasins. Other game species known throughout the subbasins include: mule deer (*Odocoileus hemionus*), whitetail deer (*Odocoileus virginianus*), pronghorn antelope (*Antilocapra americana*), bighorn sheep (*Ovis canadensis*), mountain goat (*Oreamnos americanus*), moose (*Alces alces*), coyote (*Canis latrans*), black bear (*Ursus americanus*), and mountain lion (*Felis concolor*). Whitetail deer are particularly abundant in the Little Salmon Subbasin (NPPC 2001). Bighorn sheep are believed to have high reproductive rates in south Lemhi Subbasin, despite the statewide decrease (NPPC 2001).

Nongame mammals potentially occurring or known to occur within the subbasins include gray wolf (*Canis lupis*), lynx (*Lynx canadensis*), fisher (*Martes pennanti*), marten (*Martes americana*), wolverine (*Gulo gulo*), and nearly 50 species of small mammals (NPPC 2001, 2002). The fisher, wolverine, and many bat species are State or Federal sensitive and rare species that are suspected to occur in the subbasins.

Fishers are believed to be more common in the Clearwater Subbasin compared to the more southern subbasins (NPPC 2001). The wolverine range overlaps with all of the subbasins and is associated with mountainous areas away from humans (Ruggiero et al. 1994). A number of bat species inhabit the subbasins, including western small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), Yuma myotis (*M. yumanensis*), spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western pipistrel (*Pipistrellus hesperus*) (NPPC 2001, 2002). Other small mammals, including rodents, weasel, skunks, fox, rabbits, pika, squirrels, marmot, and shrews are widespread (NPPC 2001, 2002, Chapman and Feldhamer 1982).

A number of exotic wildlife species are found in the Mountain Snake Province subbasins. Introduced game species include California quail (*Callipepla californica*), Gambel's quail (*Callipepla gambelii*), ring-necked pheasant (*Phasianus colchicus*), gray partridge (*Perdix perdix*), chukar (*Alectoris chukar*), and wild turkey (*Maleagris gallopavo*) (NPPC 2001). Other exotic wildlife species include bullfrog, European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and rock dove (*Columba livia*) (NPPC 2001, 2002; IDFG 2002).

Table 3.6-1. Examples of Avian Species Documented in the Mountain Snake Province Subbasins.

Common Name	Scientific Name
Raptors	
Turkey vulture	*Cathartes aura*
Golden eagle	*Aquila chrysaetos*
Bald eagle	*Haliaeetus leucocephalus*
Swainson's hawk	*Buteo swainson*
Prairie falcon	*Falco mexicanus*
Peregrine falcon	*Falco peregrinus*
Northern goshawk	*Accipter gentiles*
Boreal owl	*Aegolius funereus*
Northern pygmy-owl	*Glaucidium gnoma*
Flammulated owl	*Otus flammeolus*
Great gray owl	*Strix nebulosa*
Game Birds	
Mountain quail	*Oreortyx pictus*
Sage grouse	*Centrocercus urophasianus*
Blue grouse	*Dendragapus obscurus*
Spruce grouse	*Falcipennis canadensis*
Gray partridge	*Perdix perdix*
Chukar	*Alectoris chukka*
California quail	*Callipepla californica*
Gambel's quail	*Callipepla gambelii*
Ring-necked pheasant	*Phasianus colchicus*
Other Birds	
Yellow-billed cuckoo	*Coccyzus americanus*
Upland sandpiper	*Bartramia longicauda*
Vaux's swift	*Chaetura vauxi*
Loggerhead shrike	*Lanius ludovicianus*
Long-billed curlew	*Numerius americanus*
White-headed woodpecker	*Picoides albolarvatus*
Black-backed woodpecker	*Picoides arcticus*
Three-toed woodpecker	*Picoides tridactylus*
Pygmy nuthatch	*Sitta pygmaea*
Belted kingfisher	*Ceryle alcyon*
Sage thrasher	*Oreoscoptes montanus*
Gray catbird	*Dumetella carolinensis*
Vesper sparrow	*Pooecetes gramineus*
Grasshopper sparrow	*Ammodramus savannarum*

Source: IDFG 2002; NPPC 2001, NPPC 2001

Migratory Birds

On January 17, 2001 President Bill Clinton signed an Executive Order mandating that all Federal agencies cooperate with the USFWS to increase awareness and protection of the nation's migratory bird resources. Each agency is supposed to have developed a Memorandum of Understanding with USFWS stating how it intends to cooperate. Reclamation has recently finalized an MOU with USFWS, which includes provisions for analyzing Reclamation's effect to migratory birds.

Most birds in North America are considered migratory under the Federal Migratory Bird Act. The general bird species of the subbasins are described in the above narrative and selected species are displayed in Table 3.6-1. Specifics on the vegetation of the subbasins are provided in Section 3.4.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

Restoration efforts would continue in the subbasin through the work of State, Federal, and local entities and with the technical assistance of Reclamation in the Lemhi and Upper Salmon Subbasins. These efforts would cause some minor, short-term disturbance to wildlife from construction activity and the limited removal of riparian vegetation. Noise from the limited use of heavy equipment for larger projects, such as push-up dam removal, would cause some wildlife to avoid the area during construction. Restoration of disturbed sites would minimize the effects of habitat removal. Long-term benefits to wildlife would be provided by the increased health of aquatic systems in the subbasins, the likely increase in fish populations, and the corresponding benefits to fish-eating wildlife.

Migratory Birds

The No Action Alternative would have no effects on migratory birds. The BMPs would limit the amount of vegetation that would occur and provides for seasonal work windows and restoration of disturbed sites with native vegetation. Larger projects, such as the removal of barriers, would require work during low flow periods at the end of summer. These measures were developed to protect fish but also provide protection for nesting migratory birds by restricting larger construction projects until after most migratory birds have fledged their young.

Cumulative Impacts

There would be no adverse cumulative impacts associated with the No Action Alternative. Implementation of projects in the Lemhi and Upper Salmon Subbasins would improve fish habitat and listed anadromous salmonids, and would have corresponding benefits for wildlife, such as osprey *(Pandion haliaetus)*, that feed on fish.

3.6.2.2 Proposed Action

The Proposed Action would increase the pace of restoration work in the subbasins compared to the No Action Alternative. Wildlife species that forage on fish, such as osprey, bald eagle, and many mammal species, would benefit from reduction in fish mortality and the corresponding increase in the fish populations within the four subbasins. Amphibians and, in turn, their predators would also benefit from improvements to fish passage, as most fish barriers can be barriers to aquatic amphibians.

Construction activities would cause limited and short-term disturbances to wildlife sensitive to noise and increased human presence in the project work sites. In addition, construction activities would have localized and short-term impacts on vegetation, which could decrease habitat values for wildlife species that use the project areas. Implementation of headgate consolidation and the removal and replacement of push-up dams have the potential for disturbing the most streamside habitat among the Proposed Action restoration efforts. Still, disturbance on vegetation would be limited to areas directly adjacent to canals, headgates, and push-up dams, and vegetation disturbance would be minimized according to the agreed-upon BMPs (Appendix B). If riparian vegetation removal is necessary to accommodate equipment such as a small backhoe, the clearing would be limited to what is necessary to safely operate the equipment. The BMPs in Appendix B also require Reclamation to restore areas that are disturbed by construction activities. Impacts to rare and sensitive species

would be avoided through a site inspection prior to actions, as stipulated by the BMPs. Impacts would be mitigated through site restoration and enhancement after construction is completed. Furthermore, impacts are lessened because project sites are commonly located in areas that have been previously affected from installation of canals, headgates, roads, and adjacent farming activity.

The Lemhi and the Upper Salmon have substantially greater numbers of diversion structures than the Middle Fork Clearwater and Little Salmon Subbasins. Therefore, the number of restoration projects would likely be higher in the Lemhi and Upper Salmon Subbasins. In general there would be a greater magnitude of temporary disturbance to vegetation and wildlife compared to the number of projects in the other subbasins. Impacts to vegetation and wildlife would be minimal because of the implementation of BMPs that specify limits of vegetation clearing and rehabilitation standards for streambanks and vegetation.

Migratory Birds

It may be possible that seepage from existing drainage ditches supports wetland habitat that could be affected by consolidation projects. Such site-specific considerations would be assessed by Reclamation's implementation team, and actions to prevent or mitigate impacts would be developed accordingly. Reclamation would continue to coordinate habitat protection measures with USFWS staff. Thus, there would be no impacts to migratory birds from implementation of the Proposed Action. Provisions in the BMPs as described under the No Action Alternative would provide sufficient protection for migratory birds.

Cumulative Impacts

There would be no adverse cumulative impacts associated with the Proposed Action. There would be similar beneficial effects to migratory birds as described under the No Action Alternative, but the pace of project implementation is expected to be faster under the Action Alternative, with corresponding benefits to fish and the migratory birds that feed upon them.

3.6.3 Mitigation

Impacts of the Proposed Action are addressed by the BMPs which include standards for clearing and rehabilitation of disturbed sites. No additional mitigation measures are necessary.

3.7 Threatened and Endangered Species

3.7.1 Existing Conditions

Pursuant to Section 7 of the Endangered Species Act (ESA), Reclamation has contacted NMFS and the USFWS to request information on listed and candidate endangered and threatened animal and plant species (TES) that may be present within the Mountain Snake Province subbasins. Reclamation's correspondences from NMFS and USFWS are provided in Appendix E. USFWS provided a list of threatened and endangered species in the four subbasins in March of 2002 but updated this information by letter on September 20, 2002.

Reclamation is required to determine whether its proposed Federal action may affect listed and/or proposed species or their critical habitat pursuant to Section 7 (a)(1) and 7 (a)(2) of the ESA.

Prior to implementation of specific projects, consultation will occur with both USFWS and NMFS. Conferencing regarding proposed critical habitat will be integrated into the consultation process. Reclamation is currently working with USFWS and NMFS to develop a Biological Assessment for general types of projects for which programmatic consultation can be done. For the types of projects included in the programmatic consultation, additional consultation would not be needed. For other types of projects, additional consultation would occur as necessary. Refer to Section 4.1.1 for additional discussion on consultation.

3.7.1.1 Aquatic Resources

Federal ESA listed species addressed in this section include the Snake River spring/summer chinook salmon (*Oncorhynchus tshawytscha*) evolutionarily significant unit (ESU), except in the Middle Fork Clearwater Subbasin; Snake River fall chinook salmon ESU; Snake River sockeye salmon (*O. nerka*) ESU; Snake River steelhead (*O. mykiss*) ESU; and Columbia River Basin bull trout (*Salvelinus confluentus*) distinct population segment (DPS). Snake River spring/summer chinook salmon ESU are not addressed in the Middle Fork Clearwater Subbasin because this species is considered extirpated in the Clearwater River Basin; those chinook salmon that are present are hatchery-derived fish with no special status and are not part of the ESU encompassing other Snake River spring/summer chinook salmon stocks.

Only subbasins in which a particular species is found are discussed within each species section below. If a species is not found within a particular subbasin, that subbasin is not included in the discussion.

Snake River Fall Chinook Salmon

Snake River fall chinook salmon are listed as threatened under the Federal ESA within the designated ESU.

Middle Fork Clearwater Subbasin

Although the Snake River ESU fall chinook salmon are found within the larger Clearwater River Basin, they do not venture into the Middle Fork Clearwater Subbasin. The Middle Fork Clearwater Subbasin is included in the ESU designation as critical habitat for this species, however. The Snake River fall chinook salmon in the Clearwater River Basin include natural re-colonized and re-introduced populations. All indigenous fall chinook salmon stocks were eliminated by the Lewiston Dam (Schoen et al. 1999). Re-introduction efforts began in 1960 but were terminated in 1968 because of insignificant returns (Hoss 1970). However, redds have increased since 1988 through re-colonization and introduction of hatchery fish (USFWS 1999). Fall chinook are not known to inhabit or spawn in the Middle Fork Clearwater River subbasin (NPPC 2002). Table 3.5-2 in Section 3.5 shows key life history stages for this species.

Steelhead

Snake River summer-run steelhead are Federally listed as threatened under the ESA within the NMFS designated ESU.

Lemhi Subbasin

Specific data on spawning populations of steelhead within this subbasin are very limited. Steelhead in the Lemhi Subbasin are classified as A-run steelhead (early migrators and spawners) (Figure 3.5-1). These fish arise from stocks that were introduced by IDFG but are now considered natural populations.

The lower 27 miles of the mainstem Lemhi River from the mouth to Agency Creek serves mainly as a migration corridor. The 11-mile reach between Agency and Hayden Creeks provides rearing and limited spawning habitat. Tributary streams also provide spawning habitat.

Irrigation, grazing, and road construction have affected habitat conditions throughout the Lemhi Subbasin (NPPC 2001). Limiting factors on the mainstem river can be grouped based on three distinct river segments, each having its own limiting factors. The lower 27-mile mainstem reach is degraded because of the lack of riparian vegetation and lack of pools for rearing and adult holding. The next segment, an 11-mile reach between Agency and Hayden Creeks, provides habitat, but riparian degradation has led to elevated water temperatures and unstable banks. The third mainstem segment, 28 miles from Hayden Creek to Leadore, has fluctuating summer temperatures, unstabilized banks, and few high quality pools. Salmonid habitat threats in the tributary streams include bank erosion leading to sedimentation, elevated temperatures, and degraded riparian habitat. Irrigation withdrawals have resulted in dewatered lower reaches in most tributaries. Water does not flow into the Lemhi River from many of the tributaries except during spring runoff, substantially reducing downstream migrations of fish and creating migration barriers. Many irrigation diversions on lower reaches of tributaries are not screened to protect migrating fish.

Upper Salmon Subbasin

Specific data on spawning populations of steelhead within this subbasin are very limited. Steelhead in the Upper Salmon River are classified as A-run steelhead (Figure 3.5-2). These fish arise from stocks that were introduced by IDFG, but are now considered natural populations.

Limiting factors in this subbasin differ among the three major watersheds present in the Upper Salmon Subbasin (NPPC 2001). Although adequate flows are present in the mainstem East Fork of the Salmon River for fish migration, spawning, and rearing, channelization has degraded riparian areas and reduced habitat complexity and channel stability. In the Yankee Fork Salmon River, mining has altered the previously high quality spawning habitat. Mining has disconnected some tributaries from the mainstem. Upslope disturbance contributes sediment to the channel, which degrades spawning habitat and embryo survival. Riparian degradation, bank instability, high summer temperatures, and migration barriers caused by water diversions on tributaries have degraded habitat in the Salmon River headwaters upstream of the Yankee Fork (NPPC 2001).

Middle Fork Clearwater Subbasin

Over 55 percent of all Columbia River steelhead historically came from the Snake River Basin, of which the Clearwater River Basin provided a significant contribution. "A-run" steelhead are currently widely distributed throughout the Middle Fork in at least a portion of all accessible watersheds (Figure 3.5-3). A-run steelhead typically spend 1 year in the ocean before returning to spawn (Table 3.5-2) (Kiefer et al. 1992). There are clusters of 6th order Hydrologic Unit Codes (HUCs) in Oro-

fino and Jim Ford Creeks not being used by steelhead. Wild A-run steelhead occur in the lower mainstem tributaries up to Maggie Creek in the Middle Fork. Populations are considered "present-depressed" (NPPC 2002).

Steelhead enter the Columbia River between May and September and reach the Clearwater River by September through November. Spawning occurs from February through early May, with emergence from mid-April through May (Nez Perce Tribe and IDFG 1990). Most juveniles remain in the river for 2 years, with out-migration from March through May.

High soil erosion rates, high bedload movement rates, altered stream channel morphology and riparian areas, variable streamflow with severely limited late summer flows, and high summer temperatures in lower tributary reaches are the major habitat problems for A-run steelhead (Kucera and Johnson 1986; Nez Perce Tribe and IDFG 1990).

Little Salmon Subbasin

Specific data on spawning populations of steelhead within this subbasin are very limited. Steelhead in the Little Salmon River are A-run wild steelhead. Boulder Creek and Rapid River provide the most significant steelhead spawning and rearing habitat for this subbasin (NPPC 2001) (Figure 3.5-4).

Timing of migration and spawning is slightly different than in the Middle Fork Clearwater Subbasin (NPPC 2001). Steelhead enter the Little Salmon in June or July and spawn from mid-March through mid-May. Juvenile out-migration is typically 2 years later in April and May.

Just downstream of Round Valley Creek waterfalls form a barrier to anadromous fish migration. The reach above the falls is heavily grazed, and altered stream temperatures and channel simplification limit spawning and rearing. Tributaries to this upper reach are in poor condition. High temperatures in the lower reach of the mainstem Little Salmon River limit steelhead spawning below Hazard and Boulder Creeks. This lower reach is also steep, and the channel is encroached upon by upstream land uses and an adjacent Federal highway (U.S. 95). Even though Boulder Creek provides the best spawning and rearing habitat, much of the channel's natural function has been compromised by streamside development (NPPC 2001).

Spring/Summer Chinook Salmon

Spring/summer chinook salmon are Federally listed as threatened under the ESA and by the State of Idaho. The two "races" of spring/summer chinook salmon in the Salmon River are classified by the season of adult passage at Bonneville Dam during upstream migration. Spring/summer chinook enter the Columbia River March through July. Chinook that pass from March 1 to May 31 are considered "spring chinook" and those that pass from June 1 to July 31 are considered "summer chinook."

Spawning occurs in August through October. Eggs hatch in April and May, and the fry emerge approximately 1 month later. Juveniles rear for 1 year before out-migrating to the ocean (Simpson and Wallace 1982).

Lemhi Subbasin

The "spring" race of chinook salmon spawn in the Lemhi River upstream of Hayden Creek (Figure 3.5-1). Over 95 percent of the salmon spawning and rearing in this subbasin takes place in the upper 28 miles of the mainstem between Hayden Creek and Leadore. All spawning is natural, as hatchery releases from Hayden Creek were suspended in 1982. Threats to chinook salmon are the same as those discussed for steelhead in the Lemhi Subbasin.

Upper Salmon Subbasin

Chinook salmon in the Upper Salmon Subbasin migrate farther than any other chinook salmon stock in the lower 48 states, traveling over 900 miles to spawn and then rear at over 6,000 feet in elevation (Hassemer 1998) (Figure 3.5-2). Summer chinook in the Upper Salmon Subbasin are considered wild fish. Threats to spring/summer chinook salmon are the same as discussed for steelhead in the Upper Salmon Subbasin.

Little Salmon Subbasin

Spring chinook salmon were first introduced in the Little Salmon River in 1964. Rapid River has a remnant wild run of summer chinook (Figure 3.5-4). Threats to spring/summer chinook salmon are the same as discussed for steelhead in the Little Salmon Subbasin.

Sockeye Salmon

Snake River Sockeye Salmon ESU are Federally listed as Endangered under the ESA. They are listed as endangered by the State of Idaho.

Upper Salmon Subbasin

Sockeye historically returned to five lakes in the Upper Salmon Subbasin including Redfish, Alturas, Pettit, Stanley, and possibly Yellowbelly Lakes. Fish did not return to Stanley, Pettit, and Yellowbelly Lakes after 1962. Only Redfish Lake currently supports a remnant anadromous run (Figure 3.5-3). Numbers of sockeye salmon returning each year to Redfish Lake from 1954 to 1966 ranged from 11 to 4,361 fish (1955). Only 16 adult fish have returned to Redfish Lake since 1990 (NPPC 2001).

Residual and anadromous sockeye salmon are present in Redfish Lake. The residual fish are not migratory but are considered part of the ESU. Historically, sockeye first arrived at Redfish Lake in late July, with the run peaking in mid-August and a few fish coming in October (Simpson and Wallace 1978). Spawning occurs in October. Sockeye salmon spend 2 years in fresh water and 2 years in salt water before returning to spawn. Threats to sockeye salmon are the same as discussed for steelhead in this section.

Middle Fork Clearwater Subbasin

While there are no native populations of sockeye salmon in the Middle Fork Clearwater, the subbasin has a hatchery stock population. The hatchery population is not listed under the ESA.

Bull Trout

Bull trout are listed as threatened under the Federal ESA and as a species of concern by the State of Idaho. On November, 29 2002, USFWS published in the Federal Register proposed critical habitat for bull trout in the Columbia River basin. The relation of the four subbasins to proposed critical habitat in Idaho is shown in Figures 3.7-1 through 3.7-4.

Bull trout in all four subbasins are considered fluvial stock, as they migrate between streams and larger rivers. Bull trout typically spawn in September and October but may begin their spawning migration as early as April (Table 3.5-2) (USFWS et al. 2001). Spawning occurs in clean gravels, with areas of groundwater upwelling preferred. Fry emerge from early April through May. Small juveniles tend to remain in the gravels and cobbles. After reaching 4 inches in length, they move to backwater and sidewater channels, eddies, or pools (Goetz 1989).

Lemhi Subbasin

Bull trout are found in Big Eightmile, Big Timber, Eighteen Mile, Geertson, Hauley, Hayden, Kenny, Bohannon, Kirtley, Little Eight Mile, Mill, Pattee, and Texas Creeks; their tributaries; and in the Lemhi River (NPPC 2001) (Figure 3.5-1).

Threats to bull trout and their habitat are the same as listed for steelhead in the Lemhi Subbasin. Of particular concern to fluvial bull trout is dewatering of lower tributary reaches and un-screened diversion structures that inhibit downward migration into mainstem waters.

Upper Salmon Subbasin

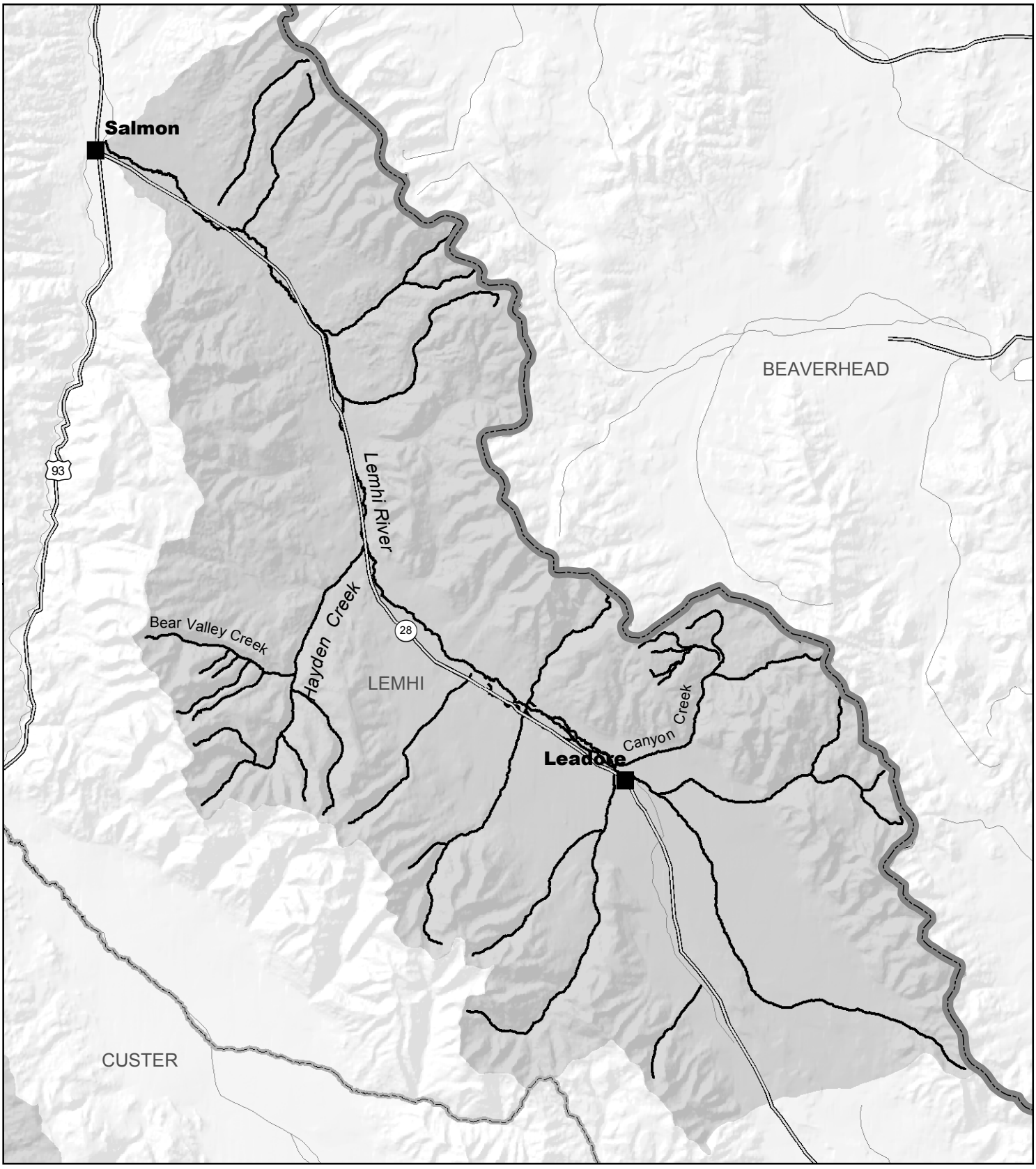
Fluvial bull trout use the mainstem Salmon River in this subbasin for migration between streams and larger rivers. Numbers of bull trout monitored in the mainstem Salmon River since 1986 have ranged from 4 to 38 fish, with no discernable trend (Lamansky et al. 2001). Bull trout have been documented in 54 streams in this subbasin, including the mainstem and tributaries of the East Fork Salmon River (BLM 1998) (Figure 3.5-2). Estimates of numbers of fish migrating each year in the East Fork Salmon River since 1984 range from 2 to 175, with no apparent trend (Lamansky et al. 2001). Threats to bull trout spawning/survival are the same as discussed for steelhead in the Upper Salmon Subbasin.

Middle Fork Clearwater Subbasin

Bull trout are sparsely distributed in this subbasin, with spawning/rearing occurring in upper reaches of Clear Creek, and migration occurring in the Middle Fork Clearwater River (NPPC 2002; Paradis et al. 1999a) (Figure 3.5-3). No key watersheds in this subbasin are listed in the State of Idaho's Bull Trout Conservation Plan (Batt 1996). Where data exist, populations are designated as "present-depressed." Primary threats to bull trout in this subbasin are elevated water temperatures and increased sedimentation from forestry, grazing, roads, and mining (NPPC 2002).

Little Salmon Subbasin

Bull trout in the Little Salmon River-Rapid River complex represent one of two distinct subpopulations in the Salmon River drainage (Figure 3.5-4). These fish exhibit resident and migratory behavior, with spawning and rearing occurring in Boulder Creek and Rapid River (Overton et. al



Proposed Habitat
Subbasin
Town
County Boundary
State Boundary
Open Water
Highway

FIGURE 3.7-1
Proposed Critical Habitat for Bull Trout in the Lemhi Subbasin

0 1 2 4 Miles

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.7-1.mxd

Back of Figure 3.7-1

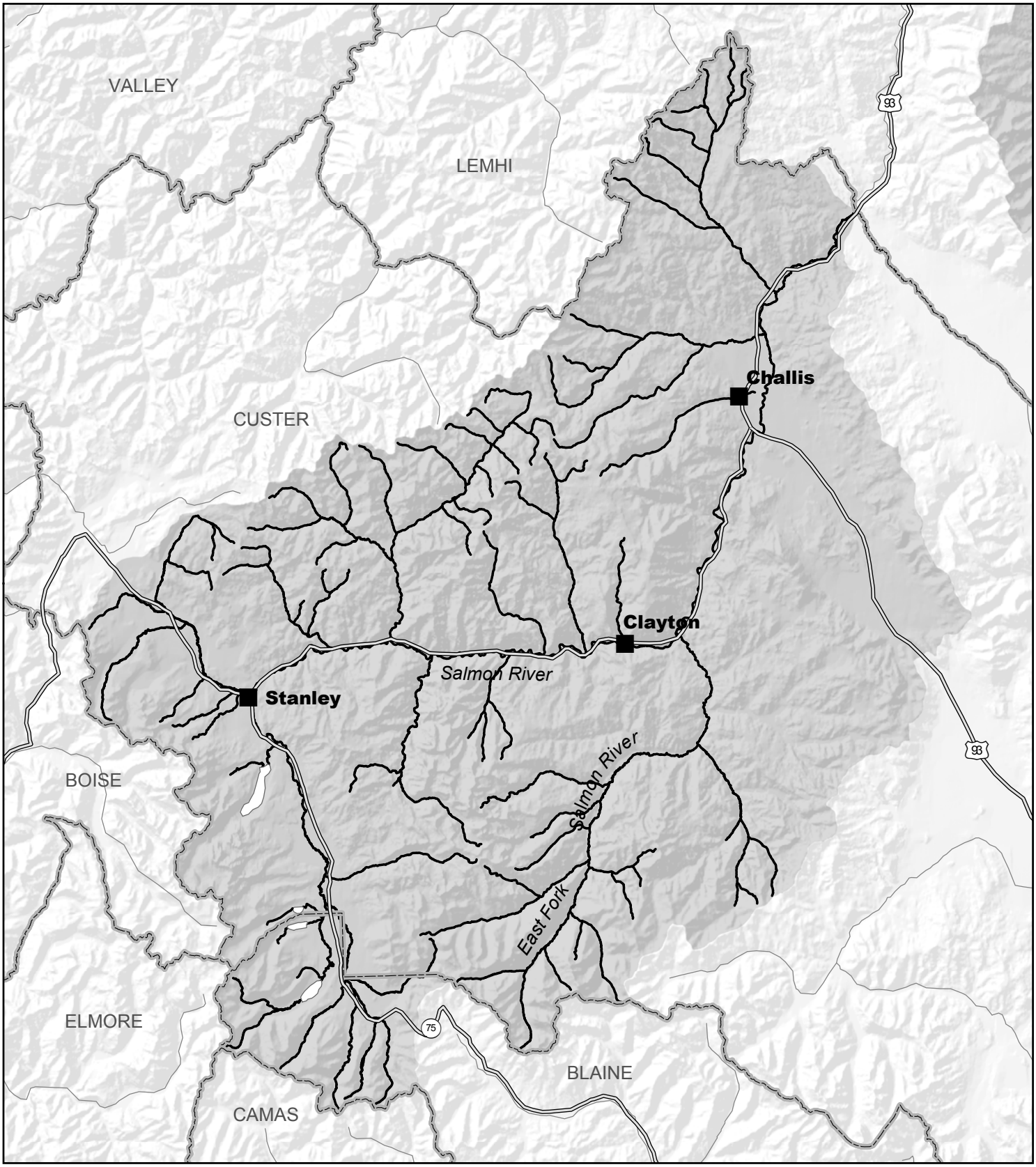


FIGURE 3.7-2

Proposed Critical Habitat for Bull Trout in the Upper Salmon Subbasin

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.7-2.mxd

Back of Figure 3.7-2

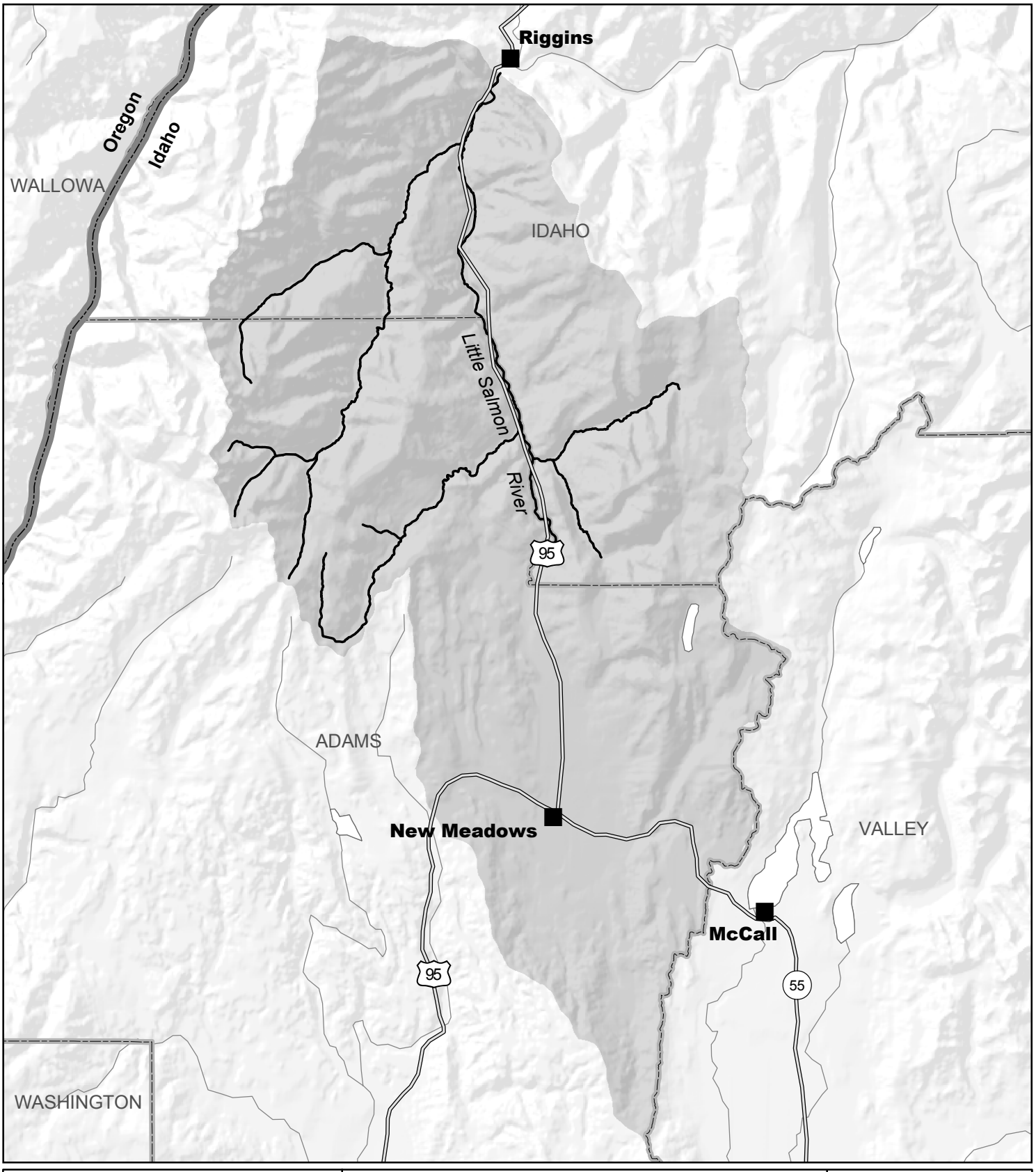
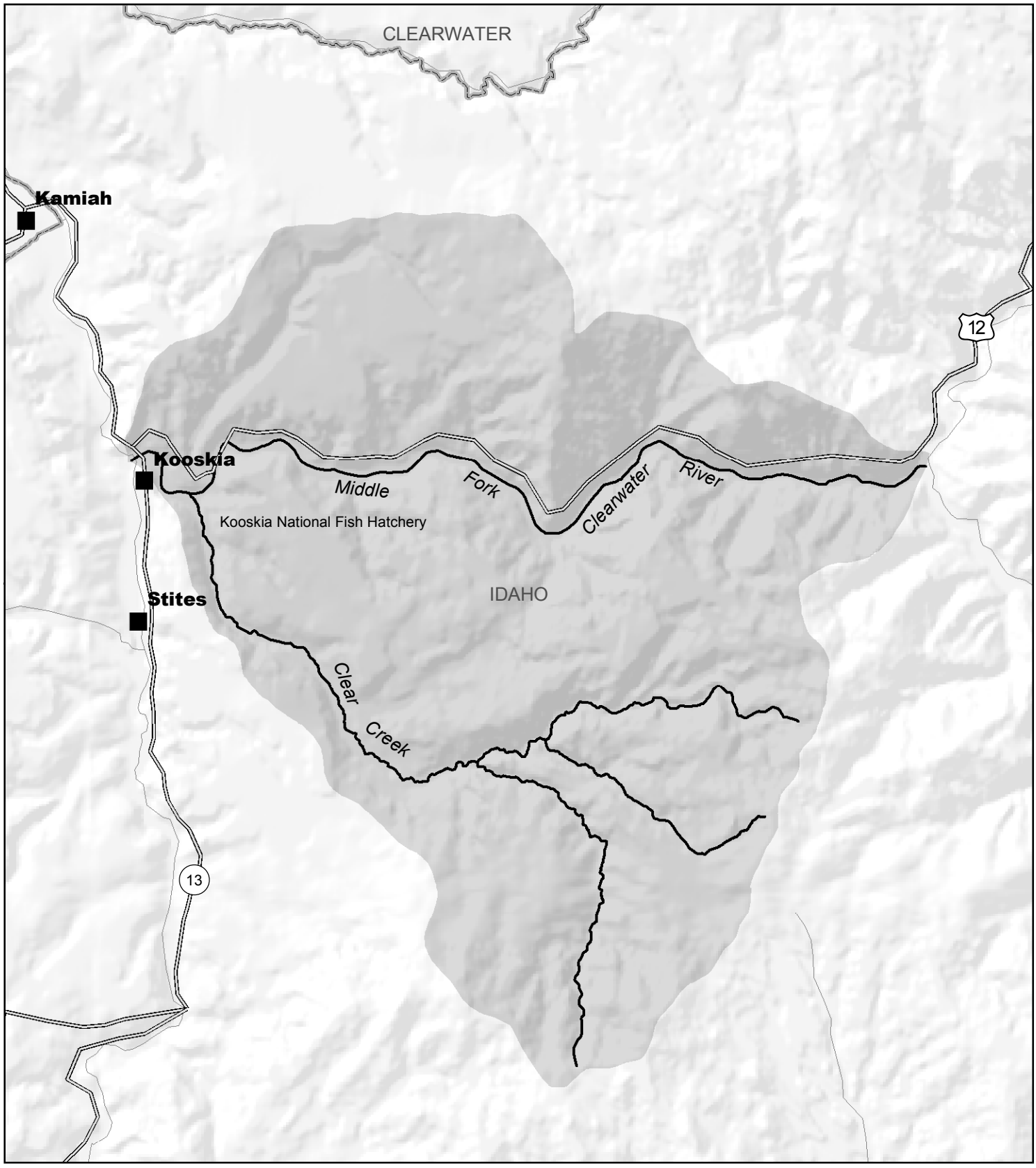


FIGURE 3.7-3
Proposed Critical Habitat for Bull Trout in the Little Salmon Subbasin

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.7-3.mxd

Back of Figure 3.7-3



Proposed Habitat
Town
Subbasin
County Boundary
Open Water
Stream
Highway

FIGURE 3.7-4
Proposed Critical Habitat for Bull Trout in the Middle Fork Clearwater Subbasin

0 0.5 1 2 Miles

Source: IDFG, USBR, EDAW Inc, 2002.
P:\1e41001 Lemhi\GIS\mxd\Figure3.7-4.mxd

Back of Figure 3.7-4

1993). Other known occupied streams include Hard Creek, Boulder Creek, upper Hazard Creek, and other small tributaries (USFWS 2003), but USFWS was unable to supply digital map data of these occurrences at this time. Spawning returns have been variable since 1973, with numbers between 100 and 500 fish. There has been a slight statistically insignificant downward trend (NPC 2001). Threats to bull trout are the same as discussed for steelhead in the Little Salmon Subbasin.

3.7.1.2 Terrestrial Resources

Terrestrial species protected by the ESA that may occur in the subbasins include two mammals and two birds (Table 3.7-1). In addition, USFWS has identified one candidate bird species that may occur in the subbasins. Candidate species have no official status under ESA but may be listed as threatened or endangered in the future.

The Canada lynx (*Lynx canadensis*), a threatened species, is known to occur in the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins (NPPC 2001, NPPC 2002). Although this species has been observed in each subbasin, they are uncommon and little is known

Table 3.7-1. Listed Species Occurring or Potentially Occurring in the Mountain Snake Province Subbasins.

Species Name	Federal Status[1]	State Status[2]	INHP Status[3]	Subbasin of Concern
Fish				
Bull Trout (*Salvelinus confluentus*)	T	-	-	All
Spring/Summer Chinook Salmon (*Oncorhynchus tshawytscha*)	T	-	-	All
Steelhead (*Oncorhynchus mykiss)*	T	-	-	All
Sockeye Salmon (*Oncorhynchus nerka)*	E	-	-	Upper Salmon
Birds				
Bald Eagle (*Haliaeetus leucocephalus*)	T	E	S3	All
Yellow-billed Cuckoo (*Coccyzus americanus*)	C	SC	S1	Upper Salmon
Mammals				
Canada Lynx (*Lynx Canadensis*)	T	SC	S1	All
Gray Wolf (*Canis Lupus*)	E	E	S1	All

Source:

1 NMFS/USFWS: E= Endangered; Taxa in danger of Extinction throughout all or a significant portion of their range. T=Threatened; Taxa likely to be classified as Endangered within the foreseeable future throughout all or a significant portion of their range. C= Candidate; Taxa for which the USFWS has on file sufficient information on biological vulnerability and threats to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

2 Idaho Department of Fish and Game Status: E**=** Any species in danger of extinction throughout all or a significant portion of its Idaho range. **T=** Threatened; Any species likely to be classified as Endangered within the foreseeable future throughout all or a significant portion of its Idaho range. **SC=** Native species which are either low in numbers, limited in distribution, or have suffered significant habitat losses. **GP1** = Global Priority 1; **GP2** = Global Priority 2; **GP3** = Global Priority 3.

3 The network of Natural Heritage Programs and Conservation Data Centers--which currently consists of installations in all 50 states, several Canadian provinces, and several Latin American and Caribbean countries--ranks the rangewide (G- global rank) and state (S- state rank) status of plants, animals, and plant communities on a scale of 1 to 5 (see below). **G** = Global rank indicator; denotes rank based on rangewide status. **S** = State rank indicator; denotes rank based on status within Idaho.

1 = Critically imperiled because of extreme rarity or because some factor of its biology makes it especially vulnerable to extinction (typically 5 or fewer occurrences).

2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (typically 6 to 20 occurrences).

3 = Rare or uncommon but not imperiled (typically 21 to 100 occurrences).

4 = Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences).

5 = Demonstrably widespread, abundant, and secure.

about their population dynamics (NPPC 2001 and NPPC 2002). It has been established that the populations rely heavily on snowshoe hare (*Lepus americanus*) population health (NPPC 2002). In Idaho, the lynx is known to use young forests and woodlands for foraging and mature stands for denning (IDFG 2002).

The bald eagle (*Haliaeetus leucocephalus*) is a threatened species with a wide range in Idaho (IDFG 2002). Bald eagle use of the Upper Snake Subbasins is restricted to foraging, especially during winter months (NPPC 2001). The Salmon and Lemhi Rivers are known to provide winter habitat for this species (NPPC 2001).

Yellow-billed cuckoo (*Coccyzus americanus*) is a candidate bird species that occupies riparian areas with thick understory, especially mature stands of cottonwood-willow (USFWS 2002; IDFG 2002). According to IDFG databases, this species is known in the region around Idaho Falls and Elmore County and is not likely in the Mountain Snake Province.

The gray wolf (*Canis lupus*), an endangered species, was extirpated in Idaho by the 1930s through hunting and other control methods (Bangs et al. 1999). Wolves were reintroduced in 1995 and 1996 and are primarily found in central Idaho (NPPC 2002). The Idaho population is deemed "nonessential experimental" to allow for management flexibility (USFWS 1994). Wolf packs are known in the Upper Salmon (Twins Peaks, Stanley Basin) (Bangs et al. 1999). The populations and their recovery are being closely monitored by the USFWS.

3.7.2 Environmental Consequences

The following narrative describes the effects to threatened and endangered species from implementation of the No Action and the Action Alternatives.

3.7.2.1 Aquatic Resources

Reclamation has initiated informal consultation with NMFS and USFWS regarding the potential effects to listed anadromous salmonids and bull trout in the subbasins. Together, these agencies have developed the BMPs listed in Appendix B that will be implemented for all Reclamation's actions. These BMPs will ensure that restoration actions are carried out using protocols for construction and in-water construction timing to minimize potential adverse effects to listed fish species. NMFS has indicated that they reserve the option for individual endangered species consultation for in-stream projects, particularly for removal and replacement of push-up dams and for measures not currently included in the BMP listing. Reclamation is continuing discussions with NMFS and USFWS on the protocol for coordination on the design and implementation of these projects.

No Action Alternative

Potential effects of the No Action Alternative on instream habitat, riparian conditions, and the status of Federally listed fish species present in the Middle Fork Clearwater, Little Salmon, Upper Salmon, and Lemhi Subbasins would generally be to maintain existing trends. Habitat improvements and anticipated contributions to the potential recovery of Federally listed species described below for the Proposed Action would occur under the No Action Alternative, but at a slower pace than the Proposed Action.

Cumulative Impacts

Continued problems with barriers, screens, and streamflow in the subbasins and the slower implementation of restoration efforts in the No Action Alternative would result in cumulative adverse impacts to ESU anadromous salmonids in the subbasins. Reclamation would, however, continue its current work assisting in fish enhancement projects in the Lemhi and Upper Salmon Subbasins on an Ad Hoc basis.

Proposed Action

Federally listed anadromous and resident fish species and their habitat in the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater Subbasins would benefit from Reclamation's fish habitat improvement program under the Proposed Action. These species include the endangered Snake River sockeye salmon, threatened Snake River spring/summer chinook salmon, threatened Snake River steelhead, and threatened bull trout. All but the bull trout are anadromous species. The general types and locations of benefits from eliminating instream fish passage barriers, correcting fish screen deficiencies, and augmenting and improving streamflows associated with irrigation practices on private lands would be the same as described in Section 3.5, Fish. Anticipated benefits to Federally listed fish species and their habitat in each of the four subbasins are briefly described in the following text for each of these three categories of improvement. Because the specific types and locations of projects and number of willing participants within the four subbasins are not known, the following discussion is consequently largely programmatic in nature. In addition, the amount of projects that could be completed are not yet known because Congressional approval is pending.

Fish Passage Barriers

Fish migration barriers and habitat fragmentation problems were described for the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins in discussions of existing conditions. Benefits from eliminating or reducing the number of barriers would greatly improve fish passage and habitat connectivity in the subbasin, and increase use of previously inaccessible stream reaches for spawning and rearing by Snake River steelhead and spring/summer chinook salmon, and year-round use by bull trout. Bull trout exhibit a cold water preference and may benefit most from access to headwater tributaries, while the typically larger spring/summer chinook salmon and steelhead may benefit more from access to upstream reaches of mainstem drainages. Barrier projects could also result in improvements to streamflow. The magnitude of benefits would ultimately depend on the number and location of barrier removal projects that are implemented under the Proposed Action, and the quantity and quality of previously inaccessible stream habitat that would then become available.

The Lemhi and Upper Salmon Subbasins would likely exhibit the greatest improvement because these subbasins have substantial numbers of dams and diversions (370 between the two subbasins). Therefore there would be corresponding improvements in habitat for Snake River Basin Steelhead and spring/summer Chinook salmon, the two ESU species present in the Lemhi and Upper Salmon Subbasins.

Instream construction projects pose the greatest risk for adverse effects on listed anadromous salmonids and bull trout. Excess sedimentation, use of large equipment in the stream, and disturbing streambanks and riparian can have deleterious effects to fish. Implementation of the BMPs (Appen-

dix B) would ensure that strict protection measures are in place during construction. These BMPs include provisions for limiting construction areas, amounts of gravel removal or fill, and area of vegetation clearing. Consulting with NMFS regarding the timing of in-water construction will minimize the chance that listed fish are in the vicinity of the construction zone. Because of the protection afforded by the BMPs, there would be no effect to proposed critical habitat for bull trout. Reclamation would continue to coordinate with USFWS.

Fish Screens

Benefits from properly functioning fish screens would accrue to the same Federally listed fish species and in the same subbasins as described for fish passage barriers above. Benefits may be greatest in the Lemhi Subbasin where many irrigation diversions on lower reaches of tributaries are not screened to protect migrating fish. This subbasin is used by Snake River steelhead and spring/summer chinook salmon and by bull trout. The magnitude of benefits would ultimately depend on the number and location of fish screen projects that are implemented under the Proposed Action and the current losses these species are experiencing at unscreened or improperly screened diversions. Benefits from reduced entrainment and/or impingement mortalities would be greatest in those areas with numerous irrigation diversions that also provide important spawning and rearing habitat for steelhead, chinook salmon, and bull trout.

Streamflow Improvement

Various threats or limiting factors currently faced by Federally listed anadromous and resident species in the four subbasins that were described under existing conditions would be reduced or diminished in severity as a result of streamflow improvement. Expected improvements of current problems would include lower water temperatures, increased base flows, reduced flow fluctuations, reduced sedimentation, increased instream cover, improved habitat connectivity and fish passage, and possibly improved riparian conditions. Targeting flow improvements in portions of the Middle Fork Clearwater, Little Salmon, Upper Salmon, and Lemhi Subbasins where these problems are most severe would result in the greatest benefits to the threatened and endangered fish species. Based on their present distributions, Federally listed fish species that would benefit from one or more of these habitat improvements include Snake River steelhead and bull trout in all four of the subbasins; Snake River spring/summer chinook salmon in the Lemhi, Upper Salmon, and Little Salmon Subbasins; and Snake River sockeye salmon in the Upper Salmon Subbasin. In-channel improvements, as well as improved riparian zone health and function, would benefit all of these species. The magnitude of benefits in each of the four subbasins and to each of these fish species would ultimately depend on the number and location of flow improvement projects that are implemented under the Proposed Action.

Cumulative Impacts

Improvements in barriers, fish screens, and streamflow in the subbasins would result in beneficial cumulative impacts particularly when considering the additive effect of other efforts within the subbasins. Because of the high number of diversions in the Lemhi and Upper Salmon Subbasins cumulative impacts of correcting adverse effects associated with these features would likely provide greater benefits to listed anadromous salmonids and bull trout in these drainages. These projects would have a beneficial cumulative effect on the Federally listed anadromous and resident fish species in the four subbasins and would contribute to their recovery.

3.7.2.2 Terrestrial Resources

No Action Alternative

Under the No Action Alternative, Reclamation would continue to supply technical assistance to local subbasin or watershed groups only in the Lemhi and Upper Salmon Subbasins to aid their salmon restoration efforts. These efforts would proceed at a slower pace without Reclamation's construction authority. There would be no effects to bald eagles, lynx, or gray wolf because the projects are relatively small and construction would be limited to very discrete parcels over the 15-year period that Reclamation would be involved in these subbasins. ESA surveys would be conducted by the lead agency prior to construction.

Cumulative Impacts

There would be no cumulative impacts to terrestrial ESA-listed or proposed species from the No Action Alternative.

Proposed Action

Reclamation's construction authority would allow salmon habitat restoration efforts to proceed at a faster pace than under the No Action Alternative in all four subbasins. In addition, it is likely that the number of projects that could be implemented would be greater. There would be no effects to lynx, gray wolf, or bald eagle because of the limited disturbance zone of construction and the agricultural setting of the implementation sites. Disturbed or removed vegetation would be replanted as stipulated in the BMPs. Reclamation's adherence to BMPs (Appendix B) would also lessen potential impacts to TES species. Long-term benefits for TES species, especially the bald eagle, are likely to occur as a result of increased stability and health of fish (prey) populations resulting from the Proposed Actions.

Cumulative Impacts

There would be no cumulative impacts to terrestrial ESA-listed or proposed species from the Proposed Action.

3.7.3 Mitigation

The Proposed Action includes the implementation of BMPs developed in coordination with NMFS. Reclamation would implement these BMPs and coordinate with NMFS regarding the specific timing dates for in-water construction to avoid adverse effects to ESA-listed plants, fish, and wildlife. Therefore, no mitigation measures are necessary.

3.8 Recreation

3.8.1 Existing Conditions

3.8.1.1 Lemhi Subbasin

Water-based recreation activities in the Lemhi Subbasin are somewhat limited because a large portion of the property adjacent to the river is in private ownership. While access to the river can be

difficult, there are four Sportsman's Access Areas maintained by IDFG along the river, where flyfishing is popular. There are also three campgrounds. The BLM manages a small campground about 8 miles west of Lemhi Pass on Agency Creek. In addition, the USFS (Salmon-Challis National Forest) manages two campgrounds in the vicinity of the town of Leadore: Smokey's Cubs Campground, about 3 miles east of Leadore, and McFarland Campground, between Leadore and Tendoy. Hiking is also a popular activity, with opportunities to access the Lewis and Clark National Historic Trail and the Continental Divide National Scenic Trail. Unlike the other three rivers, the Lemhi River is not a popular whitewater boating destination due to its limited public access, relatively calm flow, and extensive irrigation structures. Hunting opportunities are similar to those described under the Upper Salmon subbasin.

3.8.1.2 Upper Salmon Subbasin

Recreation opportunities in the Upper Salmon Subbasin are provided by Federal, State, and private entities. The subbasin includes the Challis and Salmon National Forests and the Sawtooth National Recreation Area. In addition, the Lewis and Clark and Nez Perce National Historic Trails and the Continental Divide National Scenic Trail pass through or close to the subbasin. The subbasin also offers steelhead fishing, premier boating, canoeing, and wildlife and wildflower viewing opportunities.

Fishing and Hunting

The Upper Salmon River, from Challis upstream to Stanley, is a spring steelhead fishery. Fishing is mainly walk and wade, angling to visible fish. A Sawtooth National Recreation permit is required along with a steelhead permit from IDFG. There are no designated Sportman's Access Areas provided along this river reach; however, it is a popular area for local flyfishing, as the fishing is usually consistent. Fly fishers are allowed on the water from March 1 through April 30. Hunting, particularly for big game, is popular in the subbasin. Deer, elk, bear, and cougar are hunted throughout the subbasin. There are a number of guiding services located in the town of Salmon that guide in the Upper Salmon and Lemhi subbasins.

Boating

The Upper Salmon River is used extensively by boaters, mostly on a 10-mile section that runs from near the town of Sunbeam. A wide range of floaters use this section of the river, from beginning rafters to expert kayakers. Estimated use of this section of river is 11,000 to 12,000 people annually. Four commercial outfitters host a total of about 9,000 guests annually. The remainder are private boaters using their own or rented equipment. There are six designated put-ins and take-outs, including Buckhorn Bridge, Four Aces, Mormon Bend Campground, Yankee Fork, Elk Creek, and Torrey's (PLIA 2000). The rafting season runs from mid-May until the end of September; however, chinook salmon mitigation measures go into effect in mid-August and continue through September. During this time, assigned floating times, a 1/2-mile portage, and river closures may be put into effect.

Camping

Camping is a popular activity in the Upper Salmon River corridor. The BLM manages six recreation sites and the USFS manages nine campgrounds. Overall, there are approximately 150 campsites. Most of these sites are adjacent to the river and provide primitive campsites, potable water, toilets,

and good fishing and river floating access. Some of these sites are more developed and provide picnic sites, room for recreational vehicle (RV) parking, group facilities, and designated river put-ins.

Scenic Byways

The Idaho State Byways Program was initiated in 1977 to protect and enhance the archaeological, cultural, historic, natural, recreational, and scenic qualities of these roadways. These routes are designated and managed in a partnership with local entities and several State and Federal agencies. The Upper Salmon River is closely paralleled by the 161-mile Salmon River Scenic Byway. The byway begins near the Montana border at the 6,995-foot-high Lost Trail Pass and travels along the Salmon River through the Salmon and Challis National Forests to Stanley, where it connects with the Ponderosa Pine Scenic Byway and the Sawtooth Scenic Byway. The route offers travelers views of the Salmon River from near its headwaters; views of the White Cloud, Lemhi, and Bitterroot Mountains; and abundant wildlife.

3.8.1.3 Middle Fork Clearwater Subbasin

The Middle Fork Clearwater River is known for its extraordinary scenery, exceptional water quality, and excellent wildlife viewing and whitewater opportunities. The river flows between the boundaries of the Clearwater and Nez Perce National Forests. Progressing upstream from Kooskia, the river runs past the small town of Syringa to Lowell, where the Selway and Lochsa Rivers meet. Much of the property along the river is privately owned; however, there are several spots along the road to stop. There are several turnouts that provide whitewater access points and hiking opportunities. Other recreation opportunities within the subbasin include visiting historic sites. On the north side of the river, the Lolo Trail corridor, first used by Native Americans as a travel and trade route through the Bitterroot Mountains and later followed by Lewis and Clark, is accessible from Syringa. Recreation opportunities within the corridor include camping, scenic viewing, hiking, fishing, and interpretive activities.

Fishing and Hunting

The Middle Fork Clearwater River flows along US Highway 12, providing anglers with easy fishing access on public land. Westslope cutthroat, bull trout, chinook salmon, rainbow trout, and steelhead are present in the river. Anglers can also fish for westslope cutthroat in a small number of tributaries on USFS lands within the Nez Perce National Forest to the south and the Clearwater National Forest to the north. Two miles east of Kooskia, the Kooskia National Fish Hatchery collects adult spring chinook salmon from May to August. Hunting is a popular activity in the vicinity on public and private land. Elk, deer, and bear are popular hunting objectives. Upland game birds and waterfowl are hunted throughout the subbasin.

Boating

Seasoned boaters are challenged by the high water on the free-flowing rivers in May and June, families enjoy the calmer waters during July and August, and anglers enjoy trout fishing in September and October, when the water slows and the fish begin to run. Along this spectrum, the Middle Fork Clearwater provides a relatively “easy float” year-round. The Selway and the Lochsa Rivers, on the other hand, are premier whitewater rivers and may provide some of the most extraordinary whitewater trips in the country (PLIA 2000). Several put-ins and take outs for the Lochsa and Middle Fork Clearwater Rivers are dotted along State Highway 12.

Camping

The Nez Perce National Forest manages one small campground (six campsites) and two picnic areas on the south side of the river. Just outside of Lowell, the USFS manages eight campgrounds with a total of approximately 70 primitive and developed campsites along the Selway River.

Wild and Scenic River Designation

The Middle Fork Clearwater is one of 8 rivers in Idaho designated as a Wild and Scenic River, under the 1968 National Wild and Scenic Rivers Act. Wild and Scenic Rivers are classified according to the amount of development in and type of access to the river corridor, and each classification prescribes specific management actions. There are three classifications: Wild, Scenic, and Recreational. River segments designated recreational are readily accessible by road or railroad and may have some development along their shorelines; however, rivers given this classification do not necessarily offer outstanding recreation. They may offer other outstanding qualities. A 22-mile length of the Middle Fork Clearwater is classified as recreational and is recognized for its outstanding scenic, water quality, fishery quality, and recreational values. The USFS is responsible for managing the river corridor (approximately 0.25 mile on each side of the river) to protect these outstanding values and the river's free-flowing character.

3.8.1.4 Little Salmon Subbasin

Federal, State, and local entities manage lands and facilities that provide recreation opportunities in the Little Salmon Subbasin. These include the USFS (Payette National Forest), IDFG, BLM, Adams County, and some private recreation providers. There are developed facilities for fishing, boating, and camping; in addition, there is considerable dispersed use on public land, including hunting, dredge mining, and winter sports such as snowshoeing.

Fishing and Hunting

The Little Salmon Subbasin offers a diverse combination of angling opportunities including chinook, steelhead, and trout fishing. The small size of the river and easy access via U.S. Highway 95 allow for bank fishing, unlike steelhead fishing on the Clearwater or Snake Rivers where boats are often used (IDWR 2002). The Rapid River, a large tributary in the lower subbasin, is managed as a wild trout fishery. In addition, lake fishing opportunities in the subbasin are abundant, with 42 alpine lakes managed for a variety of fish. IDFG manages six Sportman's Access Areas along the river, all within 15 miles of the town of Riggins. Hunting opportunities in the Little Salmon Subbasin are similar to those described under the Middle Fork Clearwater Subbasin. Deer and elk hunting have been increasing over the past 5 years. About 18 percent of elk hunters are not state residents while about 13 percent of deer hunters are not state residents.

Boating

River boating in the Little Salmon Subbasin is particularly popular in the spring when higher flows are available, but the boating season extends through early fall. Boating on lakes and reservoirs occurs throughout the summer and fall. There is one boat ramp along the river, located at Riggins City Park.

Camping

The majority of campgrounds in the Little Salmon Subbasin are adjacent to or proximate to water, with several clustered around the town of Riggins. There are just three campgrounds located along the river; however, there are several campgrounds throughout the subbasin managed by the USFS, Payette National Forest.

Wild and Scenic River Designations

A portion of the Rapid River, a tributary of the Little Salmon River, was designated as a Wild and Scenic River in 1975. A 26.8-mile stretch is classified as Wild. River segments with a Wild classification are essentially primitive and are often inaccessible except by trail. The Rapid River is recognized for its exceptional water quality; its support of chinook salmon, steelhead, and bull trout; and their associated habitat, as well as outstanding scenery and diverse riparian vegetation. Most of the Rapid River watershed is managed as a roadless area providing primitive non-motorized recreation opportunities.

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Salmon and steelhead restoration efforts would continue under the direction of a number of entities within each of the subbasins and with Reclamation's contribution of technical assistance in the Lemhi and Upper Salmon Subbasins. Habitat restoration efforts would proceed slower than under the Proposed action. Consequently, benefits in salmon and steelhead stock would be relatively slow, and the opportunities for recreational salmon fishing would improve in a corresponding manner. Disruption of fishing would be limited to confined areas during construction operations of larger projects, such as push-up dam removal. All projects would be implemented on private land; therefore, public access would not be affected. Work in the Upper Salmon Subbasin could temporarily affect the scenic quality as viewed from the Scenic Byway, but this would be a minor effect and would last only as long as the construction phase. Where these projects are visible from such important sites, Reclamation would incorporate standard design guidelines to ensure new structures are not a visual intrusion, to the extent practical.

Cumulative Impacts

There would be no cumulative impacts to recreation resources from the No Action Alternative.

3.8.2.2 Proposed Action

Effects of the Proposed Action would be similar to those described under the No Action Alternative, but restoration efforts would occur at a faster pace with Reclamation construction authority and funding. Recreation benefits would occur from the improvement of salmon habitat and the increased potential for increased recreational fishing. All projects would occur on private property and would not affect public access. Increased flows would provide minor long-term benefits for boating, particularly in the Upper Salmon Subbasin where this is a popular activity.

Cumulative Impacts

There would be no cumulative impacts to recreation resources from the Proposed Action.

3.8.3 Mitigation

While not specific for recreation concerns, the BMPs that Reclamation would implement as part of the Proposed Action would benefit fisheries and riparian habitat, and indirectly benefit fishing and water quality. There would be no adverse impacts to recreation resources and no mitigation is necessary.

3.9 Aesthetics

3.9.1 Existing Conditions

All of the subbasins are located in central Idaho, a region of mountains, plateaus, and deep canyons within the Northern Rocky Mountain geographic province. This area is well known for its rugged mountainous terrain with many deep canyon-walled rivers and streams with whitewater rapids. Visually apparent geology and soils vary considerably throughout the subbasins, with a unique mix of low relief hills, isolated buttes, lava basalt interfingers, and granite, sedimentary, and metamorphic rocks. Glaciated areas are prevalent in this region, and deeply incised canyons, bench topography, and basalt outcrops are common.

The most dominant manmade visual feature in each of the subbasins is either a highway or a scenic byway. Idaho Scenic Routes have been designated since 1977 through the Idaho State Byways Program. This program is administered by the Idaho Transportation Department and serves two purposes: (1) to promote the scenic, historic, and backcountry byways of Idaho; and (2) to provide funding for tourist amenities, kiosks, and signs that will assist the traveler along the byways (ITD 2002). Highways in these subbasins include: U.S. Highway 95 that parallels the Little Salmon River, State Route (SR) 28 that follows closely along the Lemhi River, and U.S. Highway 12 that follows the Middle Fork Clearwater River, intersecting with the Clearwater Canyon Scenic Byway at the town of Kooskia. Scenic highways in these subbasins include the Salmon River Scenic Byway that follows the entire reach of the Upper Salmon River.

The Lemhi Subbasin is characterized by stands of fir and pine trees, high-mountain meadows, and rolling, jade-colored hills. In the nearly 200 years since Meriwether Lewis and William Clark journeyed to the crest of Lemhi Pass the area has changed but still retains a high aesthetic quality. The subbasin is home to the Lewis and Clark Back Country Byway, which provides spectacular vistas of the surrounding mountain ranges, wildlife and wildflower viewing, and roadside interpretive stops and picnic areas. The Little Salmon Subbasin is characterized by a unique mix of high mountain lakes, rugged canyons, alpine meadows, and forests. In the Upper Salmon Subbasin, the Salmon River Scenic Byway traverses hills and meadows and provides views of the river as well as the surrounding mountain ranges. The river itself serves as a natural pathway through the subbasin's rugged backcountry. The Middle Fork Clearwater River is part of the National Wild and Scenic River System and is a very popular kayaking and whitewater rafting destination.

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

Under the No Action Alternative, restoration efforts would continue at their current pace under the direction of various entities in the subbasins and with Reclamation's technical assistance in the Lemhi and Upper Salmon Subbasins. Short-term construction-related activities and materials could negatively impact the visual experience of travelers along scenic byways in the subbasins. Temporary access roads, equipment and material storage sites, and staging areas would create temporary visual impacts in the immediate vicinity of construction projects. Replacing earthen push-up dams with concrete structures, along with other new structures, in or adjacent to the river may have long-term visual impacts that alter the experience of travelers along the scenic byways in the subbasins. Vortex weirs (natural rock structures) could be used when visual resources are an issue. However, where push-up dam replacement would be most relevant are those areas where ranching is a common land use and part of the cultural landscape. Standard design guidelines would be used for the diversion structures, and any associated building would use designs that would blend into the landscape.

Cumulative Impacts

There would be no cumulative impacts to aesthetics resulting from the No Action Alternative.

3.9.2.2 Proposed Action

Implementation of Action 149 with Reclamation construction authority and funding would result in completion of restoration efforts at a faster pace than under the No Action Alternative. Construction of projects would occur more frequently and consequently may have greater, temporary adverse effects to aesthetics. These effects would generally be limited to areas visible from roadsides and would include the assembly of construction equipment and staging of construction material. The sight of construction equipment is not an unusual one in ranch pastures, particularly in the Lemhi, Upper Salmon, and Little Salmon Subbasins where irrigated pastures are a common feature of the landscape. Vortex weirs could be used if visual resources are a concern. Assembly of construction equipment and materials would be a minor, short-term effect to local aesthetics. Implementation of BMPs and design guidelines for any new structures would minimize long-term effects. The BMPs include provisions for rehabilitating sites following construction disturbance.

Cumulative Impacts

There would be no cumulative impacts to aesthetics resulting from the Proposed Action.

3.9.3 Mitigation

Reclamation's adherence to BMPs would reduce the potential for adverse effects to aesthetic resources. These BMPs include provisions for limits on land clearing and for site restoration following construction. There would be no adverse effects to aesthetic resources and no mitigation is necessary.

3.10 Cultural Resources

3.10.1 Existing Conditions

3.10.1.1 Prehistoric Context

The four subbasins lie within the Salmon-Clearwater subregion of the Eastern Plateau prehistoric cultural area defined by Roll and Hackenberger (1998). The presence or absence of migrating salmon and steelhead greatly influenced the course of cultural development more than any single factor. Anadromous fish were prominent elements of native diet in the areas drained by the Salmon and Clearwater Rivers. Large portions of the territory drained by the Salmon River possess conditions optimum for camas (*Camasia quamash*)—also a vital plant food resource to prehistoric and ethnographic inhabitants.

Using systematic classification of phases on the lower Snake River by Leonhardy and Rice (1970), several investigators defined local phases and complexes in the Clearwater and Salmon Basins (see Pavesic 1971; Ames et al. 1981; Sappington 1994; and Holmer and Ross 1985). The most recent classification proposed by Roll and Hackenberger (1998) argues for a simplified chronology. They proposed three periods: Early Prehistoric Period—Before 8000 to 5000 B.C.; Middle Prehistoric Period—5000 B.C. to A.D. 500; and Late Prehistoric Period—A.D. 500 to 1750.

The Early Prehistoric Period archaeological record is known from surface finds, excavated rockshelters, and limited deep testing of open sites. Artifacts from this period include fluted points, Haskett and Humboldt-like projectile points. One site in the region yielded Plains Plano Tradition points. Several sites have yielded Lind Coulee and Windust type stemmed and shouldered points.

The Middle Prehistoric Period archaeological record is better known. Settlement along the Lower Clearwater and Lower Salmon Rivers intensified as early as the Tucannon phase (approximately 2500 B.C.), but pit house occupations occur more frequently during the Harder phase (about 500 B.C.). Harder phase houses and campsites on the Upper Clearwater suggest population expansion from the Lower Clearwater into the Upper Clearwater and seasonal use of the Lochsa and Selway Rivers. Limited testing of seven sites on the Selway River and analysis of large private artifact collections suggest that regular seasonal occupations of the area began after 1000 B.C. In the Lower Salmon canyon, test excavations revealed occupations spanning the late Cascade, Tucannon, and Harder phases. Test excavations in the surrounding uplands indicate extensive seasonal gathering and hunting. Hunting and hide processing tools, as well as pestles and hopper mortar bases and hearth features, reflect camas processing. Rockshelter excavations along the Middle Fork Salmon revealed 4-meter-deep deposits and radiocarbon dates extending from 10,460 +/- 115 B.C. to 3650 +/-230 B.C. Bitterroot side-notched points dominate the collections, followed by Elko and Pinto types. Scrapers and fleshers comprise over 25 percent of the total artifacts. Sporadic surveys of elevations higher than 1,675 meters revealed sites with shallow buried deposits on the upper Middle Fork Salmon River tributaries. Site locations suggest upland hunting, root gathering, and white-bark pine nut gathering.

The Late Prehistoric Period archaeological sites in the Clearwater River area have yielded numerous cutting tools, cobble tools and anvils, and pestles. The Salmon River area archaeological record has been secured from numerous surveys, testing and data recovery programs too numerous to review here. This rich and complex archaeological record is reviewed by Roll and Hackenberger (1998).

Sites include surface finds, open sites with deep deposits, and housepit villages. Recovered artifacts testify to hunting, fishing, gathering, and long-distance trade (or Bison-hunting forays into Montana).

3.10.1.2 Ethnographic Context

The four subbasins lie within the ancestral lands of the Nez Perce Indians (Walker 1998). Nez Perce territory centered on the middle Snake and Clearwater Rivers and the northern portion of the Salmon River Basin in central Idaho and adjacent Oregon and Washington. In 1800, there were over 70 permanent villages ranging from 30 to 200 individuals, depending on the season and type of social grouping (Walker 1958-1964). The Upper Nez Perce were oriented more toward a Plains lifeway. The Nez Perce are also very closely related by language, culture, and social factors to the *Sahaptin* speakers of Oregon and Washington including the Palouse, Walla Walla, Yakama, Umatilla, and Wayampam (Anastasio 1972). Nez Perce territory was marked by diverse flora and fauna and elevation dependent temperature and precipitation patterns. The deep canyons cut by the Clearwater, Salmon, and Snake Rivers encouraged seasonal subsistence migrations similar to other Plateau groups (Marshall 1977; Walker 1987, 1998).

Walker (1998) reviews aspects of Nez Perce culture; salient information is summarized here. The Nez Perce hunted elk, deer, moose, mountain sheep, and goat as well as black and grizzly bear. After 1700, horse-mounted Nez Perce hunting parties secured bison in Montana and engaged in long-distance trade and exchange with other groups. Small game food resources included rabbit, squirrel, badger, and marmot. Birds such as ducks, geese, grouse, and sage hens were taken for food, and raptors were taken for ceremonial purposes. Nez Perce fished for chinook, coho, chum, and sockeye salmon; Dolly Varden, cutthroat, lake, and steelhead trout; suckers; whitefish; sturgeon; lampreys; and northern pikeminnow. Walker (1967) estimated the Nez Perce consumed 500 pounds of fish per person per year.

In the early spring after cache pits were emptied of stored food, the Nez Perce began communal drives in the river valleys, snowshoe hunted in deep snow, and canoed down the Snake and Columbia Rivers to intercept the early salmon runs. As spring progressed, salmon began arriving in Nez Perce territory, and the early root crops were taken at lower elevations.

Large fish traps and weirs were usually built communally by villages and regulated by a fishing specialist who regulated the fishing and divided the catch. Weirs and traps constructed close to winter villages were often placed on smaller lateral streams. Salmon were speared and netted from canoes and dipping platforms on the major tributaries.

Roots in higher areas were ripe by mid-August, but the basic root staple was camas (supplemented by bitterroot, couse, wild carrot and wild onion). Important gathered fruits included serviceberries, gooseberries, hawthorn berries, thornberries, huckleberries, currants, and chokecherries. Pine nuts, sunflower seeds, and black moss were also gathered.

By midsummer, the Nez Perce typically left their villages in the lower river valleys and moved into the highlands to gather later-growing crops, fish the streams, and hunt. The fall salmon runs, fall hunting, and gathering late root and berry crops comprised the main foods stored for winter. Brief bison hunting trips into Montana helped stretch winter meat supplies.

Around 1560, Spanish horses reached Indians in the southern United States and later dispersed northward to other groups, reaching the Nez Perce by about 1720. Once equestrian, Nez Perce became much more mobile and were able to visit Oregon and Montana. The first significant contact with Euro-Americans started with Lewis and Clark (see below). Euro-Americans arrived in increasing numbers, resulting in more trade goods such as beads being used by the Nez Perce. The influence of Euro-Americans became greater through the mid-1800s until Native Americans were relegated to the reservation.

The Lemhi Subbasin is the ancestral home to Agaidika (Salmoneaters) and Tukukika (Sheepeaters), known as the Lemhi Shoshone and now part of the Shoshone-Bannock Tribes of the Fort Hall Reservation. Like the Nez Perce, the Lemhi people utilized camas, salmon, mountain sheep, antelope, and bison. Also like the Nez Perce, the introduction of the horse led to strong Plains Indian influences that contrasted to a life way in southwestern Idaho that approximated that of the Nevada Great Basin (Murphy and Murphy 1986:289).

The most famous Lemhi Shoshone is Sacajawea, the young female interpreter who accompanied Lewis and Clark and their Corps of Discovery.

3.10.1.3 Historic Context

The arrival of Lewis and Clark in 1805 began the historic period in the subbasins. Lewis and Clark traveled along the Lemhi and Clearwater Rivers; while they did not visit the Lower Salmon River, it is believed that members of their party traveled to the confluence of the Salmon and Snake Rivers. Soon after, fur trappers entered the region (BLM 1987). Donald McKenzie arrived at the confluence of the Little Salmon and Salmon Rivers in 1811, and he traveled along the Salmon River to the White Bird area before continuing north on his search for furs.

In 1855, the Nez Perce signed a treaty establishing a reservation with the understanding that they would retain control over most of their territory. In 1860, however, gold was discovered on their land, creating pressure from Euro-Americans to change the reservation boundaries. In 1863, a new treaty was drafted, greatly reducing their territory. Not all Nez Perce agreed to the treaty, and those who did not agree were forced into the new treaty area in 1877. While camped at Tolo Lake near Grangeville, several young men left camp and killed some white settlers along the Salmon River near White Bird. This resulted in a confrontation with the U.S. Army at the Battle of White Bird, on June 17, and the beginning of the Nez Perce War. The first mining in the four subbasins may have occurred along the Salmon River in 1860 when fine (flour) gold was found. From the 1860s to 1880s, intensive mining was conducted, with ups and downs through the Depression of the 1930s. An important part of regional history includes the Chinese who arrived in north Idaho in the 1860s to work in the newly discovered gold fields. Most of the Chinese mining along the Lower Salmon River took place between the 1870s and 1900.

Agriculture had its beginnings near the stations and stops along the trails leading to the mining regions. The station keepers grew garden crops for their own use, and eventually these gardens expanded in size to supply the needs of miners. Much of the mountainous land was not suitable for agriculture but had some utility for ranching. The first cattle in the region came with the first settlers. Gradually, emphasis shifted from mining to farming and ranching along the rivers. Sheep were also brought into this area, and feuds arose between the cattlemen and sheepmen over the use of open range.

Ferries formed an important transportation link in the region, moving people and livestock across the major rivers. By the early 1900s, many areas were settled with a system of trails and roads that lead to homesteads, mines, and small communities. For example, a stagecoach road between White Bird and Riggins was completed between 1894 and 1898. Highway 95 was constructed in 1931, mostly covering the original stage road. In the early 1900s, large sweep boats were used to transport people and goods on the Salmon River. The first railroad survey of the Salmon River took place around 1872 by the Northern Pacific Railroad.

3.10.1.4 Recorded Cultural Resource Sites

The following compilation of cultural resource sites was taken from an examination of a sample 2-mile wide corridor centered on the mainstem of the principal river in each subbasin. Large portions of each subbasin have never been inventoried for cultural resources; thus, these numbers do not represent a complete or exhaustive record of all sites in the subbasins (Table 3.10-1). Areas most likely to have been inventoried are Federal lands, and areas where Federally licensed or permitted actions have occurred. Although specific project locations are not currently known, it is likely that many project areas will be on private lands that have not been surveyed for cultural resources. This compilation does not include traditional cultural properties (TCPs) or sacred sites. These numbers represent only those sites registered with the Idaho State Historic Preservation Office and do not distinguish between those sites that have been evaluated for listing on the National Register of Historic Places (NRHP)and those that have not. Furthermore, all archaeological sites are listed together, whether of Native American or Euro-American origin.

Table 3.10-1. Recorded Archaeological and Architectural Sites in the Four Subbasins.*

Subbasin	Archaeological Sites	Architectural (Structure)
Lemhi River	84	56
Upper Salmon River	298	125
Little Salmon River	30	35
Middle Fork Clearwater River	52	24

* Table includes only sites within a sample 2 mile corridor of the rivers main-stem.

3.10.2 Environmental Consequences

3.10.2.1 Regulatory Setting

Important cultural resources or historic properties are given consideration in the environmental planning and permitting process through the National Historic Preservation Act (NHPA) of 1966, as amended, and other statutes and regulations. Section 106 of NHPA requires the responsible Federal official to consider the effects of any Federal action on cultural resources and to give the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on said action. A step-by-step process for identifying, evaluating, and, if necessary, mitigating adverse project effects on historic properties is provided in 36 CFR 800. Historic properties include cultural resources such as archaeological and historic sites, TCPs, historic landscapes, and buildings, structures, and objects that are eligible for listing in the National Register of Historic Places. National Register Bulletin 38, *Guidelines for Evaluating and Documenting Traditional Cultural Properties* (Parker and King 1995) specifically addresses TCPs. As noted earlier, specific locations of sacred sites and TCPs are generally not included in the State list of historic properties, and the locations are generally held as sensitive, private knowledge by tribes, to be shared only as necessary to protect them on a project-specific basis. At the programmatic level of analysis, specific project impacts cannot be determined. As

specific projects are developed, the Section 106 process begins, with identification of cultural resources through inventories and surveys. Since certain types of sites, such as TCP's, may not be apparent to non-native investigators, ethnographic studies incorporating oral histories are often undertaken to identify such properties. If the project is on ancestral lands of Federally recognized tribes, formal government-to-government consultation between the Federal agency and the affected tribe is required.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) establishes regulations regarding the treatment of any Native American graves, human remains, and/or funerary objects, sacred objects, or objects of cultural patrimony on Federal lands. Objects of cultural patrimony are objects of central importance to a group as a whole, which cannot be owned or controlled by an individual. Knowingly disturbing or removing gravesite remains or these objects is a felony under Federal law and can result in criminal prosecution. This legislation applies to Federally owned lands. In addition, Idaho's Protection of Graves Act (1984) requires notification to the director of the Idaho State Historical Society when human skeletal remains are discovered on any non-Federal lands.

3.10.2.2 High Probability Areas

Within most delineated geographic area are locations more likely to contain cultural resources than other locations. These are commonly referred to as High Probability Areas (HPAs). HPAs are designated by the archaeologist on a project-specific basis to develop survey and inventory strategies for finding cultural resources. In the Intermountain West, the availability of fresh water has long been demonstrated as an important factor influencing prehistoric settlement and subsistence patterns. Other factors important in the identification of HPAs include slope, elevation, and plant and mineral resources. As a general rule, however, the nearer accessible water, the higher probability that archaeological sites are present. In the four subbasins, stream courses fostered rich wildlife habitat and important plant resources that supported Native American subsistence and settlement. The presence of anadromous fisheries was particularly influential in the subsistence patterns of Native American inhabitants. Areas close to streams bearing salmonids are generally considered HPAs. Within an HPA, there are areas more likely and areas less likely to contain cultural sites. Areas near stream confluences, for instance, typically have a higher likelihood of containing archaeological sites, while areas directly adjacent to a fish-bearing stream but along a fast-moving stretch of deep water with high steep banks are far less likely to contain cultural sites. Although specific project locations are not currently known, it is likely that some will occur in relatively high probability areas. BMPs that will be implemented for all site-specific projects include pre-construction screening of sites regarding cultural resources. In general, there has not been a sufficient level of surveys in Idaho to confidently identify high or low probability areas. All projects must be reviewed under Section 106 regardless of a project's location relative to a high probability area.

3.10.2.3 No Action Alternative

Under the No Action Alternative, the implementation of projects to help protect and restore ESA-listed anadromous fish would continue, with limited Reclamation participation in the Upper Salmon and Lemhi Subbasins. With limited Reclamation involvement, the number and scope of these projects cannot be defined at this time but would likely proceed slower than under the Proposed Action. Since fewer of the habitat improvements would occur, the potential impacts to archaeological sites, sacred sites/TCPs, and historic structures would be less. Desirable impacts to Native American cul-

tural and spiritual lifeways resulting from improved salmon habitat would occur at a slower pace than under the Proposed Action.

Cumulative Impacts

No Cumulative Impacts to Cultural Resources are expected from the implementation of the Proposed Action.

3.10.2.4 Proposed Action

Barriers

Archaeological Sites

The addition or replacement of barriers could result in direct impacts to archaeological sites through ground-disturbing activities associated with construction and construction vehicle traffic. Archaeological cultural resources are finite in space, possessing definable boundaries. Much of the value of an archaeological site lies in its ability to provide meaningful information about an earlier prehistoric or historic cultural group—information not readily obtained by other means. This information is gleaned from the vertical and horizontal position of artifacts and other cultural materials *in situ* within an archaeological deposit. Ground-disturbing activities that disturb the relative *in situ* position of archaeological materials compromise the site's value for providing data and information. Based on the greater number of projects proposed in the Lemhi and Upper Salmon Subbasins, and because the current state of site recordation shows these areas to have the greatest number of archaeological sites (and historic standing structures), the likelihood of impacts to cultural resources appears greatest in the Lemhi and Upper Salmon Subbasins. Project review under Section 106 of the NHPA would ensure avoidance of impacts to cultural resources.

Historic Structures

Standing historic structures such as diversion dams are subject to direct physical impacts. Any cosmetic or structural change resulting from construction activities constitutes a direct impact. If project activities do not directly (physically) impact a structure but do alter its setting, such setting alterations may be considered a direct impact.

Screens

Archaeological Sites

The addition or replacement of screens could result in direct impacts to archaeological sites through ground-disturbing activities associated with construction and construction vehicle traffic. All sites are on private land in agricultural settings. Most sites have been previously disturbed. The greatest risk would be in the Lemhi and Upper Salmon Subbasins where the largest number of fish passage and screening projects are likely to be constructed. Projects would be reviewed under the guidelines of Section 106 of the NHPA prior to earth-moving activity.

Historic Structures

The environmental consequences of installing screens in the four subbasins would be the same for historic structures as the consequences of removing barriers.

Streamflow Improvement

Archaeological Sites

Actions to improve flow could result in direct physical impacts to archaeological sites through construction activities, such as headgate consolidation, that disturb ground surfaces Changes in flow from transfer of water rights would increase streamflow during critical periods. Such increases, compared to high seasonal flows, would be negligible. This appears most likely in the Lemhi and Upper Salmon Subbasins.

Historic Structures

The environmental consequences of modifying flow in the four subbasins would be the same for historic structures as the consequences of constructing screens and/or barriers.

Cumulative Impacts

While individual projects could cause some minor site-specific impacts, no Cumulative Impacts to Cultural Resources are expected from the implementation of the Proposed Action. Timely project review under Section 106 of the NHPA would result in the avoidance of cumulative effects on historic properties.

3.10.3 Mitigation

Because specific project impacts cannot be determined at the programmatic level of analysis, specific mitigation measures cannot be determined. Where impacts to archaeological sites are unavoidable, mitigation often takes the form of data recovery or archaeological excavation. Where impacts to structures are unavoidable, professional photographic documentation according to Historic American Buildings Survey/Historic American Engineering Records (HABS/HAER) standards may be required. Projects would be reviewed in accordance with the guidelines of Section 106 of the NHPA.

During project implementation, avoidance of cultural resource sites will occur whenever possible and is always the preferred course of action. If cultural resource sites are found within the area of project effect, Reclamation will consult with the Idaho SHPO and interested parties about their eligibility to the National Register of Historic Places (Register), project effect, and appropriate mitigation. If sites are determined eligible for the Register and cannot be avoided, the exact nature of the mitigative treatment would be determined in consultation with the SHPO (and others as appropriate) and documented in a Memorandum of Agreement with the consulting and interested parties. If NAGPRA human or cultural items are discovered during project implementation, activities in the immediate area of the discovery shall cease, and will not resume until Reclamation has completed consultation requirements with the tribes under NAGPRA.

3.11 Sacred Sites

3.11.1 Existing Conditions

It is recognized that the environmental and/or archaeological assessment process does not adequately address the cultural significance of all places that might be of importance to Indian people. Significance assessments of impacts to archaeological or natural resource sites fail to take into account Indian conceptions of the physical environment. Executive Order 13007 promotes accommodation of access to American Indian sacred sites by Indian religious practitioners and provides additional protection for the physical integrity of such sacred sites. The Order provides a definition of sacred sites as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian Tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion.

Reclamation has corresponded with tribes having aboriginal ties to the four subbasins, about the possible existence of sacred sites being present in the vicinity of the subbasins. Although the tribes have not responded, and no specific sacred sites have been identified, it is assumed that the subbasins, in general, would include places of spiritual and religious importance to the tribes. Various natural and physical features on the landscape - - such as mountains, foothills, buttes, springs, lakes, rivers, and caves - - derive their sacredness and power from a natural undisturbed state. In addition, certain cultural sites may be regarded as sacred to tribes, including, for example, burial places, petroglyph and pictograph sites, important travel routes, and battle or massacre sites, among others.

It is assumed in this analysis that sacred sites are present in each subbasin, and that they could be subject to the same kinds of impacts as other cultural resources.

3.11.2 Environmental Consequences

Because of the minor differences in impacts between the two alternatives this section discusses the Environmental Consequences of both alternatives. Any intrusion into a sacred site can result in direct impacts. Impacts can be immediate and directly associated with construction activities, or long term. Examples include introduction of modern development into a traditional cultural landscape that degrades the pristine setting and disrupts the ability of Indians to pray and/or view a traditional landscape feature important to Indian mythology or religious practice, and introduction of grazing into an area of critical native plant habitat. Improvement in salmon habitat can be a direct positive impact on the practice of traditional religious practices of tribes where salmon play a key role in traditional spiritual lifeways and practices.

There are likely positive impacts on sacred sites from the removal of barriers, the replacement of screens, and streamflow improvement. Sacred sites on waters edge are likely to have association with salmon. Improved habitat and subsequent greater numbers of fish would be a direct positive impact. There is a small possibility of negative impacts due to construction and the introduction of man-made materials to sacred locations.

Improvements to ESA anadromous salmonid habitat would occur at a slower pace under the No Action Alternative compared to the Proposed Action. Thus benefits regarding Sacred Sites would likely accrue faster under the Proposed Action.

Cumulative Impacts

No Cumulative Impacts are anticipated to Sacred Sites from the implementation of either the No Action or Proposed Action Alternatives.

3.11.3 Mitigation

Although Executive Order 13007 does not authorize agencies to mitigate for the impact of their actions upon Indian sacred sites, it does direct them to avoid adverse impacts whenever possible. For future Reclamation actions within the four subbasins that could impact Indian sacred sites, Reclamation will consult with tribes in conjunction with any 36CFR800 consultations. Under these consultations, Reclamation will seek means to avoid adverse impacts to sacred sites.

Sacred Sites and TCPs often embody non-physical cultural values or attributes that cannot be easily mitigated. While mitigation measures for Sacred Sites and TCPs subject to unavoidable project impact are usually developed on a case-by-case basis in consultation with the affected tribes, common off-site compensatory mitigation may include: funding tribal oral history programs or language preservation efforts, funding tribal museums or other cultural resource programs of critical importance to the tribes, or funding natural or cultural resource mitigation measures such as stream or wetland rehabilitation or fisheries enhancement. Because there are no specifics available regarding TCPs or sacred sites in the four subbasins, no mitigation beyond the BMPs to be implemented by Reclamation are recommended at this time.

3.12 Indian Trust Assets

3.12.1 Existing Conditions

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States for Indian tribes or individuals. The Secretary of the Interior, acting as the trustee, holds many assets in trust for Indian tribes or Indian individuals. Examples of things that may be trust assets are lands, minerals, hunting and fishing rights, and water rights. While most ITAs are on-reservation, they may also be found off-reservation.

The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to Indian tribes or Indian individuals by treaties, statutes, and executive orders. These are sometimes further interpreted through court decisions and regulations.

The Shoshone-Bannock Tribes, a Federally recognized tribe located at the Fort Hall Indian Reservation in southeastern Idaho, have trust assets both on-reservation and off-reservation. The Fort Bridger Treaty was signed and agreed to by the Bannock and Shoshone headman on July 3, 1868. The treaty states in Article 4 that members of the Shoshone-Bannock Tribe "...shall have the right to hunt on the unoccupied lands of the United States..." This has been interpreted to mean unoccupied Federal lands.

The tribes believe their right extends to the right to fish. The Fort Bridger Treaty for the Shoshone-Bannock has been interpreted in the case of State of Idaho v. Tinno, an off-reservation fishing case in Idaho. The Idaho Supreme Court determined that the Shoshone word for "hunt" also in-

cluded to "fish." Under Tinno, the Court affirmed the tribal members' right to take fish off-reservation pursuant to the Fort Bridger Treaty (Shoshone-Bannock Tribes 1994).

The Nez Perce Tribe is a Federally recognized Tribe of the Nez Perce Reservation in northern Idaho. The United States and the tribe entered into three treaties (Treaty of 1855, Treaty of 1863, and Treaty of 1868) and one agreement (Agreement of 1893). The rights of the Nez Perce Tribe include the right to hunt, gather, and graze livestock on open and unclaimed lands, as well as the right to fish in all usual and accustomed places (Nez Perce Tribe 1995).

The Northwestern Band of the Shoshone Indians, a Federally recognized tribe without a reservation, possess treaty-protected hunting and fishing rights that may be exercised on unoccupied lands within the area acquired by the United States pursuant to the 1868 Treaty of Fort Bridger. No opinion is expressed as to which areas may be regarded as "unoccupied lands" (Regional Solicitor 1995).

Other Federally recognized tribes may have cultural and religious interests in the four subbasins but do not have off-reservation ITAs. Cultural interests may be protected under historic preservation laws and the Native American Graves Protection and Repatriation Act (NAGPRA). See Sections 3.10 and 3.11 (Cultural Resources and Sacred Sites) for a discussion of other tribal interests.

3.12.2 Environmental Consequences

Because of the similarity of the impacts between the two alternatives the impacts are discussed within the following narrative. There is no universally accepted understanding as to the specific treaty rights to hunt and fish in the vicinity of the subbasins since there has not been a settlement with either the Nez Perce Tribe, the Shoshone-Bannock Tribe, or the Northwestern Band of the Shoshone-Nation as to the extent and nature of their off-reservation hunting and fishing treaty rights. Thus, the ITAs considered are tribal hunting and fishing rights that may exist. Water rights claims or lack of such claims within the Snake River Basin Adjudication is not necessarily determinative of these kinds of rights.

The rights of the tribes to hunt and/or fish that may exist would not be altered by any of the alternatives. The availability of fish may be somewhat changed during the construction period. Potential changes are expected to be an increase in anadromous salmonid populations in the four subbasins, representing a beneficial impact. Restoration efforts and subsequent benefits to fish would occur at a faster pace under the proposed action compared to the No Action Alternative. See 3.6.2 Wildlife and 3.5.2 Fish Affected Environment for a complete discussion.

Cumulative Impacts

No Cumulative Impacts are anticipated to ITAs from the implementation of either the No Action or Proposed Action Alternatives. There would be no impacts to traditional hunting, fishing, or gathering sites.

3.12.3 Mitigation

As there are no anticipated adverse impacts, no mitigation measures are required.

3.13 Socioeconomics

The following narrative describes the socioeconomic setting of the Lemhi, Upper Salmon, Lower Salmon, and Middle Fork Clearwater Subbasins. See Figure 1.1-1 for orientation.

3.13.1 Existing Conditions

3.13.1.1 Lemhi Subbasin

The City of Salmon is the largest population center within or adjacent to the subbasin, although other smaller towns within the subbasin include Leadore and Tendoy. Over the past decade, Lemhi County and communities showed consistently lower population growth rates than the state average. According to the Bureau of the Census, between 1990 and 2000, the population of Lemhi County grew by 13.1 percent (to 7,806 persons) compared to a statewide rate of 28.5 percent. Lemhi County had a population density of 1.7 persons per square mile in 2000, compared to the state average of 15.6 persons per square mile.

The county showed significantly lower income and employment levels than the state. As of 1999, Lemhi County showed a Per Capita Personal Income (PCPI) of $18,886, 17.4 percent below the statewide average, a proportion similar to 1990 levels (17.1 percent). In 2000, Lemhi County showed an annual unemployment level of 9.0 percent, having risen from 7.9 percent in 1998 and 8.3 percent in 1990 - significantly above the respective statewide averages of 4.9, 5.2, and 5.9 percent. One factor contributing to this trend is the seasonal nature of many local jobs.

Federal and State government activities remain a major influence upon the economy, with Federal land ownership accounting for nearly 91 percent of the County (IDC 2002). Approximately 80 percent of the Lemhi Subbasin is managed by the USFS or the BLM (ISCC 1995). The subbasin supports intensive farming and ranching and uses an extensive system of canals for irrigating crops (mainly alfalfa) and watering stock (USGS 1998).

Outdoor recreation is a key part of the local culture and customs (ISCC 1995), and recreation and tourism are also important to the county economy. The leading economic sector within the City of Salmon is tourism, followed by timber and agriculture (ISCC 1995). The city, known as "the whitewater capital of the world" (IDOC 2001), relies heavily on seasonal recreational activities such as whitewater rafting, boating, fishing, hiking, camping, and hunting.

3.13.1.2 Upper Salmon Subbasin

The Upper Salmon Subbasin constitutes a significant portion of Custer County. The City of Challis is the largest population center within or adjacent to the subbasin; smaller communities within the subbasin include Stanley and Clayton. According to the Bureau of the Census, Custer County's population growth between 1990 and 2000 at 5.1 percent, was significantly lower than the State average (28.5 percent). Conversely, between 1990 and 2000, Challis and the smaller community of Stanley showed population growth rates of 18.0 and 29.0 percent, respectively. Over the decade, 39.2 percent of the county population growth was attributable to migration rather than through births. The county is a sparsely populated and entirely rural area, evidenced by a population density of 0.9 persons per square mile, much lower than the state average of 15.6 persons per square mile.

Incomes within the county have remained generally similar to the statewide averages. As of 1999, Custer County showed a PCPI of $23,087, 0.9 percent above the statewide average having increased proportionally by 5.7 percent from 1990.

The Federal government owns more than 93 percent of the lands in the county (IDOC 2001), and predominant uses of public lands within the subbasin include livestock grazing (sheep, cattle, and horses), mining, and recreation. Livestock grazing and irrigated cut hay pasture are also the predominant activities on private land, although residential development is increasing rapidly (NPPC 2001).

3.13.1.3 Middle Fork Clearwater Subbasin

The Middle Fork Clearwater Subbasin is situated in north-central Idaho, entirely within Idaho County. Portions of both the subbasin and the county are within the Nez Perce Indian Reservation. The largest population center within or immediately adjacent to the subbasin is the small city of Kooskia, with Grangeville, the county seat, situated approximately 20 miles to the south. Idaho County is sparsely populated and predominantly rural. Land ownership within the county remains mixed, comprised of private, State/Federal, and tribal holdings, with Federal government ownership covering over 83 percent of the County (IDC 2001). Between 1990 and 2000, population growth within the county, at 12.7 percent (to 15,511 persons), remained significantly below the statewide average (28.5 percent). As of 2000, the County was characterized as almost 80 percent rural (IDC 2001) and showed a population density of 1.8 persons per square mile, much lower than the state average of 15.6 persons per square mile. In 1999, Idaho County showed a PCPI of $17,690, 22.6 percent below the statewide average.

The economy in Idaho County remains heavily dependent on natural resources, with forest products, manufacturing, and agriculture the basic industries (IDC 2001). Employment within the lumber and wood products sector constitutes a large part of the labor force (11.8 percent in 1998). The number of government jobs decreased due to cutbacks at the USFS, and the number of jobs in agriculture is just one-third of what it was 20 years ago (IDL 1999). Substantial employment is also provided within the trade and services sector (IDC 2001). Major employers include timber companies, school districts, USFS, and the County government (IDC 2001). Recreation is an increasingly significant component of the local economy with a variety of attractions situated within the county including several popular wilderness areas, a large part of the Hells Canyon National Recreation Area, and significant stretches of the Salmon River. In relation, whitewater rafting increased over the last several years along with fishing and hunting services (IDL 1999).

3.13.1.4 Little Salmon Subbasin

The Little Salmon Subbasin is situated in west-central Idaho, across portions of northern Adams and Valley Counties and southern Idaho County. Communities within or adjacent to the subbasin include Riggins in Idaho County and New Meadows in Adams County. The subbasin is an entirely rural, sparsely populated area that has generally shown relatively low levels of growth over the past decade. According to the Bureau of the Census, as of 2000, population densities within the three counties were extremely low, ranging from 1.8 to 2.5 persons per square mile, much lower than the state average of 15.6 persons per square mile. The population of Adams and Idaho Counties grew by 6.8 and 12.7 percent over the decade, respectively, much lower than the statewide rate of 28.5 percent, although the growth of Valley County (25.2 percent) was much closer to the statewide average. A large number of residents have second houses or vacation homes in the area; as such, there

are sizeable differences in population based on the season of the year (IDL 1999). As of 1999, Adams, Idaho, and Valley Counties showed PCPIs of $18,212, $17,690, and $24,390 (-19.4 percent, -22.6 percent, and +6.6 percent above or below the statewide average, respectively).

Public landholding accounts for nearly 70 percent of the subbasin, with the vast majority being USFS land. The main employers within the region include the USFS, local government, logging, and tourism-related trade and services (IDC 2001). The Adams County economy relies heavily on forest products manufacturing and government for employment (IDC 2001). Government employment through the USFS traditionally provides a stable economic element (IDL 1999). As of 2000, in Valley County nearly 31 percent of all non-farm employment was with government (IDC 2001), with other main sources of employment in construction and forest products/ manufacturing. In Valley and Adams Counties, an essential support of the economy has traditionally been natural resource-based industry. Timber harvesting and lumber production operations are still present, although the future of the timber industry is uncertain because of the continued dispute over access to public lands (IDL 1999). Recreation and tourism are important components of the Valley County economy. The Brundage Ski Area, located on the Adams and Valley County border, is a large seasonal employer. In Idaho County, forest products manufacturing and agriculture are the basic industries; government is the largest employment sector, and substantial employment is also provided by the trade and services sector (IDC 2001).

3.13.2 Environmental Consequences

3.13.2.1 No Action Alternative

Under the No Action Alternative, Reclamation would continue to provide technical assistance in the Lemhi and Upper Salmon Subbasins. Other entities have initiated similar streamflow improvement projects within the four subbasins. The role of Reclamation would be limited to providing technical assistance for certain irrigation-related projects in the Lemhi and Upper Salmon Subbasins. The scope and level of this involvement would continue to fluctuate annually. There would be no effect to the socioeconomics of the four subbasins.

Cumulative Impacts

There would be no cumulative impacts to socioeconomics from the No Action Alternative.

3.13.2.2 Proposed Action

No displacement or relocation of any person, populations, or housing would occur as a result of the Proposed Action. The construction of the structures and installation of the related equipment would take place incrementally throughout each of the subbasins over approximately 10 years. Construction would involve a certain amount of locally procured materials and would use local labor predominantly. These factors allow an incremental but positive economic impact from the limited increase in local employment and use of material. These economic benefits would be minor because of the small size of the projects and their dispersion throughout the subbasins. Landowners may have to contribute to part of the cost of these structures. The level of contribution by landowners is not yet known and will depend on the outcome of pending Congressional approval of Reclamation construction authority. Landowners will realize improved operation efficiencies and would benefit from assistance in complying with ESA requirements. Construction impacts are anticipated to be short-term, localized, and not adverse. No significant impacts would occur during construction.

Landowners must bear the cost of maintenance and upkeep of the structures on their property. This maintenance is expected to be minimal given the sturdy construction and long lifespan of the structures. Projected maintenance costs of the new structures are not anticipated to outweigh the costs of maintenance of the existing structures. Maintenance of new Fish Screens or other facilities would be an added cost to private landowners. Long term operation and maintenance related to push-up dam replacement may reduce operation and maintenance costs, due to more efficient alternative irrigation methods.

The proposed structures and equipment, when constructed, would facilitate more efficient extraction and distribution of irrigation water. Therefore, while the volume of extracted water would diminish at any given location, the actual amount of water currently applied to crops would remain constant, with no impact to agriculture.

The fishing and recreation industry is an increasingly important economic sector within all of the subbasins, and outdoor recreation tourism and tourist-related industries have become increasingly important to the economy of the entire region. Given that the ultimate goal of the Proposed Action is to improve flows and eliminate instream passage barriers, the resultant increase in flows would positively impact fish habitat and, with the installation of adequate fish screens, enhance fish passage. In turn, increases in fish populations would enhance and expand fishing and recreational opportunities within each subbasin, allowing a wider package of visitor-serving activities to be offered. All projects would be implemented with willing participants and would provide solutions to endangered species concerns for landowners. There would be no socio-economic impacts to willing participants from implementation of the Proposed Action. Overall long-term socioeconomic impacts would be positive. No significant socioeconomic impacts are anticipated.

Cumulative Impacts

There would be no cumulative impacts to socioeconomics from the Proposed Action.

3.13.3 Mitigation

No mitigation measures are necessary beyond those incorporated into the project design.

3.14 Land Use

3.14.1 Existing Conditions

This section summarized land use in the Mountain Snake Province Subbasins. A brief summary of the largest cities and towns, land ownership, and predominant land uses in each subbasin is provided.

3.14.1.1 Lemhi Subbasin

The Lemhi Subbasin encompasses 1,270 square miles. The majority of the subbasin is Federally owned. The Federal lands are distributed evenly between the USFS (39 percent) and the BLM (39 percent) with another 3.0 percent in public ownership at the State level. Of the four subbasins, Lemhi has the largest proportion of private ownership at 18.4 percent.

The largest city within this subbasin is Salmon, with a population of 3,122, located at the confluence of the Lemhi and Salmon Rivers. Leadore, a town with a population of 594, is approximately 45 miles upstream from Salmon (IDC 2000).

The predominant land uses within the subbasin are agriculture and livestock grazing. Highway 28 roughly parallels the Lemhi River throughout the subbasin. Approximately 21 percent of the riverbed has been channelized and straightened by the state Highway Department and local ranchers. This has subsequently raised the riverbed and increased flood hazards (NPPC 2002).

3.14.1.2 Upper Salmon Subbasin

The majority of the lands within the Upper Salmon Subbasin are publicly owned. Private ownership covers 5 percent of the land area and is generally concentrated around the City of Challis and along the Salmon River, especially near the town of Stanley (NPPC 2002).

The predominant uses of public lands within the subbasin are mining, livestock grazing, and recreation. Livestock grazing is not as predominant as mining but has been a constant use within the subbasin for decades. The subbasin lowlands are primarily used for livestock grazing with a few upper rangeland areas grazed by sheep. The majority of allotments within the subbasin are managed under an Allotment Management Plan administered by the BLM. Livestock grazing and irrigated cut hay pasture agriculture are the predominant activities on private land, although residential development is increasing.

3.14.1.3 Middle Fork Clearwater Subbasin

Land ownership in the Middle Fork Clearwater Subbasin is highly mixed and is comprised of private, State, Federal, and tribal holdings. Potlach Corporation and the Idaho Department of Lands manage substantial portions of the land within the subbasin, and properties managed by these two entities are highly mixed. The eastern-most portion of the Middle Fork Clearwater is Federally owned and managed by the USFS. Private holdings are an important component in the western half of the subbasin, which is also interspersed with Nez Perce Tribal lands.

The largest town within the subbasin is Kooskia, with a population of 675 (IDC 2000). Highway 12 parallels the river throughout the subbasin. While moderate urban development is occurring in the lower Clearwater Subbasin, land cover in the Middle Fork Clearwater Subbasin is primarily forest, with agricultural use limited to portions of the western plateaus. Much of the forested area has been intensively harvested, reflected by the high densities of forest roads through much of the subbasin. Most of the land in the larger Clearwater Basin is Federally owned, particularly in the mountainous areas, and mostly under USFS jurisdiction.

3.14.1.4 Little Salmon Subbasin

The Little Salmon Subbasin lies within northeastern Adams and southwestern Idaho Counties and covers 582 square miles. Land ownership in the Little Salmon Subbasin is dominated by USFS (67.8 percent) and private ownership (23 percent) with 5.3 percent and 3.9 percent owned by BLM and the State, respectively (NPPC 2002). The largest towns within the subbasin are Riggins and New Meadows, which have a combined population of just under 1,000 (IDC 2000). Highway 95 parallels the river throughout the subbasin. Predominant land uses include livestock grazing, mining, recreation, residences, and timber harvest.

3.14.2 Environmental Consequences

3.14.2.1 No Action Alternative

Salmon and steelhead restoration efforts would continue under the present pace under the guidance of local entities and with continued technical assistance by Reclamation in the Lemhi and Upper Salmon Subbasin. Implementation of these efforts would have no effect on land use in the four subbasins.

Cumulative Impacts

There would be no cumulative impacts to land use from the No Action Alternative.

3.14.2.2 Proposed Action

Implementation of restoration efforts would occur at a faster pace with Reclamation's participation through the FCRPS BiOp than described under the No Action Alternative. All projects would occur on private land. Reclamation could purchase water rights from willing landowners and permanently transfer these rights to a third part for instream use. Such a transaction would need to comply with Idaho water law. Transfer of water rights could have some minor land use effects if land in agriculture use, such as irrigated pasture, were removed from production. Given the complexities of these transfers and the likely limited use of these efforts by Reclamation, there would be minimal effects to land use from water transfers. There would be no effect to land use in the four subbasins addressed herein.

Cumulative Impacts

There would be no cumulative impacts to land use from the Proposed Action.

3.14.3 Mitigation

No impacts have been identified; therefore, no mitigation measures are necessary.

3.15 Environmental Justice

Executive Order 12898 (Environmental Justice, 59 Fed. Reg. 7629 [1994]) requires each Federal agency to achieve environmental justice by addressing "disproportionately high and adverse human health and environmental effects on minority and low-income populations." The demographics of the affected area are examined to determine whether minority populations, low-income populations, or Indian tribes present in the area are impacted by a proposed action. If so, a determination must be made as to whether the implementation/development of the proposed project may cause disproportionately high and adverse human health or environmental effects on the minority or low-income populations present. Examination of minority and low income populations is warranted through the adoption of a 1994 directive designed specifically to examine impacts to such things as human health of minority populations, low income populations, and Indian tribes and is commonly known as Environmental Justice.

The Council on Environmental Quality (CEQ) defined "minority" to consist of the following groups: Black/African American, Asian, Native Hawaiian or Other Pacific Islander, American Indian or

Alaskan Native, and Hispanic populations (regardless of race). Additionally, for the purposes of this analysis, "minority' also includes all other non-white racial categories within the 2000 Census such as "Some other race" and "Two or more races." The Interagency Federal Working Group on Environmental Justice (IWG) guidance states that a "minority population" may be present in an area if the minority population percentage in the area of interest is "meaningfully greater" than the minority population in the general population. CEQ also defined "low income populations" based on the annual statistical thresholds from the Bureau of the Census. These "poverty thresholds" are calculated by family size and composition and are updated annually to reflect inflation. A population is considered low income if the percentage of the population that is below the poverty threshold within the area of interest is "meaningfully greater" than the low-income population in the general area (state-wide) population.

3.15.1 Existing Conditions

According to the Bureau of the Census, as of 2000, the white population is the substantial majority (91 percent) in Idaho with much smaller populations of other racial groups such as African American (0.4 percent), Asian (1.4 percent), and Hawaiian (0.1 percent). With regard to ethnicity, the statewide Hispanic population was 7.9 percent and consequently raised the total minority population (under Environmental Justice guidelines) of the State to 12.0 percent. Because non-white Hispanics (ethnicity) and people of color (race) are included in the definition of Minority under the Environmental Justice guidelines, the total for minorities and the majority (whites) is greater than 100 percent. Under this classification a person who is white Hispanic gets counted in both the majority and minority. Racial and ethnic populations within each of the subbasins were examined both by county and primary towns/cities, as shown in Table 3.15-1.

Mirroring the state, all counties examined were dominated by white populations, ranging from 94.1 percent (Idaho County) to 97.3 percent (Custer County). Consequently, other racial categories were correspondingly low. Black/African American populations ranged from 0 to 0.1 percent, Asian populations ranged from 0 to 0.3 percent, "Some other race" ranged from 0.8 to 1.2 percent, and "Two or more races" ranged from 0.9 to 1.7 percent. Native American populations were significantly lower than the statewide average of 1.4 percent in Lemhi, Custer, and Valley Counties, and equal within Adams County (1.4 percent); Idaho County at 2.9 percent has a higher percentage than the statewide average. Hispanic populations within each of the subbasins, ranging from 1.6 percent (Adams County) to 4.2 percent (Custer County), were also all significantly below the statewide average of 7.9 percent. Total minority populations within the subbasins were all significantly below the statewide average of 12.0 percent, and ranged from 4.2 percent (Valley County) to 6.6 percent (Idaho County).

The cities of Salmon, Challis, Grangeville, and Riggins showed total minority populations of 4.5 percent, 5.1 percent, 4.3 percent, and 1.7 percent, respectively, all equal to or below the applicable county and statewide averages. The City of Kooskia showed higher "Two or more races" populations (2.7 percent) than that of both the county and statewide averages and, although marginally lower than the county average of 2.9 percent, also showed higher Native American populations (2.2 percent) than the statewide average. However, at 7.7 percent, the total minority population remained considerably below the statewide average of 12.0 percent. As such, using the criteria presented above, none of the counties or communities examined are considered to have sufficient minority populations to warrant evaluation under Executive Order 12898.

Table 3.15-1. Summary of Race and Ethnicity for County, Local, and Tribal Jurisdictions of the Subbasins.

	Idaho State	Lemhi County	City of Salmon	Custer County	City of Challis	Adams County	City of Riggins	Valley County	Idaho County	City of Grangeville	City of Kooskia	Nez Perce Reservation
White	91.0	96.6	96.8	97.3	97.1	96.3	98.3	96.4	94.1	96.3	93.2	84.6
Black or African American	0.4	0.1	0.2	-	-	0.1	-	-	0.1	-	-	0.2
American Indian, Alaskan Native	1.4	0.6	0.5	0.6	0.9	1.4	0.5	0.7	2.9	1.1	2.2	11.7
Asian	0.9	0.2	0.3	-	-	0.1	-	0.3	0.3	0.3	0.3	0.3
Native Hawaiian and Other Pacific Islander	0.1	[1]-	-	-	-	-	-	-	-	-	-	0.1
Some Other Race	4.2	0.8	0.6	1.2	1.2	0.9	0.2	1.1	0.9	0.7	1.6	0.9
Two or More Races	2.0	1.7	1.6	0.9	0.8	1.2	1.0	1.4	1.7	1.5	2.7	2.2
Hispanic origin, any race	7.9	2.2	2.2	4.2	3.9	1.6	-	2.0	1.6	1.6	2.4	2.0
Total Non-Minority Population (White Non-Hispanic)	88.0	95.5	95.5	94.4	94.9	95.5	98.3	95.8	6.6	95.7	7.7	83.8
Total Minority Population	12.0	4.5	4.5	5.6	5.1	4.5	1.7	4.2	93.4	4.3	92.3	16.2

Source: Bureau of the Census 2000

[1] less than .01 %

The Nez Perce Reservation, located partially within the Middle Fork Clearwater Subbasin, includes a significant Native American population of 11.7 percent in turn leading to a total minority population of 16.2 percent. Thus, using the criteria presented above, the Nez Perce Reservation is a minority population that warrants consideration of impacts under the Environmental Justice criteria.

According to the Bureau of the Census, in 1990, 13.25 percent of Idaho's population was below the poverty level. In 1990, Adams and Valley Counties showed poverty levels below that of the statewide average (10.9 percent and 12.7 percent, respectively). Custer and Lemhi Counties, at 14.84 percent and 20.24 percent, were significantly above the statewide average, while Idaho County, at 13.75 percent, was only marginally above. According to the Bureau of the Census 1997 mode-based estimates of the poverty level (the latest figures available), the statewide average poverty level was marginally lower (13 percent), and Adams and Idaho Counties, at 14.6 percent and 17.6 percent, respectively, showed elevated poverty levels significantly above the statewide average. Poverty levels within Valley County rose to 13.8 percent, marginally above the statewide rate. Between 1990 and 1997, both Custer and Lemhi Counties showed marked decreases in poverty levels, with Custer County at 12.1 percent, which is below the statewide average. However, Lemhi, County, at 15.8 percent, remained significantly above the statewide average. As of 1997, the poverty levels of Adams, Lemhi, and Idaho Counties were considerably higher than that of the state, and thus, using the criteria presented above, are considered to be low-income populations that warrant consideration of impacts under the Environmental Justice criteria.

3.15.2 Environmental Consequences

3.15.2.1 No Action Alternative

Under the No Action Alternative Reclamation would continue providing technical assistance in the Lemhi and Upper Salmon Subbasins. Because of the limited scope of the No Action Alternative the general economy of these subbasins and the region in general would benefit to a lesser degree than under the Proposed Action. Disproportionately high and adverse human health or environmental effects on the minority or low income populations are not expected. Therefore, no environmental justice impacts are anticipated.

Cumulative Impacts

There would be no cumulative environmental justice impacts associated with the No Action Alternative.

3.15.2.2 Proposed Action

Impacts associated with the Proposed Action include short-term biological, water quality, and noise impacts. Minimal short-term positive economic impacts are anticipated related to construction activities. No adverse long-term impacts are anticipated within any of the subbasins, although potentially significant long-term positive local and regional economic impacts are expected with the implementation of the Proposed Action. The number and dispersion of the temporary structures to be replaced also render project impacts relatively evenly distributed throughout four subbasins. Similarly, the growth of the fishing, recreation, and tourism sectors throughout the region means that positive impacts will also be felt throughout region as a whole.

Although there are both minority and low income populations present within the study areas, given the number and geographically dispersed nature of the individual sites, anticipated impacts would be distributed relatively evenly within each subbasin. There is no indication that the Proposed Action would impact a minority or low income population component to any greater degree than the surrounding area or region. As such, disproportionately high and adverse human health or environmental effects impacts on the minority or low income populations present are not expected. Thus, no environmental justice impacts are anticipated.

Cumulative Impacts

There would be no cumulative environmental justice impacts associated with the Proposed Action.

3.15.3 Mitigation

No mitigation measures are necessary beyond those incorporated into the project design.

Chapter 4

Consultation and Coordination

4.1 Agencies and Individuals Contacted

Reclamation has consulted with Federal, State, and local agencies during this NEPA process to gather input, provide information, and to meet NEPA and ESA regulatory requirements. This coordination was integrated with the public involvement process. Table 4.1-1 lists the EA public involvement contacts, and Table 4.1-2 summarizes the responses from the scoping process.

4.1.1 Endangered Species Act

Section 7 of the ESA requires Federal agencies that plan to initiate an action, which could affect an ESA-listed species or their critical habitat, to consult with the appropriate Federal regulatory agency. NMFS has regulatory responsibility for anadromous fish, and USFWS has regulatory responsibility for plants and terrestrial, avian, and resident aquatic animals. ESA-listed species are present in all four of the Mountain Snake Province subbasins. The USFWS recently published in the Federal Register proposed critical habitat for bull trout, with proposed designations occurring in each of the four subbasins.

In general, the Section 7 consultation process can consist of two parts: informal consultation and formal consultation. Informal consultation provides an opportunity for the Federal action agency to describe the project they intend to implement to the regulatory agencies. If the action agency determines that there is "no effect" to listed species or critical habitat, no further consultation is required. If there is agreement among the responsible agencies that the project "may affect – but is not likely to adversely affect" ESA-listed species or their critical habitats, the action agency can proceed with the project after receiving a "letter of concurrence" from the regulatory agencies, and informal consultation is concluded. Formal consultation is initiated by the action agency if it is determined that the project may adversely affect a listed species or their critical habitat. ESA requires Reclamation to confer with the appropriate regulatory agency if it is determined that the action may result in adverse modification of proposed critical habitat. Consideration of the proposed critical habitat for bull trout will be integrated into the consultation process with the USFWS.

RPA Action 149 of NMFS BiOp on the FCRPS specifies habitat improvement measures for Reclamation to initiate. These measures are designed to benefit anadromous fish and serve as off-site mitigation for the effects of the mainstem Columbia River dams. Overall and in the long-term, it is expected that implementation of Action 149 will benefit both anadromous and resident fish species. In the four identified subbasins, Action 149 will be comprised of many site-specific projects. ESA-required conferencing and informal consultation will ensure that all measures are taken to avoid adverse effects to listed species and critical habitat from site-specific project construction. However, there could be unavoidable short-term adverse effects associated with some site-specific projects.

Formal consultation with NMFS and USFWS will be initiated if it is determined that a proposed site-specific project may adversely affect a listed species or their critical habitat.

Informal consultation has provided, and will continue to provide, a means to develop a sound basis for formal consultation and still may be appropriate for many site-specific projects. Subsequent to the programmatic EA, a Biological Assessment will be prepared to evaluate the effects of a proposed action and determine whether listed species or their critical habitat are likely to be adversely affected.

Formal consultation is expected to consist of two parts. One part is expected to be a programmatic consultation; the other part is expected to be project specific consultation. The purpose of programmatic consultation is to obtain from the NMFS and USFWS a programmatic BiOp with Terms and Conditions that Reclamation will be obligated to follow to implement certain types of projects without further Section 7 consultation. To date, informal consultation between Reclamation and NMFS has identified three types of projects that qualify for programmatic consultation: off-stream screens in irrigation canals, screens on pumped diversions, and irrigation canal headgates. This programmatic EA will provide a large part of the information for developing a programmatic BA. NMFS and USFWS will use the programmatic BA to issue a joint programmatic BiOp that will include the specific terms and conditions for implementation of the types of projects identified in the BA.

The NMFS and USFWS have informed Reclamation that project specific consultation would be required when Reclamation funds implementation of in-stream projects, such as flow or barrier projects because, although flow and barrier projects are intended to have a long-term beneficial effect for ESA-listed anadromous and other species, there could be a short-term adverse effect in some projects associated with in-stream construction. Informal consultation may be adequate if there will be ”no effect” to ESA-listed species. If a "no effect" opinion is not warranted for a particular flow or barrier project, Reclamation will prepare a BA and the NMFS and USFWS will respond with a biological opinion. For projects that require a BA, Reclamation will combine as many projects as possible in a single BA to expedite the formal consultation process.

As Reclamation, NMFS, and USFWS become more experienced with project specific consultation, additional types of projects may be considered and identified for programmatic consultation. The programmatic consultation could be amended to include these additional types of projects and any new terms and conditions. Reclamation then would be able to implement these additional types of projects without further Section 7 consultation. Prior to implementation of specific projects, coordination will occur with NMFS and USFWS.

Reclamation will complete ESA consultation with NMFS and USFWS before initiating any action that would result in irretrievable or irreversible commitment of resources. This includes consultation at both a programmatic level and for site-specific projects.

4.1.2 National Historic Preservation Act

Data has been collected from the Idaho SHPO to prepare the EA and to facilitate compliance with the National Historic Preservation Act and its implementing regulations (36 CFR 800). In addition, as part of Reclamation’s government-to-government consultation with the tribes (described below), Reclamation has contacted appropriate Indian tribes to identify TCPs and Indian sacred sites. Coor-

dination with the Idaho SHPO and additional coordination with the Shoshone-Paiute Tribes, Shoshone-Bannock Tribes, Nez Perce Tribe, and the Burns-Paiute Tribe will continue.

4.1.3 Public Comment Summary

The comment period for the Draft Programmatic EA for Implementation of Acton 149 was extended from November 22 through December 31, 2002. Comments were received from the USFWS, U.S. Forest Service, the Idaho Soil Conservation Commission, U.S. Army Corps of Engineers, Idaho State Historical Society, and the Nez Perce Tribe. Most of the agency comments dealt with minor inconsistencies or errors of factual information in the document and suggested revisions for the text or map data. The Idaho State Historical Society emphasized the need for surveys prior to ground-disturbing activity, noting that important archaeological resources may be present even in agricultural settings.

The USFWS provided some additional information regarding the occurrence of bull trout in the Little Salmon Subbasin. USFWS also expressed concern for the project's effects to wetlands that may be supported by leakage in existing irrigation conveyance systems. In addition, USFWS also requested greater detail on the potential effects to bull trout in order to develop a Biological Opinion regarding bull trout for this project. Consequently, Reclamation met with NMFS and USFWS to discuss endangered species issues. NMFS and the USFWS were particularly concerned with the potential effects of larger project implementation, such as the removal and replacement of push-up dams. NMFS did not provide written comments regarding the Draft EA.

Therefore, Reclamation will develop a separate programmatic Biological Assessment for review by NMFS and USFWS. Reclamation will continue to coordinate with NMFS and USFWS to resolve all endangered species issues prior to implementation of subbasin projects, which may include preparation of site-specific BAs as needed.

The Nez Perce Tribe comments requested more information regarding potential effects to fishing and hunting rights and to expand the analysis to an Environmental Impact Statement. All projects would be implemented on private land and would not affect Tribal fishing and hunting rights. The Tribe also suggested that Reclamation consult with them on the choice of subbasins for future project implementation and that Reclamation should expand its responsibilities outside the project constraints listed in the EA. For instance, the Tribe recommends that Reclamation address other subbasins in the region and issues that affect salmon and steelhead in addition to irrigated agriculture. Reclamation notes in the EA that NMFS has specified those subbasins under Reclamation responsibility and the corresponding constraints and that the choice of subbasins and project constraints is not at Reclamation's discretion. Comment and response letters can be found in Appendix H.

Table 4.1-1. Public Involvement Schedule for Selected Mountain Snake Province Subbasins.

	Lemhi	Upper Salmon	Middle Fork Clearwater	Little Salmon
Scoping **5/01 through 2/02**	***State-wide*** Meetings: IDFG, IDWR, IWUA, NPPC, Nature Conservancy Letters: ~ 80 letters were mailed; see Appendix A for list. ***Local*** Meetings: Advance Team USBWP Technical Advisory Committee	***State-wide*** Meetings: IDFG, IDWR, IWUA, NPPC, Nature Conservancy Letters: ~ 80 letters were mailed; see Appendix A for list ***Local*** Meetings: USBWP Technical Advisory Committee	***State-wide*** Meetings: IDFG, IDWR, IWUA, NPPC, Nature Conservancy Letters: ~ 80 letters were mailed; see Appendix A for list ***Local*** Meeting: (Prior to comment period) Meet with agencies & entities of the Clearwater Focus Watershed Group to provide an overview of the BiOp program, introduce the programmatic EA, and encourage input and comments on the programmatic EA.	***State-wide*** Meetings: IDFG, IDWR, IWUA, NPPC, Nature Conservancy Letters: ~ 80 letters were mailed; see Appendix A for list ***Local*** Meetings: Local, State, and Federal agency staff Outreach: (Prior to comment period) Introductory level meeting to familiarize the community with Reclamation.
Public Comment **11/22/02 through 12/31/02**	Public notice that DEA is available for review & comment	Public notice that DEA is available for review & comment	Public notice that DEA is available for review & comment	Public notice that DEA is available for review & comment

IDFG = Idaho Department of Fish and Game
IDWR = Idaho Department of Water Resources
IWUA = Idaho Water Users Association
NPPC = Northwest Power Planning Council
USBWP = Upper Salmon Basin Watershed Project

Table 4.1-2. Scoping Response Summary.

Name	Affiliation	Scoping Comments Received	Draft EA Requested
Written Correspondence			
Hal N. Anderson Administrator	IDWR	2/15/02 Would like to coordinate efforts with Reclamation on projects with similar goals. Emphasizes the importance of groundwater to surface water flows.	2/14/02
Ferrell Crossley	Adams SWCD		2/14/02
Sarah Bigger	Sen. Mike Crapo		2/12/02
Jude Trapani	BLM		2/19/02
George Matejko	USFS Salmon-Challis NF		2/19/02
M. Gene Gibson	IDWR Western Region	2/20/02 Need for Stream Channel Alteration permit for in-stream work.	
Janna Brimmer	NMFS		2/20/02
Vincent Pero	Shoshone-Paiute Tribes		2/20/02
Bruce Smith	Salmon-Challis NF		2/21/02
Steve Miller	The Nature Conservancy	3/1/02 Requested information on Action 149. Written comments would follow.	
J. Richard Ward	Salmon-Challis NF Leadore RD		3/2/02
Deb Mignogno	USFWS	3/7/02 Requested extension for comment submittal.	
Justin Hayes	Idaho Conservation League	3/8/02 Recommend that Reclamation's efforts include description of necessary flows, designation of minimum flows, streamside revegetation, include instream woody debris, fence livestock from riparian zones, limit ATV fording, and identify and remove fish barriers.	3/8/02
Craig A. Johnson Forest Supervisor	BLM USFS Payette NF		3/8/02 3/8/02

Table 4.1-2. Scoping Response Summary.

Name	Affiliation	Scoping Comments Received	Draft EA Requested
Scott Grunder	IDFG	3/12/02 Supports Reclamations efforts, offer to supply data on known fish barriers. Offered assistance in identifying barriers and other problems, and prioritizing projects.	3/12/02 Send to all IDFG on dist list + Bob Martin 3101 S Powerline Road Nampa, ID 83686
Alison Beck Haas	USFWS	3/12/02 Provides recommendations for meeting requirements of NEPA and ESA. Provides list of T&E species in study area.	
Dirk Kempthorne	Governor	3/12/02 Emphasizes the need to cooperate with State and local entities.	
Sarah McNary	BPA	3/19/02 Supports Reclamation's efforts to meet requirements of BiOp.	
Meetings			
Will Whelan, Director of Government Relations Lou Lunte Director of Conservation Programs	The Nature Conservancy	1/18/02 Supports Reclamation's goals in program.	
Norm Semanko Executive Director and General Counsel	Idaho Water Users Association	1/31/02 Sees value in programmatic approach.	
Judi Danielson Idaho NPPC Member	Northwest Power Planning Council	2/11/02 Sees value in programmatic approach.	
Hal N. Anderson Administrator	IDWR	2/13/02 Informed Reclamation that IDWR was preparing written comments. Believed that Reclamation actions would complement IDWR activities. Emphasized need to consider impacts of surface and groundwater.	

4.2 Tribal Consultation and Coordination

4.2.1 Government-to-Government Consultation with Tribes

Reclamation sent letters to the tribes explaining the EA process during the scoping phase. In a follow-up correspondence, Reclamation requested information on TCPs and Indian sacred sites from the tribes for documentation during the EA process. To date, the tribes have not responded to this request. Letters to and meetings with Tribes are listed in Appendix G.

4.2.2 National Historic Preservation Act Tribal Consultation

The National Historic Preservation Act (NHPA), of 1966, as amended through 1992, requires agencies to consult with Native American tribes if a proposed Federal action may affect properties to which they attach religious and cultural significance. The implementing regulations of the NHPA 36 CFR 800 addresses procedures for consultation in more detail.

4.2.3 Indian Trust Assets

Reclamation coordinated with the Shoshone-Paiute, Shoshone-Bannock, Nez Perce, and Burns-Paiute Tribes to identify ITAs. It is not anticipated there will be any negative effects to ITAs that may exist in the subbasins. Indian Trust Assets are discussed in Section 3.12.

4.2.4 Other Laws and Regulations

The relationship between Federal agencies and sovereign tribes is defined by several laws and regulations addressing the requirement of Federal agencies to notify or consult with Native American groups or otherwise consider their interests when planning and implementing Federal undertakings. Among these are the following:

- National Environmental Policy Act (1969)
- American Indian Religious Freedom Act (1978)
- Archeological Resources Protection Act (1979)
- Native American Graves Protection and Repatriation Act (1990)
- Executive Order 12875, Enhancing the Intergovernmental Partnership
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Presidential Memorandum: Government-to-government Relations with Native American Tribal Governments
- Executive Order 13007, Indian Sacred Sites

- Executive Order 13175 (modifies 13084). Consultation and Coordination with Indian Tribal Governments.

4.3 Distribution

This EA was distributed to private, State, Federal, and Tribal entities listed in Appendix G.

Chapter 5

Environmental Commitments

5.1 Best Management Practices

Reclamation has developed draft BMPs (Appendix B) in coordination with NMFS and USFWS. These BMPs are included as environmental commitments that Reclamation will implement for projects covered under this EA. Pending internal discussions at NMFS, modifications may be made to these BMPs at a later date for consistency with other NMFS projects. The BMPs are specific provisions for Reclamation projects in the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater Subbasins in Idaho. Items that are addressed by the BMPs include erosion and sedimentation, turbidity, pollution control, isolation of work areas, staging areas, fish handling and transfer, construction practices, restoration, and other natural and physical resource concerns. Other environmental commitments are listed below. Although not listed here, the management actions identified in the Proposed Action are also considered to be environmental commitments.

5.1.1 Biological Resources

1. Rare and sensitive species clearances described below will be conducted after project authorization, but prior to the start of construction.

2. If native plant communities must be used for access roads or staging areas, site clearances at the appropriate time of year for the species involved will be conducted by qualified biologists to ensure sensitive species are not impacted. Any established search protocols will be followed. Additional information concerning avoidance of threatened or endangered species is presented in Section 3.7.

3. Construction activities that could impact fish will be undertaken during non-spawning periods.

4. During the project implementation period, species not currently protected under the Endangered Species Act may be listed. If any such species occur on Reclamation lands, Reclamation would enforce time of year access restrictions in areas harboring Federal and State designated species of special concern (including Federally designated rare, endangered, or threatened species). Other measures described in Chapter 3 and in the BMPs (Appendix B) will be implemented by Reclamation.

5.1.2 Site Restoration and Revegetation

1. Construction areas, including storage yards, will limit the amount of waste material and trash accumulations at all times.

2. All unused materials and trash will be removed from construction and storage sites during the final phase of work. All removed material will be placed in approved sanitary landfills or storage sites, and work areas will be left to conform to the natural landscape.

3. Upon completion of construction, grade any land disturbed outside the limits of reservoir pools, permanent roads, and other permanent facilities to provide proper drainage and blend with the natural contour of the land. Following grading, revegetate using plants native to the area, suitable for the site conditions, and beneficial to wildlife.

4. Where applicable, consult with the following agencies to determine the recommended plant species composition, seeding rates, and planting dates:

    - Idaho Department of Fish and Game
    - U.S. Natural Resources Conservation Service (NRCS)
    - U.S. Bureau of Land Management (BLM)

5. Grasses, forbs, shrubs, and trees appropriate for site conditions and surrounding vegetation will be included on a plant list developed during site design. Species chosen for a site will be matched for site drainage, climate, shading, resistance to erosion, soil type, slope, aspect, and vegetation management goals. Wetland and riparian species will be used in revegetating disturbed wetlands. Upland revegetation shall match the plant list to the site's soil type, topographic position, elevation, and surrounding communities. Other specific items can be found in the BMPs in Appendix B.

5.1.3 Pollution Prevention

1. All Federal and State laws related to control and abatement of water pollution will be complied with. All waste material and sewage from construction activities or project-related features will be disposed of according to Federal and State pollution control regulations.

2. Construction contractors may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit as established under Public Law 92B500 and amended by the Clean Water Act (Public Law 95B217).

3. Construction specifications shall require construction methods that will prevent entrance or accidental spillage of pollutants into flowing or dry watercourses and underground water sources. Potential pollutants and wastes include refuse, garbage, cement, concrete, sewage effluent, industrial waste, oil and other petroleum products, aggregate processing tailings, mineral salts, drilling mud, and thermal pollution.

4. Eroded materials shall be prevented from entering streams or watercourses during dewatering activities associated with structure foundations or earthwork operations adjacent to, or encroaching on, streams or watercourses.

5. Any construction wastewater discharged into surface waters will be essentially free of settling material. Water pumped from behind cofferdams and wastewater from aggregate processing,

concrete batching, or other construction operations shall not enter streams or watercourses without water quality treatment. Turbidity control methods may include settling ponds, gravel-filter entrapment dikes, approved flocculating processes not harmful to fish or other aquatic life, recirculation systems for washing aggregates, or other approved methods.

6. Appropriate controls to reduce stormwater pollutant loads in post-construction site runoff shall be followed.

5.1.4 Noise and Air Pollution Prevention

1. Contractors will be required to comply with all applicable Federal, State, and local laws and regulations concerning prevention and control of noise and air pollution. Contractors are expected to use reasonably available methods and devices to control, prevent, and reduce atmospheric emissions or discharges of atmospheric contaminants and noise.

2. Contractors will be required to reduce dust from construction operations and prevent it from damaging dwellings or causing a nuisance to people. Methods such as wetting exposed soil or roads where dust is generated by passing vehicles will be employed.

5.1.5 Cultural Resource Site Protection

1. Conduct any necessary cultural resource survey and clearance prior to any ground-disturbing activity related to project implementation. Develop appropriate mitigation if necessary.

2. If the Tribes identify culturally important resources within new development areas, avoid adverse impacts to those resource locations when avoidance will allow accomplishment of broader agency responsibilities, is cost effective, and lies within Reclamation's authority.

5.2 Mitigation Measures

Because of the extensive BMPs developed in coordination with the agencies and the resource protection measures built into the Proposed Action, no specific mitigation measures are necessary. However, if cultural resources are identified prior to construction the following mitigation measure would apply.

5.2.1 Cultural Resources

Mitigation under all alternatives would occur if cultural resources are present that are eligible for the National Register, and if they are being adversely impacted by reservoir operations or land uses or are being damaged by natural agents. If an action is planned that could adversely impact historic properties, Reclamation would investigate options to avoid the site. Cultural resource management actions for impacted sites would be planned and implemented in accordance with consultation requirements defined in 36 CFR 800, using methods consistent with the Secretary of the Interior's Standards and Guidelines.

Chapter 6

Preparers

Name	Background	Responsibility
EDAW, Inc.		
Jim Keany	Terrestrial Ecologist	EA Project Manager, Climate and Air Quality, and Noise
Jennifer Seavy	Terrestrial Ecologist	Vegetation, Wildlife, and Terrestrial Endangered Species
Christy Carr	Recreation Planner	Recreation, Land Use, and Aesthetics
Rob Harris	GIS Specialist	Mapping
Ron Tressler	Terrestrial Ecologist	Vegetation and TES Plants
Marty Watson	Socioeconomist	Socioeconomics, & Environmental Justice
Peter Carr	Technical Writer	Technical Writing, Editing
Liza MacKinnon	Production Manager	Document Production
Jill Sterrett	Principal-in-Charge	Senior Review
CH2M Hill		
Denny Mengle	Aquatic Ecologist	Fish and Aquatic Endangered Species
Lynn Foster	Aquatic Ecologist	Fish and Aquatic Endangered Species
Steve Miller	Water Resources Engineer	Hydrology
Tom Mosko	Water Resources Engineer	Hydrology
Jonathan Mathews	Water Quality Specialist	Water Quality
Jim Bard	Archaeologist	Cultural Resources, Sacred Sites, ITAs
Robin McClintock	Archaeologist	Cultural Resources, Sacred Sites, ITAs
Tom Haslip	Principal	Senior Review

Chapter 7

Bibliography

Ames, K.M., J.P. Green, and M. Pfoertner. 1981. *Hatwai (10 NP 143): interim report*. Boise State University Archaeological Reports 9, Boise Idaho.

Anastasio, A. 1972. The southern plateau: an ecological analysis of intergroup relations. Northwest Anthropological Research Notes 6(2):109-229, Moscow, Idaho.

Bangs, E. E., S. H. Fritts, J. A. Fontaine, D. W. Smith, K. M. Murphy, C. M. Mack, and C. C. Niemeyer. 1999. Status of gray wolf restoration in Montana, Idaho, and Wyoming. Wildlife Society Bulletin 26(4):785-798.

Batt, P.E. 1996. Governor Philip E. Batt's State of Idaho bull trout conservation plan. Boise, ID.

Behnke, R.J. 1992. Native trout of North America. American Fisheries Society. Bethesda, MD.

Bjornn, T.C., and J. Mallett. 1964. Movements of planted and wild trout in an Idaho river system. Transactions of the American Fisheries Society 93(1): 70-76.

BLM (U.S. Bureau of Land Management). 1987. Our cultural heritage: a fragile record of the last 10,000 years along the lower Salmon River. U.S. Department of the Interior, Bureau of Land Management, Idaho.

BLM. 1998. Bull Trout Section 7 Consultation, East Fork Salmon River. Upper Columbia-Salmon Clearwater Districts, Challis Resource Area.

BLM. 2000. Clearwater River, North Fork Clearwater River, and Middle Fork Clearwater River Subbasins: biological assessment of ongoing and proposed Bureau of Land Management activities on fall chinook salmon, steelhead trout, bull trout, and BLM sensitive species. Cottonwood, ID.

Bureau of the Census. 2001. "Profiles of General Demographic Characteristics 2000: 2000 Census of Population and Housing" Idaho: 2000, United States Department of Commerce.

CBFWA (Columbia Basin Fish and Wildlife Authority). 1999. FY 2000 Draft annual implementation work plan. Submitted to the Northwest Power Planning Council. Portland, OR.

Chapman, J. A. and G. A. Feldhamer. 1982. Wildlife mammals of North America. John Hopkins University Press, Baltimore, Maryland.

Clearwater National Forest. 1997. Clearwater Subbasin ecosystem analysis at the watershed scale. Orofino, ID.

Close, D.A. 2000. Pacific lamprey research and restoration project. Annual Report 1998. DOE-BPA Project No. 94-026. Contract No. 00000248.

Davies, R.W., and G.W. Thompson. 1976. Movements of mountain whitefish (*Prosopium williamsoni*) in the Sheep River watershed. Canadian Journal of Fisheries and Aquatic Sciences. 33:2395-2401.

Davis, J., L. Nelson, and N. Horner. 1996. Annual Performance Report. Idaho Department of Fish and Game. Fisheries Management Report F-71-R-20.

Elle, S. 1995. Rapid River Bull Trout Migration and Mortality Studies. Project 6. Bull Trout Investigations. Subproject 1. Idaho Department of Fish and Game. IDFG 93-33.

EPA (U.S. Environmental Protection Agency). 1971, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances.

EPA. 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. EPA 550/9-74-004, March, 1974, U.S. Environmental Protection Agency, Washington, D.C.

EPA. 2002. National Priorities List Sites in Idaho. http://www.epa.gov/superfund/sites/npl/id.htm.

Gerhardt, N. 2002. Hydrologist, Nez Perce National Forest. Communication with J. Keany, Terrestrial Ecologist, EDAW, Inc, Seattle, WA June 5, 2002.

Goetz, F. 1989. Biology of the bull trout, *Salvelinus confluentus*, a literature review. U.S. Forest Service, Willamette National Forest. Eugene, OR.

Hann, W.J., J.L. Jones, M.G. Karl, P.F. Hessburg, R.E. Keane, D.G. Long, J.P. Menakis, C.H. McNicoll, S.G. Leonard, R A. Gravenmier, and B.G. Smith. 1997. Landscape dynamics of the Basin. In: T.M. Quigley and S.J. Arbelbide, tech. eds. An assessment of ecosystem components in the Interior Columbia Basin and portions of the Klamath and Great Basins: Volume II. USDA Forest Service and USDI Bureau of Land Management, Pacific Northwest Research Station, General Technical Report PNW-GTR-405, Portland.

Hassemer, P.F. 1998. Upper Salmon River spring chinook salmon. Pages 109-118. In: Lower Snake River Compensation Plan status review symposium. FWS. Boise, ID.

Holmer, R.N. and J.W. Ross. 1985. Excavations at Corn Creek. Swanson/Crabtree Anthropological Research Laboratory. Reports of Investigations 84-08. Idaho State University, Pocatello.

Hoss, S.A. 1970. Reintroduction of salmon and steelhead into portions of the Clearwater River drainage. Annual Project Closing Report. July 1, 1968 to June 30, 1969. Columbia River Fishery Development Program. Project No. 161.22A. Contract No. 14-17-0001-1860. Idaho Department of Fish and Game. Boise, ID.

Idaho Administrative Code. http:/www2.state.id.us/adm/adminrules/rules/idapa58/58 index.htm.

Idaho Department of Water Resources. 2001. Comprehensive State Water Plan-Part B, Little Salmon River Basin.

IDC (Idaho Department of Commerce). 2001. Community Profiles. Reviewed from: http://www.idoc.state.id.us/idcomm/compro.html.

IDC. 2002. Community Profiles. Reviewed at: http://www.idoc.state.id.us/idcomm/compro.html. Idaho Department of Commerce. Boise, ID.

IDEQ (Idaho Department of Environmental Quality). 1999. Lemhi River watershed TMDL. June.

IDEQ. 2002. Upper Salmon River Subbasin assessment and TMDL DRAFT. January.

IDFG (Idaho Department of Fish and Game). 2001. Five-year fisheries management plan. 2001-2006. Boise, ID.

IDFG. 2002. Digital Atlas of Idaho. Available at: http://imnh.isu.edu/digitalatlas/

IDFG. 2002. Salmon basin database. GIS query. March 22.

IDL (Idaho Department of Labor). 1999a. Salmon Job Service Economic Profile (Custer and Lemhi Counties).

IDL (Idaho Department of Labor). 1999b. McCall Job Service Economic Profile (Valley and Adams Counties).

IDL (Idaho Department of Labor). 1999c. Grangeville Job Service Economic Profile (Idaho County and Lewis County).

IDWR (Idaho Department of Water Resources). 2002. Little Salmon River Basin Comprehensive State Water Plan. Idaho Department of Water Resources. Planning and Technical Services Division. Boise, ID.

IDWR. 2002. Snake River Basin adjudication database system for the Upper Salmon River, GIS query, March 12, 2002.

IOGA (Idaho Outfitters and Guides Association). 2002. Website: http://www.ioga.org/riverrun.htm

ISCC (Idaho Soil Conservation Commission). 1995. Model Watershed Plan: Lemhi, Pahsimeroi, and East Fork of the Salmon River. Boise Idaho. November 1995.

ITD (Idaho Transportation Department). 2002. Idaho Transportation Department's Scenic Byways page. Reviewed from: http://www2.state.id.us/itd/planning/reports/scenic/byways.html.

Kiefer, S., M. Rowe, and K. Hatch. 1992. Stock summary reports for Colombia River anadromous salmonids, volume V; Idaho final Draft for the Coordinated Information System. Idaho Department of Fish and Game. Boise, ID.

Kucera, P.A., and D.B. Johnson. 1986. A biological and physical inventory of the streams within the Nez Perce Reservation: juvenile steelhead survey and factors that affect abundance in se-

lected streams in the Lower Clearwater River Basin, Idaho. Nez Perce Tribe Fisheries Resource Management. Lapwai, ID.

Lamansky, J.A., F.S. Elle, and D.J. Schill. 2001. Wild trout investigations. Project 2: Subproject 2, Grant F-73-22. Idaho Department of Fish and Game. Boise, ID.

Lemhi Riparian Conservation Agreement Group. 1998. An Assessment of Resource Conditions and Issues within the Watersheds of the Lemhi River Valley. February.

Leonhardy, F.C. and D.G. Rice. 1970. A Proposed culture typology for the lower Snake River region, southeastern Washington. Northwest Anthropological Research Notes 4(1):1-29, Moscow, Idaho.

Mancuso**,** M.1996. Species Account: MacFarlane's Four-o'clock**.** The Nature Conservancy, the Natural Heritage Network, and the Idaho Conservation Data Center. Available at: http://www2.state.id.us/fishgame/info/cdc/plants/plants_E-M/mirmac.htm

Marshall, A.G. 1977. Nez Perce social groups: an ecological interpretation. Ph.D. dissertation on file, Department of Anthropology, Washington State University, Pullman.

Meehan, W.R., and T.C. Bjornn. 1991. Salmonid distributions and life histories. In: Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. W. R. Meechan (ed). American Fisheries Society Special Publication, pp. 47-82.

Moseley, R.K., and M. Mancuso. 1997. 1997 Ute ladies'-tresses (*Spiranthes diluvialis*) inventory: Idaho transportation department, district 6 bridge projects. Idaho Fish and Game Department, Boise, Idaho.

Moseley, R.K. 2001. Ute ladies tresses (*Spiranthes diluvialis*) in Idaho: 1999 Status Report. IDFG, Natural Resource Policy Bureau, Boise, ID. March 2000.

Murphy, R.F. and Y. Murphy. 1986. Northern Shoshone and Bannock. In, W.L. D'Azvedo (ed.), Volume 11: Great Basin. Handbook of North American Indians, pps. 284-307. Smithsonian Institution Press, Washington, D.C.

Nez Perce National Forest. 1998. South Fork Clearwater River landscape assessment Vol. I: Narrative. Grangeville, ID.

Nez Perce Tribe and IDFG. 1990. Clearwater River Subbasin salmon and steelhead production plan. Funded by the Northwest Power Planning Council; Colombia Basin Fish and Wildlife Authority. Portland, OR.

Nez Perce Tribe and NPPC (Northwest Power Planning Council). 2002. Review Draft Clearwater Subbasin Assessment. February.

Nez Perce Tribe. 1995. Ensuring our Future Honoring our Past.

NMFS (National Marine Fisheries Service). 1995. Environmental and Technical Services Division. Juvenile Fish Screen Criteria. Portland, Oregon. Revised February 16, 1995.

NMFS. 2001. Draft 5-Year Implementation Plan for the Federal Columbia River Power System Biological Opinions. http://www.salmonrecovery.gov/biops_5-year_ip.shtml.

NMFS. 2002. Endangered Species Act - Section 7 Consultation, Biological Opinion Reinitiation of Consultation of Operation of the Federal Columbia River Power System, Including Juvenile Fish Transportation Program and 19 Bureau of Reclamation Projects in the Columbia River Basin, Agencies: ACOE, BPA, USBR, NMFS, Consultation Conducted by National Marine Fisheries Service, Northwest Region, 21 December 2000, NMFS Regional Office, Seattle, WA.

NPPC. (Northwest Power Planning Council). 2001. Draft Salmon Subbasin Summary. November 30.

NPPC. 2002. Final Draft Clearwater Subbasin summary. 310pp.

OSU (Oregon State University). 1995. Herbarium Database. Available at: http://www.orst.edu/dept/botany/herbarium/

Overton, C.K., M.A. Radko, and R.L. Nelson. 1993. Fish habitat conditions: using the Northern/Intermountain region's inventory procedures for detecting differences on two differently managed watersheds. IN-300. USFS Intermountain Research Station. Boise, ID.

Pacific Biodiversity Institute. 2000. Bliss Rapid Snail. Available at: http://www.pacificbio.org/ESIN/MapImages/id_blissrapidssnail.jpg

Paradis, W.J., H.S. Lentz, S. Blair, and L. Lake. 1999a. Middle Fork Clearwater River face drainages biological assessment. Nez Perce National Forest. Grangeville, ID.

Paradis, W.J., H.S. Lentz, D. Mays, S. Blair, and L. Lake. 1999b. South Fork Clearwater River biological assessment. Nez Perce National Forest. Grangeville, ID.

Parker, P.L. and T.F. King. 1995. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*. National Register Bulletin 38, National Park Service. Washington, D.C.

Pavesic, M.G. 1971. The archaeology of Hells Canyon Creek Rockshelter, Wallowa County, Oregon. Ph.D. dissertation on file, University of Colorado, Boulder.

PLIA (Public Lands Interpretive Association). 2000. Public Lands Information Center. Reviewed from: http://www.fs.fed.us/r4.sc.

Reclamation (U.S. Bureau of Reclamation). 1997. Pacific Northwest Region, Lower Columbia Area Office. Final Environmental Impact Assessment and Finding of No Significant Impact – Rogue River Basin Fish Passage Improvement Program, Appendix B: Fish Passage Protective Facilities Design Criteria and Concepts. Portland, Oregon. March 1997.

Reclamation. 2000. Pacific Northwest Region. Completion Report: Tributary Enhancement Water Conservation Demonstration Projects for the Lemhi River Basin, the Wallowa River Basin, and the John Day River Basin. Boise, Idaho. April 2000.

Reclamation. 2002. Scoping Document for Programmatic Environmental Assessment for Implementation of Action 149 of the NMFS 2000 FCRPS BiOp in four subbasins of the Mountain Snake Province in Central Idaho

Regional Solicitor. 1985. Memorandum from Regional Solicitor, Department of Interior Portland Office to Portland Area Director, Bureau of Indian Affairs. March 29, 1985.

Rieman, B.E., and K.A. Apperson. 1989. Status and analysis of salmonid fisheries: westslope cutthroat trout synopsis and analysis of fishery information. Job Performance Report, Project F-73-R-11, Subproject II, Job 1. Idaho Department of Fish and Game. Boise, ID.

Roll, T.E. and S. Hackenberger. 1998. Prehistory of the eastern plateau. In, D.E. Walker, Jr. (ed.), Volume 12: Plateau. Handbook of North American Indians. Smithsonian Institution Press, Washington, D.C.

Ruggiero, L.F., K.B. Aubry, et al. (1994). American Marten, Fisher, Lynx, and Wolverine in the Western United States. United States Forest Service, Fort Collins, Colorado, 184pp.

Sappington, R.L. 1994. The Prehistory of the Clearwater River region, north central Idaho. University of Idaho, Alfred W. Bowers Laboratory of Anthropology, Letter Report 95, Moscow, Idaho.

Schoen, D., R.M. Jones, and P.K. Murphy. 1999. Section 7 Watershed biological assessment Lochsa River Drainage Clearwater Subbasin: determination of effects of ongoing activities based on the matrix of pathways and indicators of watershed condition for steelhead trout, fall chinook salmon and bull trout. Clearwater National Forest. Orofino, ID.

Shoshone-Bannock Tribes. 1994. Treaty Right Seminar Pocatello, Idaho, May 18-20. The Shoshone-Bannock Tribes Treaty Rights Seminar Planning Committee.

Simpson, J.C., and R.L. Wallace. 1978. Fishes of Idaho. The University Press of Idaho. Moscow, ID.

Simpson, J.C., and R.L. Wallace. 1982. Fishes of Idaho. University of Idaho Press. Moscow, ID.

Stolz, J., and J Schnell. 1991. Trout. Stackpole Books. Harrisburg, PA.

Storm, R.M., W.P. Leonard, H.A. Brown, R.B. Bury, D.M. Darda, L.V. Diller, and C.R. Peterson. 1995. Reptiles of Washington and Oregon. Seattle Audubon Society, Trailside Series, Seattle, Washington.

University of Idaho. 2001. Bull Trout Distribution. Available at: http://www.ets.uidaho.edu/fishwild/bt/btdist.htm

USFS (U.S. Forest Service). 1997. An assessment of ecosystem components in the Interior Columbia Basin and Portions of the Klamath and Great Basins. Quigley, T.M. and S.J. Arbelbide (eds). Portland, OR.

USFWS (United States Fish and Wildlife Service). 1992. Ute ladies' tresses (*Spiranthes diluvialis*) draft recovery plan. U.S. Fish and Wildlife Service, Denver, Colorado. 46 pp.

USFWS. 1994. Establishment of a nonessential experimental population of gray wolves in Yellowstone National Park in Wyoming, Idaho, and Montana and central Idaho and southwest Montana. Final Rule, November 22. Federal Register, Volume 59(224):60252-60281.

USFWS. 1998. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Northern Idaho Ground Squirrel. Federal Register 63(55): 13825-13832.

USFWS. 1999. Draft Lower Snake River juvenile salmon migration feasibility study. Prepared for the U.S. Army Corps of Engineers, Walla Walla District.

USFWS. 2002. Response letter for Scoping the Programmatic Environmental Assessment of the Bureau of Reclamation's Idaho Subbasin Habitat Improvement Program of Biological Opinion- Federal Columbia River Power System. File # 1008.0141.02 OALS #02-0473. Snake River Basin Office, Boise, Idaho.

USFWS. 2003. Response letter to Draft Programmatic Environmental Assessment for Implementing Fish Improvement Measures in Four Mountain Snake Province Subbasins. Bureau of Reclamation 2002.

USFWS, NMFS, Plum Creek Timber Company, and CH2M HILL. 2000. Final Environmental Impact Statement and Native Fish Habitat Conservation Plan. Proposed Permit for Taking of Federally Protected Native Fish Species on Plum Creek Timber Company Lands. September 2000.

USFWS, NMFS, Plum Creek Timber Company, and CH2M HILL. 2001. Final environmental impact statement and native fish habitat conservation plan. Boise, ID and Seattle, WA.

USGS (U.S. Geological Survey). 1998. Surface Water/Ground Water Relations in the Lemhi River Basin , East Central Idaho USGS. http://idaho.usgs.gov/PDF/wri984185/LEMHI.PDF. U.S. Department of the Interior.

USGS. 2002. National Water Information System (NWIS) Web Data for the Nation. March.

Walker, D.E. Jr. 1958-1964. [Nez Perce fieldnotes.] (Manuscripts in D. Walker's possession).

Walker, D.E. Jr. 1967. Mutual cross-utilization of economic resources in the plateau: an example from Aboriginal Nez Perce fishing practices. Washington State University, Laboratory of Anthropology, Report of Investigations 41, Pullman.

Walker, D.E. Jr. 1987. Native Americans and cultural impact analysis: the proposed nuclear waste repository at Hanford. Pp. 123-124 in Vol. 1 of Proceedings of the Symposium on Waste Management: Session on Economic and Social Effects of High Level Waste Repository Management. University of Arizona, College of Engineering and Mines (Board of Regents), Tucson, March 1-5. (Library of Congress No. 87-70501).

Walker. 1998. *Nez Perce.* IN, D.E. Walker, Jr. (ed.), Volume 12: Plateau. Handbook of North American Indians, pp:420-438. Smithsonian Institution Press, Washington, D.C.

Western Regional Climate Center. 1992. http://wrcc.sage.dri.edu/.

APPENDIX A

INFORMATION LETTER FROM U.S. BUREAU OF RECLAMATION

This page left blank intentionally, for double sided printing.

United States Department of the Interior

BUREAU OF RECLAMATION
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7298

IN REPLY REFER TO:

SRA-1203
ENV-1.10

February 7, 2002

Subject: **Scoping for Programmatic Environmental Assessment of Reclamation's Idaho Subbasin Habitat Improvement Program of Biological Opinion - Federal Columbia River Power System**

Dear Ladies and Gentlemen:

A biological opinion for the Federal Columbia River Power System issued by the National Marine Fisheries Service in December 2000 directs the Bureau of Reclamation (Reclamation) to engage in certain forms of fish habitat improvement activities in the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater subbasins. As part of implementing activities associated with this biological opinion, and in compliance with the National Environmental Policy Act (NEPA), Reclamation is initiating a programmatic Environmental Assessment (EA) concerning this habitat improvement program.

Enclosed with this letter is a scoping paper that describes the purpose and need, proposed action, and circumstances surrounding Reclamation's effort. This scoping effort is the first step in the programmatic EA process. Your comments on issues related to the enclosed material will assist us in determining issues to be included in the programmatic EA, and may help in developing alternatives to our proposed action. Written comments for this step of the process are requested by **March 8, 2002.** Additional opportunities for comment will be provided when the draft EA is distributed for public review. You are encouraged to return the enclosed survey to express your interest in reviewing the draft EA when it becomes available during the public comment period.

You are welcome to forward these materials to others who you think may be interested in this information.

If you have questions concerning the habitat improvement program or this particular NEPA compliance activity, you may contact Mr. Joe Spinazola of Reclamation's Snake River Area Office at (208) 334-9856.

Sincerely,

Jerrold D. Gregg
Area Manager

Enclosures

A Century of Water for the West
1902-2002

bc: 2116-404 (Kidd)

This page left blank intentionally, for double sided printing.

This page left blank intentionally, for double sided printing.

DRAFT Programmatic BMPs for Reclamation Headgates/Screens in Idaho

Introduction Draft BMPs introduced in this section were developed in consultation with NMFS staff for offstream screen and headgate structures and in-stream pumped diversions. The Draft BMPs will be refined in a subsequent programmatic Biological Assessment. BMPs refined during programmatic consultation could be modified or augmented as part of consultation on individual, site-specific, in-stream projects. All actions related to the implementation of Action 149 will be conditional to the appropriate BMPs developed during forthcoming programmatic and site-specific consultation with NMFS and USFWS.

1. **Specifically Authorized Activities**
    1. Headgate Repair/Replacement
        1. Description: Build, rebuild, repair, upgrade, or relocate headgates at irrigation diversions, including those at heads of ditches at the stream edge.
        2. Limitations/Details
            1. Removal and fill is minimized to the maximum extent possible. In-water removal (excavation) and fill (including riprap) up to 20 cubic yards is permitted.
            2. Headwalls of concrete, timber, plastic, or metal expressly are permitted. Un-hardened concrete is considered a pollutant and shall not be permitted in flowing waters. Cast-in-place concrete must be protected from contact with flowing waters for 8 hours after pouring.

    2. Canal Fish Screens
        1. Description: Screening of canal-type surface water diversions with conventional screening technology (as noted below) including construction of fish bypass piping and appurtenances, installed downstream of closed, functioning headgates. This includes realignment and repositioning of ditches, and construction of fish bypass returns to the river.
        2. Limitations/Details:
            1. Screens to conform to NMFS published fish screen criteria.[i]
            2. Excludes in-stream or bankside fish screens.
            3. Surface water in the work area must be isolated from the creek.
            4. Entire ditch shall be screened by a single screen structure.
            5. Limited to screens of less than 20 cfs.
            6. Fish shall be able to volitionally avoid the screen, that is, swim away or otherwise avoid the screen (E.g., no coandas or horizontal screens.) Ambient flow around screens shall safely return a neutral particle, e.g., "fish," away from the screen hazard and back to the

main channel. Screens with sheet flow are prohibited.

7. Infiltration galleries not allowed.

3. Acceptable Screens
   1. Rotating drum type, constructed, or
   2. Flat Plate type screen, aligned within 45 degrees from vertical.
4. Types of acceptable screen cleaning:
   1. Mechanical brushing, wiping, or sweeping
   2. Water displacement (for example, air-burst systems)
   3. Water jets
   4. Screens less than 1 cfs are not required to have cleaners, provided that approach velocities remain less than 0.2 fps.
   5. Rotating drum screens employ an acceptable passive screen cleaning process when constructed to NMFS criteria
5. Frequency of cleaning: Screen cleaners shall be designed to have the ability to clean the entire screen once every 4 minutes, minimum, 24/7. (However, in practice screens need only be operated as frequently as required to keep screens clean.)
6. Efficacy: Screen cleaners shall remain at least 90% unclogged between cleaning cycles; maximum screen approach velocity shall be less than 0.4 fps at all times.

3. Riverine Pump Suction Screens
   1. Description
      1. End-of-pipe pump, commercially available pump suction screens including all components from the river to the pump such as, but not limited to piping, piping support structures, piles, concrete supports.
   2. Limitation/Details
      1. Limited in-water excavation identical to that authorized for headgates (noted above) is authorized.
      2. End-of-pipe suction screens may be employed in gravity diversions, if appropriate.
      3. Screens to conform to NMFS published pump screen criteria.[ii]

2. **Federal Nexus**
   1. The riparian work envisioned here requires consultation under the Endangered Species Act. In this case, a Section 7 consultation under the Endangered Species Act is appropriate because of Reclamation's obligation to mitigate for activities conducted elsewhere[1] in the Columbia Basin. The mitigation work here will not

[1]Specifically, Federal Columbia River Power System (FCRPS) Reasonable and Prudent Alternative (RPA) 149

likely or necessarily be on projects that Reclamation owns, controls, or operates and the long-term outcome of these projects will not be under Reclamation's control.

2. Any "take" protection derived from an appropriate ESA consultation will be conferred on Reclamation directly, but may also flow through to Reclamation's agents inasmuch as they prosecute the work in accordance with these terms and conditions.
3. To the extent that the terms and conditions imposed herein require actions in the future, such as monitoring, revegetation, etc., Reclamation shall bind its agents to perform and conform according to these terms and conditions. Where the term Reclamation is used it refers to the U.S. Bureau of Reclamation, and its authorized agents.
4. These conditions are those imposed by NMFS; other regulatory agencies may have other, more restrictive requirements, for example, the Corps of Engineers' Section 404 permitting requirements.

3. **General Limitations**
   1. Limited to Reclamation activities within Idaho on streams with historic presence of anadromous fishes.
   2. This "Programmatic" expires on Dec 31, 2003, unless extended. NMFS will evaluate the work done in 2003 and consider extending or modifying it, based upon observations and experience.
   3. Within any 1000' reach of river within the riparian buffer area[iv]:
      1. Though in-water activities to construct these improvements may be authorized, as noted elsewhere herein, in-water excavation or fill in excess of 10 cu. yards per year to maintain these features is not authorized by this document.
      2. Permanent[iii] unimproved or gravelled access roads are limited to 500' extensions beyond existing roads. For any new culverts:
         1. Maximum average water velocity[v] shall not exceed 1 foot per second
         2. Suitable grade controls must be included to prevent culvert failure caused by changes in stream elevation.
      3. Completed headgate and screen structures (including rip-rap) are limited to a total footprint of less than 3,000 sq. ft.
      4. The totality of riparian buffer area[iv] disturbances shall be limited to 10,000 sq. ft.
   4. NMFS shall be notified when project construction for any project is commenced (email to Janna.Brimmer@NOAA.gov or phone 208-756-6496); once commenced, all work shall be completed in 45 calendar days.
   5. Diversion dam construction or repair is not included.

4. **In-water work period**

DRAFT Programmatic BMPs for Reclamation Headgates/Screens in Idaho

1. Reclamation shall observe written in-water guidelines provided by NMFS. Reclamation may deem written in-water guidelines provided by IDF&G as if originating from NMFS and USFWS, unless otherwise notified by either agency. Work within the active channel of all ESA-listed salmonid-bearing streams, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within NMFS and USFWS approved in-water work period. If a site-specific project is within the distribution for bull trout, the in-water work period will be scheduled to avoid their critical life history stages.
2. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved by NMFS.

5. **Pollution and erosion control**
   1. Turbidity Limits
      1. Turbidity downstream of the project area shall be limited to 30 NTU's or 125% of background turbidity above the project area, whichever is higher. Water discharged from sediment basins or pumped from project area shall conform to the above, utilizing such methods as settlement basins and discharge into upland areas, as required, to remain within specified turbidity limits. Discharges of water exceeding turbidity limits and discharging into spawning areas or areas with submerged vegetation are prohibited.
      2. No turbidity creating work is permitted within 300 feet upstream of fish spawning areas.
      3. Except as authorized under head gate installation and pump screen installation above, no equipment is permitted in the flowing water portion stream channel where sediment could be released downstream.
   2. Pollution and Erosion Control Plan.
      1. A *Pollution and Erosion Control Plan* (PECP) will be developed for each project activity to prevent point-source pollution related to construction operations. The PECP will describe the elements listed below and meet requirements of all applicable laws and regulations:
         1. Methods that will be used to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
         2. Methods that will be used to confine and remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
         3. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.

4. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
5. Measures that will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
6. The plan shall note that a supply of erosion control materials (e. g., silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales shall be used to prevent introduction of weeds.

3. Pollution & Erosion Control Practices All temporary erosion controls (e. g., straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective. Unless specifically noted as not needed in the approved *pollution and erosion* control plan, the following shall be required:
   1. All project operations, except efforts to minimize storm or high flow erosion, will cease under high flow conditions that may result in inundation of the project area.
   2. Prior to significant alteration of the action area, the following actions will be accomplished:
      1. Construction impact area shall be delineated on project plans, and work confined to the noted area.
      2. Boundaries of the clearing limits associated with site access, construction, and operations will be flagged to prevent ground disturbance of critical riparian vegetation, wetlands, and other sensitive sites beyond the flagged boundary.
      3. The following materials shall be on-site to facilitate response to sediment emergencies:
         A supply of erosion control materials (e.g., silt fences and straw bales.)
         An oil absorbing floating boom (minimum 100 lineal feet)appropriate for the size of the stream shall be available on-site during all phases of construction whenever surface water is present.
      4. All temporary erosion controls noted in the erosion control plan shall be in place and appropriately installed downslope of project

activities in the riparian area. These shall be maintained at all times during the work, until such time that permanent erosion control measures are effective.

5. An assessment of potential spawning habitat 1,000 feet upstream and downstream of the project area shall be conducted prior to beginning construction when discharges associated with the construction might drain into the stream or when overland flow through disturbed project areas could temporarily drain into the stream.
6. Reclamation would also avoid in-water construction between August 15 and September 30 to protect spawning bull trout as requested by USFWS. Surveys for adult bull trout would be conducted prior to construction for in-water projects in areas occupied by bull trout.
7. Any outfall structures associated with this activity shall be placed to prevent discharge water from affecting aquatic vegetation, such as uprooting or scouring.

3. All equipment that is used for instream work shall be cleaned prior to operations below the bankfull elevation, in such a manner that wash water does not enter the creek. External oil and grease will be removed, along with dirt and mud.
4. Vehicle staging, maintenance, refueling, and fuel storage areas shall be placed a minimum of 150' horizontal distance from any stream, when possible. All vehicle staging, maintenance, refueling, servicing, and fuel storage areas shall be on dry land above bankfull elevation. Equipment used for instream or riparian work shall be fueled and serviced in one of these areas.
5. When not in use, vehicles will be stored in the vehicle staging area, whenever feasible.

4. Isolation of in-water work area
   1. The work area shall be isolated from creek waters to the extent necessary to attain and maintain turbidity standards noted above.
   2. Ensure that the work area is well isolated from the active flowing stream to minimize the potential for sediment entrainment with a cofferdam or similar structure made out of washed drain rock/w liners, water tubes, sandbags, sheet pilings, inflatable bags, etc. Pit run berms are specifically not authorized.
   3. No ground or substrate disturbing action will occur within the active channel 300 feet upstream of potential spawning habitat as measured at the thalweg without isolation of the work area from flowing waters.

Isolation activities shall conform to the limits on instream work described in General Limitations, elsewhere herein.

6. **Fish Handling & Transfer Protocols**
   1. If listed fish are found in the work isolation area attempts shall be made to capture/move fish from the work isolation area as is prudent to minimize their risk of injury. Reclamation will ccoordinate fish handling activities with USFWS, NMFS, and IDFG.
   2. If an area is to be dewatered to the extent that fish are concentrated and their viability is in question, they shall be salvaged as noted herein.
   3. Seining, if conducted, will be by or under the supervision of a fishery biologist experienced in such efforts and all staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish. These efforts would be coordinated through IDFG, NMFS, and USFWS staff.
   4. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures.
   5. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer to prevent the added stress of an out-of-water transfer.
   6. Seined fish must be released as near as possible to capture sites.
   7. The transfer of any ESA-listed fish from Reclamation to third-parties other than NMFS personnel requires written approval from NMFS.
   8. Reclamation or its agents must obtain any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities.
   9. Reclamation must allow NMFS or its designated representative to accompany field personnel during the seining activity, and allow such representative(s) to inspect Reclamation's seining records and facilities.
   10. A description of fish handling and seining activities shall be included in the Post-Project report, and shall include:
       1. Name of the supervising biologist
       2. Methods used to isolate the work
       3. Methods used to minimize disturbances to ESA-listed species
       4. Stream conditions prior to and following placement and removal of barriers
       5. Means of fish removal
       6. Number of fish removed by species
       7. Condition of all fish released, and incidences of observed injury or mortality

7. Interim Fish Passage for ESA-listed fish
   1. The work shall not create a fish barrier to either upstream or downstream ESA-listed fish migration.

2. Water will not be withdrawn from any waterbody containing salmonids unless screens compliant with NMFS screen criteria are employed.
3. If fish are observed congregating above or below the project area NMFS shall be notified within 4 hours (email to Janna.Brimmer@NOAA.gov or phone 208-756-6496). NMFS and Reclamation shall confer to determine appropriate fish passage measures, or NMFS may unilaterally require measures for fish passage. These measures shall be implemented and be sufficient to allow ESA-listed fish to pass the project area. USFWS will be contacted regarding bull trout.
4. Construction work shall not inhibit passage of any adult or juvenile salmonid species throughout the construction period or after project completion. All culvert and road designs must comply with IDF&G guidelines and criteria for stream-road crossings with appropriate grade controls to prevent culvert failure due to changes in stream elevation. Channel modifications which could adversely affect fish passage are not authorized.

8. **Construction Practices**
   1. Construction impacts will be confined to the minimum area necessary to complete the project. In-water blasting is not permitted; however, rock splitting by chemical expansion rock splitting or shotshell powered rock splitting (e.g. *Boulder Busters)* is permitted.
   2. Temporary Access Roads are only permitted as described in General Limitations.
   3. Stream Crossings
      1. No equipment crossings of a flowing stream are permitted at known or suspected spawning areas, or within 300' upstream of spawning activities.
      2. Where stream crossings are essential, crossing designs shall not increase risks of channel re-routing due to high water conditions.
      3. Vehicles and machinery shall cross riparian areas and streams at right angles to the main channel where possible.
   4. Heavy equipment use will be restricted as follows.
      1. Where sediment could be dislodged, flow downstream, and exceed turbidity limits, motorized equipment possessing wheels/tracks is not authorized to be in a flowing stream at all. In such case, all equipment work shall be performed from the bank, or in an area hydraulically isolated from the flowing stream.
      2. When heavy equipment is required, Reclamation will use equipment having the least impact (e. g., minimally disruptive, rubber-tired where feasible)
      3. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:
         1. Imported boulders, rock, woody materials and other natural construction materials used for the project must be obtained from outside of the riparian area. Excavated materials from construction

may be used; however the local area may not be "mined" for materials.

2. During excavation, native streambed materials will be stockpiled above the bankfull elevation for later use. In most cases, material removed during excavation will only be placed in locations where it cannot enter streams or other water bodies. However, once riprap has been placed, excess native materials will be placed over the top of the riprap in a way to support vegetative growth.

5. Site preparation. (Disposition of native stream materials, topsoil, surface vegetation and major root systems.)
   1. Large wood, riparian vegetation, top soil, surface vegetation that is moved or altered during construction will stay on site or be replaced with a functional equivalent.
   2. Clearing and grubbing shall be restricted to within a 50 feet perimeter outside of the project footprint and access road.
   3. Trees

      No tree (3 inches diameter at breast height or greater) will be removed from within 50 feet horizontal distance of the ordinary high water mark.

      No more than 5 trees (3 inches diameter at breast height or greater) total may be removed from the area spanning 50 feet to 150 feet horizontal distance from the ordinary high water mark.

1. **Site Restoration**: Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows.
   1. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.
   2. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation.
   3. Revegetation. Areas requiring revegetation must be replanted before the first April 15 following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.
   4. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.
   5. Fertilizer. No surface application of fertilizer may occur within 50-feet of any stream channel.
   6. Fencing. Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

7. All exposed or disturbed areas will be stabilized to prevent erosion.

2. **Post-Project Report**

Briefly describe stream conditions prior to and following construction activities, and any notable events.

Briefly describe methods used to minimize disturbances to ESA listed species that were not previously described in the EA.

Document any fish handling activities, if conducted.

Report on project goals and objectives.

Program Review: Reclamation will meet with NMFS and USFWS prior to March 31 each year to discuss the prior year's monitoring report and any actions that may be necessary to make the program more effective.

ESSENTIAL FISH HABITAT

"Essential fish habitat" (EFH) provisions of the Magnuson-Stevens Act (MSA) require heightened consideration of a fish habitat in resource management decisions. EFH is defined in the section 3 of the MSA as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." NMFS interprets EFH to include aquatic areas and their associated physical, chemical and biological properties used by fish that are necessary to support a sustainable fishery and the contribution of the managed species to a healthy ecosystem.

The MSA and its implementing regulations at 50 CFR 600.920 (j) require that before a Federal agency may authorize, fund or carry out any action that may adversely effect EFH, it must consult with NMFS and, if requested, the appropriate Regional Fishery Management Council. The purpose of consultation is to develop a conservation recommendation that addresses all reasonably foreseeable adverse effects to EFH. Further, the action agency must provide a detailed response in writing to NMFS and the appropriate Council within 30 days after receiving an EFH conservation recommendation. The response must include measures proposed by the agency to avoid, minimize, mitigate, or offset the impact of the activity on EFH. If the response is inconsistent with conservation recommendations of NMFS, the agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, or mitigate such effects.

This consultation requirement does not distinguish between actions which occur within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and up slope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, whatever its location.

APPENDIX B

DRAFT
BEST MANAGEMENT PRACTICES (BMPs)

DRAFT Programmatic BMPs for Reclamation Headgates/Screens in Idaho

The objective of this consultation is to determine whether the proposed action, adoption of permit conditions for certain activities within the State of Idaho by Reclamation that would preclude the need for further individual ESA consultation and the development of standard local operating procedures for these activities, is likely to adversely affect EFH. If the proposed action is likely to adversely affect EFH, a conservation recommendation will be provided.

---

i. See for more information http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm.

ii. See for more information http://www.nwr.noaa.gov/1hydrop/pumpcrit1.htm.

iii. Permanent means a feature that will remain after construction activities are concluded.

iv. "Riparian buffer area" means land within: (1) 150 feet of any natural water occupied by listed salmonids during any part of the year or designated as critical habitat; (2) 100 feet of any natural water within 1/4 mile upstream of areas occupied by listed salmonids or designated as critical habitat and that is physically connected by an above-ground channel system such that water, sediment, or woody material delivered to such waters will eventually be delivered to water occupied by listed salmonids or designated as critical habitat; and (3) 50 feet of any natural water upstream of areas occupied by listed salmonids or designated as critical habitat and that is physically connected by an above-ground channel system such that water, sediment, or woody material delivered to such waters will eventually be delivered to water occupied by listed salmonids or designated as critical habitat. "Natural water" means all perennial or seasonal waters except water conveyance systems that are artificially constructed and actively maintained for irrigation.

v. "Maximum average water velocity" means the average of water velocity within the barrel of the culvert calculated using the 10 percent annual exceedance of the daily average flow.

This page left blank intentionally, for double sided printing.

APPENDIX C

STREAMFLOW DATA

This page left blank intentionally, for double sided printing.

Appendix C. Annual and Monthly Streamflow Statistic, in cfs[1]

Site	DA[2] (mi^2)	POR[3] (Year)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Min	Max	Ave.
Upper Salmon River Sub-basin																	
Salmon River below Yankee Fork (USGS 13296500)	802	1921-2000	411	404	422	926	2,581	3,217	1,404	599	490	508	496	444	160	10,500	977
Salmon River near Clayton (USGS 13298000)	532	1928-1939; 1973-1981	79.0	79.1	85.6	146	434	870	450	171	124	119	103	84.5	29	3,580	235
Salmon River near Challis (USGS 13337000)	1,800	1928-1972	616	619	626	1,279	3,687	4,968	2,257	982	774	791	736	659	395	17,300	1,473
Middle for Clearwater River Sub-basin																	
Selway River (USGS 13336500)	1,910	1911-2001	1,272	1,552	2,256	6,031	13,360	1,1870	3,149	922	752	959	1,296	1,435	150	48,900	3,753
Lochsa River	1,180	1910-2001	1,115	1,302	1,841	4,879	10,180	8,360	2,198	674	562	744	1,091	1,246	110	35,100	2,852
Clearwater River near Kamiah (USGS 13339000)	4,850	1910-1965	2,992	3,317	5,099	14,720	29,959	23,790	6,170	1,903	1,592	2,275	3,109	3,369	200	103,000	8,162
Lemhi River Sub-basin																	
Lemhi River near Lemhi (USGS 13305000)	895	1939-2000	231	238	260	260	310	550	298	150	164	255	278	235	34	2,430	272
Lemhi River below L5 Diversion (USGS 13305310)	1,218	1992-2000	272	284	334	279	339	820	330	76.6	84.6	267	336	275	0.75	2,920	321
Lemhi River at Salmon (USGS 13305500)	1,270	1928-1942	205	218	253	293	302	577	208	70.4	121	232	268	219	14	2,400	234
Little Salmon River Sub-basin																	
Mud Creek (USGS 13315500)	15.8	1937-1959	4.67	5.29	14.7	98.3	74.4	12.4	3.61	1.99	1.8	2.46	3.82	8.17	0.5	395	19.6
Boulder Creek (USGS 13316000)	6.5	1938-1945	NA[4]	NA	NA	NA	68.3	35.1	6.29	2.18	1.63	2.10	NA	NA	0.5	244	NA
Little Salmon @ Riggins (USGS 13316500)	576	1951-2000	332	394	676	1,326	2,379	2381	704	261	225	241	291	327	60	12,600	798

[1]Source: USGS, March 2002.
[2]DA = Drainage Area above stream gage location
[3]POR = Period of record
[4]NA = Not Available

This page left blank intentionally, for double sided printing.

APPENDIX D

WATER QUALITY STANDARDS

This page left blank intentionally, for double sided printing.

Appendix D

IDAHO ADMINISTRATIVE CODE
Department of Environmental Quality

IDAPA 58.01.02 - Water Quality Standards
and Wastewater Treatment Requirements

100. SURFACE WATER USE DESIGNATIONS.
Water bodies are designated in Idaho to protect water quality for existing or designated uses. The designated use of a water body does not imply any rights to access or ability to conduct any activity related to the use designation, nor does it imply that an activity is safe. Wherever attainable, the designated beneficial uses for which the surface waters of the state are to be protected include:

(11-9-01)T

01. Aquatic Life. (7-1-93)

a. Cold water (COLD): water quality appropriate for the protection and maintenance of a viable aquatic life community for cold water species. (4-5-00)

b. Salmonid spawning: waters which provide or could provide a habitat for active self-propagating populations of salmonid fishes. (7-1-93)

c. Seasonal cold water (SC): water quality appropriate for the protection and maintenance of a viable aquatic life community of cool and cold water species, where cold water aquatic life may be absent during, or tolerant of , seasonally warm temperatures. (4-5-00)

d. Warm water (WARM): water quality appropriate for the protection and maintenance of a viable aquatic life community for warm water species. (4-5-00)

e. Modified (MOD): water quality appropriate for an aquatic life community that is limited due to one (1) or more conditions set forth in 40 CFR 131.10(g) which preclude attainment of reference streams or conditions.(4-5-00)

02. Recreation. (7-1-93)

a. Primary contact recreation (PCR): water quality appropriate for prolonged and intimate contact by humans or for recreational activities when the ingestion of small quantities of water is likely to occur. Such activities include, but are not restricted to, those used for swimming, water skiing, or skin diving. (4-5-00)

b. Secondary contact recreation (SCR): water quality appropriate for recreational uses on or about the water and which are not included in the primary contact category. These activities may include fishing, boating, wading, infrequent swimming, and other activities where ingestion of raw water is not likely to occur. (4-5-00)

03. Water Supply. (7-1-93)

a. Domestic: water quality appropriate for drinking water supplies. (4-5-00)

b. Agricultural: water quality appropriate for the irrigation of crops or as drinking water for livestock. ***This use applies to all surface waters of the state***. (4-5-00)

c. Industrial: water quality appropriate for industrial water supplies. ***This use applies to all surface waters of the state.*** (4-5-00)

04. Wildlife Habitats. Water quality appropriate for wildlife habitats. ***This use applies to all surface waters of the state.*** (4-5-00)

05. Aesthetics. This use applies to all surface waters of the state. (7-1-93)

120. CLEARWATER BASIN.
Surface waters found within the Clearwater basin total ten (10) subbasins and are designated as follows: (4-5-00)

06. Middle Fork Clearwater Subbasin. The Middle Fork Clearwater Subbasin, HUC 17060304, is comprised of eleven (11) water body units.

Unit	Waters	Aquatic Life	Recreation	Other
C-1	Middle Fork Clearwater River – confluence of Lochsa and Selway River to mouth	COLD SS	PCR	DWS SRW
C-2	Clear Creek - South Fork Clear Creek to mouth			
C-3	West Fork Clear Creek - source to mouth			
C-4	South Fork Clear Creek - source to mouth			
C-5	Kay Creek - source to mouth			
C-6	Clear Creek - source to South Fork Clear Creek			
C-7	Middle Fork Clear Creek - source to mouth			
C-8	Browns Spring Creek - source to mouth			
C-9	Pine Knob Creek - source to mouth			
C-10	Lodge Creek - source to mouth			
C-11	Maggie Creek - source to mouth			

130. SALMON BASIN.

Surface waters found within the Salmon basin total twelve (12) subbasins and are designated as follows: (4-5-00)

06. Lemhi Subbasin. The Lemhi Subbasin, HUC 17060204, is comprised of sixty-six (66) water body units.

Unit	Waters	Aquatic Life	Recreation	Other
S-1	Lemhi River - Kenney Creek to mouth	COLD SS	PCR	DWS SRW
S-2	Mulkey Creek - source to mouth			
S-3a	Withington Creek - diversion (T20N, R23E, Sec. 09) to mouth			
S-3b	Withington Creek - source to diversion (T20N, R23E, Sec. 09)	COLD SS	SCR	
S-4	Haynes Creek - source to mouth			
S-5	Lemhi River - Hayden Creek to Kenney Creek	COLD SS	PCR	DWS SRW
S-6	Baldy Creek - source to mouth			
S-7a	McDevitt Creek - diversion (T19N, R23E, Sec. 36) to mouth			
S-7b	McDevitt Creek - source to diversion (T19N, R23E, Sec. 36)	COLD SS	SCR	
S-8	Muddy Creek - source to mouth			
S-9	Hayden Creek - Basin Creek to mouth	COLD SS	SCR	

Unit	Waters	Aquatic Life	Recreation	Other
S-10	Basin Creek - Lake Creek to mouth	COLD SS	SCR	
S-11	Basin Creek - confluence of McNutt Creek and Trail Creek to Lake Creek	COLD SS	SCR	
S-12	Trail Creek - source mouth			
S-13	McNutt Creek - source to mouth			
S-14	Lake Creek - source to mouth			
S-15	Hayden Creek - Bear Valley Creek to Basin Creek	COLD SS	SCR	
S-16	Bear Valley Creek -Wright Creek to mouth	COLD SS	SCR	
S-17	Bear Valley Creek - source to Wright Creek	COLD SS	SCR	
S-18	Wright Creek - source to mouth			
S-19	Kadletz Creek - source to mouth			
S-20	Hayden Creek -West Fork Hayden Creek to Bear Valley Creek	COLD SS	SCR	
S-21	Hayden Creek - source to West Fork Hayden Creek	COLD SS	SCR	
S-22	West Fork Hayden Creek - source to mouth			
S-23	East Fork Hayden Creek - source to mouth	COLD SS	SCR	
S-24	Lemhi River - Peterson Creek to Hayden Creek	COLD SS	PCR	DWS SRW
S-25	Lemhi River - confluence of Big and Little Eight Mile Creeks to Peterson Creek	COLD SS	PCR	DWS SRW
S-26a	Mill Creek - diversion (T16N, R24E, Sec. 22) to mouth			
S-26b	Mill Creek - source to diversion (T16N, R24E, Sec. 22)	COLD SS	SCR	
S-27	Walter Creek - source to mouth			
S-28	Lee Creek - source to mouth			
S-29a	Big Eight Mile Creek - diversion (T16N, R25E, Sec. 21) to mouth			
S-29b	Big Eight Mile Creek - source to diversion (T16N, R25E, Sec. 21)	COLD SS	SCR	
S-30	Lemhi River - confluence of Eighteen Mile Creek and Texas Creek to the confluence of Big and Little Eight Mile Creeks			
S-31	Big Timber Creek - Little Timber Creek to mouth			
S-32a	Little Timber Creek - diversion (T15N, R25E, Sec. 24) to mouth			
S-32b	Little Timber Creek - source to diversion (T15N, R25E, Sec. 24)	COLD SS	SCR	

Unit	Waters	Aquatic Life	Recreation	Other
S-33	Big Timber Creek - Rocky Creek to Little Timber Creek	COLD SS	SCR	
S-34	Rocky Creek - source to mouth			
S-35	Big Timber Creek - source to Rocky Creek	COLD SS	SCR	
S-36	Texas Creek - Deer Creek to mouth			
S-37	Deer Creek - source to mouth			
S-38	Texas Creek - Meadow Creek to Deer Creek			
S-39	Meadow Lake Creek - source to mouth			
S-40	Texas Creek - source to Meadow Lake Creek			
S-41	Eighteen Mile Creek - Hawley Creek to mouth			
S-42	Eighteen Mile Creek - Clear Creek to Hawley Creek			
S-43	Eighteen Mile Creek - Divide Creek to Hawley Creek	COLD	SCR	
S-44	Divide Creek - source to mouth			
S-45	Eighteen Mile Creek - source to Divide Creek	COLD SS	SCR	
S-46	Clear Creek - source to mouth			
S-47	Ten Mile Creek - Powderhorn Gulch to mouth			
S-48	Ten Mile Creek - source to Powderhorn Gulch			
S-49	Powderhorn Gulch - source to mouth			
S-50a	Hawley Creek - diversion (T15N, R27E, Sec. 03) to mouth			
S-50b	Hawley Creek - source to diversion (T15N, R27E, Sec. 03)			
S-51a	Canyon Creek - diversion (T16N, R26E, Sec.22) to mouth			
S-51b	Canyon Creek - source to diversion (T16N, R26E, Sec.22)	COLD SS	SCR	
S-52a	Little Eight Mile Creek - diversion (T16N, R25E, Sec. 02) to mouth			
S-52b	Little Eight Mile Creek - source to diversion (T16N, R25E, Sec. 02)	COLD SS	SCR	
S-53	Peterson Creek - source to mouth			
S-54	Reese Creek - source to mouth			
S-55a	Yearian Creek - diversion (T17N, R24E, Sec. 03) to mouth			
S-55b	Yearian Creek - source to diversion (T17N, R24E, Sec. 03)	COLD SS	SCR	
S-56a	Agency Creek - diversion (T19N, R24E, Sec. 28) to mouth			
S-56b	Agency Creek - Cow Creek to diversion (T19N, R24E, Sec. 28)	COLD SS	SCR	

Unit	Waters	Aquatic Life	Recreation	Other
S-57	Cow Creek - source to mouth	COLD SS	SCR	
S-58	Agency Creek - source to Cow Creek	COLD SS	SCR	
S-59a	Pattee Creek - diversion (T19N, R24E, Sec. 16) to mouth			
S-59b	Pattee Creek - source to diversion (T19N, R24E, Sec. 16)	COLD SS	SCR	
S-60a	Pratt Creek - diversion (T20N, R23E, Sec. 11) to mouth			
S-60b	Pratt Creek - source to diversion (T20N, R23E, Sec. 11)	COLD SS	SCR	
S-61	Kenney Creek - source to mouth	COLD SS	SCR	
S-62a	Sandy Creek - diversion (T20N, R24E, Sec. 17) to mouth			
S-62b	Sandy Creek - source to diversion (T20N, R24E, Sec. 17)	COLD SS	SCR	
S-63	Wimpey Creek - source to mouth	COLD SS	SCR	
S-64a	Bohannon Creek - diversion (T21N, R23E, Sec. 22) to mouth			
S-64b	Bohannon Creek - source to diversion (T21N, R23E, Sec. 22)	COLD SS	SCR	
S-65a	Geertson Creek - diversion (T21N, R23E, Sec. 20) to mouth			
S-65b	Geertson Creek - source to diversion (T21N, R23E, Sec. 20)	COLD SS	SCR	
S-66a	Kirtley Creek - diversion (T21N, R22E, Sec. 02) to mouth			
S-66b	Kirtley Creek - source to diversion (T21N, R22E, Sec. 02)	COLD SS	SCR	

12. Little Salmon Subbasin. The Little Salmon Subbasin, HUC 17060210, is comprised of sixteen (16) water body units.

Unit	Waters	Aquatic Life	Recreation	Other
S-1	Little Salmon River - Round Valley Creek to mouth	COLD SS	PCR	DWS SRW
S-2	Rapid River - source to mouth	COLD SS	PCR	DWS SRW
S-3	West Fork Rapid River - source to mouth			
S-4	Paradise Creek - source to mouth			

Unit	Waters	Aquatic Life	Recreation	Other
S-5	Boulder Creek - source to mouth			
S-6	Round Valley Creek - source to mouth			
S-7	Little Salmon River - source to Round Valley Creek	COLD SS	PCR	DWS SRW
S-8	Mud Creek - source to mouth			
S-9	Big Creek - source to mouth			
S-10	Goose Creek - source to mouth			
S-11	Brundage Reservoir			
S-12	Goose Lake			
S-13	Six Mile Creek - source to mouth			
S-14	Hazard Creek - source to mouth			
S-15	Hard Creek - source to mouth			
S-16	Elk Creek - source to mouth			

140. SOUTHWEST IDAHO BASIN.
Surface waters found within the Southwest basin total nineteen (19) subbasins and are designated as follows:(4-5-00)

03. Upper Salmon Subbasin. The Upper Salmon Subbasin, HUC 17060201, is comprised of one hundred thirty-two (132) water body units.

Unit	Waters	Aquatic Life	Recreation	Other
S-1	Salmon River - Pennal Gulch to Pashsimeroi River	COLD SS	PCR	DWS SRW
S-2	Morgan Creek - West Creek to mouth			
S-3	Morgan Creek - source to West Creek			
S-4	West Creek - Blowfly Creek to mouth			
S-5	Blowfly Creek - source to mouth			
S-6	West Creek - source to Blowfly Creek			
S-7	Challis Creek - Darling Creek to mouth			
S-8	Darling Creek - source to mouth			
S-9	Challis Creek - Bear Creek to Darling Creek			
S-10	Eddy Creek - source to mouth			
S-11	Bear Creek - source to mouth			
S-12	Challis Creek - source to Bear Creek			
S-13	Mill Creek - source to mouth			
S-14	Salmon River - Garden Creek to Pennal Gulch	COLD SS	PCR	DWS SRW

Unit	Waters	Aquatic Life	Recreation	Other
S-15	Garden Creek - source to mouth			
S-16	Salmon River - East Fork Salmon River to Garden Creek	COLD SS	PCR	DWS SRW
S-17	Bayhorse Creek - source to mouth			
S-18	Lyon Creek - source to mouth			
S-19	Salmon River - Squaw Creek to East Fork Salmon River	COLD SS	PCR	DWS SRW
S-20	Kinnikinic Creek - source to mouth			
S-21	Squaw Creek - Cash Creek to mouth	COLD SS	SCR	
S-22	Cash Creek - source to mouth			
S-23	Squaw Creek - confluence of Aspen and Cinnabar Creeks to Cash Creek	COLD SS	SCR	
S-24	Aspen Creek - source to mouth			
S-25	Cinnabar Creek - source to mouth			
S-26	Bruno Creek - source to mouth			
S-27	Salmon River - Thompson Creek to Squaw Creek	COLD SS	PCR	DWS SRW
S-28	Thompson Creek - source to mouth	COLD SS	SCR	
S-29	Pat Hughes Creek -source to mouth			
S-30	Buckskin Creek - source to mouth			
S-31	Salmon River - Yankee Fork Creek to Thompson Creek	COLD SS	PCR	DWS SRW
S-32	Yankee Fork Creek - Jordan Creek to mouth COLD	COLD SS	PCR	DWS SRW
S-33	Ramey Creek - source to mouth			
S-34	Yankee Fork Creek - source to Jordan Creek COLD	COLD SS	PCR	DWS SRW
S-35	Five Mile Creek - source to mouth			
S-36	Eleven Mile Creek - source to mouth			
S-37	McKay Creek - source to mouth			
S-38	Twenty Mile Creek - source to mouth			
S-39	Ten Mile Creek - source to mouth			
S-40	Eight Mile Creek - source to mouth			
S-41	Jordan Creek - from and including Unnamed Tributary (T13N, R15E, Sec. 29) to mouth			
S-42	Jordan Creek - source to Unnamed Tributary (T13N, R15E, Sec. 29)			

Unit	Waters	Aquatic Life	Recreation	Other
S-43	West Fork Yankee Fork Creek - Lightning Creek to mouth			
S-44	Lightning Creek - source to mouth			
S-45	West Fork Yankee Fork Creek - source to Lightning Creek			
S-46	Cabin Creek - source to mouth			
S-47	Salmon River - Valley Creek to Yankee Fork Creek	COLD SS	PCR	DWS SRW
S-48	Basin Creek - East Basin Creek to mouth			
S-49	East Basin Creek - source to mouth			
S-50	Basin Creek - source to East Basin Creek			
S-51	Valley Creek - Trap Creek to mouth			
S-52	Stanley Creek - source to mouth			
S-53	Valley Creek - source to Trap Creek			
S-54	Trap Creek - Meadow Creek to mouth			
S-55	Trap Creek - source to Meadow Creek			
S-56	Meadow Creek - source to mouth			
S-57	Elk Creek - source to mouth			
S-58	Stanley Creek - source to mouth			
S-59	Crooked Creek - source to mouth			
S-60	Iron Creek - source to mouth			
S-61	Goat Creek - source to mouth			
S-62	Meadow Creek - source to mouth			
S-63	Salmon River - Redfish Lake Creek to Valley Creek	COLD SS	PCR	DWS SRW
S-64	Redfish Lake Creek - Redfish Lake to mouth			
S-65	Fishhook Creek - source to mouth			
S-66	Redfish Lake			
S-67	Redfish Lake Creek - source to Redfish Lake			
S-68	Salmon River - Unnamed Tributary (T19N, R13E, Sec. 25) to Redfish Lake Creek	COLD SS	PCR	DWS SRW
S-69	Decker Creek - Huckleberry Creek to mouth			
S-70	Decker Creek - source to Huckleberry Creek			
S-71	Huckleberry Creek - source to mouth			
S-72	Salmon River - Fisher Creek to Decker Creek	COLD SS	PCR	DWS SRW
S-73	Salmon River - Alturas Lake Creek to Fisher Creek	COLD SS	PCR	DWS SRW

Unit	Waters	Aquatic Life	Recreation	Other
S-74	Hell Roaring Creek - source to mouth			
S-75	Alturas Lake Creek - Alturas Lake to mouth			
S-76	Toxaway/Farley Lake - source to mouth			
S-77	Pettit Lake			
S-78	Alturas Lake			
S-79	Alturas Lake Creek - source to Alturas Lake			
S-80	Alpine Creek - source to mouth			
S-81	Salmon River - source to Alturas Lake Creek	COLD SS	PCR	DWS SRW
S-82	Beaver Creek - source to mouth			
S-83	Smiley Creek - source to mouth			
S-84	Frenchman Creek - source to mouth			
S-85	Pole Creek - source to mouth			
S-86	Champion Creek - source to mouth			
S-87	Fourth of July Creek - source to mouth			
S-88	Fisher Creek - source to mouth			
S-89	Williams Creek - source to mouth			
S-90	Gold Creek - source to mouth			
S-91	Little Casino Creek - source to mouth			
S-92	Big Casino Creek - source to mouth			
S-93	Rough Creek - source to mouth			
S-94	Warm Springs Creek - Swimm Creek to mouth			
S-95	Warm Springs Creek - Pigtail Creek to Swimm Creek			
S-96	Pigtail Creek - source to mouth			
S-97	Warm Springs Creek - source to Pigtail Creek			
S-98	Swimm Creek - source to mouth			
S-99	Slate Creek - source to mouth			
S-100	Holman Creek - source to mouth			
S-101	Sullivan Creek - source to mouth			
S-102	East Fork Salmon River - Herd Creek to mouth	COLD SS	PCR	DWS SRW
S-103	East Fork Salmon River - Germania Creek to Herd Creek	COLD SS	PCR	DWS SRW
S-104	Big Lake Creek - source to mouth			
S-105	Big Boulder Creek - source to mouth			
S-106	Little Boulder Creek - source to mouth			
S-107	Germania Creek - Chamberlain Creek to mouth			

Unit	Waters	Aquatic Life	Recreation	Other
S-108	Chamberlain Creek - source to mouth			
S-109	Germania Creek - source to Chamberlain Creek			
S-110	East Fork Salmon River - confluence of South and West Fork Salmon Rivers to Germania	COLD SS	PCR	DWS SRW
S-111	West Fork East Fork Salmon River - source to mouth			
S-112	South Fork East Fork Salmon River - source to mouth			
S-113	Ibex Creek - source to mouth			
S-114	West Pass Creek - source to mouth			
S-115	Bowery Creek - source to mouth			
S-116	Pine Creek - source to mouth			
S-117	McDonald Creek - source to mouth			
S-118	Herd Creek - confluence of West Fork Herd Creek and East Pass Creek to mouth			
S-119	East Pass Creek - source to mouth			
S-120	Taylor Creek - source to mouth			
S-121	West Fork Herd Creek - source to mouth			
S-122	East Fork Herd Creek - source to mouth			
S-123	Lake Creek - source to mouth			
S-124	Road Creek - Corral Basin Creek to mouth			
S-125	Road Creek - source to Corral Basin Creek			
S-126	Mosquito Creek - source to mouth			
S-127	Corral Basin Creek - source to mouth			
S-128	Horse Basin Creek - source to mouth			
S-129	Spar Canyon Creek - source to mouth			
S-130	Bradshaw Gulch - source to mouth			
S-131	Warm Spring Creek - Hole-in-Rock Creek to mouth			
S-132	Warm Spring Creek - source to Hole-in-Rock Creek			
S-133	Broken Wagon Creek - source to mouth			
S-134	Hole-in-Rock Creek - source to mouth			
S-135	Pennal Gulch - source to mouth			

a. COLD Cold Water Communities. (4-5-00)
b. SS - Salmonid Spawning. (4-5-00)
c. SC - Seasonal Cold Water Communities. (4-5-00)
d. WARM - Warm Water Communities. (4-5-00)
e. MOD - Modified Communities. (4-5-00)
f. PCR - Primary Contact Recreation. (4-5-00)
g. SCR - Secondary Contact Recreation. (4-5-00)
h. DWS - Domestic Water Supply. (4-5-00)
i. SRW - Special Resource Water. (4-5-00)
j. NONE - Use Unattainable. (4-5-00)

APPENDIX E

ESA CONSULTATION/CORRESPONDENCE

This page left blank intentionally, for double sided printing.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

National Marine Fisheries Service
Idaho Habitat Branch
10215 W. Emerald, Suite 180
Boise, Idaho 83704

April 16, 2002

Mr. Jack La Rocco
Bureau of Reclamation
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7298

RE: SRA-6124
ENV-1.10

Subject: Species List Verification Request For Fish Habitat Improvement Programmatic Environmental Assessment In The Lemhi, Upper Salmon, Little Salmon, And Middle Fork Clearwater Subbasins

Dear Mr. La Rocco:

This letter is to confirm the phone message left for you on April 15, 2002. The species list in the letter from Area Manager, Jerrold D. Gregg is incomplete. The Middle Fork Clearwater River contains listed Fall Chinook (T). Spring/summer chinook are not listed in the Middle Fork Clearwater River. Your species lists for the Lemhi, Upper Salmon and Little Salmon rivers are correct. This letter responds only to anadromous fish listings under NMFS's jurisdiction. The U.S. Fish and Wildlife Service should be contacted regarding species under its jurisdiction.

If you have any questions regarding this matter please contact Vince Kozakiewicz at the above address or at telephone number (208) 685-6905.

Sincerely,

Angela Somma

Angela Somma
Acting Branch Chief

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▸ 2

To Jim Keany	From Jack LaRocco
Dept./Agency EDAW	Phone # 334-9858
Fax # 206-343-9809	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

SRA-6124
ENV-1.10

April 8, 2002

Mr. Ken Troyer
Acting Branch Chief
National Marine Fisheries Service
10215 W Emerald, Bldg C, Suite 180
Boise ID 83704

Subject: Species List Verification Request For Fish Habitat Improvement Programmatic Environmental Assessment In The Lemhi, Upper Salmon, Little Salmon, And Middle Fork Clearwater Subbasins

Dear Mr. Troyer:

In compliance with Action 149 of the National Marine Fisheries Service (NMFS) Biological Opinion regarding off-site mitigation for the Operation of the Federal Columbia River Power System, December 21, 2000, the Bureau of Reclamation (Reclamation) will implement fish habitat improvement measures in the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater subbasins (see enclosed map). Fish habitat improvement measures will include correction of passage barriers, stream flow deficiencies and unscreened irrigation diversions. Reclamation is preparing a programmatic Environmental Assessment (EA) concerning these habitat improvement measures.

To ensure correctness of Federally listed species to be addressed in the programmatic EA, we request that you review the following species identified by subbasin in the NMFS Biological Opinion:

Subbasins:
Lemhi: Steelhead ESU (T); Spring/summer chinook salmon ESU (T)
Upper Salmon: Steelhead ESU (T); Spring/summer chinook salmon ESU (T); Sockeye salmon ESU (E)
Middle Fork Clearwater: Steelhead ESU (T); Spring/summer chinook salmon ESU (T) *listed critical habitat with hatchery stock population*
Little Salmon: Steelhead ESU (T); Spring/summer chinook salmon ESU (T)

Please respond to verify whether these species lists are adequate or if species need to be added or removed from lists for any of the subbasins. Please direct your response to Jack La Rocco at the above address or at telephone number (208) 334-9858.

Sincerely,

Jerrold D. Gregg
Area Manager

Enclosure

JLaRocco:ea:4/5/02:X:\common\SRA1001\workfiles\Jack\04-04-02LetterNMFSFinal.wpd

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Snake River Basin Office
1387 South Vinnell Way, Room 368
Boise, Idaho 83709

SEP 20 02

SEP 19 2002

Memorandum

To: Area Manager, Snake River Area Office, Bureau of Reclamation, Boise, Idaho

From: Supervisor, Snake River Basin Office, Boise, Idaho

Subject: Species List Verification – Fish Habitat Improvement Programmatic Environmental Assessment in the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater Subbasins
File #1006.0141.02 SP #1-4-02-SP-729, 730, 731, 732

The U.S. Fish and Wildlife Service is writing to provide you with updated lists of threatened, endangered, proposed, and candidate species which may occur within the areas involved in the programmatic Environmental Assessments (Assessment) for fish habitat improvements. This includes the Lemhi, Upper Salmon, Little Salmon, and Middle Fork Clearwater River Subbasins. You requested the update in a letter dated April 9, 2002, received by our office on April 15, 2002. There is a change to the previous list.

We are no longer asking you to consider Ute ladies'-tresses (*Spiranthes diluvialis*) in any of the subbasins involved in the Assessment. This change is the result of an internal shift in the way the Service, specifically the Snake River Basin Office, addresses issues involving Ute ladies'-tresses.

Thank you for your continued interest in endangered species conservation.

BUREAU OF RECLAMATION, FISH HABITAT IMPROVEMENT
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
LEMHI RIVER SUBBASIN, IDAHO
SPECIES LIST #1-4-02-SP-729

LISTED SPECIES	COMMENTS
Gray wolf *(Canis lupus)*	XN - Experimental/Non-essential Population
Canada lynx *(Lynx canadensis)*	LT
Bald eagle *(Haliaeetus leucocephalus)*	LT
Bull trout *(Salvelinus confluentus)*	LT

PROPOSED SPECIES

None

CANDIDATE SPECIES

None

BUREAU OF RECLAMATION, FISH HABITAT IMPROVEMENT
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
UPPER SALMON RIVER SUBBASIN, IDAHO
SPECIES LIST #1-4-02-SP-734

LISTED SPECIES	COMMENT
Gray wolf *(Canis lupus)*	XN - Experimental/Non-essential Population
Canada lynx *(Lynx canadensis)*	LT
Bald eagle *(Haliaeetus leucocephalus)*	LT
Bull trout *(Salvelinus confluentus)*	LT

PROPOSED SPECIES

None

CANDIDATE SPECIES[1]

Yellow-billed cuckoo *(Coccyzus americanus)*	C

[1]Candidate species have no protection under the Act, but are included for your early planning consideration. Candidate species could be proposed or listed during the project planning period, and would then be covered under Section 7 of the Act. The Service advises no evaluation of potential effects on candidate species that may occur in the project area.

BUREAU OF RECLAMATION, PREPARATION OF IMPROVEMENT
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
LITTLE SALMON RIVER WATERSHED, IDAHO
SPECIES LIST #1-4-02-SP-722

LISTED SPECIES	COMMENTS
Gray wolf (Canis lupus)	XN - Experimental/Non-essential Population
Canada lynx (Lynx canadensis)	
Bald eagle (Haliaeetus leucocephalus)	
Bull trout (Salvelinus confluentus)	

PROPOSED SPECIES

None

CANDIDATE SPECIES

None

APPENDIX F

TRIBAL COORDINATION

This page left blank intentionally, for double sided printing.

Letters to and Meetings with Tribes

February 7, 2002	Letter to the Chairman of the Fort Hall Business Council requesting comments and offering to meet regarding the proposal
February 7, 2002	Letter to the Chairman of the Northwestern Band of the Shoshone Nation requesting comments and offering to meet regarding the proposal
February 7, 2002	Letter to the Chairman of the Nez Perce Tribal Executive Committee requesting comments and offering to meet regarding the proposal
February 7, 2002	Letter to the Chairman of the Burns Paiute General Council requesting comments and offering to meet regarding the proposal
May 22, 2002	Letter to the Chairman of the Burns Paiute General Council inviting comments about traditional cultural properties and sacred sites
May 22, 2002	Letter to the Chairman of the Nez Perce Tribal Executive Committee inviting comments about traditional cultural properties and sacred sites
May 22, 2002	Letter to the Chairman of Northwestern Band of the Shoshone Nation inviting comments about traditional cultural properties and sacred sites
May 22, 2002	Letter to the Chairman of the Shoshone-Paiute Tribal Council inviting comments about traditional cultural properties and sacred sites
May 22, 2002	Letter to the Chairman of the Fort Hall Business Council inviting comments about traditional cultural properties and sacred sites

This page left blank intentionally, for double sided printing.

APPENDIX G

EA DISTRIBUTION LIST

This page left blank intentionally, for double sided printing.

State Govt./Agencies

Mr. Jim Caswell
Office of Species Conservation
Statehouse Mail
Boise ID 83720

Idaho Department of Environmental Quality
Idaho Falls Regional Office
Attn: Mr. Tom Herron
900 N. Skyline Drive Suite B
Idaho Falls ID 83402

Idaho Department of Environmental Quality
Lewiston Regional Office
Attn: Mr. Jim Bellatty
1118 S Street
Lewiston ID 83501

Idaho Department of Environmental Quality
Regional Office
Attn: Mr. Steve West
1445 N. Orchard
Boise ID 83706

Idaho Department of Water Resources
Attn: Mr. Karl Dreher, Director
1301 North Orchard
Boise ID 83706

Idaho Dept. of Water Resources
Western Regional Office
2735 Airport Way
Boise ID 83705

Idaho Dept. of Fish and Game
Attn: Mr. Scott Grunder
600 South Walnut
PO Box 25
Boise ID 83707

Idaho Dept of Fish and Game
Attn: Mr. Tom Curet
PO Box 1336
Salmon ID 83467

Idaho Dept. of Fish and Game
Attn: Ms. Kim Appeson
555 Deinhard Lane
McCall ID 83638

Idaho Department of Fish and Game
Attn: Mr. Jim Lukens
PO Box 1336
Salmon ID 83467

Idaho Department of Fish and Game
Attn: Cal Groen
1540 Warner Ave
Lewiston ID 83501

Idaho Dept of Fish And Game
Attn: Jerome Hansen
1540 Warner Ave
Lewiston ID 83501

Idaho Assoc of Soil Conservation Dists Division II
Attn: Mr. Kyle Hawley
1180 Lewis Rd
Moscow ID 83843

Lemhi Soil and Water Conservation Service
Attn: Lynn Herbst
PO Box 21
Tendoy ID 83468

Custer Soil and Water Conservation District
Attn: Mr. Ted O'Neil
PO Box 305
Challis ID 83226

Adams Soil and Water Conservation District
Attn: Ferrell Crossley
1684 Goodrich Creek Rd
Council ID 83612

Idaho State Historic Preservation Office
Attn: Mr. Kenneth Reid
210 Main Street
Boise ID 83702

Idaho State Department of Lands
Attn: Mr. Jeremy Dedic
555 Deinhard Lane
McCall ID 83638

Idaho Department of Lands
Attn: Mr. Bob McKnight
10230 Hwy 12
Orofino ID 83544

Idaho Soil Conservation Commission
Attn: Janet Hohle
220 E. 5th Street
Moscow ID 83843

Idaho Water Resources Research Inst.
Mr. Roy Mink, Director
University of Idaho-Morrill Hall Rm 106
Moscow ID 83843

Local Govts/Agencies - County Commissioners

Board of Adams County Commissioners
PO Box 48
Council ID 83612

Board of Custer County Commissioners
PO Box 385
Challis ID 83226

Board of Idaho County Commissioners
320 W Main Room 5
Grangeville ID 83530

Board of Lemhi County Commissioners
206 Courthouse Drive
Salmon ID 83467

Federal Agencies

Natural Resource Conservation Service
PO Box 305
Challis ID 83226

Natural Resource Conservation Service
Attn: Mr. Mark Olson
201 N. Church
Salmon ID 83467

Natural Resource Conservation Service
Attn: Mr. Richard Spencer
203 N. "A" Street
Grangeville ID 83530

Natural Resource Conservation Service
Attn: Mr. Tom Yanke
847 E. 9th Street
Weiser ID 83672

U.S. Fish and Wildlife Service
Mr. Robert Ruesink, Supervisor
1387 S Vinnell Road Rm 368
Boise ID 83709

U.S. Fish and Wildlife Service
Attn: Ms Deb Mignogno
4425 Burley Drive
Chubbuck ID 83202

U.S. Fish and Wildlife Service
Bill Miller - Complex Mgr
Dworshak Hatchery
Ahsaka ID 83520

Environmental Protection Agency
Attn: Mr. Richard B. Parkin
1200 Sixth Avenue, ECO-088
Seattle WA 98101

NMFS-Hydropower Program
Attn: Mr. Richie Graves
525 NE Oregon Street
Portland OR 97232-2737

National Marine Fisheries Service
Attn: Ms. Angela Somma
10215 W Emerald Suite 180
Boise ID 83704

National Marine Fisheries Service
Attn: Mr. Dale Brege
102 College
Grangeville ID 83540

Northwest Power Planning Council
PO Box 83720
Boise ID 8372009962

Bonneville Power Administration
905 NE 11th Ave
Portland OR 97232-4169

Department of the Army
Walla Walla District - Corps of Engineers
201 N 3rd Street
Walla Walla WA 99362

Department of the Army
Idaho Falls District- Corps of Engineers
Attn: Mr. Rob Brochu
900 N Skyline Drive Suite A
Idaho Falls ID 83402

Department of the Army
Boise Regulatory Office
304 North Eighth Street, Room 140
Boise ID 83702-5820

Department of the Army
Corps of Engineers
Attn: Russ Davis - Wildlife Bio.
Dworshak Dam
Ahsaka ID 83520

Department of the Army
Corps of Engineers
Attn: Mr. Erik Peteson, Resource Manager
Dworshak Dam
Ahsaka ID 83520

Payette National Forest
Office of the Supervisor
800 W. Lakeside Ave
McCall ID 83638

Federal Agencies – Continued

New Meadows Ranger District
Attn: Mr. Dale Olson
PO Box "J"
New Meadows ID 83654

Mr. Dave Burns
Payette National Forest
PO Box 1026
McCall ID 83638

Nez Perce National Forest
Mr. Scott Russell
Route 2 Box 475
Grangeville ID 83530

Nez Perce National Forest
Attn: Phil Jahn - Staff Officer
Rt 2 Box 475
Grangeville ID 83530

U.S. Forest Service
RR 2 Box 600
Salmon ID 83467-9812

U.S. Forest Service
Attn: Mr. George Matejko
Hwy 93
Salmon ID 83467

Mr. Nick Gerhardt
Hydrologist
Nez Perce National Forest
Route 2 Box 475
Grangeville ID 83530

Clearwater National Forest
Attn: Larry Dawson
12730 Hwy 12
Orofino ID 83544

Clearwater National Forest
Attn: Mr. John Keersemaker
12730 Hwy 12
Orofino ID 83544

Bureau of Land Management
Salmon Field Office
Attn: Jude Trapani
50 Hwy 935 S
Salmon ID 83467

Bureau of Land Management
Attn: Fritz Rennebaum
Upper Columbia-Salmon/Clearwater Dist
1808 N 3rd St
Coeur d' Alene ID 83814-3407

Bureau of Land Management
Cottonwood Resource Area
Attn: Craig Johnson
Route 3 Box 181
Cottonwood ID 83522-9498

Business, Organizations

Potlatch Corporation
Attn: Terry Cundy
PO Box 1388
Lewiston ID 83501-1388

Idaho Conservation League
PO Box 844
Boise ID 83701

Trout Unlimited
Idaho Headquarters
PO Box 893
Lewiston ID 83501-0893

Idaho Water Users Association Inc
Attn: Mr. Norman M. Semanko
410 S Orchard # 144
Boise ID 83705

Idaho Rivers United
PO Box 633
Boise ID 83701-0633

Idaho Steelhead & Salmon Unlimited
PO Box 2294
Boise ID 83701-2294

The Nature Conservancy
Idaho Chapter
2015 Sunrise Rim Rd
Boise ID 83705-5157

Lemhi Model Watershed Project
Attn: Mr. John Folsom
206 Van Dreff Suite A
Salmon ID 83467

Tribal Governments

Mr. Terry Gibson, Chairman
Shoshone-Paiute Tribal Council
PO Box 219
Owyhee NV 89832

Mr. John Meisinger
CEO, Shoshone-Paiute Tribes
PO Box 219
Owyhee NV 89832

Tribal Governments – Continued

Mr. Blaine Edmo, Chairman
Fort Hall Business Council
PO Box 306
Fort Hall ID 83203-0306

Mr. Chad Colter
Director of Fish & Wildlife
Shoshone-Bannock Tribes
PO Box 306
Fort Hall ID 83203-0306

Ms. Gwen T. Davis, Chairperson
Northwestern Band of the Shoshone Nation
10108 East Forest
Brigham City UT 84302

Mr. Bruce Parry
Executive Director
Northwestern Band of the Shoshone Nation
10108 East Forest
Brigham City UT 84302

Mr. Samuel Penney, Chairman
Nez Perce Tribal Executive Committee
PO Box 305
Lapwai ID 83540-0305

Mr. Justin Gould
Chairman, Nez Perce Natural Resource Cmt
Nez Perce Tribe
PO Box 365
Lapwai ID 83540-0305

Mr. Mike Penney
Executive Director
Nez Perce Tribe
PO Box 365
Lapwai ID 83540-0305

Director, Department of Fisheries
Nez Perce Tribe
PO Box 365
Lapwai ID 83540-0305

Ira Jones
Watershed Coordinator & Focus Coord.
Nez Perce Tribe
PO Box 365
Lapwai ID 83540-0305

Mr. Dave Johnson
Deputy Director, Department of Fisheries
Nez Perce Tribe
PO Box 365
Lapwai ID 83540-0305

Nez Perce Tribe Fisheries
Attn: Chad Fialco
PO Box 365
Lapwai ID 83540

Mr. Albert Teeman, Chairman
Burns Paiute General Council
HC71, 100 Pasigo Street
Burns OR 97720-9303

General Manager
HC71, 100 Pasigo Street
Burns OR 97720-9303

Congressional Delegation

Honorable C.L. "Butch" Otter
Member, United States House of Representatives
802 West Bannock Ste 101
Boise ID 83702

Honorable Mike Simpson
Member, U.S. House of Representatives
802 West Bannock Ste 600
Boise ID 83702

Honorable Larry E. Craig
United States Senator
304 North 8th Street Rm 149
Boise ID 83702

Honorable Mike Crapo
United States Senator
304 North 8th Street Rm 338
Boise ID 83702

Libraries

Centennial Library
215 W. North
Grangeville ID 83530

APPENDIX H

PUBLIC COMMENTS AND RECLAMATION'S RESPONSES

This page left blank intentionally, for double sided printing.

IDAHO SOIL CONSERVATION COMMISSION

220 East 8th Room 212-A
Moscow, Idaho
83843

(208) 882-9007 ext. 3
Fax (208) 883-4225

Governor
Dirk Kempthorne

Commission Members

Tom Edmonds
Jerry Reed
Ed Wickersham
J. Morgan Grant
Gary Anderson

Agency Members
Gerry Winkel

December 30, 2002

Bureau of Reclamation
Snake River Area Office
214 Broadway Ave
Boise, ID 83702-7998

Attention: Mr. Joe Spinazola

Dear Joe

I have gone through the draft Programmatic Environmental Assessment and have a few comments that I will organize in this letter by page number. I have my comments don't sound too nit-picky, but as you know we have been through document peer reading here in the Clearwater so often that I tend to go into a section mode when engaging in the exercise.

Page 1-11 Paragraph beginning with "The Middle Fork Clearwater Subbasin was selected by former Governor Phil Batt" is inaccurate. Governor Batt selected the entire Clearwater River subbasin as a candidate for designation as a Focus Program in the Northwest Power Planning Council's Fish and Wildlife Program. The Middle Fork Clearwater River is one of the eight fourth field hydrologic unit codes (HUC) that comprise the Clearwater River. Furthermore work in the Clearwater is not focused in the Middle Fork. In fact, no projects have been implemented in the Middle Fork under the Focus Program to date.

Page 3-90 Section 3.5.1.3 Westslope Cutthroat Trout. Last paragraph in section relative to Middle Fork refers to Jim Ford Creek. Jim Ford Creek is not in the Middle Fork Clearwater River drainage but it is a tributary of the Clearwater River mainstem system. The confusion may stem from the 2001 draft Clearwater Subbasin Summary and the 2002 draft Clearwater Subbasin Assessment, in which sixth field HUCs with similar characteristics were clustered into Assessment Units for evaluation. The Middle Fork Clearwater River and Lolo Creek comprise one such assessment unit, although Jim Ford Creek is a tributary of neither. Finally at the very end of the paragraph the figure reference, "Figure 3.5-4" should read "Figure 3.5-1".

Page 3-93 Section 3.5.1.6 Pacific Lamprey. Last paragraph, "For the Middle Fork Clearwater Subbasin, individuals are limited to larger, accessible tributaries such as Lolo Creek (BLM) 2002." This sentence is also misleading for the same reason described in the previous comment. Perhaps also contributing to the confusion is that

Review BoR Programmatic EA
December 30, 2002

Page 3-53 continued the U.S. Fish and Wildlife Service draft Bull Trout Recovery Plan also describes one of the defined bull trout "core areas" as that containing Lolo Creek and the Middle Fork.

Page 3-66 Section 3.7 Threatened and Endangered Species Sockeye Salmon. The last paragraph that is specific to the Middle Fork says that it is listed as critical habitat. This seemed an odd designation so I checked Federal Register Volume 58, Number 247, December 28, 1993 "Designated Critical Habitats" and noted that there is nothing in the Clearwater River Subbasin listed as critical habitat for sockeye salmon.

Page 3-77 Section 3.7 Bull Trout. The Middle Fork Clearwater Subbasin section again references Lolo Creek as though it is part of the Middle Fork. See comments regarding pages 3-50 and 3-53. The USFWS draft Bull Trout Recovery Plan, Clearwater River Recovery Unit, Idaho reports that this species use the Middle Fork and tributaries for foraging, migration, rearing, and over-wintering habitat. The documents also reports that Clear Creek a tributary to the Middle Fork could potentially provide spawning and rearing habitat, although neither has been documented.

Bibliography The Clearwater subbasin summary is listed twice in the bibliography, once each under "CBFWA" and again under "NPPC". The Salmon subbasin summary is listed three times, once under "CBFWA" and twice under "NPPC". The citations for these documents I think might be more correctly shown as follows

Northwest Power Planning Council. 2001. Draft Clearwater Subbasin Summary. 307p.

Northwest Power Planning Council. 2002. Final Draft Clearwater Subbasin Assessment. 448p.

Northwest Power Planning Council. 2001. Draft Salmon Subbasin Summary. 226p.

United States Department of the Interior

BUREAU OF RECLAMATION
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7298

BUREAU OF RECLAMATIO
OFFICIAL FILE COP

SD	INIT.	DATE
[illegible]		

SRA-1300
ENV-1.10

MAR - 6 2003

Ms. Janet Hohle
Idaho Soil Conservation Commission
220 East 5th Street
Moscow, ID 83843

Subject: Response to Comments on the Draft Programmatic Environmental Assessment for Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins Under Action 149 of the December 2000 National Marine [illegible] Federal Columbia River Power System Biological Opinion

Dear Ms. Hohle:

Thank you for your comments on the subject draft Programmatic EA. I appreciate your quick response and your attention to technical details. The following narrative provides responses to the comments in your December 30, 2002, letter. Your comments are listed, followed by Bureau of Reclamation's response.

Comment: Page 1-17. Paragraph beginning with "The Middle Fork Clearwater Subbasin was selected by former Governor Phil Batt ....." is inaccurate. Governor Batt selected the entire Clearwater River subbasin.

Response: The text has been edited to reflect your comment regarding the selection of the Clearwater River Subbasin as a Focus Program in the Northwest Power Planning Council's Fish and Wildlife Program.

Comment: Page 3-50. Section 3.5.1.3 Westslope Cutthroat Trout. Jim Ford Creek is not in the Middle Fork Clearwater River drainage but is a tributary of the Clearwater River mainstem system.

Response: The text has been corrected.

Comment: Page 3-53 Section 3.5.1.6 Pacific Lamprey. Last paragraph, For the Middle Fork Clearwater Subbasin, individuals are limited to larger, accessible tributaries such as Lolo Creek (BLM 2000). Lolo Creek is not in the Middle Fork Clearwater Subbasin.

Response: The text has been corrected.

Comment: Page 3-66. Section 3.7 Threatened and Endangered Species Sockeye Salmon. Federal Register Volume 58, Number 247, does not indicate that Designated Critical Habitat is located in the Clearwater River Subbasin.

Response: The text has been corrected.

Comment: Page 3-67. Section 3.7. Bull Trout. Remove reference to Lolo Creek. The USFWS draft Bull Trout Recovery Plan, Clearwater River Recovery Unit, Idaho reports that this species use the Middle Fork and tributaries for foraging, migration, rearing, and over wintering habitat. The document also reports that Clear Creek, a tributary to the Middle Fork, could potentially provide spawning and rearing habitat, although neither has been documented.

Response: The reference to Lolo Creek has been removed. The occurrence of bull trout in Clear Creek is displayed in Figure 3.5-3 - Selected Fish Species Distribution, Middle Fork Clearwater Subbasin. These data were obtained from the Idaho Department of Fish and Game, which were the most accurate data available. Reclamation has coordinated with USFWS to update these data, and the text has been edited to reflect this information.

Comment: Bibliography. Consistency is needed when referencing the NPPC Clearwater Subbasin Summary and the Clearwater Subbasin Summary.

Response: The Bibliography and references in the text have been edited to provide consistency.

Your comments will help us provide current and accurate information for this final stage of the Environmental Assessment process. If you have any questions regarding the response to your comments, please contact me at 208-334-9856.

Sincerely,

Acting

Jim Spinazola
Activity Manager
ESA Programs

bc: PN-6407 (Jensen-Lark)

WBR:JSpinazola:rarel:rev 3/3/00 208-334-9856 SRA-1203
N:\common\SRA\DUI\workfiles\Doc 5\DOSCC.doc

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
201 NORTH THIRD AVENUE
WALLA WALLA, WASHINGTON 99362-1876

REPLY TO ATTENTION OF

DEC 19 2000

Planning, Programs, and Project Management Division

Mr. Joe Spinazzola
Bureau of Reclamation
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7298

Dear Mr. Spinazzola:

Thank you for sending the Programmatic Environmental Assessment for Implementing Fish Habitat Improvement Measures on Four Mountain Snake Province Sub-basins under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion for our review and comment.

The Walla Walla District, Corps of Engineers (Corps), does not have any comments on the draft programmatic environmental assessment on fish habitat improvement activities, but we would like to make you aware of a project we are conducting along the Salmon River in Challis, Idaho.

The Corps is currently in the study phase of an environmental restoration project along the Salmon River in Challis, Idaho. A project of this type is authorized under Section 206 of the Flood Control Act of 1960. The project is the Salmon River, Section 206 Environmental Restoration Project. The project area encompasses the Round Valley reach of the Salmon River that is the 12 miles between the Highway 93 Bridge and Broyles Bridge in Custer County near Challis, Idaho. The goal of the project is to utilize bioengineering techniques to the extent practicable to reduce existing bank erosion and restore natural channel function and aquatic and riparian biological processes. The Custer Soil and Water Conservation District has agreed to be the sponsor and will use Bonneville Power Administration funding. The sponsor, in support of the Custer County Watershed Group, has demonstrated a strong community commitment towards the continued sustained ecological values of the Salmon River and its resources.

We appreciate the opportunity to review your draft programmatic environmental assessment addressing Action 149 of the Biological Opinion. You may contact Mr. Jeff Sedgewick at 509-527-7210 if you have any questions.

Sincerely,

Harry L. Cunningham
Major, Corps of Engineers
Deputy District Commander

IDAHO STATE HISTORICAL SOCIETY

Dirk Kempthorne
Governor of Idaho

Steve Guerber
Executive Director

December 31 2002

Mr. Jerrold D. Gregg
Bureau of Reclamation
Snake River Area Office
214 Broadway Ave.
Boise, Idaho 83702-7256

RE: SHPO Comments on the *Draft Programmatic Environmental Assessment for Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion*

Dear Mr. Gregg,

Thank you for requesting our views on the above referenced Programmatic Environmental Assessment (PA). Our comments focus on Section 3.10 Cultural Resources

Section 3.10.1.3. Historic Context. The second sentence of the first paragraph should be corrected to read: *Lewis and Clark traveled along the Lemhi and Clearwater rivers ...*

Section 3.10.2.1: Regulatory Setting. To introduce language specific to the Section 106 Review process, the first sentence should begin by saying: *Important cultural resources, or historic properties, are given consideration...*

Similarly, the third and fourth sentences should be rewritten as follows: *A step-by-step process for identifying, evaluating, and, if necessary, mitigating adverse effects on historic properties is provided in 36CFR800. Historic properties include cultural resources such as archaeological and historic sites, TCPs, historic landscapes, and buildings, structures, and objects that are eligible for listing in the National Register of Historic Places*

Since many of the projects will take place on private lands, a short paragraph should be added about Idaho's Protection of Graves Act. The 1984 State law requires notification to the director of the Idaho State Historical Society when human skeletal remains are discovered on any non-Federal lands. A copy of the law is enclosed, but it can also be found on the Idaho State website www.accessidaho.org under Government/Legislature/Idaho Statutes/Title 27/Chapter 5

Section 3.10.2.2. High Probability Areas. This paragraph should note that all projects must be reviewed under Section 106 regardless of a project's location relative to a high probability area. It should also clarify that, generally speaking, there has not been enough survey completed in Idaho to confidently identify high- or low-probability areas.

3.10.2.4: Proposed Action. The paragraph describing the effects of screens on archaeological sites states that most sites where screens will be installed have been disturbed. Have these locations been surveyed, or is the Bureau of Reclamation just assuming this condition since the screens will be installed in agricultural fields? Unless the locations have been surveyed, this sentence should be revised or deleted. Routine agriculture activity does not usually disturb an archaeological site to the extent that it would no longer be eligible for the National Register. In fact, several of Idaho's most significant archaeological sites have been found in agricultural fields.

The last sentence under Cumulative Impacts is confusing. Site surveys are not always conducted under Section 106 Reviews, and the Reclamation's BMPs seem to be focused on the best management of natural, not cultural, resources. To address cumulative effects on historic properties, this sentence should be revised to state that: *Timely project review under Section 106 of the NHPA would result in avoiding cumulative effects on historic properties.*

3.10.3: Mitigation. Once again, both paragraphs should reference Section 106 Review. The second paragraph describes the review process, but *Section 106 Review* should be specifically mentioned.

We feel that these changes will more accurately reflect how historic properties are considered and treated under the Federal preservation program. If you have any questions, feel free to contact me at 208-334-3847.

Sincerely,

Susan Pengilly Heikkila
Deputy SHPO and
Compliance Coordinator

cc: Ray Leitch, Bureau of Reclamation

United States Department of the Interior

BUREAU OF RECLAMATION
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7298

IN REPLY REFER TO:

SRA-1203
ENV-1.10

MAR - 6 2003

BUREAU OF RECLAMATION
OFFICIAL FILE COPY

TO	INIT	DATE
[illegible]		
CONTROL #		
FOLDER #		

Ms. Susan Pengill Neitzel
Deputy SHPO and Compliance Coordinator
Idaho State Historical Society
210 Main Street
Boise, ID 83702

Subject: Response to Comments on the Draft Programmatic Environmental Assessment Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins Under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion

Dear Ms. Pengill Neitzel:

Thank you for your comments on the subject draft Programmatic EA. The following narrative provides responses to the comments in your December 31, 2002, letter. Your comments are listed, followed by Bureau of Reclamation's response.

Comment: Section 3.10.1.3: Historic Context. The second sentence of the first paragraph should be corrected to read: *Lewis and Clark traveled along the Lemhi and Clearwater rivers.*

Response: The text has been edited according to your recommendations.

Comment: Section 3.10.2.1: Regulatory Setting. To introduce language specific to the Section 106 Review process, the first sentence should begin by noting: *Important cultural resources, or historic properties, are given consideration…*

Response: The text has been edited according to these recommendations and the following paragraph of your recommendations. In addition, a reference to Idaho's Protection of Graves Act has been added as requested.

Comment: Section 3.10.2.2: High Probability Areas. This paragraph should note that all projects must be reviewed under Section 106 regardless of a project's location relative to a high probability area. It should also clarify that, generally speaking, there has not been enough survey completed in Idaho to confidently identify high, or low, probability areas.

Response: The text has been edited according to these recommendations.

Comment: 3.10.2.4 Proposed Action. The paragraph describing the effects of screens on archaeological sites states that most sites where screens will be installed have been disturbed. Have these location been surveyed or is the Bureau of Reclamation……

Response: The text has been edited to indicate that Section 106 Reviews will be conducted prior to earth-moving activity for specific projects. The wording that you provided for Cumulative Effects has been added to the text.

Comment: 3.10.3. Mitigation. Once again, both paragraphs should reference Section 106 Review. The second paragraph describes the review process, but Section 106 Review should be specifically mentioned.

Response: The text has been edited according to these recommendations.

Your comments will help us provide current and accurate information for this final stage of the Environmental Assessment process. If you have any questions regarding the response to your comments, please contact Joe Spinazola at 208 334-9856.

Sincerely,

JERROLD D. GREGG

Jerrold D. Gregg
Area Manager

bc: PN-6403 (Jansen-Lutz)
SRA-1203 (Spinazola), SRA-6116 (Leicht)

WBR:JSpinazola:cas:Ianuar3/3/03:208-334-9856:SRA-1203
N:\common\SRA100\workfiles\Joe SMDAHOH-1.DOC

United States Department of the Interior

FISH AND WILDLIFE SERVICE

[illegible]
[illegible]
[illegible]
Telephone (208) 237-6975 Fax Number (208) 237-9421

January 8, 2003

Joe Spinazola
United States Bureau of Reclamation
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7298

Subject: Draft Programmatic Environmental Assessment for Implementing Fish Habitat Measures under NMFS Federal Columbia Power System Biological Opinion

File: 1-4-03-I-0043

Dear Joe,

This is in response to your request for United States Fish and Wildlife Service (Service) comments on the draft Programmatic Environmental Assessment for Implementing Fish Habitat Measures under NMFS Federal Columbia Power System Biological Opinion (EA). The Service has reviewed the draft EA and has provides the comments below. The Service's comments are provided in accordance with section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*) and the National Environmental Policy Act (NEPA).

General Comments

We were impressed with the quality of this draft. This is a well written document that contains good information needed in an environmental assessment. It is well organized and specific information is easily found in the text. The maps are easy to read and, with a few exceptions that are noted below, incorporate the latest scientific information available.

Some maps do not show existing bull trout waters. Bull trout are known to exist in areas not shown on the distribution map for the Little Salmon Subbasin. These areas include at least one known spawning population (Hard Creek), as well as Boulder Creek, Yellow Jacket Creek, upper Hazard Creek, and other smaller headwater tributaries known to support bull trout populations.

The Service recently proposed critical habitat for bull trout in the sub-basins the EA covers. It would be prudent to include this proposed habitat in your discussions of each sub-basin. In addition, an assessment of the potential impacts of the described projects to proposed critical habitat would be useful.

Specific Comments

Chapter 3.6.2; page 3-61: It is stated that no impacts on migratory birds were anticipated. The consolidation of irrigation ditches may reduce the amount of habitat for waterfowl and other species (such as amphibians and hydric plants). These "artificial" wetlands may be important to some species and the Service believes these types of impacts should be assessed.

Chapter 4.1.1; page 4-1: This section describes the BOR's intentions with regard to the requirements of section 7 of the ESA. In paragraph 1, the BOR states that implementation of the proposed program may affect, but is not likely to adversely effect, the bull trout. However, later in paragraph 3, BOR states that it expects formal consultation may be required for specific projects.

If implementation of the program would result in a specific project causing adverse effects (either short-term or long-term effects) to the bull trout, then implementation of the proposed program is likely to adversely affect bull trout and BOR should request initiation of formal consultation with the FWS.

If the subject EA is to be considered the BOR's Biological Assessment for the purposes of consultation, the EA should include the following information required to request initiation of formal consultation with the FWS, as outlined in 50 CFR 402.14(c):

1) A description of the action to be considered;
2) A description of the specific area that may be affected by the action;
3) A description of any listed species or critical habitat that may be affected by the action;
4) A description of the manner in which the action may affect the bull trout (proposed critical habitat should also be considered) and an analysis of any cumulative effects; and
5) Any other relevant available information on the action, the affected listed species or critical habitat.

In addition, because critical habitat has been proposed for bull trout in the action area, the Service encourages the BOR to use this opportunity to initiate a conference with the Service. This would help avoid delays in project implementation, as the conference can be used as a Biological Opinion (BO) once critical habitat designation is final and as long as no new information becomes available that contradicts the BO. The Service would like to work closely with the BOR to gather information needed for conference. Please contact Alison Beck-Haas for more information regarding this opportunity at 208-378-5384 or at alison_beckhaas@fws.gov.

Appendix B; page B-5: NMFS approved in-water work periods do not consider times sensitive to bull trout spawning. Nor does it state that bull trout will be surveyed for in the work area prior to project implementation. The Service would like to see a commitment to avoid in-stream work during critical periods of the bull trout life cycle (August 15 - September 30) and to survey for adults if project area is in bull trout waters.

Appendix B; page B-6: Fish handling and transfer protocols: The actions described in this section may adversely affect bull trout and result in "take". If biologists employed by the Idaho Department of Fish and Game perform the capturing, removing, and/or otherwise handling the listed fish, they would be covered under their Section 6 cooperative agreement, for which the requirements of Section 7 of the ESA have already been met.

Appendix B; page B-7: The word "anadromous" does not include bull trout found in the areas described in the EA. Changing this to "salmonid" would be an acceptable revision. The Service would like to be contacted in the same manner described in 7.3 if bull trout are found in the project area.

Appendix B; page B-9: The Service would like to participate in these meetings.

Thank you for the opportunity to comment on this document and for including the Service in this process at an early stage. We hope that our comments are helpful and look forward to working with the BOR on these projects in the future. If any questions or clarifications are needed, please contact Chris Witt at 208-237-6975 X35 (or chris_witt@fws.gov).

Sincerely,

Deishie Mizuguchi
Supervisor
Eastern Idaho Field Office

United States Department of the Interior

BUREAU OF RECLAMATION
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7208

IN REPLY REFER TO:
SRA-1203
ENV-1.10

MAR 12 2003

MEMORANDUM

To: Ms. Debbie Mignogno, Supervisor, U.S. Fish and Wildlife Service, Eastern Idaho Field Office, 4425 Burley Drive, Chubbuck, ID 83202

From: Jerrold D. Gregg
Area Manager JERROLD D. GREGG

Subject: Response to Comments on the Draft Programmatic Environmental Assessment for Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion

Thank you for your comments on the subject draft Programmatic EA. The following narrative provides responses to the comments in your January 8, 2003, letter. Your comments are listed, followed by Reclamation's response.

Comment: Bull trout are known to exist in areas not shown on the distribution map for the Little Salmon Subbasin.

Response: Early in 2002, Reclamation held several meetings with USFWS and National Marine Fisheries Service staff to introduce Reclamation's fish habitat program and to solicit ideas in developing Best Management Practices for these projects. In addition, Reclamation explained that they would be using Idaho Department of Fish and Wildlife's GIS database to indicate distribution of species listed or proposed under the Endangered Species Act. This database contains the most updated information available, and data are compiled from federal and state resource agencies. In addition, Reclamation requested updated information from USFWS and NMFS staff regarding distribution and spawning times for fish species under their jurisdiction in the four subbasins of interest. USFWS responded at that time that they did not have the resources to be able to provide any data.

Based on a recent phone conversation with Kendra Wolmuck of USFWS, who compiled the Proposed Critical Habitat data for the Little Salmon Subbasin, it does not appear that this updated information is available in a digital format. The text in the bull trout section has been edited to reflect the distribution information provided in your comment letter.

Comment: The EA does not indicate the recently proposed critical habitat for bull trout in the subbasins.

Response: USFWS proposed bull trout critical habitat on November 29, 2002, after the issuance of the EA in October 2002. The proposed critical habitat supplied on the USFWS in GIS format will be displayed in the Final EA, along with a discussion regarding any effects to this habitat.

Comment: Chapter 3.6.2, page 3-61. It is stated that no impacts on migratory birds were anticipated. The consolidation of irrigation ditches may reduce the amount of habitat for waterfowl and other species (such as amphibians and hydric plants). These "artificial" wetlands may be important to some species, and the Service believes these types of impacts should be addressed.

Response: Irrigation ditches are maintained for the efficient conveyance of water and are regularly cleaned, mowed, or burned to remove vegetation and sediment. While the ditches themselves provide marginal habitat at best, there may be some circumstances where seepage from unlined ditches supports adjacent wetland habitat. In such cases, consolidation of drainage ditches may reduce the amount of artificial/created wetlands while benefiting the flow regime of the stream. The narrative in this section has been edited to acknowledge the potential effect of drainage canal consolidation. Reclamation would coordinate site-specific project implementation with USFWS and would adhere to the Best Management Practices, including site restoration, included in the appendix of the EA.

Comment: Chapter 4.1.1, page 4-1. The section describes the BOR's intentions with regard to the requirements of Section 7 of the ESA. In paragraph 1 the BOR states that implementation of the proposed program may affect, but is not likely to adversely effect, the bull trout. However, later in paragraph 3, BOR states that it expects formal consultation may be required for specific projects. If implementation of the program would result in a specific project causing adverse effects (either short-term of long-term effects) to the bull trout, then implementation of the proposed program is likely to adversely affect bull trout and BOR should request initiation of formal consultation with USFWS.

Response: The language of this section has been altered to better reflect Reclamation's commitment to coordinate with FWS regarding the implementation of habitat improvement measures.

Comment: If the subject EA is to be considered the BOR's Biological Assessment for the purposes of consultation, the EA should include the following information required to request initiation of formal consultation with the USFWS, as outlined in 50 CFR 402.14(c):

1) A description of the action to be considered;
2) A description of the specific area that may be affected by the action;
3) A description of any listed species or critical habitat that may be affected by the action;
4) A description of the manner in which the action may affect the bull trout (proposed critical habitat should also be considered) and an analysis of any cumulative effects; and
5) any other relevant available information on the action, the affect listed species or critical habitat.

Response: The Programmatic EA has been revised to meet only NEPA obligations and no longer is intended to also serve as a BA. Paragraph 2 in section 3.7.1 on p. 3-62 was revised to be consistent with this change.

Comment: Because critical habitat has been proposed for bull trout in the action area, USFWS encourages Reclamation to use this opportunity to initiate a conference with USFWS.

Response: Reclamation will coordinate with USFWS staff to integrate conferencing on proposed critical habitat with consultation on ESA-listed species.

Comment: Appendix B; Page B-3. NMFS approved in-water periods do not consider times sensitive to bull trout spawning. Nor does it state that bull trout will be surveyed for in the work area prior to project implementation. USFWS would like to see a commitment to avoid in-stream work during critical periods of the bull trout life cycle (August 15-September 30) and to survey for adults if a project area is in bull trout waters.

Response: The text has been edited to include provisions for avoiding stream work from August 15 through September 30, and for conducting surveys for adults in bull trout waters for in-stream construction projects.

Comment: Appendix B; page B-6. Fish handling protocols. The actions described in this section may adversely affect bull trout and result in "take". If biologists employed by the Idaho Department of Fish and Game perform the capturing, removing, and/or otherwise handling the listed fish, they would be covered under their Section 6 cooperative agreement, for which the requirements of Section 7 of the ESA have already been met.

Response: Reclamation will coordinate fish handling activities among USFWS, NMFS, and IDFG.

Comment: Appendix B, page B-7. the word "anadromous" does not include bull trout found in the areas described in the EA. Changing this to "salmonid" would be an acceptable revision. The Service would like to be contacted in the same manner described in 7.3 if bull trout are found in the project area.

Response: The text was edited as recommended.

Comment: Appendix B, page B-9. USFWS would like to participate in these meetings.

Response: The text has been edited to include USFWS in annual meetings.

Your comments will help us provide current and accurate information for this final stage of the Environmental Assessment process. If you have any questions regarding the response to your comments, please contact Joe Spinazola at 208-334-9856.

bc: PN-6403 (Jansen-Lutz), SRA-1203 (Spinazola)

WBR:JSpinazola:rcox:2/28/2003:208-334-9856:SRA-1203
N:\common\SRA100\workfiles\Stark\USFishdWildl.doc

Nez Perce Tribe
Department of Fisheries
Watershed Division
P.O. Box 365
Lapwai, ID 83540
Phone: (208) 843-7144 • Fax: (208) 843-9192

January 9, 2002

Mr. Joe Spinazola
U.S. Department of the Interior
Bureau of Reclamation
Snake River Area Office
214 Broadway Avenue
Boise, ID 83702-7298
Via email: jspinazola@pn.usbr.gov
Via telefax (208) 334-9562

Re: Comments on BOR's Programmatic EA for Implementing RPA 149

Mr. Spinazola,

Thank you for granting the Nez Perce Tribe (the Tribe) an extension for submitting comments to the U.S. Bureau of Reclamation (BOR or the Bureau) on the draft "Programmatic Environmental Assessment for Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion" (hereinafter referred to as the Programmatic EA).

The Tribe is governed by the Nez Perce Tribal Executive Committee (NPTEC), which governs or co-manages over 13.5 million acres across Idaho, Oregon, and Washington, including the Mountain Snake Province Subbasins covered by this Programmatic EA. The Tribe has extensive treaty rights throughout the province, and has worked for decades to manage and improve treaty resources, especially fish and wildlife habitat through the Nez Perce Tribe Department of Fisheries Resources Management (NPTDFRM).

The Watershed Division of the NPTDFRM is focused on protecting, restoring, and enhancing watersheds and all treaty resources throughout Nez Perce Treaty Territory by using a holistic approach, which encompasses entire watersheds—ridge-top to ridge-top—emphasizing all cultural aspects, and helping to restore healthy, productive ecosystems. To guide these efforts, the Nez Perce Tribe, through its own fisheries programs and the Columbia River Inter-Tribal Fish Commission (CRITFC), has developed and implemented a comprehensive salmon recovery plan. *See* CRITFC, *Wy-Kan-Ush-Mi Wa-Kish-Wit: Spirit of the Salmon: The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes* (1995). The Watershed Division commends the Bureau on its efforts to integrate environmental analysis for implementing its legal responsibilities under RPA 149 of the 2000 FCRPS BiOp. However, the Watershed Division does have some comments and concerns to

raise with the Bureau in order to ensure adequate analysis of the impacts to treaty rights and trust resources of the Nez Perce Tribe.

1. Selection of Subbasins—Tribal Consultation

We understand that the Bureau has selected the Lemhi, Upper Salmon, Middle Fork Clearwater, and Little Salmon Subbasins for implementing the actions covered by this Programmatic EA. Each of these subbasins is located within the territory of the Nez Perce Tribe. The Middle Fork Clearwater is within the boundaries of the Nez Perce Reservation, and the other three subbasins are within the ceded territory of the Nez Perce Tribe, as defined by the Treaty of 1855, 12 Stat. 957, and the Indian Claims Commission. In Article III of this treaty, the Nez Perce Tribe explicitly reserved to themselves "the right to fish at all usual and accustomed places in common with the citizens of the Territory." This right includes the area identified by the Programmatic EA.

The Watershed Division Commends the Bureau for including several sections in the Programmatic EA that pertain to tribal concerns with respect to cultural resources (3.10), sacred sites (3.11), Indian trust assets (3.12), environmental justice (3.13), and tribal consultation (4.2).

a. Cultural Resources, Sacred Sites & Indian Trust Assets

Sections 3.10–3.12 discuss potential effects to cultural resources, sacred sites, and Indian trust assets. The Tribe has not had an adequate opportunity to evaluate the potential effects to these resources from the Bureau's implementation of RPA 149. The Bureau should identify a process for further consultation and coordination with the Nez Perce Tribe for handling such important issues. The unique character of these resources and the controversy that could erupt from disturbance of such resources indicate that this is a major federal action with significant environmental impacts which likely requires a more detailed analysis by conducting environmental impact statement (EIS). Specifically, the Programmatic EA contains no discussion of cumulative impacts to fishing and hunting rights retained by the Nez Perce Tribe. We encourage you to conduct an EIS on the potential impacts to these resources or to explain how the EA satisfies such analysis.

b. Tribal Consultation

We feel that tribal consultation and coordination should have been greater than is reflected in section 4.2. We feel that the Bureau should have consulted with the Nez Perce Tribe before selecting which subbasins to implement RPA 149. Executive Order 13175 directs federal agencies to consult and coordinate with tribal governments. To this end, the Nez Perce Tribe encloses a copy of "Nez Perce Tribe Guidance on Government-to-Government Consultation" for your consideration on how to conduct future consultation with the Tribe for Bureau projects that affect the Tribe's treaty rights and trust resources. Had the Bureau consulted with the Tribe, different subbasins may have been chosen to better coordinate the Bureau's actions with the Tribe's reservation work. Further, we request that the Bureau include an evaluation of the consistency of its efforts with *My_Kee_Um_Mi, We_Kin_Wit*. We invite you to so consult with us for future selection of subbasins and the types of actions that can be implemented.

2. Constraints to Purpose and Need—Legal Authority

The Bureau states that the scope of this Programmatic EA will be constrained by certain limitations, including, but not limited to: (1) "Reclamation will be responsible for activities and actions that *only occur within the stream*"; (2) "Reclamation will address issues/needs that have been caused *by irrigation activities*"; and, (3) all actions will take place on non-public land." Programmatic EA at 1-2 (emphasis added). We disagree with these constraints and urge the Bureau to seek additional legal authorities if needed.

a. Activities Within the Stream

The EA contains no discussion as to why the Bureau takes the position that its activities are limited only to activities inside the streambed. Surely the Bureau has legal authority to restore riparian and associated habitat impacted by Bureau actions. We urge the Bureau to interpret its legal authority to allow riparian and upland habitat restoration activities under the Programmatic EA. If the Bureau does not agree that it has adequate legal authority to conduct riparian and upland habitat restoration, then the Bureau should explain this in the EA. Further, the Bureau should enter into multi-agency agreements or seek additional legal authority from Congress to allow such restoration activities.

b. Issues and Needs Caused by Irrigation Activities

We agree that the Bureau is responsible for mitigating past and present habitat degradation caused by irrigation. However, the Programmatic EA does not adequately explain why this is a constraint for the Bureaus' implementation of RPA 149. RPA 149 is one of many actions that NOAA Fisheries required of federal agencies under the 2000 FCRPS BiOp. The BiOp requires the federal agencies to conduct these actions in order to offset and mitigate for the impacts to threatened and endangered salmonids that are caused by the operation *of* the Federal Columbia River Power System, not just from irrigation.

We urge the Bureau to interpret its legal authority to implement RPA 149 of the 2000 FCRPS BiOp in a way that addresses issues and needs caused by the operation of the FCRPS, not just from irrigation. The Bureau operates two projects on the FCRPS: Grand Coulee Dam and Hungry Horse Dam. The authorizing legislation for both of these projects expressly states that the project purposes include irrigation, flood control, and power production. Furthermore, the administrator of Bonneville Power Authority disposes of power generated at reclamation projects in accordance with Reclamation laws, including but not limited to Executive Order 8526, 5 Fed. Reg. 3390; and Secretarial Order 2860, 27 Fed. Reg. 591. In 1945, Congress passed the Rivers and Harbors Act 1945, 59 Stat. 10, authorizing "such dams as are necessary" for the purpose of navigation, irrigation, then surplus power was to be transmitted to the Secretary of the Interior for disposition in accordance with the laws governing the disposition of power for the Bonneville project. The Northwest Power Act mandated that federal agency consider fish and wildlife on an equal basis with project operations.

The Bureau's legal authority is at least this broad; habitat restoration activities should not be constrained to only irrigation. But rather, the Bureau's legal authority is at least as strong as the

project purposes (flood control, irrigation, and power), and further bolstered by the Northwest Power Act for fish and wildlife purposes. Therefore, the Bureau's authority to implement RPA 149 should not be interpreted to be restricted to only irrigation. If the Bureau does not agree that it has adequate legal authority to mitigate for operation of the FCRPS beyond irrigation, then the Bureau should explain this in the EA. Further, the Bureau should enter into multi-agency agreements or seek additional legal authority from Congress to allow such mitigation activities.

c. All Actions on Non-Public Land.

The EA does not adequately explain this purported constraint—please explain.

Again, we commend the Bureau for its efforts to integrate an analysis of the effects to tribal issues and trust assets in the Programmatic EA for implementing its legal responsibilities under RPA 149 of the 2000 FCRPS BiOp. We hope you will take these comments under full consideration; we look forward to receiving the final EA upon its completion, or an indication from the Bureau that an EIS will be prepared. Thank you for granting the Tribe an extension for submitting these comments to the Bureau.

Sincerely,

for Ida Jones, Director, Watershed Division

Enclosure: Nez Perce Tribe Guidance on Government-to-Government Consultation

cc: Jerrold D. Gregg
Rick Eichstaedt
Dave Johnson

NEZ PERCE TRIBE

GUIDANCE ON GOVERNMENT-TO-GOVERNMENT CONSULTATION

As a fiduciary, the United States and all its agencies owe a trust duty to the Nez Perce Tribe and other federally-recognized tribes. *See United States v. Cherokee Nation of Oklahoma*, 480 U.S. 700, 707 (1987); *United States v. Mitchell*, 463 U.S. 206, 225 (1983); *Seminole Nation v. United States*, 316 U.S. 286, 296-97 (1942). This trust relationship has been described as "one of the primary cornerstones of Indian law," Felix Cohen, Handbook of Federal Indian Law 221(1982), and has been compared to one existing under the common law of trusts, with the United States as trustee, the tribes as beneficiaries, and the property and natural resources managed by the United States as the trust corpus. *See, e.g., Mitchell*, 463 U.S. at 225.

The United States' trust obligation includes a substantive duty to consult with a tribe in decision-making to avoid adverse impacts on treaty resources and a duty to protect tribal treaty-reserved rights "and the resources on which those rights depend." *Klamath Tribes v. U.S.*, 24 Ind. Law Rep. 3017, 3020 (D.Or. 1996). The duty ensures that the United States conduct meaningful consultation "in advance with the decision maker or with intermediaries with clear authority to present tribal views to the . . . decision maker." *Lower Brule Sioux Tribe v. Dorr*, 911 F.Supp 395, 401 (D. S.D. 1995).

Further, Executive Order 13175 provides that each "agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." According to the President's April 29, 1994 memorandum regarding Government-to-Government Relations with Native American Tribal Governments, federal agencies "shall assess the impacts of Federal Government plans, projects, programs, and activities on tribal trust resources and assure that Tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities." As a result, Federal agencies must proactively protect tribal interests, including those associated with tribal culture, religion, subsistence, and commerce. Meaningful consultation with the Nez Perce Tribe is a vital component of this process.

Consultation is the formal process of negotiation, cooperation, and mutual decision-making between two sovereigns: the Nez Perce Tribe (NPT) and the United States (including all federal agencies). Consultation is the process that ultimately leads to the development of a decision, not just a process or a means to an end. The most important component of consultation is the ultimate decision.

Consultation does not mean notifying the Tribe that an action will occur, requesting written comments on that prospective action, and then proceeding with the action. In this scenario the decision is not affected. "Dear Interested Party" letters are not consultation. It is equally important to understand that as a sovereign government, a Tribe may elect not to conduct government-to-government consultation or may decide to limit the scope of their consultation as needed.

Objectives of Consultation:

1. Assure that the Nez Perce Tribal Executive Committee (NPTEC) understands the technical and legal issues necessary to make an informed policy decision;

2. Assure federal compliance with treaty and trust obligations, as well as other applicable federal laws and policies impacting tribal culture, religion, subsistence, and commerce;

3. Improve policy-level decision-making of both NPTEC and federal government;

4. Bilateral decision-making among two sovereigns (co-management of resources);

5. Ensure the protection of NPT resources, culture, religion, and economy;

6. Ensure compliance with tribal laws and policies;

7. Develop and achieve mutual decisions through a complete understanding of technical and legal issues; and

8. Improve the integrity of federal-tribal decisions.

Process of Consultation:

Consultation works through both technical and policy-level meetings to differentiate between technical and policy issues allowing for proper technical level staff consultation and then policy-level consultation for those issues that remain unresolved or for those issues that are clearly only resolvable at the policy level. Consultation is the process of coming to common understanding of the technical and legal issues that affect, or are affected by, a decision and then using this understanding to formulate a decision.

Meaningful consultation requires that federal agencies and Tribes their understand respective roles and have a basic understanding of the legal underpinnings of the government-to-government relationship, including the responsibility of the federal government under the Trust doctrine. In addition, federal agencies will benefit from some understanding of tribal culture, perspectives, world view, and treaty rights. Tribal governments must understand the policy decision-making authority of the federal agency. Tribal governments must understand the non-tribal politics of the federal agency decision that consultation will affect.

In these examples, it is critical to note that a tribal government cannot understand the politics of the federal agency decision without personal communications. Similarly, the federal agency cannot understand the Tribe's issues and concerns unless agency staff met with the Tribe to discuss those issues and concerns. Without communication, consultation is meaningless and a mutual decision is difficult or impossible.

The consultation process works like this:

1. Federal agency contacts NPTEC or its appointed position-keeper to notify of an upcoming project proposal or to conduct an activity that may or may not impact a tribal resource.

2. NPTEC responds back that this issue is important and that it would like to initiate consultation. NPTEC requests federal agency technical experts meet with tribal technical staff (or NPTEC requests a policy level meeting).

3. Consultation has been initiated. Technical staffs meet. Technical and legal issues are discussed, the result is that tribal staff understand the proposal and federal agency staff understand at technical level why this proposed activity is of concern to the Tribe. This allows respective technical staff to brief respective policy entities and to provide informed opinions and recommendations.

4. Tribal staff briefs NPTEC. Consultation is then held between policy-level decision-makers from both the Tribe and the federal agency.

5. Additional meetings are held, if necessary, leading up to the decision.

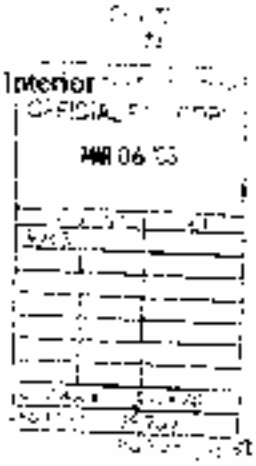
6. Federal agency and Tribe formulate a decision. Assurances are made that the decision is consistent with federal laws and tribal laws and policies. This means the decision is consistent with applicable natural and cultural resources laws and policies. For the NPT specifically, it means the decision protects the resources in which the NPT has specific treaty-reserved rights and enables continued practice of tribal religious, cultural, and subsistence activities.

These steps may be adapted to suit the needs of the decision-making process leading to the formulation of a decision.

United States Department of the Interior

BUREAU OF RECLAMATION
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7294

MAR - 5 2003



9RA-1200-SRA-1104
ENV-1.10

Mr. Ira Jones
Director, Watershed Division
Department of Fisheries
Nez Perce Tribe
P.O. Box 365
Lapwai, ID 83540

Subject: Response to Comments on the Draft Programmatic Environmental Assessment for Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins Under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion

Dear Mr. Jones:

Thank you for your comments on the subject draft Programmatic Environmental Assessment. The following narrative provides responses to the comments in your January 9, 2003, letter signed by Sean Althouse on your behalf. Your comments are listed, followed by Bureau of Reclamation's response.

1. Selection of Subbasins - Tribal Consultation.

a. Cultural Resources, Sacred Sites, and Indian Trust Assets.

Comment: The Bureau should identify a process for further consultation and coordination with the Nez Perce Tribe for handling such important issues . . . Specifically, the Programmatic EA contains no discussion of cumulative impacts to fishing and treaty rights retained by the Nez Perce Tribe. We encourage you to conduct an EIS on the potential impacts to these resources or to explain how the EA satisfies such analysis.

Response: Reclamation would like to work with the Nez Perce Tribe to identify a coordination process for handling cultural resources, sacred sites, and Indian Trust Asset issues related to implementation of flow, screen, and barrier projects outlined in the PEA. Because the programmatic EA described these types of projects in a general way, Reclamation expects that potentially there will be a wide range of circumstances that could occur with individual site-specific projects. It makes sense to coordinate now so that Reclamation can comply with Nez Perce protocols on these issues. I would very much appreciate being provided the name of one contact person with whom I could coordinate Tribal concerns.

Under Section 3.12 Indian Trust Assets, there is a discussion of the Nez Perce Tribe, a brief history of the treaties with the Federal government, and a discussion of the Nez Perce Tribe rights concerning hunting, fishing, and gathering. Further, in Section 3.12.2 Environmental Consequences, there is a discussion on the effects to these rights that includes the statement, "The rights of the tribes to hunt and/or fish that may exist would not be altered by any of the alternatives." The Cumulative Impacts section notes that there would be no impacts to ITAs. Specific language addressing no impacts to traditional hunting, fishing, or gathering sites has been added to the Cumulative Impact discussion.

Reclamation staff and managers debated whether preparation of an EA or an EIS was appropriate to meet NEPA obligations. Action 149 recognizes that existing barrier, screen, and flow deficiencies inhibit the survival and recovery of ESA-listed anadromous fish. Correction of these deficiencies by Reclamation on non-public lands is expected to provide a net long-term benefit to ESA-listed fish without imposing undue hardship to existing landowners. Furthermore, Reclamation plans to work with a wide range of other interested parties to implement Action 149 projects while meeting tribal obligations and other responsibilities under existing Federal and State laws. Considering that implementation of Action 149 projects were expected to provide benefits to ESA-listed fish and were not expected to adversely affect any other interested parties, Reclamation managers concluded that an EA was the appropriate NEPA document. Under NEPA, an EIS is not required unless there is the potential for significant impacts. Thus, an EA meets the standards set forth by NEPA, and Reclamation concluded that an EIS was not necessary.

b. Tribal Consultation.

Comment: We feel that tribal consultation and coordination should have been greater than is reflected in section 4.2. We feel that the Bureau should have consulted with the Nez Perce Tribe before selecting which subbasins to implement RPA 149.

Response: Thank you for including a copy of the "Nez Perce Tribe Guidance on Government-to- Government Consultation." I was not aware of this particular guidance and am sure to find it a useful reference as we work together in the future. Upon review of the material in the guidance, I consider myself at the technical level in relation to the Nez Perce Tribe. Consequently, I checked with Reclamation management and inquired whether consultation took place with the Nez Perce Tribe. I was informed that the Federal Caucus (National Marine Fisheries Service, U.S. Fish and Wildlife Service, Reclamation, BPA, Corps of Engineers, U.S. Forest Service, Environmental Protection Agency, Bureau of Land Management, and Bureau of Indian Affairs) developed and released the Conceptual Recovery Plan (All-H paper) in 1999. After 15 public hearings and consultation with Columbia River Basin Tribes, including the Nez Perce Tribe, the Federal Caucus released the Draft Basin-Wide Salmon Recovery Strategy. Consideration of written and verbal comments on that draft culminated with release of the Final Basinwide Salmon Recovery Strategy in December, 2000. Reclamation managers consider that Government-to-Government consultation took place during the Federal Caucus process to develop the Final Basinwide Salmon Recovery Strategy.

Information in these documents was incorporated into various parts of the NMFS Biological Opinion that includes Action 149. Sixteen priority subbasins were identified in volume 2 of the Final Basinwide Salmon Recovery Strategy. These subbasins are those that Reclamation ultimately was assigned in the Biological Opinion. There is disagreement in many circles about the current designation of subbasins. I will forward your offer to consult on selection of future subbasins and types of actions that can be implemented to Reclamation management.

Thank you for alerting me to *Wy_Kan_Ush_Mi, Wa_Kish_Wit*. I downloaded the document that includes the subbasin plans from the CRITFC web site. I plan to read it soon and identify areas that overlap between it and the projects we are able to implement in our Action 149 program.

Constraints to Purpose and Need-Legal Authority.

a. Activities within the stream.

Comment: The EA contains no discussion as to why the Bureau takes the position that its activities are limited only to activities inside the streambed. Surely the Bureau has legal authority to restore riparian and associated habitat impacted by Bureau actions.

Response: The Purpose and Need of the EA addresses the implementation of Action 149 as prescribed under the NMFS BiOp for the FCRPS. Action 149 provides specific guidelines and parameters under which Reclamation must complete its work. Reclamation does not have discretion under Action 149 to address habitat issues other than flow, barrier, and screening issues.

b. Issues and needs caused by irrigation activities.

Comment: We urge the Bureau to interpret its legal authority to implement RPA 149 of the 2000 FCRPS BiOp in a way that addresses issues and needs caused by the operation of the FCRPS, not just from irrigation.

Response: While Reclamation is aware of the complexities of issues affecting salmon in the subbasins, its scope in addressing salmon restoration in the assigned subbasins is limited to the provisions of Action 149 of the NMFS BiOp for the FCRPS. The Purpose and Need section of the EA describes the specifics of Action 149 and the parameters under which Reclamation must work.

There are 198 other Action items in the RPA that concern flood control, hydropower generation, hatcheries, research, monitoring, and evaluation, and other elements that when implemented in combination are intended to avoid jeopardy of ESA-listed anadromous fish. This EA only is intended to meet NEPA obligations for implementation of Action 149.

c. All actions on non-public land.

Comment: The EA does not adequately explain this purported constraint – please explain.

Response: Following publication of the FCRPS BiOp, NMFS coordinated with the Corps of Engineers, Bonneville Power Administration, and Reclamation regarding implementation parameters. One of the outcomes of this coordination was that Reclamation would implement Action 149 on private lands because: (1) federal land management agencies (BLM and USFS) are coordinating with NMFS regarding ESA matters on the public land they administer, (2) members of the Federal Caucus (which includes the regulatory agencies, action agencies, BLM, USFS, BIA, and EPA) have committed to helping meet BiOp objectives when implementing their program objectives whenever possible; (3) States have the lead for ESA issues on state-owned land; (4) Reclamation does not operate any projects (facilities) in any of the assigned subbasins under Action 149 and administers no land; and (5) Reclamation has a history of working successfully with landowners on water resources issues related to irrigated agriculture.

Your comments will help us provide current and accurate information for this final stage of the Environmental Assessment process. If you have any questions regarding the response to your comments please contact me at 208 334-9856.

We will provide you copies of the final EA as you requested. I look forward to working with you in the future. Please don't hesitate to contact me if you would like to talk about Action 149 or related matters.

Sincerely,

for Joe Spinazola
Activity Manager
ESA Programs

cc: Justin Gould, Chairman, Nez Perce Tribe Natural Resources Committee, Nez Perce Tribe
Dave Johnson, Manager, Department of Fisheries, Nez Perce Tribe
Scott Althouse, Watershed Division, Department of Fisheries, Nez Perce Tribe
Rick Eichstaedt, Tribal Attorney, Nez Perce Tribe
Jerold D. Gregg, Snake River Area Manager, Bureau of Reclamation

bc: Duane Mecham, Regional Solicitors Office, Portland
PN-1020 (Peddo); PN-3050 (Rigby), PN-6400 (Jansen-Lutz), SRA-1100 (Tafoya)

WBRJSpinazola:rcox:2/28/03:208-334-9856:SRA-1203
N:\common\SRA1001\workfiles\Joe SWP3.doc

United States Department of Agriculture
Forest Service
Nez Perce National Forest
Route 2, Box 475
Grangeville, ID 83530
(208) 983-1950
TTY (208) 983-1280

File Code: 2610
Date: January 3, 2003

Mr. Joe Spinazola
US Dept of the Interior
Snake River Area Office
214 Broadway Avenue
Boise, ID 83702-7298

Dear Mr. Spinazola:

Thank you for the opportunity to review the Draft Programmatic Environmental Assessment for implementing fish habitat improvement measures in four Mountain Snake Province Subbasins under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion.

Attached are some review comments. Please contact Nick Gerbrandt of this office if you have any questions or need additional information.

Sincerely,

FOR

PHIL JAHN
Heritage, Watershed, Geology and Biology Staff Officer

Enclosure

Review Comments
Draft Programmatic Environmental Assessment
Nick Gerhardt – 1/2/03

Page 1-17 – A Comprehensive State Water Plan was recently completed for the Little Salmon River subbasin. This could be referenced in the section on related activities.

Page 3-19 – Irrigation diversions are much more significant in the Little Salmon River subbasin than in the Middle Fork Clearwater River subbasin. If possible, these should be identified and mapped in the final assessment.

Page 3-31 – The Rapid River Fish Hatchery is misplaced on this map. It is located just above the mouth of Shingle Creek, rather than near the county boundary as shown.

Page 3-40 – To the best of our knowledge, golden trout have never been introduced into the Middle Fork Clearwater River subbasin.

Page 3-50 – Jim Ford Creek is not located in the Middle Fork Clearwater River subbasin.

Page 3-52 – Lolo Creek is not located in the Middle Fork Clearwater River subbasin.

Page 6-2 – The reference to R.Gerhardt should be N. Gerhardt. He is a hydrologist, rather than a biologist.

Page G-3 – "Gerheardt" is misspelled and the discipline should be hydrology, rather than fisheries.

United States Department of the Interior

BUREAU OF RECLAMATION
Snake River Area Office
214 Broadway Avenue
Boise, Idaho 83702-7298

SRA-1203
ENV-1.10

MAR - 6 2003

Mr. Phil Jahn
Heritage, Watershed, Ecology and Biology Staff Officer
USDA Forest Service
Nez Perce National Forest
Route 2, Box 475
Grangeville, ID 83530

Subject: Response to Comments on the Draft Programmatic Environmental Assessment for Implementing Fish Habitat Improvement Measures in Four Mountain Snake Province Subbasins Under Action 149 of the December 2000 National Marine Fisheries Service Federal Columbia River Power System Biological Opinion

Dear Mr. Jahn:

Thank you for your comments on the subject draft Programmatic EA. The following narrative provides responses to the comments in your January 3, 2003, letter. Your comments are listed, followed by Bureau of Reclamation's response.

Comment: Page 1-17. A Comprehensive State Water Plan was recently completed for the Little Salmon River subbasin. This could be referenced in the section on related activities.

Response: The narrative was edited according to your recommendation.

Comment: Page 3-19. Irrigation diversions are much more significant in the Little Salmon River subbasin than in the Middle Fork Clearwater subbasin. If possible, these should be identified and mapped in the final assessment.

Response: The narrative was edited to conform with your comment. Currently there is no dependable source of data for locations of irrigation diversions in the Little Salmon or Middle Fork Clearwater subbasins as there is for the Lemhi subbasin and Upper Salmon subbasin.

Comment: Page 3-31. The Rapid River Fish Hatchery is mislocated on this map. It is located just above the mouth of Shingle Creek, rather than near the county boundary as shown.

Response: The map has been edited according to your recommendation.

Comment: Page 3-40. To the best of our knowledge, golden trout have never been introduced into the Middle Fork Clearwater subbasin.

Response: Golden trout have been removed in the matrix from the Middle Fork Clearwater subbasin.

Comment: Page 3-50. Jim Ford Creek is not located in the Middle Fork Clearwater River subbasin.

Response: This reference has been removed.

Comment: Page 3-52. Lolo Creek is not located in the Middle Fork Clearwater River subbasin.

Response: This reference has been removed.

Comment: Page 6-2. The reference to R. Gerhardt should be N. Gerhardt. He is a hydrologist, rather than a biologist.

Response: The text has been edited according to your recommendation.

Comment: Page G-3. Gerheardt is misspelled and the discipline should be hydrology rather than fisheries.

Response: The text has been edited according to your recommendation.

Your comments will help us provide current and accurate information for this final stage of the Environmental Assessment process. If you have any questions regarding the response to your comments, please contact me at 208-334-9856.

Sincerely,

Joe Spinazola
Activity Manager
Acting ESA Programs

bc: PN-6403 (Jansen-Lute)

WBR:JSpinazola:caseliano:3/3/03:208-334-9856:SRA-1203
N:\common\SRA1001\workfiles\Joe SWSFS.doc