

# **Imnaha Subbasin Inventory**

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**Written by  
Ecovista**

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Nez Perce Tribe**

**Planning Team:  
Wallowa County Natural Resources Advisory Committee**

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Table 1. Acronyms used in the Imnaha Subbasin Inventory.

<b>Acronym</b>	<b>Definition</b>
<b>Agencies or Groups</b>	
BLM	U.S. Bureau of Land Management
BPA	Bonneville Power Administration (Bonneville)
CBFWA	Columbia Basin Fish and Wildlife Authority
NPCC or Council	Northwest Power and Conservation Council
EPA	U.S. Environmental Protection Agency
ICIE	Idaho Council on Industry and the Environment
NOAA Fisheries or NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPT	Nez Perce Tribe
NRCS	USDA Natural Resources Conservation Service
ODFW	Oregon Department of Fish and Wildlife
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
<b>Terms</b>	
BiOp	Biological Opinion
BMP	Best Management Practice
CRFMP	Columbia River Fish Management Plan
CRP	Conservation Reserve Program (FSA)
CWA	Clean Water Act
EOIP	Environmental Quality Incentive Program
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FCRPS	Federal Columbia River Power System
HGMP	Hatchery Genetic Management Plan
HUC	Hydrologic Unit Code
INFISH	Interim strategies for managing fish-producing watersheds in Eastern Oregon and Washington, Idaho, Western Montana and portions of Nevada
LFH	Lyons Ferry Hatchery
LOD	Large Organic Debris
LSRCP	Lower Snake River Compensation Program
PACFISH	Interim Strategies for managing anadromous fish-producing watersheds in Eastern Oregon and Washington, Idaho, and parts of California.
SPZ	Streamside Protection Zone
TMDL	Total Maximum Daily Load
WDFW	Washington Department of Fish and Wildlife
WMA	Wildlife Management Area

## 1 Introduction

The Imnaha Subbasin Inventory identifies existing projects and programs, and provides information about the context for aquatic and terrestrial species and habitat management for the Imnaha subbasin. Existing activities have been organized into four categories as suggested by the “Technical Guide for Subbasin Planners”: 1) existing protection—description of existing protection related to fish and wildlife habitats and species within the Imnaha subbasin (i.e. stream buffers, municipal or county ordinances, conservation designations, or water resources protection), 2) existing plans—description of existing fish and/or wildlife management plans and water resource management plans that affect fish and wildlife within the Imnaha subbasin, 3) management programs—description of ongoing or planned management programs or initiatives that have a significant effect on fish, wildlife, water resources, riparian areas, and/or upland areas in the Imnaha subbasin, and 4) restoration and conservation projects—description of existing restoration and conservation projects related to fish and wildlife habitats and species within the Imnaha subbasin.

The information within the inventory was voluntarily provided by management entities within the subbasin. In some cases brief information was taken directly from agency web sites while in other instances the agencies worked closely with our staff to provide more in depth information. In all cases, the best information available was used and efforts were made to represent all information in a consistent manner. The information within the inventory should not be considered to be an all-inclusive list of activities related to fish and wildlife within the Imnaha subbasin, but only contains the information that was currently available during this process.

Web sites consulted include Grande Ronde Model Watershed, <http://www.fs.fed.us/pnw/modelwatershed/grmwp-project-page.html#DB> and [http://www.fs.fed.us/pnw/modelwatershed/docs/project-inventory/grbasin\\_2000\\_projectreport.pdf](http://www.fs.fed.us/pnw/modelwatershed/docs/project-inventory/grbasin_2000_projectreport.pdf); Northwest Power and Conservation Council, <http://www.nwcouncil.org/fw/subbasinplanning/displayprojects.asp?id=27>.

Agencies consulted include Natural Resource Conservation Service, The Nature Conservancy, Oregon State University Extension, Wallowa Resources; Wallowa County Weed Board, US Forest Service, Oregon Department of Fish and Wildlife, The Nez Perce Tribe, and US Fish and Wildlife Service.

The inventory is set up to identify the target area, key ecological functions addressed, project duration, funding, and management of past or current activities within the subbasin. The inventory serves as a useful tool for identifying whether fish and wildlife issues have or have not been adequately addressed. A gap analysis was conducted to determine issues and areas in the subbasin in need of further action.

The *Imnaha Subbasin Plan* was produced as part of the Northwest Power and Conservation Council's (NPCC) Fish and Wildlife Program. This plan will help direct Bonneville Power Administration's funding of projects that mitigate for damage to fish and wildlife caused by the development and operations of the Columbia River's hydropower system. Subbasin plans were developed in an open public process that included the participation of a wide range of state, federal and tribal governments, local managers, landowners, local governments, and other stakeholders, a process the Council hopes will ensure support of the final plan and direct funding to fish and wildlife projects that will do the most good.

An adopted subbasin plan is intended to be a living document that increases analytical, predictive, and prescriptive ability to restore fish and wildlife. The Imnaha Subbasin Plan will be updated every three years to include new information that will guide revision of the biological objectives, strategies and implementation plan. The NPCC views plan development as an ongoing process of evaluation and refinement of the region's efforts through adaptive management, research and evaluation. More information about subbasin planning can be found at [www.nwcouncil.org](http://www.nwcouncil.org).

The Imnaha Subbasin Plan includes three interrelated volumes that describe the characteristics, management, and vision for the future of the Imnaha Subbasin:

**Assessment--**The assessment is a technical analysis that examines the biological potential of the Imnaha Subbasin to support key habitats and species, and the factors limiting this potential. These limiting factors provide opportunity for restoration. The assessment describes existing and historic resources and conditions within the subbasin, focal species and habitats, environmental conditions, out of subbasin impacts, ecological relationships, limiting factors and a final synthesis and interpretation. A **Technical Team** was formed to guide the development of the assessment and technical portions of the management plan. It was composed of scientific experts with the biological, physical, and management expertise to refine, validate, and analyze data used to inform the planning process.

**Inventory--** The inventory summarizes fish and wildlife protection, restoration and artificial production activities and programs within the Imnaha Subbasin that have occurred over the last five years or are about to be implemented. The information includes programs and projects as well as locally developed regulations and ordinances that provide fish, wildlife and habitat protections.

**Management plan--** defines a vision for the future of the subbasin, including biological goals and strategies for the next 10-15 years. The management plan includes a research, monitoring and evaluation plan to insure that implemented strategies succeed in addressing limiting factors and to reduce uncertainties and data gaps. The management plan also includes information about the relationship between proposed activities and the Endangered Species Act and the Clean Water Act. Finally the plan includes a gap analysis that outlines the programs and projects currently addressing the objectives and strategies and where additional work needs to be developed. A **Planning Team**

composed of representatives from government agencies with jurisdictional authority and other stakeholders in the subbasin was formed to guide the development of the management plan

The plans for each of the subbasins are developed through a process that involved the public and natural resource management within the subbasin. A **Project Team** composed of staff from Ecovista was formed to develop and document, under the guidance of the Technical and Planning Teams, the Imnaha Subbasin Plan. The completed plan was submitted to the Council by the Nez Perce Tribe on May 28, 2004. The following sections detail the entities contractually involved in producing the Imnaha Subbasin Plan.

## **1.1 Entities and Authorities for Resource Management**

Multiple agencies and entities are involved in management and protection of fish and wildlife populations and their habitats in the Imnaha Subbasin. Federal, tribal, state, and local regulations, plans, policies, initiatives, and guidelines are part of this effort. The Nez Perce Tribe and Oregon Department of Fish and Wildlife share co-management authority over the fisheries resources in the subbasin. Federal involvement in this arena stems from Endangered Species Act responsibilities and from management responsibilities for federal lands, and treaty-trust responsibilities. Numerous federal, state, and local land managers are responsible for multipurpose land and water use management, including the protection and restoration of fish and wildlife habitat. Major management entities involved in developing the Imnaha Subbasin Plan are outlined below.

### **Nez Perce Tribe**

The Nez Perce Tribe serves as lead entity for subbasin planning for the Imnaha Subbasin. The Tribe contracted with the NPCC to deliver the Imnaha Subbasin Plan. The Tribe ensured the opportunity for participation in the process by fish and wildlife managers, local interests and other key stakeholders, including tribal and local governments.

The NPT is responsible for managing, protecting, and enhancing treaty fish and wildlife resources and habitats for present and future generations. Tribal government headquarters are located in the Clearwater River subbasin in Lapwai, Idaho, with regional offices covering the Imnaha subbasin in Enterprise, Oregon. The NPT has treaty reserved fishing, hunting and gathering rights pursuant to the 1855 Treaty with the United States. Fish and wildlife activities relate to all aspects of management, including recovery, restoration, mitigation, enforcement, and resident fish programs.

### **Northwest Power Conservation Council**

The NPCC, or Council, has the responsibility to develop and periodically revise the Fish and Wildlife Program for the Columbia Basin. In the 2000 revision, the NPCC proposed that 62 locally developed subbasin plans, and plans for the main stem Columbia and Snake Rivers, be adopted into its Fish and Wildlife Program. The NPCC administers subbasin planning contracts pursuant to requirements in its Master Contract with Bonneville Power Administration (NPCC 2003). The NPCC will be responsible for reviewing and adopting each subbasin plan, ensuring that it is consistent with the vision, biological objectives and strategies adopted at the Columbia Basin and province levels.

### **Bonneville Power Administration**

The BPA is a federal agency established to market power produced by the federal dams in the Columbia River Basin. As a result of the Northwest Power Act of 1980, BPA is required to allocate a portion of power revenues to mitigate the damages caused to fish and wildlife populations and habitat from federal hydropower construction and operation. BPA provided the funds for subbasin planning contracts administered by the NPCC.

## Project Team

The Nez Perce Tribe subcontracted with Ecovista to facilitate the planning process and write plan documents. Project Team members are listed in Table 2

Table 2. Innaha Project Team

Name	Affiliation	
Darin Saul	Ecovista	project coordinator, tech writer, and editor
Craig Rabe	Ecovista	fisheries biologist, tech writer
Anne Davidson	Ecovista	wildlife biologist, GIS, tech writer

## Planning Team

The Innaha Planning Team is composed of representatives from government agencies with jurisdictional authority in the subbasin, fish and wildlife managers, county, industry and user group representatives and private landowners. The Planning Team's guided the public involvement process, developed the vision statement, helped develop and review the biological objectives, and participated in prioritizing subbasin strategies. Regular communication and input among team members occurred at the inception of and throughout the planning process. The Planning Team met monthly throughout the project period (Table 3).

Table 3. Innaha Planning Team contact information.

Name	Affiliation
Cass Botts	Landowner
Jack McClaren	Landowner--alternate
Rod Childers	Soil/Water Conservation
James Yost	Soil/Water Conservation--alternate
Bruce Dunn	Logging
Mike Mahon	Logging--alternate
Ira Jones	Nez Perce Tribe
Bill Knox	Oregon Department of Fish and Wildlife
Meg Mitchell	US Forest Service
Kendall Clark	US Forest Service--alternate
Andrea Mitchell	The Nature Conservancy
Phil Shephard	The Nature Conservancy
Diane Snyder	Wallowa Resources
Gail Hammock	Wallowa Resources--alternate
Tom Smith	Natural Resource Conservation Service
Cynthia Warnock	Natural Resource Cons. Service--alternate
John Williams	Oregon State University
Saralyn Johnson	Oregon State University--alternate

## Technical Team

The Technical Team includes members with the biological, physical, and management expertise to refine, validate, and analyze data used to inform the planning process. The



technical team also guides and participates in developing the biological objectives, strategies and research, monitoring and evaluation sections of the plan and review all project documents. The Innaha Technical Team met monthly or bimonthly throughout the process, and participated in day or multi-day workshops focused on filling data gaps. See Table 4 for a listing of Technical Team members.

Table 4. Innaha Technical Team contact information.

<b>Name</b>	<b>Affiliation</b>
Becky Ashe	NPT
Mike Bianchi	NOAA Fisheries
Ken Bronec	US Forest Service
Ralph Browning	USFS
Debby Colbert	OWRD
Paul Daniello	Oregon Department of Environmental Quality
Bruce Dunn	Logging
Jeff Fryer	CRITFC/TOAST
Alicia Glassford	USFS
Bill Knox	Oregon Department of Fish and Wildlife
Paula Krieger	Oregon Department of Fish and Wildlife
Megan Lucas	US Forest Service
Pat Mathews	Oregon Department of Fish and Wildlife
Coby Menton	Grande Ronde Model Watershed
Meg Mitchell	US Forest Service
Drew Parkin	NWPPC
Keith Paul	US Fish and Wildlife Service
Tim Schommer	US Forest Service
Phil Shephard	The Nature Conservancy
Paul Survis	USFS
Teresa Smergut	USFS
Brad Smith	Oregon Department of Fish and Wildlife
Tom Smith	Natural Resource Conservation Service
Angela Sondenaa	NPT-Wildlife Dept.
Randy Tweten	NOAA Fisheries
Andy White	Forest Management
John Williams	Oregon State University
Jack Yearout	NPT- Watershed

## **1.2 Review Process**

Drafts of the Innaha Subbasin Inventory was posted for review starting August of 2003. Drafts were posted on the Ecovista website ([www.ecovista.ws](http://www.ecovista.ws)) and presented at Planning Team and Technical Team meetings. Through this review process, comments, suggestions, and clarifications were received from local, state, tribal, and federal representatives with relevant professional expertise as well as landowners and other stakeholders in the subbasin. The review by those involved in the process in the subbasin was completed, within the constraints of time, by May 28, 2004.

The summer schedule for the independent scientific review of subbasin plans has been developed. For a majority of the subbasin plans, the ISRP/ISAB review process will begin immediately following the May 28 deadline and conclude with submittal of final reports to the Council by August 12, 2004. The Imnaha Subbasin Plan will be reviewed during Week 7: July 19<sup>th</sup>-July 23<sup>rd</sup> (NWPCC 2004).

To complete the review, about ten review teams, and one basin-wide umbrella committee have been established. The review teams are organized to review sets of subbasin plans grouped by province. Each team consists of six or more reviewers and includes a mix of ISRP, ISAB, and Peer Review Group members. The umbrella group will help ensure a consistent level of review scrutiny and comment quality (NWPCC 2004).

A review checklist and comment template is being developed for the ISRP/ISAB review of subbasin plans based on the Council's Subbasin Planning Technical Guide and will include the Council's review questions. Reviewers must evaluate: 1) whether the subbasin plans are complete, scientifically sound, and internally consistent following a transparent and defensible logic path; and 2) whether the subbasin plans are externally consistent with the vision, principles, objectives, and strategies contained in the Council's 2000 Fish and Wildlife Program. The checklist also asks reviewers to evaluate whether the plan satisfactorily provides the assessment, inventory and management elements requested by the Council and, to recommend the level of need to further treat a specific element of the subbasin plan before the plan meets the criteria of completeness, scientific soundness, and transparency. A sample of the checklist and template will be available in March (NWPCC 2004).

#### *Subbasin Plan Adoptability Framework*

The Council's Legal Division is organizing a framework that the Council members and may use to make the determinations required by the Power Act relative to subbasin plan amendment recommendations. The framework is essentially a way of organizing the review around the Act's standards that apply to program amendments for the Fish and Wildlife Program measures found in section 4(h), and the standards set in the 2000 Fish and Wildlife Program in the unique context of subbasin plans. The framework will be discussed with Council members in the near future.

## 2 Existing Protection

### 2.1 Existing Status

The Imnaha subbasin includes a high percentage of land under protected status, including large portions of the subbasin in designated wilderness area, in the Hells Canyon National Recreation Area and under the ownership and management of the Nature Conservancy.

Approximately 71% of the Imnaha subbasin is under public ownership (Figure 1). The majority of the subbasin lies within the Wallowa-Whitman National Forest, under the management of four Ranger Districts (Eagle Cap, HCNRA, Wallowa Valley, and Pine) (Table 5). The ODFW manages two small parcels of land in the subbasin, the largest of these is along Little Sheep Creek and is where they operate the Little Sheep fish hatchery. BLM lands are primarily grasslands and are utilized for domestic livestock grazing under the provisions of the Taylor Grazing Act (WWNF 2003a).

Table 5 Land management entities in the Imnaha subbasin.

Description		Acres of Land Managed	Percent of subbasin
BLM		158	0.03
ODFW		612	0.11
The Nature Conservancy		28,919	5.32
Private		129,668	23.87
USFS	Eagle Cap Ranger District	58,145	10.71
	HCNRA	223,766	41.20
	Pine Ranger District	319	0.06
	Wallowa Valley Ranger District	101,554	18.70
	Total USFS	383,784	70.66

In 2000, the Nature Conservancy purchased a large portion of the Zumwalt prairie at the lower western edge of the subbasin. The land was purchased to preserve its high value to fish, wildlife and botanical resources and its acquisition made the Nature Conservancy the second largest land manager in the subbasin (Nature Conservancy 2003) (Table 5). Twenty-four percent of the subbasin is privately owned. Most of the lands in private ownership are used for ranching.

The goals and focus of land management in the subbasin varies across and within ownerships. The Wallowa-Whitman National Forest has divided the lands they manage into Management Areas. Each Management area is managed following a strategy developed in the Forest Plan. Strategies for management in the subbasin range from protection as a Wilderness Area to a timber production emphasis (Figure 2). Differences in the focus and goals in land management across the subbasin result in differing ecosystem conditions and levels of protection for the fish and wildlife populations of the subbasin.

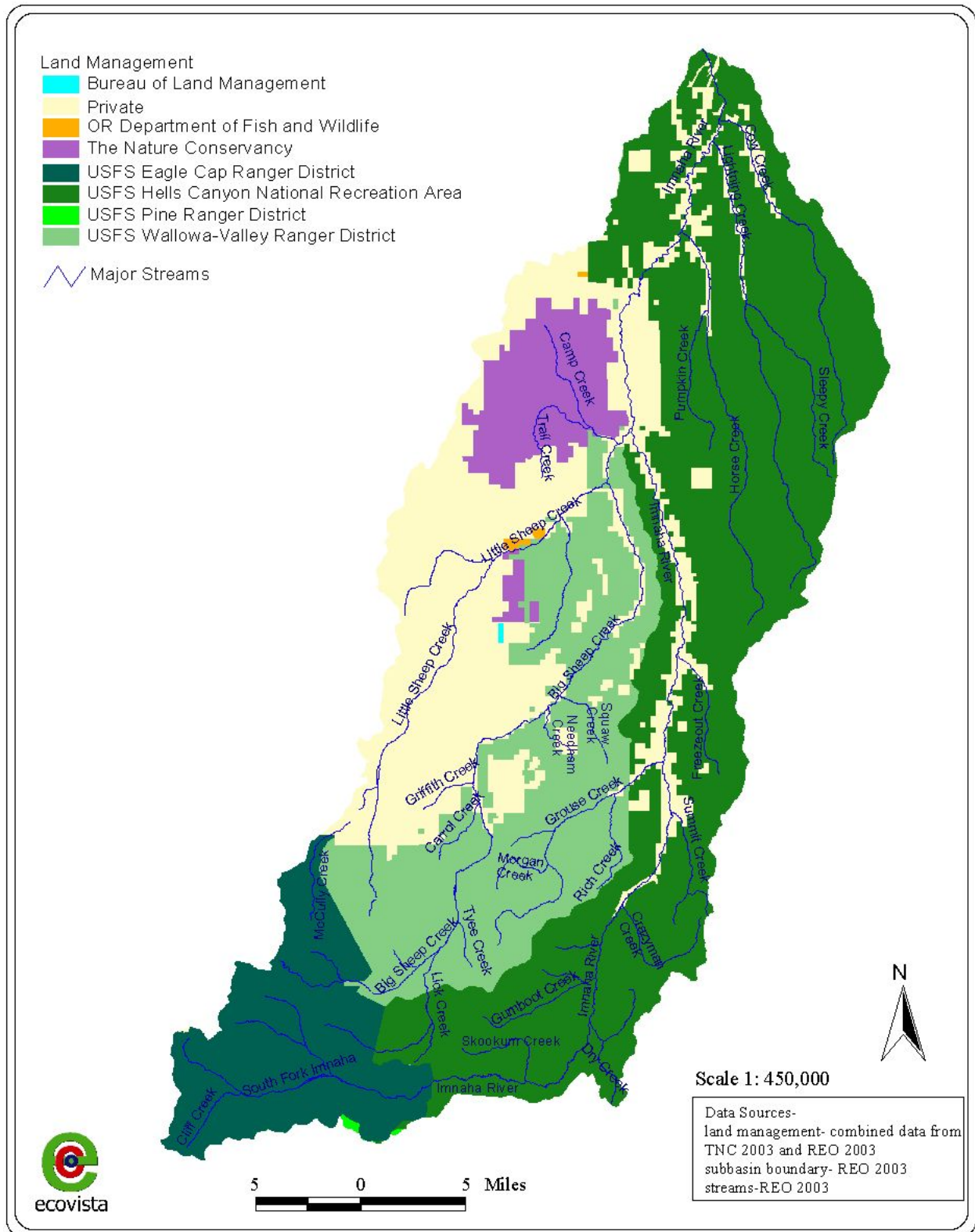


Figure 1 Land management in the Imnaha subbasin

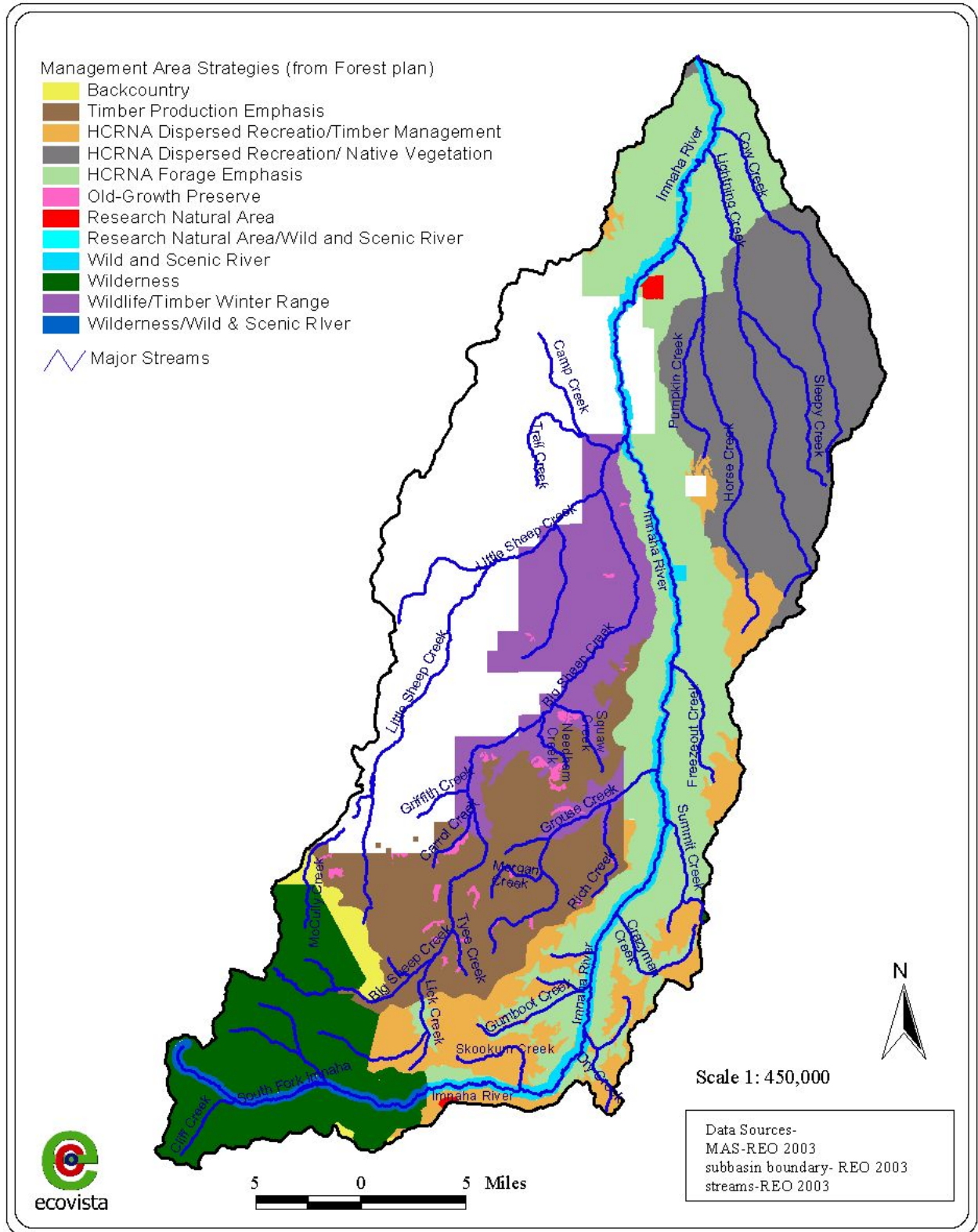


Figure 2 Management area strategies for USFS lands in the Imnaha subbasin

To assess and account for these differences, a GIS layer containing land protection status was developed for the subbasin (Figure 3). GIS layers depicting land protection status have been developed by the Northwest Habitat Institute, but because of recent changes in ownership and management focus in the subbasin, these are no longer accurate. To create the layer, the subbasin was stratified into different ownership/management types and assigned a protection status classification. Protection status classifications were based on those used by both the Natural Heritage Program and GAP (Idaho GAP 2003). Examples from a similar process used in the *Middle Rockies-Blue Mountain Ecoregional Plan* (TNC 2003) were used to help guide the selection of protection levels.

In addition to these coarse scale protection and management strategies, a number of other areas have protected status, although these are often limited in type and scale. Additional protection identified through interviews with agency staff working in the Imnaha subbasin are identified in Table 6.

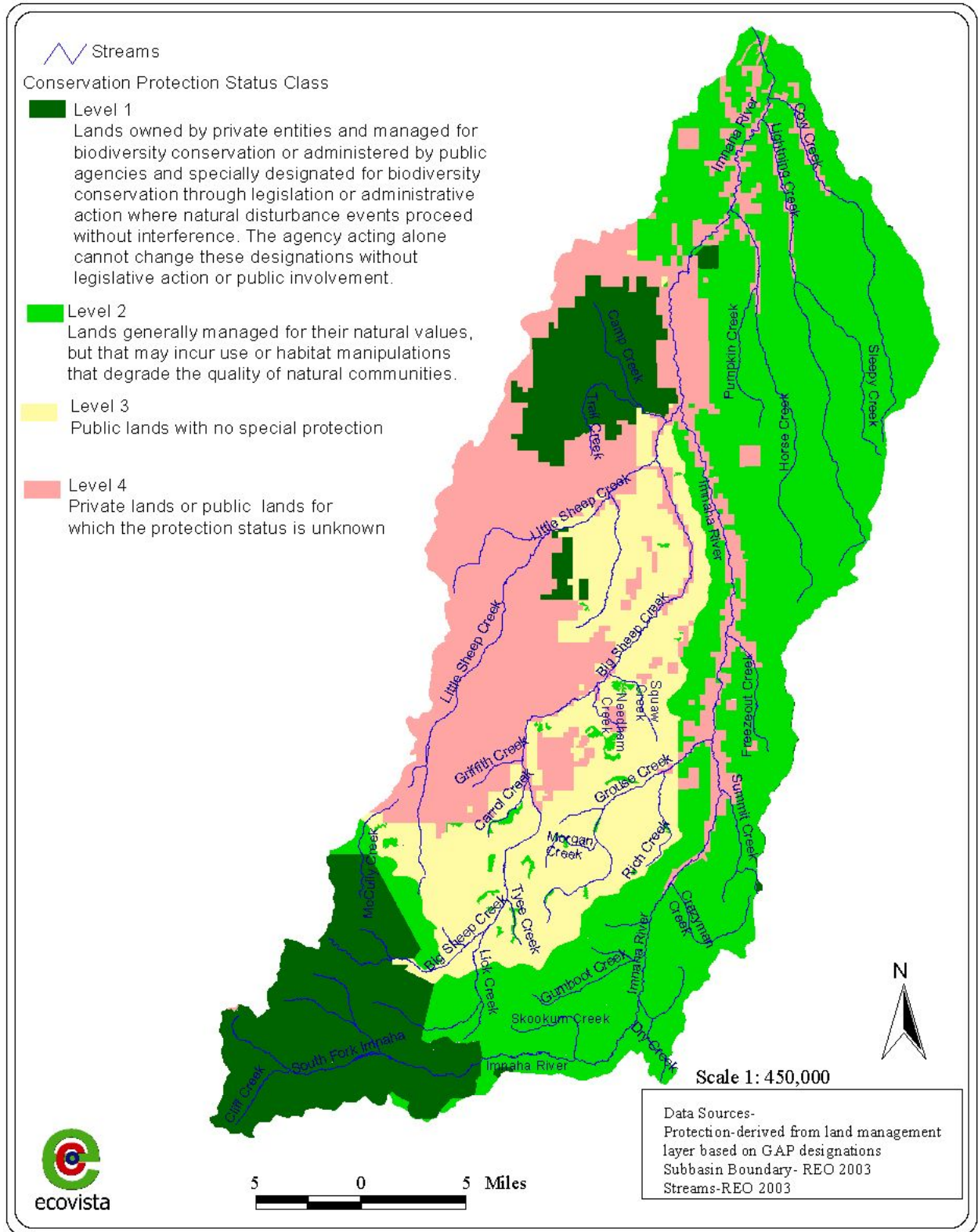


Figure 3 Protection status in the Imnaha Subbasin.

Table 6 Description of existing protection related to fish and wildlife habitats and species within the Imnaha subbasin

Location	Sub-watershed Name	Type of Protection	General Description of Protection	Projected Duration	Funding Source and ID #	Responsible Agency	Type of Area Protected	Scale of Protection	Key Ecological Functions Addressed	Goal of Protection	Publications
Clear Lake Ridge	Bear Gulch and Lower Little Sheep Creek		fenced springs, fenced devils gulch, weed control, spaldings catchfly joint burn with USFS in habitat, release of sharptail grouse with ODFW	1988-	TNC, numerous entities	TNC		3,100 Acres	riparian function, species and habitat viability	protection of riparian habitats, protection of uplands, protection of spaldings catchfly,	summary of spaldings catchfly survey
Imnaha River		riparian	moving small feedlot from next to Imnaha river, installation of 2 upland water sources		OWEB	SWCD	riparian		riparian restoration and protection		
Imnaha River		riparian	moving and fencing feedlots, installing alternative water sources for livestock	in progress	private	private	riparian		riparian restoration and protection		
Instream Water Rights		flow rates	maintain minimum flow for fish bearing strea				instream water flow	Oregon		maintain minimum flow for fish bearing streams	
Little Sheep Creek		river bank	instream structures and bank construction	1996-1997	BPA # 9607400	SWCD	river bank		bank stability		
Lower Imnaha		riparian	moving and fencing feedlots, installing alternative water sources for livestock	in progress	private	private	riparian		riparian restoration and protection		
Lower Imnaha		Weed Control	spraying, revegetation, biological control, and hand pulling for noxious weeds including: diffuse knapweed, common bugloss, yellow star thistle, Japanese knapweed, Scotch thistle, white top	1970s-current	Private, USFS, OSWB, ODA	PVT/USFS		Lower Imnaha	noxious weed control and habitat improvement	stop the spread of noxious weeds	Wallowa County Vegetation Management Plan (2003)
Oregon's Removal-Fill Law (ORS 196.795-990)		instream and riparian areas	requires people who plan to remove or fill material in waters of the state to obtain a permit from the Division of State Lands in order to protect public navigation, fishery and recreational uses of the waters					Oregon	instream and riparian areas	to protect public navigation, fishery and recreational uses of the waters	



Location	Sub-watershed Name	Type of Protection	General Description of Protection	Projected Duration	Funding Source and ID #	Responsible Agency	Type of Area Protected	Scale of Protection	Key Ecological Functions Addressed	Goal of Protection	Publications
Upper Imnaha		Weed Control	spraying, revegetation, biological control, and hand pulling for noxious weeds including: diffuse knapweed, common bugloss, yellow star thistle, Japanese knapweed, Scotch thistle, white top	1970s-current	Private, USFS, OSWB, ODA	PVT/USFS		Upper Imnaha	noxious weed control and habitat improvement	stop the spread of noxious weeds	Wallowa County Vegetation Management Plan (2003)
Zumwalt Prairie Preserve			sharptail grouse release, spaldings catchfly monitoring, camp creek (index stream for ODFW) yearly spring redd count, raptor project	2000-	TNC ,BPA # KEC-4 or TR-TPP-4, OWEB	TNC		27,000 acres	riparian function, species and habitat viability		summary of spaldings catchfly survey, vegetation map
		river bank	instream structures and bank construction	1996-1998	BPA # 9607401	SWCD	river bank		bank stability		
		riparian	riparian planting, campground protection, livestock watering improvements, livestock and vehicle access limitations	1996-1997	BPA # 9604900	WWNF	riparian		riparian restoration and protection		

## **3 Existing Plans**

### **3.1 Existing Aquatic and Terrestrial Plans**

Information presented here highlights the broad-scale plans guiding land and resource management (see Table 7). Plan descriptions are organized according to the primary management entity responsible for their development and/or implementation. Plans and assessments focused on finer scale watershed levels are described in the following section. Throughout the planning process, the Imnaha Planning Team drew from and coordinated with a number of these plans. Hatchery Genetic Management Plans are described in the next section of this inventory.

### **3.2 TMDLS**

The Clean Water Act requires states to develop water quality goals (called Total Maximum Daily Loads, or TMDLs) along with an implementation plan and schedule to achieve water quality goals for §303(d)-listed water bodies. The TMDL process includes a watershed assessment, and potentially a load allocation and implementation plan. The §303(d)-listed streams within the Imnaha subbasin, which includes the entire Imnaha River mainstem and some stream reaches in key tributaries, exceed the numeric criteria of the water quality standard for temperature. Accordingly, a TMDL is being developed for the Imnaha.

Table 7. Description of existing fish and/or wildlife management plans and water resource management plans that affect fish and wildlife within the Imnaha subbasin

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Big Sheep Creek Coordinated Research Management Plan (CRMP)	1995	1995-ongoing	SWCD, NRCS, USFS	identified problem areas, solutions, and project implementation	Big Sheep Creek Watershed	Identified problem areas, solutions, and project implementation	improve water quality and upland conditions	
Clean Water Action Plan			NMFS				water quality	
Columbia River Fish Management Plan	1987		Federal agencies, Indian tribes, and state agencies	provide a framework within which the U.S. and OR could exercise their sovereign powers in a coordinated and systematic manner in order to protect, rebuild, and enhance upper Columbia River fish runs while providing harvests for both treaty Indian and non-Indian fisheries	upper Columbia River	rebuild weak runs by habitat protection, enhancement, artificial production and harvest management in order to and fairly share the harvest	protect, rebuild and enhance upper Columbia River fish runs	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Final Environmental Impact Statement for the Hells Canyon National Recreation Area	2003		USFS	the purpose of the FEIS is to update the Comprehensive Management Plan for the Hells Canyon National Recreation Area. The FEIS presents five management alternatives: a Native Ecosystem alternative, a Wallowa County alternative, and three Forest Service generated alternatives	Hells Canyon National Recreation Area	"to assure that the natural beauty and historical and archeological values of the Hells Canyon area... are preserved for this and future generation, and that the recreational and ecologic values and public enjoyment of the area are thereby enhanced."		Final Environmental Impact Statement for the Hells Canyon National Recreation Area
Hatchery Genetic Management Plan for the Imnaha Subbasin			ODFW, NMFS		Imnaha Subbasin		fish genetic management	
Imnaha River Subbasin Salmon and Steelhead Production Plan	1991		NPT, CTUIR, ODFW		Imnaha River Subbasin		salmon and steelhead production	
Implementation of the County/Tribe Plan	1997	1997-present	NPT, BPA # 199702500	provides funds for small habitat projects that miss the normal funding cycles for the Grande Ronde Model Watershed Program and Oregon Watershed Enhancement Board.	Wallowa County		habitat restoration	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Inter-Governmental Task Force for Monitoring Principles (Oregon Plan)			NMFS		Oregon			
Land and Resource Management Plan (Forest Plan)	1990		USFS	guides all natural resource management activities, establishes forest-wide multiple-use goals and objectives, and establishes management standards and guidelines for the National Forest	Wallowa-Whitman National Forest		land and natural resource management	
Little Sheep Creek Coordinated Research Management Plan (CRMP)	1997	1997-ongoing	SWCD, NRCS	identified problem areas, solutions, and project implementation	private lands in Little Sheep Creek Watershed	Identified problem areas, solutions, and project implementation	improve water quality and upland conditions	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Lower Snake River Compensation Plan (LSRCP)	1982		BPA, USFWS, NPT, ODFW	facilities and lands established to compensate for the loss of wildlife habitat and anadromous and resident fisheries caused by the construction of the 4 lower Snake River dams (Ice Harbor, Lower Monumental, Little Goose, and Lower Granite)	Imnaha River, Imnaha River satellite facility, Lookingglass fish hatchery (LFH), Oxbow Hatchery, Irrigon Hatchery, Wallowa Hatchery	Restoration of spring/summer chinook salmon in the Imnaha River using the indigenous stock and to mitigate for fish losses resulting from the four Lower Snake River Dams.	wildlife habitat, protect anadromous fish populations	fish hatcheries, satellite fish facilities, a fish laboratory, wildlife habitat areas, and lands with fishing and hunting access. Smolt production levels have been highly variable and typically well below the goal of 490,000. Current chinook smolt production has been reduced by 25% due to facility limitations at LFH. Since 1987, returns of naturally produced adult steelhead to Little Sheep Creek have amounted to less than 20% of the total return, however, smolt production goals have generally been achieved in all years except 1997

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Matrix of Pathways and Indicators	1996		NMFS	actions include moisture retention on crop lands, development of riparian vegetation, restoration of streamflow and appropriate hydrologic peak flow conditions, passage improvements and screening		habitat goal: the existence of high quality habitats that are protected, degraded habitats that are restored and connected to other functioning habitats, and a system where further degradation of tributary and estuary habitat and water quality is prevented. Hatchery goal: reduced genetic, ecological, and management effects of artificial production that are adverse on the natural population. Research Monitoring and evaluation goal: identified trends in populations of listed anadromous salmonids	habitat restoration and conservation, enhanced hatchery management	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Native Fish Conservation Policy	2003	2003-	ODFW	the Native Fish Conservation Policy will provide a new approach for ODFW to manage Oregon's native fish populations. The draft policy provides a collaborative, science-based process to manage hatcheries, fisheries, and habitat in balance with sustainable conservation of native fishes. The Policy uses a public process to write conservation plans to guide fish management.	Oregon	to provide a basis for managing hatcheries, fisheries, habitat, predators, competitors, and pathogens in balance with sustainable production of naturally produced native fish	native fish populations	
NE Oregon Outplanting Facility Master Plan	1989	1989-current	NPT, BPA # 8805301	develop the Imnaha and Grande Ronde Master Plans covering production, supplementation, genetics, etc. Develop facility designs and costs with schedule for implementation.	Imnaha Grand Ronde subbasins	supports a healthy Columbia basin; maintains biological diversity; maintains genetic integrity; increases run sizes or populations; adaptive management (research or M&E); program coordination or planning	salmon populations, genetics, and habitat	NEPA analysis of Lostine River, Upper Grande Ronde River, and Catherine Creek adult trapping and acclimation facilities; Completed well testing at proposed incubation and rearing facility sites; Completed cultural resource surveys; Finalized feasibility study on reintroduction of coho and sockeye in the Grande Ronde River; Completed independent engineering review of Lookingglass Hatchery spring chinook production; Spring Chinook Master Plan



Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Nez Perce Fish and Wildlife Code			NPT				fish and wildlife habitat	
Nez Perce Tribe Executive Committee Resolutions			NPT					
Nez Perce Tribe Salmon Habitat Recovery Plan with Multi-Species Habitat Strategy	1999	ongoing	NPT	This strategy outlines habitat recommendations for salmonids and other vertebrate species. It analyzes Imnaha River water quantity, water quality, stream structure, substrate, and habitat features. Appendices include social and economic infrastructure, land use history, and vegetation				

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Northeast Oregon Hatchery Master Plan	1989	1989-1993 and 1997-present	NPT, BPA # 198805301	plan and develop conservation production facilities in the Imnaha and Grande Ronde rivers necessary to implement salmon recovery programs for native, ESA listed salmon. Complete activities and sub-activities designed to provide data for resolving management questions and critical uncertainties relating to supplementation of chinook salmon.	Imnaha and Grande Ronde rivers	development of a comprehensive monitoring and evaluation program that allows adaptive management to optimize hatchery and natural production, sustain harvest, and minimize ecological impacts	salmon production and protection of populations	participated in NEPA analysis of Lostine River, Upper Grande Ronde River, and Catherine Creek adult trapping and acclimation facilities; Completed well testing at proposed incubation and rearing facility sites; Completed cultural resource surveys of proposed facility sites; Finalized feasibility study on reintroduction of coho and sockeye salmon in the Grande Ronde River; Completed independent engineering review of Lookingglass Hatchery to meet needs of currently permitted and programmed spring chinook production; Spring Chinook Master Plan
Northeast Oregon Hatchery Project (NEOH) Spring Chinook Master Plan	2000		NPT	provides information needed for deciding whether the proposed facilities to restore salmon populations should move forward. Also included are description of the fish culture program, historic and current management practices, and life history and biology of Imnaha and Lostine River spring chinook salmon	Northeast Oregon			

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
OAR 635 Division 008-Department of Wildlife Lands			ODFW	sets forth management goals for each State Wildlife area	Oregon		wildlife habitat	
OAR Division 100-Wildlife Diversity Plan			ODFW	sets outlines for wildlife diversity program goals and objectives, identifies species listings, establishes survival guidelines and creates other wildlife diversity policy	Oregon		wildlife diversity, wildlife populations	
OAR Division 400-Instream Water Rights Rules			ODFW	Provides guidelines for inflow measurement methodologies, established processes for applying for instream water rights , and sets forth other instream water rights policies	Oregon		water rights	
OAR Division 415-Fish and Wildlife Habitat Mitigation Policy			ODFW	establishes mitigation requirements and recommendations, outlines mitigation goals and standards, and provides other mitigation guidelines	Oregon		fish and wildlife habitat	
OAR Divisions 068-071			ODFW	set deer and elk seasons	Oregon			

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Oregon Administration Rule (OAR) 635 Division 07- Fish Management and Hatchery Operation			ODFW	set forth policies on general fish management goals, the Natural Production Policy, and other fish management policies	Oregon		fish populations	
Oregon Bighorn Sheep Management Plan	1992		ODFW	summarizes the history and status of Oregon's bighorn sheep and presents a means by which they will be restored to remaining suitable habitat	Oregon		wildlife populations, wildlife habitat	
Oregon Black Bear Management Plan	1987		ODFW	summarizes the life history of black bear and their management in OR, lists concerns and the strategies to be used in addressing identifies problems, and direction is provided to inform the interested public of how black bear will be managed	Oregon	1) recognize the black bear as an important part of OR wildlife fauna, valued by many Oregonians 2) maintain healthy black bear populations within the state and into the future 3) conduct a management program that maintains healthy populations of black bear and recognizes the desires of the public and the statutory obligations of ODFW	wildlife populations, wildlife habitat	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Oregon Cougar management Plan	1993		ODFW	summarizes the life history of cougar and their management in OR, lists concerns and the strategies to be used in addressing identified problems, and direction is provided to inform the interested public of how cougar will be managed	Oregon	1) recognize the cougar as an important part of OR wildlife fauna, valued by many Oregonians 2) maintain healthy cougar populations within the state and into the future 3) conduct a management program that maintains healthy populations of cougar and recognizes the desires of the public and the statutory obligations of ODFW	wildlife populations, wildlife habitat	
Oregon Elk Management Plan	1992		ODFW	summarizes the life history of elk and their management in OR, lists concerns and the strategies to be used in addressing identified problems, and provides management direction to inform the interested public of how elk will be managed	Oregon	protect and enhance elk populations to provide optimum recreational benefits to the public, and to be compatible with habitat capability and primary land uses	wildlife populations, wildlife habitat	
Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources	1997		ODFW		Oregon		fish and wildlife habitat and resources	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Oregon Migratory Game Bird Program Strategic Management Plan	1993		ODFW	strategies are described that assist in the development of specific operational plans to achieve the program mission and integrate with other state and federal agencies and private organizations	Oregon	protect and enhance populations and habitats of native migratory game birds and associated species at prescribed levels as determined by national, state, and flyway plans throughout natural geographic ranges in OR and the Pacific Flyway to contribute to OR wildlife diversity and the uses of those resources	wildlife populations, wildlife habitat	
Oregon Mule Deer Management Plan	1990		ODFW	summarizes the life history of mule deer and their management in OR, lists concerns and the strategies to be used in addressing identified problems, and provides management direction to inform the interested public of how mule deer will be managed	Oregon	manage mule deer populations to provide optimum recreational benefits to the public, and to be compatible with habitat capability and primary land uses	wildlife populations, wildlife habitat	
Oregon Plan for Salmon and Watersheds	1997		ODFW	outlines a statewide approach to ESA concerns based on watershed restoration and ecosystem management to protect and improve salmon and steelhead habitat in OR	Oregon		watershed restoration, ecosystem management, salmon and steelhead habitat	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Oregon Senate Bill 1010			ODA	county-specific agricultural water quality issues are identified and addressed through a committee process	Oregon	reduce water pollution from agricultural sources and protect beneficial uses of watersheds	water quality	
Oregon Steelhead Plan			ODFW	conservation of wild steelhead; providing public benefits that include angling tribal uses, and others; and engaging the public, tribes, and agencies in management processes.	Oregon	describe habitat, harvest, and hatchery fish considerations intended to maintain healthy and abundant wild populations	steelhead populations and habitat	
Oregon Trout Plan			ODFW	achieve and maintain optimum populations and production of trout to maximize benefits and to insure a wide diversity of opportunity for present and future citizens	Oregon	maintain the genetic diversity and integrity of wild trout stocks throughout OR; Protect, restore and enhance trout habitat, Provide a diversity of trout angling opportunities; Determine the statewide management needs for hatchery trout	trout population, trout genetic diversity, trout habitat	
Oregon Warmwater Game Fish Plan			ODFW	identify the public's needs and expectation for angling opportunity; choose management alternatives for individual waters or groups of waters	Oregon	provide optimum recreational benefits to the people of OR by managing warmwater game fishes and their habitats	fish habitat and fish populations	

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Oregon Wildlife Diversity Plan	1993		ODFW	provides policy direction for the maintenance and enhancement of the vertebrate wildlife resources in OR, identifies goals and objectives for maintaining a diversity of non-game activities for the benefit of all species	Oregon	maintain OR wildlife diversity by protecting and enhancing populations and habitats of native non-game wildlife as self-sustaining levels throughout natural geographic ranges	wildlife populations, wildlife habitat, wildlife diversity	
Outplanting facilities plan	1989	1989-1999	NPT, BPA # 8805301		Imnaha River			
Snake, Grande Ronde and Imnaha Rivers Warmwater and Sturgeon Recreational Fisheries	2001		NMFS	fisheries management and evaluation plan	Snake, Grande Ronde and Imnaha Rivers		warmwater and surgeon fish populations	Snake, Grande Ronde and Imnaha Rivers Warmwater and Sturgeon Recreational Fisheries
Steelhead Supplement to the Oregon Plan	1997		ODFW	outlines a statewide approach to ESA concerns based on watershed restoration and ecosystem management to protect and improve salmon and steelhead habitat in OR	Oregon	sustain healthy and abundant wild populations of steelhead	watershed restoration, ecosystem management, salmon and steelhead habitat	



Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Summer Steelhead and Trout Sport Fisheries in Grande Ronde Basin, Imnaha Basin and Snake River	2001		NMFS	fisheries management and evaluation plan	Grande Ronde Basin, Imnaha Basin, and Snake River		sport fish populations	Summer Steelhead and Trout Sport Fisheries in Grande Ronde Basin, Imnaha Basin and Snake River
System Planning effort (Imnaha Subbasin Plan)	1990	1990-	NPT, ODFW		Wallowa County	restore, maintain or enhance habitat to levels necessary to support and/or recover anadromous and resident fish to harvestable levels in Wallowa County; Restore, maintain or enhance terrestrial habitat to conditions necessary to support and/or recover terrestrial vertebrates in Wallowa County		
Unified Federal Policy for a Watershed Approach to Federal Land and Resource Management			NMFS				watershed resource management	
Viable Salmonid Populations	2000		NMFS				salmon populations and habitat	
Vision 2006	2000	2000-2006	ODFW	six-year strategic operational plan providing guidance up to 2006	Oregon			

Plan Title	Date Started	Projected Duration	Responsible Agency (ID #)	Brief Description of Plan	Scale of Plan	Goal of Plan	Key Ecological Functions Addressed	Accomplishments and Publications
Wallowa County Comprehensive Land Use Plan	1973	On-going	Wallowa County	Developed under Oregon Senate Bill 10	Wallowa County	Manage existing and developing land use in Wallowa County		Land use plan documents
Wallowa County Restoration Planner	1994	1994-present	NPT	develops project proposals for Wallowa County's Public Works Department and private landowners that go to the Grande Ronde Model Watershed Program and Oregon Watershed Enhancement Board for funding. Writes BA's and NEPA compliance for county and private landowner projects.	Wallowa County	facilitate coordination of watershed restoration efforts in Wallowa County and provide the linkage to efforts in Union County	watershed restoration	
Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan with Multi-Species Strategy	1993	1993-ongoing	Wallowa County, NPT	intended to restore and maintain habitat for chinook salmon ( <i>Oncorhynchus tshawytscha</i> ) and, potentially, other salmonid fish in Wallowa County, Oregon. The plan will provide the best watershed conditions available consistent with the needs of the people of Wallowa County, the Nez Perce Tribe, and the rest of the United States and is made an integral part of the Wallowa County comprehensive land use Plan	Wallowa County	to develop a management plan and a multi-species strategy to assure that watershed conditions in Wallowa County provide habitat necessary for salmonids and other vertebrate species occurring in Wallowa County by protecting and enhancing conditions as needed	salmon and wildlife habitat	all streams with known chinook populations were analyzed for a variety of habitat conditions relating to salmon survival

<b>Plan Title</b>	<b>Date Started</b>	<b>Projected Duration</b>	<b>Responsible Agency (ID #)</b>	<b>Brief Description of Plan</b>	<b>Scale of Plan</b>	<b>Goal of Plan</b>	<b>Key Ecological Functions Addressed</b>	<b>Accomplishments and Publications</b>
Wy-Kan-Ush-Mi Wa-Kish-Wit; Spirit of the Salmon.	1996	1996-	NPT	increase adult return targets for each subbasin by gravel to gravel management	all subbasins in the Columbia Basin	salmon recovery through institutional, technical, and watershed actions	enhanced anadromous fish population	

## **4 Management Programs and Policies**

### **4.1 Existing Management Programs**

Existing and ongoing management programs affecting the Imnaha Subbasin are presented in Table 8.

Table 8. Description of ongoing or planned management programs or initiatives that have a significant effect on fish, wildlife, water resources, riparian areas, and/or upland areas in the Imnaha subbasin

Title	Project-ed Duration	Funding Source and ID # (BPA # if applicable)	Management Entity/ Responsible Agency	Program Scale	Key Ecological Functions Addressed	Goal of Program	Results of Program/Document: Accomplishments and Failures	Publications
Basin-wide Salmon Recovery Strategy			NMFS	Columbia Basin	salmon recovery	prevent the extinction of 12 species and lead to their recovery by halting the decline in salmon populations within 5-10 years and establishing increasing trends in abundance within 25 years	identifies strategies for harvest management, hatchery reform, habitat restoration, and hydropower system operations. Outlines specific federal actions to be taken and proposes additional actions for tribe, state and local governments. Imnaha subbasin is a priority subbasin for initial early actions to support and enhance salmon recovery.	Conservation of Columbia Basin Salmon: A Coordinated Federal Strategy for the Recovery of the Columbia- Snake River Basin Salmon (all-H-paper)
Confined Animal Feeding Operations Program (CAFO)	2003-ongoing	N/A	ODA	private land confined feeding area and crop land where manure is spread in OR	livestock waste management, water quality	better manage livestock waste and improve water quality, develop animal waste management plans; manage with respect to containment, treatment, storage, and utilization of manure, litter, and process waste water in order to remain in compliance with permit conditions and water quality laws.	inspection of ranches	
Conservation Reserve Enhancement Program					riparian restoration	establish forested riparian buffers		

Title	Project-ed Duration	Funding Source and ID # (BPA # if applicable)	Management Entity/ Responsible Agency	Program Scale	Key Ecological Functions Addressed	Goal of Program	Results of Program/Document: Accomplishments and Failures	Publications
Conservation Reserve Program			USDA- Farm Services Agency (FSA), NRCS, ODFW		soil erosion, wildlife habitat	place sensitive croplands under permanent vegetative cover		
Coordinated Enforcement Program			Oregon State Police, ODFW	Oregon	critical species and habitat	coordinate enforcement priorities and plans by and between OSP officers and ODFW biologists	yearly action plans guide protection efforts for critical species and their habitats	
Environmental Quality Incentives Program (EQIP)	1996		USDA- Farm Services Agency (FSA), NRCS		soil, water, natural resources conservation	voluntary conservation for farmers and ranchers who face serious threats to soil, water, and related natural resources		
FCRPS Biological Opinion			NMFS, FWS	Columbia River	mitigation in tributaries		concludes that off-site mitigation in tributaries is necessary to continue to operate the hydropower system	FCRPS Biological Opinion
Fish and Wildlife Program			Council		fish and wildlife populations and habitat			
Fish Screening Program		NMFS, BPA	ODFW	Oregon	salmon recovery	place fish screens at entrances to water diversions to prevent juvenile salmon from swimming into irrigation canals to decrease mortality for native fishes.		

Title	Project-ed Duration	Funding Source and ID # (BPA # if applicable)	Management Entity/ Responsible Agency	Program Scale	Key Ecological Functions Addressed	Goal of Program	Results of Program/Document: Accomplishments and Failures	Publications
Grande Ronde Model Watershed Program	1992-present	BPA #199202601	GRMWP	Model watershed project in OR, provides coordination of efforts in the Grand Ronde and Imnaha subbasins	watershed assessment	to develop and oversee the implementation, maintenance, and monitoring of coordinated resource management that will enhance the natural resources of the Grande Ronde River Basin; provide habitat for the restoration and enhancement of anadromous salmonids and other native fish species	Completed a basin wide assessment in 1993, completed an Operations-Action Plan in 1994	
Grande Ronde Water Quality Committee				Grande Ronde	water quality	to meet the necessary load allocations and achieve the water quality standards by implementing management measures to improve stream temperature, DO and pH; protect the beneficial uses of the waters of the subbasin by protecting existing high quality waters and improving impaired waters to meet state water quality standards		
Imnaha River Spring/Summer Chinook Salmon (LSRCP)	1982-present	USFWS	ODFW, NPT, Confederated Tribes of the Umatilla Indian Reservation	Lookingglass hatchery, Imnaha River Subbasin	mitigation and supplementation of spring/summer chinook	produce up to 3,210 spring/summer chinook salmon adults for in-place, in-kind mitigation	Results from each year since 1990 available for unmarked and marked fish collected, released, and retained. Results available for fish harvested in the ocean and Columbia River, fish return to Imnaha, strays, and total return	

Title	Project-ed Duration	Funding Source and ID # (BPA # if applicable)	Management Entity/ Responsible Agency	Program Scale	Key Ecological Functions Addressed	Goal of Program	Results of Program/Document: Accomplishments and Failures	Publications
Imnaha Subbasin Hatchery Summer Steelhead Program (Lower Snake River Compensation Plan)	1982-present		ODFW, USFWS, NPT, CTUIR	Little Sheep Creek Acclimation facility, Wallowa Hatchery, Irrigon Hatchery, Imnaha River subbasin	summer steelhead populations and management	return 2,000 summer steelhead to the Snake River Basin above Lower Granite Dam; compensate for summer steelhead losses caused by the construction and operation of four lower Snake River dams and to support sports and tribal fisheries	Results available for every year since 1990 for adults returned to Little Sheep Creek and number of adults spawned. Information on broodstock collection, mating, and release	
Imnaha/Parks Ditch Water Conservation Program	2000	BPA # 200006200						
INFISH			USFS, BLM	Columbia River Basin	protection of habitat and populations of resident fishes outside anadromous fish habitat	protect areas that contribute to salmonid recovery and improve riparian habitat and water quality throughout the Basin, including the Imnaha subbasin		
Interior Columbia Basin Ecosystem Management Project (ICBEMP)			USFS, BLM	63 million acres of federal land over the interior Columbia Basin	restoration of federal lands, landscape health, aquatic and terrestrial habitats, human needs, products and services	affects how federal agencies will prioritize actions and undertake and fund restoration activities	If approved, ICBEMP will replace the interim management strategies, providing for longer-term management of lands east of the Cascades. As implemented, subbasin and watershed assessments and plans will target further habitat work	Supplemental Draft Environmental Impact Statement (March 2000), Interior Columbia Basin Ecosystem Management Project



Title	Project-ed Duration	Funding Source and ID # (BPA # if applicable)	Management Entity/ Responsible Agency	Program Scale	Key Ecological Functions Addressed	Goal of Program	Results of Program/Document: Accomplishments and Failures	Publications
Lower Snake River Compensation Plan Hatchery Evaluations	1989-present	USFWS	NPT	Imnaha River satellite facility, Lookingglass fish hatchery (LFH), Oxbow Hatchery, Irrigon Hatchery, Wallowa Hatchery	fish populations, genetic conservation	monitor aspects of LSRCP hatchery production performance, natural production status and performance, interactions of hatchery and natural juveniles, promote genetic conservation, and contribute to the co-management of the LSRCP program	adult escapement of both natural and hatchery origin chinook salmon and steelhead in several key spawning aggregates, pre-release sampling of LSRCP hatchery produced fish, monitoring of life stage survival of naturally and hatchery produced, identification of the genetic stock structure are monitored	
Lower Snake River Compensation Plan Steelhead and Chinook Salmon Evaluations			ODFW	Imnaha River Basin	steelhead and chinook populations, production, and management	establish and maintain artificial production programs for steelhead and chinook salmon to mitigate for fish losses associated with construction and operation of Lower Snake River Dams		
Oregon House Bill 3609				Oregon	anadromous fish populations and habitat	direct the development of plans for fully seeded, sustainable production of natural anadromous fish runs in Oregon river subbasins above Bonneville Dam through consultation among state and tribal entities		
Oregon Noxious Weeds Control Program			ODA	Oregon	noxious weed control	protect Oregon's natural resources from the invasion and proliferation of noxious weeds (ODA 2004). Goals include 1) Coordinate statewide noxious weed efforts, 2) Implement statewide integrated weed management projects 3) Conduct surveys to detect and delimit invasive noxious weed species, 4) Implement and coordinate biological control of weed projects, and 5) Provide information to cooperators		

Title	Project-ed Duration	Funding Source and ID # (BPA # if applicable)	Management Entity/ Responsible Agency	Program Scale	Key Ecological Functions Addressed	Goal of Program	Results of Program/Document: Accomplishments and Failures	Publications
PACFISH			USFS, BLM	Columbia River Basin	protection of habitat and populations of anadromous fish, riparian area management, watershed and habitat restoration, fisheries and wildlife restoration	protect areas that contribute to salmonid recovery and improve riparian habitat and water quality throughout the Basin, including the Innaha subbasin		
Partners in Wildlife Program		USFWS			riparian, wetland, and native plant community restoration	restoration of riparian areas, wetlands, and native plant communities		
Wallowa County Weed Control District			Wallowa County Weed Board	Wallowa County	noxious weed control	promote and implement noxious weed control in Wallowa County, contain existing weed populations and eradicate new invaders, , promote stewardship, preserve natural resources	county weed inventory, review of yearly herbicide application records, prioritize weed control efforts, coordinate control efforts, seek funding for weed control efforts, weed control education, annual weed tour	

## **4.2 Policies**

### **Oregon House Bill 3609**

This Oregon State Policy directs the development of plans for fully seeded, sustainable production of natural anadromous fish runs in Oregon river subbasins above Bonneville Dam through consultation among state and tribal entities.

### **Oregon Administration Rules**

The Administrative Rules Unit, Archives Division, Secretary of State publishes the Oregon Administrative Rules (OAR) Compilation and the Oregon Bulletin. The Oregon Administrative Rules Compilation is an annual publication containing the complete text of the Oregon Administrative Rules at the time of publication. The Oregon Bulletin is a monthly publication which updates rule text found in the annual compilation and provides notice of intended rule action, Executive Orders of the Governor and Opinions of the Attorney General.

OAR's that involve fish and wildlife planning include OAR 635 Division 008-Department of Wildlife Lands, OAR Division 100-Wildlife Diversity Plan, OAR Division 400-Instream Water Rights Rules, OAR Division 415-Fish and Wildlife Habitat Mitigation Policy, OAR Divisions 068-071, and Oregon Administration Rule (OAR) 635 Division 07-Fish Management and Hatchery Operation.

### **Public Law 566 (Small Watershed Program)**

NRCS administers the Small Watershed Program (including River Basin Operations) under Public Law 566. The Program works through local government sponsors and helps participants solve natural resource and related economic problems on a watershed basis (NRCS 2004d). Projects include watershed protection, flood prevention, erosion and sediment control, water supply, water quality, fish and wildlife habitat enhancement, wetlands creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance are available.

### **Nez Perce Tribe Treaty Rights**

The Imnaha subbasin is a part of the over 13 million acres in central Idaho, northeastern Oregon and southeastern Washington included in the Nez Perce Tribe pre-treaty area of tribal use. Although the Hells Canyon subbasin is outside of the Nez Perce Reservation, the Tribe reserves the right of its members to hunt and fish, and treaty rights apply to areas beyond current reservation boundaries. The treaty rights are based on the Treaties of 1855 and 1863 which maintained and protected the Nez Perce Tribe's historic rights to fish, hunt, and gather roots and berries and other resources on the reservation and at usual and accustomed places:

- 1855 Treaty, Article 3: “The exclusive right of taking fish in all streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.”
- 1863 Treaty, Article 8: “The United States also agrees to reserve all springs or fountains not adjacent to, or directly connected with, the streams and rivers within the lands hereby relinquished, and to keep back from settlement or entry so much of the surrounding land as may be necessary to prevent the said springs or fountains being enclosed; and, further, to preserve a perpetual right of way to and from the same, as watering places, for the use in common of both whites and Indians”

### **Federal Water Pollution Control Act of 1972 Section 404**

Department of Army permits are required under §404 of the Clean Water Act for discharges of dredged or fill material into waters of the United States, including wetlands. This includes excavation activities that result in the discharge of dredged material that destroy or degrade waters of the United States. Department of Army permits are also required under §10 of the rivers and Harbors Act of 1899 for work or structures waterward of the ordinary high water mark of or affecting, navigable waters of the United States.

### **FCRPS Biological Opinion and the Basinwide Salmon Recovery Strategy**

NOAA Fisheries has recently developed several documents and initiatives for the recovery of Endangered Species Act listed Snake River steelhead, chinook and sockeye. The Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp) and the Basinwide Salmon Recovery Strategy issued at the end of 2000 contain actions and strategies for habitat restoration and protection for the Columbia River Basin. Action agencies are identified that will lead fast-start efforts in specific aspects of restoration on nonfederal lands. Federal land management will be implemented by current programs that protect important aquatic habitats (PACFISH, ICBEMP, see above program section). Actions within the FCRPS BiOp are intended to be consistent with or complement the Council’s amended Fish and Wildlife Program and state and local watershed planning efforts.

NOAA Fisheries has also initiated recovery planning with the establishment of a Technical Recovery Team for the Interior Columbia, which includes Snake River stocks. The Technical Recovery Team will identify delisting criteria and viability criteria for populations within Evolutionarily Significant Units (ESU)s, identify factors that limit recovery, and identify early actions for recovery among other things. A stakeholder-based forum will develop a formal recovery plan from these products.

Subbasin plans will become local recovery plans or will become a substantial component of NOAA Fisheries recovery planning. The BiOp relies on subbasin plans to identify and

prioritize specific actions needed to recover listed salmon and steelhead in tributary habitats. NOAA Fisheries expects subbasin plans to include implementation of the BiOp's offsite mitigation actions in the Reasonable and Prudent Alternative (RPA). Specifically, subbasin planning should provide for RPA habitat actions 149 through 163 and harvest and hatchery RPA actions 164 through 178 that pertain to and require local planning and management.

## **5 Restoration and Conservation Projects**

Information presented in Table 9 describes past and ongoing projects in the Imnaha subbasin related to aquatic and terrestrial species and habitat restoration. Project information is organized in alphabetical order with information on location, scale, goals and results of the effort.

Table 9 Description of existing restoration and conservation projects related to fish and wildlife habitats and species within the Imnaha subbasin

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Acquire 27,000 Camp Creek Ranch at Zumwalt Prairie	2001-	BPA # 200104300		The Nature Conservancy	secure, restore and protect steelhead, bull trout, redband trout and chinook habitat on tributaries to the Imnaha River, including entire Camp Creek watershed. Restore and protect 27,000 acres of wildlife habitat on the Zumwalt Prairie.	Zumwalt Prairie, Camp Creek			Snake River steelhead, Columbia River bull trout, redband trout, Snake River chinook, Columbian sharp-tail grouse, Ferruginous and Swainson's Hawks	secure, restore and protect steelhead, bull trout, redband trout and chinook habitat on tributaries to the Imnaha River, including entire Camp Creek watershed. Restore and protect 27,000 acres of wildlife habitat on the Zumwalt Prairie.		

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Adult Steelhead Status Monitoring-Imnaha River Subbasin	Not Funded to date	BPA # 27021		NPT	quantify adult steelhead abundance, population growth rate, spatial distribution, and genetic stock structure in all tributaries of the Imnaha River subbasin through the operation of adult spawner escapement monitoring facilities	Imnaha River Subbasin			Steelhead populations and genetics	quantify steelhead adult escapement/abundance into tributary specific areas of the Imnaha River subbasin. Assess the feasibility/validity of remote monitoring approaches to quantify adult steelhead escapement in select tributaries of the Imnaha River subbasin. Collect stream temperature and discharge data to correlate with staff gauge information in all tributaries directly monitored for adult escapement. Coordinate study activities and communicate results with resource managers and other interested parties.		LSRCP Hatchery Evaluations: Conducts or assists with escapement monitoring in Lightning and Cow Creeks' juvenile survival trapping and survival estimation from the lower Imnaha River; LSRCP O&M and Evaluations ODFW: provides adult escapement monitoring in Little Sheep Creek; Evaluation of hatchery and natural returns; Imnaha River Smolt Monitoring: provides juvenile emigration characteristics and survival data, SAR information for steelhead in future years; Northeast Oregon Hatchery: will provide new weir at Gumboot that can operate in high flow conditions.
Imnaha Subbasin Inventory					48				May 2004			



Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Aspen by Harl Butte Lookout Riparian Enhancement - USFS		USFS		USFS	wetland/riparian exclosure	wetland in Needham Creek subwatershed	50864 7.9/ 50190 12.71	Big Sheep Creek/Marr Creek 0305	riparian enhancement			water quality-temperature
Audit Columbia basin anadromous hatcheries	1995	BPA # 9500200		Montgomery Watson		Little Sheep Creek Pond			anadromous fish hatcheries			
Audit Columbia basin anadromous hatcheries	1995	BPA # 9500200		Montgomery Watson		Imnaha Pond Hatchery			anadromous fish hatcheries			
Bear Gulch Pasture Fence - FS				USFS			50536 8.40/ 50278 84.62	Bear Gulch 0404	upland protection			water quality-temperature

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Big Sheep and Carrol Creek Deciduous and Conifer Planting Project	2000	Federal Highway administration	\$6,650	USFS	planted the riparian zone of Big Sheep (chinook, steelhead, bull trout) and Carrol Creek with coniferous and deciduous vegetation	.75 stream miles and 7 acres on private and USFS lands			riparian vegetation enhancement, water quality, erosion control, fish habitat enhancement	increase stream shade and increase bank stability in the long term	planted 750 Ponderosa Pine and 400 deciduous species	water quality, temperature, erosion control, fish habitat
Big Sheep Creek Bridge Abutment Repair					Project will remove excess material from underneath the bridge and take actions to prevent further soil erosion. Shade tolerant shrubs will be planted along the creek flanks.	Big Sheep Creek Bridge-located on FS road #3900-140			riparian rehabilitation	reduce bank erosion		rehabilitation
Big Sheep Creek Riparian Enhancement		OWEB		OWHP	streambank rock structures and riparian/upland enclosure fencing	Big Sheep Creek at confluence with Little Sheep Creek	51101 5.80/ 50406 13.83	Lower Little Sheep Creek 407	riparian protection			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Big Sheep Creek Riparian Enhancement - USFS				USFS		Big Sheep Creek	49885 4.99/50057 32.52	Big Sheep Creek/Tyee Creek 0303	riparian enhancement			water quality-temperature
Big Sheep Creek Riparian Fence	1993-2011	NRCS, OWHIP, private landowners		NRCS/SWCD	riparian enclosure fencing and planting	Lower Big Sheep above confluence with Little Sheep Creek	51147 9.26/50397 33.44	Big Sheep Creek/Steer Creek 0306	riparian protection			
Big Sheep Riparian Fence	2001-2011	GWEB, private landowners		NRCS/SWCD	riparian enclosure fence	Lower end of Big Sheep Creek, RM 4-6	51227 4.95/50373 25.37	Big Sheep Creek/Steer Creek 0306	riparian protection			
Big Sheep Riparian Fence and Revegetation GR-64	2001-2011	OWHP, private landowners		SWCD	riparian pasture fencing	Big Sheep Creek	51368 9.94/50341 56.7	Big Sheep Creek/Steer Creek 0306	riparian protection, revegetation		3,184 ft riparian fence, planted with trees, shrubs	

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Big Sheep Riparian Pasture Fencing & Trough Replacement	1995-2005	OWHP, private landowners		SWCD	riparian pasture fencing, spring development, trough installment	Big Sheep Creek	51286 9.81/50301 84.88	Big Sheep Creek/Steer Creek 0306	riparian protection			
Big Sheep/Carrol Creek Instream and Riparian Habitat Improvements -	2000			USFS	large woody material and boulder placement	Big Sheep/Carrol Creek	50168 4.07/50143 75.7	Big Sheep Creek/Tyee Creek 0303	instream and riparian habitat improvements			water quality-temperature
Bird Canyon	2000			USFS, Wallowa - Whitman NF	restoration in upland areas to protect riparian/aquatic system health and functions. Can include slope stabilization/ revegetation, exclusion fencing	1 acre	45.42/116.93	Bear Gulch 404	upland protection			water quality-temperature

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Bird Canyon Exclosure Construction	2000	TNC, Wallowa Resources, Grande Ronde Model Watershed, and USFS	\$3,500	USFS	exclosure constructed to improve riparian health, reduce erosion and provide wildlife habitat. Fence includes 3 acres of barb wire construction	3 acres			riparian health, reduced erosion, wildlife habitat	improve riparian health, reduce erosion and provide wildlife habitat.	3 acres fenced with 1/3 mile of barb wire	water quality, wildlife habitat
Bragg Investment Riparian Improvement, Imnaha River	2001-2011	OWEB		SWCD	fencing, spring development, trough installment	Imnaha River	516819.64/5029463.26	Imnaha River/Deer Creek 0206	riparian improvement			
Brigham Creek & Bird Canyon Spring				The Nature Conservancy and ODFW/USFS		Brigham Creek, Bird Canyon	505365.40/5029954.55	Bear Gulch 0404	wildlife habitat			
Bull trout life history	1994-1997	BPA # 9405400		ODFW, OS Systems		Indian Creek			bull trout life history			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Bull trout life history	1994-1997	BPA # 9405400		ODFW, OS Systems		Imnaha River			bull trout life history			
Bull trout life history	1994-1997	BPA # 9405400		ODFW, OS Systems		McCully Creek			bull trout life history			
Bull trout life history	1994-1997	BPA # 9405400		ODFW, OS Systems		Big Sheep Creek			bull trout life history			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Bull trout population assessment and life history characteristics in association with habitat quality and land use: template for recovery planning	2003-	BPA # 27017		Utah Cooperative Fish and Wildlife Research Unit, USGS	assess bull trout population density, abundance and life history characteristics for core areas of the Imnaha Subbasin and evaluate relationships to habitat quality and land use based on field evaluations and mark/recapture techniques.	Blue Mountain province, Imnaha subbasin: Imnaha mainstem, Big Sheep Creek, Little Sheep Creek, and Lick Creek	45.567/116.889	Lower Camp Creek 406	Bull Trout populations and habitat	comprehensive bull trout population assessment and monitoring; Comprehensive stream and riparian habitat assessment and monitoring; Feasibility of innovative pass-through PIT tag monitoring system		Characterize the Migratory Patterns, Structure, Abundance, and Status of Bull Trout Populations from Subbasins in the Columbia Plateau;
camp creek and trail creek weed control	pending	ODFW, rocky mtn elk foundation		TNC	weed control	Zumwalt Prairie		0501, 0406, 0405, 0407, 0404	riparian function, species and habitat viability			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
camp creek riparian restoration	pending			TNC	riparian restoration	camp creek			riparian rehabilitation			
Carrol Creek	2002	GRWM and KV		USFS	7.2 miles road decommissioning, 5 culverts removed	7.2 miles road decommissioning, 5 culverts removed						
Carrol Creek Exclosure	2001	GRWM and USFS		USFS	constructed 3/4 mile of let down fence				riparian protection			water quality, temperature



Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Carrol Creek Fire Salvage and Restoration Project, Big Sheep Creek Watershed – Informal Consultation (1-4-01-I-433)	2001-2002				remove salvageable dead fuels; reforest; redelineate the boundary of old growth preserve MA 15; repair and decommission existing roads; replace existing troughs and spring boxes, install fences around four springs; plant 2-3 acres of riparian vegetation; contour fell and leave dead trees (less than 10" in diameter);				reforestation, old growth preservation, road stabilization, erosion reduction, improved riparian and watershed conditions, soil productivity and channel stability, fish and wildlife habitat	reforestation, old growth preservation, road stabilization, erosion reduction, improve and enhance riparian and watershed conditions, improve soil productivity and channel stability, retention of fish and wildlife habitat elements		
Carrol Creek Rehab	2000			USFS, Wallowa - Whitman NF	improve, restore, or maintain quality and/or conditions of riparian zone vegetation	1 acre	45.29/117	Big Sheep Creek/Carrol Creek 304	riparian protection			water quality-temperature
Carrol Creek Riparian Enhancement - USFS				USFS		Carrol Creek	49580 2.07/50102 15.01	Big Sheep Creek/Carrol Creek 0304	riparian enhancement			water quality-temperature

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Carrol Creek Road Repairs project (1-4-98-I-78)- Site 10	1998-			Western Federal Lands Highway Division-US Department of Transportation	The bridge will be reconstructed in the same location. The new span will be 18.3 m (the old span was 11.1 m). New walls on the abutment will be constructed and riprap will be keyed along the wing walls and wall face. The location of the new walls will be approximately 1 to 2 m further away from the stream. Plantings will occur in all areas where project activities are occurring within or directly adjacent to the stream channel	The Carrol Creek ERFO sites are situated along the bottom 1.7 miles of Carrol Creek ending at it's junction with Big Sheep Creek. The project site is between 4,000-4800 feet in elevation and is located in T 3S, R 47E, Sections 18 and 19, Willamette Meridian			erosion reduction; protection of soil, water, and fisheries; riparian protection; fish passage	riparian protection and enhanced fish passage		

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Carrol Creek Road Repairs project (1-4-98-I-78)- Site 20	1998-			Western Federal Lands Highway Division-US Department of Transportation	involves replacing a culvert on Carrol Creek (Mile post 7.2) and reconstructing approximately 400 feet of washed out road (due to culvert plugging and washing out). Work will involve constructing a low water ford crossing using a 2.8 m x 1.9 m pipe arch (based on a 100-year event). The culvert will be passable by fish. Riprap will be placed on the inlet and outlet. Plantings will occur in all areas where project activities are occurring within or directly adjacent to the stream channel.	The Carrol Creek ERFO sites are situated along the bottom 1.7 miles of Carrol Creek ending at it's junction with Big Sheep Creek. The project site is between 4,000 and 4,800 feet in elevation and is located in T 3S, R 47E, Sections 18 and 19, Willamette Meridian			erosion reduction and fish passage	reduce bank erosion, enhanced fish passage		

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Carrol Creek Road Repairs project (1-4-98-I-78)- Site 30	1998-			Western Federal Lands Highway Division-US Department of Transportation	replace a culvert on Carrol Creek (Mile post 9.55), resurface approximately 600 feet of washed out road and reconstruct a road washout. A riprap headwall will be constructed on the inlet and outlet. The road washout will be reconstructed with riprap embankment that will be keyed into the stream bed. Plantings will occur in all areas influenced by project activities.	The Carrol Creek ERFO sites are along the bottom 1.7 miles of Carrol Creek ending at Big Sheep Creek. The project site is between 4,000 and 4,800 feet in elevation and is located in T 3S, R 47E, Sections 18 and 19, Willamette Meridian			erosion reduction, water quality	reduce erosion and improve water quality		

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Carrol Creek Road Repairs project (1-4-98-I-78)- Site 40	1998-			Western Federal Lands Highway Division-US Department of Transportation	involves rebuilding the road at three road washouts (Mile post 8.96, 9.1, and 9.17), where Carrol Creek washed away portions of the road prism. At mile post 8.96, 32 cubic m of material will be removed from the stream and replaced with riprap. At mile post 9.1, 60 cubic m of material will be removed from the stream and replaced with riprap. At mile post 9.17, 30 cubic m of material will be removed from the stream and replaced with riprap. Plantings will occur in all areas where project activities are occurring within or directly adjacent to the stream channel	The Carrol Creek ERFO sites are situated along the bottom 1.7 miles of Carrol Creek (FS? road 3940 – Carrol Creek Rd) ending at it's junction with Big Sheep Creek. The project site is between 4,000 and 4,800 feet in elevation and is located in T 3S, R 47E, Sections 18 and 19, Willamette Meridian			erosion reduction, water quality	reduce erosion and improve water quality		

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Clear Creek	2000			USFS, Wallowa - Whitman NF	restoration in upland areas to minimize risk to riparian/aquatic system health and functions. Can include slope stabilization/ revegetation, silvicultural treatments, livestock exclusion fencing	1 acre	45.43/116.94	Bear Gulch 404	upland protection			water quality-temperature
Clear Lake Pond Enclosure Reconstruction and snow fence	2000	TNC, Wallowa Resources, Grande Ronde Model Watershed, and USFS	\$12, 150	USFS	reconstruction of existing fence and enlargement for a total of 35 acres and 1 mile of fence. Also, 150 feet of snow fence and 200 feet of berm to increase water holding capacity.	35 acres				reconstruction livestock exclusion fence for 35 acres at Clear Lake Pond, construction to increase water holding capacity	35 acres fenced, berm improved	water quality, water holding capacity

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Comparative Survival Rate Study of Hatchery PIT-Tagged Chinook Salmon-PIT_Tag Marking Spring and Summer Chinook Salmon at Lookingglass Hatchery		BPA # 9712702		PSMFC, FPC, ODFW, BPA	a long term PIT tag study to develop smolt-to-adult survival indices for spring and summer stream type chinook originating above Lower Granite Dam to evaluate smolt migration mitigation measures and actions (such as flow augmentation, spill, and transportation) for the recovery of listed salmon stocks	Lookingglass hatchery			chinook populations	to evaluate smolt migration mitigation measures and actions (such as flow augmentation, spill, and transportation) for the recovery of listed salmon stocks		

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Compilation of existing and potential sites for anadromous fish hatcheries	1984-1986	BPA # 8405100		USSBA		Basin-wide			anadromous fish hatcheries			
Culvert Repairs/Replacement	2003-2013				culvert replacements in intermittent non-fish bearing channels. Replacement culverts will be sized to carry 100-year flood events and will be placed to ensure passage of all life stages of fish.				fish passage	culvert repairs/replacement to enhance fish passage		
Divide Riparian Pasture Fencing		OWHP, permittee, USFS		USFS	riparian pasture fencing w/ cattle guard	Big Sheep Creek, RM 26-36; Lick Creek, RM 0-4	49617 9.20/50032 95.51	Upper Big Sheep Creek 0301	riparian protection			water quality-temperature



Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Eastside Fire LWM project			\$4,800	USFS	involved falling LWM into headwater streams that were burned at high intensity	10 miles			fish habitat			water quality, temperature, fish habitat enhancement
Eastside Fire Riparian Rehabilitation - USFS				USFS			51649 9.37/50668 95	Imnaha River/Thorn Creek 0510	riparian rehabilitation			
Enhanced Conservation Enforcement for Fish & Wildlife, Watersheds of the Nez Perce		200005500		NPT	Increase conservation law enforcement (CE) protection of fish, wildlife, critical habitats and other natural resources within watersheds managed by the Nez Perce Tribe. The CE program will be coordinated with all of the NPT resource enhancement projects.							
evaluating supplementing summer steelhead	1989, 1991-1993	BPA # 8909700		ODFW		Little Sheep Creek			summer steelhead supplementation			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
evaluating supplementing summer steelhead	1989, 1991-1993	BPA # 8909700		ODFW		Imnaha River			summer steelhead supplementation			
Evaluation of re-establishment actions	1989-1999	BPA # 8805304		ODFW		Basin-wide						
Evergreen and Indian Crossing Rehabilitation	2001	GRWM and KV		USFS	planted three acres within Evergreen and Indian Crossing Campgrounds	3 acres			riparian protection			water quality, temperature, erosion control

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Exclosure Fence Maintenance	1999-2000	USFS	\$40,800	USFS	the entire stream corridor and upland riparian fence maintenance program on the Wallowa zone includes approximately 65 miles of stream corridor fence and 160 upland riparian exclosures	65 miles of stream corridor and 160 upland riparian exclosures in Upper and Lower Joseph, Upper and Lower Imnaha, Big Sheep, and Wildcat/Mud/Court. watersheds			protection of stream water quality and riparian areas	maintain exclosure fences within Upper and Lower Joseph, Upper and Lower Imnaha, Big Sheep, and Wildcat/Mud/Court. watersheds	protect stream corridor .	
Fish passage evaluation	1992-1995	BPA # 9204100		USACE		Imnaha River			fish passage evaluation			
Fish passage evaluation	1996	BPA # 9204101		USACE		Imnaha River			fish passage evaluation			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Genetic Evaluations of hatchery and natural fish	1989-1999	BPA # 8909600		NMFS		Camp Creek			genetic evaluations of fish			
Genetic Evaluations of hatchery and natural fish	1989-1999	BPA # 8909600		NMFS		Grouse Creek			genetic evaluations of fish			
Genetic Evaluations of hatchery and natural fish	1989-1999	BPA # 8909600		NMFS		Little Sheep Creek			genetic evaluations of fish			
Genetic Evaluations of hatchery and natural fish	1989-1999	BPA # 8909600		NMFS		Innaha River			genetic evaluations of fish			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Genetic Evaluations of hatchery and natural fish	1989-1999	BPA # 8909600		NMFS		Lick Creek			genetic evaluations of fish			
Genetic Evaluations of hatchery and natural fish	1989-1999	BPA # 8909600		NMFS		Imnaha Pond Hatchery			genetic evaluations of fish			
Genetics, population, and passage of natural fall chinook	1992-1996	BPA # 9204600		WDFW		Imnaha River			genetics, population, passage of natural fall chinook			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Grande Ronde Model Watershed Project	1992-present	BPA #199202601		GRMWP	model watershed project in OR, Standing Committee and Technical Committee provide coordination of efforts in the Grand Ronde and Imnaha subbasins	Grande Ronde and Imnaha subbasins			watershed assessment	to develop and oversee the implementation, maintenance, and monitoring of coordinated resource management to enhance the natural resources of the Grande Ronde River Basin	Assessment in 1993, Operations-Action Plan in 1994	
Grizzly Creek Stream Restoration - USFS	1998			USFS, Wallowa - Whitman NF	Improve, restore, or maintain quality riparian zone vegetation. Change or modify stream complexity and structure	Grizzly Creek; 3 acres riparian; 0.8 miles instream	51444 6.49/50103 35.56	Imnaha River/Summit Creek 0203	stream and riparian restoration			water quality-temperature
Grouse Creek Springs	2001			USFS					riparian protection			water quality-temperature

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Gumboot Creek	2000			USFS, Wallowa - Whitman NF	improve, restore, or maintain riparian zone vegetation; including but not limited to planting, fencing, off channel watering, or other management	5 mi.	45.16/116.92	Gumboot Creek 105	riparian protection			water quality-temperature
Gumboot Creek In-Stream Rehabilitation - USFS	1998	USFS		USFS	rehabilitate stream habitat altered in 1997 flood, instream placement of large woody debris, boulders, log weirs and floodplain restoration	Gumboot Creek; 4.5 miles instream; 5 acres riparian	50607 0.79/50008 11.49	Gumboot Creek 0105	stream restoration			water quality-temperature
Gumboot Creek Riparian Planting - USFS	2000	Federal highway Administration and GRMW	\$40,848	USFS	plant road cutbanks and fill slopes and the riparian zone adjacent to Gumboot Creek (steelhead and redband trout stream)	4.5 stream miles and 20 acres	50659 3.90/50010 15.46	Gumboot Creek 0105	riparian planting	increase stream shade, increase bank stability, increase cut and fill slope stabilization in the long term	Approx. 2000 native trees and shrubs	water quality, temperature, erosion control
Habitat Study	1987-1993	BPA # 8801500		NPT		Imnaha River			habitat study			

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Hat Point Road Flood Repair Project – Informal Consultation (1-4-98-I-131)	Summer 1998			USFS, ODFW	repair fill scarps, rebuild ditch, clean cattleguards, clean or replace culverts, shape roadbed, rebuild the roadway including ditch by replacing lost material with crushed aggregate, reslope scoured cutslopes	FS road 4240			road stabilization, erosion reduction	road stabilization, erosion reduction		water quality-temperature
Hatchery site feasibility and conceptual design	1991-1997	BPA # 8805300		Montgomery Watson		Imnaha River			hatchery sites			
Holding Pasture Spring Exclosure	2001	GRWM and USFS		USFS	reconstructed 1/16 mile of split rail fence				riparian protection			water quality, temperature
Imnaha Riparian Fence - NRCS		FCS, private landowners		NRCS/SWCD	riparian exclosure fence	Imnaha River	51283 9.71/50466 15.17	Imnaha River/Bore Creek 0501	riparian protection			



Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Innaha River	1998			USFS, Wallowa - Whitman NF		Innaha River	45.34/116.8	Innaha River/Chalk Creek 205				water quality-temperature
Innaha River Riparian Enhancement - USFS		USFS		USFS	large woody material additions	Innaha River	50848 0.14/49967 31	Innaha River/Dry Creek 0104	riparian enhancement			water quality-temperature
Innaha River Smolt Monitoring Program Project	1994-present	BPA # 198712703 and 199701500 and 199701501		NPT	provides information and indices on spring emigration timing, estimated smolt survival, smolt performance and health of wild and hatchery steelhead smolts captured	Innaha River to Snake and Columbia River dams			chinook and steelhead population, migration, and health	document migration trends of chinook salmon and steel head smolts emigrating out of the Innaha River and to estimate survival of steelhead smolts from the Innaha River emigration traps, to the Snake and Columbia River dams	Assist the Fish Passage Center Smolt Monitoring program successful operation and monitoring since 1994. In 2001 PIT tagged 9,954 natural chinook salmon, 2,997 hatchery chinook	

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-wat-er-shed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
											salmon, 3,571 natural steelhead, and 3,297 hatchery steelhead	
Innaha River Smolt Monitoring Program Project	1994-present	BPA # 199701500		NPT	provides information and indices on spring emigration timing, estimated smolt survival, smolt performance and health of wild and hatchery steelhead smolts captured	Innaha River to Snake and Columbia River dams			chinook and steelhead population, migration, and health	document migration trends of chinook salmon and steel head smolts emigrating out of the Innaha River and to estimate survival of steelhead smolts from the Innaha River emigration traps, to the Snake and Columbia River dams	Assist the Fish Passage Center Smolt Monitoring program	

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Imnaha Smolt Survival and Smolt to Adult Return Rate Quantification	Proposed in 2002 increased funding level never provided	BPA # 199701501		Nez Perce Tribe Department of Fisheries Resources Management	quantify juvenile emigrant abundance, determine smolt survival from the Imnaha River to Lower Granite and McNary dams, quantify smolt-to-adult return rate (SAR) of wild/natural chinook salmon at Lower Granite Dam and back to the Imnaha River	Blue Mountain province, Imnaha subbasin: trap located south of Imnaha, Oregon at the Cow Creek Bridge	N45 45/W116 26'		spring/summer chinook and steelhead (natural and hatchery) salmon populations	determine juvenile emigrant abundance and emigration timing of chinook salmon and steelhead smolts from the Imnaha River on an annual basis. Determine emigration timing of PIT tagged natural and hatchery chinook salmon and steelhead smolts at the lower Imnaha River trap. Determine arrival timing, travel time, and survival of PIT tagged natural and hatchery chinook salmon and steelhead released in Imnaha River subbasin to Lower Granite, Little Goose, Lower Monumental, and McNary Dams. Determine the smolt-to-adult return (SAR) of Imnaha River natural chinook salmon at Lower Granite Dam and at Imnaha River rkm 7.		spring/summer chinook salmon monitoring; Steelhead monitoring; Salmonid Gamete Preservation etc.	
Imnaha Subbasin Inventory												75	May 2004

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Imnaha/Parks Ditch Water Conservation Project				Wallowa Resources			51559 1.29/ 50137 77.47	Imnaha River/Summit Creek 0203	water conservation			
Leutenant Creek Spring Exclosure	2001	GRWM and KV		USFS	constructed 3/16 miles of fence and installed trough and spring box on spring located near tributary to Shadow Canyon				riparian protection			water quality-temperature
L Imnaha	2000			USFS, Wallowa - Whitman NF	improve, restore, or maintain riparian zone vegetation; including through planting, fencing, or other management,	0.5 mi.	45.70/ 116.7 8	Imnaha River/Thorn Creek 510	riparian protection			water quality-temperature

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Level 1 Road Maintenance	recurs on at least a seven-year rotation				occurs on roads closed to full sized vehicle traffic. Rehabilitate roads and ditches through natural revegetation and artificial seeding processes, using native species of grasses and forbs (since 1994). Maintain drainage facilities and runoff patterns				erosion reduction; protection of soil, water, and fisheries	road maintenance and erosion reduction		
Level 2 Road Maintenance	recurs on a three to seven year rotation				occurs on open roads managed for use by high-clearance vehicles. clean culverts, maintain water bars and drainage dips, outsloping road surfaces, grass seeding entire road and ditch surfaces, and replacing ditch relief culverts where needed.				erosion reduction; protection of soil, water, and fisheries	maintaining proper water passage and reducing erosion		

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Level 3, 4, and 5 Road Maintenance	recurs annually				occurs on open roads managed for use by low-clearance vehicles. Includes patching pavement; grading and/or replacing crushed aggregate surfaces; creating drainage dips; chip sealing worn pavement; dust abatement; maintaining water bars, drainage ditches, and culverts; seeding cut and fill slopes; trimming roadside brush.				erosion reduction; protection of soil, water, and fisheries	road maintenance and erosion reduction		
Lick Creek Bridge Replacement					Bridge will be replaced to maintain adequate fish passage. In addition, an undersized drainage culvert adjacent to Lick Creek Campground will be replaced.	Lick Creek Bridge-located on FS road 39			fish passage	maintain adequate fish passage		

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Lightning Creek	1998			USFS, Wallowa - Whitman NF			45.74/116.75	Lower Lightning Creek 507				water quality-temperature
Lightning Creek Road - Phase I		NPT/BPA, private landowners		NPT	relocate road out of creek bottom and construct stream crossing fords along Lightning Creek	Lightning Creek Road	519872.07/5064874.15	Lower Lightning Creek 0507	stream protection			
Little Sheep & Salt Creek Riparian Planting - USFS				USFS		Little Sheep Creek, Salt Creek	493555.08/5008388.31	Upper Little Sheep Creek 0401	riparian planting			water quality-temperature
Little Sheep Creek - Streambank Stabilization - NRCS		FSA, private landowners		NRCS/S WCD	streambank rip rap, log/barb vegetative planting, rock weirs	Little Sheep Creek	493331.42/5015267.36	Upper Little Sheep Creek 0401	streambank stabilization			

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Little Sheep Creek Bridge Replacement, Imnaha River Watershed, Wallowa County, Oregon – Formal Consultation (1-4-F-01-29)	2001			Federal Highway Administration US Dept. of Transportation	replace two single span timber structures with new single span concrete bridges. The new bridges will be constructed on the same alignment as the existing bridges to minimize disturbance. The new bridges will feature spill-through abutments and longer spans.	Little Sheep Creek Bridge on Highway 350 in northeast Wallowa County, OR			water flow, control of surface runoff	restore water flow, divers surface runoff away from stream		
Little Sheep Creek Fence - NRCS	1998-2008	FSA, private landowners		NRCS/SWCD	riparian enclosure fence	Little Sheep Creek	49884 3.21/ 50267 20.86	Middle Little Sheep Creek 0402	riparian protection			



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Little Sheep Creek Fencing GR-89	1992-2002	OWHP, private landowners		SWCD	riparian enclosure fencing and planting	Little Sheep Creek near junction of Imnaha Hwy and Wallowa Loop Rd.	49393 1.26/50199 46.48	Middle Little Sheep Creek 0402	riparian protection, planting		East side 443 ft fence, 370 ft on west side, water gap, 180 trees/shrubs planted on both sides	
Little Sheep Creek Improvement Project (KEC-4) Wallowa County, OR – Biological Opinion (1-4-02-I-0427).	July-October 2002	BPA		Grande Ronde Model Watershed, Oregon Department of Forestry, the Nez Perce Tribe, and the ODFWe	replace two culverts with bridges (FS road 39), fill a plunge pool at the outlet of the lower culvert with clean rocks and boulders, remove 20 yards of streambed substrate to prevent the development of a headcut, and place 15 large pieces of wood at nine different locations along Little Sheep Creek.				fish passage and habitat Improvement	improve fish passage by replacing two culverts with bridges and to improve fish habitat through the addition of large wood		

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Little Sheep Creek Riparian Fence - ODFW				ODFW		Little Sheep Creek	49939 5.25/50308 68.07	Middle Little Sheep Creek 0402	riparian protection			
Little Sheep Creek Streambank Protection				NPT		Little Sheep Creek	51073 3.61/50403 09.42	Lower Little Sheep Creek 0407	streambank protection			
Little Sheep Creek Streambank Protection				NPT		Little Sheep Creek	49344 9.66/50179 27.26	Middle Little Sheep Creek 402	streambank protection			
Lower Gumboot Creek Exclosure Construction	2000	Federal Highway Administration	\$5,900	USFS	livestock excluded from lower Gumboot Creek for a total of 12 acres	12 acres			steelhead spawning protection	protect spawning steelhead and the riparian area within lower Gumboot Creek	12 acres fenced with .81 mile of fence	water quality, temperature, steelhead spawning

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Lower Imnaha River Enclosure Fence - USFS	2000	USFS	\$1,850	USFS	livestock excluded from Imnaha River for a total of 3 acres on the Lower Imnaha River	3 acres	51692 3.65/50606 52	Imnaha River/Thorn Creek 0510	riparian protection	protect the Imnaha River (spring/summer chinook, fall chinook, steelhead, bull trout and redband trout) and promote increased bank stability and riparian vegetation growth	excluded livestock for a total of 3 acres	water quality, temperature, anadromous fish protection
Mahogany Spring	2001			USFS					riparian protection			water quality-temperature
Makin Pond	2000	Grande Ronde Model Watershed, USFS	\$6,100	USFS	exclosure fence construction and trough /spring box instillation	5 acres			riparian protection	exclosure fence construction, trough/spring box	5 acres fenced and one trough/spring box installed	water quality-temperature
Marr Flat	2002	GRWM and KV		USFS	1.25 miles fence and trough built to protect spring sites and cultural resource sites; 3 miles wood material placement; 33 acres conifer seedling planting, 17 trough/spring boxes installed							

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Marr Flat	2000			USFS, Wallowa - Whitman NF	change or modify stream complexity and structure, including but not limited to placement of large woody debris, construction of weirs/deflectors, creation of pools, or other actions designed to improve stream structure	0.5 mi.	45.20/116.94	Upper Grouse Creek 201	stream improvement			water quality-temperature
Marr Flat	2000			USFS, Wallowa - Whitman NF	change or modify stream complexity and structure, including but not limited to placement of large woody debris, construction of weirs/deflectors, creation of pools, or other actions designed to improve stream structure	0.8 mi.	45.18/116.97	Upper Grouse Creek 201	stream improvement			water quality-temperature

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Marr Flat Allotment & Big Sheep/Imnaha Fisheries	2000-	BPA # 200005900										
Marr Flat LWM	2000			USFS, Wallowa - Whitman NF	change or modify stream complexity and structure, including but not limited to placement of large woody debris, construction of weirs/deflectors, creation of pools, or other actions designed to improve stream structure	1 mi.	45.27/116.89	Lower Grouse Creek 202	stream improvement			water quality-temperature
Marr Flat LWM Placement	2000	BPA, Grande Ronde Model watershed and USFS	\$21,000	USFS	large woody material was machine placed into 5.5 miles. Hand placement occurred on one mile of streams within Marr Flat Allotment. Machine	5.5 miles instream			fish habitat, reduced erosion, bank stability	increase bank stability, decrease erosion, increase capture, storage and safe release of water, and increase capture of sediment needed to build floodplains	placement of large woody material into 5.5 miles	water quality, enhanced fish habitat

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Marr Flat/ Big Sheep Riparian Pasture Fencing		OWHP, permittee, USFS		USFS	riparian pasture fencing	Big Sheep Creek, RM 26- 34; Lick Creek, RM 0-1	49978 6.66/ 50058 53.34	Big Sheep Creek/St eer Creek 0303	riparian protection			water quality- temperature
McCully Creek Riparian Fence	1997- 2007	OWEB		SWCD	3000 ft riparian fencing along both sides of McCully Creek, 2 pond development for livestock watering	McCully Creek	49260 8.41/ 50170 08.54	Upper Little Sheep Creek 0401	riparian protection, decrease of sediment load			
McFarland s Exclosure	2000	USFS	\$8,300	USFS	exclosure constructed to exclude livestock from the McFarlands Four o'clock plant	5 acres				exclude livestock from 5 acres on the McFarlands Four o'clock plant	5 acres fenced	water quality
Miller Butte Pond Exclosure Fence Reconstru ction	2000	Grande Ronde Model Watershed and USFS	\$1,800	USFS	exclosure fence reconstruction	1 acre			water quality protection	pond exclosure fence reconstruction	1 acre fenced with 3/16 mile of fence	water quality- temperature

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Monitor and Evaluate Yearling Snake River Fall Chinook Released Upstream Of Lower Granite Dam	1998	199801004		NPT	Monitor and evaluate survival and performance of yearling fall chinook from Pittsburg Landing, Big Canyon, and Captain John acclimation facilities (Project 199801005) to maximize success of the fall chinook supplementation program above Lower Granite Dam.	Snake Basin upstream of Lower Granite Dam				Fall Chinook Salmon Spawning ground surveys (redd counts) in Imnaha River.	Annual Redd counts of fall chinook	
Mosquito Lake Let-down fence	2001	GRWM and USFS		USFS	constructed 0.25 miles of let down fence				riparian protection	livestock exclusion fencing		water quality, temperature
Mud Lake	2000			USFS, Wallowa - Whitman NF	restoration in upland to protect aquatic habitat and species	1 acre	45.44/116.93	Bear Gulch 404	upland protection			water quality-temperature
Mud Lake Pond Exclosure Reconstruction	2000	TNC, Wallowa Resources, Grande Ronde Model Watershed, and USFS	\$8,050	USFS	exclosure fence reconstruction and expansion to 32 acres	32 acres			water quality protection	reconstruction and expansion of livestock exclosure fence	32 acres of exclosure fence	water quality

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NE OR artificial production study	1997-1999	BPA # 8805305		ODFW		Basin-wide			artificial fish production			
Needham Butte Riparian Enhancement - USFS				USFS		Nedham Butte	50891 4.98/ 50211 96.96	Big Sheep Creek/Marr Creek 0305	riparian enhancement			water quality-temperature
Needham Spring	2000	Grande Ronde Model Watershed and USFS	\$2,200	USFS, Wallowa - Whitman NF	restoration in upland areas to protect riparian/aquatic system health and functions.	1 acre	45.33/ 116.8 8	Big Sheep Creek/Marr Creek 305	upland protection	reconstruction of livestock exclusion fence	fence on 1 acre, trough/spring box	water quality-temperature
Neiman Bridge Removal					Project involves removal of bridge and decommissioning of 1.7 miles of road (#3955-020) by removing two culverts and seeding the roadbed.	Neiman Bridge-crosses the Imnaha directly downstream from Blackhorse Campground along FS road #3955-020			riparian rehabilitation	bridge removal, road decommissioning		



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Nez Perce Harvest Monitoring	Not funded to date	200206000		NPT	Tribal harvest Quantification	Snake Basin Tributaries			Escapement Monitoring	Harvest estimates		LSRCP
Nine Point Creek	2000			USFS, Wallowa - Whitman NF	Change or modify stream complexity and structure, Improve, restore, or maintain quality and/or conditions of riparian zone vegetation;	Instream: 0.5 mi.; Riparian: 0.5 mi.	45.21/116.87	Imnaha River/Crazyman Creek 106	instream and riparian habitat improvements			water quality-temperature
Nine point Creek Deciduous and Conifer Planting Project	2000	BPA, Grande Ronde Model watershed and USFS	\$6,700	USFS	planting the riparian zone of Ninepoint Creek (tributary to the Imnaha River) with coniferous and deciduous vegetation	.5 stream miles, 5 acres			riparian vegetation enhancement, water quality	increase stream shade and increase bank stability in the long term	planted 1,500 Ponderosa Pine and 250 deciduous species	water quality, temperature, erosion control

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Northeast Oregon Hatchery project						Northeast OR			fish populations and conservation	design new facilities and identifying modifications to LFH necessary to meet program requirements and conservation objectives of LSRCP		
Pit tagging hatchery chinook	1996	BPA # 9602001		ODFW		Imnaha Pond Hatchery			chinook populations			
Pit tagging wild chinook	1991-1999	BPA # 9102800		NMFS		Imnaha River			wild chinook populations			
Preserve Salmonid Gametes	1997-present	BPA# 199703800		NPT	preserve male salmonid gametes through cryogenic techniques to maintain genetic diversity in populations with low levels of abundance and high risk of localized extinction	major subbasins in the Snake River basin			genetic diversity of salmonid populations	ensure availability of genetic sample of the existing male population through preservation in a salmonid germplasm repository	Chinook - 306 hatchery origin and 144 natural origin collected to date Steelhead - 327 hatchery origin and 20 natural origin to date	LSRCP

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Rich Creek	2000			USFS, Wallowa - Whitman NF	change or modify stream complexity and structure, including but not limited to placement of large woody debris, construction of weirs/deflectors, creation of pools, or other actions designed to improve stream structure	1.5 mi.	45.24/116.88	Lower Grouse Creek 202	instream improvements			water quality-temperature
Rich Creek/Shadow Canyon Riparian Enhancement - USFS	2000	Grande Ronde Model Watershed and USFS	\$1,350	USFS	exclosure fence reconstruction	Rich Creek, Shadow Canyon	510110.00/5012838.56	Lower Grouse Creek 0202	riparian enhancement	reconstruction of existing fence	0.5 acres fenced with 1/8 mile of fence	water quality-temperature
Rich Creek Spring Exclosure	2001			USFS	constructed 1/8 miles fence and installed trough and two spring boxes				riparian protection			water quality-temperature

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Riparian Rehab	2000			USFS, Wallowa - Whitman NF	improve, restore, or maintain quality and/or conditions of riparian zone vegetation; through planting, fencing, off channel watering, or other management	1 acre	45.76/116.79	Imnaha River/Thorn Creek 510	riparian protection			water quality-temperature
Riparian Rehab	2000			USFS, Wallowa - Whitman NF	riparian: improve, restore, or maintain riparian zone vegetation; including but not limited to planting, fencing, off channel watering or other management	1 acre	45.74/116.80	Imnaha River/Thorn Creek 510	riparian protection			water quality-temperature
Riparian rehabilitation within the Carrol Creek Fire	2000	USFS	\$12,050	USFS	rehabilitating skid roads, closed roads, and safety zones through placement of LWM, waterbar construction, boulder placement and seeding	3.5 miles of streams primarily Big Sheep Creek, North Fork Carrol Creek, and Owl Creeks			water quality, fish habitat, erosion control	rehabilitate skid roads, closed roads, and safety zones	rehabilitation of skid roads, closed roads, and safety zones g	water quality, erosion control, fish habitat enhancement

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Riparian Rehabilitation within the Eastside Complex Fire	2000	USFS	\$1,750	USFS	rehabilitate skid roads, and ponds placement of LWM, waterbar construction, and seeding	.25 miles of streams on Thorn and Tully Creeks			water quality, fish habitat, erosion control	rehabilitate skid roads and ponds	rehabilitation of skid roads, and ponds	water quality, erosion control, fish habitat enhancement
Road Canyon	2000			USFS, Wallowa - Whitman NF	Change or modify stream complexity and structure, Restoration in upland areas to minimize risk to riparian/aquatic system health and functions.	Instream: 1 mi.; Upland: 1 acre	45.30/116.91	Lower Grouse Creek 202	instream and upland improvements and protection			water quality-temperature
Road Canyon Headwaters Fencing - FS	2000	Grande Ronde Model Watershed, USFS	\$5,700	USFS	trough/spring/pond/gully instillation enclosure fence construction/reconstruction	Road Canyon	50647 8.22/50162 60.74	Lower Grouse Creek 0202	riparian protection	reconstruction of existing fence troughs/spring box installation	Repair and expand fence Two troughs/spring boxes installed	water quality-temperature

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Shadow Canyon Headwaters Exclosures #1	2001	GRWM and USFS		USFS	constructed 1/8 mile of fence and installed one trough and two spring boxes				riparian protection			water quality, temperature
Shadow Canyon Headwaters Exclosures #2	2001	GRWM and USFS		USFS	constructed 3/16 miles of fence and installed one trough and spring box				riparian protection			water quality, temperature
Shadow Springs	2000	Grande Ronde Model Watershed, USFS	\$3,150	USFS, Wallowa - Whitman NF	Change or modify stream complexity and structure. Restoration in upland areas to minimize risk to riparian/aquatic system health and functions.	Instream: 2 mi.; Upland: 8-10 acres	45.27/116.88	Lower Grouse Creek 202	instream and upland improvements and protection	exclosure fence reconstruction, stream restoration	8-10 acres fenced	water quality-temperature

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Sheep Creek Planting	2000			USFS, Wallowa - Whitman NF	Improve, restore, or maintain quality and/or conditions of riparian zone vegetation. Change or modify stream complexity and structure.	Instream: 2 mi.; Riparian: 2 acres	45.29/116.99	Big Sheep Creek/Carrrol Creek 304	instream and riparian habitat improvements			water quality-temperature
Skookum Creek Large Woody Debris Placement - USFS	1998	USFS		USFS, Wallowa - Whitman NF	Change or modify stream complexity and structure.	Skookum Creek; Instreams: 0.5 mi.	50509 8.86/49974 08.72	Imnaha River/Dry Creek 0104	instream improvements			water quality-temperature
Smolt monitoring	1987-1998	BPA # 8712700		PSMFC		Imnaha River			smolt monitoring			
Safety Net Artificial Propagation Plans	2003-	200200400		NPT, ODFW, NOAA, IDFG,	Extinction Risk Assessment	Snake Basin tributaries			Spring/summer Chinook, steelhead	Benefit Risk Assessments for high risk populations		
Spoon Spring Exclosure	2001	GRWM and USFS		USFS	constructed 1/16 miles of fence and installed trough and spring boxes				riparian protection			water quality and temperature

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Standardization of fish health monitoring	1987-1991	BPA # 8711800		ODFW		Basin-wide			fish health			
Summit Creek Diversion				ODFW, USFS	A space exists between the irrigation diversion and the screen containing a bypass allowing fish to return to Summit Creek. But, the bypass pipe is small and juvenile fish refuse to use it,				fish passage	appropriate water diversion and improved fish passage		
Telemetry tracking	1993-1996	BPA # 9307000		USFS		Basin-wide						



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Troy Imnaha Section Project (Wallowa County Roads) – Informal Consultation (1-4-99-I-192)	July-Sept 2000				the embankment along the Imnaha River will be reconstructed using riprap. A toe trench will be constructed from Station 1+640 to Station 1+700 to key the embankment.	Upper Imnaha Road 727. The work area is located 1.8 km (1.1 mi) south of Imnaha			bank stability, erosion reduction	bank stability, erosion reduction		
Upper Imnaha Fish & Recreation Enhancement - 94/95 FS		Misc., USFS		USFS	campground riparian plantings, interpretive signs, road closures	Upper Imnaha River, RM 58.5-64.5; Coverdale CG and dispersed campsite	50615 0.15/49945 77.18	Imnaha River/Drury Creek 0104	fish and recreation enhancement			water quality-temperature

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Upper Imnaha Fisheries & Recreation Enhancement				USFS			50022 4.43/ 49950 37.98	Imnaha River/Dry Creek 0104	fisheries and recreation enhancement			water quality-temperature
Upper Imnaha Recreation & Fish	1998			USFS, Wallowa - Whitman NF	Improve, restore, or maintain quality and/or conditions of riparian zone vegetation.	Riparian: 10 acres; 1.3 mi.	45.11/ 117.0 1	Imnaha River/Dry Creek 104	riparian protection			water quality-temperature
Upper Imnaha Recreation & Fish Enhancement CCS Project - USFS		USFS, volunteers		USFS	campground riparian planting and road closures	Imnaha River at Indian Crossing; Evergreen and Coverdale CG's	49894 1.52/ 49951 53.40	Imnaha River/Dry Creek 0104	recreation and fish enhancement			water quality-temperature

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Upper Imnaha Recreation & Fish Enhancement CCS Project 1999-2000 - USFS		BPA, Misc., USFS		USFS	campground riparian plantings, interpretive signs, road closures	Upper Imnaha River, RM 59-66; Evergreen CG; Coverdale CG and O65 campsite dispersed	50192 0.92/ 49953 93.68	Imnaha River/Dry Creek 0104	recreation and fish enhancement			water quality-temperature

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Upper Imnaha River Challenge Cost Share Project	1994-2000	USFS, GRMW, Little Foot Construction, Hells Canyon Preservation Council, ODFW, Oregon Trout, and the Wallowa County community	\$19,050	USFS	planting the riparian zone with native large stock, seedling conifers and fast growing shrub; strategically placing boulders and logs to create defined public access points within an approximate 100 acre area; interpretive signs and public education	Upper Imnaha River			fish habitat, reduced erosion, bank stability, riparian vegetation	preserve the special values of the Imnaha River; Maintain and protect fish habitat through careful resource management and recreation; provide opportunities for visitors to enjoy Imnaha fisheries, while maintaining high quality fish habitat; maintain, or enhance, the present level of water quality and soil productivity; upgrade existing rustic campgrounds for resource protection purposes	150 large potted western larch stock (2.5'-3.5' high) and 200 cottonwood were planted.	fish habitat enhancement, water quality, temperature, erosion reduction, road obliteration
Upper Mahogany	2001	GRWM and USFS		USFS	completed 1/4 mile of LWM hand placement on Upper Mahogany Creek	1/4 mile			fish habitat enhancement			water quality, temperature, fish habitat enhancement
Warnock Spring Exclosure	2001	GRWM and USFS		USFS	constructed 1/8 mile of fence				riparian protection			water quality, temperature

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Whiskey Riparian Corridor Fencing and Trough Replacement	1997-2007	OWHP, private landowners, USFS		USFS, SWCD	riparian corridor enclosure fence and trough improvements	Big Sheep Creek, RM 17-20.5	50475 1.97/ 50223 67.87	Big Sheep Creek/Marr Creek 0305	riparian protection		3 mi of fence on SE side, 1.5 mi on NW side, 1 water gap, 3 upland spring with troughs	water quality-temperature
Williams Imnaha Fencing & Spring Development	2000-2010			NRCS			51547 3.12/ 50200 76.56	Imnaha River/Chalk Creek 0205				
Witherrite/Imnaha				NPT			51300 7.16/ 50455 16.59	Imnaha River/Bore Creek 0501				
Zumwalt Prairie Preserve Grasshopper Sparrow Monitoring				TNC	grasshopper sparrow monitoring	Zumwalt Prairie		0501, 0406, 0405, 0407, 0404	riparian function, species and habitat viability			

Project Title	Project Duration	Funding Source and ID #	Cost	Responsible Entity	Brief Project Description	Scale of Project	X/Y UTM or lat/long	Sub-watershed name and #	Key Ecological Functions Addressed	Goal of Project	Results	Relationship to Other Activities
Zumwalt Prairie Preserve Hawk Monitoring	2003-2008			NRCS	Redtail hawks, Swainson's hawks, Ferruginous hawks	Zumwalt Prairie		0501, 0406, 0405, 0407, 0404	riparian function, species and habitat viability			

## 6 Prioritized Recommendations and GAP Analysis

This section attempts to assess the ability of existing projects to address the prioritized needs identified in the subbasin plan. The Imnaha Subbasin Management Plan recommends four general high priorities for aquatic species and habitat management and a number of species specific recommendations (Section 6.3.1 of the management plan). The management plan makes five high priority recommendations for terrestrial species and habitats (Section 6.1.2.1 of the management plan). These priority recommendations are summarized below and then discussed in terms of information presented in the inventory.

### 6.1 Aquatic Priorities and GAPs

One aquatic recommendation is **restoration**. Based on the multi-species limiting factors analysis, high priority restoration areas are most common in the Big Sheep Creek watershed. Excessive stream temperature, low flows and channel form/stability are the most common limiting factors affecting multiple species. For optimal ecological benefits, restoration efforts should occur first in upland or headwater areas and proceed downriver. Restoration of lower- and middle-mainstem habitats in the Imnaha is identified as a moderate priority, based on multiple species occurrence and their life history needs. Common problems affecting the species that occur in these reaches include channel stability, low flows, high stream temperatures, and excessive sedimentation. Restoration efforts should occur first in upland or headwater areas and then proceed downriver to effectively address problems in the lower elevation portions of the subbasin. As Table 9 lists, many restoration projects have occurred and are in process in the Imnaha Subbasin. The NPT, TNC and state and federal agencies are actively engaged in projects to restore habitat in the Imnaha Subbasin. These efforts need to continue to be funded and implemented, and new projects need to be developed to address problems and areas of the subbasin without current efforts.

The second recommendation involves **protection** of existing high quality aquatic habitat, particularly in headwater reaches. The Imnaha subbasin includes a high percentage of land under protected status, including large portions of the subbasin in designated wilderness area, in the Hells Canyon National Recreation Area and under the ownership and management of the Nature Conservancy. But, as Figure 3 shows, much of the subbasin exists without specific protections for fish and wildlife. Differences in the focus and goals in land management across the subbasin result in differing ecosystem conditions and levels of protection for the fish and wildlife populations of the subbasin. Multiple species will benefit if headwater reaches are protected. The wilderness designation in many of the analysis areas of the upper mainstem Imnaha and Big Sheep Creek effectively addresses this priority for QHA prioritized HUCs in these watersheds. Priority areas identified by QHA as ‘protect and restore’ should be addressed throughout the subbasin in order to benefit multiple focal species (*e.g.*, HUCs 07Q, 08C, and 09J). These are areas, such as Lick Creek, that provide an important ecological/biological function for a given focal species, but would improve considerably given appropriate restoration actions occur. Existing protections in the subbasin are listed in Table 6. The Nature Conservancy has been active in purchasing land in the subbasin. While

significant activity has occurred historically to provide protection for fish and wildlife in the subbasin, the Technical Team has identified this need as an ongoing high priority.

The third recommendation involves participating in a **regionally coordinated RM & E** approach. According to the ISAB (2003), the value of a monitoring and evaluation plan is greatly enhanced if different types of monitoring are integrated. Adherence of a regionally accepted, scientifically based RM&E approach, will provide us with a better picture of species status at differing resolutions (*e.g.*, reach, HUC, watershed, population unit, subbasin, ESU, province). Numerous RM & E and data gap needs exist as outlined in Table 5, Table 6 and Section 4.4.1 in the management plan. Current or ongoing RM&E programs (as described in the inventory) incorporate many of these RM&E needs but fall short of what the Technical Team thinks adequate to meet the information needs of planning and implementation in the subbasin.. Development of new projects in the subbasin will therefore need to be coordinated with existing programs to maximize effectiveness, reduce redundancy, and enhance spatial and temporal data comparability. The broad nature of identified strategies will likely result in the delineation of multiple focused restoration or implementation projects that, when results are combined, will address the overall need identified in the subbasin plan.

The fourth aquatic recommendation **Genetics Research** involves the collection of genetics data for each focal species. This information will allow for the differentiation of populations and sub-populations, and provide for more effective management of the five focal species. Some genetics research is identified in Table 8, but only a fraction of what is called for under this priority. Additional projects need to be implemented to begin addressing this priority.

The Technical Team also made a number of focal species specific recommendations. Most of these recommendations are address under the restoration and protection discussion in this section, but a number are not.

For **spring chinook**, the Technical Team recommended the collection of juvenile emigrant abundance data, determination of egg-to-emigrant survival rates. representative trapping and tagging across the entire emigration period, definition of production, collection of genetic information at the population level, collection of dispersal and stray rate information, and collection of spawn-timing data.

For **fall chinook**, the technical team recommended the collection of genetic samples that allow for the differentiation of Snake/Imnaha ancestry, the definition of production and additional assessment of outmigrant timing.

For **steelhead**, the technical team recommended the determination of egg-to-emigrant survival rates, representative trapping and tagging across the entire emigration period, definition of production, and collection of genetic information at the population level

**For bull trout**, the Technical Team recommended the determination of relative proportions of resident and migratory life history forms, definition of bull trout use in the Snake River mainstem, definition of bull trout fidelity to their natal streams, continued



collection of abundance and distribution data, and an evaluation of connectivity between local populations

For **Pacific Lamprey**, the Technical Team recommended collection information critical to improve our understanding of Pacific lamprey in the subbasin, including population distribution, population abundance/density estimates, capture efficiencies, population monitoring, basic ecological information, including habitat use, and within species biodiversity.

Specific needs defined at the Columbia River Basin Lamprey Technical Workshop (March 9, 2004) and endorsed by USFWS (K. Paul, USFWS, personal communication, April, 2004) include the following:

- Lamprey status
- Basic Biology/Ecology, including but not limited to:
  - species and gender
  - migration
  - aging
  - reproduction
  - growth
  - feeding
- Genetic Structure
- Adult/Juvenile Passage
- Survival estimates
- Limiting factors
  - environmental stressors
  - habitat requirement/availability for life history stages
  - host availability
- Restoration Actions
- Education and Outreach

No projects were identified that will address the Pacific lamprey needs. Table 8 lists a number of projects that collect some needed information for salmon, steelhead and bull trout, but many of these information needs remain unaddressed.

## 6.2 Terrestrial Priorities and GAPS

The first terrestrial species and habitat high priority recommendation involves reducing the **risk of catastrophic fire**. Altered fire regimes and other disturbance processes have changed the stand density, and vegetative composition of the subbasins forests. Fuel loads have accumulated and more of the subbasins forests exhibit fuel model 9 or 10 characteristics than did historically. Fires burning in these fuel models can have much higher intensities, are more difficult to suppress, and have longer and more severe ecological impacts than other fires. Much new work needs to be initiated to address this priority.

The Technical Team also prioritized reducing **the risk of noxious weed invasion** into grassland habitats. The grassland habitats of the Imnaha subbasin are still in relatively good condition relative to other grassland habitats in the Columbia Basin. Preventing the further establishment and spread of noxious weeds into these habitats is a priority for maintaining these high quality areas. Focus noxious weed efforts based on the priorities set by Wallowa County (see assessment section 1.5.2). A number of programs and projects are listed in Table 7, Table 8, and Table 9 that address problems with noxious weeds. Both the Planning and Technical Teams indicated that while important, these existing efforts fall far short of current and potential future needs associated with this priority. Current efforts need to be grown and more programs and projects need to be developed before these problems become much more severe.

Third, the Technical Team recommended **restoring degraded riparian areas**. Riparian areas are very important to both the aquatic and terrestrial wildlife populations of the Imnaha subbasin. The Imnaha subbasin Multi-species Biological Assessment (USFS 2003d) identified 17 subwatershed in the subbasin where riparian conditions are functioning at risk (7A,7D,7E,7H,7J,7K,7M,7O,7P,7Q, 8D, 9A,9D,9E,9F,9H,9K); see [Figure X](#) for locations) maintaining and enhancing riparian conditions should improve habitat for fish and riparian dependent wildlife and improve connectivity between habitats and populations. Other finer scale areas of the subbasin may be identified as needing riparian restoration in the future. Table 9 lists many restoration projects that have occurred and are in process in the Imnaha Subbasin. The NPT, TNC and state and federal agencies are actively engaged in projects to restore riparian habitat in the Imnaha Subbasin. These projects need to continue to be funded and implemented, and new projects need to be developed to address problems and areas of the subbasin without current efforts.

The Technical Team also recommended **increasing baseline data collection and monitoring**. Increased information on terrestrial populations in the subbasin, their interactions and ecosystem function is vital to effective management of the subbasins terrestrial resources. Increased levels of baseline data collection and monitoring during and after project implementation will increase the ability for effective adaptive management.

Fifth, the Technical Team recommended **protecting existing good quality habitat**. Many areas of the subbasin contain terrestrial habitats in good condition particularly when compared to the rest of the Columbia Basin. For example, the native bunchgrass habitats of the subbasin are among the best remaining examples in the region. Protecting these habitats should be a top priority as they provide habitat for species that have lost habitat across much of their historic range, support ESA listed plant populations, provide reference conditions that may be useful to restoration efforts in other areas. Protection of areas while they are in good condition is far more cost effective than restoring degraded areas, if restoration is even feasible. The Imnaha subbasin includes a high percentage of land under protected status, including large portions of the subbasin in designated wilderness area, in the Hells Canyon National Recreation Area and under the ownership and management of the Nature Conservancy. But, as Figure 3 shows, much of the

subbasin exists without specific protections for fish and wildlife. Differences in the focus and goals in land management across the subbasin result in differing ecosystem conditions and levels of protection for the fish and wildlife populations of the subbasin. Additional projects to increase protection of terrestrial species and habitats need to be developed.

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