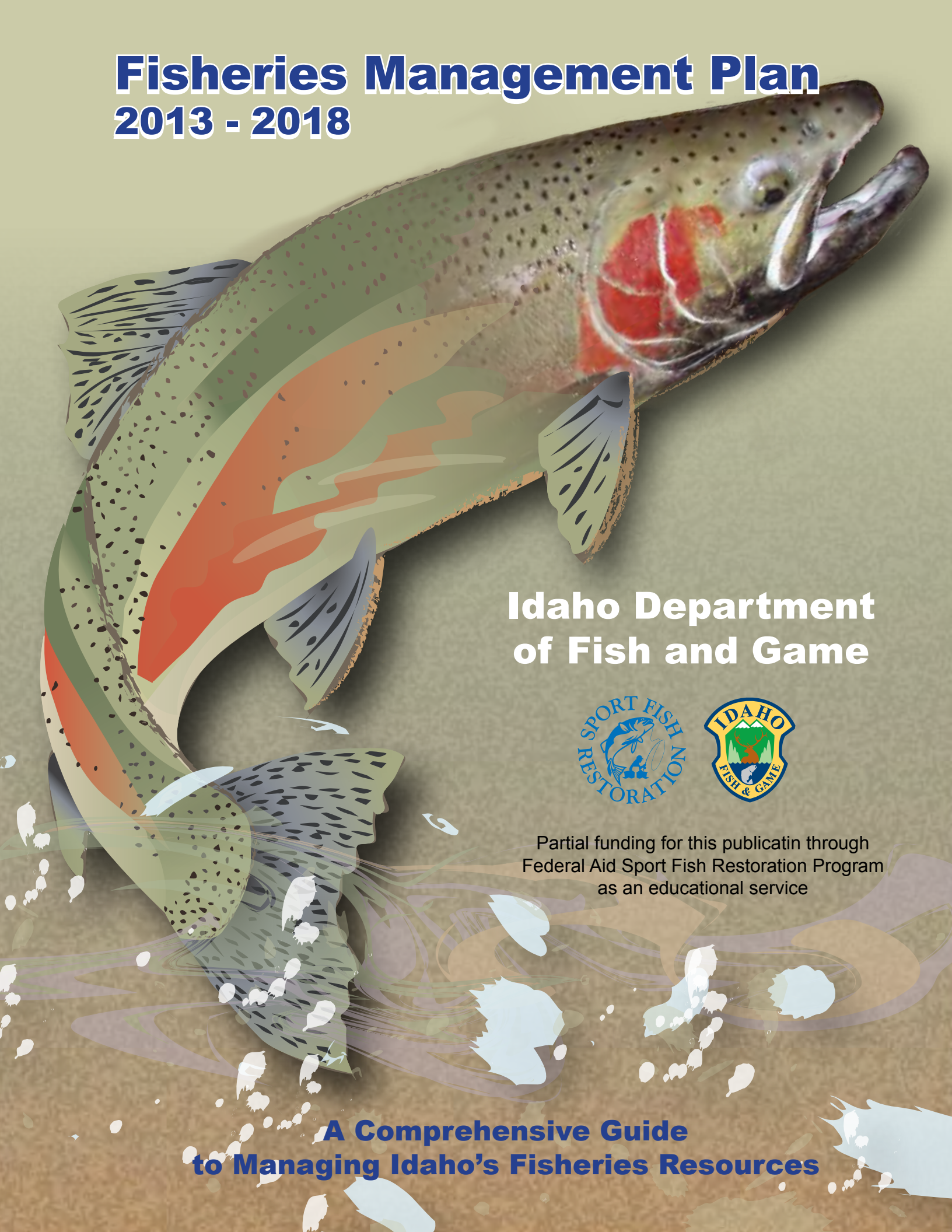
Fisheries Management Plan
2013 - 2018



Idaho Department of Fish and Game

Partial funding for this publicatin through
Federal Aid Sport Fish Restoration Program
as an educational service

A Comprehensive Guide to Managing Idaho's Fisheries Resources

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INTRODUCTION

The 2013 – 2018 Fisheries Management Plan describes the management direction of the Idaho Department of Fish and Game (Department) and is the guiding policy document for fisheries activities over the six-year period. The document's goals, objectives, and deliverables are tiered to the Department's strategic plan known as the "Compass." This management plan establishes policy direction for Department personnel that maintains their focus on priorities identified by our angling constituency and other stakeholders.

Idaho Code section §36-106 directs the Department to, "…preserve, protect, perpetuate, and manage…" the fisheries resources of the state for the citizens of Idaho and "…. provide fishable populations." The plan describes both general and specific Department policies and establishes our major goals and objectives. In some cases, the management direction outlined in this plan is a continuation of long-established programs. In other cases, new issues and management challenges, whether they are biological or social in nature, are discussed and relevant Department actions are proposed. After public review and approval by the Idaho Fish and Game Commission, this document will guide fishery management in Idaho from 2013 through 2018. Annual work activities of Department field and headquarters fisheries staff will be guided by the priorities and framework approved in this plan.

HOW TO USE THIS DOCUMENT

The plan is divided into two parts:

1. Part 1 of this plan deals with fisheries management on a statewide basis, and provides Department goals, objectives, and desired outcomes. Department policies and fisheries management programs are described. Results of the 2011 Angler Opinion Survey are summarized, statewide issues and programs are discussed, and strategies are identified to attain the goals.

2. Part 2 of this plan proposes specific management direction for all drainages in the state. This document contains currently relevant management issues and general plans for major water bodies in the state. It is a description of objectives and strategies for what the Department deems the most important waters per drainage as determined by angler use and complexity of the management program. A narrative overview describes the location, gives pertinent statistics on use, land management activities, demographics, and describes the habitat and important fisheries. Objectives and specific programs by drainage are listed. Management direction for important waters by drainage is presented. This section is intended to be adaptive to respond to changing biological, temporal, and social climates.

PART 1—STATEWIDE MANAGEMENT

Funding of Programs

Budget preparation for Bureau of Fisheries activities of the Department will be within the guidelines of this plan as needed to support annual activities and objectives. The Bureau of Fisheries of the Department receives approximately $11.0 million annually from the sale of fishing licenses and through the Federal Sport Fish Restoration Program. Funds for this program come from a National trust fund generated from excises taxes on fishing tackle, associated equipment, and motor boat fuels. The Bureau of Fisheries also receives approximately $13.8 million in federal grant funds to address specific objectives; many of which are associated with mitigation programs for salmon and steelhead. In addition to the above, the Bureau of Fisheries receives approximately $3.2 million annually in non-federal or private grants to address specific mitigation objectives. Programs supported with the above funds include fishery management and research, fish hatchery production (anadromous and resident species), boating and fishing access, fish screens and fish ways, and aquatic education. A breakdown of specific fund sources and programs is presented in Figure 1.

Accomplishments from 2007-2012

During the past 2007-2102 planning period, the Department established goals and objectives for a number of fisheries programs. A summary of significant accomplishments of the Bureau of Fisheries during the 2007-2012 planning period is included in Table 1.

Idaho Fish Species

IDFG has management responsibility for 82 species of fish in Idaho of which 12 species are native game fish. An additional 30 species are game fish that have been introduced (Table 2).

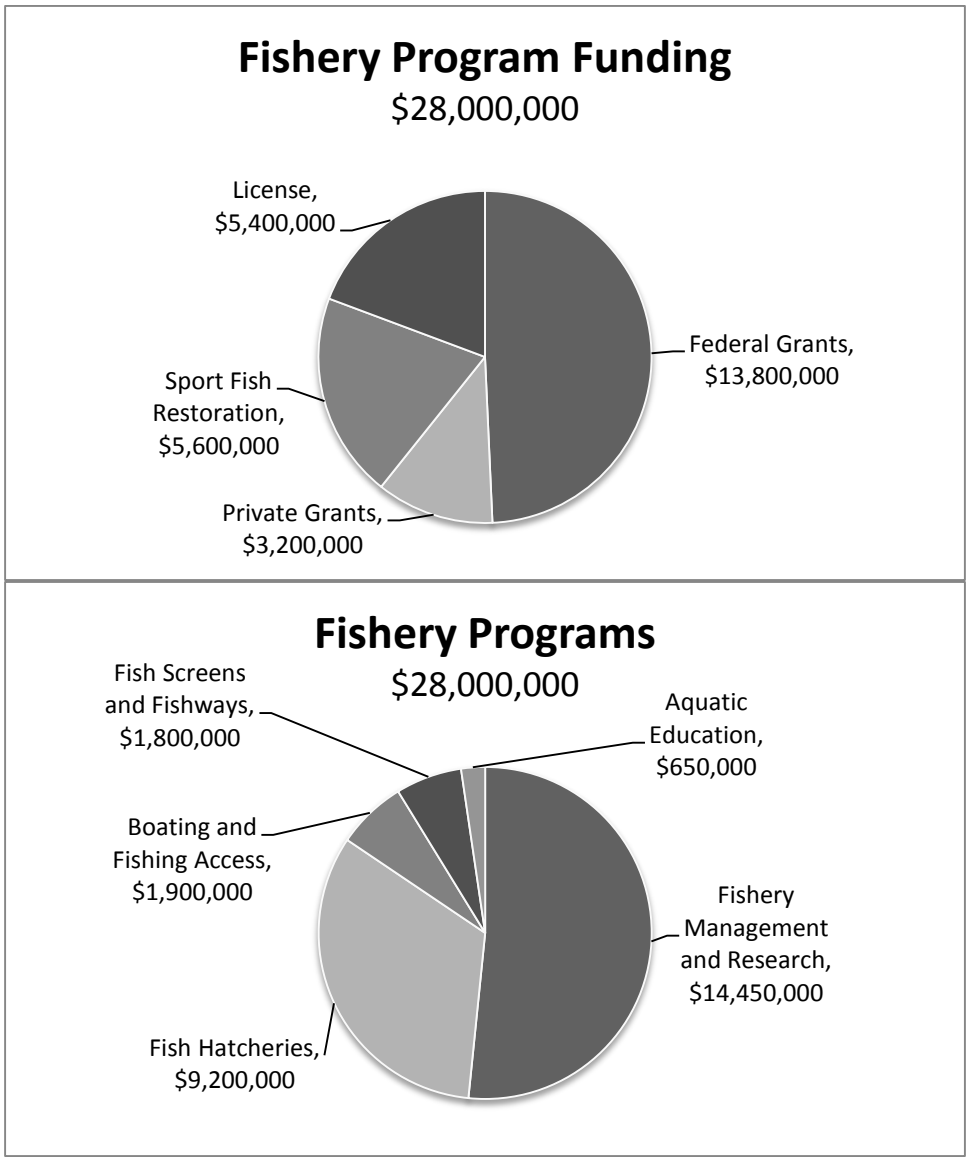

Figure 1. Fishery programs (top panel) and associated fund sources (bottom panel) for fiscal year 2013 for the Idaho Department of Fish and Game's Bureau of Fisheries.

Table 1. Summary of accomplishments by program from the 2007-2012 planning period.

Program	2007-2012 Goals	Accomplishments
Increase emphasis on habitat protection.	Conduct habitat improvement projects.	Numerous stream fencing, diversion screening, and fish passage projects completed. Reconnected tributaries to mainstem rivers.
	Expand volunteer involvement. Expand involvement in habitat restoration	Utilized volunteers in nearly all habitat projects. Fish habitat program established in 2007with hiring of statewide coordinator and biologists in all but two regions. Habitat program engineer hired in 2010. Implemented intensive fish population monitoring program in Clearwater and Salmon regions.
Provide a diversity of angling opportunity.	Provide a mix of hatchery trout and wild trout management, and general and quality management.	Done throughout the state.
	Evaluate potential new species introductions and stock if appropriate.	New or reestablished fisheries for white sturgeon, yellow perch, kokanee, tiger muskie, and channel catfish. Established fall Chinook salmon fishery and additional areas opened for spring/summer Chinook fisheries.
Provide increased family fishing opportunity and manage as consumptive fisheries with simple fishing rules.	Provide additional access and information on where to go.	Reprinted *The Official Guide to Fishing in Idaho.* Family Fishing Water brochures produced for each region.
	Identify sites and initiate development of new fishing waters.	Established 88 Family Fishing Waters with simplified fishing rules. Created Deer Creek Reservoir in the Clearwater Region. New community fisheries created in the Upper Snake, Southeast, Magic Valley, and Southwest regions.
Continue quality and trophy fishing opportunities.	Manage existing quality and trophy waters.	Produced new state records for nine game fish species.
	Establish additional quality and trophy waters.	Deleted 3 waters from quality/trophy management since they did not attain objectives. No new waters added.
Increase emphasis on protection and enhancement of wild trout.	Enhance wild trout habitat protection.	Numerous stream fencing, diversion screening, and fish passage projects completed. Reconnected tributaries to mainstem rivers.
	Increase public awareness of wild trout values.	Built informational signs and fish identification boards, produced and distributed stickers and brochures; press and TV coverage.
	Reduce potential impacts of hatchery trout on wild trout.	Maintained sterile (triploid) hatchery rainbow trout program. Stock sterile lake trout in Bear Lake and sterile brook trout in Henrys Lake
	Implement statewide wild trout management program.	Ongoing program to integrate native trout conservation plans with reduced harvest rules.
Continue emphasis on hatchery trout programs in streams, lakes, and reservoirs.	Designate, sign and publicize locations of put-and-take trout streams.	Signing completed to assist anglers wanting to fish on put-and-take streams.
	Concentrate stockings in high-use/high-return streams increase the number and frequency of fish stockings.	Done in a majority of sites. Improved stocking reports on Department website. Implemented stocking criteria protocols to refine allocation and maximize benefits of hatchery fish.

Program	2007-2012 Goals	Accomplishments
Continue emphasis on protection and restoration of salmon and steelhead.	Enhance hatchery fish health and smolt quality.	An ongoing program that includes extensive disease sampling, modified rearing strategies to reduce stress, structural modifications, and the completion of netting to reduce avian disease transmittal.
	Maintain a secure wild fish management program.	Have maintained wild management-only drainages. Assisted in habitat protection and/or improvement in key production areas in Salmon River. For many years have allowed harvest of only adipose-clipped fish.
	Emphasize management for natural production.	Supplementation research on-going; releasing all natural Chinook that arrive at hatchery weir so they spawn naturally.
	Provide continued fisheries for surplus hatchery fish.	Conducted salmon and steelhead fishing seasons each year.
	Intensify efforts to improve migration survival.	Department participating in collaborative science processes and in-season migration management forums.
Provide additional angling information to the public.	Continue production of maps, brochures and other information. Finish developing Anglers Guide brochures on lowland lakes and reservoirs.	Updated and reprinted *The Official Guide to Fishing in Idaho.* Published Access Guide. Brochures developed for eight (12 total).
	Informative signs and brochures, and use of electronic media.	Brochures developed for three waters (11 total). Continued this ongoing program into wild trout activities. Numerous informational signs, stream drainage maps and brochures completed or updated; angling information provided on Department website via Fish Planner
	Provide locations of put-and-take stocking sites with signs and maps and informing media.	Standardized put-and-take signs posted at all put-and-take stream stocking sites, new angler guide with expanded maps produced.
	Improve angler ability to identify various fish and increase awareness of regulations.	Improved quality and quantity of fish pictures in rule books. Distributed placemats, bumper stickers, leaflets, and other printed materials to help anglers identify key species. Used 3-D Fish ID display at various events to test anglers' identification skills.
Improve condition of boating and fishing access sites.	Continue program of acquiring lease, easement or fee title to key areas to provide angler access.	325 access sites are provided. New access/fishing ponds provided 2007-2012: (Spirit Lake addition; Falk Bridge; Edson Fichter Pond; North Fork; Bayhorse; Deer Creek; Deyo Reservoir; Springfield Pond; Ryder Pond; Filer Pond; Carmen Bridge; Highway 52 Bridge; Colton Creek; Pahsimeroi River; Weiser Pond).
	Expend approximately $2,100,000 per year on maintenance or development of new fishing, handicap, docks and boating access facilities.	$9,721,390 spent on renovations and operations. 41 sites renovated. Standardized kiosks and signs at access sites.
Increased emphasis on recruiting and retaining new anglers.	Conduct youth fishing clinics.	Department fishing clinics conducted each year throughout the state with thousands of participants. Fishing trailers with equipment available in all regions. Increased focus on promoting participation in recreational fishing.
	IDFG will continue to foster cooperative educational programs such as Trout in the Classroom and Idaho Salmon and Steelhead	Evaluated the effectiveness of the aquatic education programs administered. *Idaho Salmon and Steelhead Days* and *Trout in*

Program	2007-2012 Goals	Accomplishments
	Days.	*the Classroom* held annually. Viable *Trout in the Classroom* programs established throughout the state. Aquaria now found in many elementary schools around state.
Simplify and standardize fishing rules.	Make fewer changes to fishing rules to reduce confusion. Increase signage, information, and other means of making rules more understandable.	Totally redesigned fishing rule booklet for ease of use and clarity. Maps explaining rules updated for several river systems; numerous special signs developed, fish identification signs developed and placed near streams. Standardized bag limits and regulation options for fishing (e.g., 6 trout, 6 bass). Clarified winter stream fishing rules and open most streams year-round. Reduced/condensed definitions. Standardized signage statewide. Extended the 2008 – 2009 fishing rules booklet an additional year so it was valid for three years (2008 – 2010). Only exceptions to standard rules and seasons are listed in the rules booklet. Developed interactive map for updates on salmon and steelhead fisheries. Established salmon season Hotline on the phone. Created hatchery database for the public.
Improve knowledge on native nongame fish species		We completed a population genetics assessment of Shoshone sculpin and a basin-wide status assessment for Wood River sculpin. IDFG finished a status report for Pacific lamprey. Completed a population status assessment report of nongame species for the upper Snake River basin. We became signatories to conservation strategies for Pacific lamprey, northern leatherside chub and bluehead sucker.
Develop management plans for native game and nongame species.		Management plans completed for Snake River white sturgeon, Yellowstone and Bonneville cutthroat trout, Big Lost River mountain whitefish, and Bear Lake endemics.

Table 2. A list of Idaho fish species and their distribution by drainage, current as of 2012.

		Species			Drainage[a]							
Common Name	**Family**	**Common Name**	**Scientific Name**	**Origin[b]**	**K**	**P**	**S**	**Pa**	**Sb**	**Sa**	**B**	**I**
Trout	Salmonidae	Lake whitefish	*Coregonus clupeaformis*	I		X						
		Bear Lake whitefish	*Prosopium abyssicola*	N							X	
		Pygmy whitefish	*Prosopium coulteri*	N		X						
		Bonneville cisco	*Prosopium gemmifer*	N							X	
		Bonneville whitefish	*Prosopium spilonotus*	N							X	
		Mountain whitefish	*Prosopium williamsoni*	N	X	X	X		X	X	X	X
		Coho salmon	*Oncorhynchus kisutch*	I[c]					X	X		
		Sockeye salmon	*Oncorhynchus nerka*	N					X			
		Kokanee	*Oncorhynchus nerka kennerlyi*	N	X	X[I]	X[I]		X	X[I]		X[I]
		Chinook salmon	*Oncorhynchus tshawytscha*	N			X[I]		X			
		Golden trout	*Oncorhynchus aguabonita*	I	X		X		X	X		X
		Westslope cutthroat trout	*Oncorhynchus clarkii lewisi*	N	X	X	X		X			
		Yellowstone cutthroat trout	*Oncorhynchus clarkii bouvieri*	N						X		X
		Bonneville cutthroat trout	*Oncorhynchus clarkii utah*	N							X	
		Lahontan cutthroat trout	*Oncorhynchus clarkii henshawi*	I					X	X		X
		Rainbow trout	*Oncorhynchus mykiss*	N	X	X[I]	X	X	X	X[I]	X[I]	X[I]
		Redband trout	*Oncorhynchus mykiss gairdneri*	N	X				X			
		Steelhead trout	*Oncorhynchus mykiss gairdneri*	N					X			
		Brown trout	*Salmo trutta*	I		X	X	X	X	X	X	
		Atlantic salmon	*Salmo salar*	I					X			
		Blueback trout	*Salvelinus alpinus oquassa*	I					X			
		Brook trout	*Salvelinus fontinalis*	I	X	X	X	X	X	X	X	X
		Bull trout	*Salvelinus confluentus*	N	X	X	X		X			X
		Lake trout	*Salvelinus namaycush*	I		X			X	X	X	
		Splake	*Salvelinus namaycush x fontinalis*	I		X	X		X	X		
		Arctic grayling	*Thymallus arcticus*	I	X		X		X	X		X
Lamprey	Petromyzontidae	Pacific lamprey	*Entosphenus tridentata*	N		X			X			
Sturgeon	Acipenseridae	White sturgeon	*Acipenser transmontanus*	N	X				X	X[1]		

		Species			Drainage[a]							
Common Name	**Family**	**Common Name**	**Scientific Name**	**Origin[b]**	**K**	**P**	**S**	**Pa**	**Sb**	**Sa**	**B**	**I**
Pike	Esocidae	Northern pike	*Esox lucius*	I		X	X					
		Tiger muskie	*Esox lucius x E. masquinongy*	I	X	X	X		X		X	X
Minnow	Cyprinidae	Chiselmouth	*Acrocheilus alutaceus*	N					X			
		Goldfish	*Carassius auratus*	I					X			X
		Lake chub	*Couesius plumbeus*	N	X							
		Common carp	*Cyprinus carpio*	I				X	X	X	X	
		Grass carp (triploid)	*Ctenopharyngodon idella*	I		X	X	X	X	X	X	
		Utah chub	*Gila atraria*	N					X	X	X	X
		Tui chub	*Gila bicolor*	I					X			
		Northern leatherside chub	*Lepidomeda copei*	N						X	X	
		Peamouth	*Mylocheilus caurinus*	N	X	X	X		X			
		Spottail shiner	*Notropis hudsonius*	I					X	X	X	
		Fathead minnow	*Pimephales promelas*	I		X			X	X		
		Northern pikeminnow	*Ptychocheilus oregonensis*	N	X	X	X	X	X			
		Longnose dace	*Rhinichthys cataractae*	N	X	X	X	X	X	X	X	X
		Leopard dace	*Rhinichthys falcatus*	N					X			
		Speckled dace	*Rhinichthys osculus*	N			X	X	X	X	X	X
		Redside shiner	*Richardsonius balteatus*	N	X	X	X	X	X	X	X	X
		Tench	*Tinca tinca*	I		X	X					
Sucker	Catostomidae	Utah sucker	*Catostomus ardens*	N						X	X	X
		Longnose sucker	*Catostomus catostomus*	N	X	X	X					
		Bridgelip sucker	*Catostomus columbianus*	N			X	X	X			
		Bluehead sucker	*Catostomus discobolus*	N						X	X	
		Largescale sucker	*Catostomus macrocheilus*	N	X	X	X	X	X			
		Mountain sucker	*Catostomus platyrhynchus*	N					X	X	X	X
Catfish	Ictaluridae	Black bullhead	*Ameiurus melas*	I			X		X			
		Brown bullhead	*Ameiurus nebulosus*	I	X	X	X	X	X	X	X	
		Yellow bullhead	*Ameiurus natalis*	I					X	X		
		Blue catfish	*Ictalurus furcatus*	I					X			

		Species			Drainage[a]							
Common Name	**Family**	**Common Name**	**Scientific Name**	**Origin[b]**	**K**	**P**	**S**	**Pa**	**Sb**	**Sa**	**B**	**I**
		Channel catfish	*Ictalurus punctatus*	I	X	X	X		X	X	X	
		Tadpole madtom	*Noturus gyrinus*	I					X			
		Flathead catfish	*Pylodictis olivaris*	I					X			
Trout-perch	Percopsidae	Sand roller	*Percopsis transmontana*	N					X			
Cod	Gadidae	Burbot (ling)	*Lota lota*	N	X							
Livebearer	Poeciliidae	Mosquitofish	*Gambusia affinis*	I					X	X	X	
		Guppy	*Poecilia reticulata*	I[d]							X	X
		Green swordtail	*Xiphophorus helleri*	I[d]					X		X	X
		Platy	*Xiphophorus* spp.	I[d]							X	X
Sunfish	Centrarchidae	Green sunfish	*Lepomis cyanellus*	I			X				X	
		Pumpkinseed	*Lepomis gibbosus*	I	X	X	X	X	X	X		
		Warmouth	*Lepomis gulosus*	I					X			
		Bluegill	*Lepomis macrochirus*	I	X	X	X	X	X	X	X	
		Smallmouth bass	*Micropterus dolomieu*	I		X	X		X	X	X	
		Largemouth bass	*Micropterus salmoides*	I	X	X	X	X	X	X	X	
		Black crappie	*Pomoxis nigromaculatus*	I	X	X	X	X	X	X	X	X
		White crappie	*Pomoxis annularis*	I					X			
Perch	Percidae	Yellow perch	*Perca flavescens*	I	X	X	X		X	X	X	X
		Walleye	*Stizostedion vitreum*	I		X			X		X	
		Sauger	*Stizostedion canadense*	I							X	
Sculpin	Cottidae	Mottled sculpin	*Cottus bairdi*	N					X	X	X	X
		Paiute sculpin	*Cottus beldingi*	N					X	X	X	
		Slimy sculpin	*Cottus cognatus*	N	X	X			X			
		Shorthead sculpin	*Cottus confuses*	N			X		X			X
		Bear Lake sculpin	*Cottus extensus*	N							X	
		Shoshone sculpin	*Cottus greenei*	N					X			
		Wood River sculpin	*Cottus leiopomus*	N					X			
		Torrent sculpin	*Cottus rhotheus*	N	X	X	X	X	X			

		Species			Drainage[a]							
Common Name	**Family**	**Common Name**	**Scientific Name**	**Origin[b]**	**K**	**P**	**S**	**Pa**	**Sb**	**Sa**	**B**	**I**
Cichlid[d]	Cichlidae	Mozambique (Java) tilapia	*Tilapia mossambica*	I[d]					X			X
		Redbelly (Zill's) tilapia	*Tilapia zilli*	I[d]					X			
		Convict cichlid	*Cichlasoma nigrofasciatum*	I[d]					X			X
Loach	Cobitidae	Oriental weatherfish	*Misgurnus anguillicaudatus*	I					X			
Shad	Clupeidae	American shad	*Alosa sapidissima*	I					X			
Killifish	Cyprinodontidae	Banded killifish	*Fundulus diaphanus*						X[1]			

[a] K=Kootenai River drainage, P=Pend Oreille River drainage, S=Spokane River drainage, Pa=Palouse River drainage, Sb=Snake River below Shoshone Falls, Sa=Snake River above Shoshone Falls, B=Bear River drainages, and I=Independent drainages.
[b] N=Native and I=Introduced.
[c] Natural population of Coho extirpated; new population of hatchery origin.
[d] Confined to geothermal water.
[1] Native in part of the state, but introduced into this drainage.

Fishing Economics in Idaho

The Idaho Department of Commerce estimates that the recreation and tourism industry is the third largest in the state. Sport fishing comprises a substantial part of this business. IDFG conducted a fishery economics survey in 2011 by mailing out 59,200 surveys to Idaho fishing license holders. In 2011, Idaho's population was 1,584,986 with one in five eligible people residing in Idaho purchasing a fishing license. Based on the results of almost 26,000 completed responses from this survey, the Department estimated that 425,415 anglers spent more than 3.6 million days (nearly 2.8 million trips) on Idaho waters. Fishing in Idaho generated $548,351,483 in statewide retail sales in 2011 with an additional $14,962,572 for fishing licenses and permits (IDFG, unpublished data). Comparatively, recreational fishing in Idaho generated $437,631,735 in statewide retail sales in 2003 with an additional $12,289,806 for fishing licenses and permits (Grunder et al. 2008).

IDFG conducted an economic survey following the 2010 Chinook salmon season that generated an estimated direct angler expenditure of $39.6 million (IDFG, unpublished data). This survey did not measure any indirect economic activity or jobs created. Approximately 103,407 days of effort were expended during nearly 75,000 angler trips. The average cost per trip was over $500.

Fisheries Management in Idaho

In Idaho, the primary sport fish are native species including rainbow trout, cutthroat trout, steelhead, Chinook salmon, and white sturgeon. Two of these species, steelhead and Chinook salmon, migrate to the ocean to complete a portion of their life cycle (i.e., they are "anadromous" species), and thus management of these two species involves cooperative agreements among other state and federal agencies and Indian tribes. Introduced or non-native game fish that provide important sport fisheries include rainbow trout stocks, brown trout, lake trout, brook trout, kokanee, smallmouth and largemouth bass, a variety of sunfish, yellow perch, black and white crappie, channel catfish, walleye, and tiger muskie.

Department fisheries management activities will strive to meet the goals outlined in the strategic plan and in particular the following goals: "Sustain fish and wildlife, and the habitats upon which they depend," and "Meet the demand for fish and wildlife recreation." A top priority is to manage populations so that sport-fishing demands are met through natural production of fish species. A wide range of research projects and other information-gathering activities support management functions. In areas where sufficient fish habitat exists but natural production is insufficient to meet angling demands, fish stocks may be rebuilt through supplementation. Wherever possible, appropriate wild stocks will be evaluated and utilized in suitable habitat. Hatchery put-grow-and-take and put-and-take programs are primarily used in other heavily-fished, altered habitats to provide recreational fishing opportunity. Emphasis is given to those areas that will allow a high proportion of hatchery-produced fish to be caught by anglers. IDFG uses a variety of rules on different waters to provide a mixture of sport fishing opportunities. As feasible, new fishing opportunities will be developed through reclamation of damaged habitats and development of new fishing areas.

The six-year focus of the anadromous fish program is to maintain hatchery supported steelhead and Chinook salmon fisheries in Idaho and take management actions in Idaho necessary to preserve wild steelhead, Chinook, and sockeye salmon. In addition, the Department will continue its efforts working toward and promoting improvement of the mainstem Snake River and Columbia River migration route for these fish. These efforts are essential to improve the survival of salmon

and steelhead leaving Idaho and returning from the ocean. Improved survival is the key to restoring wild salmon and steelhead runs and the traditional fisheries they once supported.

IDFG also has responsibility for management of commercial fisheries in Idaho. Commercial fishing in public waters has traditionally been limited to nongame fish species and crayfish. The Commission authorized a commercial rod-and-reel fishery for lake trout in Lake Pend Oreille in 2002 as part of an ongoing effort to reduce predator populations to keep the kokanee population from collapsing. Commercial fishing operations are regulated by the Department to minimize the potential for adverse effects on sport fisheries.

IDFG's Fisheries Program is divided into five areas: 1) resident fisheries management, 2) anadromous fisheries management, 3) hatcheries, 4) fisheries research, and 5) fish habitat.

The Compass, Our Strategic Plan

In 2005, the Department issued its strategic plan, "The Compass" (Idaho Department of Fish and Game 2005). IDFG developed the Compass to accomplish the following:

1. Align Department programs and actions with the values, needs, and expectations of Idaho hunters, anglers, and citizens as a whole.
2. Involve the public in deciding what the Department will attempt to accomplish in the next 15 years.
3. Enable the Department to respond to the anticipated changes in the physical, biological, and social environments.
4. Initiate business practices that link strategic and action plans to the budget, evaluate progress toward goals, and employ adaptive management.

There are a number of important reasons for the strategic plan including 1) clearly conveying the Department's management goals and how they will be achieved; 2) assisting the Commission in developing policies, priorities, and direction; 3) providing overall direction to Department staff in developing and implementing fish and wildlife programs; 4) assisting others in developing plans and implementing programs that are compatible with fish and wildlife conservation and management; and 5) encouraging a cooperative approach in addressing fish and wildlife issues in Idaho.

Our Mission

(Idaho Code Section 36-103)

"All wildlife, including all wild animals, wild birds, and fish, within the state of Idaho, is hereby declared to be the property of the state of Idaho. It shall be preserved, protected, perpetuated, and managed. It shall only be captured or taken at such times or places, under such conditions, or by such means, or in such manner, as will preserve, protect, and perpetuate such wildlife, and provide for the citizens of this state and, as by law permitted to others, continued supplies of such wildlife for hunting, fishing and trapping."

Working under the guidance of the Commission, the Department manages the fish and wildlife of the state.

Our Vision

The Idaho Department of Fish and Game shall work with the citizens of Idaho in providing abundant, diverse fish and wildlife and ensuring a rich outdoor heritage for all generations.

Our Core Values

Public Service
We believe in having open, two-way communication with the public, facilitating understanding and participation in management decisions, and providing diverse fish- and wildlife-based recreational opportunities and educational experiences.

Science
We believe that scientifically developed knowledge and information are the foundation of fish and wildlife management and that we are obligated to develop, use, and share such knowledge and information.

Sustainability
We believe our management responsibility is to foster solutions to fish and wildlife issues that are ecologically viable, economically feasible, and socially acceptable.

Ecosystem Management
We believe productive habitats and healthy ecosystems are essential in sustaining diverse fish and wildlife and Idaho's communities and economies.

Credibility
We believe that we maintain credibility by achieving the highest level of employee and agency objectivity, expertise, professionalism, and effectiveness.

The 2013-2018 Fisheries Management Plan describes how the Department will attain identified goals of the Compass, our strategic plan. This plan will describe Department programs and strategies, and how progress toward achieving the goals will be measured. The biological and social systems in which the Department operates are complex and the results of management actions are often difficult to predict. During the course of this plan, Department staff will monitor and evaluate the performance of our programs, projects, and activities. Measuring progress and performance will determine whether activities achieve the desired results. During this planning period, if anticipated or desired results are not attained, the Department will make adjustments as necessary.

Goals, Objectives & Desired Outcomes

The Compass contains broad goals and objectives that cover all the Department's current and future activities and responsibilities. The goals specify what the Department is trying to achieve. The objectives contribute to achieving the goals. Additionally, the Compass contains desired outcomes for each goal. The desired outcomes or performance measures are the future condition we are striving for as a result of achieving the goals.

Goal 1: Sustain Idaho's fish and wildlife and the habitats upon which they depend.

Objective 1. Maintain or improve game populations to meet the demand for hunting, fishing, and trapping.

Objective 2. Ensure the long-term survival of native fish, wildlife, and plants.

Objective 3. Increase the capacity of habitat to support fish and wildlife.

Objective 4. Eliminate the impacts of fish and wildlife diseases on fish and wildlife populations, livestock, and humans.

Desired Outcomes:

- Hunters, anglers, and trappers are highly satisfied with the number and variety of fish and game available for harvest.
- Idaho citizens are highly satisfied with the diversity and health of the state's native fish, wildlife, and plants.
- Idaho's fish and wildlife is managed by the state.
- There is no net loss of habitat.
- Fish and wildlife diseases do not significantly impact fish and wildlife, humans, or domestic animals.
- IDFG is highly regarded as a comprehensive source of objective, scientifically-based information on fish, wildlife, and plants in Idaho.

Goal 2: Meet the demand for fish and wildlife recreation.

Objective 1. Maintain a diversity of fishing, hunting, and trapping opportunities.

Objective 2. Sustain fish and wildlife recreation on public lands.

Objective 3. Increase the variety and distribution of access to private land for fish and wildlife recreation.

Objective 4. Maintain broad public support for fish and wildlife recreation and management.

Desired Outcomes:

- Hunters, anglers, trappers, and wildlife viewers are highly satisfied with fish and wildlife recreation opportunities.
- Landowners allow access for fish and wildlife recreation.
- Recreational opportunities are abundant and well distributed around the state, while conflicts between recreationists are few and far between.
- Hunters, anglers, trappers, and wildlife viewers enjoy broad public support for their recreational activities.
- There is broad recognition and support in Idaho for the economic and social benefits of fish and wildlife recreation and management.

Goal 3: Improve public understanding of and involvement in fish and wildlife management.

Objective 1. Improve citizen involvement in the decision-making process.

Objective 2. Increase public knowledge and understanding of Idaho's fish and wildlife.

Desired Outcomes:

- A broad spectrum of the public participates in and supports management decisions.
- Idaho citizens are well-informed and knowledgeable about fish and wildlife resources and the Department's management role.
- Fish and wildlife management is based on sound science and is responsive to the needs and expectations of Idaho citizens.
- Information related to Idaho's fish, wildlife, plants, and ecosystems is easily accessible in a variety of formats.

Goal 4: Enhance the capability of the Department to manage fish and wildlife and serve the public.

Objective 1. Attract and retain a diverse and professional workforce.

Objective 2. Provide equipment and facilities for excellent customer service and management effectiveness.

Objective 3. Improve information management and business systems.

Objective 4. Improve funding to meet legal mandates and public expectations.

Desired Outcomes:

- Employees are recognized and respected for public service and leadership in fish and wildlife management.
- IDFG attracts and keeps highly qualified personnel.
- IDFG is recognized as an effective and efficient state agency.
- Funding is sufficient to manage fish and wildlife and serve the public.
- All that pay benefit; all that benefit pay.
- Facilities, equipment, and information systems are safe, reliable, and cost effective.

Statewide Fisheries Management Principles

The Fisheries Bureau of the Department has a number of long-standing principles that assist Fisheries staff in accomplishing our mission. These principles appropriately lay the foundation and provide direction for staff to attain the goals and objectives of the strategic plan.

Management

1. IDFG will recommend that fish and wildlife receive equal treatment with all other resources in land and water management decisions.

2. The fish resources of Idaho belong to the residents of the state, and while regional and national interests will also be considered, these resources will be managed for the recreational and other legitimate benefits that can be derived primarily by the residents of Idaho.

3. Fish management will be designed to provide a variety of consumptive and non-consumptive recreational opportunities as well as scientific and educational uses.

4. Fish habitat and populations will be preserved, protected, perpetuated, and managed for their intrinsic and ecological values as well as their direct benefit to humans.

5. IDFG will use the best available biological and sociological information in making resource decisions and support research efforts to provide state-of-the-art techniques and data.

6. Native populations of resident and anadromous fish species will receive priority consideration in management programs.

7. Management programs will emphasize maintenance of self-sustaining populations of fish.

8. IDFG will strive to maintain genetic integrity of native stocks of resident and anadromous fish and naturally-managed fish when using hatchery supplementation.

9. Hatchery-reared fish will be stocked as appropriate to preserve, establish, or reestablish depleted fish populations and to provide angling opportunity to the public.

10. Factors affecting downstream smolt survival will receive priority attention in anadromous fish management.

Public Involvement

11. IDFG is the principal government agency speaking on behalf of Idaho's fish resources and habitats and has a responsibility to inform interested citizens of potential threats to those resources.

12. IDFG will provide information on Idaho's fishing to identify recreational opportunities and to meet specific management goals.

13. IDFG will emphasize individual recreational opportunities rather than promoting contests or competitions, or activities that may result in commercialization of fish resources.

Rules

14. Within the range of biologically sound alternatives, the Department will consider legal and economic factors, desires of the sporting public, social acceptability, and administrative feasibility when promulgating rules.

15. Rules will be designed for ease of understanding and will include only those restrictions necessary to meet desired management objectives.

Access

16. On land open to the public, the Department will recommend access that provides a variety of fish-associated recreational opportunities while achieving habitat and population management goals.

17. IDFG will cooperate with sportsmen and landowners to minimize negative impacts of outdoor recreation on private lands and ensure the continued availability of recreational access by permission to private lands for fish-associated recreation.

18. IDFG will actively pursue acquiring easements, leases, or purchase and development of key areas to provide access for anglers and other recreationists. Priority will be given to easements collaboratively developed with landowners.

19. Department funds will not be used to manage waters closed to public fishing access except where such closures are part of a Department-approved management program.

Importations and Introductions

20. Maintaining self-perpetuating populations of fish will receive priority over the use of hatchery stocking programs.

21. Introduction of fish species may be considered when a) substantial benefits are anticipated; b) sufficient and suitable habitat is available; c) impacts to native species and existing sport fisheries are benign; and d) where necessary, approval is obtained from appropriate agencies or private landholders. To protect populations of native fish, and to protect existing public fisheries, the Department will follow the American Fisheries Society recommended seven-step process for evaluating proposed new species introductions before recommending any new introductions into Idaho waters.

Cooperation with other Agencies

22. Agreements with other governing agencies will be developed to ensure cooperative management of fish resources shared in common. IDFG will work with neighboring states and consult on issues of mutual interest regarding fisheries management and aquatic ecosystems in shared waterways.

Indian Tribes

23. Native American treaty rights will be recognized in the management of fish and wildlife.

Outfitting and Guiding

24. IDFG will provide comment on the issuance of outfitting licenses and special use permits to the Outfitter and Guides Licensing Board and appropriate land management agency. We will not recommend issuance of licenses or special use permits where the impacts to fish resources are biologically unacceptable or the opportunity for non-guided public recreation is significantly impaired.

25. IDFG will request that outfitting licenses be specific to individual waters so that outfitting activities can be customized to fit social and biological needs.

26. IDFG will not place additional fishing restrictions on outfitters that are not already required of the public without specific Commission approval.

Habitat Restoration and Protection

27. IDFG will work with appropriate state and federal agencies, non-governmental organizations, tribes, and private landowners to identify, fund, and implement high-priority aquatic habitat restoration projects.

28. IDFG will conduct effectiveness monitoring of aquatic habitat restoration actions.

29. IDFG will seek stable long-term funding sources for fish habitat personnel and for implementing restoration actions.

30. IDFG will expand the fish habitat program statewide.

31. IDFG will participate in the review of proposed land and water use activities, policies, or programs that could result in significant loss of or degradation of fish habitat or populations, and will suggest alternative project designs and make recommendations that minimize or avoid such losses.

32. IDFG will review and make recommendations on any activity that has the potential to result in significant loss or degradation of habitat capable of supporting self-sustaining game fish populations or important recreational fisheries.

33. IDFG will participate in the Federal Energy Regulatory Commission process for licensing hydroelectric projects on Idaho waters to ensure that adverse effects to aquatic resources are avoided or appropriately mitigated.

34. IDFG will actively support state and federal agencies, Tribes, private entities, and landowners on projects that protect or enhance water quality and fish habitat.

Mitigation

35. Whenever unavoidable fish habitat or population losses occur, the Department will, where practical and legally possible, actively seek compensation under the following guidelines:

    a. For long-term losses caused by habitat elimination or degradation, compensation by acquisition and improvement of alternate habitat will be sought rather than monetary restitution. Compensation must be permanent and include funding necessary for annual operations, maintenance, and monitoring if these are required to ensure that target goals for mitigation are achieved.
    b. Monetary restitution, based on costs to replace lost resources, will be sought for losses caused by direct mortality if replacement of animals is not feasible.
    c. Whenever possible, replacement of losses will be by the same fish species or by habitat capable of producing the same species that suffered the loss, and compensation programs will be located in the immediate area of loss.
    d. Offsite locations and different species may be substituted in compensation programs if “onsite” and “in kind” compensation is not possible.
    e. Compensation levels will be based on loss of habitat and loss of potential for fish production and recreation rather than numbers of animals or days of use of animals occurring at the time of loss.

f. In jointly funded projects requiring fish mitigation, participating entities will share mitigation credit proportional to their contribution.

Statewide Fisheries Programs

Within the Bureau of Fisheries, professional staff are organized into operational sections including: 1) Resident Fisheries Management, 2) Anadromous Fisheries Management, 3) Hatcheries (resident and anadromous), 4) Research, and 5) Habitat.

The primary responsibility of the resident and anadromous fisheries management sections of the Bureau of Fisheries is to monitor and manipulate fish populations to maintain/create public fisheries, protect and enhance fish habitat, develop angler access, provide information to anglers, coordinate with the general fishing public, and develop fishing rules. Most of the management effort involves Department field staff (biologists, technicians, and others) working in coordination with headquarters staff, and with personnel of state and federal agencies, Indian tribes, and non-governmental organizations. The programmatic function of habitat protection and technical assistance is currently implemented through the Director's Office of the Department. Regional and headquarters fisheries staff supply data and provide technical support to regional environmental staff biologists and the Director's Office.

The fish habitat section designs and implements fish habitat restoration projects focused on addressing the primary factor(s) limiting native fish production and productivity. Projects are designed to be ecologically sustainable over the long-term. Staff interact with a variety of state and federal agencies, non-governmental organizations, and private landowners to develop and implement projects. The majority of funding comes from federal or private sources. Because of this, staff also develop proposals and compete for available funding.

The hatcheries section raises fish to meet specific fishery management objectives. New technologies are developed to raise healthy fish in the most cost-effective manner. The hatcheries section includes a fish health unit designed to identify and treat various fish diseases and to improve the health of particular stocks. Fisheries projects that benefit directly from the hatchery program include put-and-take and put-grow-and-take fish stocking programs, supplementation of salmon and steelhead natural production, supplementation of reduced populations of resident fish, and production of other game fishes to produce sport fisheries (e.g., tiger muskie).

The fisheries research section serves to enhance management capabilities by providing detailed information on specific fisheries or biological systems to address specific needs. In addition to collecting and analyzing biological data, the fisheries research section also assists in development of management recommendations and methods, and summarizes existing information. Since the spring of 2002, the Department has operated the Eagle Fish Genetics Laboratory to provide an efficient, cost-effective means of generating detailed genetic information necessary for the management and conservation of Idaho's native fish species.

Resident Fisheries Management

Native Trout

Native trout are the original inhabitants of Idaho's waterways and are indigenous to a particular river basin or area. These indigenous trout were present before the arrival of Europeans to the United States. Maintaining native trout fisheries in Idaho continues to be a significant challenge.

Resident trout species native to Idaho include the redband trout (a type of rainbow trout), three subspecies of cutthroat trout (westslope, Yellowstone, and Bonneville), and bull trout (a char). Bull trout are a fall spawning char and the only species of its type native to Idaho. In waters accessible to anadromous or "sea-run" trout, many populations of steelhead (the anadromous redband trout), Chinook salmon, and sockeye salmon are also native Idaho trout. IDFG strives to perpetuate native trout in numbers adequate to provide fishing opportunity. Native trout are important to Idaho biologically because they evolved here and are best adapted to their historical waters; ecologically, because their presence is an indicator of the overall health of Idaho's waters; and socially, because Idaho anglers place a high value on native trout. Economically, native trout populations are self-sustaining, and thus are less costly to manage than hatchery supplemented fisheries. Many anglers also specifically target native trout for their uniqueness thus adding great value to Idaho's economy. IDFG, by statute, is the steward for Idaho's native fishery resources and must protect and perpetuate these populations.

As described above, the Department uses the term "native" to refer to indigenous trout species in Idaho drainages. Native species have also been referred to as "wild trout." However, there are other game fish species such as introduced rainbow trout, brown trout, and brook trout that were stocked generations ago and have established self-sustaining populations. They can also be considered "wild" in origin. Some "wild" populations also hold high sport value, particularly introduced rainbow trout. IDFG is entrusted to protect Idaho's native species while also providing sport fishing opportunities to the public. Native salmonid species are given priority management attention by the Department. For self-sustaining trout populations, whether native or introduced, the Department will typically manage harvest with reduced bag limits, referred to as the "wild trout" rule (See Part 2, Drainage Management).

Since the early 1990s, the status of Idaho's native trout and salmon has been scrutinized through petitions for listing under the federal Endangered Species Act. Sockeye salmon were listed as endangered in 1991, most of Idaho's naturally produced Chinook salmon were listed as threatened in 1992, and steelhead were listed as threatened in 1997. Several related populations of hatchery Chinook salmon and steelhead were also listed as threatened in 2005. Bull trout were listed as threatened in 1998. More recently, westslope, Yellowstone, and Bonneville cutthroat trout, and redband trout have been petitioned for listing under the Endangered Species Act. As of 2012, the U.S. Fish and Wildlife Service consistently determined that federal protection was not warranted for these four trout.

IDFG has progressively taken steps to conserve and manage native trout. Pioneering research in the late 1960s and early 1970s on the north Idaho waters of Kelly Creek, St. Joe River, and Lochsa River documented significant benefit to westslope cutthroat trout populations from catch-and-release or from restrictive bag and size limits. Currently waters in the state that support native trout populations have some kind of fishing rule that limits harvest. Examples of restrictive harvest rules are catch-and-release, where the general trout limit is six but only two may be cutthroat trout, or where a minimum size limit is employed for harvest (e.g., none under 16 inches). In a few waters, no native trout may be harvested. In the case of bull trout, there is a statewide prohibition on harvest. Key to the effectiveness of special regulations to protect native trout is the ability of the angling public to accurately identify affected species of fish. Research in several states suggests that fish identification should receive additional emphasis as an aspect of angler education.

Over the years, IDFG has taken other steps to protect native trout. Some important actions include 1) discontinuing IDFG's brook trout stocking program in native trout streams; 2) increasing the daily limit of brook trout from six to 25; 3) using sterile rainbow trout for most

stockings including private ponds in native trout drainages to significantly reduce the likelihood of hatchery rainbow trout hybridizing with native trout; 4) discontinuing all stocking of rainbow trout in Panhandle Region streams and rivers managed for native westslope cutthroat trout; 5) increasing harvest of non-native rainbow trout in the South Fork Snake River to protect Yellowstone cutthroat trout with a no-limit regulation on rainbow trout; 6) implementing a number of non-native species suppression efforts across the state; and 7) hiring professional genetics staff starting in 2001 and establishing a fish genetics lab in 2002. IDFG has also expended considerable effort in identifying the status and distribution of native trout to ensure their persistence.

Maintaining high-quality habitat is critical to ensuring the persistence of native trout populations. IDFG's role in fish habitat is discussed later in this plan.

During this six-year period, IDFG will prioritize native trout management by continuing or implementing the following measures:

- Regulate harvest as needed to protect native trout populations and to maintain acceptable catch rates;

- Reduce or eliminate hybridization and introgression with hatchery trout;

- Where feasible, remove or suppress populations of non-native trout species that compete with or hybridize with native trout;

- Continue efforts to restore and protect aquatic, riparian, and wetland habitat;

- Continue to enhance the statewide fish habitat program implemented during the last planning period;

- Work with land and water users, Indian tribes, and federal and state resource agencies to reduce human-caused impacts to native trout habitat;

- Encourage partnerships with resource agencies, water users, private landowners, Indian Tribes, and non-governmental organizations to provide adequate fish screens and migration bypass design at irrigation diversions to provide suitable flows to protect native trout and to provide fish passage at all other locations where necessary;

- Provide pamphlets, brochures, signs, posters, and cards that improve anglers' ability to identify various trout species and how to release wild trout with minimal injury; and

- IDFG will complete management plans for westslope cutthroat trout and redband trout.

As described previously, IDFG manages many native trout populations under its "wild trout" rules which are generally a bag limit of two fish with additional harvest opportunity provided on non-native or hatchery trout if present. This selective rule emphasizes protection for native trout while allowing ample harvest on hatchery-reared and non-native trout. This encourages anglers to limit harvest of native trout. Where needed, harvest on native trout will be further restricted with length limits or catch-and-release regulations. As a last resort for conservation purposes, streams or lakes will be closed to fishing.

In lightly fished streams, the reduction in bag limit to two native trout may do little to affect harvest and may not be biologically necessary. When limits are liberal, anglers rarely harvest their limit and the reduction in total harvest resulting from a more conservative limit is small relative to the total fish population. However, a conservative bag limit for native trout directs more consumption-oriented anglers to waters managed with liberal limits on hatchery trout or warmwater fish species. The reduced bag limit also reinforces the non-consumptive values of native trout.

Cutthroat Trout

The three "subspecies" of native cutthroat trout in Idaho are the westslope, Yellowstone, and Bonneville. When a species such as cutthroat trout is comprised of distinct, geographically separate groups that are not yet distinct enough to constitute a separate species, the term "subspecies" is used. Historically, all three subspecies occupied larger ranges than they do currently. Populations have been impacted across their ranges by a host of human-caused factors including habitat degradation, water management, and non-native species. IDFG will continue to ensure that cutthroat trout are considered in fisheries, land, and water management in their remaining habitat by collaborating with other agency partners and stakeholders, and providing technical information to land and water management decision-makers. Emphasis will be placed on continuing our collaborative habitat restoration efforts with other agencies and stakeholders.

During this planning period, IDFG will continue to explore and implement actions to manage recreational fishing and reduce genetic introgression with non-native trout. IDFG will continue implementing projects removing or suppressing populations of non-native salmonids such as introduced rainbow trout and brook trout where feasible to benefit and recover native cutthroat trout. However, IDFG recognizes that many anglers enjoy opportunities to fish for non-native sport fish such as brook trout, brown trout, and rainbow trout. We will specifically target drainages for non-native species removal where we believe we can enhance persistence and expand the range of native cutthroat trout.

During the 2007-2012 planning period, IDFG completed management plans for Yellowstone (Idaho Department of Fish and Game 2007) and Bonneville cutthroat trout (Idaho Department of Fish and Game and U.S. Forest Service 2007). During this six-year planning period, IDFG will complete a management plan for the westslope subspecies.

Redband Trout

Redband trout are found in the interior Columbia River basin from east of the Cascades upstream to geologic barriers such as Shoshone Falls on the Snake River and Kootenai Falls on the Kootenai River and in the upper Fraser River. However, they are not present in the Clark Fork and Coeur d'Alene river drainages. Redband trout are present in the Salmon and Clearwater drainage along with anadromous steelhead. However, due to difficulties identifying juveniles of these two life forms, redband trout in these drainages are included under the steelhead distribution. During the 2007-2012 planning period, IDFG completed a statewide assessment of redband trout in drainages where anadromous fish were extirpated. Populations of redband trout above Hells Canyon and Dworshak dams are locally abundant as is the case in the Boise, Weiser, Payette, Bruneau, Owyhee, and Wood/Malad river drainages.

In Part 2 of this Fisheries Management Plan, we list introduced stocks of rainbow trout separately from the native redband trout in the individual drainages.

During the 2007-2012 planning period, IDFG completed an assessment of population structure and intra-/interspecific hybridization of redband trout above Hells Canyon Dam (upper Snake River, 8 basins, 61 sample locations) (Kozfkay et al. 2011).

IDFG recommends the following management actions for redband trout during this planning period: 1) continue statewide population and trend monitoring; 2) continue stocking sterile fish in areas where redband trout and introduced hatchery fish overlap; 3) maintain or reestablish connectivity of current redband trout metapopulations; 4) publish a state status assessment for redband trout; and 5) complete a management plan.

Bull Trout

Bull trout were federally listed as a "threatened" species under the Endangered Species Act in 1998 by the U.S. Fish and Wildlife Service. They are widely distributed in Idaho and are found in varying abundance depending on location. Overall, bull trout have declined in abundance and distribution from their historical range; however, in Idaho, they are faring much better than elsewhere across their range due to the vast areas of federally designated wilderness and roadless areas. They are especially abundant in the Salmon and Clearwater river basins.

Bull trout exhibit two distinct life history forms, resident and migratory. Resident populations generally spend their entire lives in small headwater streams while migratory bull trout rear in tributary streams for several years before either migrating into larger river systems (fluvial) or lakes (adfluvial). Migratory (fluvial and adfluvial) bull trout can reach much larger sizes than resident fish. The largest bull trout recorded in Idaho is 32 pounds, which is also a world record.

Bull trout have specific habitat requirements but importantly they require cold clear water, abundant instream cover including woody debris and deep pools, and intact migration corridors. In many instances, habitat modification has influenced the status, abundance, and distribution of bull trout populations in Idaho. Because of habitat modification, the migratory form of bull trout is no longer present in many streams, and populations are comprised wholly of small resident populations that are more susceptible to environmental or biological disturbance.

Bull trout do not compete well with other non-native chars such as brook trout and lake trout. Brook trout are a pervasive species and will outcompete and hybridize with bull trout. The latter threat is particularly alarming for small isolated bull trout populations. Lake trout pose a serious threat to the adfluvial form of bull trout. Bull trout numbers, along with other native sport fish, have plummeted in Idaho lakes such as the Priest Lake system where lake trout and Mysis shrimp are present. Mysis shrimp were introduced into a number of Idaho lakes decades ago to provide forage for introduced kokanee; however, this did not work in north Idaho's deep oligotrophic lakes since kokanee do not forage in the depths where Mysis shrimp are found. Instead, Mysis shrimp provided the perfect prey for young lake trout which allowed lake trout populations to explode and displace native species such as bull trout.

IDFG instituted statewide "no harvest" rules for bull trout in 1994. Additionally, IDFG developed an active public education program including signs to notify anglers about the presence of bull trout and how to correctly identify them from other salmonid species. Additionally, enforcement patrols were enhanced in drainages inhabited by bull trout.

IDFG will continue to work closely with the U.S. Fish and Wildlife Service and relevant stakeholders in bull trout conservation and recovery planning. We view coordination with federal land management agencies such as the U.S. Forest Service as especially critical due to

their large span of control over much of the bull trout habitat in Idaho. However, it is IDFG's position that bull trout should not have been listed under the Endangered Species Act. We are of the opinion that bull trout populations in much of Idaho are not in imminent danger of extinction and reclassification is warranted.

Mountain Whitefish

Mountain whitefish are members of the family Salmonidae which also includes trout and char. They are a recognized game fish in Idaho although often overlooked and underutilized by anglers. Mountain whitefish are widely distributed in Idaho's rivers and lakes and they require clean, cold water. This species spawns from October into December. As a game fish, it readily takes artificial flies or bait and puts up a good fight when hooked. During the winter when most fishing activity slows down in Idaho, mountain whitefish can provide some good fishing because of their active winter feeding habits.

Mountain whitefish populations are adversely affected by similar factors that impact trout populations including water management, channel degradation, water pollution, disease, and non-native species interactions. Because they are geographically and physically isolated, mountain whitefish in the Big Lost River basin are genetically distinct from other Snake River populations. During the 2007-2012 planning period, IDFG completed a management plan for the Big Lost River basin population of mountain whitefish and has implemented the majority of conservation actions identified in the plan to conserve and protect this unique population. During this planning period, IDFG will continue collaborating with other agencies and stakeholders to monitor population status and restore habitat.

White Sturgeon (Snake and Kootenai Rivers)

The white sturgeon is the largest freshwater fish in North America, reaching documented sizes of up to 18 feet in length and almost 1,400 pounds. White sturgeon historically occurred in the Snake River downstream from Shoshone Falls, the lower Salmon River, and in the Kootenai River. White sturgeon are given heightened management attention from IDFG because they are unique, attain a large size, are long-lived, and provide tremendous sport fishing opportunities. In the Snake River, catch-and-release sport fishing for white sturgeon has continued for over 40 years.

Sturgeon have declined in Idaho for a variety of reasons but primarily due to construction of dams that began in the early 1900s through the late 1960s. This accelerated the decline as much of the large, free-flowing river habitat required by sturgeon was lost. Sturgeon populations in the Snake River drainage are generally restricted to short river reaches and are isolated from other populations by dams. While white sturgeon in the Kootenai River can move freely between Kootenay Lake in British Columbia, Canada, the Kootenai River in Idaho, and upstream as far as Kootenai Falls in Montana, they are significantly impacted by flow releases from Libby Dam and resultant changes in habitat quality.

Commercial fishing for sturgeon in Idaho was prohibited in 1943. Harvest of sturgeon from the Snake River drainage has been prohibited since 1970. Harvest of sturgeon was also prohibited in the United States' section of the Kootenai River beginning in 1984 because this population was also decreasing. Kootenai River white sturgeon were federally listed in 1994 as an endangered species under the Endangered Species Act. Because of the listing and continued population decline, for conservation purposes, the Kootenai River was closed to sturgeon fishing in 1995. Trapping of nutrients behind Libby Dam is potentially another contributing factor

to reproductive failure. Lack of reproduction was a major factor in listing Kootenai sturgeon under the Endangered Species Act. IDFG will continue to participate on the Kootenai Sturgeon Recovery Team led by the U.S. Fish and Wildlife Service to develop recovery measures that emphasize restoration of natural reproduction and recruitment to the Kootenai River white sturgeon population.

During the 2007-2012 planning period, IDFG completed a management plan for Snake River white sturgeon. IDFG's management goal for Snake River white sturgeon is to preserve, restore, and enhance populations capable of providing sport-fishing opportunities.

IDFG's plan for Snake River white sturgeon emphasizes the following management activities:

1. Habitat protection and enhancement—IDFG believes the most effective approach to maintaining healthy, reproducing white sturgeon populations within their native range is to protect stronghold populations and intact habitat, and as is feasible, to improve habitat. We will continue to provide technical support and input to state and federal regulatory agencies on land and water management activities and proposals.
2. Population monitoring—intensive assessments of white sturgeon abundance and size structure will occur in individual river reaches at approximately five to ten-year intervals. Idaho Power will perform the bulk of the population census work but will be supplemented by IDFG and Nez Perce Tribe as necessary.
3. Evaluate fishing-related mortality—the effects of catch-and-release angling on white sturgeon are largely unknown. IDFG has proposed to examine white sturgeon angling effort and catch in relation to population status and trends for key river reaches.
4. Fishing regulations, angler education, and enforcement—IDFG will continue to provide barbless hook, catch-and-release fishing opportunity for white sturgeon in the Snake River. In the state fishing rules, we require the use of a sliding weight along with barbless hooks. We will continue to develop and distribute information on white sturgeon status and fishing opportunity and will promote angling and fish handling techniques that minimize mortality. Conservation officers will continue to educate the public and ensure compliance with rules on white sturgeon fisheries.
5. Translocation—IDFG will collaborate with Idaho Power Company and other agency and tribal stakeholders in the translocation of wild white sturgeon with a goal of artificially restoring some degree of connectivity between river reaches.
6. Conservation aquaculture—while the top priority of IDFG is the conservation of wild, self-sustaining populations of white sturgeon, in reaches where natural recruitment is absent or minimal, hatchery supplementation is a viable management option. In 2011, IDFG and the College of Southern Idaho in Twin Falls, Idaho signed a cooperative agreement on the limited production of white sturgeon for management purposes.
7. Commercial aquaculture—IDFG will work with the Idaho Department of Agriculture to monitor commercial aquaculture operations with respect to importing non-native white sturgeon into their hatcheries. Sturgeon are also regularly purchased by private pond owners for ornamental purposes in southern Idaho.
8. Mortality monitoring—IDFG and Idaho Power Company have established protocols for investigating, examining, and collecting appropriate samples from mortalities when possible.

During the 2007-2012 planning period, IDFG introduced hatchery-reared white sturgeon outside their native range in the Snake River in the vicinity of Idaho Falls to create additional catch-and-release fishing opportunity. This fishery is expected to be dependent on periodic stocking of

hatchery-reared sturgeon. During this planning period, IDFG may consider further expansion of white sturgeon fishing opportunity in appropriate habitats outside the historic range.

This plan and our white sturgeon management plan (Idaho Department of Fish and Game 2008) directs us to monitor the status of white sturgeon populations and evaluate potential factors that could negatively impact this species. White sturgeon are extremely long-lived fish, potentially living up to 100 years. Data collected by IDFG indicates they are slow growing, averaging 1-4 cm per year in Hells Canyon fish <100 cm long and >140 cm in length, and 4-8 cm per year in fish 100-140 cm in length. Idaho Power Company studies have shown age of sexual maturity to be as high as 35-40 years, indicating a potential for population level effects with minimal increases in mortality. In addition, sturgeon do not reproduce every year, with reproduction occurring every 2-4 years for males and around five years for females, and in some cases, spawning periodicity may even range up to 11 years. These life history characteristics mean that increases in mortality through sport fishing could influence overall abundance of sturgeon. In the past few years, dead sturgeon with hooks inside of them have been found in the Snake River, raising concerns about the impact of sport fishing on the sturgeon population. This combined with recent increases in angling pressure have prompted IDFG to initiate work to evaluate whether catch-and-release sport fishing is influencing survival of sturgeon and whether changes in fishing rules could be used to improve their survival. Past research on other fishes has shown that circle hooks can reduce deep hooking and mortality rates over J-hooks. This type of information is not available for white sturgeon. Our goal over the next five years is to sample enough white sturgeon to evaluate whether circle hooks provide a survival advantage over J-hooks.

To supplement this work, we will also be evaluating whether hook ingestions is influencing sturgeon survival. In recent years, hooks swallowed by sturgeon have become an issue of concern. As an example, the percentage of sturgeon with fishing tackle inside them was 57% in the Snake River below C.J. Strike Dam and 34% in the Hells Canyon reach. Bait gear consumed by sturgeon stems not only from sturgeon fishing, but also includes hooks broken off by anglers fishing for other species such as catfish, trout, and steelhead. IDFG is working with other entities such as the Nez Perce Tribe and Idaho Power Company to assess gear uptake and retention in sturgeon. This is being done by x-raying sturgeon in each reach of the Snake River where they occur. Over the next 10 years, it is estimated that perhaps 100 sturgeon will be x-rayed more than once. X-raying recaptured fish will offer additional information, such as an estimate of the speed at which angling gear passes through the digestive system in wild fish. Laboratory studies are also being conducted to 1) assess stress levels in sturgeon that have ingested angling gear, 2) examine the passage speed of angling gear through the digestive system of hatchery sturgeon, and 3) determine hook corrosion rates (and therefore possible lifespan) in acidic solutions as a surrogate to sturgeon digestive systems. The results from this study will help determine whether additional angling restrictions are necessary to conserve sturgeon populations.

IDFG's management plan for white sturgeon provides policy guidance for Idaho Power Company's White Sturgeon Conservation Plan (WSCP) (Idaho Power Company 2005). IDFG, other agencies, and Indian tribes collaborated with Idaho Power Company on development of a WSCP for the Snake River. This effort occurred during a period when Idaho Power Company was seeking new licenses from the Federal Energy Regulatory Commission for its Snake River hydropower system between Shoshone Falls and the Hells Canyon Complex. Idaho Power Company's efforts, guided by their WSCP, are intended to mitigate for operational impacts of its hydropower projects on white sturgeon throughout the Snake River. During this six-year planning period, IDFG, as per its mandate, will collaborate with Idaho Power Company, the

States of Oregon and Washington, federal agencies, and Indian tribes to implement and monitor the success of Idaho Power Company's mitigation efforts for white sturgeon. Since new license terms for these hydropower projects are a minimum of 30 years, this will be a long-term commitment by IDFG.

Non-native Sport Fish

Non-native sport fish include coldwater, coolwater, and warmwater species that are very popular with Idaho anglers and provide important sport fisheries in Idaho.

Like many other anglers, bass anglers have learned that length limit regulations can improve the average size of bass in some fisheries and that bass that can be produced and recycled many times for sport fishing enjoyment.

All of the warmwater and coolwater sport fish species in Idaho are introduced. The major species that IDFG manages are largemouth bass, smallmouth bass, black and white crappie, bluegill, channel catfish, yellow perch, walleye, northern pike, and tiger muskie. The presence of these fish in Idaho presents both opportunities and challenges for IDFG. On the positive side, these species can create productive sport fisheries in altered habitats and lowland lakes and ponds. The presence of these sport fish species can also be negative when their introduction affects native salmonid fisheries through competition and predation.

A majority of Idaho anglers still prefer trout fishing, but many of their preferred waters now contain introduced warmwater or coolwater species. While trout still provide the bulk of angling opportunity, bass angling has gained a strong following. Statewide, there are several instances of "two-story" fisheries that have increased angling opportunity using stocked or wild trout and warmwater fish populations in the same waters. Typically, costs to maintain a trout fishery through stocking are increased when warmwater species are abundant. The warmwater species present in Idaho can successfully reproduce in most areas, making them less expensive to manage than trout stocking programs.

Hatchery Trout

Hatchery trout, primarily rainbow trout, are used in reservoirs and streams where habitats are not capable of supporting wild or natural production sufficient to meet angler demand. These domesticated trout stocks typically do not survive well in streams and even fertile hatchery trout contribute little to natural reproduction. Hatchery trout stocking can generally be split into two categories. Put-and-take stocking includes catchable size fish where there is intensive angling pressure and long-term survival is not expected or needed. Put-and-grow stocking can include sizes from fry to catchable stocked into productive waters where long-term growth and survival is necessary for good returns to the angler. Because fingerling trout (3- to 7-inches) do not survive well or grow to acceptable sizes in streams, most trout stocked in streams will be catchable size (8- to 10-inches) to provide immediate fishing opportunity.

Put-and-take (catchable-size) trout used in stocking programs are expensive. These trout must be stocked at times and places where they are available to anglers and where they are likely to be caught. Over the last 15 years, IDFG has maintained stream stocking in locations where there is high harvest demand and high returns on hatchery fish, and has eliminated most stream stocking with poor return rates. These fish are typically stocked into waters that will yield high return rates such as urban ponds, and other waters with high amounts of angling pressure.

IDFG will continue to adjust the use of hatchery fish and improve return to anglers. Biologists will look at various environmental factors such as water temperature, zooplankton densities and sizes, species composition, and predator populations to improve survival and return to creel of fingerling and catchable-size trout.

Largemouth and Smallmouth Bass

Both largemouth and smallmouth bass were some of the very first non-native species introduced into Idaho and they now support many popular fisheries. Bass are prolific enough to produce adequate numbers of young fish without stocking. However, the growing season for bass in Idaho is generally short due to the high altitude and northern latitude. Research studies indicated that bass growth is regulated primarily by water temperature and not food availability, so efforts to improve bass fisheries focus on regulations that allow bass to live longer.

Largemouth bass are generally most successful in smaller ponds and lakes that get warm, where vegetation is present, and have an abundant forage base of fish. However, 31,500-acre Coeur d'Alene Lake and the eight connecting "lateral lakes" support a very popular fishery for largemouth bass. Growth rate of largemouth bass in Idaho is limited primarily by water temperature and is generally much slower than areas of the country where bass are native. Due to their slow growth, largemouth bass are susceptible to overharvest. Despite slow growth rates and low productivity water in many areas of the state, Idaho anglers enjoy good bass fishing from a combination of restrictive regulations and voluntary support for catch-and-release fishing.

Smallmouth bass are most successful in Idaho's large lakes and reservoirs and the Snake River. Smallmouth bass have greatly expanded their range in Idaho. This species can thrive in waters with limited forage fish because they utilize crayfish as a preferred food item and will feed on zooplankton and aquatic insects longer than largemouth bass. Idaho's mainstem reservoirs and large lakes offer large expanses of rocky shorelines that generally support crayfish and other large aquatic insects. Smallmouth bass growth can also be slow, requiring five to seven years before they reach 12 inches. Anglers seek smallmouth bass because their aggressive nature and high abundance tends to provide fast fishing action.

Smallmouth bass populations are rapidly expanding in some waters where they are negatively impacting native species as well as other popular warmwater fisheries. Smallmouth bass were intentionally introduced in Hayden Lake in 1983, but were illegally moved to Coeur d'Alene Lake in about 1990. They have now spread upstream to most of the lateral lakes, the lower Coeur d'Alene, St. Joe, and St. Maries rivers as well as downstream to the Spokane River. Montana Fish Wildlife and Parks introduced smallmouth bass into Noxon Reservoir on the Clark Fork River in 1983 and 1986 and they are now well established in Lake Pend Oreille, the Pend Oreille River, and have moved upstream into the Priest Lake system. Smallmouth bass prey on juvenile westslope cutthroat trout and bull trout and they have significantly reduced many of the native minnow species in these waters. In some waters, smallmouth bass are also impacting popular largemouth bass, crappie, and perch fisheries. In most northern Idaho waters, smallmouth bass are managed with liberal (6 fish) bag limits and no size restrictions. In the Salmon and Clearwater rivers and in the Snake River below Hells Canyon Dam, IDFG also permits the harvest of any size bass in an attempt to reduce predation on salmon and steelhead juveniles.

Black and White Crappie

Crappie are one of the most popular panfish species in Idaho due to excellent table qualities and high-yield populations. Unfortunately, crappie are probably the most difficult warmwater species for IDFG to manage successfully for anglers. In smaller water bodies in southern Idaho, crappie tend to stunt and do not reach a size preferred by anglers. Better population structure is generally found in larger, more productive lakes and reservoirs where crappie can provide tremendous harvest opportunity. Populations can fluctuate greatly from year to year depending on the survival rate of young crappie. In northern Idaho, a lack of large fish may be caused by the short growing season and inconsistent recruitment. These species eat primarily zooplankton when small, then become more opportunistic when they reach a large size. Crappie are usually most vulnerable to anglers when concentrated near shoreline structure during the spring spawning season. Despite this vulnerability, angler exploitation does not generally exceed 30% of the adult population, even in the most intense fisheries. During other times of the year, they suspend in open water areas making them more difficult to catch.

Hayden Lake in north Idaho has consistently low crappie recruitment and slow growth, and is the only quality crappie fishery in the state being managed with a 10-inch minimum size limit and a six fish limit. In most other crappie fisheries, harvest does not play a large role in structuring populations so there is no statewide bag limit for crappie. At Brownlee Reservoir, for example, with no bag limit anglers typically harvest just 25-30% of crappie larger than eight inches in a given year. This is a very sustainable harvest rate and restricting harvest would not result in noticeably better size or catch rates in this fishery.

Bluegill

Anglers enjoy bluegill because of their ease of capture, scrappy fight, and abundance. Bluegill, and to a lesser extent pumpkinseed sunfish, are the main prey for largemouth bass. Bluegill provide popular warmwater fisheries for harvest-oriented anglers in many waters. For either of these species to grow to an acceptable angler size, there must be considerable predation on their young. By managing largemouth bass with a quality or trophy regulation, the increased density of bass reduces young bluegill densities and allows for improved growth. Bluegill can reach weights of over a pound. In some lowland lakes with high angling effort, anglers have been able to crop off the larger bluegill preventing them from exceeding eight inches. Through dispersal or unlawful introductions, bluegill have become established in several north Idaho lakes. In most cases, they support popular fisheries and have not generally been detrimental. They appear to have successfully outcompeted pumpkinseed sunfish in nearly all north Idaho waters where they have been introduced. Hybrids between the two species exist in some lakes. Bluegill have however, replaced perch in some north Idaho lakes.

Yellow Perch

Yellow perch can produce important sport fisheries in Idaho's larger reservoirs and lakes (e.g., Cascade Reservoir). Many ice fisheries in north Idaho lowland lakes are supported by yellow perch. Yellow perch are notoriously difficult for IDFG to manage for consistent size structure and abundance. The species tends to have cyclic year class strength where the formation of strong year classes can dominate and suppress subsequent year classes. Stable yellow perch populations and fisheries are associated with productive waters generally larger than 10,000 acres which have complex fish communities. Complex fish communities are thought to be necessary to maintain adequate levels of predation to prevent stunting and, at the same time, provide alternate food items for other predators. Yellow perch are extremely fecund, producing

up to 40,000 eggs per female, and can easily stunt because of overpopulation or, sometimes because of suppressed food supplies caused by poor water quality. In a mixed fishery, young yellow perch are an important food source for other predators. When yellow perch become established in trout fisheries, trout growth can be severely impacted. IDFG has renovated fisheries because of illegal introductions of yellow perch into waters managed for trout. Once yellow perch are introduced, it is extremely difficult and expensive to eliminate them to allow a more desirable fish species to become established.

Catfish

Catfish species introduced into Idaho have included channel, flathead, brown and black bullhead species, as well as three other rarely found species (yellow bullhead, blue catfish, and tadpole madtom). All species are generally fished for with bait. The channel catfish is by far the preferred target species of anglers, especially in the Snake River system from Swan Falls Reservoir downstream. Channel catfish reproduce successfully in some Idaho waters and have become self-sustaining in many southwest Idaho waters. In north and eastern Idaho lowland lakes and reservoirs, channel catfish do not reproduce successfully due to the lack of suitable temperatures for spawning and early development. In these areas, fisheries for channel catfish have been supported by stocking. Size at stocking must exceed eight inches to avoid heavy predation by bass. Channel catfish have grown to sizes of 19 pounds in several north Idaho lakes and are providing popular fisheries. Supplies of hatchery channel catfish have been inconsistent and currently there are no bag, possession, or length limits on any catfish species. An extensive evaluation of channel catfish stocking rates, growth, and exploitation in northern Idaho indicates a high in-lake density at historical stocking rates and relatively low exploitation and growth rates. This suggests a reduction in stocking rates would not compromise the fishery and may improve growth.

Flathead catfish are generally confined to the middle Snake River and Brownlee Reservoir. This species is considered a trophy species in southwest Idaho with individuals commonly reaching over 20 pounds. Bullhead catfish are very successful in small water bodies, although they can tend to overpopulate and stunt. Bullhead catfish are easily captured and can tolerate poor water quality.

Walleye

Walleye is one of the most controversial introduced species in the western United States. In general, waters of the western U.S. do not have the diverse and abundant forage base needed to support these prolific keystone predators. As a result, walleye introduced in the western U.S. typically exhibit poor growth and often create conflict with management of other game species. The Idaho Fish and Game Commission approved a policy in the 1980s to introduce walleye only in closed systems where they have no chance of escaping to other waters. Walleye were first introduced into Salmon Falls Creek Reservoir in south-central Idaho in the mid-1970s. IDFG currently manages walleye in Salmon Falls Creek Reservoir, Oakley Reservoir, and Oneida Reservoir.

Walleye have been documented in Hayden Lake since the early 1980s, in the Bear River system, lower Snake River, and Ririe Reservoir. A reproducing population and limited target fishery now exists in Lake Pend Oreille and the Pend Oreille River. These populations originated from walleye that were introduced illegally or that drifted in from elsewhere in the drainages. IDFG will monitor these populations and if possible, eliminate them or control their

expansion. In 2006, IDFG removed bag limits on walleye in all waters statewide where they are not being specifically managed.

Walleye can significantly impact native fish populations and existing sport fisheries. IDFG will not restrict harvest or permit catch-and-release fishing contests or tournaments on walleye in waters where unauthorized introductions have occurred. IDFG will not introduce walleye into new waters during this planning period.

Northern Pike

Northern pike were illegally introduced into Cave Lake in north Idaho in 1972. Cave Lake is one of the nine "chain or lateral lakes" connected to the Coeur d'Alene River. Northern pike were also collected in the Clark Fork River below Cabinet Gorge Dam in 1974. Both of these introductions came from northern pike populations that were illegally established in Montana waters. Northern pike spread rapidly throughout the Coeur d'Alene system and additional illegal introductions established northern pike in Hayden, Twin, Spirit, Blue, Perkins, Bonner, Hauser, and Freeman lakes. Northern pike have only been documented in the Panhandle Region of Idaho.

Northern pike grow fast, are highly aggressive and are good eating, making them a desirable sport fish for some anglers. However, northern pike have negatively impacted native species and other sport fisheries through predation. Northern pike in Coeur d'Alene Lake prey on native westslope cutthroat trout adding another mortality factor to an already depressed population. In 2006, IDFG removed bag limits on northern pike to discourage illegal introductions into other waters and to keep pike densities low to minimize predation on important sport and native fisheries. IDFG will not restrict harvest or permit catch-and-release fishing contests or tournaments on northern pike in waters where unauthorized introductions have occurred. IDFG will not expand the range of northern pike in Idaho.

Tiger Muskie

Tiger muskie are a sterile hybrid cross between a female muskellunge and male northern pike. The first introduction of tiger muskie into the state was made in Mud Lake in 1988. After careful consideration, and employing a thorough assessment protocol, additional introductions of tiger muskie occurred.

Tiger muskie are utilized to provide trophy fisheries in waters to take advantage of abundant populations of forage fish such as yellow perch, bullhead, Utah chub, and suckers. They are stocked in Idaho lowland lakes and reservoirs to provide a trophy fishery. All of the recent state record fish were caught in Hauser Lake with the largest being 38 pounds 7 ounces landed from 2001. Tiger muskie are also used on a limited basis for experimental control of brook trout in alpine lakes. The use of tiger muskie in alpine lakes will continue during this planning period, and IDFG will closely monitor results of the program.

In lakes and reservoirs where tiger muskie have been stocked to provide fisheries, most areas are managed with a two-fish, 40-inch minimum length limit regulation. During this planning period, additional waters will be considered for tiger muskie management where the forage base is adequate and where there are no conflicts with other fish management goals.

Special Rules in Resident Fisheries Management

Quality and Trophy Trout Rules

The terms “quality” and “trophy” have been applied to trout fisheries by anglers and managers to mean various things, including whether fish were of native or wild origin and the aesthetics of the surroundings. Within the context of IDFG’s fish management programs and this plan, however, they are used to refer to specific management programs that utilize special rules to increase the average size of trout in a fishery. They generally provide increased catch rates as well. Trout may be of wild, natural, or hatchery origin.

Quality and trophy trout management differ in the size of trout the regulations are designed to produce. They are defined as follows:

> **Quality Trout Management -** A management program that uses special rules to reduce or delay mortality to provide increased size of trout, but where less than 20% of the fish exceed 16 inches. Quality trout management is appropriate for lakes and streams with poorer productivity and growth potential, or on waters with trophy growth potential where the majority of affected anglers desire to retain more harvest opportunity than that provided under trophy management.
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> **Trophy Trout Management -** A management program that uses special rules to reduce or delay mortality to provide increased catch rates and increased size of trout such that 20% or more of the trout exceed 16 inches. Trophy trout management is appropriate for lakes and streams with good productivity and growth potential where the majority of affected anglers desire to forego most or all harvest opportunity in order to catch large trout.

Special rules used under quality and trophy trout management programs may include a combination of a two-fish bag limit and various size limits, or catch-and-release where appropriate. Bait restrictions may be applied where necessary to achieve size structure goals. IDFG has quality management programs that may utilize a minimum size limit of 14- inches or 16-inches, depending on productivity and biological characteristics of the fish population. Trophy management programs utilize a minimum size limit (most often 20-inches), again depending on productivity and biological characteristics of the fish population. For quality and trophy management objectives, slot length limits may be used where there is a clear public demand for harvest opportunity or where recruitment is not a limiting factor. The most restrictive rule, catch-and-release, may be used as part of quality or trophy trout management, depending on the same characteristics.

Quality and trophy management may also include seasonal restrictions to reduce mortality on spawning fish or on trout as they concentrate to migrate downstream in the fall in response to dropping water temperatures. Seasonal restrictions may apply to all trout within a body of water, or may be applied to certain species in order to provide a diversity of opportunity within the same body of water or geographical area.

Idaho is fortunate to have many bodies of water that provide large trout without special rules because of their productivity or minimal angling pressure. These waters will remain under current general management with a six-fish bag limit or wild trout management with a two-fish bag limit. As numbers of anglers using the water increases and harvest affects the size structure of the trout population, and as more anglers desire to optimize catch rates and size of fish and

de-emphasize harvest, quality and trophy trout management may be applied to additional waters.

Quality and Trophy Bass Rules

Quality and trophy bass fishing opportunities were created on some waters by further reducing or delaying harvest with special regulations that allowed bass to live longer and reach larger average size. Most Idaho anglers define a “quality” size bass as a 14- to 16-inch fish. Bass over 20 inches are generally considered fish of “trophy” size. Quality and trophy bass management differs in the size of bass, the total catch rates, and the harvest opportunity the regulations are designed to provide. They are defined as follows:

> **Quality Bass Management** - A management program using slot limit regulations which reduces or delays harvest to provide increased catch rates for 12- to 16-inch bass, but where less than 20% would exceed 16 inches. Under quality bass management, the percentage of fish that exceed 12 inches would be greater than under general regulations, but total harvest rates may be reduced.
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> **Trophy Bass Management** - A management program using special regulations, which reduces or delays harvest to provide increased numbers of larger bass such that 20% or more exceed 16 inches. Trophy bass management would maximize both catch rates and size of bass and provide only for harvest of trophy-sized bass.

Special regulations used under quality and trophy bass management provide a combination of a two-fish bag limit and various size limits and/or seasonal harvest restrictions. The primary regulation for quality bass management requires anglers to release all bass prior to July 1 to prevent harvest during the pre- and post-spawn period when large bass are most vulnerable to harvest. Harvest after July 1 is restricted to two fish, none between 12 and 16 inches. Quality management may also include a 16-inch minimum size limit where harvest of bass less than 12 inches is not appropriate. The primary regulation for trophy bass management would require anglers to release all bass less than 20 inches. There are no season restrictions under trophy management because the spawning period may be the only time bass of legal size are vulnerable to harvest.

During this planning period, IDFG will continue to manage designated lakes and reservoirs for quality bass in addition to managing some for trophy fishing opportunity. Where biologically feasible and supported by anglers, we will manage additional waters for quality or trophy bass fishing.

Native Nongame Species

Statewide fisheries management goals include maintaining or restoring native populations of fish in suitable waters and historic habitats to ensure they have a high probability of long-term persistence, and are present in appropriate numbers to perform ecological functions. There are a number of nongame fish species that are native to Idaho. These include eight sculpin, 10 minnows, six suckers, one lamprey, and one species of trout-perch.

The ecological importance of nongame species in their native habitats is often overlooked, and many of these species play an integral role in supporting fish and wildlife communities. All fish

and wildlife in Idaho are to be preserved, protected, perpetuated, and managed by IDFG. Native nongame fishes are important for ecological, scientific, aesthetic, and cultural reasons.

There are a number of native nongame fish that are abundant and widely distributed in Idaho including chiselmouth, peamouth, northern pikeminnow, longnose dace, speckled dace, redside shiner, largescale sucker, and mottled sculpin. These species are regularly documented during IDFG's routine field sampling efforts.

In many instances, little is known about the status or distribution of native nongame fish species. As with native game fishes, habitat degradation and other factors have adversely affected native nongame fishes and the ecological communities they occupy. Species with very limited ranges or special habitat needs include the Bear Lake sculpin, Shoshone sculpin, Wood River sculpin, northern leatherside chub, bluehead sucker, Pacific lamprey, and sand roller. Fish with restricted ranges and small population size can be more prone to extinction than species with more widespread distributions. Pacific lamprey are anadromous fish and face essentially the same threats to survival as salmon and steelhead. Their population numbers have plummeted in the past few decades and increased attention is being given to their conservation by federal and state agencies, and Indian tribes. Other species, including some of the minnow species, may actually increase to the point where the fish community is out of balance or no longer in a natural condition due to habitat changes such as reservoir construction. It is therefore important that IDFG, in coordination with other agencies, understand the current distribution and population status of native nongame species, and to ensure persistence of these species.

During the 2007-2012 planning period, IDFG became a signatory to conservation agreements dealing specifically with the conservation of northern leatherside chub, Pacific lamprey, and bluehead sucker. We routinely participate in conservation team meetings with other parties to discuss management and conservation actions taken by signatory agencies and tribes. The goal of these conservation agreements is for all parties to undertake active conservation to increase population abundance and distribution of these native species to avoid listing under the Endangered Species Act.

During this planning period, IDFG will do the following regarding native nongame fish species:

- IDFG will continue to advocate protecting habitat for all aquatic communities supporting native fish species. In particular, special attention will be given to fish communities supporting native species with limited distributions. We will work with state and federal land management agencies, private landowners, and others to promote good land and water stewardship. IDFG will be an active participant in efforts devoted to the conservation of "at risk" native nongame fish.

- IDFG will continue to enhance its understanding and knowledge about the distribution, population status, habitat preferences, and management needs of native nongame species through monitoring and research, as appropriate funds are available.

- IDFG will take the lead in developing species management or conservation plans for native fishes including plans that address fish assemblages containing native sport and nongame fish.

- IDFG will take a proactive role in informing and educating Idaho citizens, agencies, and decision-makers about population status and the ecological and intrinsic value of native nongame species.

Alpine (High Mountain) Lake Management

Anglers utilizing alpine lakes have consistently expressed the highest level of satisfaction with their fishing experience. Alpine lakes provide an enhanced fishing experience in scenic country with the opportunity for solitude and remoteness. Alpine lakes are also important components in Idaho's recreation economy. Over 40,000 anglers fish in alpine lakes each year.

It is estimated that over 3,000 alpine lakes exist in Idaho, ranging in size from small temporary ponds to large lakes over a mile long. Approximately 1,355 lakes are stocked or have natural fish populations. Many of the lakes have received fish since the early 1900s when fish stocking was conducted by backpack and horseback followed by aerial stocking in the last 50 years. Stocking of most lakes is done on two or three-year rotational schedules and is guided by a Memorandum of Understanding with the U.S. Forest Service. Although most of the species historically stocked were native to Idaho, they were not always native to certain watersheds. During the 1920s to 1950s, brook trout were stocked into many lakes and established naturally reproducing populations. Other apparently unsuccessful non-native fish stocked in the early 1900s included arctic char and Atlantic salmon. Yellowstone and Henrys Lake cutthroat trout were utilized for stocking through the 1980s in both native and non-native watersheds. All strains of rainbow trout used for stocking mountain lakes were of non-native stocks. In addition, bull trout, golden trout, brown trout, and grayling have been stocked to provide diverse fishing opportunities and meet specific management needs.

Historical alpine lake management was conducted to provide diverse angling opportunities. Wilderness areas were not designated at the time and little consideration was given to native fauna occurring in the lakes. Prior to fish introductions, amphibians were the top vertebrate carnivores in most alpine lakes (Pilliod et al. 1996). Introductions of fish into some of these lake systems have reduced amphibian populations through predation and competition (Hoffman and Pilliod 1999).

In recent years, IDFG has developed an adaptive management approach to guide the alpine lake fish-stocking program. Information from a variety of sources is incorporated to continuously optimize the total array of benefits from the alpine lake program. Ecological and biological aspects of maintaining healthy amphibian populations are now considered in determining how alpine lakes are managed. Potential impacts to downstream native fish populations are also part of the decision process.

During this six-year planning period, IDFG will develop an alpine lakes management plan. We will also continue to evaluate alpine lake management based on the following guidelines:

1. Where desirable and feasible, some lakes will be maintained as fishless. Fishless lakes will allow for maintenance of natural conditions for native fauna within alpine ecosystems.

2. Management of alpine lakes in wilderness and national recreation areas will be coordinated closely with the appropriate land management agencies.

   The "Policies and Guidelines for Fish and Wildlife Management in Wilderness and Primitive Areas" manual, developed by the U.S. Forest Service, U.S. Bureau of Land Management, and the Association of Fish and Wildlife Agencies, will guide management of these alpine lakes. Stocking plans for wilderness lakes should address impacts on fisheries, lake ecosystems, recreational use, and aesthetics. IDFG is the lead agency for

fish population management in alpine lakes. Stocking rates and frequencies will be adjusted to respond to changes in angler preferences and access.

3. Self-sustaining native trout populations will be maintained.

   Determination of lake capability of providing natural reproduction will be made when the lake is surveyed. Stocking will be modified or eliminated to reduce the detrimental effects of supplementing more fish on existing populations and reducing costs.

   Species of greatest conservation need, native species, and threatened and endangered species within alpine lake drainages will be given management priority.

   Priority will be placed on management of alpine lakes to reduce or eliminate impacts to native species in and downstream from alpine lakes. In these drainages, sterile fish may be stocked to eliminate potential interbreeding with native fish in the drainage.

   Self-sustaining populations of non-native species may be reduced where feasible, to achieve native species goals or other fish management goals.

4. Amphibian and Natural Fauna Plans.

   Most of the 1,645 alpine lakes in Idaho currently designated as fishless appear to provide amphibian habitat. Lakes that are fishless and that have never been stocked previously may remain fishless. A few lakes that currently hold fish may be removed from the stocking schedule as a research experiment to measure fish, amphibian, and other natural fauna population responses. These lakes will be selected to maintain biotic integrity of amphibian and invertebrate populations or to improve trout growth potential in adjoining lakes. Amphibians and natural fauna will be considered appropriately as part of IDFG's alpine lakes management plan. We will manage for suitable fishless habitat to ensure the long-term persistence of native aquatic fauna.

5. Non-native fish control.

   Brook trout and other non-native fish can negatively impact native fish populations. Management will be directed towards reducing or eliminating negative effects of non-native fish populations on native fish by utilizing regulations or population management actions. Tiger muskie will be used in a few selected lakes as a management tool to either remove non-native fish (primarily brook trout) from alpine lakes or improve the brook trout fishery by reducing their numbers thereby increasing their size.

Anadromous Fisheries Management

The Snake River upstream from Lewiston historically produced an estimated 55% of the summer steelhead trout, 40% of the spring Chinook salmon, and 45% of the summer Chinook salmon in the Columbia River. Historically, Idaho was also a key production area for fall Chinook salmon. Lesser numbers of sockeye salmon and Coho salmon inhabited the Snake River drainage although Snake River Coho salmon were declared extinct in the mid-1980s. Runs of naturally reproducing salmon and steelhead in Idaho have generally improved since historic low abundances experienced in the mid-1990s, but they are still lower than the 1960s and early 1970s. The declines in run sizes led to federal Endangered Species Act listings of Snake River salmon and steelhead starting in 1992. The three Snake River federally-listed Evolutionarily Significant Units (ESUs) and the listing status of each are: Snake River sockeye salmon (endangered), Snake River spring/summer Chinook salmon (threatened), and Snake River fall Chinook salmon (threatened). Also, the Snake River steelhead Distinct Population Segment (DPS) is listed as threatened. Forty-three of the 62 independent populations within the listed ESUs and DPS are entirely contained in waters managed by IDFG, and two populations occur in waters jointly managed with Oregon and Washington. The federal Endangered Species Act listings add complexity to state management. More specific information about which populations are included in these ESUs and DPS is in the Threatened and Endangered Species section of this plan.

IDFG's long-range goal of the anadromous fish program is to recover and preserve Idaho's salmon and steelhead runs to provide benefits for all users. This management goal complements the Compass objectives to: 1) maintain or improve game populations to meet the demand for hunting, fishing, and trapping; and 2) ensure the long-term survival of native fish, wildlife, and plants. The anadromous management program will employ many of the key Compass strategies consistent with these objectives, generally described below.

Key management objectives to achieve the management goal are: 1) maintain genetic and life history diversity and integrity of both naturally- and hatchery-produced fish; 2) rebuild naturally-producing populations of anadromous fish to utilize existing and potential habitat at an optimal level; 3) achieve equitable mitigation benefits for losses of anadromous fish caused by development of the hydroelectric system on the Snake and Columbia rivers; 4) improve overall life cycle survival sufficient for delisting and recovery by addressing key limiting factors identified in all "H's" of hydropower, habitat, harvest, and hatchery effects; 5) allow consumptive harvest by sport and treaty fishers; and 6) coordinate Pacific Northwest regional management with Idaho anadromous management to ensure achievement of Idaho management objectives and the long-range program goal.

To help meet the anadromous program long-range goal and federal recovery goals, Idaho's anadromous fish management utilizes both natural and hatchery production. In natural production waters, populations are sustained by spawning and rearing in the natural habitat without human intervention, regardless of the parentage of the spawners (i.e., naturally-produced progeny of hatchery or wild/natural origin fish). Hatchery production occurs in a controlled artificial spawning and rearing environment with hatchery fish released to provide fishing opportunity or to sustain populations. For management purposes, IDFG classifies three groups of salmon and steelhead based on definition of production and broodstock history: wild, natural, and hatchery fish.

Wild/Natural

Wild fish are native fish, which have no history or evidence of reproductive introgression with hatchery or non-native fish. These fish are naturally produced without artificial intervention. Natural fish also result from natural production, but their parentage may include hatchery fish. For example, naturally spawning spring Chinook salmon in the Clearwater River Basin is considered natural because current populations were established through reintroduction efforts using hatchery fish. Coho in the Snake River Basin is another example of natural fish management where hatchery fish are the foundation of a reintroduction effort. In Idaho, "conservation" describes the fishery management strategy applied to most wild/natural salmon and steelhead populations (see Part 2, Drainage Management) during this planning period. Because populations of these fish are so low, this management strategy prohibits directed harvest and/or angling in order to minimize harvest mortality. Conservation-oriented strategies seek to maintain a diversity of wild (without hatchery influence) and natural populations (may have hatchery influence) that are broadly distributed across the range of current anadromous fish habitat.

IDFG will emphasize protecting and maintaining populations of wild, native stocks of salmon and steelhead. Examples include wild steelhead in the Selway River and the South Fork Salmon River drainages, or wild salmon and steelhead in the Middle Fork Salmon River drainage and the Salmon River Canyon tributaries (Table 3).

Table 3. Geographic locations of wild populations of salmon and steelhead.

Spring/Summer Chinook Salmon
Salmon River
• Salmon River tributaries from mouth to Middle Fork Salmon River, excluding Little Salmon and South Fork Salmon Rivers
• Secesh Drainage (South Fork Salmon River tributary)
• Middle Fork Salmon River Drainage
• Valley Creek
Steelhead
Clearwater River
• Lower Clearwater tributaries excluding Lolo Creek drainage
• Lochsa River Drainage
• Selway River Drainage
Salmon River
• Salmon River tributaries from mouth to Middle Fork Salmon River, excluding Little Salmon River
• Rapid River (Little Salmon River tributary)
• South Fork Salmon River Drainage
• Middle Fork Salmon River Drainage

Maintaining genetic integrity and diversity of the wild stocks is considered essential to continued production (hatchery and natural) of fish evolutionarily suited for Idaho habitat, as well as being the only practical means of fully utilizing the production capability of wilderness streams. Preserving the current diversity of populations is critical so that survival improvement effected by management changes in the four "H's" (habitat, hatcheries, hydropower, and harvest) or by natural environmental variables, such as ocean regime, can be capitalized on for rebuilding and recovery. Artificial production will be limited or absent in areas managed for wild production.

Clear benefit as a result of benefit/risk assessment must be demonstrated before considering new interventions using artificial propagation as a safety net for wild/natural populations that may be at risk of loss of population viability during the next management period. Bringing wild fish into captivity will be considered only if essential for long-term conservation. Careful monitoring of wild/natural salmon and steelhead populations will be necessary for future conservation and recovery management decisions.

Releases of hatchery-produced fish will be managed to minimize straying as juveniles or adults into non-targeted or wild fish streams. Use of natural fish in hatchery programs will be controlled to avoid reducing genetic integrity or fitness of the population.

Management activities to increase wild and natural salmon and steelhead abundance will focus on improving life cycle survival. Key priorities for scientific assessment and recommendations will be the Snake and Columbia rivers' migration corridor and regional fisheries. Improvements in spawning and rearing habitat that provide significant survival benefit for wild/natural populations of salmon and steelhead will be pursued in collaboration with land managers and private landowners. Hatchery production will be used consistent with policy and scientific information to provide selective fisheries and supplement natural populations.

Fish Hatchery Program

Resident Fish Hatcheries

On an annual basis, IDFG may stock over 22,000,000 fish from its resident hatcheries. This includes fry, fingerlings, and catchable sized fish from 18 species and 16 strains (examples are Hayspur, Kamloops, and Shasta). Most of these fish are utilized in lowland lakes and reservoirs with about 300,000 trout stocked annually in mountain lakes. About 88% of the total numbers of resident fish released are salmonids, with the other 12% being comprised of walleye, channel catfish, and tiger muskie. Rainbow trout comprise upwards of 27% of the resident salmonids stocked while kokanee salmon comprise over 51%.

IDFG currently has eight fish hatcheries that produce resident salmonids. Three other facilities stock resident fish in addition to their primary function as anadromous fish hatcheries. The Mullan Hatchery, owned by the Shoshone County Sportsman's Association, redistributes catchable-size rainbow trout throughout the Silver Valley of north Idaho. The Clark Fork Hatchery is owned by IDFG but has been closed since 2000 due to the presence of Infectious Pancreatic Necrosis in the water supply. The Cabinet Gorge Hatchery was built to mitigate for the loss of habitat due to the operation of Albeni Falls Dam. This facility produces primarily kokanee. This hatchery holds a captive broodstock of westslope cutthroat trout that supplies eggs for statewide management programs. Other fish for statewide use will be reared at Cabinet Gorge as rearing space allows. In addition to the 11 facilities mentioned above, the Henrys Lake Management Station takes Yellowstone cutthroat trout eggs in the spring for use statewide, but primarily for the Henrys Lake fishery.

In addition, the genetic purity of wild/natural trout stocks is a concern. IDFG will stock rainbow trout strains that have been subjected to sterilization techniques. If there is no genetic risk to native trout species, IDFG may consider supplementing native/natural stocks with reproducing fish for conservation or sport fishery purposes.

Fish health in hatchery stocks, as well as native stocks, is a concern to IDFG. As a result, IDFG has participated in the development of, and is adhering to, fish health guidelines set forth by the

Pacific Northwest Fish Health Protection Committee and the Integrated Hatcheries Operation Team. The Eagle Fish Health Laboratory provides fish health and diagnostic services to both resident and anadromous hatcheries, as well as assisting regional personnel in monitoring disease, diagnosing fish kills, or pathogen presence in wild populations. The primary goals of the fish health program are to reduce the threat of introduction of new or exotic pathogens to the State of Idaho; to avoid amplifying any pathogens of concern that already occur in hatchery fish or wild fish; to limit the possibility of spreading any specific endemic disease agents through Departmental activities; and to enhance hatchery fish health and smolt quality to assist in the restoration of salmon and steelhead including an ongoing anadromous program that includes extensive disease sampling, modified rearing strategies to reduce stress, and structural modifications to increase or maintain a high level of fish health.

At Hayspur Hatchery, IDFG's sole rainbow trout broodstock facility, we conduct our triploid rainbow trout program. In our most robust assessment of techniques, we developed two techniques to induce triploidy. Both the heat and pressure shock methods were tested. Both methods were determined to be highly effective; however, the pressure shock method provided slightly higher average triploidy induction rates than heat. As a result, we now only use pressure treatment on all rainbow trout produced at Hayspur Hatchery.

A monitoring program was developed to ensure that overall triploidy induction rates are precisely estimated each year and monitored over time. From this monitoring program, annual triploidy induction rates have ranged from a low of 94.8 % in 2002 to a high of 100% in 2009-2011, with an average over 99%. A small number (<1-4%) of fertile fish may occur among treated fish that are used for stocking. IDFG will continue to work on perfecting triploidy induction techniques to maintain a goal of 99% sterilization. Other species IDFG has conducted research on to induce triploidy include cutthroat trout, rainbow x cutthroat hybrids, brook trout, lake trout, and kokanee. As we develop these sterile hatchery fish, they will be used wherever necessary to reduce genetic, competition, and predation risks to native trout.

In addition to producing rainbow trout from our own broodstocks, IDFG also purchases triploid rainbow trout eggs from commercial suppliers. Purchase orders for commercial eggs stipulate the triploidy rate must be at least 95%.

During this planning period, the resident fish hatchery section will focus on meeting fish management needs statewide. Fishing opportunity can be increased and improved by increasing efficiency of put-and-take trout programs through: 1) concentrating releases of catchables in easily accessible, heavily-fished waters; 2) timing releases to coincide with peaks in fishing pressure; 3) publicizing the location of stocked trout streams; and 4) producing a consistently high-quality product at the hatcheries. Additional hatchery production may be needed if new angling waters are developed.

IDFG also coordinates the acquisition and stocking of cool and warmwater fish for use in management and research activities. These include channel catfish, tiger muskie, and walleye. Details of planned hatchery production, development, and maintenance are described in separate reports available from IDFG.

Anadromous Fish Hatcheries

Idaho's anadromous fish hatcheries were built to mitigate for lost natural fish production and reduced survival that resulted from hydroelectric development of Columbia Basin rivers.

Management of IDFG's salmon and steelhead hatcheries is focused on producing and releasing juvenile fish to provide harvest opportunity on adult fish returning from the juvenile releases.

Over the past two decades, hatchery-produced fish have provided the only sport fishing and harvest opportunity for salmon and steelhead in Idaho. Although the primary objective of the hatcheries is to provide harvest opportunity, fisheries can be considered only when: 1) enough hatchery adults return to ensure that hatchery broodstock needs can be met, and 2) incidental impacts to non-target stocks are minimal. Of the fishery management classifications (see Part 2, Drainage Management), "anadromous" refers to management which targets harvest opportunity on hatchery-origin fish while protecting wild and natural fish.

A secondary objective of the anadromous mitigation hatcheries is to preserve and rebuild natural stocks. IDFG will continue to carefully assess the risks of using hatchery fish over the long term to bolster numbers of fish in the natural environment. Evaluation and implementation of supplementation programs targeting natural fish populations will be regionally coordinated. The Idaho Supplementation Studies (ISS) for Chinook salmon will be completed during this planning period and its results, along with information from other studies, will guide future hatchery actions for natural stock rebuilding. New efforts to integrate natural and hatchery production are being initiated. The purposes of these integrated brood programs are to reduce the impact of hatchery programs on wild and natural populations and to promote recovery of ESA-listed populations. However, rebuilding runs only through supplementation or other artificial production mechanisms is unlikely to succeed if life cycle survival is less than needed for spawner-to-spawner replacement.

IDFG's anadromous hatchery program will: 1) strive to produce maximize survival of juvenile fish to adulthood through effective disease control, fish culture practices, and release strategies; 2) produce sufficient numbers of fish to maintain and enhance sport and tribal salmon and steelhead fisheries; and 3) implement supplementation programs as appropriate and guided by current research and science. Anadromous hatcheries, where necessary, will be used to help preserve salmon and steelhead populations on the verge of extinction until life cycle survival permits rebuilding. IDFG will continue to mark hatchery smolts prior to release in order to maximize hatchery selective fishery opportunities and to easily identify hatchery fish to maximize broodstock management options.

Fisheries Research Program

The fisheries research section has five organizational components: anadromous fish mitigation, resident fish species mitigation (both 100% Federal funding), discretionary research, program management/technical support (both funded 75% with federal sport fish restoration or Dingell-Johnson funds), and lastly a genetics program (funded via a variety of Federal, state and private (e.g., Idaho Power Company) funds.

IDFG operates a fish genetics laboratory to provide an efficient, cost-effective means of generating detailed genetic information necessary for the improved management of Idaho's native fish species. Importantly, information gained from genetic research studies completed in the laboratory are being used by mangers to assess current and future genetic risks, preserve existing genetic variability, delineate and prioritize populations for management purposes, identify suitable populations for translocations and reintroductions, identify suitable populations for broodstock development, and address genetic concerns in Endangered Species Act petitions.

The Endangered Species Act status of anadromous sockeye salmon and Chinook salmon mandates research/mitigation efforts on those two species are intricately tied to Federal recovery processes. Currently, two research projects (Captive Chinook and Sockeye Research) are focusing on long- and short-term implementation of captive technologies for maintenance of genetic diversity and restoration of wild stocks to harvestable levels.

Resident fish species mitigation research is designed to mitigate for fish populations impacted by development of the federal Columbia River hydropower system. Population monitoring, evaluation, and other findings are used to recover populations of Kootenai River white sturgeon, kokanee, rainbow trout, bull trout, burbot, and other species that have been adversely impacted by hydropower systems. The general direction of these research activities is coordinated with other resource agencies, provincial governments, Indian tribes, and federal or utility funding entities and set through funding contracts (Table 4).

To provide direction for the remainder of IDFG's fisheries research program, a combination of management, hatchery and research personnel identified needed information and tools that would enhance fisheries management in Idaho (Table 5). These research questions are being addressed by three separate Dingell-Johnson funded projects entitled Hatchery Trout, Wild Trout, and Lake and Reservoir Research.

Table 4. Resident species mitigation research, 2012-2017.

Resident Mitigation Research Projects	Schedule
Monitor and evaluate adult white sturgeon spawning and juvenile rearing responses to changes in Kootenai River temperature, flow/discharge and habitat enhancement efforts prescribed in the Kootenai Sturgeon Recovery Plan.	2012 -2017
Evaluate phosphorus and nitrogen addition to the canyon reach of the Kootenai River in terms of changes in periphyton, zooplankton, benthos, and associated shifts in fish populations.	2012-2017
Evaluate limiting factors for redband trout recruitment in the Kootenai River upstream of Bonners Ferry and develop solutions.	2012-2017
Evaluate limiting factors for kokanee recruitment and examine effects of management actions designed to improve kokanee spawning habitat and recruitment in Lake Pend Oreille.	2012-2017
Monitor and evaluate hatchery burbot releases and other recovery measures implemented under the Kootenai River Conservation Strategy.	2012-2017
Evaluate the kokanee stocking program in Lake Pend Oreille to assist in restoration of kokanee and protect bull trout.	2012-2017
Reduce lake trout abundance and evaluate effects of associated predation reduction on kokanee in Lake Pend Oreille.	2012-2017
Monitor rainbow trout population to inform management of sport fishery and evaluate predation potential on kokanee in Lake Pend Oreille.	2012-2017
Evaluate benefits to the kokanee fishery from pilot fertilization efforts in Dworshak Reservoir.	2012-2017
Evaluate trophic dynamics in Lake Pend Oreille to identify limiting factors for kokanee recovery and potential management actions.	2012-2017

Table 5. Management needs scheduled to be addressed by discretionary (DJ) research.

Management Need	Schedule
Lake and reservoir studies • What is the most effective study design and sample size for creel surveys in Idaho? • Would the use of circle hooks reduce deep hooking of sturgeon when bait fishing? • What proportion of sturgeon have ingested fishing tackle in various sections of the Snake River in Idaho? • Can sturgeon effectively pass circle hooks or other fishing material through their digestive systems? • Determine the most effective sampling methods and gear ratios for standard sampling of lowland lentic waters in Idaho.	2011-2015
Sterile fish studies • Evaluate the performance of sterile cutthroat trout in high mountain lakes. • Continue to refine sterilization recipes for westslope cutthroat, kokanee, and other species. • Evaluate the potential for sterilization to improve kokanee fisheries. • Evaluate the potential of using predators to eliminate or improve brook trout fisheries in high lakes.	2011-2015
Improve hatchery trout return to creel • Identify optimum hatchery densities that lead to better catch rates and return to creel. • Identify optimum grading strategy to remove “stragglers” that could potentially save feed costs and increase return to creel. • Can hatchery conditioning of fish improve return to creel?	2011-2015
Wild / native species studies • Monitor trends in native salmonid populations across Idaho. • Can the level of introgression be reduced in hybridized populations of cutthroat trout? • Can daughterless fish technology be used to control undesirable fish species? • Determine the best PIT tagging body location for salmonids to minimize tag loss. • Estimate pelican predation vs. angler harvest on select waters in Idaho. • Determine the best electrical settings at electric weirs to minimize fish injury while maximizing capture efficiency.	2011-2015
Conduct angler use, fish harvest, and angler economic surveys as needed • Can we estimate use and harvest more efficiently?	2011-2015
Develop database and GIS coverage for fish species distribution as needed to support fish management and ESA listing needs	2011-2015

Fish Habitat Program

In 2007, IDFG created a fish habitat restoration program and hired a Habitat Coordinator to supervise the program. In 2008, IDFG hired two fish habitat biologists, one for the Clearwater Region and one for the Salmon Region. This was accomplished with Bonneville Power Administration funding. These positions are responsible for identifying, prioritizing, designing, and implementing habitat restoration projects. Because the majority of the funding for these projects comes from federal or private sources, the habitat biologists are also responsible for securing funding for these projects. One hundred percent of their time is dedicated towards restoration efforts.

To complement this restoration work, IDFG implemented intensive monitoring efforts on a sub-basin scale in two drainages where habitat restoration efforts are being focused: the Lemhi River drainage (Salmon Region) and the Potlatch River drainage (Clearwater Region). This monitoring is designed to determine the effectiveness of habitat restoration work in increasing fish production and to provide guidance on future habitat work.

It was apparent early in the program that engineering services are critical for the design and implementation of successful projects. Lack of these services limited IDFG's ability to implement projects. As a result, a habitat engineer was added to the program in 2010. IDFG also uses the services of private engineering firms when needed.

The program has since grown to include most Department administrative regions. There is now a biologist in the Panhandle Region, the Upper Snake Region, and the Southeast Region that have a percentage of their time dedicated to fish habitat restoration. The biologists in the Panhandle and Southeast regions are funded through hydropower relicensing agreements while the Upper Snake biologist is funded through several different sources.

While the Southwest and Magic Valley regions do not have fish habitat biologists, we will continue to explore opportunities to enhance the program.

Additional changes to the fish habitat program were implemented in late 2012. Restructuring of responsibilities resulted in the former Fish Habitat Program Coordinator assuming the title of Operations Coordinator. This position will provide technical and administrative support regarding funding, contracts, billing, and budgets to the program. The Conservation and Restoration Coordinator will oversee the planning and implementation of the fish habitat program and serve as the primary technical liaison with other agencies and partners. During this planning period, IDFG will develop a strategic plan for the fish habitat program to assist in focusing and prioritizing our restoration efforts and to provide policy perspective and guidance.

Special Management Issues

Other Aquatic Species

All wildlife is the property of the state and are protected and managed by IDFG. Aquatic animals that are important to, may be impacted by, or may have an impact on fish management include amphibians, mollusks, crustaceans, and insects. Aquatic mammals and birds that may affect fish management are not considered in this plan.

The blueback trout (*Salvelinus alpinus oquassa*), formerly the sunapee trout, was synonymized with the blueback trout by taxonomists. It was introduced into alpine lakes of the Sawtooth Range many years ago. The Idaho population of this exotic char is the only population outside of its native range of northeastern New England and southeastern Canada, where only a few populations remain. Because it is not native, it will not be considered an “at risk” species, but IDFG will protect this fish and its habitat. IDFG will protect this species by suppressing publicity, carefully monitoring the populations to determine their status, and by not stocking other species, which would adversely affect blueback trout in waters where they occur.

One amphibian, the bullfrog (*Rana catesbiana*), is classified as a Game Fish for management purposes and is subject to sport harvest. Management consists of restricting harvest to the same season as other game fish in waters where bullfrogs occur. Scientists specializing in amphibians are concerned about apparent declines in amphibian abundance and the effect non-native amphibians such as the bullfrog may have on native species. IDFG only administers the sport harvest of bull frogs. Bull frogs are classified as an Invasive Species as per Idaho Administrative Code 02.06.09. The Idaho Department of Agriculture administers rules governing the possession, cultivation, importation, shipping, or transportation of designated Invasive Species.

Crayfish are crustaceans and for management purposes are also classified as game fish and are subject to sport and commercial harvest regulations. There are three native crayfish species in Idaho and all are members of the genus *Pacifastacus.* Management consists of restricting harvest to the same season as other game fish in waters where they occur for sport and commercial harvest and regulating types of gear used. Non-native crayfish species (e.g., rusty crayfish) can cause potential negative impacts on native species and potential problems associated with burrowing species on irrigation dikes. Several non-native crayfish species are classified as Invasive Species as per Idaho Administrative Code 02.06.09. The Idaho Department of Agriculture administers rules governing the possession, cultivation, importation, shipping, or transportation of designated Invasive Species.

Other amphibians, crustaceans, aquatic insects, and mollusks provide forage for game fish, are used by anglers for bait, or are of scientific or aesthetic value. IDFG has developed conservation plans for the Columbia spotted frog and the Coeur d’Alene salamander and present populations will be monitored while conducting routine fish surveys.

Endangered Species Act

The Endangered Species Act as amended was passed by Congress in 1973. Its purpose is to provide a means of ensuring the preservation of animal and plant species that are in danger of extinction. An endangered species is any species that is in danger of extinction throughout all or a significant portion of its range, whereas a threatened species is any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Species may be broadly defined to include isolated breeding populations that are significant for ecological importance such as the Kootenai River white sturgeon, which is comprised of a single spawning population. Recovery of a species to a level safe from extinction is the key goal of the act. Typically, restoration actions are guided by a recovery plan, and the tools of recovery may range from captive breeding to land acquisition. Critical habitat is identified for listed species in order to provide special protection for key spawning and rearing areas.

There are six fish species in Idaho that are listed as threatened or endangered under the federal Endangered Species Act. The Snake River sockeye salmon was listed as endangered in 1991. Naturally-produced Snake River spring, summer, and fall Chinook salmon, excluding spring Chinook salmon in the Clearwater River, were listed as threatened in 1992 and several related hatchery stocks were added to the listing in 2005. The Kootenai River white sturgeon was listed as endangered in 1994. Naturally-produced Snake River steelhead trout were listed as threatened in 1997. Bull trout were listed as a threatened species throughout its entire range in 1998. NOAA Fisheries (part of the National Marine Fisheries Service) oversees management of listed anadromous species such as salmon and steelhead. The U.S. Fish and Wildlife Service is legally responsible for the management of listed resident species such as bull trout and Kootenai River white sturgeon.

In 2000, the Office of Species Conservation was created by the Idaho Legislature within the Office of the Governor to provide coordination, cooperation, and consultation among various state and federal agencies with Endangered Species Act responsibilities in Idaho. The core functions of the Office of Species Conservation are to coordinate federal Endangered Species Act programs with state agencies; solicit, provide and delegate funding for Endangered Species Act programs; negotiate agreements with federal agencies concerning endangered species; serve as the state's "one-voice" on Endangered Species Act policy; provide a mechanism for Idaho citizens to voice Endangered Species Act concerns; and facilitate collaboration between state, federal, and private stakeholders.

Section 9 of the Endangered Species Act prohibits the taking of listed species unless authorized by the federal regulatory agency in charge. "Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Essentially all of IDFG's management and research activities for listed fish and other fish species that coexist with listed fishes, fall under the definition of take. IDFG must be federally authorized to conduct tasks that preserve, protect, and perpetuate fish and wildlife resources when its actions may "take" listed fish. The Endangered Species Act requires federal managers to determine if proposed actions are or are not likely to jeopardize the continued existence of listed fishes. Actions that do not jeopardize a species can be authorized or permitted under the Endangered Species Act and may be implemented.

The administrative requirements for both IDFG and the federal managers to propose and authorize activities are very lengthy because of their legal nature. Considerable reporting to the federal managers is also required. These reporting responsibilities are in addition to existing state management functions. The substantial research, management, and administrative activities associated with federally-listed fishes are supported primarily with federal contracts because federal hydropower development has been a major factor in the decline of all of Idaho's current federally-listed anadromous fishes as well as Kootenai River sturgeon.

Research, propagation, and management of listed fishes are directed at preservation and recovery in order to eventually reclassify or delist them. The sockeye salmon captive broodstock program implemented in 1991 is a significant example of a preservation action taken by IDFG. Information and education about the status and presence of listed species has also been emphasized.

Changes in IDFG's management of non-listed species are sometimes required to reduce potential adverse effects to listed fishes. An example is the hatchery steelhead program where there are concerns about interactions such as competition and predation with listed Chinook salmon. IDFG has taken actions to minimize these interactions. Steelhead releases have been

shifted out of listed Chinook spawning and rearing areas and release numbers have been reduced. Impacts on bull trout in Lake Pend Oreille are being reduced through an aggressive angler harvest and commercial netting program on non-native lake trout. Another example is that IDFG has eliminated use of brook trout in its hatchery program to reduce potential genetic introgression with bull trout. Brook trout (sterile) are still managed via our hatchery at Henrys Lake and are used solely at that location, outside of the range of bull trout.

IDFG will work with the Governor's Office of Species Conservation and federal managers to develop sound, biological approaches to delisting and recovery that address key factors of decline. We will ensure that programs do not jeopardize listed fishes but IDFG will not support needless constraints imposed on recreational fisheries and fishing opportunity without defensible biological information.

Fish Species at Risk

In Idaho, a number of subspecies and species of fish are considered to be at risk for local extirpations, range constrictions, or extinctions due to their limited or declining range or undetermined and/or declining population status. The Commission is authorized under Idaho Code Sections 36-104(b) and 36-201 to adopt rules concerning the taking of wildlife species (including fishes) and the classification of all wildlife in the state of Idaho. These rules are cited in full as IDAPA 13.01.06.000 et seq., Rules of the Idaho Fish and Game Commission, IDAPA 13.01.06, Rules Governing Classification and Protection of Wildlife. These rules were updated in 2012. IDFG will continue to review and recommend changes to these species classifications as biological information warrants.

IDFG defines and classifies threatened and endangered species in this plan similar to federal definitions:

> Threatened Species **-** Any native species likely to be classified as Endangered within the foreseeable future throughout all or a significant portion of its Idaho range.
>
> Endangered Species **-** Any native species in danger of extinction throughout all or a significant portion of its Idaho range.

Species listed as threatened and endangered wildlife under Idaho Code have no statutory protection in contrast to the federal Endangered Species Act. Their classification as threatened or endangered is a policy statement for management and not for legal purposes. In Idaho, the burbot and Pacific lamprey are listed as endangered under Idaho Code but not under the federal Endangered Species Act, while sockeye salmon and the Kootenai River population of white sturgeon are federally listed as endangered and also have the same classification under Idaho Code. Fishes recognized as threatened under Idaho Code include bull trout, Chinook salmon (spring/summer and fall runs), and Snake River steelhead. These threatened fish are also federally listed and given protection under the Endangered Species Act.

IDFG classifies species as Game Species, Protected Nongame Wildlife, Threatened or Endangered Species, or Unprotected and Predatory Wildlife.

Game Species: Those species of wildlife classified as Big Game Animals, Upland Game Animals, Game Birds, Migratory Birds, Game Fish, Crustacea, or Furbearing Animals may be taken only in accordance with Idaho law and rules established by the Idaho Fish and Game Commission.

Protected Nongame and Threatened or Endangered Species: No person shall take or possess those species of wildlife classified as Protected Nongame, or Threatened or Endangered at any time or in any manner, except as provided in Sections 36-106(e) and 36-1107, Idaho Code, by Commission rule, or IDAPA 13.01.10, "Rules Governing the Importation, Possession, Release, Sale, or Salvage of Wildlife," Subsection 100.06.b. Protected Nongame status is not intended to prevent unintentional take of these species, protection of personal health and/or safety, limit property and building management, or prevent management of animals to address public health concerns or agricultural damage.

Unprotected and Predatory Wildlife: Those species of wildlife classified as Unprotected Wildlife and Predatory Wildlife may be taken in any amount, at any time, and in any manner not prohibited by state or federal law, by holders of the appropriate valid Idaho hunting, trapping, or combination hunting and fishing licenses, provided such taking is not in violation of state, county, or city laws, ordinances, or regulations.

Under Idaho Code, when a species is classified as Endangered, Threatened, or Protected Nongame, this does not automatically create a management action response as would happen if the federal Endangered Species Act were applied. IDFG will consider these species when making any fishery management decisions that affect their numbers, genetic integrity, or habitat. Likewise, we will use our knowledge of these fish to affect decisions by other agencies, entities, or individuals relative to the health of these species.

State Wildlife Action Plan

As of June 2012, 600 animal species in the United States were listed as threatened or endangered under the Endangered Species Act of 1973 (16 U.S.C. 1531–1544, 87 Stat. 884), as amended (ESA). In addition, more than 500 U.S. plant and animal species, subspecies, and varieties had already gone extinct or missing, and several thousand more were at risk (Stein 2002). Many species have declined without action being taken until the species became listed, which results in higher recovery costs than if action had been taken first to prevent declines. With the exception of the ESA, no prevention program had existed for other at–risk species, and rather than a strategic approach to conservation, many conservation actions were opportunistic, crisis-oriented, and driven by available funding.

Traditionally, federal funding to state fish and wildlife agencies came through the Wildlife and Sport Fish Restoration Programs Improvement Act of 2000 (Pub. L. No. 106–408, title I, § 131, 114 Stat. 1775 [Nov. 1, 2000]), which combined the programs formerly established under the Pittman–Robertson Wildlife Restoration Act (16 U.S.C. 669 et seq.) and the Dingell–Johnson Sport Fish Restoration Act (16 U.S.C. 777 et seq.), and now known as the Federal Assistance Program for State Wildlife and Sport Fish Restoration. However, this program targets the conservation and sustainable use of game species, and does not provide funding for most species, especially those that are not hunted, fished, or trapped. Although states have various mechanisms in place for funding species not covered under the Federal Assistance Program for State Wildlife and Sport Fish Restoration, funding has been limited, and prior to 2001, no equivalent federal program had existed for nongame species.

To address this disparity, Congress authorized two separate appropriations to provide grant funds to states and U.S. Territories to enhance fish and wildlife conservation and restoration: title IX of Pub. L. No. 106–553, appendix B, (Wildlife, Ocean and Coastal Conservation), §§ 901–902, 114 Stat. 2762A–118–124 (Dec. 21, 2000), and title VIII of IDFG of the Interior and Related

Agencies Appropriations Act, 2001 (Land Conservation, Preservation and Infrastructure Improvement). These appropriations were for expenses necessary to support activities that supplement, but not replace, existing funds available to the states and territories from the wildlife restoration account and sport fish restoration account.

In November 2001, President George W. Bush signed into law H.R. 2217, IDFG of the Interior and Related Agencies Appropriations Act, 2002, enacting the State Wildlife Grants program, which provides wildlife conservation grants to states and to the District of Columbia, Puerto Rico, Guam, the U.S. Virgin Islands, the Northern Mariana Islands, American Samoa, and federally recognized Indian tribes under the provisions of the Fish and Wildlife Act of 1956 and the Fish and Wildlife Coordination Act. This program is for the development and implementation of programs for the benefit of wildlife and their habitat, including species that are not hunted or fished. Funding is derived from the Land and Water Conservation Fund with revenues from Outer Continental Shelf Oil and Gas. The bill provides annual formula-based appropriations. To qualify for funding under this program, each U.S. state and territory was required to develop a comprehensive wildlife conservation plan by October 1, 2005, consistent with criteria established by the Secretary of the Interior, and that considered the broad range of the state, territory, or other jurisdiction's wildlife and associated habitats, with appropriate priority placed on those species with the greatest conservation need (as defined by the State wildlife conservation and restoration program). Each state's respective fish and wildlife agency was authorized to take the lead on this, in coordination with other state, federal, tribal, and non-governmental partners who managed significant amounts of land in the state. As the state agency vested with authority for wildlife management in Idaho, IDFG assumed the lead role for developing the plan, and completed the first version in September 2005. The plan was subsequently approved by the U.S. Fish and Wildlife Service in February 2006 (Idaho Department of Fish and Game 2006), and has been implemented over the past several years. To remain current, Congress also required that each state review and/or revise its plan at least every 10 years. IDFG has notified its Regional USFWS Federal Assistance office by letter of intent to review/revise the Action Plan by October 1, 2015, and has started the review and revision process.

In the existing plan (formerly known as the Idaho Comprehensive Wildlife Conservation Strategy), 26 fish taxa are considered species of greatest conservation need (SGCN) (Table 6) [Excerpted from Appendix B: Common and Scientific Names of Idaho Species of Greatest Conservation Need]. Of these, 21 taxa have substantial information pertaining to their status in Idaho, and six taxa lack essential information pertaining to their status in the state. Included in the existing SGCN list, which appears in Appendix B of the plan, the status of each SGCN is given, as well as its global conservation status (G-Rank), subnational (i.e., state, province, municipal) conservation status (S-Rank), status under the Endangered Species Act of 1973, as amended, administrative designations of the U.S. Forest Service (Northern and Intermountain regions) and U.S. Bureau of Land Management, and the species' formal classification in the state of Idaho under IDAPA 13.01.06.000, et seq., Rules of the Idaho Fish and Game Commission, IDAPA 13.01.06, "Rules Governing Classification and Protection of Wildlife" (IAC 2011). Also included in an appendix for each SGCN is additional information on its conservation status / classification, basis for inclusion, taxonomy, distribution and abundance, population trend, habitat and ecology, issues, and recommended actions (Idaho Department of Fish and Game 2005b).

Conservation status ranks assess the relative risk facing a species and do not imply that any specific action or legal status is needed to assure its survival. Global conservation status assessments (G-Ranks) are generally carried out by Nature-Serve scientists (including

biologists in state and provincial member programs), with input from other experts. Subnational conservation status assessments (S-Ranks) (i.e., state, province, municipal) in Idaho are assigned by Idaho Natural Heritage Program staff, a division within IDFG. Definitions for interpreting conservation status ranks (G-Ranks and S-Ranks) can be found in Appendix A of Idaho's State Wildlife Action Plan (Idaho Department of Fish and Game 2006).

IDFG will seek funding from nontraditional sources to conduct status assessments, monitoring, or research of nongame [fish] species on this list. The Regional Fishery Managers, in concert with the Bureau of Fisheries, will pursue information on population status and distribution by integrating inventory and monitoring activities into their annual work plans. The logical progression is to develop species management or conservation plans to guide recovery or maintenance of populations. When appropriate, IDFG will collaborate with other state, federal, Indian tribes, or private entities to develop conservation plans. The first priority for conservation plans will be candidate species for listing under the Endangered Species Act. Notably from a fisheries management standpoint, the list of SGCN includes Idaho's three subspecies of cutthroat trout and Snake River white sturgeon, all of which are classified as game fish. Cutthroat trout and white sturgeon provide important recreational fisheries in Idaho.

IDFG will closely control the stocking of fish species and other aquatic organisms that might compete or interbreed with, prey upon, or indirectly cause detrimental effects to SGCN fish species. In some cases, artificial supplementation may be the only viable alternative. This is where species management or conservation plans will provide direction.

Table 6. Fishes recognized as Species of Greatest Conservation Need in Idaho along with conservation status ranks and state and federal status.

Taxa	Updated GRank	GRank	SRank	ESA	FSR1	FSR4	BLM	IDFG Classification
Species with Substantial Information Pertaining to Status in Idaho								
LAMPREYS								
Pacific Lamprey Entosphenus tridentata	G4	G5	S1		S		TYPE 2	Endangered Species
RAY–FINNED FISHES								
White Sturgeon (Snake River system) Acipenser transmontanus		G4	S1				TYPE 2	Game Fish
White Sturgeon (Kootenai River system) Acipenser transmontanus	G4T1Q	G4T1	S1	LE			TYPE 1	Game Fish; Endangered Species
Northern Leatherside Chub Lepidomeda copei	G3	G1G2	S2				TYPE 3	Protected Nongame Species
Bonneville Cutthroat Trout Oncorhynchus clarkii utah		G4T4	S3			S	TYPE 2	Game Fish
Yellowstone Cutthroat Trout Oncorhynchus clarkii bouvieri		G4T2	S2		S		TYPE 2	Game Fish
Westslope Cutthroat Trout Oncorhynchus clarkii lewisi		G4T3	S3		S	S	TYPE 2	Game Fish
Inland Redband Trout Oncorhynchus mykiss gairdneri		G5T4	S4		S		TYPE 2	Game Fish
Steelhead (Snake River basin) Oncorhynchus mykiss gairdneri	G5T2T3Q	G5T2T3	S3	LT		S	TYPE 1	Game Fish; Threatened Species
Sockeye Salmon (Snake River) Oncorhynchus nerka	G5T1Q	G5T1	S1	LE		E	TYPE 1	Game Fish; Endangered Species
Kokanee Oncorhynchus nerka		G5	S2					Game Fish
Chinook Salmon (Snake River fall-run) Oncorhynchus tshawytscha	G5T1Q	G5T1	S1	LT		T	TYPE 1	Game Fish; Threatened Species
Chinook Salmon (Snake River spring/summer-run) Oncorhynchus tshawytscha	G5T1Q	G5T1	S1	LT	S	T	TYPE 1	Game Fish; Threatened Species
Bear Lake Whitefish Prosopium abyssicola		G1	S1				TYPE 2	Game Fish
Bonneville Cisco Prosopium gemmifer	G3	G1	S1				TYPE 2	Game Fish
Bonneville Whitefish Prosopium spilonotus	G3	G1	S1				TYPE 2	Game Fish
Bull Trout Salvelinus confluentus	G4	G3	S3	LT		S	TYPE 1	Game Fish; Threatened Species
Burbot Lota lota		G5	S1		S		TYPE 3	Game Fish; Endangered Species

Taxa	Updated GRank	GRank	SRank	ESA	FSR1	FSR4	BLM	IDFG Classification
Bear Lake Sculpin Cottus extensus	G3	G1	S1				TYPE 2	Protected Nongame Species
Shoshone Sculpin Cottus greenei		G2	S2				TYPE 2	Protected Nongame Species
Wood River Sculpin Cottus leiopomus		G2	S2			S	TYPE 2	Protected Nongame Species
Species Lacking Essential Information Pertaining to Status in Idaho								
RAY-FINNED FISHES								
Lake Chub Couesius plumbeus		G5	SNR					Unprotected Wildlife
Umatilla Dace Rhinichthys umatilla		G4	SNR					Unprotected Wildlife
Leopard Dace Rhinichthys falcatus		G4	SNR					Unprotected Wildlife
Bluehead Sucker Catostomus discobolus		G4	SNR					Unprotected Wildlife
Pygmy Whitefish Prosopium coulterii		G5	SNR					Game Fish
Sand Roller Percopsis transmontana		G4	SH				TYPE 3	Protected Nongame Species

Private Fish Ponds

IDFG issues private fish pond permits to members of the public as a way to acquire approved fish species for their own use, enjoyment, and management. The permit designates that those fish are private property and not a public resource. Fishing and harvest from a permitted private fish pond are at the discretion of the owner and do not fall under Department rules. The private fish pond permit does not exempt the pond owner from all other required permits required by other County, State and Federal agencies for water rights, dam construction, screening of inflow and discharge sources, etc.

Idaho has regulated the import, transport, and stocking of fish into private fish ponds since 1976 to prevent the introduction and spread of undesirable fish species and fish diseases into the public waters. Private fish pond owners who wish to stock their pond with fish are required to obtain a private fish pond permit and, if necessary, a fish transport permit specifying number, species, hatchery origin and destination from IDFG. This permitting process requires that the fish to be stocked will be compatible with Regional Fishery Management Drainage Plans and free of serious diseases (see below). IDFG's Regional Office serving the pond owner will issue private fish pond permits drawing from a list of approved trout sources provided by the Bureau of Fisheries. When necessary, sterile trout will be required for management consistency. If other species are desired and not commercially available, but are found in nearby Idaho waters, the permit holder may apply for a live fish transport permit from IDFG to acquire fish from approved public waters. All standard fishing rules for those waters will apply.

With the proliferation of private fish pond construction across the state, it is becoming increasingly difficult for fishery managers to keep track of new ponds and new pond owners are frequently unaware of the private fish pond permit and fish transport permit requirements. This situation is potentially a serious threat to established fisheries. IDFG will work with the private fish culture industry, the Idaho Department of Agriculture (which licenses private hatcheries within Idaho), local real-estate offices, and local construction companies (specializing in pond construction) to increase awareness of private fish pond and live fish transport permit requirements, procedures, and the risks of non-native species to public resources.

Establishing that a private aquaculture facility is free of serious diseases will require an annual inspection of trout lots intended for sale to private pond owners. The list of exotic pathogens (Class A viruses and *Myxobolus cerebralis*) in the current and approved version of the Model Program of the Pacific Northwest Fish Health Protection Committee (PNFHPC) defines "serious diseases" as one in which the potential of a particular pathogen to cause a disease state is one that exceeds a certain tolerance threshold. When use of sterile trout is required, a level of induction consistent with aquaculture standards will likewise be applied.

Aquatic Invasive Species Prevention and Control

Preventing introduction or removing non-desirable aquatic species from Idaho waters is a major focus of fishery management over the life of this plan and the foreseeable future. Aquatic invasive species (AIS) are a significant threat to native fish and wildlife populations, habitat, and the economy of Idaho. Idaho State Department of Agriculture is the lead agency for directing AIS prevention and control activities while IDFG provides technical assistance and logistical support.

Preventing the introduction of non-desirable aquatic species is the most efficient and economical method of controlling these plants and animals due to the cost of removal and very

low chance of success. Species other than fish of immediate concern include the plant, Eurasian water milfoil *Myriophyllum spicatum* and the bivalve, Zebra mussel *Dreissena polymorpha.* These species are highly invasive in suitable aquatic habitats and can quickly become a nuisance. Eurasian water milfoil can completely choke off a waterway; prevent boating, swimming, and fishing, along with altering the habitat for native species. This plant has been found in Cocolalla, Spirit, and Hayden lakes and the Pend Oreille system in north Idaho; Payette Lake near McCall; and several isolated ponds in southwest Idaho. Zebra and quagga mussels form dense colonies that can clog intake screens on water supply lines and compete with native bivalve populations. To date, these species have not been found in Idaho.

The most likely vector for these organisms is boats, live wells, and other equipment used in contaminated waters which are then transported unknowingly to Idaho. Public education and border check stations are the primary means to prevent the introduction to the State. During this planning period, IDFG will continue to work with the Idaho Department of Agriculture and other state and federal agencies to increase public awareness of the potential problems and how to maintain clean boats, trailers, waders and other aquatic equipment when traveling from water to water.

Concern over the introductions of new fish species has increased. IDFG conducts a review following the American Fisheries Society guidelines for “Introductions of Aquatic Species” prior to any new species introduction, either by the public or IDFG. One of the confounding issues is the increasing ease of internet purchasing and shipping live fish through overnight mail systems for bait and aquariums. Legally, all fish and wildlife, except for a few commercial species, require an import permit from IDFG before being brought into Idaho. Commercial exceptions such as rainbow trout are under the jurisdiction of the Idaho Department of Agriculture. During this planning period, IDFG will increase efforts to inform the public of the importation requirements and will work with other state and federal agencies in controlling undesirable importations.

The ability to control or remove populations of fish in order to improve fishing or to protect native species is a major fisheries management tool. Currently, rotenone is an approved piscicide and has proven useful in removing undesirable species. Applying piscicides requires permits from the Environmental Protection Agency and IDFG of Agriculture. IDFG utilizes the “Lake Renovation Procedures Manual” to guide renovation projects (Horton 1997). Although non chemical methods of controlling undesirable species may not be as effective, they can be considered if conditions warrant. They include manual removal by electrofishing or netting, dewatering, installing barriers to prevent fish movement, aiding in the development of commercial markets, and adding predatory species such as tiger muskie to control stunted fish populations.

Non-native trout species such as brook trout, brown trout, and rainbow trout are desired by many anglers. In Idaho, these species often times provide the only local fishing opportunities available, and as such, IDFG will attempt to balance the need for increasing the persistence and expanding the range of native species with the desire by anglers to maintain these locally important fisheries.

During this planning period, IDFG will continue to assess and implement methods to control or eliminate unwanted non-native fish where they pose serious risks to native species persistence and survival. Target species for control could include brook trout, lake trout, brown trout, introduced rainbow trout stocks, northern pike, and walleye. We will also propose and seek Commission approval to liberalize fishing rules and regulations when needed to allow the public and/or commercial interests where appropriate to assist in removal of non-native sport fish.

Biological

IDFG will continue using sterile predators such as tiger muskie in lowland lakes and alpine lakes to control non-native fish populations. Before considering the introduction of a fish species into a water body, IDFG will review and assess potential impacts using the American Fisheries Society (AFS) policy regarding introductions of aquatic species (AFS Policy Statement #15: Introductions of Aquatic Species). We will involve the public in our decision-making process and consult with the appropriate state and federal agencies, including neighboring states. We will also continue evaluating the introductions of sterile hatchery fish (3n) as a way to prevent genetic integration with wild or native fish populations.

Chemical

In certain situations, IDFG will consider the use of fish toxicants to remove non-native fish and other aquatic organisms from Idaho waterways under the guidance of our Lake Renovation Procedures Manual (Horton 1997) and the 2011 Environmental Protection Agency's nonpoint source discharge elimination permit (NPDES). Applications in flowing waters must be handled differently than lakes as the toxicant can quickly move downstream and affect areas not intended for treatment. IDFG will involve the public in our decision-making process and consult with local officials as well as state and federal agencies, including neighboring states. IDFG will adhere to a guiding principle of the 2010 revision to the joint Memorandum of Understanding between the U.S. Forest Service and Department whereas IDFG will "make no use of chemicals for the control of wildlife and fish on National Forest System Lands without prior consultation with the Forest Service."

Physical

IDFG will consider and employ the use of nets, electrofishing, and dewatering as is feasible, as physical control methods for non-native fish species. For instance, during this planning period, IDFG will continue the use of gill nets in Lake Pend Oreille to capture and remove non-native lake trout to benefit native bull trout and westslope cutthroat trout and prevent an important kokanee population from collapsing. Electrofishing will be used in small streams to suppress and possibly eliminate brook trout and introduced rainbow trout stocks that compete and hybridize with native bull trout and cutthroat trout. Where appropriate, physical barriers may be constructed and maintained on streams to prevent upstream colonization by non-native fish species. IDFG will also attempt to develop a commercial market for species such as common carp in southern Idaho to reduce their competition with native or sport fish species.

Special Fishing Opportunities

Community Fishing Waters

One of IDFG's missions is to provide continued supplies of fish for all Idaho anglers and to respond to the changing needs of society. Increasingly, people cite time and financial constraints as primary reasons for disengaging from the sport of fishing. In response, IDFG has sought to develop waters throughout the state where people, especially beginning anglers, can gain instruction or participate easily in the sport of fishing. Approximately 30 small lakes and reservoirs ranging from less than one to nearly 50 acres are being managed as community fishing waters. These waters have been designed, developed, or managed to provide easily-accessible, safe, and enjoyable angling experiences.

Fisheries within community fishing waters are supported by stocking or through the establishment of self-sustaining populations. IDFG stocks catchable-sized rainbow trout on a bi-weekly or monthly basis in many community fishing waters. Rainbow trout stocking numbers are based on pond size, angling effort, and habitat quality with the intention of providing adequate catch rates for as many anglers as possible. Fingerling channel catfish have been stocked in a few community fishing waters to diversify fishing opportunity. Fingerling channel catfish may be susceptible to largemouth bass predation requiring large stocking sizes and additional cost. Therefore, fingerling channel catfish will only be utilized at locations where survival and growth rates are sufficient to provide a fishery. Introductions of non-native sportfish such as bluegill, largemouth bass, yellow perch, and bullhead catfish have created self-sustaining populations in many community fishing waters. These species have created popular fisheries without substantial annual investment.

IDFG seeks to effectively manage community fishing waters which may include stocking adjustments, rule changes, habitat improvements, or development of new waters. IDFG will continually evaluate stocking practices to maximize efficiency and benefits provided to anglers. Adjustments may include reallocation of hatchery fish, changing stocking size, modifying stocking frequency as well as re-establishment of certain species. Recent tagging studies have indicated that in extremely high use waters, catchable trout may be removed quickly. In this situation, IDFG will seek to implement reduced bag limits to spread out the harvest more equitably. Community fishing waters often have very simple fish habitat and may be susceptible to nuisance aquatic plant problems. Where possible, IDFG will seek to improve in-water and shoreline habitat complexity to increase pond carrying capacity. Furthermore, aquatic plants will be managed using chemical (herbicides), biological (grass carp), and physical (drawdowns) methods in an attempt to balance the needs for controlling nuisance levels and providing adequate fish cover. During this period, IDFG will look for opportunities to develop new community fishing waters in underserved areas. Due to limited resources, IDFG will look for opportunities to collaboratively manage existing and any new community fishing waters with city parks departments and others.

In 2012, restructuring within the Bureau of Fisheries led to establishment of a Sportfish Coordinator position whose role will be to develop and promote sportfish programs that maintain or increase angler participation in Idaho. This position will also provide technical and administrative support to statewide and region programs.

Youth Fishing Opportunities

Competing recreational activities may limit the time that new anglers have to develop fishing skills necessary to make fishing an enjoyable experience. IDFG has been asked to manage certain waters for anglers who may not have the skills or the ability to compete with more experienced anglers. During the previous planning period, IDFG implemented the Family Fishing Waters program to encourage and enhance family fishing, including the introduction of youths to fishing. During this planning period, IDFG will continue to work with local communities, counties, and sportsmen's groups to encourage development of community fishing waters, including some managed specifically for children younger than the age of fourteen. This is in keeping with IDFG's mission to provided continued supplies of fish for all of the anglers in Idaho and in response to the changing needs of society.

Commercial Fisheries

The Idaho Legislature enacted commercial fishing legislation in 1988 to document the use of crayfish and nongame fish for commercial purposes. Later that year, the Commission adopted commercial fishing rules. The rules established an equitable fee structure for the take of these public resources. Some nongame fish have commercial value as animal feed, fish bait, fertilizer, and for human consumption. These species may reduce game fish populations through competition and predation and may be a nuisance to sport anglers. In many Idaho waters, the majority of the fish biomass is nongame fish such as suckers, carp, northern pikeminnow, and chubs. More recently, the Commission approved rules for the commercial take of lake trout from Lake Pend Oreille to address specific fish management objectives. Commercial harvest of some fish species not classified as nongame may have value as a management tool in other fisheries in the future, and will be considered where appropriate.

Crayfish are a species used for human consumption and are an important bait species for fishing. They are also an important forage resource in some of our sport fishes. The effect of commercial exploitation of crayfish on the food availability for game fishes is unknown. However, reporting requirements for the commercial license will provide IDFG with continued information during this planning period.

Currently, commercial fishing for crayfish occurs at a low level. Since 2001, only two to three licenses have been issued each year outside of the Lake Pend Oreille lake trout fishery. Prices paid for live crayfish at large markets outside of Idaho were less than the cost of harvesting them and generally do not justify the cost of shipping The decline in other commercial fishing activity has continued with only occasional interest in harvesting common carp in recent years.

The Commission approved a commercial rod-and-reel fishery for lake trout on Lake Pend Oreille in 2002 as part of an ongoing effort to reduce lake trout numbers. Commercial anglers were restricted to normal sport fishing tackle, but were allowed to use as many rods as they desired. Entry to the fishery was restricted to 10 licenses. In 2003, all 10 licenses were purchased, but by July 2012, only two anglers were still pursuing some type of commercial fishing activity. Strict Food and Drug Administration requirements for fish handling and processing, and the lack of a large market for lake trout have limited participation. More recent rule changes allowing sport anglers unlimited rods on Lake Pend Oreille have largely made the commercial permit unnecessary, and IDFG does not anticipate issuing commercial rod-and-reel permits in the future.

Lake whitefish were introduced in Lake Pend Oreille in the 1890s and have been commercially fished in the Great Lakes for over 100 years. An evaluation of the lake whitefish population in Lake Pend Oreille in 2005 indicated the population could conservatively support a sustainable harvest of around 86,000 pounds annually. In 2008, the Fish and Game Commission added lake whitefish in Lake Pend Oreille to the list of species available for commercial fishing. The intent was to allow for the possibility that incidental harvest could help offset the cost of the commercial lake trout removal effort. Subsequent evaluation of the cost of the netting program and the potential value of whitefish by-catch indicated minimal benefits, and the interest in a commercial whitefish net fishery has diminished. However, some interest in a commercial rod-and-reel fishery persists. Though a commercial rod-and-reel fishery would have little or no benefits to the lake trout suppression program, which was the intent of designating lake whitefish as a commercial species, the population could likely support such a fishery if anglers were restricted to existing daily bag limits. We will evaluate the potential benefits and pitfalls of a commercial rod-and-reel fishery for lake whitefish in this planning period and recommend either

implementation of a commercial fishery on a trial basis or removal of lake whitefish from the list of commercial species.

Fishing Contests

Effective July 1, 1989, IDFG was given the statutory authority to regulate fishing contests, tournaments, and derbies. Pursuant to that authority, a permit is required from IDFG when: 1) an event is planned that has a live-fish weigh-in; 2) awards, cash, or prizes of one thousand dollars ($1,000) or more based on number, size, or species of fish captured; or 3) is expected to draw or have more than twenty (20) participants. Events organized wholly for youth under the age of fourteen (14) are excluded from the requirement for a Fishing Contest Permit. Legislation passed in 2000 now requires IDFG to charge a fee for any fishing contest, tournament, or derby.

Applications are reviewed for 1) impacts of the contest on local fish populations; 2) compatibility of the contest with fish population management programs and goals; 3) conflicts with other recreational users (anglers and hunters) for access facilities or hunting/fishing opportunities; and 4) conflicts with other contests previously applied for. Permit provisions may be required to mitigate impacts of fishing contests on other users.

Applications and permits will be given priority based on the date a completed application is received at the Bureau of Fisheries in Boise, Idaho. No permits will be accepted prior to December 1. Public opportunities to fish and hunt will be given priority over organized contests. Additional harvest restrictions may be included as provisions of a harvest contest permit.

IDFG recognizes and permits two types of fishing contests: 1) a catch-and-release contest where contest rules require specific procedures to keep target species of fish alive and healthy, and require that all fish caught by participants be released back into the contest water on the same day they were captured; and 2) a harvest contest where contest rules allow participants to keep the fish. In the next six years, IDFG will work towards providing more information to the public and streamlining the permit process through the use of the Internet.

Aquatic Education

The goals of IDFG's aquatic education program are to: 1) Create an environmentally literate citizenry that takes an active role in natural resource stewardship, and 2) increase and maintain participation in fishing. IDFG has identified three overlapping components of Aquatic Education that serve to meet these two goals: angler recruitment and retention, fishing education, and stewardship education. These components are consistent with IDFG's statutory mission to preserve, protect and perpetuate and manage fish and wildlife. These components also support goals, objectives, and strategies outlined in IDFG's strategic plan, *The Compass*.

Angler recruitment and retention efforts involve a variety of components aimed at increasing participation in fishing. These include print, radio, and television advertisements promoting fishing. Additionally, IDFG's website now contains a section entitled "Learn to Fish." It includes information on basic fishing set-ups as well as "how to" videos on a variety of angling topics such as cleaning fish and fishing for kokanee. The site will continue to expand to meet the needs of new anglers and encourage participation in fishing. Fishing education efforts include fishing clinics, Free Fishing Day, fishing camps, the Take Me Fishing trailers, Fishing--A Lifetime Sport curriculum, rod loaner programs, Family Fishing Waters brochures, stocking reports, fulfilling angler information requests, and fishing forecasts on the website. These efforts give anglers the skills, equipment, and/or information they need to have a successful fishing

experience. Future efforts will consist of adding stewardship messages to all classes and publications to encourage all anglers to enjoy and protect aquatic resources.

Stewardship education efforts focus on increasing public awareness of Idaho's aquatic resources and issues affecting these resources. Department employees have identified four critical topics on which stewardship education efforts should focus: riparian habitat, water quality, water quantity, and angler ethics. Specific stewardship programs occurring in many regions include Trout in the Classroom, teacher education trunks, Department participation in various local fairs and water-related events, and Project WILD teacher workshops. Hatcheries provide an additional opportunity for the public to view and learn about fish and aquatic systems. Many hatcheries have informational kiosks and offer tours to interested groups. The MK Nature Center in Boise provides education programs on riparian habitat and fish for thousands of students annually, and sponsors the annual Salmon and Steelhead Days. The new Water Life Discovery Center in Sandpoint will provide local schools and visitors a place to learn about aquatic habitats. Future stewardship efforts will include the expansion of the Trout in the Classroom program to each region of the state. Stewardship messages will also be developed for the Take Me Fishing trailers so beginning anglers can learn about their important role in taking care of the aquatic habitats and fish they enjoy.

Fishing and Boating Access

Providing access for anglers to fish is an important part of IDFG's fisheries program. Most water in Idaho is owned by the State, but anglers are not allowed to trespass across private property to fish. Public access must be maintained or provided in many areas. When surveyed, anglers regularly indicate that providing access for fishing is an important function of IDFG. IDFG spends about 5% of the fisheries budget on access exclusive of the steelhead and salmon permit account. The steelhead and salmon permit account uses a portion ($4.00) of the cost of each steelhead and salmon permit primarily to acquire, maintain, and improve access for steelhead and salmon fishing. This program will continue as funds and opportunity allows. IDFG is required to spend 15% of the funds it receives from the Sport Fish Restoration Federal Aid Program (Federal Assistance) administered by the U.S. Fish and Wildlife Service, on motorboat access projects.

Increasing commercial and private development of waterfront and streamside property tends to reduce access for all recreationists, especially anglers. IDFG will continue to participate in land management actions to be a voice for anglers. Involvement in local planning and zoning decisions or state and federal planning efforts can help preserve traditional access to fishing waters. IDFG will continue its programs of landowner relations, acquiring easements, leasing, or purchase and development of key areas to provide access for anglers to public waters.

Additional fishing docks, boat launch ramps, and access facilities for persons with disabilities will be provided at public streams, fishing lakes, and reservoirs. Boat ramps and docks will be built or existing ones repaired or replaced where appropriate. Approximately $2.1 million per year will be expended in the next six years for the maintenance of existing, or acquisition and development of new boating and fishing access facilities. Major funding for these projects is provided through the U.S. Fish and Wildlife Service Federal Assistance program through excise taxes on fishing and boating equipment and motorboat fuel.

IDFG has participated in the construction of fishing ponds in several Idaho communities. This worthwhile program encourages cost share cooperation with private, local, and governmental entities to mutually benefit sportsmen and to increase fishing opportunities for young or beginning anglers. IDFG benefits by recruiting new anglers to the sport, by providing urban

fishing areas close to population centers and by attaining a very high return to creel from the number of fish stocked.

Each management region of the state has Department access specialists who work in conjunction with fishery managers and headquarters staff to acquire, develop, and maintain fishing and boating access areas. About 325 sites are currently in the access program and provide fishing access, boat ramps and docks, parking, and toilet facilities. In addition, the program has constructed and developed some major fishing waters such as Deyo Reservoir, Deer Creek, Spring Valley, and Horsethief reservoirs. The program cooperates with local irrigation districts and others to help repair dams, spillways, and outlet works to maintain or enhance fisheries. Costs of this program are currently about $500,000 annually. As future access sites are developed, IDFG will need to consider ways to minimize maintenance requirements. Anglers and volunteers will be asked to help reduce costly maintenance so that more access opportunities can be provided. During the previous six-year planning period a long-range plan was developed for the fishing and boating access program. This plan was updated in 2009 (Parker 2010). Priorities for improving existing sites were developed in the plan and during this planning period, we will complete the renovation of as many sites as possible.

Outfitting and Guiding

In Idaho, professional licensed outfitters and guides provide an important function by making fishing opportunities accessible to resident and non-resident anglers. During the previous planning period (2008), IDFG and the Idaho Outfitters and Guides Licensing Board (IOGLB) completed a Memorandum of Understanding that clearly defined each entity's role and responsibility to the public as it relates to fish and wildlife management and opportunities to utilize our resources. It is the responsibility of IDFG to provide science-based information to the IOGLB for decision-making purposes on marketing natural resource related activities. IOGLB will actively seek input from IDFG on changes in outfitter operations or proposals to develop new fish and wildlife-based commercial opportunities. Review of previous year's decisions and briefing on anticipated activities will be discussed during annual coordination meetings.

Other Statewide Fisheries Activities

During this planning period, the Fisheries Bureau will undertake or provide support for a number of other key activities that fall outside managing fish, habitat, or anglers. Database management and development continues to be an important function provided by Headquarters staff with assistance from the regions. The Idaho Fish and Wildlife Information System or IFWIS, is the infrastructure developed by IDFG to support the various databases. Existing databases managed as part of IFWIS include 1) Standard Stream Survey, 2) Juvenile Trapping, 3) Spawning Ground Survey, 4) StreamNet Reference, 5) Genetics, 6) Pathology, and 7) Aging. Databases currently in production by Department staff include 1) Hatchery, 2) Standard Lakes Survey, 3) Scientific Collecting Permit, and 4) Mountain Lakes.

Additional activities that will be undertaken by Department staff during this planning period that have statewide relevance include fishing rule changes and periodic angler opinion surveys.

Law Enforcement and Public Outreach

A stated goal of the Compass is to "sustain Idaho's fish and wildlife and the habitats upon which they depend." Enforcing fishing rules is an identified strategy to maintain or improve fish populations to meet the demand for fishing.

Idaho's conservation officers spend approximately 50% of their time enforcing fish and game laws and rules through routine patrols, directed patrols, enforcement Action Plans and investigations. Conservation Officers annually contact over 80,000 licensed hunters and anglers, issuing an average of 5,000 citations and warnings. Additionally, contacts with anglers and hunters provide the conservation officer opportunities to interact, communicate, and educate the public.

Enforcement activities that address regional fishery priorities have been developed by enforcement and fishery personnel (Table 7). "Directed Patrols" allow individual officers to focus or emphasize patrol activities on federally listed species, species or populations at risk, or popular fisheries when fish are vulnerable. Enforcement Action Plans are designed to coordinate efforts of multiple officers and other personnel, addressing critical fisheries and Species of Greatest Conservation Need. Action Plans may include a multi-pronged approach to address the fishery that may include a public outreach component. Action plans measure efforts and effectiveness of patrols that will be used to develop future plans. Waters and fisheries not listed will continue to receive attention through routine patrols as needed.

Table 7. Fishery enforcement priorities by Department administrative region for 2013-2018.

Panhandle Region		
Water	**Species**	**Enforcement Direction**
Kootenai River	Native Trout White sturgeon Burbot	Directed compliance patrols to restore self-sustaining populations
Pend Oreille tributaries	Bull Trout	Focused patrols to monitor and protect spawning bull trout. Increase outreach programs to educate the public on Bull Trout identification and the effects of unlawful harvest.
Regional Waters	Non-native species	Increase public awareness campaign and enforcement efforts to detect and deter illegal introductions of exotic fish species.
Priest Lake	Kokanee	Increase uniform boat patrols to gain compliance on rules related to developing kokanee fishery.
Coeur d'Alene River	Westslope cutthroat	Directed patrols to enforce special regulations, including catch and release sections, to improve size and numbers of cutthroat.
Clearwater Region		
Water	**Species**	**Enforcement Direction**
All regional waters	Bull trout	Enhance compliance through regular patrols and public outreach. Increase patrols in areas where bull trout congregate prior to and during spawning.
NF-Clearwater, Lochsa, Selway, and South Fork rivers and Tributaries	Westslope cutthroat	Directed patrols to gain compliance of the 2 fish limit or catch and release special regulations protecting cutthroat trout. Work with anglers through public outreach to gain understanding on rules in the South Fork Clearwater.
Main Salmon and Little Salmon rivers, and Clearwater drainage	Chinook Salmon	Implementation of annual Action Plan to monitor the fishery. Increase presence during periods of heavy angling pressure.
Snake, Clearwater, SF-Clearwater, NF-Clearwater, Salmon, and Little Salmon Rivers	Steelhead	Directed patrols to monitor the fishery and protect wild steel head. Increase night patrols on the South Fork Clearwater to address complaints that more violations are occurring by night anglers.
Snake River-Hells Canyon	White Sturgeon	Directed patrols and public outreach campaigns in this catch-and-release only fishery. Identify and target illegal sturgeon harvest and trade.
Southwest Region		
Water	**Species**	**Enforcement Direction**
SF-Boise River	Bull Trout Redband trout	Implement Action Plan protecting bull trout and increasing public awareness and accurate fish identification Directed patrols to protect older age class wild trout
NF & MF Boise River	Bull Trout	Implement Action Plan protecting bull trout and increasing public awareness and accurate fish identification

Snake River	White Sturgeon	Directed patrols and public outreach campaigns in this catch and release only fishery
SF Salmon River	Chinook Salmon	Implementation of annual Action Plan to monitor the fishery and protect wild salmon
Bear Valley Creek	Chinook Salmon	Directed patrols and public outreach campaign to protect spawning wild salmon
Magic Valley Region		
Water	**Species**	**Enforcement Direction**
SF-Boise River	Bull Trout	Directed patrols and public outreach will focus on protecting bull trout from harvest.
Jarbidge/Bruneau rivers	Bull Trout	Directed patrols will monitor bull trout vulnerability and provide public outreach.
Snake River	White sturgeon	Directed patrols will monitor sturgeon vulnerability and provide public outreach.
Regional Lakes/Reservoirs	All	Directed compliance patrols to maintain officer presence.
Southeast Region		
Water	**Species**	**Enforcement Direction**
Daniels Reservoir	Trout	Directed compliance patrols of the special regulations
Edson Fichter Pond	Rainbow Trout	Directed patrols and Action Plan to enhance compliance with fishing hours, licenses, littering and no alcohol rule.
Snake River	Trout, bass, sturgeon	Directed patrols both uniform and undercover to enhance compliance of new catch-and-release winter fishing rule below American Falls Dam
Bear River and Tributaries	Cutthroat trout	Compliance of cutthroat trout harvest regulations
Chesterfield Reservoir	Trout	Directed compliance of 2-trout limit during ice fishery
Upper Snake Region		
Water	**Species**	**Enforcement Direction**
SF-Snake River	Yellowstone cutthroat	Directed compliance patrols and implementation of an Action Plan to address the special regulations limiting cutthroat to catch and release. Outreach campaign to educate public of the no limit on rainbow trout and protection of the cutthroat stock.
Henrys Lake	Yellowstone cutthroat	Focused patrols specifically on special regulations compliance.
Little Lost River	Bull Trout	Implement Action Plan protecting Bull Trout and increasing public awareness of bull trout presence.
Salmon Region		
Water	**Species**	**Enforcement Direction**
Upper Salmon River	Chinook Salmon	Implementation of Action Plan to protect spawning salmon in closed waters
Salmon River	Steelhead	Directed patrols to monitor fishery and protect wild steelhead
Lemhi River	Redband, Cutthroat, Bull Trout, Chinook and Steelhead	Directed compliance patrols of special regulations
Salmon River Drainage	Westslope cutthroat	Directed compliance patrols on rivers and streams for the catch and release fishery

2011 Angler Opinion Survey

To obtain angler input for development of the 2013-2018 Fisheries Management Plan, IDFG conducted a random mail survey with a total of 16 questions (Appendix 1). Anglers were asked to respond to the survey questions based on their last five years of fishing in Idaho. Similar surveys were conducted in 1967, 1977, 1987, 1994, 1999, and 2006 (see Willard et al. 2007). In 2011, we significantly pared down the size of the survey from years past and focused instead on more contemporaneous issues. A total of 16,000 fishing license buyers were randomly selected from the 2010 license buyer database, including 14,000 residents (2,000/Department administrative region) and 2,000 non-residents, to ensure statistically valid estimates. Responses were received from over 5,600 anglers for a return rate of 35%.

It should be noted that while equal numbers of surveys were mailed out in each Department region, statewide results were weighted based on the proportion of license buyers per region.

In 2011, there were 314,402 resident license buyers and 152,394 non-resident license buyers in Idaho. The greatest numbers of resident anglers live in the Southwest (40%) and Panhandle (15%) regions and the least live in the Salmon Region (1%).

Fishing Habits

Trout remain the most sought after fish in Idaho (Table 8). Anglers were asked how often (never, occasionally, often) they fished for a host of fish species over the last five years. Combined, over 90% of anglers listed trout as a species they "occasionally" or "often" fished for. Other species that were occasionally or often sought by anglers included bass (59%), steelhead (42%), kokanee (36%), bluegill/perch/crappie combined (50%), and "anything that bites" (68%). Other fish species that were either occasionally or often fished for combined included whitefish (18%), Chinook salmon (26%), sturgeon (12%), and walleye (16%). The majority of respondents were bank anglers (92%) and the most used fishing gear was bait and artificial lures (52% and 43%, respectively). None of these statistics are significant departures from the 2006 angler opinion survey.

Table 8. Most preferred species of fish sought in Idaho by total anglers from 2007-2011.

Type of fish	Never	Occasionally	Often
Bluegill/perch/crappie	50	39	11
Bass	41	43	16
Walleye	84	13	3
Catfish/bullhead	67	26	7
Steelhead	58	32	10
Chinook salmon	74	20	6
Trout	7	42	51
Kokanee	64	26	10
Whitefish	82	15	3
Sturgeon	88	10	2
Carp/sucker/other nongame fish	84	13	3
Tiger muskie/pike	94	5	1
Anything that bites	32	40	28

The top five reasons that anglers use when deciding where to fish in declining order of importance are natural beauty of area, presence of favorite fish, chance to catch big fish, solitude, and a place that families like.

Fisheries Management

Idaho has roughly 26,000 miles of fishable streams and 202 major lowland lakes and reservoirs. Habitat conditions have a great influence on fish populations and strongly dictate the species and numbers that can be supported. Lowland lakes and reservoirs and large rivers generally support many kinds of fish including bass, trout, and nongame species. Small, colder streams and high elevation lakes typically only support a few species of fish. Different management strategies involving stocking and special fishing rules are used to best provide the diversity of fishing that anglers want.

Fishing rules are a primary tool used by IDFG to manage fish populations and provide different types of angling experiences. Establishing more restrictive fishing rules generally is well accepted by the angling public, especially if they understand why it is being done, but it is not without controversy.

To assist in providing guidance to IDFG in managing Idaho fisheries, the 2011 angler opinion survey included questions regarding their satisfaction with various fishery types, the importance of Department management activities, special rules, social issues, and fishing tournaments.

As part of its overall responsibilities for fisheries management in Idaho, IDFG carries out a number of activities desired by the public. The public was asked how important a number of these activities are to them. The following 10 fisheries management activities were judged to be very important to somewhat important in declining order of importance by anglers:

1. Protecting and improving fish habitat
2. Maintaining and improving existing fishing access sites
3. Managing for native trout fisheries
4. Providing places for family fishing
5. Managing for quality/trophy trout in rivers and streams
6. Managing for steelhead fishing
7. Managing for quality/trophy trout in lakes and reservoirs
8. Managing mountain lake trout fisheries
9. Managing for Chinook salmon fishing in rivers
10. Managing catch-and-release fisheries

Throughout the years, anglers have cited protecting and improving fish habitat as their most important Department management activity. In 2011, about 92% of anglers informed us that this management activity was very to somewhat important to them. Maintaining and improving fishing access sites and managing for native trout fisheries were similar in importance to anglers. Rounding out the top five Department management activities were providing places for family fishing and managing for quality/trophy trout in rivers and streams. In 2011, we did not include enforcing fishing regulations as a management activity because we believe this activity is a tacitly expected function of IDFG by our angling constituents.

Overall, anglers believe IDFG is doing a good job in a number of fisheries management activities but particularly well in providing places for family fishing, protecting and improving habitat,

managing for steelhead fisheries, managing for native trout fisheries, and managing catch-and-release fisheries.

Special Rules

Anglers were asked several questions about ways to reduce harvest as a method to manage a recreational fishery. When asked to what degree they would support or oppose a number of methods to reduce harvest, 82% of respondents supported restricting the number of fish kept, 75% supported restricting the size of fish kept, and 58% supported applying catch-and release rules. Less attractive management options for respondents were shortening the fishing season, which was opposed by 68% of anglers, and limiting angler use, which was opposed by 44%.IDFG asked anglers about their level of support for reducing bag limits in urban ponds as a method to improve fishing success and extend stocking effectiveness. Over 70% of respondents supported reducing bag limits on these urban pond fisheries.

Conflict Management

IDFG asked two questions regarding potential management actions designed to reduce conflicts among anglers. The first question dealt with increasing conflict among anglers fishing for salmon and steelhead. We asked anglers to consider several options designed to reduce conflict and better allocate salmon and steelhead opportunities among anglers. Forty-nine percent of respondents believed IDFG should attempt to reduce conflict through education programs, 43% support the use of special rules to manage crowding, and 28% supported using limited entry permits but only 9% strongly supported this option. Overall, there was a relatively high percentage (~30%) of respondents who replied with a neutral/no opinion answer to these options, and there appeared to be no strong consensus among anglers as to how IDFG should handle this important issue.

The second conflict-management question dealt with the issue of fishing tournament compatibility with the general angling public. IDFG manages fishing tournaments to address public concerns that these permitted activities may increase boat traffic, result in busy boat launch sites, and/or negatively impact the overall fishing experience. We asked anglers to weigh in on whether they agree or disagree that fishing tournaments are appropriate for various fishery types in Idaho. Anglers agreed in the majority that fishing tournaments are appropriate for trophy fishing in large lakes (55%), bass tournaments on lakes and reservoirs (52%), while disagreeing that they are appropriate for backcountry trout waters (46%) and steelhead fisheries on small rivers (43%). Again, there was a relatively high neutral/no opinion response (range 27-40%) for these questions suggesting the public is either apathetic or conflicted about fishing tournaments. These results are similar to those documented in the 2006 angler opinion survey (Willard et al. 2007).

Gear Type

IDFG asked anglers several questions related to the use of specific hook types as a means of better managing fishery resources and recreational fishing. When we asked anglers if they have ever used circle hooks when fishing in Idaho, 56% of respondents were unfamiliar with them, 36% said no, and only 8% replied they had used circle hooks. We then followed up with a question stating that if circle hooks were demonstrated to reduce fishing mortality, would anglers support rules requiring their use in specific fisheries. Anglers were supportive of using circle hooks as follows:

- White sturgeon fisheries 68%
- Wild trout fisheries 59%
- Trophy/quality fisheries 57%
- Stocked trout fisheries 44%
- General rules waters 39%

It appears that anglers support the use of circle hooks if it will benefit native fish management and conservation but they are not supportive of restrictions in general waters or in hatchery trout supported fisheries. Idaho anglers especially covet white sturgeon fishing and have been very supportive of the 40-year history of catch-and-release angling for this highly valued species.

The state of Idaho first promoted the use of barbless hooks in the 1970s as a means to reduce fishing-related mortality on native trout, particularly cutthroat trout. There has been significant social support by anglers for the implementation of rules requiring the use of barbless hooks when fishing for native fish species. IDFG has since institutionalized the use of barbless hooks in recreational fisheries for native trout, trophy trout fisheries that are supported with stocking, and for white sturgeon. Since that time, scientific studies have shown that most hooking-related fishing mortality is more closely associated with where the fish is hooked and not to the use of barbed versus barbless hooks. While IDFG anticipated a great deal of controversy, we view the requirement of using barbless hooks as an unnecessary restriction on anglers since it doesn't strongly assist us in achieving management and conservation goals. As such, we are considering removing the mandatory barbless hook restrictions on trout fisheries *only*. Anglers could continue to use barbless hooks if they desire. We asked anglers to weigh in on whether they would support or oppose the elimination of the mandatory barbless hook rule on Idaho trout fisheries. Surprisingly, nearly 55% supported removing the barbless hook rule while 24% opposed. About 22% of anglers had no opinion.

White Sturgeon

Since 1971, IDFG has regulated sport fishing for white sturgeon as catch-and-release. Fishing for white sturgeon has become increasingly popular. Individual white sturgeon can be caught multiple times each year and IDFG has documented the presence of fishing tackle in the digestive tracts of a significant percentage of sturgeon. IDFG is conducting an ongoing study regarding the effects of high fishing pressure and ingested tackle on sturgeon populations. We currently have no information documenting that angling pressure or ingested tackle are impacting population health or viability. Providing this information, we asked anglers that if negative impacts on sturgeon populations are found and it becomes necessary to restrict sturgeon angling to conserve populations, which of the following restrictions would they support or oppose:

- Area closures
- Seasonal closures
- Gear and tackle restrictions

Anglers strongly supported gear and tackle restrictions (60%) and seasonal closures (58%), and 48% supported area closures. There was also a fairly high segment of anglers that provided a neutral/no response answer.

Since the early 1990s, IDFG has been stocking hatchery-produced white sturgeon in locations upstream of their historical native range near Idaho Falls and American Falls (historical upriver

terminus is Shoshone Falls near Twin Falls, Idaho). We currently manage the recreational fisheries at both locations as catch-and-release. We asked anglers to tell us how they feel about the potential for a future harvest opportunity for these hatchery-reared fish. Sixty percent of respondents supported IDFG providing a limited harvest fishery for white sturgeon at some future time. Again, a sizable proportion of anglers provided a neutral/no opinion answer.

Public Review of the 2013 – 2018 Fisheries Management Plan

IDFG solicited public review of our fisheries management programs to assist with development of the 2013 – 2018 Fisheries Management Plan. We received comments via electronic mail, IDFG's website (http://fishandgame.idaho.gov), telephone, standard mail, and participation in public meetings.

Anglers made a number of suggestions to IDFG on issues they would like to see incorporated into the state fisheries management program. IDFG weighs these suggestions based on what is best for the resource taking into account public and social preferences. It is important for IDFG to hear the views of all anglers, not just organized groups or anglers with special fishery interests. A survey, such as the random mail survey, provides a relatively unbiased picture of the angling public as a whole. For the past several angler opinion surveys including 2011, the majority of anglers told us that fish habitat protection was their number one priority for IDFG. Based on this feedback, IDFG has a long-standing habitat protection program. Due to the public's strong support for habitat protection, IDFG pursued and implemented a fish habitat restoration program as well as per the direction of the 2007 -2012 fisheries management plan.

Comments of Agencies and Indian Tribes

IDFG solicited the review and input of other state and federal natural resource agencies (including neighboring state fish and wildlife agencies) and Indian tribes. As appropriate, their input is reflected in this plan. A key component of the comments received is the need for continued collaboration and cooperation among agencies, Tribes, and IDFG in land and water management and conservation issues that may impact the status and health of fish species and populations in Idaho.

Statewide Programs and Strategies

Based on the 2011 angler opinion survey, angler input provided on this plan, and internal Department priorities, the following are the major areas of concern and program direction we intend to pursue during this planning period.

1. Protecting and restoring fish habitat.

2. Providing a diversity of angling opportunities.

3. Providing family fishing opportunities managed as consumptive fisheries with simple fishing rules.

4. Providing quality and trophy fishing opportunities for trout and bass.

5. Protecting and enhancing native trout populations.

6. Maintaining hatchery trout programs in streams, lakes, and reservoirs.

7. Protecting and enhancing salmon and steelhead populations.

8. Providing fishing information to the public.

9. Improving the condition of boating and fishing access sites.

10. Recruiting and retaining new anglers.

11. Continuing efforts to make fishing rules easier to read and understand.

12. Improving understanding and knowledge about the distribution, population status, habitat preferences, and management needs of native nongame species.

13. Developing management plans for native game fish species.

1. Protecting and Restoring Fish Habitat

As in past surveys, the angling public responded that IDFG should continue its emphasis on habitat protection. Because of continued strong public support for protecting and restoring fish habitat, during the last planning period IDFG significantly enhanced its involvement in fish habitat restoration, particularly for anadromous fish.

In 2007, IDFG created a fish habitat restoration program and hired a coordinator to supervise the program. One of the first tasks of the habitat coordinator was to hire two fish habitat biologists, one for the Clearwater Region and one for the Salmon Region. This was accomplished in the spring of 2008 with Bonneville Power Administration funding. These positions are responsible for identifying, prioritizing, designing, and implementing habitat restoration projects. Because the majority of the funding for these projects comes from federal or private sources, they are also responsible for securing funding for these projects. One hundred percent of their time is dedicated towards restoration efforts.

To complement this restoration work, IDFG implemented intensive monitoring efforts on a sub-basin scale in two drainages where habitat restoration efforts are being focused: the Lemhi River drainage (Salmon Region) and the Potlatch River drainage (Clearwater Region). This monitoring is designed to determine the effectiveness of habitat restoration work in increasing fish production and productivity and to provide guidance on future habitat work.

It was apparent early in the program that engineering services are critical for the design and implementation of successful projects. Lack of these services limited IDFG's ability to implement projects. As a result, a habitat engineer was added to the program in 2010. IDFG also uses the services of private engineering firms when needed.

The program has since grown to include most of IDFG's regions in the state. There is now a biologist in the Panhandle Region, the Upper Snake Region, and the Southeast Region that have a percentage of their time dedicated to fish habitat restoration. The biologists in the Panhandle and Southeast regions are funded through hydropower relicensing agreements while the Upper Snake biologist is funded through several different sources. We do not have fish habitat biologists in the Southwest or Magic Valley regions.

We will continue to work with state and federal agencies, private landowners, industry, non-governmental organizations, Indian tribes, and local and county governments to reduce impacts of land-disturbing activities, improve land and water management practices, and to provide water quality and habitat capable of supporting native and introduced sportfish populations. IDFG will emphasize water management issues in water bodies that provide important recreational fisheries or support native fish populations.

IDFG has environmental staff biologists in six of its seven regions. During the past planning period, the Natural Resources Policy Bureau was eliminated and administration of the habitat protection function of IDFG shifted to the Director's Office. Environmental staff biologists annually review hundreds of land and water management proposals and make recommendations to avoid or mitigate impacts to fish habitat. They collaborate and coordinate with other agencies and private landowners to promote and consider fish habitat issues during the planning process for land and water management development. During this planning period, IDFG will continue to support these important efforts.

IDFG will continue to solicit the assistance of volunteer help in habitat protection or rehabilitation programs during this planning period. This has increased public awareness of the importance of fish habitat and expanded the public's feeling of ownership.

There are a number of federal programs where available funding can be used on fish habitat enhancement projects in Idaho. These include the Wildlife Habitat Incentives Program, Environmental Quality Incentive Program, Conservation Security Program, Pacific Salmon Coastal Restoration Fund, Landowner Incentive Program, State Wildlife Grants, Fish Restoration Irrigation Mitigation Act, U.S. Fish and Wildlife Service Partners for Wildlife and Special Grants, Section 6 funding to states, and National Fish Habitat Action Plan partnerships such as the Western Native Trout Initiative.

IDFG emphasis for habitat restoration will be on actions that will have measurable benefits on native fish species as well as valuable fisheries supported by introduced species. Our approach will be pragmatic, and we will pursue and implement habitat restoration projects as much as possible with other cooperators to share funds and responsibilities. IDFG will work with other agencies, Indian Tribes, private landowners, irrigators, non-governmental organizations, and others to seek collaborative and creative ways to secure funding and leverage available monies. IDFG intends to pursue restoration projects on a prioritized basis as much as possible; however, significant "opportunistic" projects will be considered as well.

2. Providing a Diversity of Angling Opportunities

Anglers once again informed us that while they support special regulations as a tool to protect and enhance fish populations, they also want us to maintain harvest opportunities. Idaho anglers support a diversified mix of fishing opportunities. A mixture of hatchery and wild trout management and general, quality, and trophy management regulations for cold and warmwater species will be used to provide diverse angling opportunities within geographic areas. A diversity of angling opportunity, especially near population centers, will encourage greater use and increased angler satisfaction.

Providing a diversity of fishing experiences, ranging from urban to wilderness, from areas with highly social fisheries (such as ice fishing or family fishing waters) to fisheries that provide opportunities for solitude (e.g., alpine lakes or remote streams), and fisheries that lend themselves to guiding and outfitting to fisheries that provide relative freedom from competition

with outfitted parties, is also a means by which IDFG can meet the demands of a broad spectrum of anglers.

IDFG currently stocks 19 different fish species and 16 additional "strains" to provide a diversity of angling opportunities. Some of these species may be proposed for introduction in lakes and reservoirs to continue providing a diversity of species available within various geographical areas. Other game fish and forage fish species may be considered for introduction into Idaho waters on a case-by-case basis. However, intensive studies of new species introductions and their potential effects on wild trout and other existing species, particularly native species, will be made prior to any proposed introductions.

3. Providing Family Fishing Opportunities Managed as Consumptive Fisheries with Simple Fishing Rules.

Based on the 2011 angler opinion survey, providing opportunities for family fishing continues to be a preferred Department management program. Previously, in response to anglers' requests for more family-oriented fishing opportunities and simplified rules, IDFG developed Family Fishing Water regulations. In these areas, there are year-round seasons, a general six-fish limit for trout, bass, walleye, and pike and no bag limit on other species. There are designated Family Fishing Waters located in every region of the state. Each Department region has developed Family Fishing Water Guides for distribution to the public and all of this information is available on IDFG's internet website.

Providing information on available fishing areas and increasing angler access will serve to increase family fishing opportunities. During the past planning period, IDFG developed or renovated several fishing ponds. During this six-year period IDFG will continue to identify and develop new fishing waters near populated areas to provide increased fishing opportunities without detracting from existing hatchery-supported fisheries. This will benefit family groups and novice anglers who traditionally do not travel far to participate in fishing activities.

4. Providing Quality and Trophy Fishing Opportunities for Trout and Bass

Anglers continue to support quality and trophy management on Idaho waters. A quality or trophy fishery is one specifically managed to limit harvest in some way to provide enhanced catch rates and/or larger fish. Anglers continue to favor fishing rules that produce quality and trophy size fish understanding that it means reducing the number of fish that can be harvested. Anglers generally do not support limiting access to areas as a means of reducing harvest so IDFG will not consider this idea.

During this six-year period, IDFG proposes to manage existing quality and trophy waters for those specific purposes and establish additional quality and trophy waters in areas where demand exists.

5. Protecting and Enhancing Native Trout Populations

During this six-year period, IDFG will continue to emphasize protection and enhancement of native trout. Anglers largely support protecting and improving fish habitat and managing for native trout fisheries. IDFG's native trout program historically was largely based on protecting existing habitat quality and to a lesser degree, enhancing habitat to improve wild trout populations. As mentioned previously, IDFG expanded its involvement in habitat enhancement efforts statewide. IDFG will continue to seek collaborative ways to do this.

IDFG will manage for native trout in streams and lakes with the potential to support acceptable fisheries on native trout. This may involve varying levels of harvest regulation necessary to maintain catch rates and protect native trout. Additional measures may be necessary in special circumstances to protect spawning native trout where they might be especially vulnerable to harvest. IDFG will also strive to control overharvest and mortality of native trout through non-regulatory means. Public information materials and programs will be used to promote non-consumptive values of native trout and educate anglers on release methods to minimize hooking mortality.

IDFG continues to undertake measures to restore native trout access to streams where culverts, diversions, dams, and other manmade structures have blocked passage and access to historical spawning and rearing areas. IDFG will continue to advocate that entities responsible for development that impacts the connectivity of rivers and streams should be responsible for maintaining or restoring fish passage for native trout and other native aquatic fauna. IDFG will encourage passage facilities and screens on new structures and will work with owners of existing structures to improve native trout access to important habitats.

6. Maintaining Hatchery Trout Programs in Streams, Lakes, and Reservoirs

IDFG proposes to maintain stocking in streams only where there is convenient angler access, return to anglers is good, and stocking does not negatively impact native species. Where hatchery fish are stocked in waters accessible to wild/native fish, all fish stocked will be treated to induce triploidy, thus rendering them sterile. The sterile hatchery fish will not breed with the native fish, thus maintaining the genetic integrity of the native fish. If there is a need to supplement wild/native fish with hatchery stocks for conservation purposes, appropriate fertile stocks will be introduced. Streams may be designated as “put-and-take” trout streams, which will be identified in brochures and maps made available to anglers. Put-and-take waters are expected to return 40% of stocked trout to the angler catch.

To enhance hatchery trout programs in lakes and reservoirs, IDFG will continue planting fingerling put-and-grow sized trout where natural food and survival conditions are good. Put-and-grow fisheries are expected to return 100% of the weight stocked to the angler catch.

Where harvest restrictions are necessary to maintain or restore wild/native trout populations in streams, lakes, and reservoirs, harvest opportunity may be provided by allowing anglers to harvest marked hatchery fish.

7. Protecting and Restoring Salmon and Steelhead Populations

The current range (Figure 2) and abundance (Figure 3, Figure 4) of anadromous salmon, steelhead, and Pacific lamprey in Idaho are reduced from historical conditions. About 62% of Idaho’s historic spawning and rearing habitat for spring and summer Chinook salmon remains accessible and a similar amount of steelhead habitat remains. Current accessible habitat is capable of producing up to an estimated 6.7 million spring/summer Chinook smolts and 3.1 million steelhead smolts at 70% of rearing capacity (Idaho Department of Fish and Game 1992). Approximately 25% of the historical surface area of sockeye salmon nursery lakes in Idaho remains accessible. The greatest loss of production habitat has occurred for Snake River fall Chinook salmon, for which only 17% of the historical habitat is currently accessible. Approximately 30% of Idaho’s streams inhabited by anadromous salmon and steelhead are

located within areas designated as wilderness or waterways classified as wild and scenic rivers. This increases to over 50% with roadless and undeveloped drainages included.

Within the current range of salmon and steelhead, the reduction in abundance of naturally produced salmon and steelhead has been severe. Recently, there has been considerable variability in annual abundance, influenced by changes in ocean productivity and hydro-system migration conditions. As an example, the five-year average redd count for spring Chinook salmon in the Middle Fork Salmon River, a wilderness sanctuary for native spring Chinook salmon with preservation management, decreased from 1,575 (1957-1961) to 142 (1995-1999), a 91% decline. Despite an improvement in the recent five-year average (2007 to 2011) to 506 redds, this still represents a 68% decline from the 1957-1961 period.

IDFG's regulatory authority is limited to hatchery, harvest, and fish management activities to rebuild salmon and steelhead to meet the long-term goal and objectives. The natural population of sockeye salmon in the upper Salmon River drainage was listed as endangered under the Endangered Species Act in 1991. Natural populations of Chinook salmon in the Salmon River drainage and steelhead populations in the Salmon and Clearwater drainages were listed as threatened in 1992 and 1994, respectively. NOAA Fisheries is the federal authority in charge of Endangered Species Act-listed Snake River salmon and steelhead recovery. The result of federal listings is that actions to protect or enhance Idaho's salmon and steelhead in Idaho and the Columbia River basin must be consistent with the federal recovery plan and standards.

Regional efforts to achieve improved survival of Snake River salmon and steelhead intensified during the 1990s and continue as an important management activity. Improvement in juvenile and adult survival associated with migration through the lower Snake and Columbia Rivers provide the best opportunity for enhancement of all salmon and steelhead populations, wild or hatchery, in Idaho (Idaho Fish and Game Commission Policy, May 8, 1998). IDFG will continue to use its technical expertise directed at in-season and longer-term assessments to explore opportunities to improve survival of juvenile and adult salmon, steelhead, and as more information is available, Pacific lamprey. The role of IDFG is to help strengthen the scientific foundation from which various management alternatives are considered and to make biologically based recommendations to the Fish and Game Commission, State of Idaho, NOAA Fisheries, and other policy forums.

The four "H's": hydropower development, habitat alterations, hatchery effects, and harvest have resulted in human-caused adverse effects to salmon and steelhead populations. However, the mainstem dam and reservoir system in the lower Snake and Columbia rivers continues to be the primary human-caused factor limiting recovery of Idaho's wild salmon and steelhead. To date, barging juvenile salmon and steelhead as a mitigation strategy for the dams and reservoirs has not provided sufficient survival improvement to rebuild salmon and steelhead populations.

As noted in the previous Fisheries Management Plan, in May 1998 the Fish and Game Commission supported consideration of a natural river strategy in the lower Snake River as the best biological option at that time for regional consideration for recovery planning (Fish and Game Commission Policy). But, recognizing that the option would not likely be socially or politically acceptable, the Commission also directed staff to assess alternative recovery strategies adopted for implementation. Via life cycle survival studies, continuing transportation evaluation, and studies of new dam configurations and operations, Department staff continues the Commission-directed assessments.

IDFG anticipates incremental improvement from changes in the configuration and management of federal dams and reservoirs during this planning period, through installation of removable spillway weirs and refined spill management at lower Snake and Columbia River dams. Regional decisions about important aspects of operations that affect dam and reservoir passage, such as flow and spill are expected during this planning period via actions related to the Biological Opinion for the Federal Columbia and Snake River Power System and NOAA Fisheries recovery plans. Additional expected "out of Idaho" actions affecting the migration corridor include predator controls for fish, bird, and mammal populations, and estuary improvements. We anticipate a continued need for use of cold water from Dworshak Reservoir to reduce temperature experienced by summer migrants in the lower Snake River. In addition, we expect continued implementation of Upper Snake River flow augmentation that is consistent with Idaho statutes, key state and tribal agreements, an Upper Snake River Biological Opinion for Bureau of Reclamation projects, and Idaho Power Company relicensing terms and conditions. The focus of this flow augmentation is expected to be the late spring to early summer migration periods.

IDFG will focus expertise on both in-season fish passage recommendations and on continuing assessment of transportation and river migration conditions. This work will be directed at determining the best balance between in-river migration and transportation and defining the migration conditions (with new configuration and management aspects) that provide optimum life-cycle survival. The transportation evaluation that was initiated in the 1990s and focused on spring migrants (spring/summer Chinook salmon and steelhead) has been expanded to include sockeye salmon and summer migrants (fall Chinook salmon) to refine information about the survival effects of transportation versus the survival effects of an improved in-river migration strategy. The position of IDFG remains to create optimal in-river migration conditions and to continue to spread the risk by transporting collected fish when the scientific information indicates that their survival will be high relative to in-river migrants. Annual in-season conditions will continue to play a crucial role in migration recommendations. Key to near- and long-term actions will be risk assessment to judge effectiveness of actions within the context of environmental variability (State of Idaho 2000), which IDFG will continue to provide.

Habitat degradation for some specific populations of salmon and steelhead has also contributed to the overall decline. Mixed stock harvest for fall Chinook in the Columbia River is currently not sensitive to run size and remains much higher than harvest rates on spring/summer Chinook or steelhead. Drought and poor ocean rearing conditions during the early to mid-1990s, and burgeoning avian and mammalian predator populations, have exacerbated the mortality problems for anadromous salmon and steelhead.

IDFG administers and implements hatchery programs to fulfill fishery mitigation responsibilities from private and federal hydroelectric dams. Hatchery facilities that produce a total of about 20 million salmon and steelhead smolts are in operation as partial mitigation for losses to Idaho runs. The steelhead hatchery program generally meets production goals and provides a consistent fishery. In contrast, the spring and summer Chinook hatchery program has only met federally identified mitigation goals for annual adult returns in two years during the last three decades. Very low smolt to adult survivals throughout the 1990s resulted in adult returns too low to even meet hatchery broodstock and smolt production goals. Marine survivals improved in the late 1990s and since that time hatcheries have met smolt production goals. While full smolt production over the last decade and a half has resulted in adult returns sufficient to support annual fisheries in several locations in the Snake, Salmon, and Clearwater rivers, those returns have still been considerably below the mitigation goals in all years except 2001 and 2010 (Figure 5, Figure 6). Another key role of the hatcheries continuing during the last four planning

periods has been design, implementation, and evaluation of supplementation programs for natural salmon and steelhead populations.

The Endangered Species Act status of anadromous sockeye salmon, Chinook salmon and steelhead, along with recovery planning, mitigation hatchery programs and other legal issues, necessitate long-term research, monitoring and evaluation efforts on these species. Current and longer term research, monitoring and evaluation tasks are listed in Table 9. These research, monitoring and evaluation efforts are applied in an adaptive management approach. Research, monitoring, and evaluation efforts are coordinated in the Snake and Columbia river basins with state and federal agencies, Indian tribes, and federal or private utility funding entities.

Some of IDFG's long-term research programs addressing hatchery intervention strategies for recovering natural populations will be completed in this planning period, and other hatchery evaluations will be initiated. IDFG will complete a large-scale, two-decade long Chinook salmon supplementation evaluation in 2012. Recommendations from the analyses of this and other supplementation programs are expected at the end of this planning period. Those recommendations will help determine the efficacy of using our current hatcheries to aid longer-term recovery, guide production facility investments, and still provide consumptive fisheries. Results of supplementation studies will also aid in planning integrated broodstock programs. These programs are incorporating natural origin fish broodstocks at some hatcheries to minimize the risks associated with adult hatchery returns that stray and mate with natural origin fish in natural spawning areas.

The Snake River Sockeye Captive Broodstock Program was founded in 1991 by IDFG and NOAA Fisheries to prevent extinction of the species. The program incorporates the use of hatchery facilities, captive broodstock technology, genetic support, and a comprehensive monitoring and evaluation plan to maintain the genetic resource and to continue rebuilding the number of sockeye salmon in the natural environment. Eggs from adults spawned in the hatchery are incubated and reared in the hatchery for three to five years to adulthood, and then they are spawned in the hatchery. This rearing strategy bypasses mortality associated with migration to the ocean and back and adult-ocean rearing. During this planning period, the captive broodstock program will continue but there will also be an expansion in the program to rear more smolts that will be released into the natural environment, rather than reared to adulthood in the hatchery. The intent is to improve the overall fitness of the sockeye salmon hatchery broodstock by including adults that have survived seaward migration and ocean maturation. During this planning period we also expect management to focus on strategies to improve the success of sockeye salmon adults, which enter the Snake River, in completing their migration to the Stanley Basin.

Due to historic low spring and summer Chinook salmon adult returns in 1994-1995, the Department initiated additional preservation experiments to test the efficacy of captive techniques. Experiments have been conducted with Chinook salmon in the East Fork of the Salmon River, the West Fork of the Yankee Fork River, and the Lemhi River in conjunction with tribal and federal fish managers. Similar to the captive breeding program for sockeye salmon, juvenile fish are reared to maturity in a hatchery, but are released as adults to spawn naturally. This technique is called "captive rearing." IDFG expects to complete these experiments during the planning period and analytical results will also provide guidance about future intervention strategies.

IDFG will continue to test hatchery intervention strategies and implement them where necessary and ecologically prudent to provide a safety net for selected populations at risk. For example, an

ongoing steelhead supplementation program for the East Fork of the Salmon River using natural steelhead collected there as broodstock will be evaluated to inform future actions. Implementation of these measures must carefully balance the genetic and demographic risks of these unproven hatchery intervention strategies with the imminent risk of extinction. Because of uncertainties in approach and effectiveness of hatchery intervention strategies, as well as the need for evaluation, the Department will implement a suite of approaches coupled with continued support of anadromous refuge areas without hatchery intervention. This approach will guide Department assessment of supplementation proposals initiated by tribal or federal managers.

The wild salmon and steelhead management program, which includes a diversity of genetic refugia, will be maintained. Idaho's large areas of natural, native fish production, much of which is in areas classified as wilderness or Wild and Scenic Rivers are critical to genetic preservation and evaluation of wild fish production and trends. These areas also act as controls for evaluating supplementation actions and provide needed insight about the effects of environmental variability versus management actions.

Hatchery salmon and steelhead programs that provide fishery mitigation have been modified to reduce potential ecological effects to listed fish and to provide greater program benefit. Modifications include altering release sites and numbers. This has been referred to as "hatchery reform" and is an ongoing process as new information is gained about hatchery and natural fish interactions. Work will continue on hatchery priorities such as improvement of fish health and smolt quality factors most likely associated with early migration mortality. IDFG will continue to emphasize the important fishery mitigation role of most of Idaho's hatcheries and will not support exclusive use for recovery purposes.

Selective sport fisheries that safeguard naturally-produced salmon and steelhead while providing fishing opportunity for hatchery fish will be designed and implemented when the numbers of adult hatchery fish are great enough to allow some fishing opportunity after hatchery broodstock needs are met. The primary implementation tool for selective fisheries will remain adipose fin-clipping hatchery Chinook salmon and steelhead targeted for sport harvest. Chinook salmon fisheries with a magnitude and variability similar to 2002-2006 are projected during this plan cycle (Figure 5). Steelhead harvest should remain within the range of the last five years, averaging 49% of the hatchery steelhead run crossing Lower Granite Dam (Figure 6). IDFG will continue to use offsite fishery areas if necessary to reduce impacts to listed species while providing fishing opportunity. This can be accomplished by transporting surplus hatchery fish to non-anadromous water such as the Boise River for fishing.

Although the Department has little direct authority regarding anadromous fish habitat in Idaho, the goal will be to work with federal, state, and private landowners to first maintain current good quality habitat and fish populations to use it and secondly to improve habitat that is limiting productivity. An area of emphasis will be improvement of tributary streamflow and associated connectivity, and improved thermal regimes in the upper Salmon River drainage, including the Lemhi and Pahsimeroi rivers. IDFG will use the screen mitigation program resources and expertise to work with landowners to develop legal, practical solutions to increase fish survival such as additional screens and diversion consolidation.

IDFG will seek to ensure sufficient returns of anadromous fish to Idaho waters through negotiation or legal means to perpetuate both naturally- and hatchery-produced runs and to allow sport harvest in Idaho. Efforts will be continued in regional and Idaho forums to limit harvest impacts on weak fish stocks and to ensure a fair allocation for Idaho of the harvestable

portion of anadromous fish returns among the various Columbia River basin user groups. Tribal ceremonial fisheries will continue to take precedence over sport fisheries. IDFG will work with Idaho Indian tribes to develop ceremonial harvest opportunities in years when surplus fish for treaty subsistence harvest are not available. When surplus is sufficient for tribal subsistence or commercial harvest, both tribal and sport fisheries are expected to access harvestable surplus.

Table 9. Anadromous salmon and steelhead research, monitoring and evaluation efforts that will be addressed during the 2013-2018 planning period.

Monitor abundance, productivity and distribution of naturally produced Chinook and sockeye salmon and steelhead adults and juveniles.
Research and monitor population-specific life history patterns and characteristics of naturally produced Chinook salmon and steelhead.
Document the contribution hatchery-produced salmon and steelhead make towards meeting management and mitigation objectives.
Monitor natural origin salmon and steelhead populations using genetic stock identification techniques.
Monitor Chinook salmon and steelhead mitigation hatchery programs using genetic parental based tagging techniques.
Evaluate Chinook salmon supplementation strategies to increase natural production.
Determine the efficacy of captive rearing and integrated brood stocks as conservation tools to prevent localized extinctions of Chinook salmon and promote recovery of natural populations.
Monitor anadromous hatchery programs through the development and implementation of an integrated, web-based hatchery database system.
Conduct monitoring and evaluation to increase our understanding of life history and productivity patterns of steelhead populations in the Snake River basin.

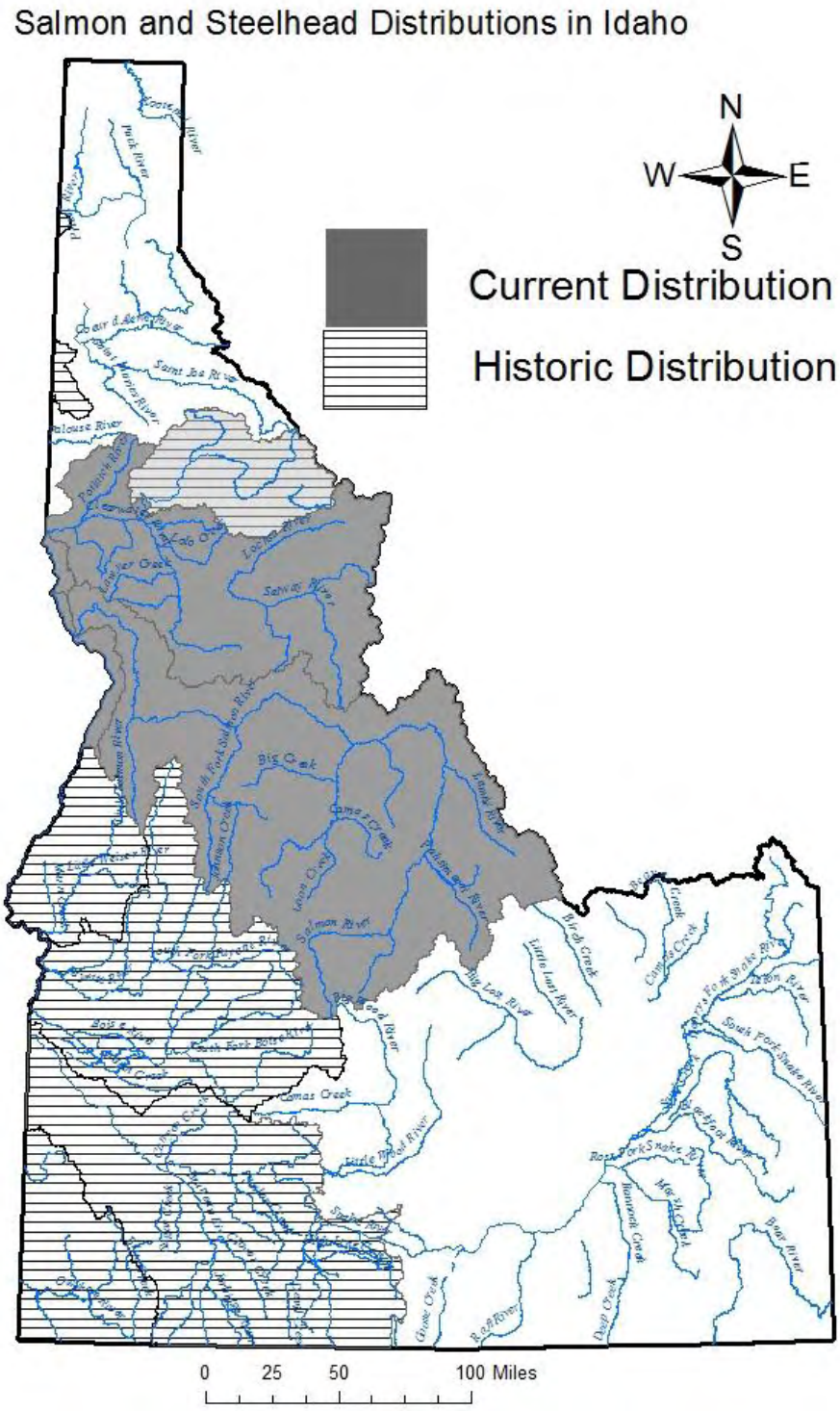

Figure 2. Current and historical range (distribution) of anadromous fish in Idaho

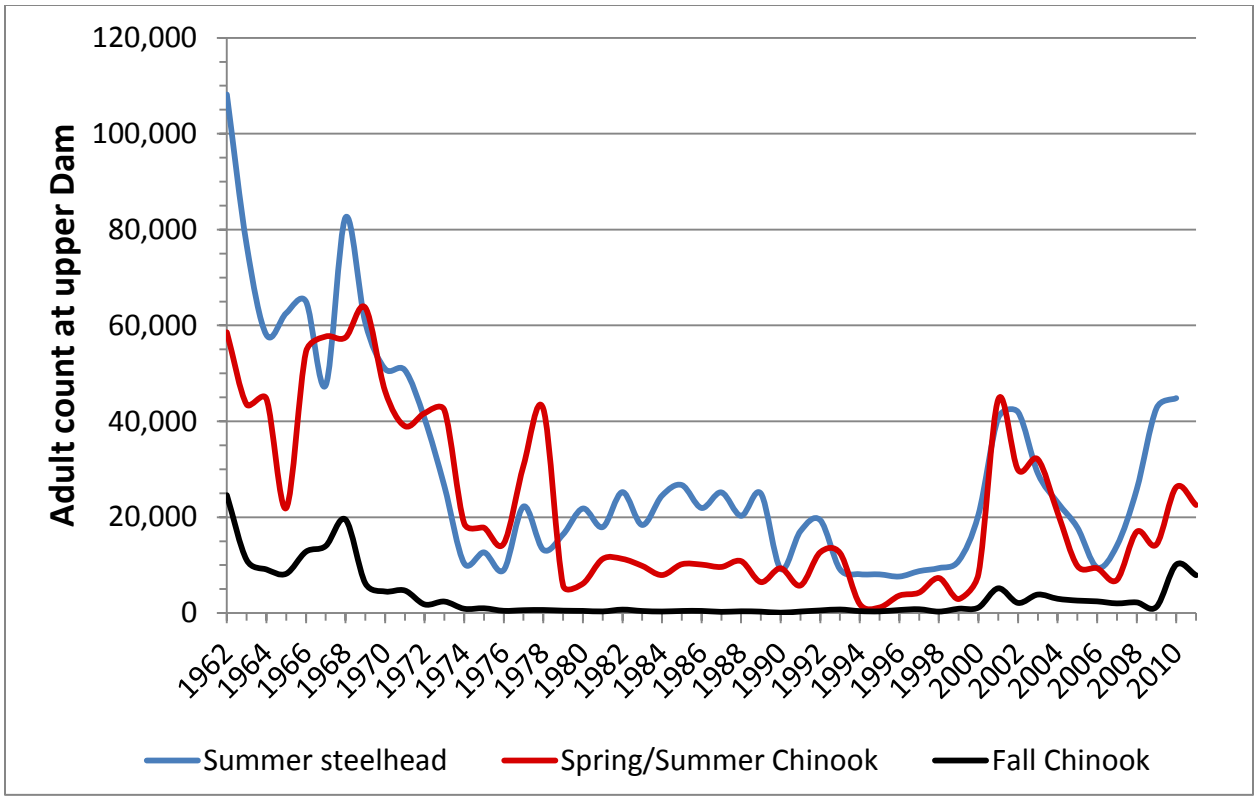

Figure 3. Historic adult passage of summer steelhead, spring/summer Chinook salmon, and fall Chinook salmon at the upper most dam and counting facility chronologically in time in the Snake River, 1960-2012. The upper most dams at the times of the fish counts were Ice Harbor 1960-1968, Lower Monumental 1969, Little Goose 1970-1974, and Lower Granite 1975 to present.

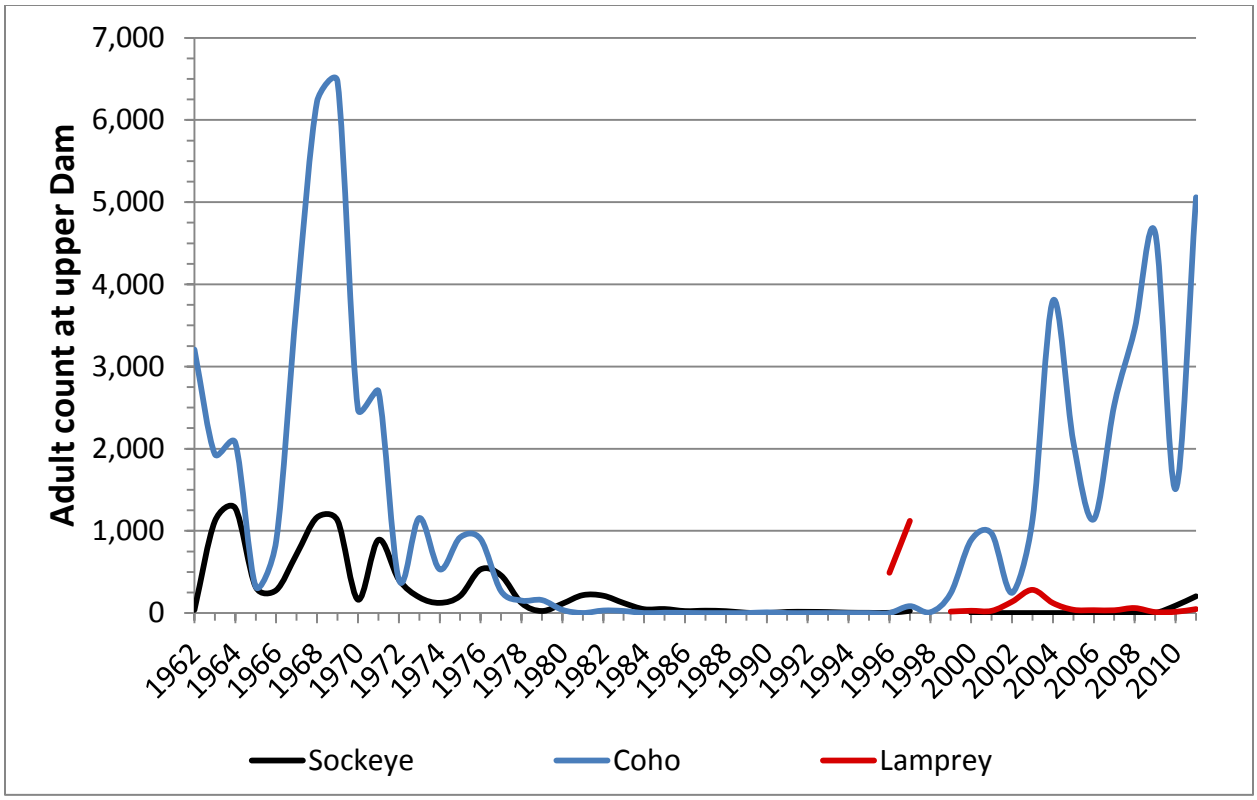

Figure 4. Historic adult passage of Snake River sockeye salmon, Coho salmon, and Pacific lamprey at the upper most dam and counting facility chronologically in time in the Snake River, 1960-2012. The upper most dams at the times of the fish counts were Ice Harbor 1960-1968, Lower Monumental 1969, Little Goose 1970-1974, and Lower Granite 1975 to present.

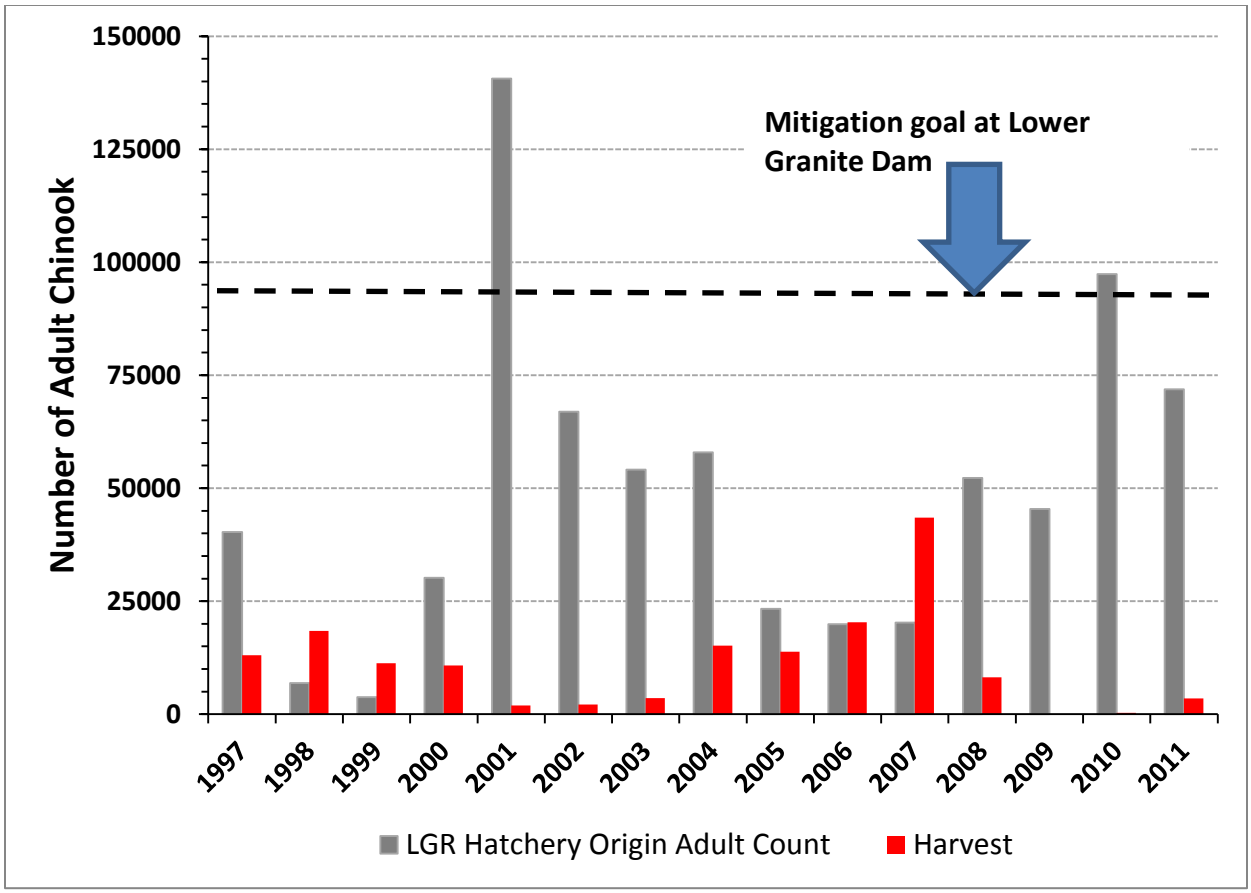

Figure 5. Annual numbers of Idaho adult hatchery spring/summer Chinook salmon in the sport harvest (red bars) and the spring/summer Chinook salmon hatchery run sizes (gray bars) at Lower Granite Dam 1996-2011 compared to the mitigation hatchery run size expectation.

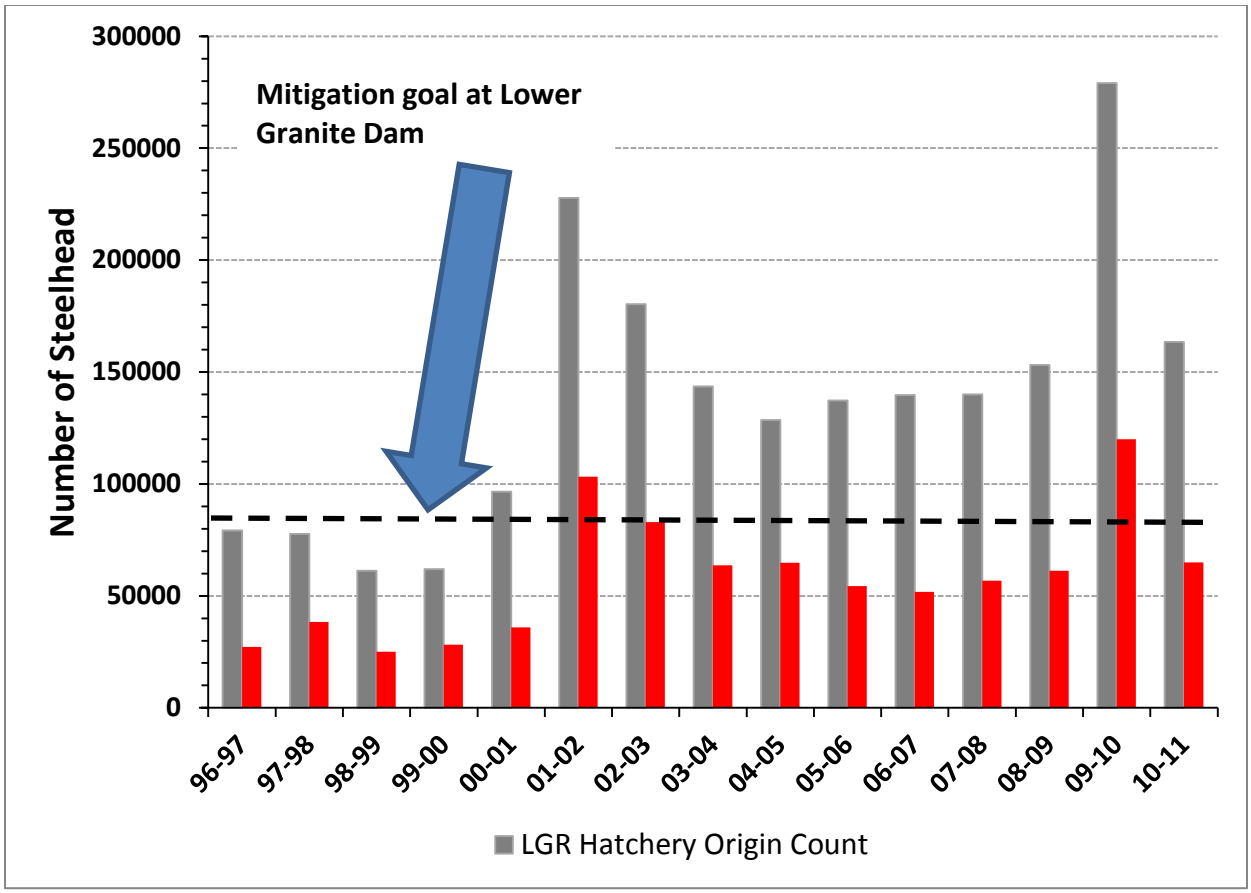

Figure 6. Annual numbers of Idaho adult hatchery steelhead in the sport harvest (red bars) and the hatchery steelhead run sizes (gray bars) at Lower Granite Dam 1996-2011 compared to the mitigation hatchery run size expectation.

8. Providing Fishing Information to the Public

During this six-year planning period, the Department will continue its production of maps, brochures, and other information to make it easier for the public to understand and utilize their fishery resource. “Angler’s Guide” brochures have been developed for major lowland lakes, urban fisheries, and reservoirs, which will include lake maps, location of angler facilities, information on species present, and angler tips. Family Fishing Waters maps and brochures have been developed. IDFG publishes the Idaho Sportsman’s Access Guide which provides a listing of motor boat and fishing access sites managed by the Department. Other brochures and guides will be developed as needed. We will also develop or expand informational type signs in high use areas (boat ramps, parks, trailheads, etc.), which may include brochures and maps. Location of hatchery-stocked trout will be advertised and maps made available through vendors and Department employees to direct anglers to these areas. The current methods for disseminating information will be expanded where possible. This includes radio, television, newspapers, and Department website and publications. Some of the areas where the Department will focus its attention include:

- Fishing Rules – strive for simplicity and readability
- Places to go Fishing – fishing water brochures; family fishing waters
- Results of Fishing Surveys – regional newsletter reports, research reports, media articles and coverage
- Fishing Tips – fishing leaflets and workshops
- Environmental Issues – habitat and fish relationships, articles, regional newsletters, and research reports
- Expand Information on Department website – fish stocking information, Fish Planner, regulations, fishing surveys, and access areas

9. Improving the Condition of Boating and Fishing Access Sites

IDFG owns or has a management interest in 325 fishing and boating access sites in Idaho. IDFG will spend approximately $2.1 million annually in the next six years for the maintenance, development, and acquisition of sites for fishing and boating access. Funding comes primarily from the Dingell-Johnson and Wallop-Breaux programs through the U.S. Fish and Wildlife Service Federal Assistance program, license sales funds used to match the federal funds, and the Salmon-Steelhead Permit set-aside program. In 2010, the Department published an addendum to its 2005-2009 Five-Year Statewide Fishing/Boating Access Facilities Plan (Parker 2010). The purpose of the addendum was to outline the plan for renovating and or developing fishing and boating access sites during the period 2010-2014. The addendum identified sites in each region for improvements and presented a plan for the funding and implementation of recommended improvements to these sites and to seek ways to make the access program more efficient. In 2005, a total of 228 of 325 access sites were identified as needing some kind of improvements; 70% of the sites managed by the Department. In 2014, a new inventory of the states’ fishing and boating access sites will be conducted and an updated list of priorities will be set for access improvements during the period 2015-2019.

IDFG will continue its programs to improve its relations with landowners, acquire easements through leasing or purchase, and develop key areas to provide access for anglers. Additional fishing docks and facilities for persons with disabilities will be provided at public fishing lakes with limited fishing access. Additional boat ramps and docks will be built or existing ones repaired or replaced where appropriate.

10. Recruiting and Retaining New Anglers

The 2006 Angler Opinion Survey indicated that over 50 percent of the anglers responding had fished for more than 20 years and averaged nearly 50 years in age. This indicates recruitment of new anglers is less than desirable. During this six-year planning period, the Department will continue efforts to recruit and retain anglers. Efforts will include emphasis on development of additional fishing waters, particularly in urban areas, development of family-oriented facilities, and additional educational programs to fulfill the Department's desire to encourage children to start fishing. IDFG annually conducts fishing clinics, in-classroom education, and rod-loaner programs to support new anglers. During the previous planning period, the Department acquired five "Fishing Trailers" to haul rods and other supplies to various fishing events, hired additional seasonal staff to conduct fishing clinics, and expanded rod-loaner programs administered through the regional offices. During this six-year planning period, the Department will continue to sponsor or facilitate youth fishing clinics around the state to teach angler skills, fishing ethics, and an appreciation of habitat requirements needed to support fish populations. The growing interest in cooperative educational programs such as the *Trout in the Classroom,* and *Idaho Salmon and Steelhead Days* will be fostered.

11. Continuing Efforts to make Fishing Rules Easier to Read and Understand

IDFG has been working progressively over the years to simplify fishing rules in order to improve comprehension by anglers. One significant step taken in 2011 was to open up most waters in Idaho to year-around fishing. However, in addition to societal demands, we must respond to biological issues as well. In part, Family Fishing Waters were devised to address the concern of many anglers that fishing rules were too complex. These waters have the least restrictive seasons and bag limits biologically permissible in order to alleviate confusion over rules for inexperienced anglers.

Rule changes will be recommended to the Commission on the basis of biological needs during development of the state's biennial fishing rules during this planning period, but Department recommendations will strive to fit with the suite of rule options currently in use. This six-year management plan will be used to guide future accommodation of non-biological factors in rulemaking. However, the Commission holds authority to accommodate additional factors in rulemaking, such as societal needs, at any time. IDFG will, however, continue to strive towards making fishing rules easier to read and understand for the angling public.

IDFG will upgrade its web-based Fishing Trip Planner, which will allow anglers to identify a body of water on a map, click on the map and retrieve information about species present, fish stocking records, fishing rules, access sites, land ownership, and fishing tips.

12. Improving Understanding and Knowledge about the Distribution, Population Status, Habitat Preferences, and Management Needs of Native Nongame Species

The ecological importance of nongame species in their native habitats has only recently been considered, and many of these species play an integral role in supporting fish and wildlife communities that include important game species. These native nongame fishes are important for ecological, scientific, aesthetic, and cultural reasons.

In most instances, little is known about the current status or distribution of these native nongame fish species. As with native game fishes, habitat degradation and other factors have adversely affected native nongame fishes and the ecological communities they occupy. Species

with very limited ranges or special habitat needs include the Bear Lake sculpin, Shoshone sculpin, Wood River sculpin, northern leatherside chub, Pacific lamprey, and sand roller. IDFG, in coordination with other agencies, significantly enhanced its understanding and knowledge about current distribution and population status of native nongame species. Below are some of our significant accomplishments for the 2007-2012 planning period:

- As part of the Department's joint management plan for Bear Lake that we share with the Utah Division of Wildlife Resources (Utah Division of Wildlife Resources and Idaho Department of Fish and Game 2008), we committed to surveying Bear Lake sculpin every other year. These surveys will inform our management of this endemic species.

- IDFG secured funding to hire a graduate student through Idaho State University to assess the population and genetic status of northern leatherside chub within its range in the upper Snake River basin of Idaho (Blakney 2012).

- IDFG secured Section 6 funding and cooperated with Idaho Power Company to assess the population genetics of Shoshone sculpin, a species endemic to the Thousand Springs Formation of south-central Idaho (Campbell 2011).

- IDFG completed a population status assessment for Wood River sculpin, a species endemic to the Big and Little Wood river basins of south-central Idaho (Meyer et al. 2007).

- IDFG published a report on the population status of nongame fish species in the upper Snake River basin (Meyer et al. 2012).

- IDFG became a signatory to a multi-agency conservation agreement and strategy for northern leatherside chub and we participate in annual meetings with other agencies to discuss ongoing work on this species.

- IDFG provided detailed comments to the U.S. Fish and Wildlife Service regarding the status of northern leatherside chub in Idaho in response to a petition to list the species as threatened or endangered under the Endangered Species Act. The Fish and Wildlife Service issue a "not warranted" determination.

- IDFG completed a status document on Pacific lamprey in Idaho (Idaho Department of Fish and Game 2011) and we became a signatory to a multi-agency and stakeholder conservation agreement and strategy for the species.

- IDFG became a signatory to a multi-agency and stakeholder range-wide conservation agreement and strategy for three nongame fish species including bluehead sucker. We annually participate in the "three species" conservation team meetings.

- IDFG proposed and our Fish and Game Commission adopted an Idaho Administrative Rules classification change for bluehead sucker to a Protected Nongame Wildlife species.

- We continue to collect limited information on sand rollers in Idaho; however, this information is archived and included in our databases.

13. Developing Management Plans for Native Fish Species

During the 2007-2012 planning period, the Department completed Commission-approved management plans for Snake River white sturgeon, Yellowstone cutthroat trout, Bonneville cutthroat trout, and Big Lost River mountain whitefish. These plans are policy documents that establish goals, objectives, and strategies for managing populations across their range and the sport fisheries supported by these species. They serve as guidance documents for Department staff and establish for the public how we intend to manage their fishery resources. These policy documents also serve notice to other agencies and entities about how the Department intends to conserve, protect, and enhance populations; work with others to protect and enhance habitat; and maintain state management authority over these important native game species.

In this planning period, the Department will complete management plans for westslope cutthroat trout and redband trout. We will not pursue development of a separate management plan for nongame fish species because we have significantly improved our knowledge about "at risk" species in Idaho and due to our enhanced and active involvement in multi-agency conservation teams dedicated to sensitive nongame species such as northern leatherside chub and bluehead sucker.

ACKNOWLEDGMENTS

IDFG wishes to thank its many employees who participated in development of this document including those in the bureaus of Communication, Wildlife, Enforcement, Engineering, and Administration. We truly appreciate the dedication of our Fisheries Bureau employees state-wide. This management plan would not have been possible without their hard work. We acknowledge the support to our programs provided by our Environmental Staff Biologists and Director's Office staff in protecting fisheries habitat. We appreciate the direction and support provided by Director Virgil Moore and the Idaho Fish and Game Commission. Finally, we thank all those anglers who buy fishing licenses and support Department management programs, those who filled out and returned the angler opinion survey, and the many folks and entities that provided comments on this management plan.

We wish to thank Renai Brogdon for developing the cover art and Tim Williams for development of drainage maps.

How to cite this document:

Idaho Department of Fish and Game. 2013. Fisheries Management Plan 2013 – 2018. Boise, Idaho.

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APPENDIX 1. 2011 Angler Opinion Survey mailed to a subset of resident and non-resident anglers.

2011 IDAHO ANGLER OPINION SURVEY

Section 1.
Your Fishing Background and Participation in

1. Over the last 5 years, how often have you fished for the following types of fish?

Type of fish	Never	Occasionally	Often
Bluegill/perch/crappie	❑	❑	❑
Bass	❑	❑	❑
Walleye	❑	❑	❑
Catfish/bullhead	❑	❑	❑
Steelhead	❑	❑	❑
Chinook salmon	❑	❑	❑
Trout	❑	❑	❑
Kokanee	❑	❑	❑
Whitefish	❑	❑	❑
Sturgeon	❑	❑	❑
Carp/sucker/other nongame fish	❑	❑	❑
Tiger muskie	❑	❑	❑
Northern pike	❑	❑	❑
Anything that bites	❑	❑	❑

2. Over the last 5 years, how often have you fished using the following methods?

Method of fishing	Never	Occasionally	Often
Shore/bank	❑	❑	❑
Wade	❑	❑	❑
Float tube/kick boat	❑	❑	❑
Non-motorized boat	❑	❑	❑
Motor boat	❑	❑	❑
Ice Fishing	❑	❑	❑

3. Over the last 5 years, how often have you used the following types of fishing gear?

Type of Gear	Never	Occasionally	Often
Lures	❑	❑	❑
Flies	❑	❑	❑
Bait	❑	❑	❑
Archery	❑	❑	❑

4. Please tell us your GENERAL feeling about the type of fishing experiences you have had over the last 5 years by checking one box per type of fishing experience.

	Excellent	Good	Fair	Poor	Did Not Participate
Mountain lakes…					
…for trout	❑	❑	❑	❑	❑
Ponds, lakes and reservoirs…					
…for trout	❑	❑	❑	❑	❑
…for bass	❑	❑	❑	❑	❑
…for bluegill/ perch/crappie	❑	❑	❑	❑	❑
…for walleye	❑	❑	❑	❑	❑
…for Chinook salmon	❑	❑	❑	❑	❑
…for kokanee	❑	❑	❑	❑	❑
…for catfish	❑	❑	❑	❑	❑
Rivers and streams…					
…for trout	❑	❑	❑	❑	❑
…for whitefish	❑	❑	❑	❑	❑
…for steelhead	❑	❑	❑	❑	❑
…for Chinook salmon	❑	❑	❑	❑	❑
…for bass	❑	❑	❑	❑	❑
…for catfish	❑	❑	❑	❑	❑
…for sturgeon	❑	❑	❑	❑	❑

5. Please tell us HOW IMPORTANT each of the following items are when deciding where to fish by checking one box per factor.

Possible Factors	Very Important	Somewhat Important	Not Sure/No Opinion	Somewhat Unimportant	Very Unimportant
Solitude	❑	❑	❑	❑	❑
Chance to catch native or wild fish	❑	❑	❑	❑	❑
Chance to catch a lot of fish	❑	❑	❑	❑	❑
Avoid other recreationists	❑	❑	❑	❑	❑
Chance to catch big fish	❑	❑	❑	❑	❑
Chance to catch a variety of fish	❑	❑	❑	❑	❑
Chance to keep some fish	❑	❑	❑	❑	❑
Boat ramps and marina facilities present	❑	❑	❑	❑	❑
Presence of favorite kind of fish	❑	❑	❑	❑	❑
Availability of information on fishing	❑	❑	❑	❑	❑
Nearness to camping facilities	❑	❑	❑	❑	❑
Opportunity for activities other than fishing	❑	❑	❑	❑	❑
Availability of licensed fishing guides	❑	❑	❑	❑	❑
Special rules	❑	❑	❑	❑	❑
Vehicle access	❑	❑	❑	❑	❑
Nearness to home or cabin	❑	❑	❑	❑	❑

Possible Factors	Very Important	Somewhat Important	Not Sure/No Opinion	Somewhat Unimportant	Very Unimportant
A place my family likes	❑	❑	❑	❑	❑
Natural beauty of area	❑	❑	❑	❑	❑
Hatchery fish stocked	❑	❑	❑	❑	❑

Section 2.
Activities of the Department's Fisheries

6. Please tell us HOW IMPORTANT the following Department fisheries management activities are to you by checking one box for each activity.

Management Activity	Very Important	Somewhat Important	No Opinion	Somewhat Unimportant	Very Unimportant
Developing new fishing access sites/boat ramps	❑	❑	❑	❑	❑
Protecting and improving fish habitat	❑	❑	❑	❑	❑
Managing for steelhead fishing	❑	❑	❑	❑	❑
Managing for quality/trophy bass fisheries	❑	❑	❑	❑	❑
Managing for native trout fisheries (e.g., cutthroat trout)	❑	❑	❑	❑	❑
Managing for Chinook salmon fishing in rivers	❑	❑	❑	❑	❑
Providing places for family fishing	❑	❑	❑	❑	❑
Managing for quality/trophy trout in rivers and streams	❑	❑	❑	❑	❑
Managing catch-and-release fisheries	❑	❑	❑	❑	❑
Managing catch-and-keep trout fisheries	❑	❑	❑	❑	❑
Managing for quality/trophy trout in lakes and reservoirs	❑	❑	❑	❑	❑
Managing for warm water fisheries (e.g., bass, crappie)	❑	❑	❑	❑	❑
Managing and conserving native nongame fish	❑	❑	❑	❑	❑
Maintaining/improving existing fishing access sites/boat ramps	❑	❑	❑	❑	❑
Conducting classes on how to fish	❑	❑	❑	❑	❑
Managing mountain lake trout fisheries	❑	❑	❑	❑	❑
Providing fisheries information	❑	❑	❑	❑	❑
Provide new urban fishing ponds	❑	❑	❑	❑	❑

7. Please tell us HOW WELL YOU THINK THE DEPARTMENT IS DOING in each of the following fisheries management activities by checking one box for each activity.

Management Activity	Excellent	Good	Fair	Poor	No Opinion
Developing new fishing access sites/boat ramps	❑	❑	❑	❑	❑
Protecting and improving fish habitat	❑	❑	❑	❑	❑
Managing for steelhead harvest opportunities	❑	❑	❑	❑	❑
Managing for catch-and-release steelhead fishing	❑	❑	❑	❑	❑
Managing for quality/trophy bass	❑	❑	❑	❑	❑
Managing for native trout fisheries (e.g., cutthroat trout)	❑	❑	❑	❑	❑
Managing for Chinook salmon fishing in rivers	❑	❑	❑	❑	❑
Providing places for family fishing	❑	❑	❑	❑	❑
Managing for quality/trophy trout in rivers and streams	❑	❑	❑	❑	❑
Managing catch-and-keep trout fisheries	❑	❑	❑	❑	❑
Managing for quality/trophy trout in lakes and reservoirs	❑	❑	❑	❑	❑
Managing for warm water fisheries (e.g., bass)	❑	❑	❑	❑	❑
Managing and conserving native nongame fish	❑	❑	❑	❑	❑
Managing catch-and-release fisheries	❑	❑	❑	❑	❑
Maintaining existing fishing access sites/boat ramps	❑	❑	❑	❑	❑
Conducting classes on how to fish	❑	❑	❑	❑	❑
Managing mountain lake trout fisheries	❑	❑	❑	❑	❑
Providing fisheries information	❑	❑	❑	❑	❑
Provide new urban fishing ponds	❑	❑	❑	❑	❑

Section 3.
Special Rules in Fisheries Management

Special rules are most often used to protect fish populations and include methods like restrictions on species, size or number harvested, or fishing tackle. They are also used to provide fishing experiences desired by anglers. The Department wants your opinion about using *special rules* to provide enhanced fishing opportunities.

8. Harvesting too many game fish can reduce their numbers, decrease average size, and reduce catch rates. To what degree do you support or oppose the following methods to reduce harvest?

Methods to Reduce Harvest	Strongly Support	Somewhat Support	Neutral/No Opinion	Somewhat Oppose	Strongly Oppose
Limit angler use	❑	❑	❑	❑	❑
Restrict the number of fish that can be kept	❑	❑	❑	❑	❑
Restrict the size of fish that can be kept	❑	❑	❑	❑	❑
Restrict the type of gear that can be used	❑	❑	❑	❑	❑
Apply catch-and-release rules	❑	❑	❑	❑	❑
Shorten the fishing season	❑	❑	❑	❑	❑

9. The Department is dealing with increasing conflict among some anglers fishing for salmon and steelhead. To what degree do you support or oppose the following possible management actions designed to reduce conflict and better allocate salmon and steelhead fishing opportunities among anglers?

Methods to Reduce Conflict	Strongly Support	Somewhat Support	Neutral/No Opinion	Somewhat Oppose	Strongly Oppose
Use limited entry permits (like a controlled hunt) to manage use of specific waters or reaches.	❑	❑	❑	❑	❑
Use special regulations (catch and release, no motors, no bait, fly fishing only) to manage crowding.	❑	❑	❑	❑	❑
Attempt to reduce conflict through education programs	❑	❑	❑	❑	❑
Do not improve public access as a way to avoid large increases in angler use.	❑	❑	❑	❑	❑

10. The Department manages many community and urban ponds across the state for fishing in or near populated areas. Hatchery trout are typically stocked every few weeks to provide opportunities to harvest fish. Under general fishing rules (6 fish limit) and heavy fishing pressure, stocked trout are often harvested within a few days resulting in poor fishing success until the next stocking. The Department's hatchery trout program is also increasingly expensive due to high fish feed costs. In order to provide better fishing and more consistent catch rates, the Department is considering reducing the daily bag limit on specific ponds. Would you support or oppose a reduction in the daily bag limit as a method to improve fishing success at urban ponds?

	Strongly Support	Somewhat Support	Neutral/No Opinion	Somewhat Oppose	Strongly Oppose
Reduce the daily bag limit	❑	❑	❑	❑	❑

11. Have you ever used circle hooks when fishing in Idaho?

❑ Yes ❑ No ❑ I am not familiar with circle hooks

12. Department biologists are evaluating whether circle hooks lessen the incidence of hook-and-release mortality in several fish species by reducing deep hooking. If circle hooks are demonstrated to improve survival of released fish relative to standard J-hooks, and circle hooks also do not measurably reduce angler catch rates, would you support rules requiring the use of circle hooks in the following types of waters:

13. Scientific study has demonstrated that most hooking related fishing mortality is strongly associated with where the fish is hooked and is not related to the use of barbed or barbless hooks. Because barbless hooks are an unnecessary restriction to achieve management and conservation goals, the Department is considering removing mandatory barbless hook restrictions in trout fisheries. Anglers could continue to voluntarily use barbless hooks if they desire. Would you support or oppose the elimination of mandatory barbless hook restrictions in Idaho trout fisheries?

❑ Support ❑ Oppose ❑ No opinion

14. Since 1971, the Department has regulated sport fishing for white sturgeon as catch-and-release. Fishing for white sturgeon has become increasingly popular in Idaho. Current management appears to be providing for stable populations based on long-term survey information. Individual white sturgeon can be caught multiple times during each year and the Department has documented the presence of fishing tackle (e.g., hooks, line, swivels) in the digestive tracts of a high percentage of sturgeon. The effects of high fishing pressure and ingested tackle on sturgeon populations are being evaluated in an ongoing study, but are largely unknown. Currently we have no definitive information suggesting that angling pressure or ingested tackle are impacting populations. However, if negative impacts on populations are found and it becomes necessary to restrict sturgeon angling to conserve populations, which of the following types of restrictions would you support or oppose?

	Strongly Support	Somewhat Support	Neutral/No Opinion	Somewhat Oppose	Strongly Oppose
Area closures	❑	❑	❑	❑	❑
Seasonal closures	❑	❑	❑	❑	❑
Gear/tackle restrictions	❑	❑	❑	❑	❑

15. The white sturgeon is native to the Snake River in Idaho below Shoshone Falls. Since the early 1990s, the Department has been stocking hatchery-produced white sturgeon in locations outside of their native range near Idaho Falls and American Falls. Currently, the recreational fisheries in these locations are managed as catch-and-release as they are in the rest of the state. In the future, the Department may consider offering a very limited harvest opportunity for hatchery-produced white sturgeon in these areas. Please tell us your level of support or opposition to the idea of a future limited harvest fishery for hatchery white sturgeon.

	Strongly Support	Somewhat Support	Neutral/No Opinion	Somewhat Oppose	Strongly Oppose
Keep catch and release rules	❑	❑	❑	❑	❑
Provide a limited harvest fishery (like a controlled hunt)	❑	❑	❑	❑	❑

Section 4.
Fishing Tournaments

Fishing tournaments are popular in Idaho but must be managed. The Department manages tournaments to address concerns that fishing tournaments may impact general anglers from increased boat traffic, busy boat launch sites, and/or negatively influencing their overall fishing experience. We want your opinion about fishing tournaments in Idaho.

16. To what extent do you agree or disagree that fishing tournaments are appropriate for the following types of fisheries in Idaho?

Types of Fisheries	Strongly Agree	Somewhat Agree	Neutral/No Opinion	Somewhat Disagree	Strongly Disagree
Steelhead on large rivers using boats	❑	❑	❑	❑	❑
Steelhead on small rivers	❑	❑	❑	❑	❑
Chinook salmon on large rivers using boats	❑	❑	❑	❑	❑
Chinook salmon on small rivers	❑	❑	❑	❑	❑
Catch-and-release trout waters using boats	❑	❑	❑	❑	❑
Catch-and-release trout waters by wading	❑	❑	❑	❑	❑
Quality trout waters using boats	❑	❑	❑	❑	❑
Quality trout waters by wading	❑	❑	❑	❑	❑
Backcountry trout waters	❑	❑	❑	❑	❑
Bass in rivers	❑	❑	❑	❑	❑
Bass in lakes/reservoirs	❑	❑	❑	❑	❑
Trophy fishing in large lakes	❑	❑	❑	❑	❑
Hatchery-supported trout fishery	❑	❑	❑	❑	❑
Profit-oriented harvest tournaments	❑	❑	❑	❑	❑
Profit-oriented catch-and-release tournaments	❑	❑	❑	❑	❑

PART 2 - FISHERY MANAGEMENT PLANS BY DRAINAGE

Drainage Management Plans define broad management direction for individual waters on a drainage basis. The state is broken down into 35 separate drainages (Figure 1). Each drainage section consists of three parts:

Overview

A narrative which describes the drainage, the various fisheries, and Department management of the drainage in general terms.

Objectives and Programs

This section lists fisheries objectives for the drainage as a whole or a combination of water areas, and management programs necessary to achieve them.

Management Direction

Management direction is presented as a table which lists the type of fisheries, species present, management, and further direction proposed for individual waters.

DEFINITIONS OF TERMS USED IN DRAINAGE MANAGEMENT DIRECTION TABLES

Fishery Types

A. Coldwater - fisheries supported by resident populations of salmonid game fish including trout, char, non-anadromous salmon (kokanee, Chinook), and whitefish (family Salmonidae).

B. Warmwater - fisheries supported by warmwater or coolwater game fish including bass, crappie, sunfish, catfish, northern pike, tiger muskie, walleye, and yellow perch (families Centrarchidae, Ictaluridae, Percidae, and Esocidae).

C. Mixed - fisheries supported by a combination of coldwater and warmwater fish species.

D. Anadromous - fisheries supported by anadromous salmonids (steelhead trout, Chinook salmon, and sockeye salmon). Fish from this group spend a portion of their life in the ocean.

Species Present

The major sport fish species present and any other species being proposed for introduction at this time. Species which will be considered for introduction but are not proposed at this time are referred to under "management direction."

Fishery Management

Describes the primary management applied to the water area; a secondary management listing may be given where a different specific management is applied to individual species. A more complete description of management types, fishery characteristics, and applicable regulations is provided in Part I of the Plan.

A. Put-and-Take - a management scheme using stocking of hatchery produced fish or fish collected from other public waters and stocked into waters to provide high consumptive catch rates. Applied to small lakes, ponds, and reservoirs and certain streams or stream reaches with good access and moderate to high fishing pressure. Used where long-term survival and growth is limited due to water quality characteristics or harvest rates. Other species, including some naturally produced trout, may be present.

B. Wild - a management prescription that relies on the natural production potential of a water body to provide angling opportunity for native trout. This type of management may also apply to naturalized populations of non-native salmonids. Applied to water bodies with good to excellent trout habitat where consumptive fishing pressure is light to moderate.

C. Quality - a management prescription that limits, by regulation, the size and/or numbers of fish which may be harvested in order to provide increased catch rates for larger fish which are considered quality size. This type of management may be applied to water areas or to specific species.

D. Trophy - a management prescription that limits, by regulation, the size and/or numbers of fish which may be harvested in order to provide increased catch rates for larger fish which are considered trophy size. This type of management may be applied to water areas or to specific species.

E. Conservation - a management prescription that allows angling but prohibits harvest in order to protect and rebuild the viability of a native fish population. This management may be applied to an individual species or to water bodies which are important spawning, rearing, migration, or wintering areas.

F. Anadromous - a management prescription for anadromous (ocean-going) steelhead and Chinook salmon, which provides for harvest opportunity where possible on known hatchery origin fish while preserving and rebuilding wild and natural fish.

G. General - a general management prescription applied to lakes, reservoirs, rivers, and streams which do not fit the designations above and are generally considered yield (harvest) fisheries General management waters may provide warmwater, coldwater, or mixed fisheries. Coldwater fishing is primarily managed through stocking of fry, fingerling, or catchable-size fish, which are expected to grow and contribute to the fishery over an extended time. No special regulations are applied.

H. Community/Family – a management prescription applied to a water body emphasizing family-oriented fishing opportunities with simplified rules including a year-round season, and no tackle restrictions. Emphasis will be on maximizing fishing opportunities for all anglers and efficiently using hatchery-produced fish to provide harvest opportunities.

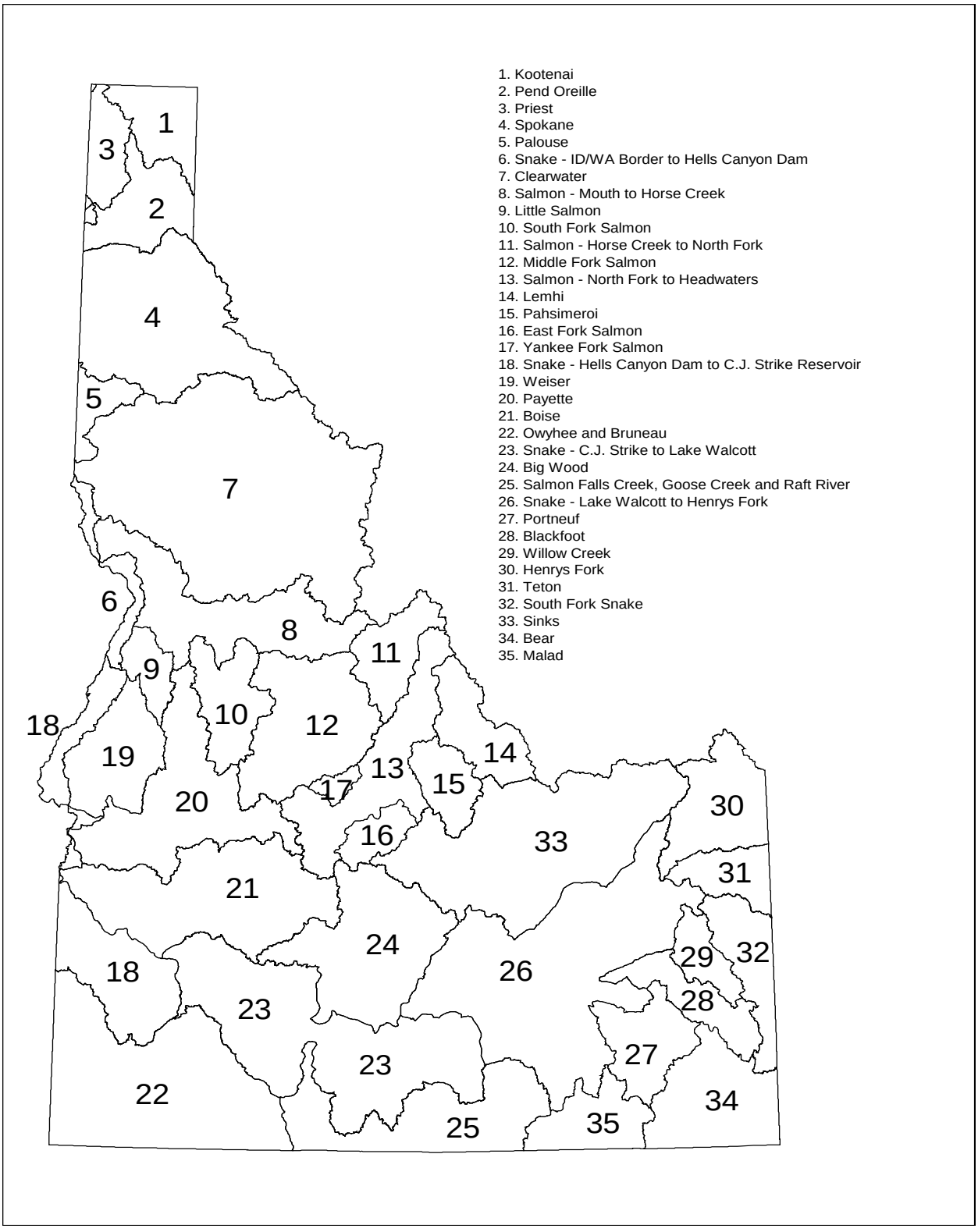
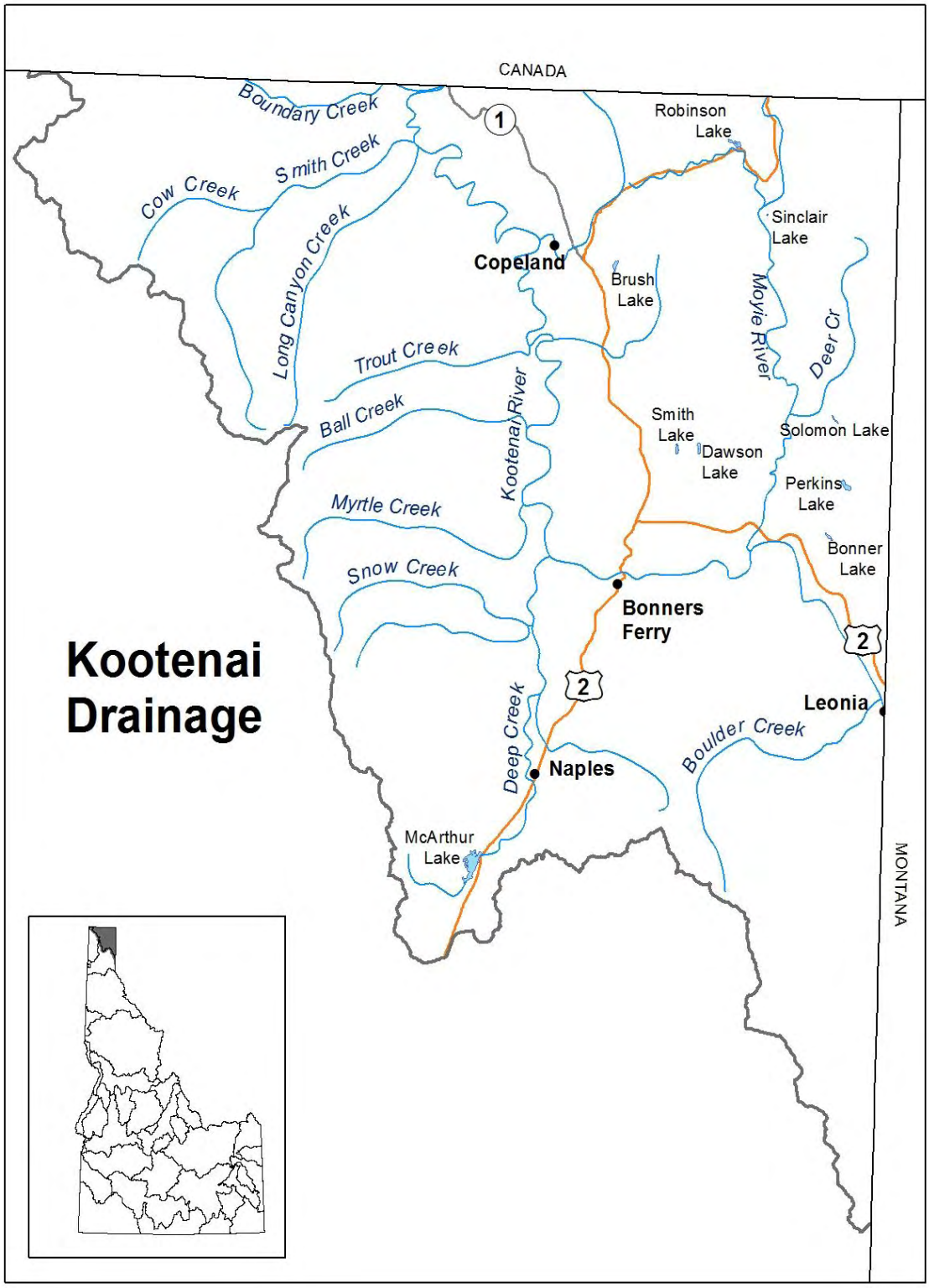


Figure 7. Statewide drainage map for 2013 - 2018 Fisheries Management Plan.


CANADA
Boundary Creek
Smith Creek
Cow Creek
Long Canyon Creek
Trout Creek
Ball Creek
Myrtle Creek
Snow Creek
Kootenai River
Deep Creek
Boulder Creek
Copeland
Robinson Lake
Sinclair Lake
Brush Lake
Moyie River
Deer Cr
Smith Lake
Dawson Lake
Solomon Lake
Perkins Lake
Bonner Lake
Bonners Ferry
Leonia
Naples
McArthur Lake
MONTANA
1
2
2
Kootenai Drainage

1. KOOTENAI RIVER DRAINAGE

Overview

The Kootenai River is located at the north end of the Idaho Panhandle in Boundary County. It originates in southeastern British Columbia (BC), Canada flows south and west through Montana, and northwest through Idaho, then returns to Canada where it flows through Kootenay Lake and joins the Columbia River at Castlegar, BC. At the International border at Porthill, Idaho, it drains approximately 13,700 square miles with an average discharge of 16,100 cfs. The 66 miles of Kootenai River in Idaho can be divided into two reaches. The 47-mile section from Porthill to Bonners Ferry is a slow moving, broad, meandering river with pools up to 100 feet deep. A dam at the outlet of Kootenay Lake influences water level in the river as far upstream as Bonners Ferry. The 19 miles of river upstream from Bonners Ferry to Montana flows in a canyon with an average gradient of 3 feet/mile.

Inland redband (rainbow) trout are native to the Kootenai River drainage and are present in the mainstem Kootenai River and above barriers in some tributaries. Hatchery rainbow trout have been widely introduced throughout the drainage, and the only known pure strain redband in an accessible tributary are found in Callahan Creek. Other native salmonids include westslope cutthroat trout, bull trout, kokanee, and mountain whitefish. Introduced brook trout are present throughout the drainage. Early spawning kokanee from Kootenay Lake, BC, are present in the mainstem Kootenai River and some west side tributaries during the summer and fall. The Kootenai Tribe of Idaho has recently supplemented these runs with kokanee from the North Arm of Kootenay Lake (Meadow Creek stock). Kokanee salmon also enter the Kootenai River from Libby Reservoir (Lake Koocanusa) during some years.

Libby Dam was constructed in Montana in 1972, and its operation for flood control and power production changed the natural seasonal and daily flow, temperature, and productivity regimes in the Kootenai River. Mean flows during spring runoff have declined 50 percent and wintertime flows have tripled. Average winter-time water temperatures have increased by about 7^{o}F, resulting in the river remaining virtually ice free. Sediments trapped behind Libby Dam have dramatically reduced turbidity and the availability of important nutrients in the river and lake.

In addition to the loss of nutrients to Libby Dam, a fertilizer plant on the St. Maries River (above Lake Koocanusa in British Columbia) that once discharged excessive phosphorus was closed in the 1970's. The result was a shift from an unnaturally high to an unnaturally low nutrient load. Since 2005, a cooperative nutrient restoration program with the Kootenai Tribe of Idaho (KTOI) has added phosphorus and nitrogen near the Idaho/Montana border with a goal of restoring *natural* levels of nutrients. The project has resulted in increases to primary production, invertebrate abundance, and fish densities. Downstream, nutrients have been replaced through fertilization in Kootenay Lake, BC since 1992. This program has clearly demonstrated the positive impacts to kokanee and Gerrard rainbow trout populations.

The Kootenai River is the only drainage in Idaho with a native burbot (ling) population. In addition, the Kootenai River is also home to a genetically distinct population of white sturgeon. Fisheries for both of these species were closed for conservation purposes in 1984 in response to major declines in these populations. Alteration of the natural flow regime, substrate, temperature, and nutrients are believed to be the primary reasons for the lack of successful reproduction of sturgeon and burbot. The Kootenai River white sturgeon was listed as an Endangered Species in 1994. The Kootenai River White Sturgeon Recovery Strategy is currently guiding recovery actions in the basin. IDFG will continue to serve on the Kootenai River White Sturgeon Recovery Team. Burbot were petitioned for listing in February 2000 but it

was determined they were not warranted for listing. Subsequently, a *Burbot Conservation Strategy* was developed in 2005 by stakeholders in the Kootenai Valley, including IDFG. The document outlines strategies to recover burbot through restoration of conditions necessary for natural reproduction as well as with conservation aquaculture. In recent years, the KTOI, University of Idaho, and IDFG have made significant advances in culturing burbot. Several thousand juvenile burbot have been released back into the Kootenai River, and recapture efforts indicate survival is good. IDFG will work with the KTOI in the coming years to identify appropriate stocking levels for burbot and to develop a plan for restoring a recreational fishery.

The trout fishery in the Idaho reach of the Kootenai River is characterized by densities lower than upstream reaches. The low densities are believed to be in part due to limited natural reproduction. Due to past glaciation, most Kootenai River tributaries are blocked by falls near their mouths, and recruitment of fish from tributaries is limited. Habitat alteration and degradation have reduced trout production in naturally accessible portions of tributaries. Sedimentation from logging, road construction, and wildfires has degraded former spawning and rearing areas. Manmade obstructions, diversions, and channelization have eliminated and isolated former trout habitat completely, especially in tributaries draining the west side. The Deep Creek, Boundary Creek, and Callahan Creek drainages are the largest accessible tributaries of the Kootenai River. Studies indicate most of the current recruitment of Kootenai River rainbow trout comes from tributaries in Montana. Some rainbow trout in the Deep Creek drainage were shown to utilize Deep Creek for spawning and rearing, but spent their adult life in Kootenay Lake, BC (an adfluvial life cycle). Efforts in recent years to improve tributary spawning and rearing habitat conditions in Idaho tributaries should increase natural recruitment.

In addition to limited recruitment, the lack of nutrients has likely limited trout production. To date, the benefits of the nutrient restoration program to trout are not definitive; however, we would expect effects on the higher trophic levels to come about more slowly, and the project is promising. Fishing regulations were modified in 2002 to address overharvest of mature rainbow trout and monitoring is showing increased numbers of larger trout. The combination of efforts to improve the trout fishery has resulted in increased use of the river by trout anglers, and some interest by outfitters in guiding fishermen in the Idaho reach of the Kootenai River. Genetics work indicate that pure strain redband populations are relatively rare. Stocking of coastal strains of rainbow trout in Montana, Idaho and BC for many decades have produced a naturalized wild population. The only known pure strain redband populations remaining in Idaho tributaries include the adfluvial population from Deep Creek and redband that utilize Callahan Creek and portions of the Boundary Creek drainage.

The Moyie River is the largest tributary of the Kootenai drainage in Idaho, but is isolated from the Kootenai River by a natural falls near its mouth. The Moyie River originates at Moyie Lake in BC and flows 58 miles through Canada and 26 miles through Idaho. The river above Meadow Creek has a relatively moderate gradient with relatively few pools. Additional pools were created with rock grade control structures and bank barbs as mitigation for the PGT natural gas pipeline construction impacts in 1992. The river gradient below Meadow Creek is much steeper, providing better summer trout habitat. Most of the trout production for the upper river appears to come from Canadian tributaries due to the lack of suitable spawning and rearing tributaries in Idaho. Deer and Meadow Creek provide enough wild trout production to support the wild trout fishery in the river below Meadow Creek. Angler access is limited in the upper river to several bridge crossings and two Forest Service campgrounds and in the lower river by only a few primitive drive-to access sites. Development of private property along the river has increased dramatically in the past decade. Historically, the Moyie River was managed primarily as a put-and-take trout fishery, but concerns about potential fish disease impacts in Canadian waters and poor returns of hatchery stocked rainbow trout, resulted in a change to wild trout

management in 2000. Surveys in 2005 and 2006 indicate the river supports densities of about 250 rainbow trout and brook trout combined per mile and only a few cutthroat trout. Mountain whitefish were numerous.

Eight natural lowland lakes (>5 acres) provide a mixed bag fishery for trout and warmwater species. Naturalized populations of largemouth bass, black crappie, brown bullhead, yellow perch, and pumpkinseed sunfish are present in most lakes. Northern pike were illegally introduced in Perkins and Bonner lakes prior to 2005, but to date have not established populations. Channel catfish, tiger muskie and bluegill sunfish fisheries have been established in some lakes. Put-and-take rainbow trout are stocked in these lakes to provide salmonid fisheries. At the request of the angling public, all Kootenai drainage lowland lakes are managed as “electric motors only.”

McArthur Lake Dam impounds the headwaters of the Deep Creek drainage and forms a shallow, warm reservoir that is ideal for waterfowl production. The fishery is limited to primarily warmwater species (mainly perch, some largemouth bass and pumpkinseed). Wild adfluvial redband trout from Kootenay Lake, BC utilize tributaries above the dam for spawning and rearing. A fish ladder on the dam allows access to these tributaries, but warm water in the reservoir may increase mortality of downstream migrating juvenile fish. The necessity of boating restrictions imposed to protect nesting waterfowl and aquatic vegetation was reevaluated in 2009. The restrictions were lifted in 2010 to provide more angling opportunity. Department fisheries and wildlife programs will evaluate whether angling activity is jeopardizing the waterfowl objectives for the McArthur Lake WMA. The reservoir is periodically drained to manage vegetation and enhance waterfowl production. This may actually enhance perch fishing by reducing the population and increasing subsequent growth of the fish that remain. Means of enhancing wild trout production should be investigated.

Nineteen mountain lakes in the Selkirk and Purcell ranges are stocked with trout fry on a rotating basis. Stocking densities have been adjusted to maximize fish growth at a given lake elevation. Only fry from disease free hatcheries are used to stock Kootenai drainage mountain lakes to address Canadian fishery management concerns. Only sterile cutthroat and rainbow trout fry are used to stock mountain lakes to reduce potential impacts to native fish populations downstream. Westslope cutthroat trout, rainbow trout, and brook trout are present in most of the stocked lakes, although four lakes are reserved for specialty species such as grayling and golden trout. In the past, we’ve cooperated with Montana fishery managers to only stock grayling in the Callahan (Smith) Lake drainage to minimize impacts to native redband in Callahan Creek. Montana is now stocking redband rainbow trout in the watershed which may present may allow us to re-evaluate our stocking strategies. There are many alpine lakes located in the Kootenai drainage that currently do not support fish, either due to natural conditions or because they are no longer stocked. We will maintain these lakes in a fishless condition in order to maintain some natural alpine lake ecosystems for amphibians and invertebrates.

Objectives and Programs

1. Objective: Improve the sport fishery in the Idaho reach of the Kootenai River.

   Program: Continue to work with Kootenai Tribe of Idaho with nutrient restoration program and evaluate the effects on the fish community with emphasis on rainbow trout, bull trout and mountain whitefish.

   Program: Assess catch, catch rates, length frequency and harvest of trout to determine if regulations and nutrient restoration are resulting in more and bigger rainbow trout in the Kootenai River fishery.

   Program: Determine where trout recruitment can be improved in Idaho tributaries through habitat improvement projects.

   Program: Work with government agencies, the Kootenai Tribe of Idaho, private developers, interested angling groups and local schools to make protection, enhancement and acquisition of fisheries habitat a primary concern in land use decisions.

2. Objective: Restore natural recruitment of burbot (ling) and white sturgeon

   Program: Estimate spawning success and natural recruitment of white sturgeon and burbot in the Kootenai River

   Program: Monitor and evaluate white sturgeon and burbot vital statistics in response to recovery strategies and adjust strategies as needed.

   Program: Work with partner agencies to develop and implement conservation aquaculture programs for white sturgeon and burbot and help identify appropriate release numbers and effective stocking strategies.

   Program: Monitor and evaluate early life survival of wild and hatchery origin burbot.

3. Objective: Maintain fishing opportunities and quality of fishery in the Moyie River.

   Program: Monitor the species composition, abundance, size structure, growth and mortality of the trout population in the Moyie River and evaluate impacts of harvest on quality of the fishery.

   Program: Improve public access through easements, cooperative agreements or purchase. Develop boat (rafts and drift boats) and walk-in access in the upper half of the river where private property limits access.

4. Objective: Improve the efficiency of hatchery put-and-take trout stocking programs in lakes, by maintaining an average return to creel of hatchery put-and-take trout of at least 30%.

Program: Periodically evaluate rate of return, catch rate, and angler use on put-and take trout fisheries through a routine data collection system.

Program: Adjust rate, timing or location of trout stocking to improve rate of return to the creel.

Program: Inform anglers of hatchery supported trout fishing opportunities through maps, brochures, media coverage and signing to improve return to the creel.

5. Objective: Provide diverse angling opportunities in lowland lakes including quality fishing rules and Family Fishing Waters.

Program: Continue periodic surveys of fish populations to monitor population status and fish growth in relation to physical and biological conditions and fishing rules.

Program: Maintain maximum harvest opportunity for warmwater species and stocked trout in most lakes.

Program: Evaluate potential to use hatchery produced burbot in Bonner or Sinclair lakes to develop a unique sport fishery and potentially serve as a genetic reserve for future conservation efforts.

Program: Continue maintenance stocking of tiger muskie and channel catfish to maintain popular fisheries. Evaluate channel catfish stocking rates and return to creel to maximize efficiency of the program.

6. Objective: Improve fishing and boating access.

Program: Develop or enhance fishing and boating access areas through easements, cooperative agreements or purchase. Utilize funds to acquire access to the canyon reach of the Kootenai River and to build fishing docks for shoreline anglers.

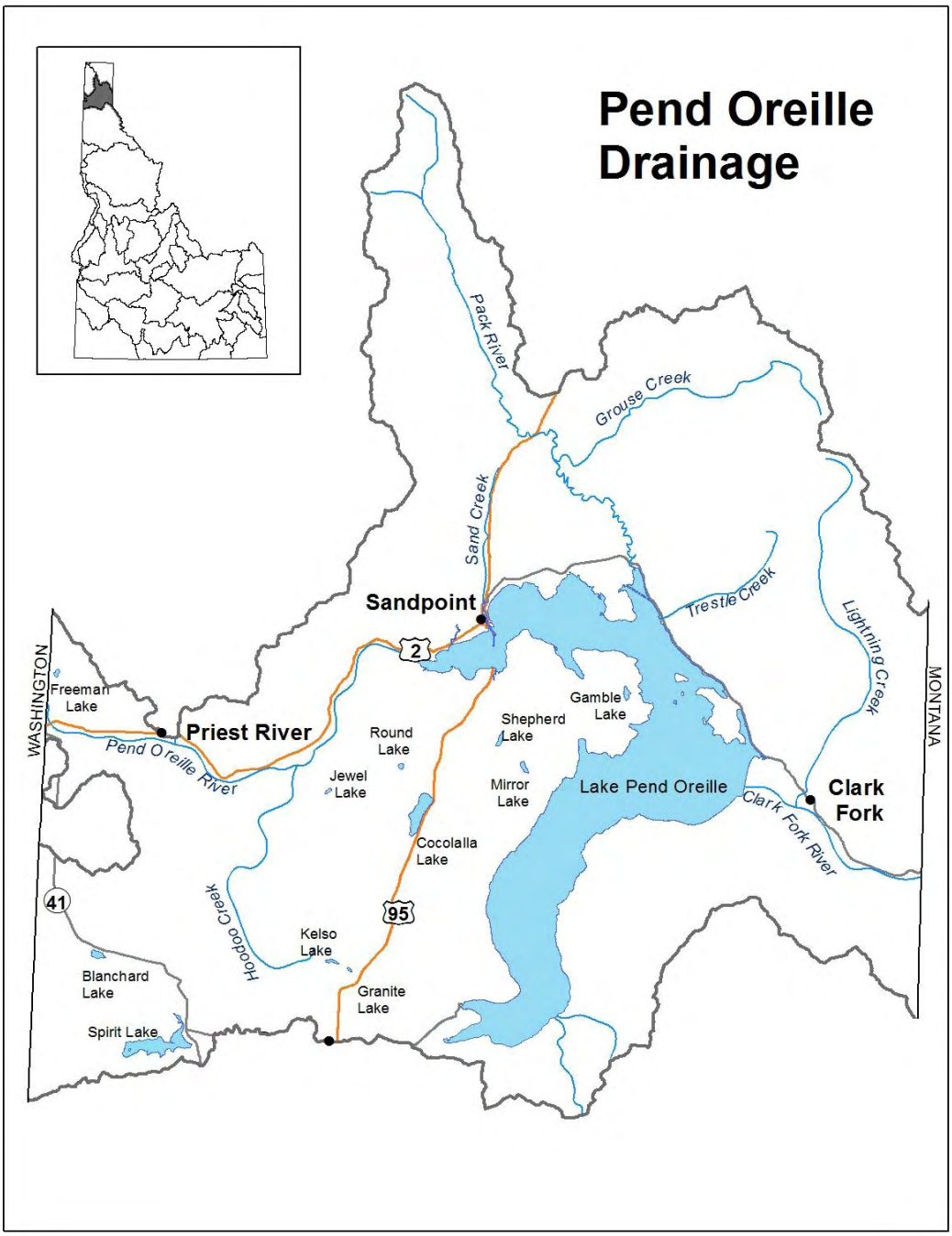
7. Objective: Provide diverse angling opportunities in alpine lakes

Program: Use westslope cutthroat trout for cutthroat trout stocking and sterile disease-free rainbow trout, and reserve some lakes for specialty fish (golden trout and grayling) only. Evaluate performance of sterile cutthroat trout to minimize potential impacts to native downstream genotypes.

Program: Periodically evaluate stocking rates to optimize growth and catch rates.

Drainage: Kootenai River					
Water	**Miles/acres**		**Fishery**		**Management Direction**
		Type	Species present	Management	
Kootenai River from Montana border to Canadian border	66/	Coldwater	Redband rainbow trout Cutthroat trout	Quality	Work toward obtaining more favorable flows and restore productivity to improve habitat conditions for salmonids. Utilize restrictive regulations to improve the trout fishery.
			Kokanee Mountain whitefish	General	Improve angler access.
			Bull trout White sturgeon Burbot	Conservation	Maintain harvest closure in river and tributary streams. Determine critical habitat and improve conditions. Identify factors that are causing depressed populations and implement recommendations from BPA-funded research.
Accessible tributaries to Kootenai River	130/	Coldwater	Redband rainbow trout Cutthroat trout Brook trout Kokanee	General/quality	Enhance trout production for the Kootenai River by identifying critical streams, improving spawning and rearing habitat conditions, and modifying regulations if necessary. Work with the British Columbia and Kootenai Tribe fishery managers to restore kokanee.
			Bull trout	Conservation	Maintain harvest closure in tributary streams. Determine critical habitat and improve conditions.
Inaccessible tributaries to Kootenai River	300/	Coldwater	Rainbow trout Cutthroat trout	Wild	Maintain limited consumptive fishery for small resident trout.
			Brook trout	General	Maximize harvest for brook trout to provide a consumptive fishery and to reduce competition with cutthroat trout.
Moyie River	25/	Coldwater	Rainbow trout Cutthroat trout	Wild	Maintain fishery for wild trout with restrictive regulations. Monitor fishery and evaluate the need for more restrictive regulations.
			Brook trout	General	Maximize harvest for brook trout to provide a consumptive fishery and to reduce competition with cutthroat trout.
Moyie River tributaries	35/	Coldwater	Rainbow trout Cutthroat trout	Wild	Maintain limited consumptive fishery for small resident trout. Seek ways to increase recruitment from tributary streams
			Brook trout	General	Maximize harvest for brook trout to provide a consumptive fishery and to reduce competition with cutthroat trout.

McArthur Reservoir	/200	Warmwater	Yellow perch Largemouth bass Pumpkinseed Rainbow trout Brook trout	General Wild General	Evaluate the effect of water level management on warmwater fish abundance and size. Evaluate effects of lake drawdowns on the quality fishery. Maintain limited consumptive fishery for trout. Seek ways to increase recruitment from tributary streams.
Smith, Brush, Bonner, Robinson, and Bloom lakes	/160	Mixed	Rainbow trout Largemouth bass Yellow perch Black crappie Bluegill Pumpkinseed Bullhead Channel catfish	General	Stock put-and-take rainbow trout to maintain the trout fishery. Enhance the diversity of the warmwater fishery with maintenance stocking of channel catfish in Smith Lake. Maintain access to Bloom Lake with an agreement with private landowners. Maintain restrictive regulations on largemouth bass in Robinson Lake to provide a quality bass fishery Consider Bonner Lake for burbot conservation culture.
Dawson, Perkins Lake	/95	Warmwater	Tiger muskie Largemouth bass Black crappie Yellow perch Bluegill Pumpkinseed Bullhead Channel catfish	Trophy General	Maintain tiger muskie stocking in Dawson Lake to provide a specialized trophy fishery.
Solomon, Sinclair lakes	/13	Coldwater	Rainbow trout	Put-and-take	Stock put-and-take rainbow trout to maintain the trout fishery.
Alpine lakes (19 stocked lakes in the Kootenai River drainage)	/260	Coldwater	Cutthroat trout Rainbow trout Brook trout Golden trout Grayling	General	Continue maintenance stocking of trout fry to provide fisheries that are consistent with lake productivity and angler pressure. Use westslope cutthroat trout for cutthroat trout stocking and disease-free sterile rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling) only. Do not stock lakes that are currently fishless in order to maintain some natural alpine lake ecosystems.


Pend Oreille Drainage
Pack River
Grouse Creek
Sand Creek
Sandpoint
Trestle Creek
Lightning Creek
MONTANA
WASHINGTON
Freeman Lake
Priest River
Pend Oreille River
2
Round Lake
Jewel Lake
Shepherd Lake
Gamble Lake
Mirror Lake
Lake Pend Oreille
Clark Fork
Clark Fork River
Cocolalla Lake
41
95
Hoodoo Creek
Kelso Lake
Blanchard Lake
Granite Lake
Spirit Lake

2. PEND OREILLE RIVER DRAINAGE

Overview

The Pend Oreille River drains about 24,200 square miles of land in western Montana and the Panhandle of northern Idaho. Most of the 2,133 square miles of the drainage within Idaho lies in Bonner County. Major tributaries of the Pend Oreille drainage include the Clark Fork, Flathead, Bitterroot, Blackfoot and St. Regis rivers in Montana and the Priest and Pack rivers and Lightning Creek in Idaho.

Lake Pend Oreille is the largest natural lake in Idaho covering 85,960 surface acres with a shoreline length of 111 miles. The glacial lake basin is deep and steep-sided with a maximum depth of 1,152 feet and mean depth of 538 feet. The combined surface area of Lake Pend Oreille and the Pend Oreille River above Albeni Falls Dam is 94,720 acres.

Historical overharvest, logging, farming, residential development, roading, the construction of hydroelectric dams, and introduced non-native species have all taken a toll on the native fish populations and habitat. Hydroelectric development began with Milltown Dam in 1907 and Thompson Falls Dam in 1913, isolating much of the drainage to migratory fish from Lake Pend Oreille. Cabinet Gorge dam was completed near the Idaho /Montana border in 1952, further reducing spawning and rearing habitat for adfluvial species. Downstream, near the Idaho/Washington border, Albeni Falls Dam was completed in 1952, profoundly altering the character of the Pend Oreille River and the lower reaches of the Clark Fork River. In addition, operations of Albeni Falls Dam have altered the seasonal variability in the level of Lake Pend Oreille. The impacts of Albeni Falls Dam on the Lake Pend Oreille fishery have been a primary focus of the mitigation program, and will continue to be in this planning period.

Westslope cutthroat trout, bull trout, pygmy whitefish and mountain whitefish are the only salmonids native to the Pend Oreille drainage in Idaho. Native cyprinids (minnows), cottids (sculpin), and catastomids (sucker) round out the mix of native species. The native game fish supported fisheries through the 1930's. Cutthroat trout were the most frequently caught species, with abundant harvest of 12 to16 inch fish. Large adfluvial bull trout were often targeted for harvest in tributary streams as well as the lake. Accounts of tributaries full of spawning cutthroat and bull trout were common in the late 1800s and into the early 1900s. A fisheries survey of the Pend Oreille River in the late 1800s also reported an abundance of native cutthroat and bull trout. Spawning runs of mountain whitefish historically supported a significant commercial fishery on Lake Pend Oreille.

For the latter half of the 1900's, Pend Oreille was primarily known for abundant kokanee and trophy rainbow and bull trout. During the winter flood of 1933, kokanee became established in Lake Pend Oreille by moving naturally into the system from Flathead Lake, Montana, where they had been stocked in 1916 from Lake Whatcom, Washington. Through the mid 1960's the adult population supported a sport and commercial fishery averaging one million fish. Kamloops rainbow trout (Gerrard strain) from Kootenay Lake, British Columbia, were introduced in 1941 and 1942. Kokanee were an ideal forage base for the piscivorous rainbow and bull trout, and the lake was soon known for its unique trophy fishery. A world record (37 lb.) rainbow trout was caught in 1947, and the world record bull trout (32 lbs.) was caught in 1949.

The kokanee population of Lake Pend Oreille declined from historic levels primarily as a result of habitat related impacts. Cabinet Gorge Dam blocked a run of tributary spawning kokanee and construction of the Cabinet Gorge Hatchery in 1986 was mitigation for dam related losses. At the same time, Albeni Falls Dam, modified the natural annual hydrograph to control spring floods and produce electricity, but in the process impacted key shoreline spawning areas for

kokanee. Starting in 1966 the lake was drawn down an additional five feet in most winters to generate hydropower. Deep winter drawdowns dewatered productive spawning beds.

Also in 1966, Mysis shrimp *Mysis diluviana,* were introduced into Lake Pend Oreille in an effort to enhance food for kokanee and were well-established by 1974. Unfortunately, the daily migration of Mysis to the depths of Lake Pend Oreille made them unavailable for kokanee forage, but Mysis provided an excellent food source for lake trout, which had been present in the system since 1925, but at insignificant levels. Ultimately, the impact of Mysis shrimp on the kokanee food supply is still not well understood. Although no direct competition for zooplankton has been shown at the current level of kokanee abundance, it is generally accepted that the carrying capacity for kokanee has declined and restoration to levels supporting an annual harvest of a million adults is not likely. However, restoration of a kokanee harvest fishery is still a management priority.

By the 1990's the kokanee population was less than 10% of historical levels. Beginning in 1996, modifications to winter pool management were implemented on a trial basis. While these appeared to benefit kokanee egg-to-fry survival, predation became the primary factor driving the population, and kokanee continued to decline. By 2000, native bull trout, trophy rainbow trout and an exponentially growing lake trout population threatened the total collapse of the kokanee population. The kokanee fishery was closed in 2000, and an aggressive fishery recovery effort was launched in 2006. While lake level management is still being implemented and evaluated, the primary thrust of the fishery recovery effort has been to improve kokanee survival through suppression of rainbow and lake trout. The effort began with removal of the limit on lake trout in 2000. A rod-and-reel commercial lake trout fishery was opened in 2003. Despite these measures, exploitation was still inadequate to control the expanding population. In 2006, commercial netters were contracted to use trap and gill nets to remove lake trout, and an aggressive angler incentive program (AIP) was initiated to pay anglers $15/head to harvest lake trout. A combination of angler and net harvest has resulted in annual exploitation on lake trout of 50-60% and total annual mortality of 60%. As a result, kokanee survival has improved.

Throughout the netting effort, minimizing bull trout by-catch has been a central component of program implementation. The USFWS has thus far concurred that netting is ultimately a benefit to the bull trout population through reduced predation and competition and that the action is consistent with the State's Section 6 permit. Using genetic analysis of captured bull trout, we have evaluated the potential impacts of netting at the local population level. To date, we've seen no evidence that weaker stocks of bull trout have been adversely impacted by netting. Each year, we have completed detailed analysis of the set location, sampling week, net design, and mesh size to determine how to best minimize bull trout by-catch and maximize lake trout removal. Initially, annual bull trout by-catch mortality was less than 150 fish, but as the netting effort has increased and the ratio of lake trout to bull trout has decreased, the annual by-catch mortality has increased to around 400. We expect this will continue to increase, as lake trout continue to decline, and the bull trout population responds. Based on the most recent population estimates, however, even a by-catch mortality of 400 bull trout equates to an annual exploitation of less than 2%, which is well below a level that would constitute a threat to the population. Ultimately, we expect to decrease the intensity of the netting effort, reducing bull trout by-catch mortality, while maintaining a suppressed lake trout population. We expect the resulting increase in bull trout survival will provide a population that allows resumption of some level of harvest in the sport fishery.

The Commission approved a commercial rod-and-reel fishery for lake trout on Lake Pend Oreille in 2002 as part of an ongoing effort to reduce lake trout numbers. Commercial anglers were restricted to normal sport fishing tackle, but were allowed to use as man rods as the

desired. Entry to the fishery was restricted to 10 licenses. In 2003, all 10 licenses were purchased, but by July 2012, only two anglers were still pursuing some type of commercial fishing activity. Strict Food and Drug Administration requirements for fish handling and processing and the lack of a large market for lake trout have limited participation. More recent rule changes allowing sport anglers unlimited rods on Lake Pend Oreille have largely made the commercial permit unnecessary, and the Department does not anticipate issuing commercial rod-and-reel permits for lake trout in the future.

Lake whitefish were introduced in Lake Pend Oreille in the 1890s and have been commercially fished in the Great Lakes for over 100 years. An evaluation of the lake whitefish population in Lake Pend Oreille in 2005 indicated the population could conservatively support a sustainable harvest of around 86,000 pounds annually. In 2008, the Fish and Game Commission added lake whitefish in Lake Pend Oreille to the list of species available for commercial fishing. The intent was to allow for the possibility that incidental harvest could help offset the cost of the commercial lake trout removal effort. Subsequent evaluation of the cost of the netting program and the potential value of whitefish by-catch indicated minimal benefits, and the interest in a commercial whitefish net fishery has diminished. However, some interest in a commercial rod-and-reel fishery persists. Though a commercial rod-and-reel fishery would have little or no benefits to the lake trout suppression program, which was the intent of designating lake whitefish as a commercial species, the population could likely support such a fishery if anglers were restricted to existing daily limits. We will evaluate the potential benefits and pitfalls of a commercial rod-and-reel fishery for lake whitefish in this planning period and recommend either implementation of a commercial fishery on a trial basis or removal of lake whitefish from the list of commercial species.

Another primary long-term objective for Lake Pend Oreille is recovery of the world-renowned trophy rainbow trout fishery. Because of the precarious status of the kokanee population and the significant predation pressure of rainbow trout, however, the AIP was also applied to rainbow trout. The hope was to temporarily suppress the rainbow trout population and provide kokanee with the best chance for recovery. Despite the incentives and outreach program exploitation estimates in 2010 and 2011 indicate rainbow trout harvest has not exceeded 30%. Fortunately the kokanee population has continued to recover. In the coming years, the rainbow trout fishery will be restored to trophy management. This will be achieved primarily through restoration of protective regulations, but in addition, we will evaluate the genetic composition of the existing rainbow stock. Genetic analysis of a sample of rainbow trout in 1984 indicated that Pend Oreille rainbow trout had changed from the original Kamloops rainbow introduced in 1941. About 16% of the genetic material was from coastal rainbow and 4% from cutthroat trout. About 50,000 pure strain Gerrard rainbow trout were stocked in the late 1980s and early 1990s to enhance the gene pool. As a follow up to the 1984 analysis and the subsequent stocking, we are in the process of collecting genetic samples from Lake Pend Oreille Gerrard rainbow trout and comparing them with samples collected from Kootenay Lake Gerrard rainbow trout. If necessary, actions may be implemented to improve the genetic composition of the Lake Pend Oreille rainbow trout population.

As we enter the current management planning period, the lake trout population is showing every indication of an over exploited population, and not coincidentally, the kokanee population is continuing to build. As a result of restoration efforts, collapse of the kokanee population has been avoided, and opportunities to restore kokanee and trophy rainbow trout fisheries are now available. We expect 2013 will be a milestone year for the lake trout suppression effort. That marks the first year that progeny from adults that were heavily netted on the spawning sites would recruit to the juvenile gillnets. The same year marks the onset of maturity for those age-classes that were intensively netted as juveniles. For these reasons, we hope and expect to

see a pronounced decline in catch rates of both juvenile and adult lake trout beginning in 2013. We anticipate continuing the AIP and netting programs for lake trout through the coming management period. A primary task will be to develop the long-term suppression strategy. This may involve indefinite continuation of the AIP and commercial netting efforts, but at decreased intensity. The lake trout population response in the next few years will dictate the necessary level of active suppression efforts.

Successful lake trout suppression is not only key to recovery of the kokanee and rainbow fisheries, but is critical to conservation of the native cutthroat and bull trout populations. The loss of adfluvial bull trout following lake trout invasions is well-documented throughout the range of bull trout. Similarly, recovery of adfluvial cutthroat will be limited if lake trout suppression efforts fail. Despite declines over the past century, fishery sampling efforts in Pend Oreille tributaries indicate cutthroat trout are widely distributed with densities stable over the past three decades. Nevertheless, the adfluvial population is believed to be significantly below historical levels and harvest has been progressively restricted. Catch-and-release rules were applied to cutthroat trout throughout the drainage (with the exception of lowland lakes and alpine lakes) in 2011. Fortunately, there are significant efforts to correct habitat related problems as well. The relicensing of Avista's Cabinet Gorge and Noxon Rapids dams on the Clark Fork River in 1999 provides 45 years of mitigation funding through the Clark Fork Settlement Agreement (CFSA) for habitat acquisition and enhancement in Idaho tributaries to Lake Pend Oreille. The mitigation program is a key component to maintaining and improving fishery resources in the drainage. In addition to habitat conservation and restoration activities, the program provides funding for research activities that will guide native fish conservation efforts.

Currently, neither Albeni Falls, nor Cabinet Gorge dams have fish passage facilities, although adult bull trout capture and transport has been occurring annually at Cabinet Gorge during the last planning period. Recently, an agreement has been reached for design and construction of fish passage facilities at both Cabinet Gorge and Noxon Rapids dams to restore access for bull trout to spawning and rearing habitat in Montana. Construction of passage facilities will begin during this management planning period. Though both adfluvial cutthroat and bull trout would likely benefit, the state of Montana has resisted passage of cutthroat trout, citing concerns about diseases and introgression. IDFG supports passage of both cutthroat and bull trout to historical habitat and will attempt to address the concerns expressed by the State of Montana. Consideration is being given to providing fish passage at both the Corp's Albeni Falls Dam and the Pend Oreille Utility District's Box Canyon Dam on the Pend Oreille River. IDFG supports the efforts to enhance bull trout connectivity throughout the basin, and has worked cooperatively with project proponents to provide bull trout for telemetry-based movement analysis below both dams. Considering the potential for upstream movement of undesirable species, the Department does not support facilities that offer volitional passage.

In addition to fish passage facilities, Avista will begin development of mitigation measures to address high levels of total dissolved gases (TDG). Levels exceeding state standards are common during spring runoff below Cabinet Gorge Dam. Fish exposed to high TDG (in excess of 110% of saturation) can suffer gas bubble disease and high mortality. During the record flood of 1997, TDG levels in excess of 130% were measured in the Clark Fork River, through the north end of Lake Pend Oreille, and were in the range of120-130% in the Pend Oreille River down to Albeni Falls Dam. Avista has reached an agreement with the State of Idaho to mitigate for TDG by making modifications to the dam and by funding projects that benefit fishery resources that impacted in the Clark Fork River and Lake Pend Oreille.

The 26 miles of the Pend Oreille River impounded by Albeni Falls Dam is greatly influenced by

up to an 11.5 foot annual winter drawdown. This reach is a warm slack water reservoir from June through September and a cold flowing river from October through May. For over 40 years, artificially high water has eliminated the natural vegetative cover along the shoreline, causing severe erosion and additional impacts to fish habitat. Habitat conditions have limited establishment of either a good trout or warmwater fishery. Higher winter pool levels produced better overwinter survival and an improved fishery for warmwater species such as largemouth bass and black crappie. Smallmouth bass have become a predominant species in recent years. In a 1992 electrofishing survey throughout the Pend Oreille River they were virtually non-existent. By 2005 the represented about 6% of the species composition, and by 2010, that number had increased to 19%. We've seen a concurrent decrease in northern pikeminnow and redside shiner. Largemouth bass may also be displaced by smallmouth bass. More recently walleye have invaded the Pend Oreille system from introductions in Clark Fork River reservoirs in Montana. We've implemented a Fall Walleye Index Netting (FWIN) program to monitor population distribution and abundance every three to four years throughout both the Pend Oreille River and the lake. Initial evaluations indicate a population dominated by a single age class, and we did not see evidence of steadily increasing recruitment. Depending on population trajectories, smallmouth bass and walleye may become problematic predators on native salmonids, especially depressed populations of westslope cutthroat and bull trout.

Spirit Lake has a surface area of 1,477 acres and a maximum depth of about 90 feet. There are many other lowland lakes in the drainage range from 10 to 800 surface acres and numerous alpine lakes in the Selkirk and Cabinet mountains. The successful establishment of kokanee in Spirit Lake in 1937 created one of the most productive kokanee fisheries in Idaho, producing the most pounds of kokanee harvested per acre of lake. In the 1990s, weak age classes of mature kokanee were overharvested, primarily by ice anglers, resulting in a marginal summer troll fishery. Fishing regulations were modified in 2000 to reduce kokanee harvest to a 15 fish limit (from 25) and kokanee fry have been stocked as needed to enhance recruitment. Recently, the kokanee population has been robust, with relatively consistent recruitment, and stocking has not been necessary.

In addition to Spirit Lake, ten additional lowland lakes in the region provide a diversity of angling effort (Kelso, Little Round, Granite, Cocolalla, Round, Stoneridge, Jewel, Shepherd, Gamble, and Mirror lakes). All of these lakes are managed for with relatively simple regulations and liberal harvest opportunity. Most are stocked with catchable rainbow trout, though Cocolalla Lake is stocked with fingerling rainbow trout and Mirror is stocked with fingerling kokanee. Periodic lake surveys and return to creel evaluations will help make most effective use of limited hatchery fish resources in the coming management period.

Thirteen alpine lakes in the lower Selkirk and Cabinet ranges are stocked with cutthroat trout fry on a rotating basis. Stocking densities have been adjusted to maximize fish growth at a given lake elevation. IDFG will make every effort to provide sport fisheries in these popular lakes without adverse impacts to native fish populations. Only cutthroat trout fry are used to stock mountain lakes to reduce potential impacts to native fish populations downstream. Sterile fish will be used when techniques are perfected for westslope cutthroat trout. Some lakes, particularly in the Lightning Creek drainage, function as headwater source populations of brook trout. In 2010, Porcupine Lake, in the Lightning Creek drainage was treated to eradicate brook trout. The treatment was successful, and effectively removed the hybridization risk of brook trout in the entire Porcupine Creek drainage. The lake has been restocked with westslope cutthroat trout to provide a sport fishery. We will continue to evaluate opportunities to remove threats to native cutthroat and bull trout associated with non-native brook trout populations. There are many alpine lakes located in the Pend Oreille drainage that currently do not support

fish, either due to natural conditions or because they are no longer stocked. We will maintain these lakes in a fishless condition in order to maintain some natural alpine lake ecosystems for amphibians and invertebrates.

Objectives and Programs

1. Objective: Restore a kokanee population capable of supporting a consistent kokanee harvest fishery and a trophy rainbow trout fishery.

   Program: Work with stakeholders to reduce the lake trout population to a level where lake trout are no longer threatening the kokanee population and priority native and sport fisheries.

   Program: Continue the Bonneville Power Administration (BPA) research program to evaluate kokanee spawning habitat limitations, and implement and evaluate other mitigation efforts.

   Program: Evaluate hatchery kokanee fry stocking strategies to better determine how to meet kokanee fishery recovery plan goals.

   Program: Evaluate food web and nutrient dynamics and the implications to kokanee recovery.

   Program: Monitor kokanee population to evaluate response to spawning habitat development and predator management actions.

   Program: As kokanee recover, progressively restore harvest opportunity and implement management strategies to restore the trophy rainbow trout fishery.

   Program: Monitor rainbow trout population dynamics to evaluate response to management actions.

   Program: Conduct periodic creel surveys to monitor kokanee and rainbow trout effort, catch and harvest.

   Program: Identify tributary sources of non-Gerrard strain rainbow trout that negatively influence the quality of the Lake Pend Oreille fishery. Remove undesirable strains of rainbow trout as appropriate.

2. Objective: Maintain or enhance existing native westslope cutthroat and bull trout populations.

   Program: Minimize bull trout by-catch mortality related to the lake trout netting program through use of adopted best management practices and evaluate impacts the netting program on the bull trout population.

   Program: Monitor status of bull trout populations through redd counts, in-lake population estimates, and/or juvenile trend surveys in tributaries.

   Program: Restore bull trout harvest opportunity when population achieves federal recovery plan criteria.

Program: Preserve populations of cutthroat and bull trout by removing non-native species and/or installing barriers in spawning and rearing tributaries where practical.

Program: Work with Avista mitigation program, land owners, and partner agencies to address habitat limitations where feasible through conservation easements, acquisitions, and habitat restoration projects.

Program: Complete Avista funded research on the Clark Fork River on adfluvial westslope cutthroat trout to identify options for fish passage above Cabinet Gorge Dam. Meet with Montana Fish Wildlife and Parks and Avista to discuss the benefits and risks of passing fish above Cabinet Gorge Dam prior to implementing a fish passage program for cutthroat trout.

Program: Monitor abundance, distribution and genetic integrity of cutthroat trout in tributaries to Lake Pend Oreille (LPO) and the Pend Oreille River to evaluate where adfluvial and resident fish are still present, where non-native salmonids pose risks, and where habitat is limiting.

Program: Identify and implement mitigation opportunities to replace lost fishing opportunities resulting from construction and operation of the Albeni Falls Dam.

3. Objective: Evaluate the ecological effects of non-native species on desirable fish species and reduce impacts where feasible and practical.

Program: Continue monitoring walleye and smallmouth bass population trends to evaluate the status, distribution and potential impact in the Pend Oreille system.

Program: Estimate angler exploitation of smallmouth bass and walleye to evaluate regulations as a means of managing populations.

Program: Provide opportunity and encourage exploitation of walleye and smallmouth bass as appropriate.

4. Objective: Maintain an average return to creel of hatchery put-and-take trout of at least 30%.

Program: Periodically evaluate rate of return, catch rate, and angler use on put-and take trout fisheries through a routine data collection system.

Program: Adjust rate, timing or location of trout stocking to improve rate of return to the creel.

Program: Inform anglers of hatchery supported trout fishing opportunities through maps, brochures, media coverage and signing to improve return to the creel.

5. Objective: Provide diverse angling opportunities in lowland lakes.

Program: Continue periodic surveys of fish populations to monitor population status and fish growth in relation to physical and biological conditions and fishing rules.

Program: Maintain maximum harvest opportunity for warmwater species and stocked trout in most lakes.

Program: Continue maintenance stocking of tiger muskie and channel catfish to maintain popular fisheries. Evaluate channel catfish stocking rates and return to creel to maximize efficiency of the program.

6. Objective: Provide diverse angling opportunities in alpine lakes

Program: Use westslope cutthroat trout for cutthroat trout stocking and sterile disease-free rainbow trout, and reserve some lakes for specialty fish (golden trout and grayling) only. Evaluate performance of sterile cutthroat trout to minimize potential impacts to native downstream genotypes.

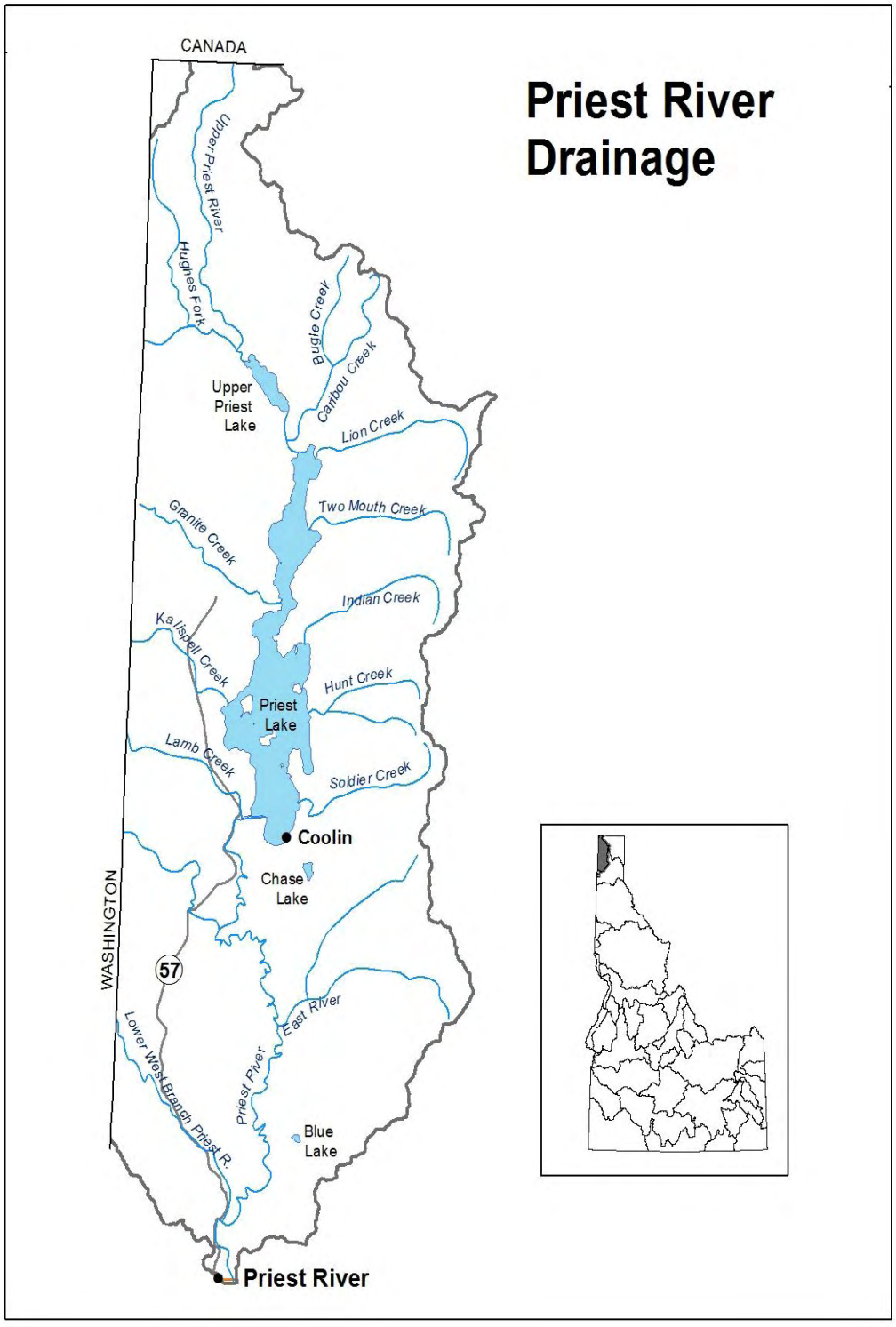
Program: Periodically evaluate stocking rates to optimize growth and catch rates.

Drainage: Pend Oreille River					
Water	**Miles/acres**		**Fishery**		**Management Direction**
		Type	Species present	Management	
Lake Pend Oreille and tributaries	200/85,960	Mixed	Bull trout	Conservation/ Trophy	No harvest allowed. Catch-and-release, only. Acquire and protect important habitat. Educate anglers to reduce unintentional harvest of bull trout, and increase enforcement to reduce poaching and remove non-native fishes that compete directly with bull trout. Work with Avista and USFWS to develop permanent fish passage facility over Cabinet Gorge Dam. Utilize BMP's to minimize by-catch of bull trout in netting program.
			Cutthroat trout	Quality/Wild	Maintain restrictive regulations on the lake and tributary streams used by adfluvial fish to maximize production of wild fish for the lake.
			Kokanee	Conservation	Provide limited harvest fishery as population allows. Continue spawning habitat restoration efforts to re-establish wild kokanee. Continue hatchery enhancement efforts for kokanee.
			Rainbow trout	General/Trophy	Progressively enhance the rainbow trout population by modifying regulations as the kokanee population recovers. Complete genetic assessment of rainbow population and implement limited stocking of pure strain Gerrard rainbow from Kootenay Lake, B.C. to improve genetics if warranted.
			Lake trout	Suppression	Utilize angler incentive programs and commercial netting to reduce lake trout population. Develop long-term maintenance plan to keep lake trout population suppressed.
			Brook trout Lake Superior whitefish Mountain whitefish Brown trout Walleye Largemouth bass Smallmouth bass Northern pike Black crappie Yellow perch	General	Where practical, remove brook trout from tributaries or alpine lakes where they pose a threat to cutthroat and bull trout. Maintain existing warmwater fisheries where they will not interfere with salmonid management programs. Encourage harvest of smallmouth bass and walleye to reduce predation on native salmonids and competition with other sportfish. Continue to monitor developing walleye population.

Clark Fork River and tributaries	11/	Coldwater	Bull trout	Conservation/ Trophy	No harvest allowed. Catch-and-release, only. Acquire and protect important habitat. Educate anglers to reduce unintentional harvest of bull trout, and increase enforcement to reduce poaching and remove non-native fishes that compete directly with bull trout. Work with Avista and USFWS to develop permanent fish passage facility over Cabinet Gorge Dam. Utilize BMP's to minimize by-catch of bull trout in netting program.
			Cutthroat trout	Quality/Wild	Maintain restrictive regulations on the lake and tributary streams used by adfluvial fish to maximize production of wild fish for the lake.
			Kokanee	Conservation	Provide limited harvest fishery as population allows. Continue spawning habitat restoration efforts to re-establish wild kokanee. Continue hatchery enhancement efforts for kokanee.
			Rainbow trout	General/Trophy	Progressively enhance the rainbow trout population by modifying regulations as the kokanee population recovers. Complete genetic assessment of rainbow population and implement limited stocking of pure strain Gerrard rainbow from Kootenay Lake, B.C. to improve genetics if warranted.
			Brook trout Brown trout Walleye Largemouth bass Smallmouth bass Northern pike Black crappie Yellow perch	General	Where practical, remove brook trout from tributaries or alpine lakes where they pose a threat to cutthroat and bull trout. Maintain existing warmwater fisheries where they will not interfere with salmonid management programs. Encourage harvest of smallmouth bass and walleye to reduce predation on native salmonids and competition with other sportfish. Continue to monitor developing walleye population.
Pend Oreille River and tributaries	26/8,760	Mixed	Cutthroat	Quality/Wild	Maintain restrictive regulations on the lake and tributary streams used by adfluvial fish or managed for adfluvial restoration to maximize production of wild fish for the lake.
			Rainbow trout Brown trout Cutthroat trout Walleye Largemouth bass Smallmouth bass Black crappie Yellow perch Bluegill Pumpkinseed Bullhead	General	Educate anglers and increase enforcement to minimize illegal harvest and reduce hooking mortality. Modify water level management of Albeni Falls Dam to reduce impacts on fish habitat. Maintain existing warmwater fisheries where they will not interfere with salmonid management programs. Encourage harvest of smallmouth bass and walleye reduce predation on native salmonids and competition with other sportfish. Continue to monitor developing walleye population. Work with Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, Kalispel Tribe, U.S. Forest Service and Corps of Engineers to evaluate establishing fish passage at Albeni Falls Dam on the Pend Oreille River.

Hoodoo Creek	11/	Coldwater	Brown trout Brook trout Rainbow trout	General	Work with riparian landowners and angling groups to restore in-stream and riparian habitat and allow fishing access through private property.
Kelso, Little Round, Granite lakes	/100	Mixed	Rainbow trout Largemouth bass Black crappie Yellow perch Bluegill Pumpkinseed Bullhead	General	Manage with simple rules, to provide a consumptive fishery oriented towards family fishing. Provide a trout fishery in Kelso Lake by stocking put-and-take rainbow trout. Out-migrants from Kelso Lake provide limited trout fisheries in Little Round and Granite lakes, but water quality limitations preclude put-and-take trout stocking.
Cocolalla, Round, Blanchard (Stoneridge Reservoir), Jewel lakes	/990	Mixed	Rainbow trout Cutthroat trout Brook trout Brown trout Largemouth bass Black crappie Yellow perch Bluegill Pumpkinseed Channel catfish Bullhead	General	Maintain trout fisheries in Round, Jewel and Blanchard lakes by stocking put-and-take rainbow trout. Maintain trout fisheries in Cocolalla Lake by stocking fingerling cutthroat and rainbow trout. Monitor the bluegill and perch population in Jewel Lake to see if additional warmwater predators will be needed to improve the warmwater fishery. Enhance the diversity of the warmwater fishery in Cocolalla and Jewell lakes with maintenance stocking of channel catfish.
Spirit Lake and tributaries	10/1,477	Mixed	Kokanee Rainbow trout Cutthroat trout Brook trout Largemouth bass Northern pike Black crappie Yellow perch Bluegill Pumpkinseed Bullhead	General	Maintain a yield kokanee fishery. Monitor kokanee population abundance to determine if kokanee management goals are being met. Provide a trout fishery by stocking fingerling cutthroat trout. Maintain the existing fishery for warmwater species.
Shepherd and Gamble lakes	/250	Warmwater	Tiger muskie Largemouth bass Black crappie Yellow perch Bluegill Pumpkinseed Bullhead	Trophy General	Maintain tiger muskie stocking to provide specialized trophy fishery. Maintain the existing fishery for warmwater species.
Mirror Lake	/90	Coldwater	Rainbow trout Kokanee	General	Maintain a trout only fishery by stocking catchable rainbow trout and kokanee fry.

Alpine Lakes (13 in the Pend Oreille River drainage)	/150	Coldwater	Cutthroat trout Rainbow trout Brook trout Golden trout Grayling	General	Provide fisheries that are consistent with lake productivity and angler pressure. Use westslope cutthroat trout for cutthroat trout stocking and sterile disease-free rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling) only. Do not stock lakes that are currently fishless in order to maintain some natural alpine lakes.


Priest River Drainage
CANADA
Upper Priest River
Hughes Fork
Bugle Creek
Caribou Creek
Upper Priest Lake
Lion Creek
Two Mouth Creek
Granite Creek
Indian Creek
Kalispell Creek
Hunt Creek
Priest Lake
Lamb Creek
Soldier Creek
Coolin
Chase Lake
WASHINGTON
57
East River
Lower West Branch Priest R.
Priest River
Blue Lake
Priest River

3. PRIEST RIVER DRAINAGE

Overview

Priest Lake and Upper Priest Lake are glacial lakes located in the northwest corner of the Idaho Panhandle in the Selkirk Mountains amid a coniferous forest watershed of 600 mi^2. Priest Lake has about 62 miles of shoreline, a surface area of about 23,360 acres and a maximum depth of 369 ft. Upper Priest Lake has about 8 miles of shoreline, a surface area of about 1,400 acres and a maximum depth of 103 ft. Upper Priest Lake is bathtub-shaped, being long and narrow with steep walls and a flat bottom where Priest Lake is more irregular in shape. The level of both lakes is maintained at 2,438 ft in elevation from the end of spring runoff until mid-October by a small dam at the outlet of Priest Lake. Summer surface temperatures of Upper Priest Lake are consistently lower than Priest Lake, with maximum temperatures of 70°F and 75°F, respectively.

Upper Priest Lake is connected to Priest Lake by a river channel known as the Thorofare. The Thorofare is about 2 miles long, about 230 ft wide and generally 5-10 ft deep. At its outlet into Priest Lake, the Thorofare is about 3 ft deep at summer pool level. When the lake levels reach low pool level, depth of the Thorofare at its outlet is <6 inches deep, impeding nearly all boat traffic. During summer months, the Thorofare receives heavy boat traffic.

Historically, Priest and Upper Priest lakes contained three native sport fishes, westslope cutthroat, bull trout and mountain whitefish. The cutthroat fishery was the most popular with many accounts of 20-fish limits. Most cutthroat trout in Upper Priest Lake and Priest Lake were adfluvial and matured at age-5, at sizes from 14-20 inches. Spawning begins in April and generally ends by mid-June. Most juvenile cutthroat trout in the Priest drainage remain in the streams two or three years before migrating to a lake. Bull trout were also relatively abundant and popular sport fish in both lakes with most of the major tributaries supporting spawning runs of over 100 adults. Annual harvest of adult bull trout from streams exceeded 600 fish during the 1950s. In the lakes, annual harvests between 1,000 and 2,000 bull trout were the norm through the 1970s.

Kokanee were introduced in the 1930s and 1940s and quickly became the most abundant game fish, replacing cutthroat as the most popular fishery. The kokanee provided an abundant food source for bull trout and a high yield sport fish for anglers. Through 1971, fishermen harvested an average of 64,000 kokanee a year at catch rate of 1.2 fish per hour. During this period, kokanee supported most of the 15,000 angler days observed on both lakes. Though lake trout have been present in the system since being introduced by the U.S. Fish Commission in 1925, they were only occasionally caught, and were a minor component of the fishery community and trophic structure.

The popular and productive cutthroat, bull trout, and kokanee fisheries that lasted through the 1970's abruptly collapsed in the early 1980's. Though declines in the cutthroat and bull trout populations was likely exacerbated by overharvest, competition with non-native species, and degradation of spawning habitat, there is little doubt that the ultimate collapse was a result of the introduction of Mysis shrimp and the subsequent explosion of the lake trout population. Mysis shrimp were introduced into Priest Lake in 1965 to provide a supplemental food item for kokanee. Though some kokanee fed on Mysis shrimp and reached trophy size, as evidenced by the state record (6 lb 9.5 oz) caught in 1975, Mysis shrimp were an even greater boon to juvenile lake trout. Prior to the establishment of Mysis shrimp, lake trout recruitment was minimal, but beginning in the 1970's the lake trout population grew exponentially. With more and more lake trout feeding on kokanee, and survival of young kokanee declining, the kokanee

population collapsed. By 1978, only 4,500 kokanee were harvested, and by 1983 it was less than 100. In the same period, cutthroat trout harvest plummeted from over 2,500 in 1978 to just over 100 in 1983. Cutthroat harvest was closed on both lakes in 1992. The creel surveys also reflected the bull trout population decline. Harvest in Priest Lake, which peaked at over 2,300 in 1978, was less than 100 in 1983, and bull trout were closed to harvest in 1984. By 1985, adfluvial bull trout runs into tributaries of Priest Lake were essentially gone, and the only strong population of bull trout occurred in the Upper Priest Lake basin.

Through the 1980s millions of kokanee fry and hundreds of thousands of cutthroat fingerlings were stocked into Priest Lake and its tributaries in an effort to overcome the predation impact of lake trout. The efforts were unsuccessful. The fishery shifted from a diverse yield and trophy fishery to one dominated by lake trout. Though popular with some anglers, overall participation in the fishery declined 30-50%, despite a nearly tripling of the area's human population during the same period. In 2003, 99% of fishing effort was for lake trout, but total effort was only about 48,000 hours, compared to 96,000 hours in 1956. The quality of the lake trout fishery (based on average size of lake trout) declined as anglers increasingly targeted lake trout and the prey base disappeared. In the 1970's the lightly harvested population (about 200 fish/year) resulted in lake trout averaging about 20 lbs, and the 57½ lb. state-record lake trout was caught in 1971. By 1983, annual harvest increased to almost 5,000, but average size declined to 22 inches and 4 lbs. Annual harvest was nearly 14,000 lake trout by 1994 and 30,000 lake trout by 2003. The mean weight of angler-caught lake trout in 2003-2004 was 2.1 lbs. Despite the increase in the number of lake trout harvested, exploitation (based on several years of tagging data) has remained very low, at about 8%.

The low exploitation rate is particularly significant for two reasons. First, exploitation less than 10% is well below a harvest rate needed to reduce the lake trout population. A sustained exploitation rate in excess of 40-50% is necessary to significantly reduce the lake trout population through over-harvest. Second, the low exploitation has tremendous implications for any attempts to improve the size structure of lake trout with fishing regulations. Since the 1980's, IDFG has implemented a variety of regulations in response to the declining size of lake trout. Restricting harvest, however, had little impact. The decrease in size structure is a function of poor growth rates rather than over-exploitation. Though lake trout grow well to 14-16 inches feeding on Mysis shrimp, growth rates of mature lake trout (18-20 inches) are typically less than ½ inch per year. Without abundant prey fish in the system, growth rates are insufficient to produce many trophy size (over 39 inches) or even preferred size (over 26 inches) fish, regardless of regulations. The population characterized by lots of older age classes, but with few of the older fish achieving quality size.

Since the 1980's when lake trout became dominant in Priest Lake, IDFG policy has been to manage a lake trout fishery in Priest Lake, and focus native fish conservation efforts on Upper Priest Lake. Tributaries in the Upper Priest Lake basin have the greatest potential to support large numbers of cutthroat trout and bull trout because they support the most miles of good steam habitat with the fewest number of brook trout. Lake trout were not known to be present in Upper Priest Lake until the mid-1980s but became well established in the 1990's through immigration from Priest Lake through the Thorofare. Since 1998, IDFG has implemented a lake trout gillnetting program in Upper Priest Lake, generally removing from 2,000 to 5,000 lake trout annually. Despite these efforts, lake trout have repopulated the lake each year through immigration and reproduction from within. For this reason, gillnet efforts in Upper Priest Lake have, at best, maintained the population at a constant level over the last few years.

It has become apparent that lasting suppression is not feasible without somehow controlling immigration through the Thorofare. Consequently, much of the native fish conservation effort in

the past previous planning period has focused on means of blocking lake trout in the Thorofare, including, electric weirs, and floating weirs, and strobe lights. Unfortunately, none of these alternatives have proven suitable in light of logistical and/or social constraints. Most recently, IDFG has contracted with Hickey Brothers Fisheries using funding from the USFWS and Kalispel Tribe to continue annual gillnetting in Upper Priest Lake in May or June, and deploy channel spanning trapnets in the Thorofare in September through early November. Though we've been able to intercept 250-350 lake trout each fall, completely blocking lake trout immigration has proven more difficult than expected. Lake trout are not easily directed into the trap, and any gap between the net and the streambed and/or the gap required to allow boat passage create opportunities for lake trout to avoid the net. In summary, the gillnetting and trap netting efforts are marginally effective. Bull trout redd counts have remained stable over the past 10 years, and depletion estimates indicated 70-80% of the population is removed each year. Unfortunately, the depletion is only short term, and the current approach requires an annual (and perpetual) commitment. Currently, the combined spring and fall netting efforts cost approximately $100,000 annually, not including the commitment of staff time and diversion away from other activities. Considering there is no secure, long-term funding source, the current management program can only be viewed as a short-term solution.

The efforts over the past six years reveal that, ultimately Priest and Upper Priest lakes will necessarily be managed as one system. One alternative is to allow lake trout to dominate both systems, which would likely mean the functional extinction of bull trout and further decline of cutthroat trout in Upper Priest Lake. Despite an atypical surge in the kokanee population in 2011, it seems highly unlikely the population will recover to level that would provide a consistent fishery. More likely, survival will be highly variable, and the population could be expected to fluctuate around a level with a spawner escapement of few thousand fish.

The second alternative is to aggressively suppress lake trout to a level where bull trout, cutthroat trout and kokanee populations could expand and begin to provide a fishery again. This could include activities such as extensive gill netting, trap netting, or an angler incentive program to harvest lake trout similar to Lake Pend Oreille. After six years of aggressive lake trout suppression efforts in Lake Pend Oreille, we've seen a significant decline in lake trout abundance and an increase in kokanee survival. Annual lake trout exploitation estimates have ranged from 40-70%. The progress on Pend Oreille strongly suggests lake trout could be suppressed in Priest Lake to the point where management of other species is an alternative.

Angler opinions about management direction for Priest Lake have been polarized since the collapse of kokanee in the late 1970s and domination of the fishery by lake trout. Many anglers would like to see restoration of a native cutthroat trout and bull trout fishery and a kokanee sport fishery. Other anglers prefer managing the fishery for lake trout. An angler opinion survey conducted in 2006 on management of the Priest Lake fishery showed a divided public with 48% of respondents strongly or somewhat agreeing with attempt to restore native cutthroat and bull trout and a kokanee fishery by aggressively suppressing lake trout in both lakes. More recently, a random angler opinion mail survey in 2012 showed a very similar result, with 45% of respondents supporting efforts to suppress lake trout.

The public scoping effort made apparent not only the near-even split in public opinion, but the trouble many anglers and stakeholders have with existing uncertainties and unanswered questions about population dynamics of both lake trout and kokanee in Priest Lake. The unanticipated strong year-class of kokanee spawners in 2011 has convinced many that a balance between kokanee and lake trout is feasible. Recent modeling predictions from Blue Mesa Reservoir in Colorado have contributed to that belief. Finally, despite the success of the lake trout suppression effort on Lake Pend Oreille, there is still skepticism with many anglers

that such a program can bring back a kokanee fishery in the presence of Mysis shrimp. In addition to the biological uncertainties are questions regarding the ability to secure the necessary funding to embark on a multi-year lake trout suppression efforts.

Though managing Priest and Upper Priest lakes as separate fisheries in perpetuity is not a practical long term solution, such an approach may be necessary while critical information is collected. Kokanee population monitoring, spawning ecology, a comprehensive age and growth analysis of lake trout, updated creel survey data, a lake trout population and exploitation estimate, and a better understanding of the interactions between Mysis shrimp, kokanee and lake trout are all evaluations that will take time, but provide critical information. An investigation of potential funding sources and likelihood of a long-term funding commitment is also a process that could potentially take years. As these evaluations are being completed, the efficacy of the Lake Pend Oreille lake trout suppression effort will become more conclusive.

In the 2013-2018 planning period IDFG will work with agency partners to collect information necessary to make an informed decision on how to manage Priest and Upper Priest lakes into the long-term future. At the same time, IDFG will work with stakeholders to develop an information-based decision making process that will culminate with a decision on how to manage the two lakes.

Smallmouth bass became established in Priest Lake in about 2003. Whether they were illegally introduced or migrated up the Priest River from the Pend Oreille River is undetermined. Over the past 10 years, they've become well-distributed throughout both lakes and are very abundant in many areas.

The Priest River below Outlet Dam provides little suitable year-round habitat for salmonids. Although the stream is characterized by ideal pools, log jams, and complex habitat, use by coldwater species is limited by mid-late summer water temperatures. Priest Lake outflow typically exceeds 70^{o} F, and cold water input from tributaries is minimal. A comprehensive survey of the mainstem in 2011 showed mountain whitefish were the most abundant game fish, followed by smallmouth bass, brown trout and then cutthroat trout. Overall, average densities were less than a tenth of the densities we see in the Coeur d'Alene River. A cooperative cutthroat telemetry project with the Kalispel Tribe may help identify, and ultimately protect or enhance, key thermal refuges. Habitat loss and competition from brook trout in tributary streams pose additional obstacles to cutthroat and bull trout recovery in the Priest River drainage. Historic logging activity reduced quantities of large woody debris and increased fine sediment, although logging practices have improved dramatically over the years. Brook trout, which are known to out-compete cutthroat trout and bull trout in lower gradient streams, or streams with high quantities of fine sediment, occur throughout the drainage and will likely reduce the carrying capacity for cutthroat trout and bull trout.

Objectives and Programs

1. Objective: Maintain native fish populations in Upper Priest Lake.

   Program: Continue yearly removal of lake trout with gill nets and other means to reduce lake trout numbers.

   Program: Estimate exploitation with gill net efforts and the benefit it is providing to bull trout and westslope cutthroat trout.

Program: Monitor bull trout population status by conducting redd counts in Upper Priest Lake tributary streams.

Program: Continue to utilize trap nets in the Thorofare as a means of capturing and removing lake trout immigrating to the upper lake if funding is available.

2. Objective: Develop a better understanding of lake trout population dynamics in Priest Lake.

Program: Assess growth rates of lake trout from diverse areas of the lake to determine variability in growth trajectories.

Program: Utilize telemetry to better understand spatial and temporal characteristics of lake trout spawning.

Program: Estimate total population through mark recapture effort, and update angler exploitation estimates using Tag-Your-It program.

3. Objective: Protect the cutthroat trout and bull trout fishery in Priest Lake.

Program: Preserve genetic integrity of wild, native cutthroat trout and bull trout by maintaining protective rules in the lake and tributaries.

Program: Work with the Forest Service, Kalispel Tribe, and Idaho Department of Lands to improve habitat conditions in tributary streams.

4. Objective: Develop a better understanding of kokanee population dynamics and limiting factors in Priest Lake.

Program: Continue monitoring historical kokanee spawning sites.

Program: Estimate kokanee age-class abundance, exploitation, growth rates, and survival through mid-water trawling, hydroacoustics, and angler creel surveys.

Program: Assess impacts of fall drawdown on kokanee spawning success.

Program: Maintain limited harvest of kokanee as long as harvest is not determined to be a factor limiting recovery of the population.

5. Objective: Seek opportunities to improve coldwater fishery in Priest River.

Program: Work cooperatively with Kalispel Tribe to improve understanding of cutthroat trout habitat use and movement patterns in the Priest River.

Program: Evaluate potential to increase coldwater refugia through habitat acquisition, conservation easements, or coldwater siphon.

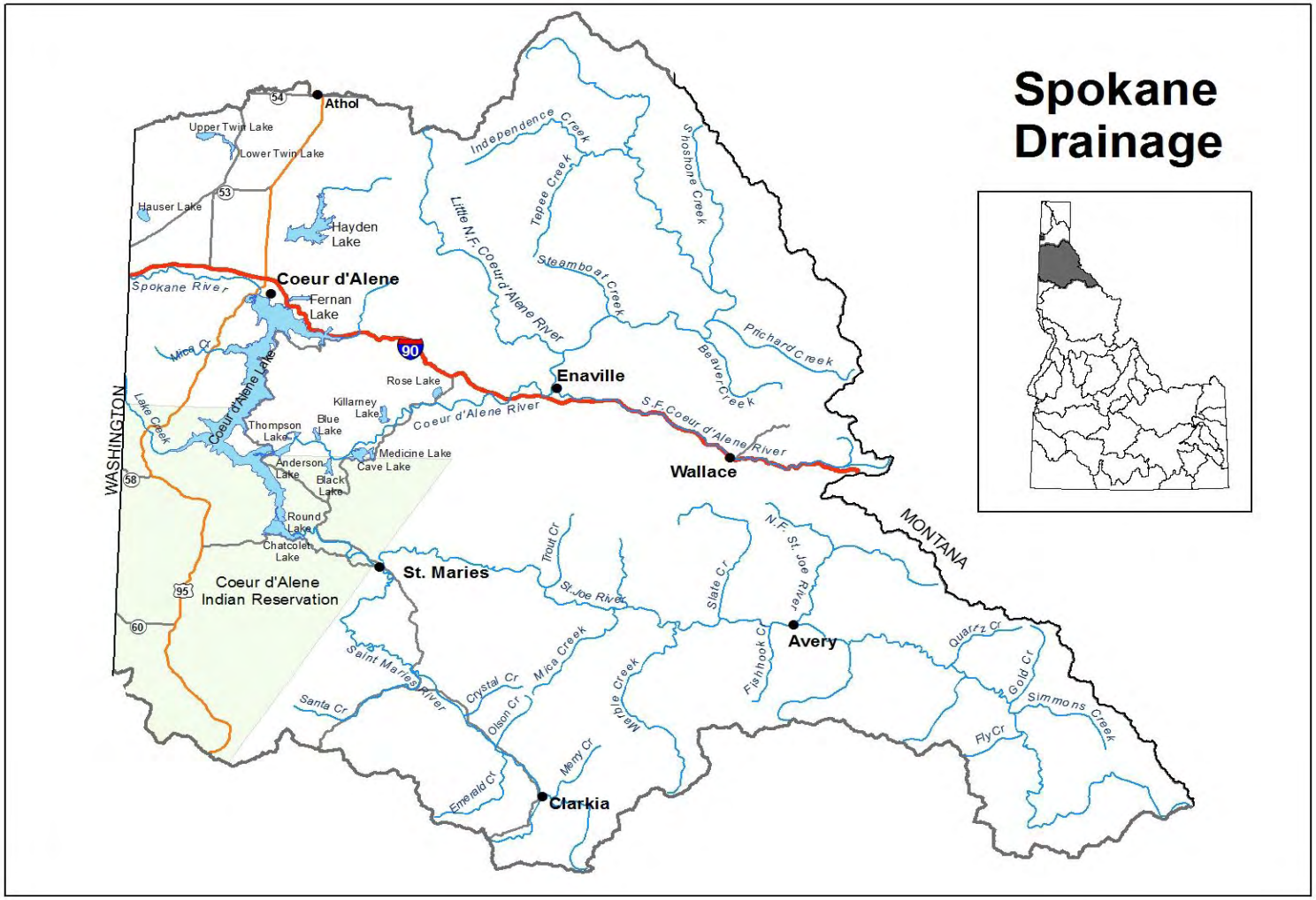
6. Objective: Provide diverse angling opportunities in lowland lakes.

Program: Continue periodic surveys of fish populations in Blue and Freeman lakes to monitor population status and fish growth in relation to physical and biological conditions and fishing rules. Manage some lakes for specific fish species in order to maximize angling opportunity.

Program: Provide liberal harvest opportunity for warmwater species and stocked trout.

Drainage: Priest River					
			Fishery		
Water	Miles/acres	Type	Species present	Management	Management Direction
Priest Lake and tributaries	100/23,360	Coldwater	Cutthroat trout Bull trout	Conservation	Manage Priest Lake and tributaries with protective regulations to preserve remaining populations of adfluvial cutthroat trout and bull trout.
			Kokanee	Quality	Conserve remnant kokanee population with harvest restrictions to provide stocks for rebuilding a kokanee fishery. Evaluate amendments to the draft 2012 State Water Plan to improve kokanee spawning success by lowering the lake level starting October 1 in order to reach the 0.0 feet goal at the outlet gauge by November 1. Develop better understanding of kokanee population dynamics.
			Lake trout Brook trout Smallmouth bass	General	Provide liberal lake trout harvest opportunity while developing a better understanding of the impacts of angling on lake trout size structure and abundance. Maintain consumptive fishery in tributaries to reduce brook trout abundance and offset harvest restrictions on adfluvial cutthroat trout in streams. Provide opportunity and encourage harvest of smallmouth bass to offset predation losses on cutthroat trout, bull trout and kokanee.
Upper Priest Lake and tributaries	50/1,400	Coldwater	Cutthroat trout Bull trout	Conservation	Manage Upper Priest Lake and tributaries with protective regulations to preserve remaining populations of adfluvial cutthroat trout and bull trout.
			Lake trout Brook trout Kokanee	General	Allow liberal harvest of lake and brook trout. Prevent lake trout from entering Upper Priest Lake by blocking their migration through the Thorofare. Suppress lake trout with periodic intensive gill netting if successful in blocking lake trout migration through the Thorofare.
Priest River and tributaries	120/	Coldwater	Cutthroat trout Bull trout	Conservation	No harvest of bull trout. Catch-and-release, only. Maintain restrictive regulations on the lake and tributary streams used by adfluvial fish or managed for adfluvial restoration to maximize production of wild fish for the lake and river. Seek opportunities to develop/enhance cold water habitat.
			Brook trout Brown trout Mountain whitefish	General	Direct anglers to Priest River tributaries to provide consumptive fishing opportunities for brook trout. Remove brook trout from tributary streams where feasible.

Freeman Lake	/30	Mixed	Rainbow trout Tiger muskie Largemouth bass Black crappie Yellow perch Pumpkinseed Bullhead Channel catfish	Put-and-take Trophy General	Stock put-and-take rainbow trout to provide a spring, fall and winter trout fishery. Maintain tiger muskie stocking to provide a specialized trophy fishery. Enhance the diversity of the warmwater fishery with maintenance stocking of channel catfish.
Blue Lake	/80	Warmwater	Tiger muskie Largemouth bass Northern pike Black crappie Yellow perch Pumpkinseed Bullhead	Trophy General	Maintain tiger muskie stocking to provide a specialized trophy fishery. Work with private landowners to ensure continued public access.
Alpine Lakes (5 stocked in the Priest River drainage)	/41	Coldwater	Cutthroat trout Rainbow trout Brook trout Golden trout Grayling	General	Provide fisheries that are consistent with lake productivity and angler pressure. Use westslope cutthroat trout for cutthroat trout stocking and sterile disease-free rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling) only. Do not stock lakes lakes


Spokane Drainage
Athol
Upper Twin Lake
Lower Twin Lake
Hauser Lake
Hayden Lake
Coeur d'Alene
Fernan Lake
Spokane River
Mica Cr
Coeur d'Alene Lake
Lake Creek
Rose Lake
Killarney Lake
Blue Lake
Thompson Lake
Anderson Lake
Black Lake
Medicine Lake
Cave Lake
Round Lake
Chatcolet Lake
Coeur d'Alene Indian Reservation
St. Maries
Enaville
Wallace
Coeur d'Alene River
S.F. Coeur d'Alene River
Little N.F. Coeur d'Alene River
Independence Creek
Teepee Creek
Steamboat Creek
Shoshone Creek
Prichard Creek
Beaver Creek
Trout Cr
St Joe River
Slate Cr
N.F. St. Joe River
Avery
Fishhook Cr
Quartz Cr
Gold Cr
Simmons Creek
Fly Cr
Marble Creek
Mica Creek
Crystal Cr
Olson Cr
Merry Cr
Emerald Cr
Saint Maries River
Santa Cr
Clarkia
WASHINGTON
MONTANA
54
53
90
58
95
60

4. SPOKANE RIVER DRAINAGE

Overview

The Spokane River upstream of the Idaho, Washington border drains about 3,840 square miles in northern Idaho. The major tributaries of the drainage include the St. Joe, St. Maries and Coeur d'Alene rivers which all feed into Coeur d'Alene Lake. Diversity of habitat in the drainage is great. There are many lowland lakes ranging from a few acres to 31,487-acre Coeur d'Alene Lake. Several lakes are close to the major population center and support important urban fisheries. River systems range from small mountain streams to the much larger rivers such as the St. Joe, Coeur d'Alene and Spokane. Mountain lakes are found in the headwaters of the South Fork Coeur d'Alene and St. Joe rivers.

The only game fish native to the drainage are westslope cutthroat trout, bull trout and mountain whitefish. Introduced game species include rainbow trout, kokanee, brook trout, brown trout, splake, Chinook salmon, largemouth bass, smallmouth bass, pumpkinseed, bluegill and green sunfish, yellow perch, black crappie, brown and black bullhead, channel catfish, tiger muskie and northern pike. There have been two to three anecdotal reports of walleye captured by anglers in Coeur d'Alene Lake, but to date, none have been confirmed.

Impoundment of Coeur d'Alene Lake by Post Falls Dam has flooded river sections that were formerly free flowing. In 2009, the Federal Energy Regulatory Commission (FERC) issued a 50-year operating license to Avista for the Spokane River Hydroelectric Project, which includes Post Falls Dam. Part of the agreement requires Avista to provide $150,000 annually for a Fisheries Protection and Enhancement Plan. This plan is implemented by Avista, but developed with and subject to approval by IDFG. The plan specifies activities associated with public education as well as habitat conservation and restoration.

The Spokane River below Post Falls Dam supports a fishery for wild rainbow trout and a few brown trout, but populations have fluctuated greatly and generally declined over the last 15 years. Much of the decline is presumably related to water temperatures. Excessively warm water temperatures in 1992, 1994 and 2003 resulted in declines in this rainbow trout fishery. Improved conditions in the past decade have not resulted in recovery of the populations to levels of the 1980's. In 1985, rainbow trout density based on electrofishing in the 10 km reach straddling the state line was about 2,000 fish/km,. In 2007, density in the reach immediately downstream was only 61 fish/km. In addition to water temperature limitations, productivity of the river has decreased, thereby decreasing algal and invertebrate abundance. The effects of decreased food availability may be exacerbated by the high metabolic demands caused by warm water temperatures. Finally, smallmouth bass have become abundant, possibly affecting juvenile trout survival. Angler interest for trout has waned with the population. Increased minimum flows mandated by the FERC license may improve conditions.

A July 28, 1998 decision from the Federal 9th District Court awarded to the Coeur d'Alene Tribe management of the water and fishery resources within the 1873 reservation boundaries. This includes the approximate southern one third of Coeur d'Alene Lake, the southern one half of Black Lake, the lower 20 miles of the St. Joe River, and several major tributaries including Lake, Plummer, Benewah and Evans creeks. The water of Coeur d'Alene Lake within the boundaries of Heyburn State Park, including Hidden, Chatcolet, Round and Benewah lakes was excluded from the court decision, but state versus tribal ownership and management remains unresolved.

IDFG is working cooperatively with the Coeur d'Alene Tribe to manage fish populations with similar regulations to meet management goals, while reducing angler confusion.

Largemouth bass are well established throughout the drainage's lakes. Historically, the area was noted for excellent bass fishing and more recently has seen a tremendous increase in bass fishing pressure do their popularity. Creel surveys and population evaluations indicate the majority of bass anglers keep few or no largemouth bass. As a result, despite liberal harvest opportunity in many lakes, exploitation is minimal and size structure is generally indicative of quality fisheries. Largemouth bass up to 8 lbs. are occasionally caught and the Coeur d'Alene Lake system has become the focus of numerous major bass fishing tournaments in recent years.

Smallmouth bass were introduced into Hayden Lake in the mid 1980's. The population proliferated to the point where smallmouth bass less than 12 inches in length are abundant throughout the lake and can be caught under almost every dock. Anecdotal evidence suggests smallmouth have adversely affected black crappie abundance. Smallmouth bass were illegally introduced into Coeur d'Alene Lake in the early 1990s, where they now have spread into most of the chain lakes, the lower Coeur d'Alene and St. Joe rivers as well as the Spokane River.

Illegal introductions of northern pike have established populations throughout the Coeur d'Alene Lake system as well as Fernan, Hauser, Hayden and Twin lakes. Population densities are generally low, which is likely related to fishing pressure and high exploitation rates. The low densities minimize intraspecific competition, and growth rates have remained very good. To minimize impacts of northern pike on native salmonids and other game fish, and to maintain the high growth rates associated with lower densities, we have continued to encourage harvest with no daily limit or size restrictions, and by not allowing catch and release fishing tournaments.

Kokanee were historically the most sought after game species in Coeur d'Alene Lake. In 1979, anglers harvested nearly 600,000 kokanee in over 250,000 angler hours of effort. By 1981, however, kokanee numbers increased to the point where kokanee growth slowed and anglers increasingly complained the fish were unacceptably small. Fall Chinook salmon were introduced in 1982 to decrease the abundance of kokanee and provide an additional fishery. Through the 1980's, the program was successful in creating a limited trophy Chinook fishery; with 300-500 fish harvested annually, some of them in excess of 30 lbs. As the popularity of the Chinook fishery increased, so did the demand for increased Chinook stocking. At the same time, Chinook were successfully reproducing naturally, and the contribution of hatchery fish to the fishery diminished. IDFG began efforts to control natural reproduction, first with a weir, and then by digging up redds, but it became increasingly apparent that we have very limited ability to control Chinook numbers.

In the 1990's, anglers became increasingly effective at targeting Chinook throughout the year. Annual harvest increased around 10-fold, but mean size decreased, and few fish exceeded 20 lbs. Kokanee densities remained high through the mid-90's, but size at maturity was sufficient to maintain angler interest and a popular fishery. In 1996 and 1997, severe floods caused the majority of juvenile kokanee to emigrate from the lake, setting off a period of imbalance that lasted over 10 years. Kokanee harvest was severely restricted, and efforts to decrease Chinook numbers through redd destruction, liberalized limits, and cessation of stocking were implemented. By 2010, kokanee had recovered to pre-flood levels, and a 15-kokanee daily limit was restored. Though this may be partly the result of the implemented actions, it is likely also a

function of favorable environmental conditions that led to an upswing in kokanee populations throughout the region.

The importance of a robust kokanee After 30 years of managing the kokanee/Chinook fishery, it is evident there are significant limitations to our ability to influence both populations and maintain a consistent balance. In addition to environmental factors affecting kokanee, we have limited ability to influence the Chinook population. A retrospective look at the fishery also demonstrates the importance of a healthy kokanee population has on angler effort—both for kokanee and for Chinook. Angler effort from the 1980's through the mid-90's ranged from 200,000 to 250,000 hours, but in 2009, when the kokanee limit was reduced to 6, and the Chinook population was depressed, angler effort was 154,000 hours, and much of that was for warmwater species. Kokanee harvest, which was historically over a half million had dropped to under 20,000.

A key factor to improving the consistency of the fishery is more consistent survival of planted Chinook. We have recently implemented a Coded Wire Tagging (CWT) program on all hatchery Chinook so that we can most effectively manage hatchery release strategies. In addition, we recently implemented more restrictive harvest limitations on Chinook (2 fish limit; none under 20") that will hopefully improve survival to older age-classes and give us more influence over the number of large Chinook in the population.

The St. Joe, Coeur d'Alene and St. Maries rivers contain populations of resident, fluvial, and adfluvial cutthroat trout. The St. Joe and Coeur d'Alene Rivers both provide tremendously popular fisheries, primarily on cutthroat trout. IDFG has maintained a snorkel count data set for both rivers dating back to the early 1970's. For most of this time, cutthroat trout densities have been much lower (approximately a third to a half) in the Coeur d'Alene River than in the St. Joe River. This difference was attributed to a combination of noncompliance with the fishing regulations and degraded habitat. The shift to catch-and-release of all cutthroat trout in the drainage, along with increased enforcement and education and habitat restoration have all helped to improve the cutthroat trout population in recent years. The Coeur d'Alene River, on average, now supports cutthroat densities about two thirds those in the St. Joe River. The improved quality of the fishery, combined with elimination of season restrictions have led to a significant increase in angler use of the river. Based on the IDFG angler use and economic surveys the estimated number of angler trips increased from 35,000 in 2003 to 50,000 in 2011.

A rainbow trout (and hybrid trout) population also exists in the Coeur d'Alene River and lower North Fork Coeur d'Alene River. We have promoted harvest of rainbow trout with liberal rules. In addition, we have attempted to encourage harvest of hybrid trout through liberal rules and descriptions in the rule book. It has become evident that anglers have difficulty reliably interpreting the descriptions, and mistaken harvest of cutthroat trout is common. Fisheries and enforcement staff are challenged with the difficult task of developing rules and descriptions that allow harvest of undesirable trout, thereby improving the genetic integrity of the cutthroat population, without frustrating anglers or promoting excessive illegal cutthroat harvest.

Mining, logging and forest development, highway construction and other land use impacts have taken a major toll on the Coeur d'Alene drainage fisheries. Heavy metal pollution, stream channelization and sedimentation and migration blocks related to the extensive mining history have had an especially severe impact on cutthroat trout and bull trout. In 2009, the U.S. EPA announced a superfund settlement with Asarco that provides nearly $500 million for clean-up of contaminants in the Coeur d'Alene drainage. In 2011 an agreement with Hecla mining company

was filed, which results in and additional $140+ million for restoring fish and wildlife habitat and water quality in the basin. IDFG and IDEQ represent the state in implementation of the program. Other trustees include the Coeur d'Alene Tribe, US Dept. of Interior, and the US Forest Service. Additional funds (approximately $150,000/year) are available for restoration and protection of fish habitat through the Avista Post Falls Settlement Agreement, which resulted from the FERC relicensing of the Post Falls Dam on the outlet of Coeur d'Alene Lake. These funds provide tremendous potential to improve aquatic habitat and associated fish populations throughout the drainage.

While fluvial cutthroat populations in the drainage (the South Fork Coeur d'Alene River notwithstanding) are generally in good health, adfluvial stocks in Coeur d'Alene Lake are a fraction of historical levels. Shoreline development, loss of quality spawning and rearing habitat in tributary streams, introduction of competing or predating species have all played a role in the decline of cutthroat trout. Currently, the Coeur d'Alene Tribe is engaged in a large scale effort to restore adfluvial cutthroat populations. IDFG has been supportive of the efforts, which entail habitat restoration in key tributaries, estimating of in-lake survival of juvenile cutthroat, and evaluating impacts of non-native predators.

Bull trout in the drainage spawn almost entirely in headwater tributaries to the St. Joe River—primarily Medicine and Wisdom creeks. Based on existing telemetry work, virtually all of the bull trout in the drainage are adfluvial, migrating the length of the St. Joe River to Coeur d'Alene Lake. Though bull trout have been functionally extirpated from the Coeur d'Alene River drainage, much of the North Fork of the Coeur d'Alene River and several tributaries were designated Critical Habitat by the USFWS in 2011, prompting questions about the feasibility of reestablishing bull trout in the Coeur d'Alene drainage and additional tributaries to the St. Joe River, such as Marble Creek. Prior to any such attempts, several questions related to availability of source stock, genetic suitability, logistics and demographics will need to be addressed.

Because of low returns to the creel and concerns with impacts to native cutthroat trout, hatchery trout have not been stocked into any streams in the Spokane River drainage since 2003. To help offset the loss of harvest opportunities in rivers and streams, ponds adjacent to the Coeur d'Alene and St. Joe rivers have been stocked with catchable rainbow trout. This strategy has allowed families and individuals to fish streams that are primarily catch and release, but still give them a place with harvest opportunity in close proximity.

Though not actually connected by surface water, Hayden Lake is included in the Coeur d'Alene drainage. Historically, Hayden Lake was a popular fishery for native cutthroat trout from the early 1900s to 1950s. Declining catch rates through the 1970's, prompted a number of efforts to improve the fishery. Restrictive regulations, addition of freshwater shrimp *Mysis diluviana*, an increase in rainbow and cutthroat trout stocking rates, and the use of various strains of rainbow trout were all attempted. Despite these efforts, trout catch rates continued to decline. In 1983 smallmouth bass were introduced into Hayden Lake to provide increased fishing opportunities in response to the declining trout populations. Although the introduction was successful in creating a popular littoral fishery, it also increased predation on fingerling trout. Northern pike were illegally introduced in the early 1990s, further adding to potential predation problem. To reduce predation on stocked fingerling trout, the stocking location was moved to the south end of Hayden Lake at Hayden Marina. Thus far, the change in stocking location doesn't appear to have increased fingerling survival. A 2010 creel survey and evaluation of harvested trout indicated that despite stocking over 250,000 fingerling trout annually, few if any return to the

creel. In the entire year, we estimated less than 100 trout were harvested. Furthermore, most of those harvested appeared to be of wild origin, and genetic evaluation of harvested trout indicated a high percentage of hybrids, suggesting they were naturally produced from tributaries such as Hayden, Mokins, and Yellowbanks creeks. Because the quality trout regulations appeared to have little impact, they were removed in 2011, and the trout fishery is managed under general rules. In an effort to improve the coldwater, troll-oriented fishery, the Department has recently stocked early spawning kokanee fry at moderate densities. In this management period we will evaluate whether these experimental releases recruit to the fishery.

Despite the poor quality of the trout fishery, the lake has remained a popular angling destination. Angling effort in 2010 was estimated at around 75,000 hours, compared to 20,000 hours in 1979 and 35,000 hours in 1982. As with many regional lakes, much of the effort has shifted to warmwater angling. Smallmouth bass were, by far the most frequently caught species, followed by largemouth bass, crappie, yellow perch, and northern pike.

Aside from Hayden and Coeur d'Alene lakes, there are an additional 20 lowland lakes in the Spokane River watershed. These lakes collectively support a tremendous amount of angling effort (in excess of 100,000 angler hours). All of these lakes are managed for either mixed fisheries or warm water fish. Where cold water fisheries do exist, they are generally supported by catchable trout stocking and/or fingerling kokanee stocking. In recent years, we have evaluated return to creel of catchable rainbow trout. In cases where returns are significantly less than the objective of 30%, such as in Hauser Lake, where returns were 2-3%, catchable stocking will likely be discontinued, and anglers will be limited to warmwater fisheries. Most of these lowland lakes have moderate or extensive shoreline development, and declining water quality and shoreline encroachment are serious problems. Continued shoreline development and eutrophication is likely to eliminate future fishery management options.

Eight mountain lakes in the Bitterroot Range are stocked with trout fry on a rotating basis. Stocking densities have been adjusted to maximize fish growth at a given lake elevation. Only sterile cutthroat and rainbow trout fry are used to stock mountain lakes to reduce potential impacts to native fish populations downstream. Westslope cutthroat trout, rainbow trout, and brook trout are present in most of the stocked lakes, although four lakes are reserved for specialty species, such as grayling and golden trout.

Objectives and Programs

1. Objective: Maintain quality trout fisheries in the Coeur d'Alene and St. Joe river drainages, defined as catch rates of 1 fish/hr., with at least 25% of population exceeding 12 inches, as determined by snorkel surveys.

   Program: Monitor fish populations periodically through snorkel and/or electrofishing surveys to determine if cutthroat management objectives are being met.

2. Develop and maintain catch-out ponds adjacent to the rivers to replace lost harvest opportunity.

   Program: Incorporate construction of a fishing pond with the upgrade to the St. Maries River access site.

Program: Work with Shoshone County Sportsmen, DEQ, IDPR, the City of Osburn, and Shoshone County Parks Dept. to restore fishing pond at Gene Day Park.

3. Objective: Maintain genetic integrity of westslope cutthroat trout populations in the Coeur d'Alene and St. Joe river drainages.

   Program: Periodically assess distribution of rainbow and hybrid trout in the Coeur d'Alene River system to determine if introgression risk is expanding.

   Program: Categorize distribution based on conservation populations (those containing <10% rainbow trout alleles) and core populations (those containing <1% rainbow trout alleles).

   Program: Work with anglers and enforcement staff to encourage removal of rainbow trout while minimizing incidental/unlawful harvest of cutthroat trout

4. Objective: Minimize impacts of land use and development on fishery habitat in streams.

   Program: Promote lessons learned from cutthroat trout research in the Coeur d'Alene River to improve habitat critical to cutthroat trout survival.

   Program: Work with Avista mitigation program and mine waste settlement funds to secure and improve cutthroat and bull trout habitat in the Coeur d'Alene and St. Joe rivers.

5. Objective: Improve the efficiency of hatchery put-and-take trout stocking programs.

   Program: Evaluate rate of return, catch rate, and angler use on put-and-take trout fisheries through a routine data collection system.

   Program: Adjust rate, timing, size of fish, or location of trout stocking to improve rate of return to the creel.

   Program: Inform anglers of hatchery supported trout fishing opportunities through maps, brochures, media coverage and signing to improve return to the creel.

6. Objective: Provide diverse angling opportunities in lowland lakes.

   Program: Continue periodic surveys of fish populations to monitor population status and fish growth in relation to physical and biological conditions and fishing regulations. Manage some lakes for specific fish species in order to maximize angling opportunity.

   Program: Provide liberal harvest opportunity for warmwater species and stocked trout.

   Program: Continue maintenance stocking of tiger muskies and channel catfish to maintain popular fisheries.

   Program: Restore coldwater fishery in Hayden Lake through experimental stocking of kokanee and sub-catchable size trout.

7. Objective: Restore a balance between the kokanee and Chinook fishery.

   Program: Continue to evaluate kokanee abundance and size through trawling.

   Program: Evaluate Chinook stocking strategies and hatchery fish survival to improve consistency of hatchery contribution.

   Program: Continue to assess the Chinook population by monitoring fishing derbies and conducting redd count surveys.

8. Objective: Improve fishing and boating access on lakes and rivers.

   Program: Work with the USFS, Avista, Shoshone County and other stakeholders to develop boating access areas on the Coeur d'Alene River.

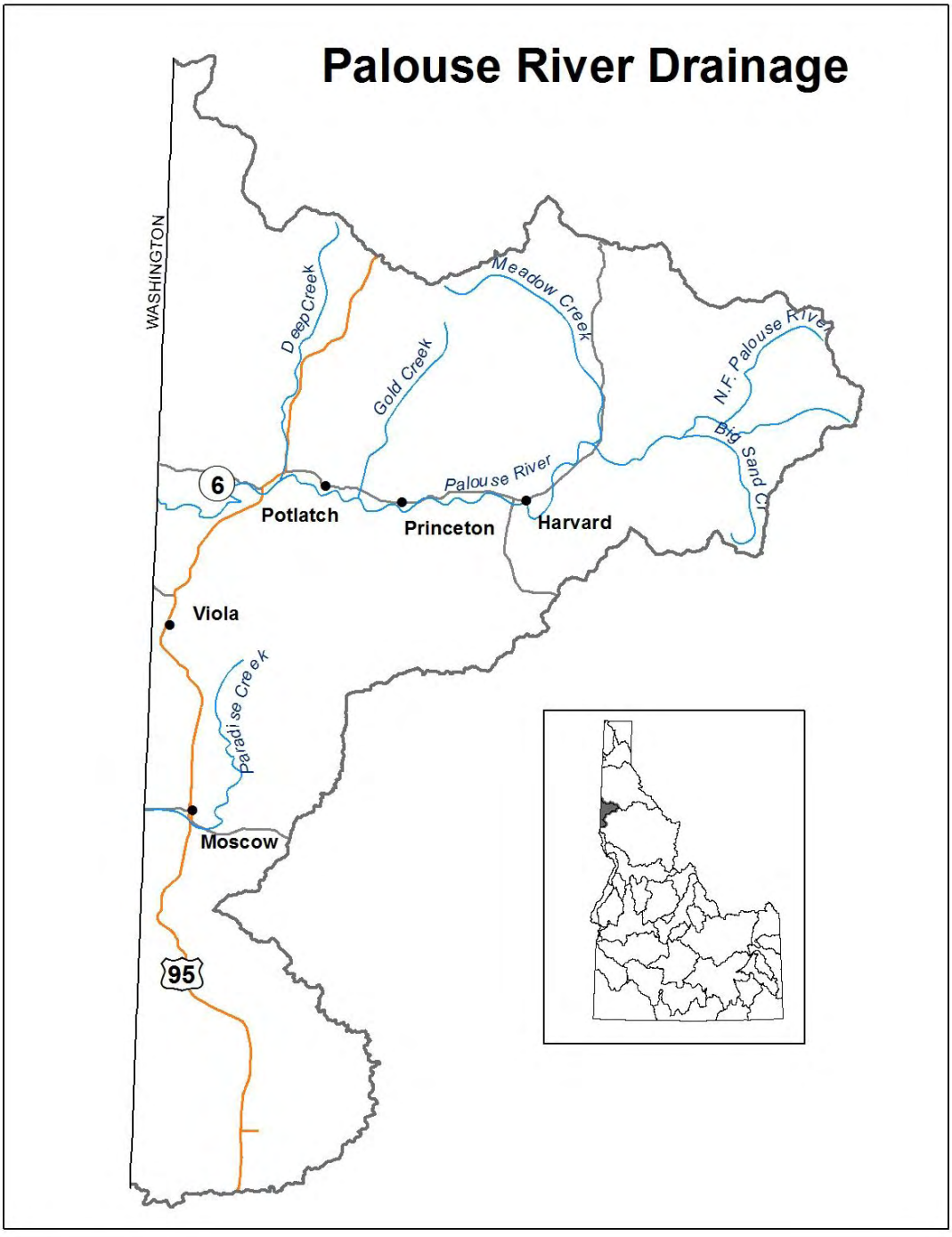
   Program: Upgrade St. Maries River access with improved boat ramp, parking area, and develop a fishing pond.

Drainage: Spokane River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Coeur d'Alene Lake and minor tributaries (including Chatcolet, Hidden, Benewah and Round lakes)	100/31,487	Mixed	Cutthroat trout	Quality/Wild	Recognize Coeur d'Alene Tribal management of the southern third of Coeur d'Alene Lake. Work with the Tribe to achieve mutual fisheries management objectives in connecting waters. Continue to work with Avista through its Post Falls Development Fisheries Protection and enhancement Plan and other entities to improve habitat for adfluvial cutthroat trout.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only. Continue to work with Avista through its Post Falls Development Fisheries Protection and Enhancement Plan, and other entities to protect or enhance habitat for bull trout..
			Chinook salmon	Quality	Refine stocking strategy to provide more consistent Chinook fishery.
			Kokanee	General	Manage the kokanee population at a level that provides a yield fishery of a size agreeable to anglers and provides forage for Chinook salmon.
			Rainbow trout Brook trout Largemouth bass Smallmouth bass Northern pike Black crappie Yellow perch Bluegill Pumpkinseed Bullhead	General	Maintain high harvest rates on rainbow trout and brook trout to reduce competition and hybridization with cutthroat trout. Maintain consumptive fisheries on warmwater species to provide yield fisheries while reducing potential predation and competition impacts on adfluvial cutthroat trout. Encourage harvest of smallmouth bass. Maintain northern pike population densities at low levels with liberal harvest regulations to maintain rapid growth rates while reducing predation on other species.

Hayden Lake And tributaries	20/3,756	Mixed	Rainbow trout Cutthroat trout	Quality	Maintain trout fishery with hatchery supplementation of rainbow trout, and natural production of cutthroat and hybrid trout. Evaluate size, timing and location of releases to maximize survival. Evaluate stock differences between rainbow trout to determine what stock will best meet angler desires.
			Kokanee	General	Evaluate experimental kokanee stocking to restore cold water, troll-based fishery.
			Largemouth bass Black crappie	Quality	Provide high catch rates for better than average size fish with regulations that reduce, but do not eliminate harvest. Evaluate bass and crappie population structure and fishery to determine if the regulations are meeting management goals.
			Smallmouth bass Northern pike Yellow perch Pumpkinseed Bullhead Bluegill	General	Provide liberal opportunity and encourage harvest of smallmouth bass and northern pike to reduce impacts to other fish populations.
Upper and Lower Twin lakes	/850	Mixed	Rainbow trout	Put-and-take trout	Stock put-and-take rainbow trout to provide a consumptive trout fishery. Limit rainbow trout stocking in Upper Twin Lake to early spring only while water temperature is suitable.
			Brook trout Largemouth bass Northern pike Black crappie Yellow perch Pumpkinseed Green sunfish Bullhead	General	Maintain harvest-oriented fisheries for warmwater species. Encourage maximum harvest of northern pike to reduce impacts to other fish populations.
Fernan Lake	/300	Mixed	Rainbow trout Largemouth bass Northern pike Black crappie Yellow perch Pumpkinseed Bullhead Green sunfish	Family fishing /Community	Manage the lake with simple regulations to provide a consumptive fishery.
			Channel catfish	General	Continue stocking channel catfish to maintain diversity of the warmwater fishery in Fernan Lake.

Hauser Lake	/550	Warmwater	Tiger muskie	Trophy	Maintain tiger muskie stocking to provide a specialized trophy fishery.
			Largemouth bass Northern pike Black crappie Yellow perch Pumpkinseed Green sunfish Bullhead	General	Maintain harvest-oriented fisheries for warmwater species. Publicize bluegill fishery through clinics and printed materials and encourage use.
			Channel catfish	General	Continue stocking channel catfish to maintain diversity of the warmwater fishery in Hauser Lake.
Lateral Lakes (Anderson, Thompson, Blue, Swan, Medicine, Cave, Black, Bull Run, and Rose lakes) and slackwater portions of the Coeur d'Alene River	/2,960	Warmwater	Largemouth bass Northern pike Black crappie Yellow perch Bluegill Pumpkinseed Bullhead	Trophy/Quality/General General	Manage Blue Lake for trophy bass, Anderson Lake for quality bass, and maintain general bass regulations on the other lakes. Manage the majority of lakes for year-round consumptive fisheries on warmwater species. Maintain northern pike population densities at low levels to maintain rapid growth while reducing predation on bass and cutthroat trout.
			Channel catfish	General	Discontinue stocking of channel catfish in Rose Lake due to costs and higher preferences in other lakes.
North and South Fork Coeur d'Alene River and tributaries and Little North Fork Coeur d'Alene River and tributaries	600+/	Coldwater	Cutthroat trout	Quality	Maximize catch rates and fish size by increasing densities through protective rules. Improve habitat through Avista mitigation program.
			Rainbow trout Brook trout Mountain whitefish Chinook salmon	General	Maximize harvest opportunities for rainbow trout and brook trout to reduce competition and hybridization with cutthroat trout. Provide harvest opportunity for stocked rainbow trout in catch-out ponds located near traditional harvest areas. Maintain existing harvest fisheries for mountain whitefish.
St. Joe River and tributaries above Avery	600+/	Coldwater	Cutthroat trout	Quality	Maximize catch rates and fish size by increasing densities through protective rules. Work with Avista mitigation program and other entities to protect, enhance, and restore habitat for cutthroat trout.
			Rainbow trout Brook trout Mountain whitefish Chinook salmon	General	Maximize harvest opportunities for rainbow trout and brook trout to reduce competition and hybridization with cutthroat trout. Provide harvest opportunity for stocked rainbow trout in catch-out ponds located near traditional harvest areas. Maintain existing harvest fisheries for mountain whitefish.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only. Investigate distribution, status, critical habitat needs and survival during different stages of their life cycle to better guide conservation efforts. Work with Avista mitigation program and other entities to protect, enhance, and restore habitat for adfluvial bull trout.

Slackwater area of St. Joe River	14/	Mixed	Cutthroat trout	Quality	Recognize Coeur d'Alene Tribal management of the slackwater portion of the St. Joe River. Work with the Tribe to meet Tribal and state management objectives in connecting waters. Work with Avista Post Falls Dam mitigation program to enhance fish habitat that has been negatively impacted by dam operations.
			Largemouth bass Black crappie Yellow perch Bullhead Northern pike	General	Provide liberal opportunity and encourage harvest of smallmouth bass and northern pike to reduce impacts to other fish populations.
St. Maries River and tributaries above slackwater	350/	Coldwater	Cutthroat trout	Quality	Providing limited harvest opportunity while maintaining quality size structure and densities.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only. Investigate distribution, status, critical habitat needs and survival during different stages of their life cycle to better guide conservation efforts.
			Rainbow trout Brook trout Mountain whitefish	General	Maximize harvest to reduce competition and hybridization with cutthroat trout. Provide harvest opportunity for stocked rainbow trout in catch-out ponds located near traditional harvest areas. Maintain existing harvest fisheries for mountain whitefish.
Spokane River (Coeur d'Alene Lake to Post Falls Dam)	15/	Mixed	Cutthroat trout	Quality	Maintain protective regulations to help improve the adfluvial cutthroat trout population
			Largemouth bass Northern pike Black crappie Yellow perch Pumpkinseed Bullhead	General	Maintain consumptive harvest fishing opportunity for warmwater species.
Spokane River (Post Falls Dam downstream to state line)	6/	Coldwater	Rainbow trout Brown trout	Wild	Periodically evaluate populations. Work with Avista to implement optimal flows and enhance fish habitat that has been negatively impacted by dam operations.
Alpine Lakes (8 in the Spokane River drainage)	/140	Coldwater	Cutthroat trout Rainbow trout Brook trout Golden trout Grayling	General	Continue maintenance stocking of trout fry to provide fisheries that are consistent with lake productivity and angler pressure. Use westslope cutthroat trout for cutthroat trout stocking and sterile disease-free rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling) only. Do not stock lakes that are currently fishless in order to maintain some natural alpine lakes.


Palouse River Drainage
WASHINGTON
Deep Creek
Gold Creek
Meadow Creek
N.F. Palouse River
Big Sand Cr
Palouse River
6
Potlatch
Princeton
Harvard
Viola
Paradise Creek
Moscow
95

5. PALOUSE RIVER DRAINAGE

Overview

The Palouse River drains from a timbered, mountainous area with elevations up to 5,000 feet through rolling, agricultural hills down to an elevation of about 2,500 feet at the Idaho-Washington border. The upper reaches of the Palouse drainage have been extensively roaded, logged and dredge mined, while the lower areas have been intensively farmed. The only remaining trout habitat in the drainage is located near the headwaters. Substantial improvements in fish populations in the drainage will necessitate rebuilding riparian habitat that will increase summer flows, reduce summer water temperatures, and reduce sediment delivery.

Objectives and Programs

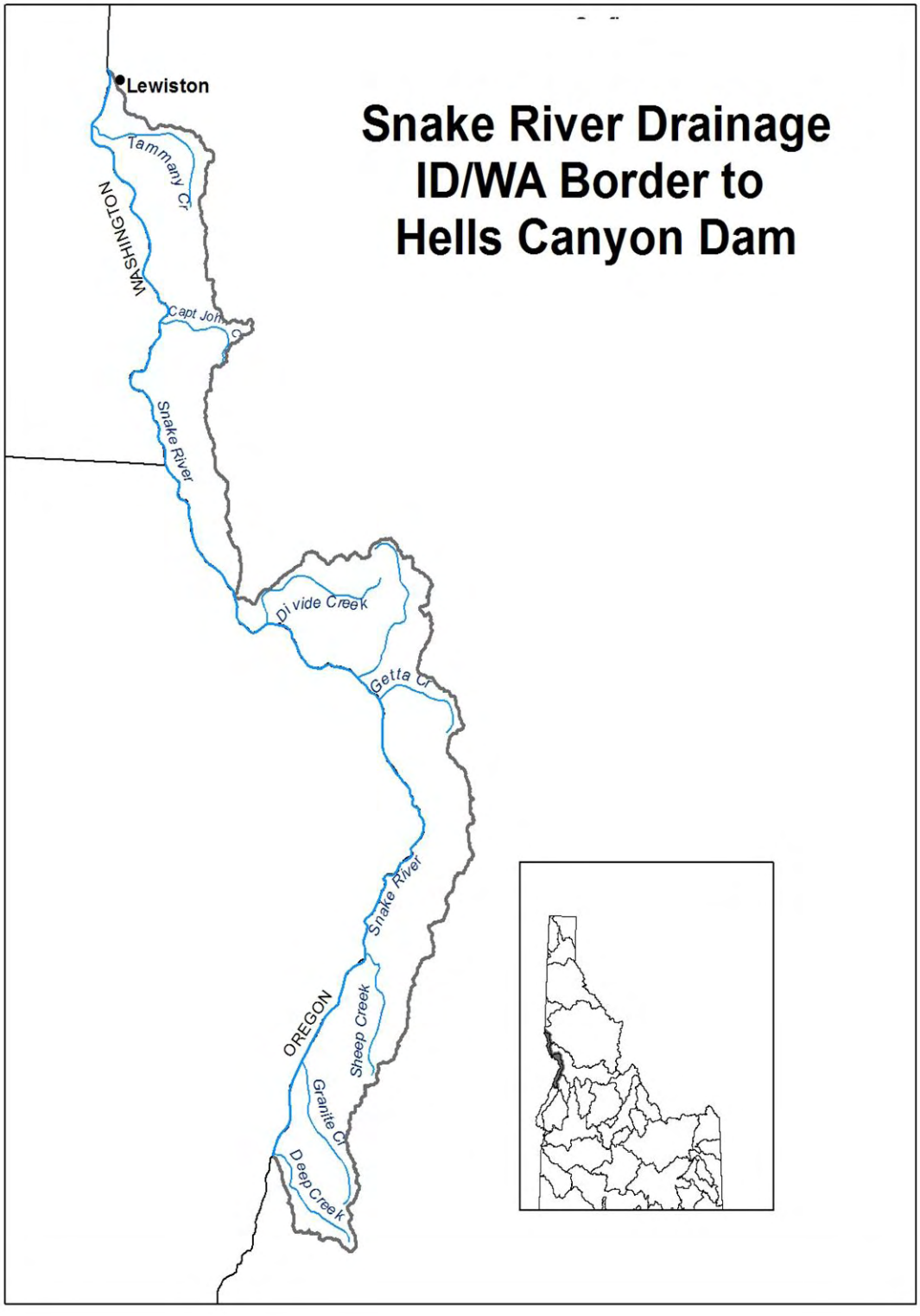
1. *Objective: Increase* fishing opportunities by developing/improving small reservoirs/ponds.

   Program: Work with public and private landowners to identify potential new small reservoir/pond sites and initiate process for construction. Look into opportunities to improve Hordeman Pond in Moscow to provide a year round fishery.

2. Objective: Increase fishing opportunity in the Palouse River

   Program: Investigate the potential for warm water fish introductions.

Drainage: Palouse River					
Water	**Miles/acre**		**Fishery**		**Management Direction**
		Type	Species Present	Management	
Palouse River from Washington border to headwaters, including tributaries	70/	Mixed	Rainbow trout	Put-and-take	Stock with catchable rainbow trout where returns to the creel are acceptable. Develop catchable trout ponds in reclaimed mining areas in cooperation with the Forest Service.
			Brook trout	General	Continue to provide fishing opportunities for naturally producing brook trout.
			Warmwater introductions		Investigate possibilities of introducing warm water fish into the Palouse River.
Hordeman Pond	/1	Mixed	Rainbow trout	Put-and-take	Stock with catchable rainbow trout to maintain a minimum catch rate of 1.0 trout/hour. Make efforts to improve summer carryover by deepening the pond.
			Warmwater introductions	General	Investigate costs versus benefits of stocking channel catfish.


Snake River Drainage
ID/WA Border to
Hells Canyon Dam
Lewiston
Tammany Cr
WASHINGTON
Capt John Cr
Snake River
Divide Creek
Getta Cr
Snake River
OREGON
Sheep Creek
Granite Cr
Deep Creek

6. SNAKE RIVER AND MINOR TRIBUTARIES IDAHO/WASHINGTON BORDER TO HELLS CANYON DAM

Overview

The portion of the Snake River from the Idaho-Washington border at Lewiston upstream to Hells Canyon Dam is 108 miles in length. The section from the Washington-Oregon border to Hells Canyon Dam flows through the deepest gorge in the United States in the Hells Canyon National Recreation Area. Forty miles of the river from the Washington-Oregon border to Big Canyon Creek is designated a "scenic" river under the Wild and Scenic Rivers System, and the remaining upper 32 miles is classified as "wild." Both the Idaho and Oregon sides of the river in the upper portions of the recreation area are bounded by wilderness. Legislation passed by Congress in 1989 prohibits the Federal Energy Regulatory Commission from issuing any licenses to develop new mainstem hydropower projects in the Snake River. Congressional intent also includes federally authorized projects.

River flows are controlled by Hells Canyon Dam and upstream storage. Daily water levels can fluctuate vertically by several feet daily below Hells Canyon Dam. From mid-October through most of December, water levels are held steady to increase fall Chinook salmon spawning success. Quality of water passing through the canyon has changed substantially since the creation of the upriver impoundments. The reservoirs act as settling basins for fine sediments that enhance water quality but impact gravel transport; however, the upriver reservoir complex and dam operations affect total dissolved gases, dissolved oxygen, and the temperature regime in the free-flowing river. Recreational use of the river from Hells Canyon Dam to Lewiston is very high.

The lower portion of the river near Lewiston is impounded by Lower Granite Dam, which lies 40 miles west of Lewiston. The reservoir extends above the towns of Lewiston and Clarkston, making the area an inland seaport.

The Snake River from Lewiston upstream is the migration corridor for adult and juvenile anadromous fish moving to and from the Salmon, Imnaha, and Grande Ronde subbasins. Spring, summer, and fall Chinook salmon, sockeye salmon, Pacific lamprey, and steelhead trout pass through this reach of the river. Fall Chinook also spawn in the mainstem of the Snake River. Most of the minor Snake River tributaries, which are accessible to anadromous fish, such as Granite, Sheep, and Captain John creeks, are suitable for steelhead spawning and rearing. This reach of the Snake River also provides over-winter habitat for bull trout and resident rainbow trout whose populations use the tributaries as production areas.

The mainstem Snake River from the Idaho/Washington border to Hells Canyon Dam will be managed for exploitation of hatchery steelhead and fall Chinook salmon. Harvest opportunities will also occur for spring Chinook salmon upstream of Doug Bar. Negotiations with NOAA fisheries and the states of Oregon and Washington will occur to determine how to structure harvest opportunities for spring/summer Chinook salmon downstream of Doug Bar. Consumptive harvest of naturally produced steelhead or Chinook salmon is not expected during the next six years.

Major resident game fish species found in the river include smallmouth bass, white sturgeon and rainbow trout. The rainbow trout fishery is primarily supported by residualized hatchery steelhead smolts. The sturgeon sport fishery is managed with catch-and-release regulations because of high angler demand and the population dynamics of slow growing, long lived fish. The sturgeon

population is self-supporting, with young fish well represented in the population. Numbers of older individuals are still recovering from depressed populations resulting from consumptive fishing over 30 years ago. In recent years, white sturgeon up to 10 feet long have been caught. Tribal treaty harvest and illegal non-treaty poaching are not well documented, but could limit the rate of population recovery if levels are high enough.

The small tributaries in this reach of the Snake River drain from high forested areas through break lands to arid bottoms before entering the river. Many streams have a very steep gradient and are accessible to steelhead trout only in the lower reaches. The upper reaches of some of the larger streams, such as Granite and Sheep creeks, support populations of resident rainbow and cutthroat trout.

Mountain lakes are found in the headwaters of Bernard, Sheep, and Granite creeks within the boundary of the Hells Canyon Wilderness.

Objectives and Programs

1. Objective: Improve juvenile anadromous fish migration survival to lower Granite Dam.

   Program: Develop and work to obtain flow regimes in the Snake River that maximize survival of migrating juvenile and adult anadromous fish. Coordinate with Idaho Power Company, Oregon Department of Fish and Wildlife, and other parties in mitigating stranding of anadromous out-migrants in river margins during load following operations. Continue to develop smolt timing and relative abundance indices to aid control of flow augmentation and water storage management.

   Program: Maintain involvement with FERC relicensing process for Hells Canyon Complex.

2. Objective: Enhance resident game fish production below Hells Canyon Dam.

   Program: Maintain involvement with FERC relicensing process for Hells Canyon Complex:

   Program: Evaluate smallmouth bass exploitation and engage in public outreach to assess if current limit restrictions are needed on smallmouth bass.

   Program: Evaluate whether additional gear or season restrictions are needed to maintain the abundance of white sturgeon in the Hells Canyon Reach.

3. Objective: Manage fisheries in mountain lakes to maintain long-term probability of persistence of amphibians and to provide a diversity of fishing opportunities for anglers.

   Program: Develop a high mountain lake stocking plan to account for lake productivity and angler pressure and addresses the different wants of the public.

   Program: Continue the long term study to evaluate the impacts the current stocking program has on long term probability of persistence of amphibians. Maintain suitable levels of fishless alpine lake habitat as described in the Clearwater Region Mountain Lake Management Plan.

4. Objective: Provide fishing opportunities for hatchery salmon and steelhead that satisfies different angler types.

   Program: Coordinate hatchery smolt releases to provide optimum adult distribution relative to angler distribution and effort.

   Program: Evaluate relationship of run timing, bag limit harvest and catch rates by river section throughout the salmon and steelhead season.

   Program: Measure the role, impact, and contribution of commercial guiding relative to anadromous fishery management objectives.

   Program: Maintain involvement with FERC relicensing process for Hells Canyon Complex.

   Program: Increase angler/boater etiquette through an educational program.

   Program: Work with Washington, Oregon, and the Nez Perce Tribe in developing a spring Chinook fishery from the Idaho border to Doug Bar that is suitable to all.

   Program: Investigate strategies to increase the popularity of fall Chinook fishing.

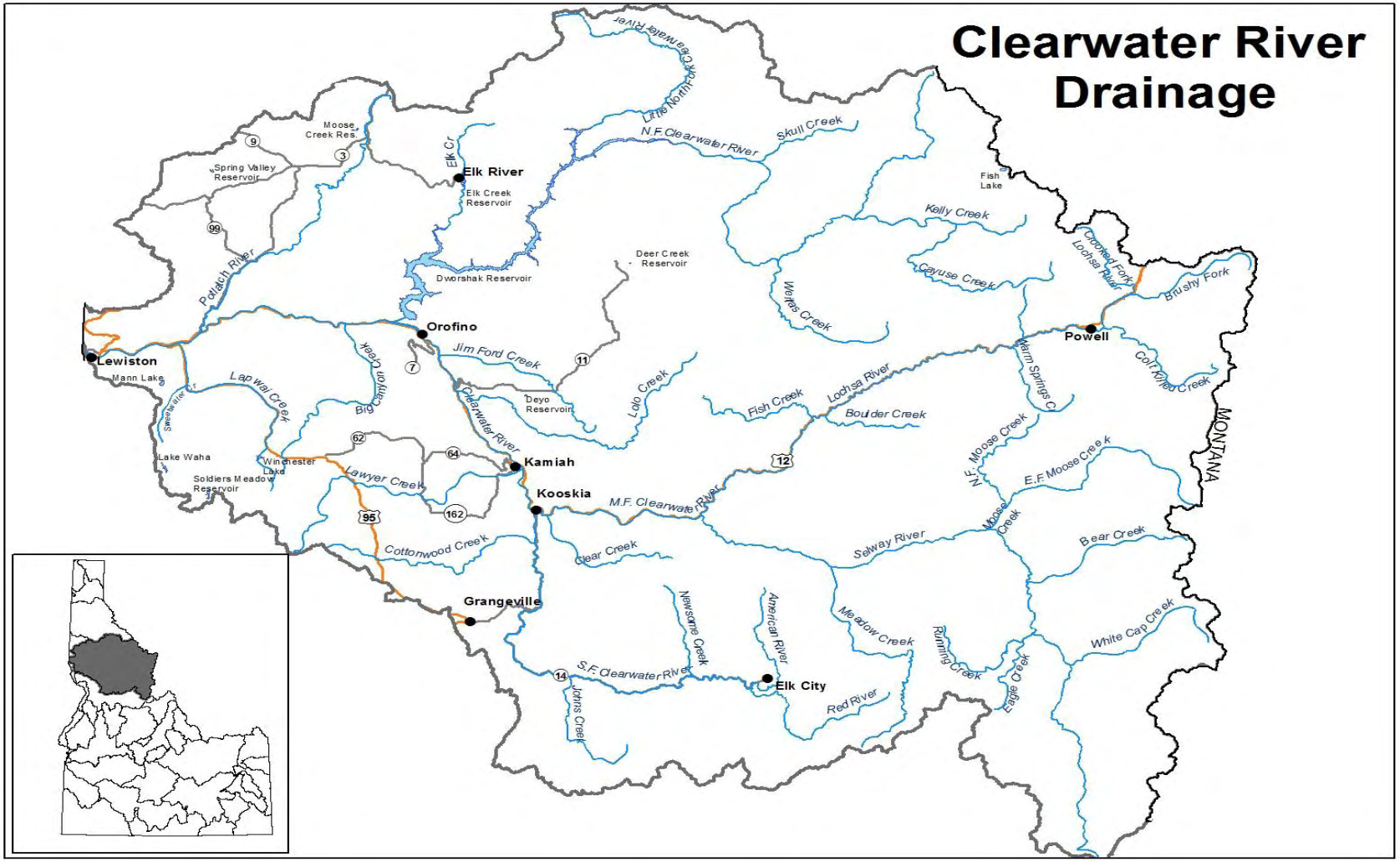
5. Objective: Better understand the abundance and distribution of wild steelhead in tributary habitat.

   Program: Prioritize work to evaluate abundance and distribution of wild steelhead in tributaries.

Drainage: **Snake River and Minor Tributaries - Idaho/Washington Border to Hells Canyon Dam**

		Fishery			
Water	**Miles/acre**	Type	Species Present	Management	**Management Direction**
Snake River from the Idaho/ Washington border to Hells Canyon Dam	71.5/	Mixed/ Anadromous	Steelhead Chinook salmon	Anadromous	Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Harvest of surplus hatchery steelhead and salmon should be managed to distribute harvest amongst different river reaches, extend fishing seasons, and reduce excess hatchery brood. Coordinate harvest of hatchery spring/summer/fall Chinook salmon with the Nez Perce Tribe, Oregon and Washington. Investigate opportunities to increase harvest opportunities of fall Chinook while staying within permitted take levels on naturally produced fish.
			Hatchery rainbow trout Smallmouth bass Channel catfish Mountain whitefish	General	Provide harvest opportunities for residualized hatchery steelhead. Coordinate management of and regulations of resident fish with adjoining states, USFS, and Nez Perce Tribe.
			Wild rainbow trout Bull trout White sturgeon	Conservation	Conserve juvenile steelhead trout through harvest restrictions. No harvest, catch-and-release on bull trout. No harvest allowed on white sturgeon. Coordinate with the Nez Perce Tribe and Idaho Power to evaluate population status of white sturgeon. Evaluate whether additional gear or season restrictions are needed to maintain the abundance of white sturgeon in the Hells Canyon Reach. Follow guidance of White Sturgeon Management Plan.
Sheep and Granite Creeks		Mixed/ Anadromous	Steelhead Chinook salmon	Anadromous	Manage for natural production of wild steelhead.
			Rainbow trout	Wild	Conserve juvenile steelhead through harvest restrictions. No trout stocking into flowing waters.
			Bull trout	Conservation	No harvest allowed, catch-and-release on bull trout.
Tributaries other than Sheep and Granite Creeks		Mixed/ Anadromous	Steelhead Chinook salmon	Anadromous	Manage minor tributaries for natural production of steelhead.
			Rainbow trout	Wild	Conserve juvenile steelhead through harvest restrictions. No trout stocking into flowing waters.

Alpine lakes	/230	Coldwater	Rainbow trout Cutthroat trout Brook Trout	General	Manage the 44 high mountain lakes as per lake specific guidelines in Clearwater Region Mountain Lake Management Plan. Maintain, at a minimum, catch rates of 0.5 fish/hour. Reduce or cease stocking in lakes where natural reproduction is sufficient to maintain a fishable population. Continue routine stocking of previously stocked lakes where necessary to perpetuate a fishable population. Stock these lakes with only sterile rainbow trout to reduce threat of genetic impacts on native fish. Manage for suitable fishless habitat to ensure for long term persistence of amphibians. Evaluate and adjust stocking densities to account for lake productivity and angler pressure.


Clearwater River Drainage
Elk River
Elk Creek Reservoir
Moose Creek Res.
Spring Valley Reservoir
Elk Cr
Little North Fork Clearwater River
N.F. Clearwater River
Skull Creek
Fish Lake
Kelly Creek
Deer Creek Reservoir
Dworshak Reservoir
Potlatch River
Orofino
Jim Ford Creek
Weitas Creek
Cayuse Creek
Crooked Fork
Lochsa River
Brushy Fork
Powell
Lewiston
Mann Lake
Lapwai Creek
Big Canyon Creek
Clearwater River
Deyo Reservoir
Lolo Creek
Fish Creek
Lochsa River
Boulder Creek
Warm Springs Cr
Cor Rived Creek
MONTANA
Lake Waha
Winchester Lake
Soldiers Meadow Reservoir
Lawyer Creek
Kamiah
Kooskia
M.F. Clearwater River
N.F. Moose Creek
E.F. Moose Creek
Moose Creek
Selway River
Bear Creek
Cottonwood Creek
Clear Creek
Grangeville
Newsome Creek
American River
Meadow Creek
Running Creek
White Cap Creek
S.F. Clearwater River
Elk City
Red River
Eagle Creek
Johns Creek

7. CLEARWATER RIVER DRAINAGE

Overview

The Clearwater River originates in the Bitterroot mountain range on the Idaho-Montana border and flows westerly across the state to Lewiston where it joins the Snake River. The river drains approximately 9,570 square miles and ranges in elevation from nearly 9,000' msl to 725' msl. There are three major tributaries to the Clearwater River including the North Fork, the Middle Fork, which originates at the confluence of the Lochsa and Selway rivers, and the South Fork. Mean annual discharge for the drainage between 1960 and 2011 averaged about 15,000 cfs with instantaneous flows ranging from 500 to 141,000 cfs.

The eastern half of the drainage is mainly national forest land, while the western half is largely private land including corporate timber holdings. There is also a scattering of state land in this area. The Nez Perce Indian Reservation makes up 13% of the drainage from approximately the South Fork Clearwater River to near Lewiston. Sixty-three miles of the main Clearwater and 11 miles of the South Fork are included within the boundary of the Reservation. The entire drainage is part of the Native American ceded lands.

Approximately 24% of the drainage in the Selway and portions of the Lochsa and South Fork Clearwater drainages are classified wilderness. The Middle Fork Clearwater, including the Lochsa and Selway rivers, is part of the National Wild and Scenic Rivers System. There are some roadless areas in the Clearwater drainage that are not wilderness. Much of this unaltered area is found in the upper North Fork Clearwater River near Kelly and Weitas creeks and in the lower Selway and upper Lochsa drainages.

Fishery habitat ranges from pristine to severely degraded. Habitat located within wilderness and roadless areas is commonly in excellent condition, whereas degraded habitat is often associated with more developed or managed areas where road construction, agriculture, silviculture, grazing and/or mining occurs. The South Fork Clearwater drainage has been negatively impacted by dredge and placer mining, and livestock grazing within the riparian corridors has contributed to loss of critical riparian habitat in certain areas. Fishery potential has been negatively impacted in many of these degraded areas.

One of the most productive steelhead streams in the state was impounded and eliminated from natural production of anadromous fish by the construction of Dworshak Dam. Since construction of the dam, the lower end of the North Fork of the Clearwater has been exclusively devoted to artificial production of anadromous fish with both Dworshak National Fish Hatchery and Clearwater Fish Hatchery located near the mouth of the North Fork. In addition, Kooskia National Fish Hatchery, located at the mouth of Clear Creek, on the Middle Fork of the Clearwater, raises spring Chinook salmon and steelhead in conjunction with Dworshak. The Clearwater Fish Hatchery rears steelhead and spring and summer Chinook salmon. This program includes three satellite facilities located at Crooked River, Red River, and Walton Creek (Lochsa Tributary), which collects adult Chinook salmon for spawning. Production of spring and fall Chinook is also occurring at the Nez Perce Tribal Hatchery. IDFG is also cooperating with the Nez Perce Tribe and U.S. Fish and Wildlife Service on a tribal-led initiative to reintroduce Coho salmon into the Clearwater River. Monitoring and evaluation during this planning period, conducted primarily by the Nez Perce Tribe, will provide future guidance for this program and determine its sustainability.

Anadromous management action in the Clearwater will emphasize maintaining existing natural spawning populations of Chinook salmon and steelhead and preserving good habitat quality. The main-stems of the Clearwater, South Fork, North Fork, and lower Middle Fork rivers will continue to be managed for exploitation of hatchery steelhead. Hatchery spring Chinook salmon will also be managed for exploitation in these same rivers and the Lochsa River. Recently, summer Chinook salmon from the South Fork Salmon River have been used for brood for smolts released into the Clearwater River basin. The first adults will be returning to the South Fork Clearwater River in 2013. IDFG will work with the Nez Perce tribe on where to release these fish in the future to provide harvest opportunities for both the tribal and non-tribal fishers.

The Clearwater River drainage also supports a myriad of resident fish and fishing opportunities for them as well. Major trout species include resident rainbow trout, westslope cutthroat trout, bull trout, mountain whitefish, and kokanee. There are 710 documented mountain lakes in the Clearwater River drainage with only 11 of them believed to historically have had fish. Of the 699 historically fishless lakes, 453 (65%) remain fishless. Introduced fish occur in 245 of these historically fishless lakes with 87 of them being currently maintained with periodic stocking. Kokanee are the most abundant species found in 16,970-acre Dworshak Reservoir, the largest impoundment in the drainage. Smallmouth bass are found in Dworshak Reservoir and the main Clearwater River. Fishing opportunity ranges from quality fisheries with gear and harvest restrictions on cutthroat trout to high-yield, consumptive fisheries for kokanee, bluegill and black crappie.

There are nine lowland lakes in the area, including the newest IDFG reservoir in the state, Deyo Reservoir. These lakes are managed mostly with sterile put-and-take rainbow trout fisheries. Warmwater species including largemouth bass, smallmouth bass, black crappie, bluegill and bullheads also provide popular fisheries in these lakes. Within the drainage are a multitude of private farm ponds for which Department personnel provide consultation on a regular basis.

Objectives and Programs

1. Objective: Maintain and improve fish habitat and water quality within the Clearwater drainage.

   Program: Implement habitat improvement projects for steelhead in the lower Clearwater drainage with emphasis in the Potlatch River watershed using PCSRF, SRBA, and other available funds.

   Program: Continue to provide monitoring and evaluation of wild steelhead response to habitat improvement in the Potlatch River Basin.

   Program: Continue working with land management agencies (Forest Service, Bureau of Land Management, State Department of Lands) and private land owners to inform, educate and assist with land management planning for protecting fish habitat and water quality. Emphasize the need for riparian habitat protection and enhancement. Encourage containment of sediment production areas, including old mining sites. Oppose land use activities that degrade quality of natural production areas.

   Program: Evaluate techniques to control nuisance aquatic macrophyte growth in regional lowland lakes where it interferes with recreational fishing.

Program: Work with DEQ and the EPA to help evaluate water quality in our lowland lakes in an effort to generate funds to improve water quality.

Program: Evaluate effectiveness of hypolimnetic aeration projects in Winchester and Waha lakes.

2. Objective: Maintain a diversity of fishing opportunity in the Clearwater River drainage to meet angler demand.

   Program: Within the biological constraints, provide an array of lake and river/stream fishing opportunities including:

   a. A high yield fishery for kokanee.
   b. Yield fisheries on hatchery produced trout.
   c. Catch-and-release fishing in rivers/streams for cutthroat trout, bull trout, and steelhead trout.
   d. Quality trout fishing in at least one lowland lake
   e. Yield and quality fisheries for smallmouth and largemouth bass.
   f. Yield and quality fisheries for trout species in mountain lakes.
   g. Yield fisheries for warmwater panfish.
   h. Opportunities to harvest hatchery steelhead trout, and hatchery salmon when run size permits.
   i. Harvest opportunities for channel catfish.

3. Objective: Continue development of the Deyo Reservoir site.

   Program: Add amenities such as campgrounds, docks, toilets, picnic shelter, handicap access, and a trail network to make this site a family fishing destination.

   Program: Create a multi-species, mixed fishery.

4. Objective: Improve and increase fishing access.

   Program: As opportunities allow, acquire additional fishing access sites.

   Program: Provide routine maintenance to existing fishing access sites. Implement a schedule of dock replacement throughout the Region's lowland lakes.

   Program: Increase handicap access to popular fisheries.

5. Objective: Maintain/improve existing natural spawning populations of salmon and steelhead.

   Program: Complete the Idaho supplementation study and utilize results for future supplementation strategies.

   Program: Monitor wild steelhead and Chinook salmon populations in priority drainages post ISS.

Program: Work with the U.S. Fish and Wildlife Service and Nez Perce Tribe to develop hatchery fish release programs that preserve and protect genetic resources of naturally spawning Chinook salmon and steelhead populations.

Program: Maintain Lochsa, Selway, and Potlatch rivers as wild steelhead refuge areas with no hatchery releases or supplementation experiments.

6. Objective: Support anadromous fish passage objectives with flood control releases and other available storage from Dworshak Reservoir.

Program: Work with Corps of Engineers and other action agencies to utilize flood control releases and the existing federal storage allocation to enhance juvenile fish passage during the spring migration period when migrants are present premised on shifts in flood control operations. Continue to support managing existing flow augmentation volumes for summer migrants subordinate to flow augmentation operations during the spring migration period. Continue to support use of Dworshak Reservoir flow later in the summer season to enhance juvenile fall Chinook migration with emphasis on using coldwater augmentation to moderate temperature in the lower Snake River and Lower Granite Reservoir. Continue to support use of Dworshak Reservoir flow into September to enhance late juvenile fall Chinook migration and to facilitate adult steelhead and fall Chinook salmon return, when possible, consistent with federal and tribal agreement for reservoir operation. Support flow management and or modification to facilitate salmon and steelhead fishing in the North Fork and lower Clearwater when feasible.

7. Objective: Work with private landowners to enhance public fishing opportunities in private farm ponds.

Program: Continue consultation with private fish pond permittees to provide fisheries in farm ponds. Provide warm water fish for give-a-ways as lowland lake populations allow.

8. Objective: Manage fisheries in mountain lakes to maintain long-term probability of persistence of amphibians and to provide a diversity of fishing opportunities for anglers.

Program: Evaluate and adjust stocking densities in high mountain lakes to account for lake productivity, angler pressure, and angler desires.

Program: Continue with long-term study to evaluate the impacts the current stocking program has on long term probability of persistence of amphibian. Maintain suitable levels of fishless alpine lake habitat as described in the Clearwater Region Mountain Lake Management Plan.

9. Objective: Maintain or improve resident fisheries in Dworshak Reservoir.

Program: Work cooperatively with U.S. Army Corps of Engineers to evaluate the nutrient enhancement program aimed at balancing annual levels of base nutrients (nitrogen and phosphorus) to improve water quality and increase zooplankton and kokanee production.

Program: Monitor smallmouth bass size and age structure. Evaluate annual angler exploitation rates and assess whether regulation changes are necessary.

Program: Assess potential impacts of smallmouth bass on native gamefish species.

Program: Investigate harvest opportunities on bull trout.

10. Objective: Provide fishing opportunities for hatchery salmon and steelhead that satisfies different angler types.

Program: Coordinate hatchery smolt releases of salmon and steelhead to provide optimum adult return distribution throughout drainage.

Program: Work with the Nez Perce tribe on release strategies of hatchery summer Chinook into Clearwater River drainage that will satisfy both organizations.

Program: Evaluate whether rule changes can be made to increase overall angler satisfaction for both salmon and steelhead anglers.

Program: Measure the role, impact and contribution of commercial guiding relative to anadromous fishery management objectives.

Program: Explore strategies to expand salmon and steelhead fishing opportunities

Drainage: Clearwater River					
Water	**Miles/acre**		**Fishery**		**Management Direction**
		Type	Species Present	Management	
Winchester Lake	/100	Mixed	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Evaluate the hypolimnetic aeration project and determine if it is needed to reach rainbow trout catch rate goals.
			Largemouth bass Yellow perch Black crappie Bullhead Bluegill Channel catfish	General	Provide a yield fishery for perch, black crappie, and bluegill. Stock with channel catfish to diversify and to add to the trophy component of this fishery.
			Tiger muskie	Trophy	Maintain tiger muskie stocking to provide a specialized trophy fishery. Regulate boating activity to minimize conflicts with other uses. Work with IDPR to specify fee areas and non-fee areas for anglers to fish. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates, and/or abundance of the more desired fishes.
Spring Valley Reservoir	/53	Mixed	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour.
			Largemouth bass Black crappie Bluegill	General	Provide a yield fishery for black crappie, and bluegill.
			Tiger muskie	Trophy	Maintain tiger muskie stocking to provide a specialized trophy fishery. Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.

Mann Lake	/106	Mixed	Rainbow trout Largemouth bass Bluegill Channel catfish Black crappie	Put-and-take General	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Provide a yield fishery for black crappie, and bluegill. Stock with channel catfish to diversify and to add to the trophy component of this fishery. Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.
Waha Lake	/94	Mixed	Rainbow trout Smallmouth bass Yellow perch Black crappie	Put-and-take General	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Evaluate Waha Lake for its quality trout potential. End the hypolimnetic aeration project. Provide a yield fishery for black crappie, and bluegill. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.
Soldiers Meadow Reservoir	/118	Mixed	Rainbow trout Largemouth Bass Yellow Perch Black crappie Bullhead	General	Following the five year survey, evaluate whether the lake should be renovated to establish a more desirable fishery. Utilize findings from the lake surveys and input from the public to determine which fish to stock and how to manage them. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.

Moose Creek Reservoir	/27	Mixed	Rainbow trout Largemouth bass Bluegill Black crappie Pumpkinseed	Put-and-take General	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Provide a yield fishery for black crappie, and bluegill. Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.
Elk Creek Reservoir	/46	Mixed	Rainbow trout Brook trout Black crappie Bluegill Smallmouth bass Largemouth bass	Put-and-take Quality General	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Implement management options to allow more brook trout to reach large sizes (>14 inches). Provide a yield fishery for black crappie and bluegill. Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.
Deer Creek Reservoir	/75	Coldwater	Rainbow trout Brook trout (sterile)	Put-and-take	Stock sterile catchable rainbow trout and sterile brook trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.
Campbell's Pond	/7	Mixed	Rainbow trout Largemouth bass Bullhead Pumpkinseed	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour.

Deyo Reservoir	/56	Mixed	Rainbow trout Largemouth bass Bluegill	Put-and-take General	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Stock largemouth bass and bluegill to provide a yield fishery and a diversity of fishing experiences. Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every five years in conjunction with a creel survey and assessment of the limnological conditions. Based on findings, adjust management (stocking, limits, size restriction, vegetation control, etc.) to improve size structure, catch rates and/or abundance of the more desired fishes.
Robinson's Pond	/2	Coldwater	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour. Evaluate use of grass carp to control aquatic vegetation.
Snake River Levee Pond	/2	Coldwater	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour. Evaluate introduction of channel catfish to diversify and to add to the trophy component of this fishery
Clearwater River from mouth to South Fork Clearwater River	75/	Mixed/ Anadromous	Steelhead Chinook salmon Coho salmon Hatchery rainbow trout Mountain whitefish Kokanee Smallmouth bass Wild rainbow trout Cutthroat trout Bull trout	Anadromous General Wild Conservation	Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Emphasize a diversity of steelhead angling opportunities. Harvest of surplus hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Work with Nez Perce Tribe to ensure fall Chinook enhancements are compatible with existing fishery programs. Provide harvest opportunities for residualized hatchery steelhead. Allow salvage fishery for kokanee lost through Dworshak Dam when abundance warrants. Maintain warmwater fishery as conditions will allow. Promote mountain whitefish fishery. Manage for a conservative fishery for wild juvenile/residualized steelhead and cutthroat trout. No harvest allowed. Catch-and-release, only.

Potlatch River and tributaries	55/	Mixed/ Anadromous	Steelhead Fall Chinook	Anadromous Conservation	Manage the entire Potlatch River drainage for wild steelhead and salmon production. Maintain the native/wild gene pool and do not release hatchery steelhead into the drainage. Monitor wild steelhead production and productivity to evaluate their overall status and to direct and evaluate the effectiveness of habitat improvement projects. If run sizes increase, evaluate potential to allow catch-and-release opportunities for steelhead and salmon. Focus IDFG habitat improvement projects in the Potlatch River watershed using PCSRF, SRBA, and other available funds. Work with other implementing agencies, organizations and land owners to focus habitat improvement projects in a manner that will target limiting factors and provide population level benefit to wild steelhead. Focus restoration efforts within prioritized tributaries
			Rainbow trout	Wild	Conserve juvenile steelhead through harvest restrictions. Limit trout stocking into flowing waters. Consider genetic risk in stocking local ponds.
			Brook trout Smallmouth bass	General	Promote reduction of brook trout populations through liberal harvest rules.
Lolo Creek and tributaries	86/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Work with Nez Perce Tribe in restoring anadromous fish populations through planned introductions and habitat improvement projects. Fishing for or targeting adult anadromous fish is prohibited.
			Rainbow trout Cutthroat trout Mountain whitefish	Wild	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Limit trout stocking into flowing waters. Consider genetic risk in stocking local ponds.
			Brook trout	General	Promote reduction of brook trout populations through liberal harvest regulations.
Other mainstream Clearwater River tributaries	283/	Coldwater/ Anadromous	Steelhead Chinook salmon Coho salmon	Anadromous Conservation	Work with action agencies and landowners to improve habitat quality. Fishing for or targeting adult anadromous fish is prohibited.
			Rainbow trout Mountain whitefish Brook trout	General	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Only release sterile hatchery rainbow trout where return to the creel is acceptable and impacts to native fish are minimal.

Drainage: Middle Fork Clearwater River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Middle Fork Clearwater River (from South Fork to Selway-Lochsa confluence)	23/	Mixed/ Anadromous	Steelhead Chinook salmon Coho salmon	Anadromous	Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Emphasize a diversity of steelhead angling opportunities. Harvest of surplus hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Work with Nez Perce Tribe to ensure fall Chinook enhancements are compatible with existing fishery programs.
			Rainbow trout Cutthroat trout	Quality	Use a combination of restrictive rules to maintain or improve the size structure and abundance of cutthroat and rainbow trout.
			Mountain whitefish Smallmouth bass	General	Promote mountain whitefish fishery.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
Clear Creek and tributaries	65/	Coldwater/ Anadromous	Chinook salmon Steelhead	Anadromous	Work with the Nez Perce tribe in developing guidelines for releasing salmon and steelhead adults above the Clear Creek weir for natural production. Fishing for or targeting wild anadromous fish is prohibited.
			Rainbow trout Cutthroat trout	Wild	Work with action agencies and landowners to improve habitat quality. Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Limit trout stocking into flowing waters. Consider genetic risk in stocking local ponds.
			Bull trout	Conservation	No harvest allowed. Catch and release, only.
Other Middle Fork tributaries	32/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality.
			Rainbow trout Cutthroat trout	Wild	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. No trout stocking into flowing waters. Consider genetic risk in stocking local ponds.
			Brook trout	General	Reduce brook trout populations through liberal harvest rules.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.

Drainage: North Fork Clearwater River					
Water	**Miles/acre**		**Fishery**		**Management Direction**
		Type	Species Present	Management	
North Fork Clearwater River from mouth to Dworshak Dam	1.4/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Harvest of surplus hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe.
			Hatchery rainbow trout Mountain whitefish Kokanee	General	Provide harvest opportunities for residualized hatchery steelhead. Allow salvage fishery for kokanee lost through Dworshak Dam when abundance warrants.
			Rainbow trout Cutthroat trout	Wild	Conserve juvenile steelhead and cutthroat trout through harvest restrictions.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
Dworshak Reservoir	53/17,090	Mixed	Kokanee Rainbow trout Smallmouth bass	General	Cooperatively work with the U.S. Army Corps of Engineers to evaluate the benefits of nutrient enhancement. Monitor the effects of nutrient enhancement on water quality, primary productivity, quality and quantity of zooplankton, fish response, and fishery response. Strive to provide, on average, a 10-inch fish at a catch rate of 1.2 fish/hour. This would be a 67% increase in catch rates over pre-nutrient enhancement levels. Monitor the smallmouth bass population and fishery to determine if regulations are adequate to meet angler desires. Evaluate the influence nutrient enhancement has on the smallmouth bass population.
			Cutthroat trout	Quality	Move stocking of sterile catchable rainbow trout to reservoirs within the North Fork Drainage that return to creel at an acceptable rate. Use a combination of restrictive regulations to increase size and survival of cutthroat trout.
			Bull trout	Conservation	No harvest allowed catch-and-release only on bull trout. Consider fishing gear restrictions to protect bull trout upstream of Grandad Bridge from Dec 1- Memorial Day.
Little North Fork Clearwater River and tributaries.	61/	Mixed	Redband trout Cutthroat trout Mountain whitefish Smallmouth bass	Wild General	Conserve cutthroat trout and rainbow trout through harvest restrictions. No trout stocking into flowing waters. Strive to protect critical habitat and maintain low access fishing opportunity. Monitor changes in size and abundance of fishes by snorkeling trend sites every three to five years
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.

Alpine lakes in Little North Fork Clearwater River drainage (15 lakes)	/150	Coldwater	Cutthroat trout Rainbow trout Brook trout Golden trout Arctic grayling	General	Continue maintenance stocking of trout fry where necessary to provide fisheries that are consistent with lake productivity and angling pressure. Emphasize use of westslope cutthroat trout for stocking lakes. Continue to survey lakes to improve management.
North Fork Clearwater River upstream of flatwater of Dworshak Reservoir	135/	Mixed	Cutthroat trout Rainbow trout	Quality	Use a combination of restrictive regulations to maintain or improve the size structure and abundance of cutthroat trout. Allow reduced harvest of any size rainbow. No trout stocking in flowing water. Re-establish historic trend snorkel sites to monitor size and abundance of fishes by snorkeling around every three years.
			Smallmouth bass Mountain whitefish Kokanee	General	Monitor smallmouth bass fishery through snorkel surveys. Encourage mountain whitefish fishing. Evaluate whether the general kokanee rules are influencing their abundance in Dworshak Reservoir.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only. Work with the USFS to monitor bull trout population strength through established redd trend count surveys.
All North Fork Clearwater River tributaries EXCEPT Kelly Creek		Coldwater	Cutthroat trout Rainbow trout	Wild	Conserve wild cutthroat trout and rainbow trout while providing limited harvest opportunities. Limit trout stocking into flowing waters.
			Mountain whitefish Brook trout Kokanee	General	Encourage harvest of brook trout in the selected tributaries where they occur. Evaluate whether the general kokanee rules are influencing their abundance in Dworshak Reservoir.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only. Work with USFS to monitor bull trout population strength through established redd trend counts.
Kelly Creek and its tributaries	119/	Coldwater	Cutthroat trout Redband trout	Quality	Manage cutthroat trout and rainbow trout with rules to maintain high quality and a higher abundance of larger fish. Maintain or improve present habitat. No trout stocking in flowing water. Re-establish historic trend snorkel sites to monitor size and abundance of fishes by snorkeling around every three years.
			Mountain whitefish	General	Encourage mountain whitefish fishing.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only. Work with USFS to monitor bull trout populations through established redd trend count surveys.
Fish Lake (Cedars)	/117	Coldwater	Cutthroat trout	Wild	Protect outlet spawning cutthroat trout. Minimize impacts of boat activity on other uses. Maintain or improve spawning habitat in the outlet stream.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.

Alpine lakes in the North Fork Clearwater drainage	/289	Coldwater	Cutthroat trout Rainbow trout Brook trout	General	Manage 66 lakes as per lake specific guidelines in Clearwater Region Mountain Lake Management Plan. Maintain, at a minimum, catch rates of 0.5 fish/hour. Reduce or cease stocking in lakes where natural reproduction is sufficient to maintain a fishable population. Continue routine stocking of previously stocked lakes where necessary to perpetuate a fishable population. Stock these lakes with only those trout fry species that are native to the drainage. Manage for suitable fishless habitat to ensure for long term persistence of amphibians. Evaluate the use of tiger muskie as experimental tool to remove brook trout populations from selected lakes. Lakes where successful brook trout removal efforts have occurred, stock with westslope cutthroat. Evaluate and adjust stocking densities to account for lake productivity and angler pressure.

Drainage: South Fork Clearwater River					
Water	**Miles/acre**		**Fishery**		**Management Direction**
		Type	Species Present	Management	
South Fork Clearwater River	65/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Harvest of surplus hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Work with Nez Perce Tribe to ensure fall Chinook enhancements are compatible with existing fishery programs. Seek opportunities to secure access to private lands, especially along popular fishing locations. Work with action agencies and landowners to improve habitat quality.
			Hatchery rainbow trout Mountain whitefish	General	Provide harvest opportunities for residualized hatchery steelhead. Encourage mountain whitefish fishing.
			Wild rainbow trout Cutthroat trout Bull trout	Conservation	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Snorkel established trend sites every three years to monitor size and abundance of fishes. No harvest allowed. Catch-and-release only on bull trout.
Ten Mile Creek and tributaries	20/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality.
			Rainbow trout Cutthroat trout	Wild	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. No trout stocking into flowing waters.
			Mountain whitefish	General	Encourage mountain whitefish fishing
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
Johns Creek		Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality.
			Cutthroat trout Rainbow trout	Wild	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Limit trout stocking into flowing waters.
			Mountain whitefish	General	
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.

Newsome Creek and tributaries	164/	Coldwater/ Anadromous	Steelhead Chinook salmon Cutthroat trout Rainbow trout Mountain whitefish Bull trout	Anadromous Wild General Conservation	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality. Work with Nez Perce Tribe in restoring anadromous fish populations. Conserve juvenile steelhead and cutthroat trout through harvest restrictions. No trout stocking into flowing waters. No harvest allowed. Catch-and-release, only.
Red River and tributaries		Coldwater/ Anadromous	Steelhead Chinook salmon Cutthroat trout Rainbow trout Mountain whitefish Brook trout Bull trout	Anadromous Wild General Conservation	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality. Complete steelhead supplementation evaluation. Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Limit trout stocking into flowing waters. Encourage harvest of brook trout No harvest allowed. Catch-and-release, only.
American River and tributaries		Coldwater/ Anadromous	Steelhead Chinook salmon Cutthroat trout Rainbow trout Brook trout Bull trout	Anadromous Wild General Conservation	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality. Complete steelhead supplementation evaluation. Conserve juvenile steelhead and cutthroat trout through harvest restrictions. No trout stocking into flowing waters. Encourage harvest of brook trout No harvest allowed. Catch-and-release, only.
Crooked River and tributaries		Coldwater/ Anadromous	Steelhead Chinook salmon Cutthroat trout Rainbow trout Bull trout	Anadromous Wild Conservation	Fishing for or targeting wild anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality. Complete steelhead supplementation evaluation. Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Limit trout stocking into flowing waters. No harvest allowed. Catch-and-release, only.

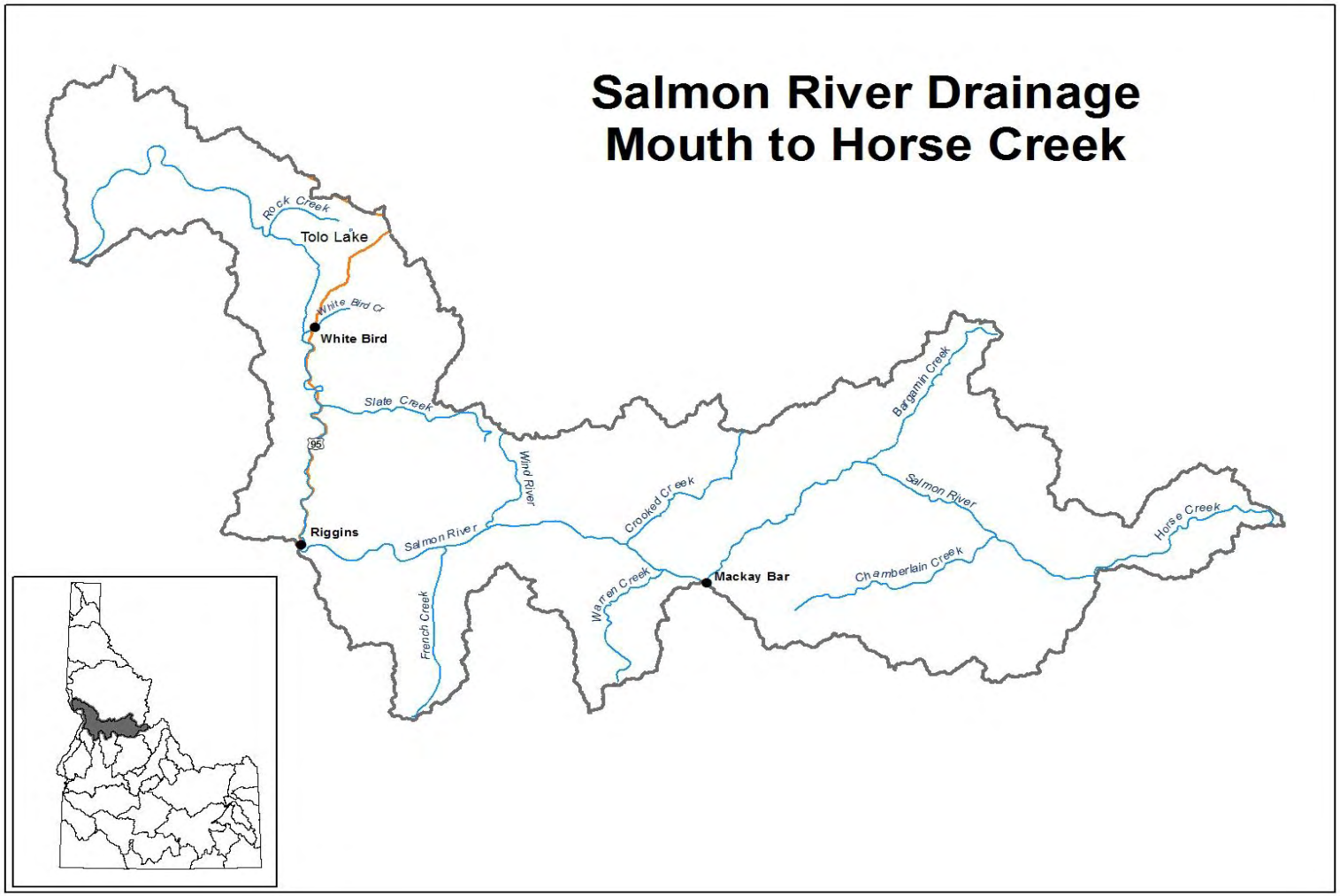
Other South Fork Clearwater River tributaries	114/	Coldwater/ Anadromous	Steelhead Chinook salmon Cutthroat trout Rainbow trout Brook trout Bull trout	Anadromous Wild General Conservation	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality. Complete steelhead supplementation evaluation. Conserve juvenile steelhead and cutthroat trout through harvest restrictions. No trout stocking into flowing waters. Encourage harvest of brook trout in select tributaries where they occur. No harvest allowed. Catch-and-release, only.
Karolyn's Pond	/1	Coldwater	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour.
5-Mile Pond	/2	Coldwater	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour.
Alpine lakes	/190	Coldwater	Cutthroat trout Rainbow trout Brook trout	General	Manage 43 lakes as per lake specific guidelines in Clearwater Region Mountain Lake Management Plan. Maintain, at a minimum, catch rates of 0.5 fish/hour. Reduce or cease stocking in lakes where natural reproduction is sufficient to maintain a fishable population. Continue routine stocking of previously stocked lakes where necessary to perpetuate a fishable population. Stock these lakes with only those trout fry species that are native to the drainage. Continue long-term monitoring to evaluate effects of fish stocking on amphibians. Manage for suitable fishless habitat to ensure for long term persistence of amphibians. Evaluate and adjust stocking densities to account for lake productivity and angler pressure.

Drainage: Lochsa River					
Water	**Miles/ Acres**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Lochsa River from mouth to Wilderness Gateway Bride (MP 123)	217/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult steelhead is prohibited. Maintain native/natural gene pool. Consider desires of different angler types when developing fishing rules for hatchery salmon. Harvest of surplus hatchery salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Work with action agencies and landowners to improve habitat quality.
			Mountain whitefish	General	Encourage mountain whitefish fishing.
			Cutthroat trout Rainbow trout	Quality	Use a combination of restrictive rules to maintain or improve the size structure and abundance of cutthroat trout and rainbow trout. No trout stocking in flowing water. Snorkel established trend sites every three years to monitor changes in size and abundance of fishes.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
Lochsa River from Wilderness Gateway Bridge to confluence of Colt Killed Creek and Crooked Fork Creek and Crooked Fork Creek upstream to Brushy Fork Creek	44/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult steelhead is prohibited. Maintain native/natural gene pool within the drainage. Consider desires of different angler types when developing fishing rules for hatchery salmon. Harvest of surplus hatchery salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Work with action agencies and landowners to improve habitat quality.
			Mountain whitefish	General	Encourage mountain whitefish fishing.
			Cutthroat trout Rainbow trout	Quality	Manage cutthroat trout and rainbow trout with rules to maintain a high abundance of larger fish. Limit trout stocking in flowing water. Snorkel established trend sites every three years to monitor size and abundance of fishes.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.

All Lochsa River tributaries except Crooked River downstream of Brushy Fork Creek		Coldwater/ Anadromous	Steelhead Chinook salmon Mountain whitefish Cutthroat trout Rainbow trout Bull trout	Anadromous General Wild Conservation	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality. Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Limit trout stocking into flowing waters. No harvest allowed. Catch-and-release,Catch-and-release, only. only.
White Sands Pond (Powell Pond)	/3	Coldwater	Rainbow Trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour.
Alpine Lake	/346	Coldwater	Cutthroat trout Rainbow trout Bull trout	General Conservation	Manage 140 lakes as per lake specific guidelines in Clearwater Region Mountain Lake Management Plan. Maintain, at a minimum, catch rates of 0.5 fish/hour. Reduce or cease stocking in lakes where natural reproduction is sufficient to maintain a fishable population. Continue routine stocking of previously stocked lakes where necessary to perpetuate a fishable population. Stock these lakes with only those trout fry species that are native to the drainage. Continue long-term monitoring to evaluate effects of fish stocking on amphibians. Manage for suitable fishless habitat to ensure for long term persistence of amphibians. Evaluate and adjust stocking densities to account for lake productivity and angler pressure No harvest allowed. Catch-and-release, only.

Drainage: **Selway River**					
Water	**Miles/acre**		**Fishery**		**Management Direction**
		Type	Species Present	Management	
Selway River from the mouth upstream to Selway Falls cable car	20/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult anadromous fish is prohibited. Maintain native/natural gene pool of steelhead. Work with action agencies and landowners to improve habitat quality. Coordinate spring/summer hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe.
			Mountain whitefish	General	Encourage mountain whitefish fishing.
			Cutthroat trout Rainbow trout	Quality	Use a combination of restrictive regulations to maintain or improve the size structure and abundance of cutthroat trout and rainbow trout. Limit trout stocking in flowing water.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
Selway River upstream of the Selway Falls cable car	71/	Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult anadromous fish is prohibited. Maintain native/natural gene pool of steelhead. Work with Nez Perce Tribe to evaluate sustainability of existing naturally produced Chinook salmon population.
			Mountain whitefish	General	Encourage mountain whitefish fishing.
			Cutthroat trout Rainbow trout	Quality	Manage cutthroat trout and rainbow trout with rules to maintain a high quality and higher abundance of larger fish. Limit trout stocking in flowing water. Snorkel established trend sites on a regular basis to monitor size and abundance of fishes.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
All Selway River tributaries		Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult anadromous fish is prohibited. Work with action agencies and landowners to improve habitat quality. Maintain native/natural gene pool of steelhead. Work with Nez Perce Tribe to evaluate sustainability of existing naturally produced Chinook salmon population.
			Mountain whitefish	General	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. Limit trout stocking into flowing waters.
			Cutthroat trout Rainbow trout	Wild	
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
Fenn Pond	/1	Coldwater	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour.

Alpine lakes	/1288	Coldwater	Cutthroat trout Rainbow trout Brook trout	General	Manage 307 lakes as per lake specific guidelines in Clearwater Region Mountain Lake Management Plan. Maintain, at a minimum, catch rates of 0.5 fish/hour. Reduce or cease stocking in lakes where natural reproduction is sufficient to maintain a fishable population. Continue routine stocking of previously stocked lakes where necessary to perpetuate a fishable population. Stock these lakes with only those trout fry species that are native to the drainage. Continue long-term monitoring to evaluate effects of fish stocking on amphibians. Manage for suitable fishless habitat to ensure for long term persistence of amphibians. Evaluate and adjust stocking densities to account for lake productivity and angler pressure.


Salmon River Drainage
Mouth to Horse Creek
Rock Creek
Tolo Lake
White Bird Cr.
White Bird
Slate Creek
95
Wind River
Riggins
Salmon River
French Creek
Crooked Creek
Warren Creek
Mackay Bar
Bargamin Creek
Salmon River
Chamberlain Creek
Horse Creek

8. SALMON RIVER DRAINAGE - MOUTH TO HORSE CREEK

Overview

Horse Creek enters the Salmon River from the north side of the river 187 miles upstream from its confluence with the Snake River. This reach of river is a migration corridor for spring, summer, and fall Chinook salmon, sockeye salmon, and steelhead, as well as an overwintering area for adult steelhead and juvenile Chinook and steelhead. It supports a myriad of recreational opportunities including rafting, jet boating, steelhead fishing and salmon fishing. There is also fishing opportunity for resident rainbow trout, cutthroat trout, bull trout and smallmouth bass. Sturgeon are present in this reach of the river. Portions of the Salmon River between the mouth and Horse Creek are protected by wilderness and wild river status. The upper segment drains parts of the Frank Church River of No Return and Gospel Hump Wilderness areas.

The 53-mile section of river from the mouth to Hammer Creek is under consideration for classification in the Wild and Scenic Rivers System. This reach of river has limited access and provides for a quality steelhead fishing opportunity. White water boating is increasing in popularity. The Central Idaho Wilderness Act of 1980 prohibits mining activity in this river stretch.

The section of river from Hammer Creek to Vinegar Creek boat ramp is heavily accessed. Highway 95 parallels 30 miles of the river from Whitebird upstream to Riggins. Opportunity for spring/summer Chinook salmon fishing has been offered in this reach from 2001-20011 and will continue to be when run-size is appropriate. The river from Riggins upstream to Vinegar Creek is bounded by a secondary road and spring/summer Chinook salmon fishing opportunities have been offered in this reach since 2009. Fall Chinook salmon spawning has been documented in this river section periodically since 1993. In 2010, spring/summer Chinook salmon fishing opportunities were extended from Hammer Creek downstream to Rice Creek Bridge.

There are 74 miles of unroaded river between Vinegar Creek and Horse Creek. This section of Salmon River is commonly referred to as the Salmon River canyon. This reach of river has limited access and is classified "wild" under the Wild and Scenic Rivers System. It supports an expanding use of jet boat traffic directed toward fall and spring steelhead fishing. Most of the commercial steelhead fishing outfitter services occurs in this area.

Downstream from Vinegar Creek, naturally reproducing populations of Chinook salmon exist primarily in Slate and Whitebird creeks. No Chinook salmon have been stocked in the lower Salmon tributaries, except the Little Salmon. (The Little Salmon River is discussed separately.) Spring Chinook production in Slate and Whitebird creeks results from wild fish and perhaps strays from the Rapid River program. Chamberlain Creek also supports wild Chinook salmon production. Most of these tributaries have good to excellent habitat.

Many of the tributary streams in the Salmon River canyon are important producers of wild steelhead trout. These tributaries represent the largest and the only contiguous production area for wild A-run steelhead trout in the Salmon River. Resident fisheries in these tributaries are supported primarily by wild juvenile steelhead trout.

Anadromous management action in this river section will emphasize maintaining existing natural spawning populations of Chinook salmon and steelhead trout and preserving good habitat quality. Tributaries in the Salmon River canyon will continue to be managed for wild Chinook salmon and steelhead production. Maintenance of the genetic resources contained in the wild populations in this river section will be a top priority. The mainstem Salmon River will continue to be managed for exploitation of hatchery steelhead but consumptive harvest is not expected on naturally produced steelhead or Chinook salmon during the next five years. Sport fisheries on excess hatchery spring/summer Chinook salmon will be managed in sections of the mainstem Salmon River where fishery monitoring is feasible and incidental take of listed stocks can be managed at an acceptable level.

There are no significant impoundments within the Salmon River drainage. The integrity of the drainage, including the diversity of fishing and recreational opportunity, is dependent on a free-flowing river. Legislation passed by Congress in 1989 prohibits the Federal Energy Regulatory Commission from issuing any licenses to develop new mainstem hydropower projects in the unprotected portions of the Salmon River. Congressional intent also includes federally authorized projects.

Objectives and Programs

1. Objective: Maintain maximum potential for fishery and recreational values in the Salmon River from mouth to Horse Creek.

   Program: Work with land managers to ensure adequate riparian and water quality protection along the Salmon River corridor between Hammer and Vinegar creeks. Attempt to influence land use activities that degrade quality of natural production and migration areas.

2. Objective: Maintain existing natural spawning populations of Chinook salmon and steelhead trout.

   Program: Allow natural production to sustain existing natural populations. Do not out-plant hatchery steelhead trout and Chinook salmon into the mainstem or tributaries, from French Creek upstream to the Middle Fork Salmon River, to preserve wild fish genetic resources. Limit hatchery out-planting in the rest of this section to support supplementation research and areas devoid of naturally produced anadromous fish.

3. Objective: Minimize harvest impacts to naturally produced Chinook salmon and steel head trout populations.

   Program: Maintain fishing regulations implemented to avoid harvest impacts to juvenile steelhead trout populations.

4. Objective: Maintain and improve habitat quality of tributary production areas.

   Program: Minimize or seek mitigation for land use activities that further degrade the quality of natural production areas. Encourage implementation of grazing management plans, which eliminate negative grazing impacts to fishery productivity and survival.

5. Objective: Increase fishing access.

Program: Develop small outboard and float boat launch facilities where possible.

6. Objective: Manage mountain lakes within productivity and user preference constraints of individual lakes.

Program: Continue mountain lakes investigations in cooperation with USFS to collect biological, physical and chemical characteristics of each lake. Use acquired information to develop management plans.

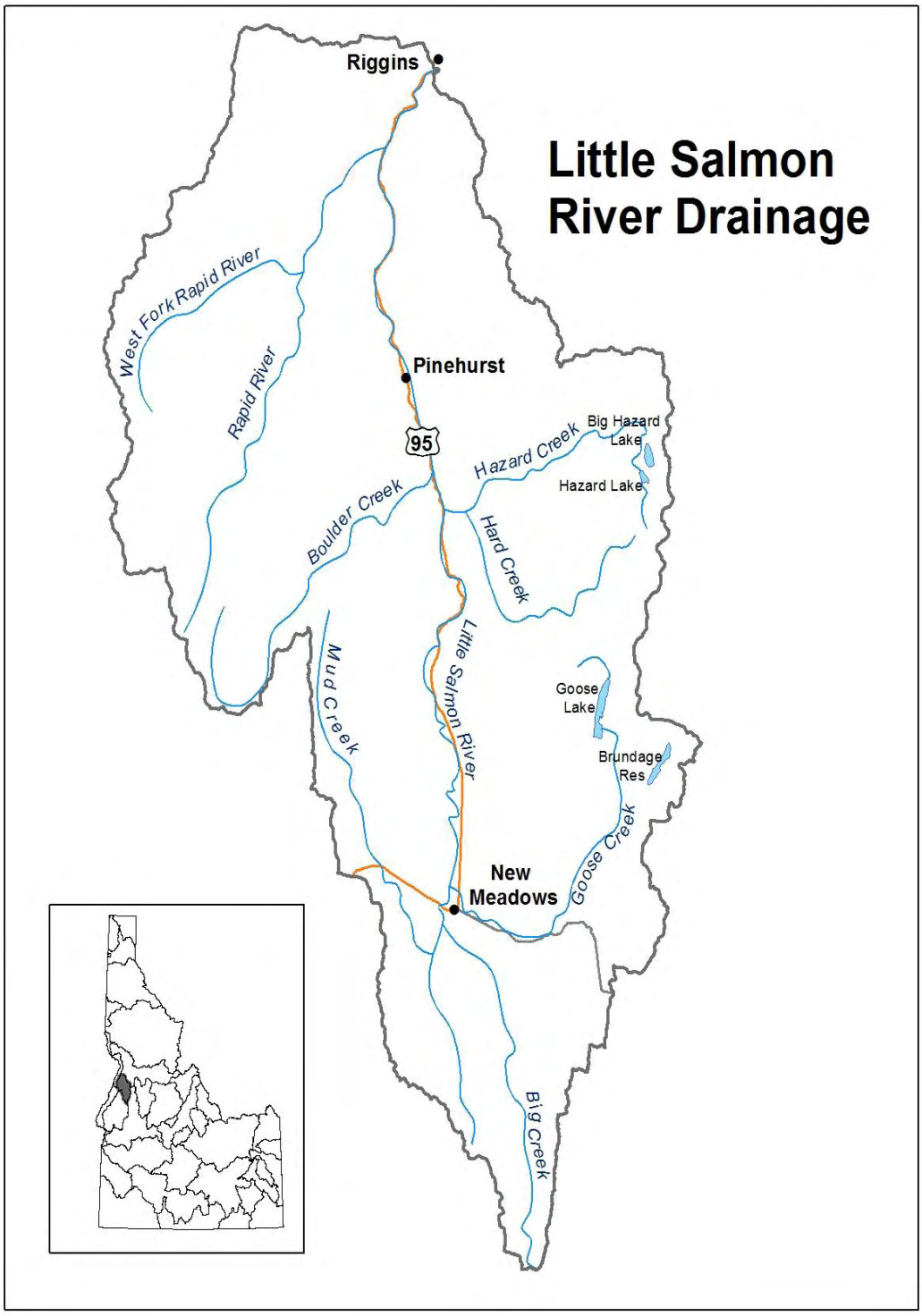
7 Objective: Manage sub-alpine ecosystems to preserve native amphibian species.

Program: Maintain suitable levels of fishless mountain lake habitat as described in the Clearwater and McCall regional mountain lake management plans.

Drainage: Salmon River - Mouth to Horse Creek					
Water	**Miles/acre**		**Fishery**		**Management Direction**
		Type	Species Present	Management	
Salmon River from its mouth to Rice Creek Bridge	37.7/	Mixed/ Anadromous	Steelhead Chinook salmon	Anadromous	Enhance steelhead fishing opportunity with a combination of A and B strain smolt releases into upstream areas. Investigate the possibilities of direct releases into this section of river to increase harvest opportunities. Harvest of surplus hatchery steelhead should be managed to distribute harvest amongst different communities, and reduce excess hatchery brood. Fishing for or targeting salmon will be prohibited in this section of river.
			Hatchery rainbow trout Mountain whitefish Smallmouth bass	General	Provide harvest opportunities for residualized hatchery steelhead. Evaluate smallmouth bass rules.
			Wild rainbow trout Cutthroat trout Bull trout White sturgeon	Conservation	Use conservative rules to protect cutthroat trout and juvenile/residualized steelhead. Manage bull trout and sturgeon under “no harvest, catch-and-release” rules. Coordinate with the Nez Perce Tribe and Idaho Power to evaluate population status of white sturgeon. Evaluate whether additional gear or season restrictions are needed to maintain the abundance of white sturgeon in this reach of river. Follow guidance of White Sturgeon Management Plan.
Salmon River from Rice Creek Bridge to Vinegar Creek Boat Ramp	74.3/	Mixed/ Anadromous	Steelhead Chinook salmon	Anadromous	Enhance steelhead fishing opportunity with a combination of A and B strain smolt releases into upstream areas. Investigate the possibilities of direct releases downstream of French Creek to increase harvest opportunities. Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Harvest of surplus hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring hatchery Chinook releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe.
			Hatchery rainbow trout Mountain whitefish Smallmouth bass	General	Provide harvest opportunities for residualized hatchery steelhead. Evaluate smallmouth bass rules.
			Rainbow trout Cutthroat trout Bull trout White sturgeon	Wild/Conservation	Use conservative rules to protect cutthroat trout and juvenile/residualized steelhead. Manage bull trout and sturgeon with “no harvest, catch-and-release” rules. Follow guidance of White Sturgeon Management Plan.

Salmon River from Vinegar Creek Boat ramp to Horse Creek	80.1/	Mixed/ Anadromous	Steelhead Chinook salmon	Anadromous	Enhance steelhead fishing opportunity with a combination of A and B strain smolt releases into upstream areas. Harvest of surplus hatchery steelhead should be managed to distribute harvest amongst different communities, and reduce excess hatchery brood. Fishing for or targeting salmon will be prohibited in this section of river.
			Hatchery rainbow trout Mountain whitefish Smallmouth bass	General	Provide harvest opportunities for residualized hatchery steelhead. Evaluate smallmouth bass rules.
			Wild rainbow trout Cutthroat trout Bull trout White sturgeon	Conservation	Use conservative rules to protect cutthroat trout and juvenile/residualized steelhead. Manage bull trout and sturgeon with “no harvest, catch-and-release” rules.
All tributaries of the Salmon River from its Mouth to Horse Creek (excluding Little Salmon River and South Fork Salmon River).		Coldwater/ Anadromous	Steelhead Chinook salmon	Anadromous	Fishing for or targeting adult anadromous fish will be prohibited. Work with land managers to protect/improve salmon and steelhead spawning and rearing habitat.
			Cutthroat trout Rainbow trout	Wild	Conserve juvenile steelhead and cutthroat trout through harvest restrictions. No trout stocking into flowing waters.
			Brook trout Mountain whitefish	General	Encourage harvest of brook trout in those tributaries they occur in
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.
Tolo Lake	/20	Warmwater	Largemouth bass Black and white crappie Channel catfish	General	Minimize impacts of boat activity on other uses. Investigate the possibility of creating a channel catfish fishery.
Long Gulch Pond	/5	Coldwater	Rainbow trout	Put-and-take	Stock sterile catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour.

Alpine lakes	/546 (Clearwater)	Coldwater	Rainbow trout Cutthroat trout Brook trout Arctic grayling Golden trout Rainbow trout x cutthroat Trout hybrids	General	Manage lakes as per lake specific guidelines in Clearwater (110 lakes) and McCall regions Mountain Lake Management Plans. Maintain, at a minimum, catch rates of 0.5 fish/hour. Reduce or cease stocking in lakes where natural reproduction is sufficient to maintain a fishable population. Continue routine stocking of previously stocked lakes where necessary to perpetuate a fishable population. In the Clearwater Region stock these lakes with only those trout fry species that are native to the drainage. Continue long-term monitoring to evaluate effects of fish stocking on amphibians. Manage for suitable fishless habitat to ensure for long term persistence of amphibians. Evaluate and adjust stocking densities to account for lake productivity and angler pressure.
			Bull trout	Conservation	No harvest allowed. Catch-and-release, only.


Little Salmon River Drainage
Riggins
Pinehurst
New Meadows
95
West Fork Rapid River
Rapid River
Boulder Creek
Mud Creek
Little Salmon River
Hazard Creek
Big Hazard Lake
Hazard Lake
Hard Creek
Goose Lake
Brundage Res
Goose Creek
Big Creek

9. LITTLE SALMON RIVER DRAINAGE

Overview

The Little Salmon River begins in the Meadows Valley in Adams County and flows northward to its confluence with the Salmon River at Riggins. Major tributaries include Goose Creek, Hazard Creek, Boulder Creek, and Rapid River. Major lakes and reservoirs include Fish (Mud) Lake, Goose Lake, Brundage Reservoir, and Hazard Lake. The drainage area is 516 square miles and includes elevations from 1,760 feet at the mouth to 9,000 feet in the Seven Devils Mountains and Hazard Creek drainages. Discharge at Riggins averages 854 cfs with extremes of 98 cfs to 12,600 cfs recorded.

Most of the drainage is forest lands, including wilderness and unroaded areas. There are 15,300 acres of irrigated agricultural lands, primarily hay meadows and pastures, in the drainage.

The Little Salmon River drainage from its mouth to and including Hazard Creek supports spring Chinook salmon, steelhead trout, inland redband trout, westslope cutthroat trout, bull trout, brook trout, mountain whitefish, and nongame species. High gradient cascades prevent anadromous fish species from upstream migration beyond Round Valley Creek. Above Round Valley Creek, the Little Salmon River is a low gradient, meandering stream with high gradient tributaries.

The Rapid River drainage is extremely important to Idaho's anadromous fish program. Upper Rapid River is classified as wilderness, and this drainage provides essential, good quality spawning and rearing habitat for salmon and steelhead to maintain natural production. It also supplies high-quality water for Idaho Power Company's Rapid River Hatchery which spawns and rears spring Chinook.

A harvestable surplus of hatchery-produced spring Chinook salmon return to Rapid River in most years. These fish are utilized for treaty and non-treaty fisheries. Anadromous management in the Little Salmon River drainage emphasizes hatchery production to provide spring Chinook for harvest as the first priority. Rapid River Hatchery has also supplied excess eggs for a number of programs outside of the drainage, such as the Clearwater River.

Little Salmon River steelhead stocking is designed to provide harvest opportunity on hatchery steelhead in the mainstem Salmon near Riggins and in the Little Salmon. It is the only Salmon River tributary open during steelhead season.

Current habitat improvement efforts are focused on water quality and the riparian corridor in the upper Little Salmon River. We will continue to participate with agencies and landowners to implement and monitor various projects prescribed through recently completed Total Maximum Daily Load and water management plans.

Brundage Reservoir and Lake Serene are managed for trophy fishing opportunities. Goose and Fish Lake reservoirs, Hazard and other alpine and lakes are popular recreation areas and provide general fishing opportunity in high elevation settings for many anglers.

Objectives and Programs

1. Objective: Maximize harvest opportunity on hatchery-produced salmon and steelhead.

   Program: Structure Chinook seasons to ensure all anglers an opportunity to harvest fair shares of the run.

2. Objective: Improve water quality and fish habitat upstream of the barriers near Round Valley Creek.

   Program: Work with the landowners and sister agencies to participate in state and federal programs to improve grazing, irrigation, and farming practices to improve riparian condition and water quality.

3. Objective**:** Provide a diversity of alpine lake fishing opportunities**.**

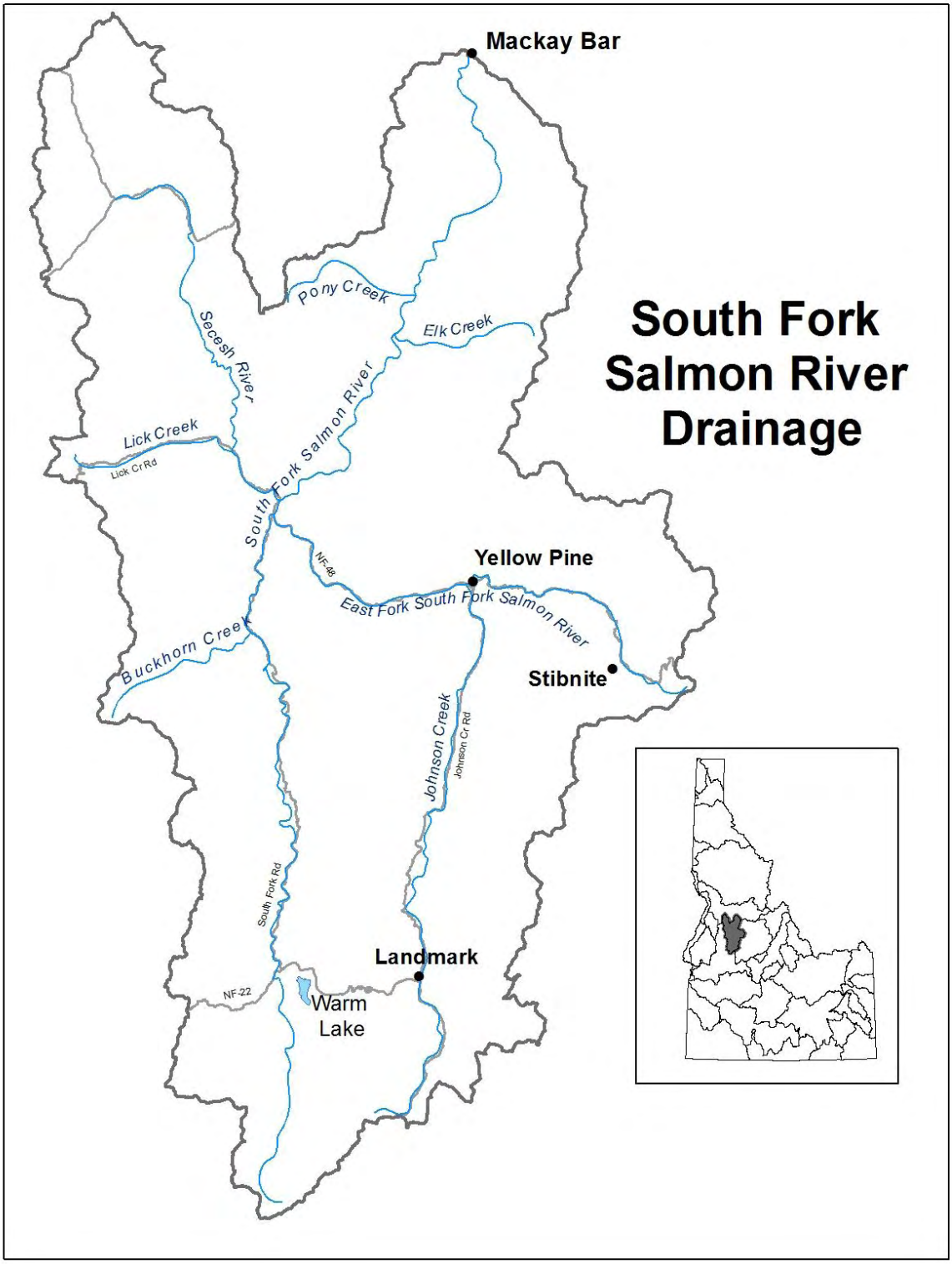
   Program: Complete surveys of the majority of alpine lakes in the drainage.

   Program: Investigate additional alpine lakes for different management actions such as brook trout suppression by stocking sterile predators.

Drainage: Little Salmon River

Water	Miles/acre	Fishery			Management Direction
		Type	Species Present	Management	
Little Salmon River and tributaries, mouth to Round Valley Creek (except Rapid River)	104/	Coldwater/ Anadromous	Chinook salmon	Anadromous	Manage primarily for sport fishing opportunity on hatchery produced salmon and steelhead. Monitor any harvest fishery closely through creel survey. Release both A and B type smolts to allow return of larger fish for anglers and to base the fishery on 2 different year-classes of steelhead.
			Steelhead		
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
			Redband trout Brook trout Cutthroat trout Mountain whitefish	General	Enhance populations of wild trout by improving water quality throughout the drainage.
Rapid River and tributaries from mouth to headwaters	35/	Coldwater/ Anadromous	Chinook salmon Steelhead	Conservation	Closed to adult Chinook and Steelhead harvest. Enhance spring Chinook salmon and steelhead trout returns to Rapid River trap and allow natural escapement to maximize seeding of spawning and rearing habitat.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only. Monitor bull trout population and life history.
			Redband trout Mountain whitefish	Wild General	Maintain and improve existing habitat to sustain/enhance wild salmonid stocks.
Little Salmon River and tributaries from Round Valley Creek to headwaters	89/	Coldwater	Redband trout	Wild	Pursue aggressive program of habitat rehabilitation with landowners and federal/state agencies. Improve water quality and riparian vegetation throughout this river section.
			Brook trout	General	
Fish (Mud) Lake	/30	Coldwater	Rainbow trout	General	Put and take fishery. Maintain spawning channel water right for future use. Consider for potential redband trout production rearing.
Brundage Reservoir	/270	Coldwater	Rainbow trout Cutthroat trout	Trophy	Maintain trophy trout fishery. Maintain catch rate of 1.0 fish/hour. Allow harvest of smaller trout under 14 inches. Monitor trout lengths through fall gillnetting. Investigate limiting trout spawners to maintain good growth.
Goose Lake	/520	Coldwater	Rainbow trout Brook trout Cutthroat trout	General	Supplement with catchable trout for a catch rate of 0.5 fish/hr

Hazard Lakes	/90	Coldwater	Brook trout Rainbow trout Cutthroat trout Rainbow trout x cutthroat trout hybrids	General	Collect baseline fishery data to assess status of system. Develop improved trout fishery to enhance catch rates and sizes of fish. Augment Main Hazard Lake with catchable rainbow trout.
Lake Serene	/10	Coldwater	Brook Trout Rainbow trout	Trophy	Maintain trophy fishing opportunity.
Other alpine lakes (42)	/1,000	Coldwater	Rainbow trout Cutthroat trout Golden trout Brook trout Arctic grayling	General	Maintenance stocking on a three-year rotational basis with salmonid fingerlings to provide species diversity. Collect baseline data on lakes to improve fishing. Seek ways to rehabilitate or improve stunted brook trout lakes.


Mackay Bar
Pony Creek
Elk Creek
Secesh River
South Fork Salmon River
Lick Creek
Lick Cr Rd
Yellow Pine
NF-46
East Fork South Fork Salmon River
Buckhorn Creek
Stibnite
Johnson Creek
Johnson Cr Rd
South Fork Rd
Landmark
NF-22
Warm Lake
South Fork Salmon River Drainage

10. SOUTH FORK SALMON RIVER DRAINAGE

Overview

The South Fork Salmon River (SFSR) drainage lies in central Idaho in Valley and Idaho counties. The drainage flows northerly through the Idaho batholith and enters the Salmon River at Mackay Bar. Elevations vary from 9,280 feet msl at North Loon Mountain to 2,166 feet msl at the mouth.

The land is characterized by extreme changes in elevation and aspect within short distances. Topography varies from steep canyon lands to meadows. The Idaho batholith soils consist largely of weathered granitic sands and fines and are sensitive to disturbance. Precipitation averages 32 inches annually, with major storm events occurring about every ten years.

Resident fish species, including redband trout, westslope cutthroat trout, bull trout, mountain whitefish, brook trout, and numerous nongame fish species occupy 515 miles of streams and 37 lakes. They provide popular fisheries for many anglers.

Principal tributaries to the SFSR are the Secesh River, the East Fork South Fork Salmon River and its tributary, Johnson Creek. Warm Lake is the largest lake, measuring 640 surface acres; all others are alpine lakes and range in size from 1 to 160 acres.

Anadromous fish species (Chinook salmon, steelhead trout) have access to most of the drainage. Historically, the steelhead spawning run exceeded 3,000 fish. The South Fork Salmon River historically supported the largest summer Chinook run in the state of Idaho. Salmon fishing was a major economic resource in the SFSR prior to 1965, when anglers harvested 1,700-4,000 salmon annually. Steelhead anglers harvested 750-800 fish per year. These runs have dwindled considerably since then, and run sizes are about one-tenth of their former abundance. The seasons were closed in 1965 for Chinook and in 1968 for steelhead. The decrease in numbers of SFSR Chinook and steelhead were caused by two major problems: 1) logging and road construction activities created unstable soil conditions in the SFSR that have damaged the aquatic habitat, and 2) serious fish passage problems and increased mortality caused by construction of hydroelectric dams on the lower Snake and Columbia rivers.

The SFSR is one of only four drainages in the Columbia Basin that supports populations of wild, native steelhead trout classified as B-run. These fish are predominantly large steelhead, which spend two or three years in the ocean, compared to the smaller A-run steelhead which inhabit much of the rest of the Salmon River drainage. Preservation of this native gene pool is a high priority. Following harvest closures on cutthroat trout (1985) and bull trout (1994), and cessation of hatchery trout stocking (1993), steelhead parr became the targeted fish harvested under general bag limits. This instigated the change to a drainage-wide catch-and-release regulation, implemented in 1998.

The management goals for the SFSR summer Chinook salmon population are to provide sustainable fishing opportunities and to enhance, recover and sustain the natural spawning population. Low abundance and productivity of the SFSR natural population has been identified as a population risk by the Interior Columbia Technical Review Team (ICTRT).

Hatchery production of summer Chinook salmon began in 1979 as part of the mitigation for lost natural escapement by operation of the lower Snake River dams. Adult trapping facilities are located approximately 71 miles upstream from the mouth of the SFSR; and the hatchery in McCall has the capacity to produce one million smolts. The hatchery mitigation program is a federally

authorized mandate to annually return 8,000 adult summer Chinook salmon to stream reaches upstream of Lower Granite Dam; a goal achieved only six times since the inception of the program.

This program also includes a conservation component intended to increase the abundance of naturally spawning fish through an integrated supplementation effort. By integrating the hatchery broodstock, managers are attempting to let the natural environment drive selection in the hatchery population and therefore reduce risks associated with hatchery-origin fish spawning naturally. This strategy is expected to provide demographic and genetic benefits by: 1) increasing the abundance of fish spawning naturally, 2) increasing the extent of available spawning habitat that is utilized, and 3) providing a genetic repository for natural fish in the hatchery environment. This strategy will be particularly advantageous during years of very low natural-origin abundance.

Starting in 2010 and guided by the recently developed Hatchery Genetic Management Plan, 25% of production at McCall Hatchery is integrated with SFSR Chinook of natural origin to provide the benefits listed above. The remaining 75% of production is a segregated group of entirely hatchery origin Chinook and will be available for sport harvest as returning adults.

Research in the upper SFSR (Stolle Meadows) has been ongoing since 1992 as part of a statewide study to evaluate supplementation with integrated Chinook salmon stocks. The goal of this research is to increase the number of fish available for natural spawning without reducing the genetic diversity or productivity of the natural population. This project ends with evaluation of smolt survival of brood year 2012 fish.

Despite the challenges of hatchery mitigation, managers have been able to open sport fishing seasons in recent years; first in 1997, then consecutively from 2000 through 2012, to harvest surplus hatchery-origin adult summer Chinook salmon returning to the SFSR. These recent fisheries have produced harvests ranging from a low of 364 Chinook in 2006 to a high of 6,843 Chinook in 2002.

The Nez Perce Tribe began hatchery production of summer Chinook in Johnson Creek in 1998, relying on shared use of the McCall hatchery. Since 1997 the Shoshone-Bannock Tribes have used fertilized eggs from surplus hatchery production to supplement with in-stream egg incubation boxes placed in several small tributaries to the main SFSR. Hatchery origin adult Chinook trapped at the SFSR facility after sport and tribal fisheries close and broodstock needs have been met are out-planted into headwater reaches of the East Fork South Fork Salmon River within the reclaimed Stibnite Mine area to spawn naturally. No hatchery-origin anadromous juvenile or adult fish have been planted in the Secesh River in order to preserve the native gene pool.

Objectives and Programs

1. Objective: Preserve genetic integrity of wild, native steelhead and summer Chinook.

   Program: Do not out-plant any hatchery steelhead into the South Fork Salmon River or hatchery summer Chinook into the Secesh River. Manage hatchery-supplemented Salmon River steelhead and spring Chinook stocks to minimize straying into the South Fork Salmon River. Minimize straying of South Fork Salmon River hatchery summer Chinook into the Secesh River.

   Program: Implement Hatchery Genetic Management Plan (HGMP) for South Fork Salmon River summer Chinook hatchery program. The HGMP prescribes that 25% of hatchery

production be dedicated to developing an integrated stock from hatchery and natural origin fish.

Program: Work with the Nez Perce and Shoshone-Bannock Tribes to develop hatchery fish release programs that preserve and protect genetic resources of naturally-spawning salmon and steelhead populations.

2. Objective: Maintain existing natural spawning populations of salmon and steelhead.

Program: Allow natural production to sustain existing naturally produced populations. Limit out-planting of hatchery summer Chinook, other than direct hatchery releases, to support HGMP.

3. Objective: Maintain and improve habitat quality of mainstem and tributary production areas.

Program: Cooperate with other agencies on habitat projects as opportunities develop. Provide needed fish population assessments to other parties.

4. Objective: Preserve genetic integrity of native cutthroat trout and bull trout. Maintain conservation management to increase population sizes.

Program: Maintain catch-and-release fisheries throughout the drainage.

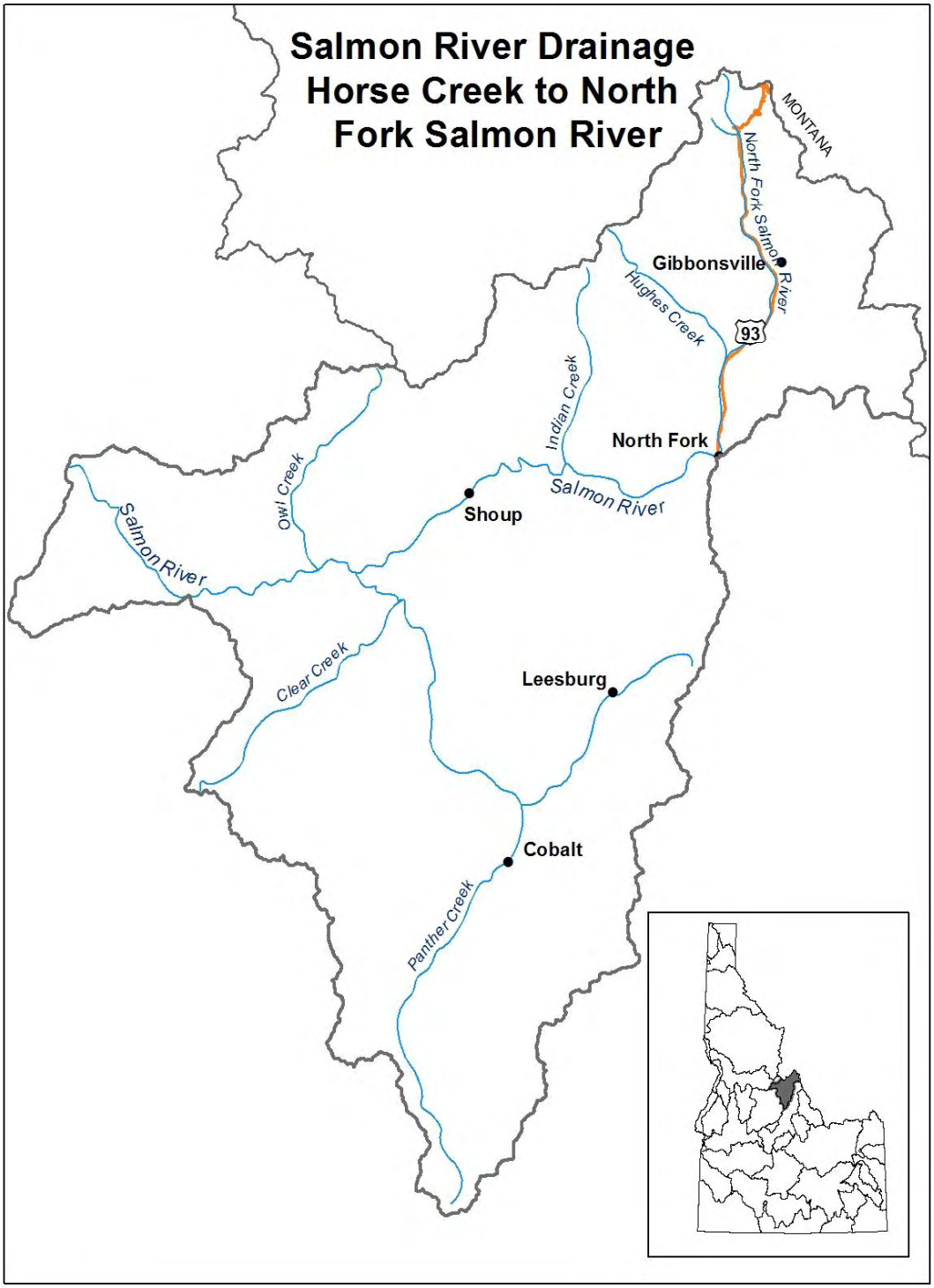
5. Objective: Collect fishery survey data on all waters within the SFSR drainage.

Program: Continue to develop and distribute fisheries information.

Program: Monitor the success of kokanee fingerling stocking in Warm Lake. Refine the stocking rate of kokanee fingerling stocking.

Drainage: South Fork Salmon River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
South Fork Salmon River, entire drainage		Coldwater Anadromous	Chinook salmon	Conservation	Provide fishing opportunities on hatchery origin fish where impacts to natural origin fish are minimal. Recover and sustain natural spawning populations. Improve and maintain quality migration, spawning, and rearing habitats.
			Steelhead	Conservation	Increase steelhead runs to historic spawning areas. Improve connectivity to tributary habitat. Maintain entire drainage as genetic refuge. Closed to sport angling for wild fish (>20 inches). Protect juvenile steelhead/redband trout.
			Redband trout Cutthroat trout	Wild	Enhance populations of wild trout through conservative rules. Participate in land management plans to promote maintenance of in-stream and riparian habitats and connectivity to tributary habitat to support and enhance fish populations.
			Mountain whitefish Brook trout	General	Promote harvest of brook trout where prevalent in headwater reaches.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
South Fork from East Fork Salmon River to Chinook weir		Coldwater/ Anadromous	Chinook salmon	Conservation / Harvest	Manage Chinook salmon as an integrated population, following prescriptions and guidelines in FMEP and HGMP. Promote harvest of hatchery salmon when escapement to weir is adequate for continued production of one million smolts, and impacts to natural origin Chinook are acceptable to allow sustained escapement. Promote production of naturally spawning Chinook.
			Steelhead	Conservation	Closed to harvest.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
South Fork from Chinook weir to headwaters		Coldwater/ Anadromous	Chinook salmon	Conservation	Manage spawner escapement with integrated and natural origin fish as prescribed in HGMP
			Steelhead	Conservation	Closed to harvest.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.

East Fork South Fork and tributaries, to headwaters		Coldwater/ Anadromous	Chinook salmon	Conservation	Continue out-planting adult hatchery Chinook in headwater reaches of East Fork and Meadow Creek that are trapped at the South Fork weir and determined as extraneous to harvest and brood stock goals. Participate in mining development projects to minimize adverse effects on habitat.
			Steelhead	Conservation	Closed to harvest.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
Johnson Creek and tributaries	54/	Coldwater/ Anadromous	Chinook salmon	Conservation	Coordinate with the Nez Perce Tribe with their hatchery supplementation program to preserve genetic resources and fitness of naturally spawning Chinook. Utilize McCall Hatchery as feasible.
			Steelhead	Conservation	
Warm Lake	/640	Coldwater	Rainbow trout Lake trout Brook trout Kokanee	General	Maintain current catchable rainbow trout stocking.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
Alpine lakes (36 in South Fork Salmon River drainage)	/890	Coldwater	Rainbow trout Brook trout Cutthroat trout Arctic grayling Golden trout	General/Trophy	Maintenance stocking with salmonid fry on a three-year rotation. Plant only westslope cutthroat trout strain or sterile rainbow trout to reduce competition/ hybridization with native cutthroat trout. Develop trophy lakes that have shown exceptional growth potential. Provide diverse opportunity for species and sizes. Collect baseline information on stocking success.


Salmon River Drainage
Horse Creek to North
Fork Salmon River
MONTANA
North Fork Salmon River
Gibbonsville
Hughes Creek
93
Indian Creek
North Fork
Owl Creek
Salmon River
Shoup
Salmon River
Clear Creek
Leesburg
Cobalt
Panther Creek

11. SALMON RIVER DRAINAGE – HORSE CREEK TO NORTH FORK

Overview

The Salmon River drainage includes 14,100 square miles and flows 410 miles from its headwaters in Blaine County in south central Idaho to its confluence with the Snake River in Idaho County in northwestern Idaho. Upstream from the confluence of the Middle Fork, the Salmon River is lower gradient and it flows through open canyon and broad valleys. The portion from Horse Creek to North Fork is 50 miles long and is located entirely within Lemhi County. There is only a trail along the river from Horse Creek upstream to Corn Creek, and a road along the river for 46 miles from Corn Creek to the North Fork. Boats are the primary mode of access below Corn Creek. A boat ramp at Corn Creek receives heavy use from floaters during the summer months and jet boaters during the fall and spring steelhead seasons.

The US Geological Survey (USGS) measured Salmon River stream flow between Panther and Owl creeks at river mile 207.8 from 1945 to 1981 and 2003 to 2011. Annual mean discharge, ranged from 1,700 cfs in 2004 to 4,513 cfs in 1965 and averaged 2,931 cfs. Diversions above this station irrigate about 149,000 acres, of which approximately 1,200 acres are by withdrawals from groundwater (1966 determination).

The Salmon River is a Wild and Scenic River. From Vinegar Creek (near Riggins) to Corn Creek, the river is federally classified as "wild," and from Corn Creek to the North Fork, it is federally classified as "recreational."

From Horse Creek to the North Fork, the Salmon River has a history of mining activity. Gold was discovered near Shoup in 1881 and a mining town quickly developed. Cobalt is a mining community on Panther Creek that once had a population of more than 500 people when the Blackbird Mine was operational.

Fishing is an important recreational activity in this area, particularly steelhead fishing in the fall and early spring. Wild and natural summer steelhead migrate to the area and begin to arrive in the early fall. Many fish overwinter in this river stretch prior to resuming their spawning migration in the spring. As wild and hatchery stocks intermingle and wild stocks are consistently under-escaped, harvest is allowed on hatchery fish only (identified by adipose fin clips). The mainstem Salmon River will continue to be managed for exploitation of hatchery steelhead, but consumptive harvest is unlikely on naturally produced steelhead or Chinook during the next five years. Naturally produced steelhead will continue to provide incidental catch-and-release fishing in the Salmon River.

The Panther Creek drainage contains nearly 100 miles of streams. Historically, it was reported to support runs of 2,000 Chinook spawners in addition to substantial runs of steelhead. Although habitat is in generally good condition, by the late 1960s, anadromous fish runs had dramatically declined due to poor water quality as a result of mine effluents. Since the mid-1980's, only a small number of juvenile salmon and steelhead were observed in rearing in Panther Creek and only in the lowermost portions of the drainage. However in the last ten years, adult Chinook salmon of both natural and hatchery origin are beginning to regularly appear in the watershed. Additionally juvenile Chinook salmon are being observed at mainstem sample locations throughout the drainage. In the last decade substantial mine-site cleanup efforts were implemented to improve the water quality in this drainage.

The North Fork drainage contains about 60 miles of stream, some of which have been negatively impacted by mining, logging, and channelization. It currently supports limited Chinook and steelhead spawning and rearing. Other smaller tributaries to the main Salmon, such as Indian, Colson, and Pine creeks, primarily support steelhead spawning and rearing. Resident populations of redband trout, bull trout and westslope cutthroat trout are also present in these mainstem tributaries.

Small numbers of white sturgeon utilize the mainstem river reach however their abundance is likely controlled by limited habitat and extreme icing conditions during the winter. In 2005, white sturgeon were documented in the Salmon River upstream as far as McKim Creek near river mile 291.

Westslope cutthroat trout emigrate from the Middle Fork Salmon River to overwinter in this portion of the mainstem Salmon River.

Despite the presence of secondary roads in many of the tributary drainages, low to moderate fishing effort is expended for resident trout species in these areas. Also, resident trout populations are reduced in the main river during the summer months due to warm temperatures and, consequently, low to moderate fishing effort is expended during this period. Tributaries in this river reach provide critical thermal refugia for anadromous and resident species during the summer months. The continued connectivity and reconnection of these environments is vital to develop sustainable fisheries in this area.

Objectives and Programs

1. Objective: Maintain existing natural spawning populations of Chinook salmon and steelhead.

   Program: Allow natural production to sustain existing naturally produced populations. Maintain enforcement efforts to ensure compliance with differential harvest regulations to protect wild steelhead. Do not out-plant hatchery steelhead and salmon into the main stem or tributaries, from Horse Creek upstream to the North Fork Salmon River, to preserve wild fish genetic resources. An exception to this program may include out planting stocks into the Panther Creek drainage to encourage restoration of natural anadromous fish populations. The Shoshone Bannock Tribes presently incubate steelhead fry in the lower reaches of Panther Creek in an attempt to increase the numbers of returning adults.

2. Objective: Maintain and improve habitat quality of tributary production areas.

   Program: Work with landowners/managers to discourage land and water use activities that further degrade the quality of natural production areas. Participate in allotment management plan review. Encourage implementation of grazing management plans that eliminate negative grazing impacts to fishery productivity and survival. Participate in interagency mining oversight committees to review operating plans and work with regulatory agencies to require strict compliance with mining laws to protect water quality and fish populations. Develop monitoring programs for fish populations and fish habitat relative to mining activities, if needed. Support and encourage continued rehabilitation measures for Panther Creek drainage.

3. Objective: Correct fish passage impediments such as irrigation diversions, road culverts, and dewatered stream segments that delay or restrict anadromous and resident fish access thermal refugia and to spawning and rearing tributaries.

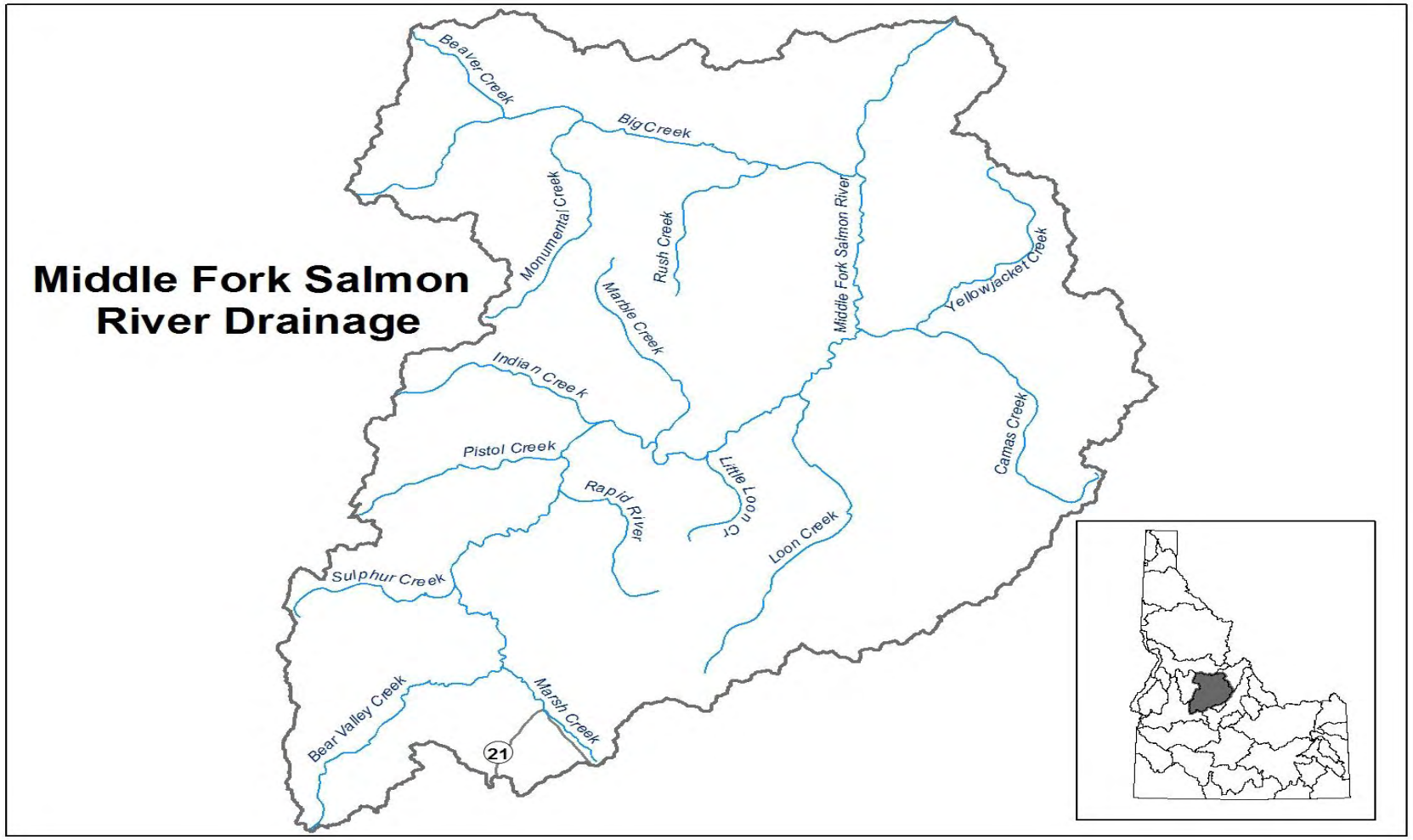
   Program: Cooperate with Lemhi County and the US Forest Service in identifying, prioritizing, and constructing fish passage improvement structures for culverts. Identify and screen or repair irrigation diversions where needed. Assist the Upper Salmon Basin Watershed Project and others to reconnect tributary streams. Maintain or improve in-stream flows through critical review of water right applications, and by working with private irrigators, Idaho Dept. of Water Resources, and irrigation districts to pursue water savings projects. Consider feasibility of lease/rentals, source switches, and minimum flow agreements.

4. Objective: Improve the quality of cutthroat trout fishing in the mainstem Salmon River during the summer months.

   Program: Continue restrictive harvest fishery rules on wild trout in the mainstem river.

Drainage: Salmon River: Horse Creek to North Fork					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
From Horse Creek to North Fork	50/	Coldwater	Bull trout	Conservation	Closed to harvest Catch and release, only.
			Cutthroat trout Redband trout	Wild	Closed to harvest. Enhance populations of wild trout by directing harvest on hatchery fish only (identified by adipose fin clips).
			Rainbow trout (clipped) Whitefish	General	Limited yield fishery during summer.
		Anadromous	Wild/natural steelhead Chinook salmon	Conservation	Maintain adult harvest closure until MFSR and upper Salmon River escapement goals are met.
			Hatchery steelhead	Anadromous	Provide maximum yield of fish surplus to escapement goals.
Tributaries from Horse Creek to North Fork (Except Horse Creek, Panther Creek)	150/	Coldwater	Redband trout Cutthroat trout	General	Provide harvest fishery supported by natural production.
			Brook trout Whitefish	General	
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook Salmon Steelhead	Conservation	Maintain adult harvest closure.
Horse Creek	19/	Coldwater	Redband trout Cutthroat trout	Wild	Naturally supported harvest fishery. Access restricted to trail or boat. Restrict harvest of trout.
			Whitefish	General	
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon	Conservation	Maintain adult harvest closure. No hatchery supplementation. Important spawning/rearing tributary for wild, A-strain steelhead.
Panther Creek	33/	Coldwater	Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
			Redband trout Cutthroat trout	General	Provide harvest fishery supported by natural production.
		Anadromous	Steelhead Chinook salmon	Conservation	Maintain adult harvest closure on wild fish. Stock with fry, smolts or adults as available and needed. Work with other agencies to clean up mining pollution from Blackbird Mine and develop anadromous restoration program.

North Fork Salmon River	22/	Coldwater	Redband trout Brook trout	General	Provide harvest fishery supported by natural production.
			Bull trout Cutthroat trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook salmon Steelhead	Conservation	Maintain adult harvest closure.
North Fork Salmon River Tributaries		Coldwater	Redband trout Brook trout Cutthroat trout Whitefish	General	Provide harvest fishery supported by natural production.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
Alpine Lakes	/233	Coldwater	Redband trout Cutthroat trout	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When feasible use sterile westslope cutthroat and rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural wilderness values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with USFS.


Middle Fork Salmon River Drainage
Beaver Creek
Big Creek
Monumental Creek
Rush Creek
Middle Fork Salmon River
Yellowjacket Creek
Marble Creek
Indian Creek
Pistol Creek
Rapid River
Little Loon Cr
Loon Creek
Camas Creek
Sulphur Creek
Bear Valley Creek
Marsh Creek
21

12. MIDDLE FORK SALMON RIVER DRAINAGE

Overview

The Middle Fork Salmon River drains 2,830 square miles of central Idaho. The main river is federally classified as wild as part of the Wild and Scenic Rivers System, and most of the drainage is within the Frank Church River of No Return Wilderness Area. Prior to classification as wilderness, the Middle Fork Salmon River drainage was included in the Idaho Primitive Area.

The USGS measured stream flow at two locations on the Middle Fork Salmon River: at the Middle Fork Lodge, near Yellow Pine, Idaho, and at the mouth of the Middle Fork Salmon River. Annual mean discharge at the Middle Fork Lodge, from 1977 to 1981 and 2000 to 2011 ranged from 582 cfs in 1977 to 2,697 cfs in 1974 and averaged 1,397 cfs. At the mouth of the Middle Fork Salmon River, annual mean discharge from 1995 to 2011 ranged from 1,415 cfs in 2001 to 4,648 cfs in 1997 and averaged 2,819 cfs.

The topography in the Middle Fork Salmon River drainage is extremely rugged and remote. Road access is limited to the headwaters reaches outside of the wilderness boundary. The principal means of access are aircraft, non-motorized boat, and primitive trail.

Except for some alpine lakes and a few small streams, the Middle Fork drainage contains only native fish species. Historically, a substantial portion of Chinook salmon and steelhead trout in the Salmon River drainage spawned and reared in the Middle Fork Salmon River and tributaries.

Anadromous species include wild, indigenous spring and summer Chinook salmon, summer steelhead, and pacific lamprey. The Middle Fork Salmon River is one of only four drainages in the Columbia Basin that supports a population of wild steelhead classified as B-run because they are predominantly large fish which spend two or three years in the ocean. Both the Chinook and steelhead of the Middle Fork Salmon River are adapted to the long migration distances necessary for their perpetuation. Preservation of the indigenous gene pools is the highest priority, as is rebuilding these runs. The key component to meeting this objective is improved Columbia and Snake River migration survival as habitat, hatcheries, and harvest are not issues in this drainage.

Although the Middle Fork Salmon River supported a major Chinook fishery, with annual harvest exceeding 2,000 fish in the late 1960s, non-treaty harvest has not been allowed for salmon and steelhead since 1978 because of very low run sizes. Middle Fork Salmon River steelhead are caught incidentally during fisheries in the mainstem Salmon River which target hatchery steelhead where they provide an exceptional catch-and-release opportunity for trophy class wild steelhead. Although harvest opportunity is not expected for salmon or steelhead in the Middle Fork Salmon River in the next five years, the long-term goal is to provide low yield, quality fisheries on these native species. This goal is achievable only if improved juvenile migration survival through the Snake and Columbia migration corridor is attained.

Chinook salmon and steelhead trout abundance and distribution is monitored both extensively throughout the watershed, primarily by snorkeling, and intensively in Marsh Creek and Big Creek; two major tributaries selected as index streams for the upper and lower Middle Fork watershed, respectively. Intensive monitoring includes frequent snorkeling,

juvenile fish trapping and PIT tagging to obtain annual emigrant and smolt survival estimates, and in-stream PIT tag arrays to document returning adults sampled at Lower Granite Dam as part of a basin wide Genetic Stock Identification project. Most Chinook spawning habitat throughout the entire watershed is surveyed annually by ground or air for number of redds.

Native resident game species include bull trout, inland redband trout, westslope cutthroat trout, and mountain whitefish. While non-native rainbow trout have been stocked in alpine lakes within the Middle Fork Salmon River and this past stocking may have led to some limited hybridization and introgression, genetic research conducted in 2008 indicated that hybridization and introgression levels in most locations were low and patterns of hybridization were largely consistent with recent, natural hybridization events (Kozfkay et al 2008). The recent development of new, single nucleotide polymorphic genetic markers for O. mykiss may provide additional information regarding intraspecific introgression of redband trout populations (anadromous and non-anadromous) in the MFSR. During this planning period, we recommend the continued screening of both redband trout and westslope cutthroat trout populations to monitor inter- and intra-specific hybridization and introgression over time.

Although undocumented, it is likely that white sturgeon utilize habitats in the lower portions of the main stem. Recently, lamprey ammocoetes of various age classes were documented rearing in the mid and lower portions of the main stem Middle Fork suggesting some level of production is occurring. Describing the distribution of lamprey throughout the Middle Fork system during this planning period will occur during standardized surveys for salmonid species.

There are no major dams in the Middle Fork drainage, and most of the streams are in a natural state and considered in pristine condition. Some headwaters of tributary streams have experienced habitat alterations from both anthropogenic (mining, agricultural) as well as natural sources (fires, floods). Major mining sites and their access roads were not included in the wilderness area. Other tributaries have been historically impacted by grazing allotments, but most watersheds are now improving under more controlled management.

The Middle Fork Salmon River is a major recreational river during the summer months. The number of people floating the river during the permit season has increased substantially in the past 50 years from 625 in 1962 to 9,069 floaters in 2011. The U.S. Forest Service estimated total use days to be 54,489 days in 2011, down from the 67,000 use days in 2004.

Objectives and Programs

1. Objective: Preserve genetic integrity of wild native salmon, steelhead, and resident trout.

   Program: Manage hatchery supplemented Salmon River anadromous stocks to minimize straying into the Middle Fork Salmon River.

   Program: Designated wild anadromous fish sanctuary. No stocking of hatchery fish into the stream environment, and manage stocking of hatchery fish in the mainstem Salmon River to minimize straying to the Middle Fork.

Program: Continue to work with other state and federal agencies to improve juvenile downstream and adult upstream passage from and to the Middle Fork Salmon River. Monitor population trends through ongoing RM&E projects.

2. Objective: Manage resident fisheries for low angler density fishing experiences and high catch rates and fish size.

   Program: Maintain catch-and-release regulations for native trout in the mainstem Middle Fork Salmon River and its tributaries.

   Program: Maintain cutthroat trout harvest restrictions in the main Salmon River to protect Middle Fork Salmon River cutthroat trout overwintering there.

3. Objective: Maintain and improve habitat and water quality of key tributary fish production areas.

   Program: Work with Forest Service and grazing permittees to reestablish healthy riparian vegetation through livestock management improvements.

   Program: Participate in grazing allotment management plan reviews. Work with agencies and landowners to eliminate grazing practices that negatively impact fish productivity and survival.

   Program: Screen all identified irrigation diversions where needed.

   Program: Participate in interagency mining oversight committees to review operating plans and work with regulatory agencies to require strict compliance with mining laws to protect water quality and fish populations. Develop monitoring programs for fish populations and fish habitat relative to mining activities, if needed.

4. Objective: Maximize recruitment of native trout to the main river from tributaries.

   Program: Maintain catch and release regulations in tributaries. Continue long-term trend monitoring of juvenile fish abundance and distribution.

5. Objective: Re-establish anadromous runs to numbers necessary to fully utilize available spawning and rearing habitat.

   Program: Continue to work with other state and federal agencies to improve juvenile downstream and adult upstream passage from and to the Middle Fork Salmon River.

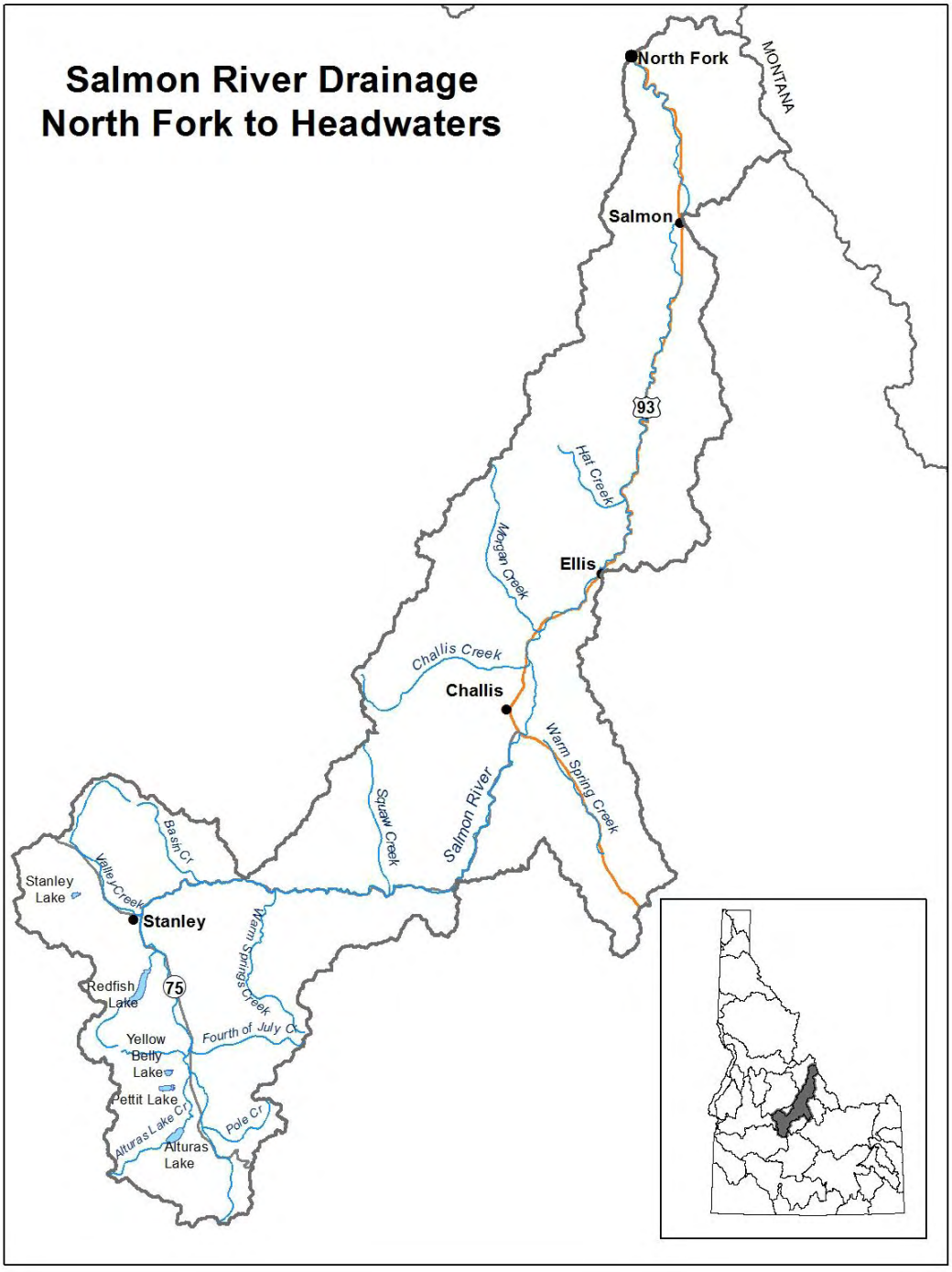
6. Objective: Continue recently developed extensive, intensive, and genetic monitoring programs for measuring production and productivity of populations.

   Program: Continue RM&E programs following Viable Salmonid Population criteria.

7. Objective: Increase ability of anglers to properly identify fish species.

   Program: Provide fish identification signs and posters to increase recognition of bull trout. Encourage harvest of brook trout.

Drainage: Middle Fork Salmon River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
From mouth to headwaters including tributaries.	183/	Coldwater	Bull trout	Conservation	Closed to harvest. Catch-and-release only.
			Cutthroat trout Redband trout	Quality	Wild stocks “no harvest” fishery. No trout stocking in flowing waters.
			Whitefish Brook trout	General	.
		Anadromous	Wild/natural steelhead Chinook salmon Lamprey	Conservation	Maintain adult harvest closure until MFSR and upper Salmon River escapement goals are met.
Big Creek and tributaries		Anadromous	Wild/natural steelhead Chinook salmon	Conservation	Continue intensive monitoring as an index population of steelhead trout for lower MFSR watershed
Marsh Creek and tributaries		Anadromous	Wild/natural steelhead Chinook salmon	Conservation	Continue intensive monitoring as an index population of steelhead trout for lower MFSR watershed
Bear Valley Creek		Anadromous	Chinook salmon	Conservation	Coordinate with Shoshone-Bannock Tribes in their program to monitor spawning escapement and juvenile production.
Yellowjacket Lake	/5	Coldwater	Redband trout	General	Stock with sterile catchable rainbow trout.
Capehorn Lakes	/44	Coldwater	Redband trout Brook trout	General	Capehorn #2 (middle lake) stocked with sterile catchable rainbow trout to provide fishery. Large (upper) lake provides a brook trout fishery.
Alpine Lakes	/2,000	Coldwater	Cutthroat trout Redband trout Golden trout Brook trout Grayling	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When and where appropriate use sterile westslope cutthroat or rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural wilderness values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with USFS.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.


Salmon River Drainage
North Fork to Headwaters
North Fork
MONTANA
Salmon
93
Hat Creek
Morgan Creek
Ellis
Challis Creek
Challis
Warm Spring Creek
Salmon River
Squaw Creek
Basin Cr
Valley Creek
Stanley Lake
Stanley
Warm Springs Creek
Redfish Lake
75
Fourth of July Cr
Yellow Belly Lake
Pettit Lake
Alturas Lake Cr
Pole Cr
Alturas Lake

13. SALMON RIVER – NORTH FORK TO HEADWATERS

Overview

The portion of the Salmon River between North Fork and the headwaters is 173 miles long and drains approximately 6,000 square miles. Highways 93 and 75 border the entire stretch of river. The headwater area, upstream from Thompson Creek, is within the Sawtooth National Recreation Area administered by the USFS. Major tributaries include the Lemhi, Pahsimeroi, East Fork Salmon, and Yankee Fork Salmon rivers, which are reported separately following this section.

The US Geological Survey (USGS) measured stream flow at the City of Salmon (river mile 258.9) from 1913 to 1916 and from 1920 to 2011. Annual mean discharge ranged from 1,024 cfs in 1994 to 3,163 cfs in 1965 and averaged 1,925 cfs. Diversions above this station irrigate about 83,000 acres, of which about 900 acres are irrigated by withdrawals from groundwater (1966 determination).

A second gage measured stream flow below the confluence of the Salmon River and the Yankee Fork Salmon River (river mile 366.9) from 1922 to 1971, in 1974, from 1977 to 1991, and from 2001 to 2011. Annual mean discharge ranged from 467 cfs in 1977 to 1,638 cfs in 1974 and averaged 973 cfs. Diversions above this upper station irrigate about 10,500 acres (1971 determination).

The drainage is characterized by mountainous terrain bisected by river valleys. Major mountain ranges include the Bitterroot Range along the Idaho/Montana border; the Lemhi Range, southwest of the Lemhi River; the Lost River Range, southwest of the Pahsimeroi River; the White Cloud Peaks, east of the upper Salmon River; and the Sawtooth Range within the Sawtooth Wilderness, west of the upper Salmon River. Numerous lakes with roaded access in the Stanley area provide substantial recreational opportunity. They include Stanley, Redfish, Little Redfish, Yellowbelly, Pettit, Alturas and Perkins lakes. Also, hundreds of lakes within the Sawtooth Wilderness and White Cloud Peaks areas provide fishing opportunity in a secluded, wilderness setting for backpacking enthusiasts. Salmon, Challis, and Stanley are the only population centers in the upper Salmon River drainage. Ranching, mining, and recreation are the major industries.

Many recreationists are attracted to the scenic beauty and recreational opportunities of the Sawtooth National Recreation Area. The granitic watershed yields few nutrients to the upper Salmon River and the large moraine lakes. Sterile waters and a short growing season render the lakes and streams incapable of producing the fish necessary for a large consumptive harvest under general fishing rules. Therefore, approximately 67,000 sterile hatchery rainbow trout are stocked in popular waters of the upper Salmon River drainage. Furthermore, fishing regulations in the main stem prohibit harvest of native trout in an effort to reestablish native resident stocks. In the spring the fishery is primarily supported by hatchery steelhead smolts.

Tributaries of the river between the North Fork and the East Fork provide critical thermal refugia for anadromous and resident species during the summer months. The continued connectivity and reconnection of these environments is vital to develop sustainable fisheries in this area.

The mainstem Salmon River will be managed for exploitation of hatchery steelhead and Chinook salmon. Anadromous fisheries management in the Salmon River from North Fork to the headwaters will emphasize maintaining natural spawning populations of Chinook and preserving and enhancing habitat quality. The Salmon River from the East Fork to Yankee Fork contains habitat for mainstem spawning Chinook. Many of the Salmon River headwater tributaries are meandering meadow streams in subalpine valleys, and are critical spawning and rearing areas for

spring Chinook. Fish access to most of these tributaries is impeded by irrigation diversions and dewatering. During this planning period the Department will continue to screen all diversions identified as impacting anadromous fish. IDFG will also seek to improve access to these spawning and rearing locations.

At one time, large runs of sockeye salmon returned to spawn along the shorelines and inlets of the Stanley Basin lakes. In 1910, Sunbeam Dam was constructed across the Salmon River just upstream from Yankee Fork at river mile 368.3. Even after a fish ladder was completed in 1920, fish passage was very limited. In 1934, the dam was breached and fish passage was restored. Sockeye runs rebounded somewhat but declined steadily from 1960-1990. In 1994, trapping on Redfish Lake Creek captured only one adult fish. As a result of the sockeye captive broodstock program, there is now natural production in Redfish, Pettit, and Alturas lakes. The captive broodstock program is expected to continue to support sockeye production in these three lakes over the term of this plan. Stocking will be enhanced with the completion of the Springfield facility in 2014 and the projected release of 1,000,000 juvenile sockeye into Redfish Lake.

During the last several decades fishing effort on Stanley Basin lowland lakes has declined appreciably. Additional efforts will be directed into improving angling opportunities in the Stanley Basin Lakes.

Hatchery A-run steelhead are trapped and spawned at Idaho Power Company's Pahsimeroi Hatchery and the Sawtooth Hatchery, a Lower Snake River Compensation Project facility. Offspring are reared at Department hatcheries in the Hagerman Valley and smolts are transported to the upper Salmon River for release. IDFG is also exploring opportunities to increase the number of large (predominantly 2-ocean) hatchery-origin steelhead to the upper Salmon River that are available for harvest. IDFG has attempted to develop this program for several decades however, the program has been difficult to establish. The objectives of the program during this planning period are to develop a locally adapted Upper Salmon River B-run (USRB) stock of hatchery steelhead. To date the program has generally relied on Dworshak B-run (DWORB) steelhead releases to support the program however research has demonstrated that locally adapted stock returns at 1.5-2 times the rate of Dworshak B-run steelhead in the upper Salmon River. During the course of this plan the Department will attempt to phase out the release of DWORB steelhead in the upper Salmon River and replace with these fish with locally adapted steelhead. In order to increase the number of USRB produced, the Department will use Pahsimeroi Fish Hatchery as an interim broodstock collection and spawning site for the USRB program. The Pahsimeroi Fish Hatchery will continue to act as an intermediate broodstock collection location until a permanent broodstock collection facility can be constructed (at a site yet to be determined). It is the intent of the Department to locate the new collection facility high in the basin to spread out harvest opportunity across a larger portion of the basin and increase the opportunity to catch these fish.

Recent fluvial trout investigations identified important trout habitats in the mainstem Salmon River and associated tributaries. The mainstem Salmon River near Challis appears to be an important overwintering habitat for bull trout, westslope cutthroat, and redband trout. In the spring and early summer redband trout utilize the mainstem Salmon and tributaries near Ellis for spawning whereas cutthroat trout focus spawning activities upstream of Challis in the tributaries between Clayton and the Yankee Fork. For spawning and summer rearing bull trout move into tributaries of the Warm Springs Creek, and East Fork, Yankee Fork and upper Salmon rivers. Bull trout from the upper Salmon River also demonstrated migrations into the Redfish Lake system for overwintering.

Objectives and Programs

1. Objective: Maintain existing natural spawning populations of salmon.

   Program: Allow natural production to sustain existing naturally produced populations. Limit out-planting of hatchery salmon, other than direct hatchery juvenile releases and adult recycle releases for sport fishing, to supplementation research sites and areas devoid of naturally producing populations of salmon. Continue to monitor smolt production and survival.

2. Objective: Increase access for steelhead and salmon anglers.

   Program: Acquire additional public fishing access with purchases or easements; develop boat launches, parking sites and sanitation facilities.

3. Objective: Improve the quality of resident trout fishing in the mainstem Salmon River during the summer months.

   Program: Continue protective fishing regulations on cutthroat trout, bull trout and redband trout while directing harvest on sterile catchable hatchery fish (as identified by adipose fin clips).

   Program: Improve fish access to tributary thermal refugia during the summer months.

4. Objective: Reestablish sockeye runs in historic habitats when population levels become sufficient to do so.

   Program: Evaluate benefits of lake fertilization to enhance kokanee/sockeye production. Evaluate reintroductions of sockeye into Redfish, Alturas and Pettit lakes.

   Program: Construct a sockeye rearing facility to increase juvenile release numbers.

5. Objective: Maintain and improve fish spawning habitat in main stem and tributaries.

   Program: Work cooperatively with willing landowners through the Upper Salmon Basin Watershed Project and other cooperators. In priority areas, maintain and enhance critical spawning and rearing areas for resident and anadromous fishes. Encourage land management activities on public and private properties that improve the quality of spawning habitat. Participate in grazing allotment management plan reviews with federal land management agencies. Encourage implementation of grazing management plans that eliminate negative grazing impacts on fish productivity and survival. Participate in interagency mining oversight committees to review operating plans. Work with regulatory agencies to require strict compliance with mining laws to protect water quality and fish populations. Develop monitoring programs for fish populations and fish habitat relative to mining activities, if needed. Continue to monitor and evaluate benefits from habitat improvement projects. Maintain or improve in-stream flows through critical review of water right applications, and by working with private irrigators and irrigation districts to pursue water savings projects. Work with IDWR on strategies such as water lease/rentals, sources switches, and minimum flow agreements.

6. Objective: Improve the return rate of stocked, catchable sized rainbow trout to the creel.

Program: Maintain high stocking frequency in heavily used areas between Hell Roaring Creek and Rough Creek Bridge and adjust, as needed, if angler distribution patterns change.

7. Objective: Improve anadromous juvenile and adult fish passage in the Salmon River.

   Program: Work with federal land managers and private irrigators to alleviate passage problems in main-river and tributaries due to irrigation diversions and dewatering.

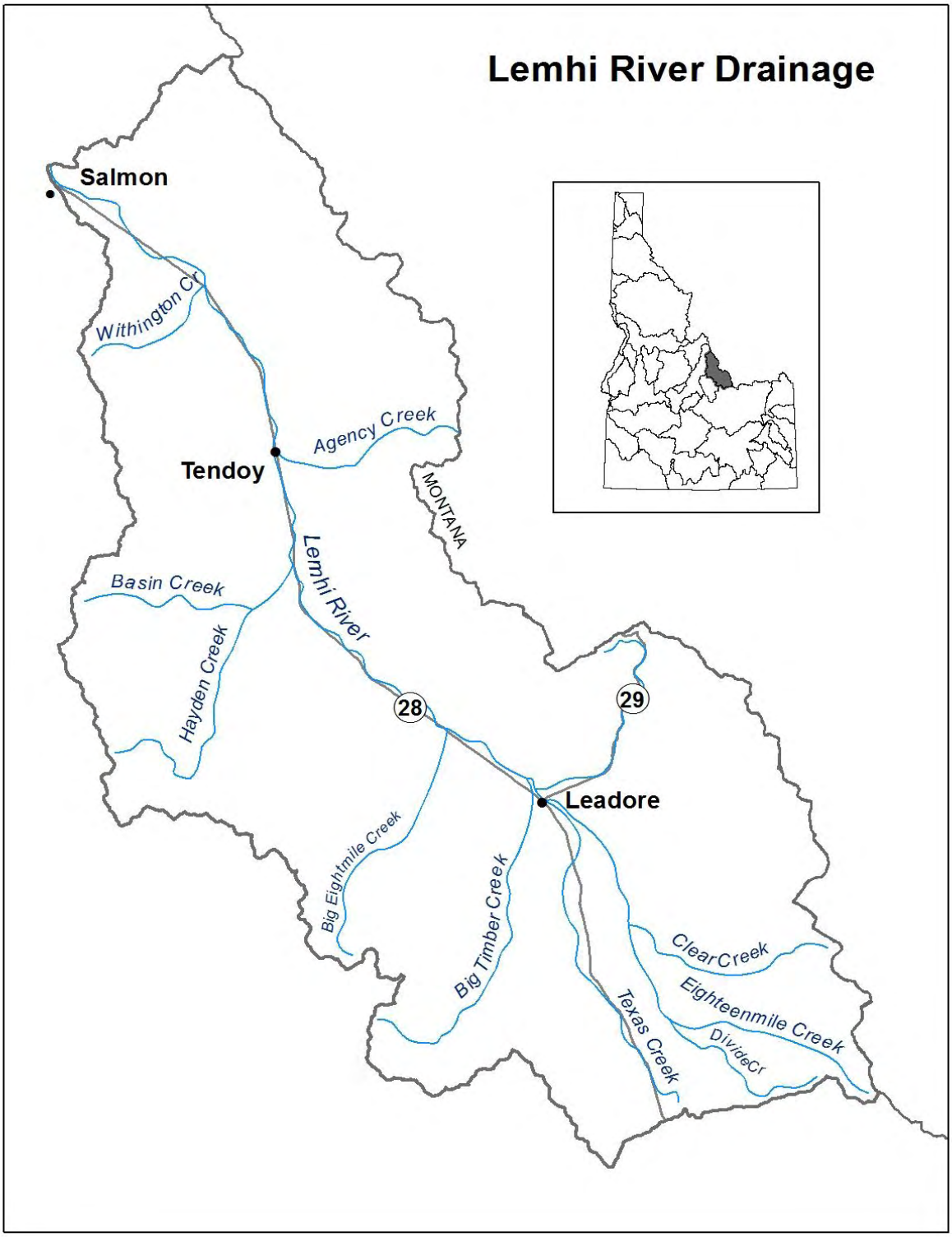
8. Objective: As funding and resources permit, evaluate the impacts of hatchery steelhead offsite releases on adult straying and resident trout displacement.

   Program: Describe the degree and mechanisms of adult hatchery steelhead straying in tributaries.

   Program: Pursue/investigate opportunities to reduce straying through adjustments in release timing and location.

Drainage: Salmon River: North Fork to Headwaters					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Salmon River	172/	Coldwater	Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
			Cutthroat trout Redband trout	Wild	Enhance populations of wild trout by directing harvest on hatchery fish only (identified by adipose fin clips).
			Rainbow trout (clipped) Whitefish Brook trout	Put-and-take General	Stock hatchery trout of catchable size to provide put and take fishery. .
		Anadromous	Wild/natural steelhead Chinook salmon	Conservation	Maintain adult harvest closure until upper Salmon River escapement goals are met.
			Hatchery steelhead Chinook Salmon	Anadromous	Provide maximum yield of fish surplus to escapement goals
Salmon River tributaries between North Fork and headwaters (excluding N. Fork, Lemhi, Pahsimeroi, E. Fork, and Yankee Fork rivers)	466/	Coldwater	Redband trout Cutthroat trout Brook trout Whitefish	General	Provide harvest fishery supported by natural production.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook salmon Steelhead	Conservation	Maintain adult harvest closure.
Lake Creek upstream from Williams Lake	5/	Coldwater	Redband trout	Quality	Maintain spring closure to protect redband trout spawners.
Williams Lake	/180	Coldwater	Redband trout	General	Yield fishery supported by natural production. Work with BLM, USFS, IDEQ, and local sewer district and homeowners association to control sources of nutrient loading and propose long term water quality improvement solutions. Explore opportunity (impact) of sterile kokanee introductions to enhance winter ice fishing.
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
Wallace Lake	/10	Coldwater	Rainbow trout Cutthroat trout	Put-and-take	Stock hatchery rainbow trout of catchable size to provide put-and-take fishery.
Iron Lake	/18	Coldwater	Rainbow trout Cutthroat trout	Put-and-take	Stock hatchery rainbow trout of catchable size to provide put-and-take fishery.
Mosquito Flat Reservoir	/37	Coldwater	Rainbow trout	Put-and-take	Stock hatchery rainbow trout of catchable and fingerling size to provide a harvest fishery. .
			Brook trout	General	
Bayhorse Lakes	/22	Coldwater	Rainbow trout	Put-and-take	Stock hatchery rainbow trout of catchable size to provide put-and-take fishery.

Stanley Lake	/182	Coldwater	Rainbow trout Brook trout Lake trout Kokanee	General	Continue stocking catchable rainbow trout. Monitor status of fish resources and fishery performance in Stanley Lake so the IDFG can begin crafting a management plan for long-term management of the lake. Evaluate the potential risk lake trout pose to other Stanley basin lakes and take action if warranted.
Redfish Lake	/1,502	Coldwater	Rainbow trout Kokanee	General	Provide harvest fishery with sterile catchable rainbow trout if feasible. Develop management plan focused on kokanee management.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Sockeye salmon	Conservation	Closed to harvest. Continue efforts to prevent extinction of sockeye salmon.
Yellowbelly Lake	/188	Coldwater	Cutthroat trout Rainbow trout Brook trout	General	
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
Pettit Lake	/389	Coldwater	Rainbow trout Brook trout Cutthroat trout Kokanee	General	
		Anadromous	Sockeye salmon	Conservation	Experimental reintroduction. Closed to adult harvest.
Alturas Lake	/838	Coldwater	Rainbow trout Kokanee	General	Provide harvest fishery with catchable rainbow trout. If resources and time permit, develop management plan with emphasis on kokanee management and recruitment of anglers to the lake.
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Sockeye salmon	Conservation	Experimental reintroduction. Closed to adult harvest.
Perkins Lake	/51	Coldwater	Rainbow trout Whitefish	General	Provide harvest fishery with catchable rainbow trout and some natural production.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
Alpine Lakes	/5,000	Coldwater	Rainbow trout Cutthroat trout Golden trout Brook trout Grayling	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When feasible use sterile westslope cutthroat and rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural wilderness values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with USFS. Evaluate the control of stunted brook trout populations with experimental measures.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.


Lemhi River Drainage
Salmon
Withington Cr
Agency Creek
Tendoy
MONTANA
Lemhi River
Basin Creek
Hayden Creek
28
29
Leadore
Big Eightmile Creek
Big Timber Creek
Clear Creek
Eighteenmile Creek
Texas Creek
Divide Cr

14. LEMHI RIVER DRAINAGE

Overview

The Lemhi River flows 60 miles from the confluence of Texas and Eighteen-mile creeks to the Salmon River at river mile 258.5 at the city of Salmon. The river drains approximately 1,290 square miles and flows through a broad valley of fertile agricultural land between the Bitterroot and Lemhi mountain ranges.

The US Geological Survey (USGS) measured stream flow in the Lemhi River below the L5 agricultural intake approximately 5.75 mi southeast of Salmon, Idaho, from 1994 to 1999 and 2001 to 2011. Annual mean discharge, ranged from 117 cfs in 2004 to 421 cfs in 1998 and averaged 262 cfs.

The valley includes more than 25,000 acres of land irrigated for hay production and grazing. Irrigation is principally flooding from an extensive system of ditches. All major mainstem ditches are screened and have bypass systems to prevent fish entrainment losses. Historically, the lower reaches of the river were seasonally dewatered during low flow a year, which, without intervention, impedes adult and juvenile salmon and steelhead migration.

The drainage supports runs of both spring Chinook salmon and summer steelhead. The amount of potential spawning habitat has been reduced by stream alterations, but there is still adequate habitat available, particularly in the upper reaches of the river and in the Hayden Creek watershed.

Hatchery Chinook have not been out-planted into this drainage in large numbers since 1982 when the Hayden Creek Hatchery was closed. The population has sustained itself through natural production. In 1998, a Chinook captive rearing research program was initiated in the Lemhi River to evaluate this strategy as a short-term approach to species preservation. Juvenile Chinook salmon removed from the Lemhi River are released back into their native river after attaining maturity in a hatchery. This program's main strategy was to prevent cohort failure especially during years of very poor returns.

Steelhead were out-planted annually through the 1980s and in the lower main stem and lower Hayden Creek during the last decade. Over the next six years, anadromous management action in the Lemhi River will emphasize maintaining natural spawning populations of spring Chinook and summer steelhead.

Native resident trout include fluvial and resident redband trout, cutthroat trout, and bull trout. Brook trout are present in limited numbers, primarily in the uppermost portions of the watershed. The redband trout population responded to restrictive regulations implemented in 1996. Limited angler access limits use of the fishery.

Objectives and Programs

1. Objective: Maintain existing natural spawning populations of salmon and steelhead.

   Program: Allow natural production to sustain existing naturally producing populations. Restrict anadromous fish stocking to only those necessary for recovery efforts.

2. Objective: Improve angler access to the Lemhi River for fishing.

   Program: Negotiate with landowners to establish fishing by permission, easements or purchases.

3. Objective: Continue to improve flows in mainstem river reaches during peak irrigation season.

   Program: Continue to participate and support efforts through the Upper Salmon Basin Watershed Project and others to transfer or purchase water rights to provide adequate flows in the main stem. Continue to investigate methods such as improved irrigation delivery systems, ditch consolidations, permanent head gates, and stream channel improvements, to provide safe fish passage throughout the river.

4. Objective: Minimize loss of juvenile salmon and steelhead to irrigation diversions on streams.

   Program: Continue evaluation of the current screening program to explore opportunities for improvements.

   Program: Install screens in any identified unscreened ditches.

5. Objective: Maintain and improve habitat quality throughout the Lemhi River drainage.

   Program: Continue to work cooperatively with willing landowners through the Upper Salmon Basin Watershed Project, in priority areas, to maintain and enhance critical spawning and rearing areas for resident and anadromous fishes. Pursue the reconnection of tributaries through improved irrigation delivery systems, dry year lease options, and/or permanent leases.

6. Objective: Improve the quality of cutthroat trout fishing in the mainstem Lemhi River and maintain the quality of the redband trout population.

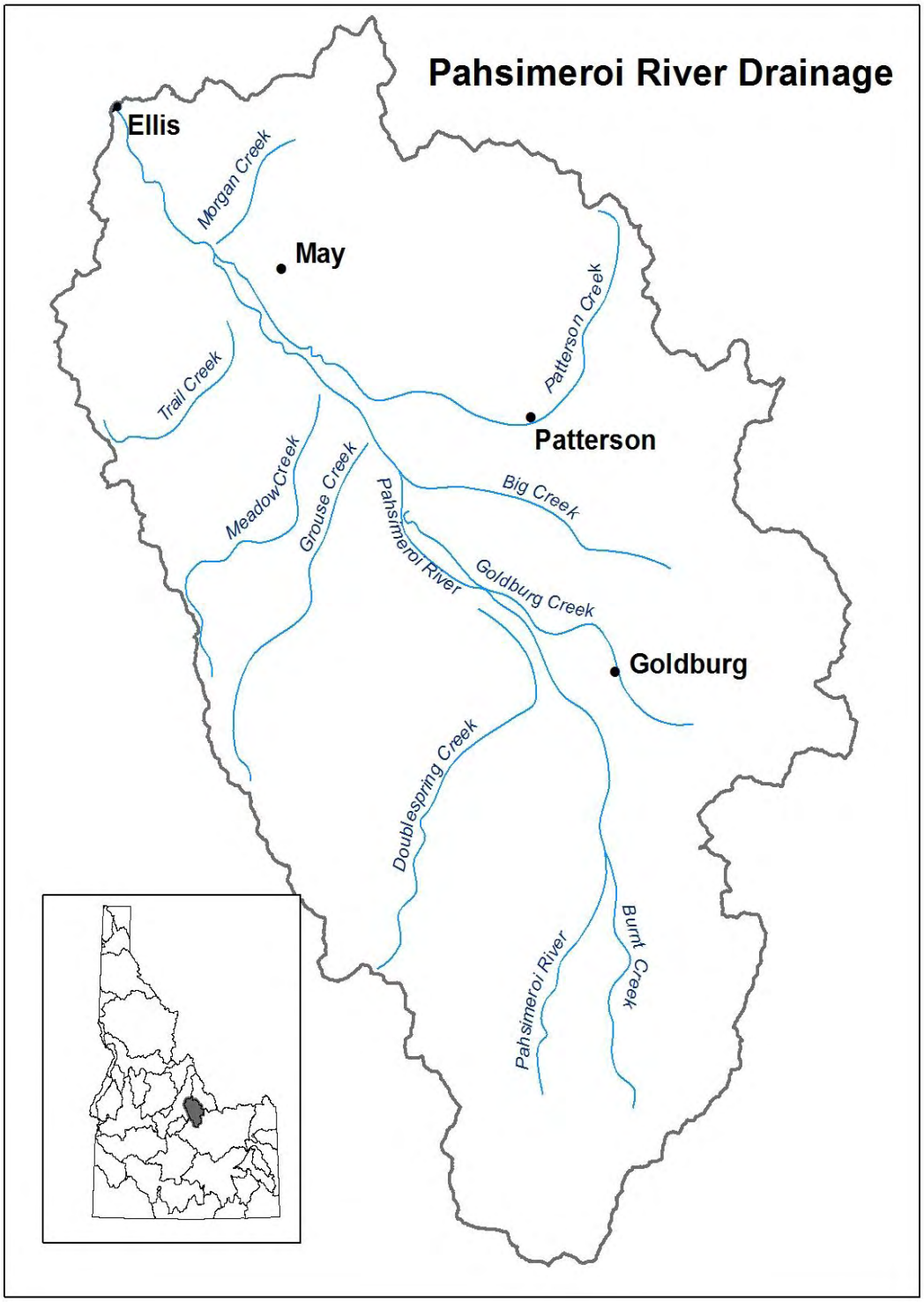
   Program: Maintain restrictive fishing regulations on all cutthroat trout and redband trout.

   Program: Improve connection to tributary environments so fluvial fish have access to mainstem environments.

7. Objective: Correct fish passage impediments such as irrigation diversions, road culverts, and dewatered stream segments that delay or restrict anadromous and resident fish access thermal refugia and to spawning and rearing tributaries.

   Program: Cooperate with Lemhi County, BLM and the US Forest Service (USFS) in identifying, prioritizing, and constructing fish passage improvement structures for culverts. Identify and screen or repair irrigation diversions where needed. Assist the Upper Salmon Basin Watershed Project and others to reconnect tributary streams. Maintain or improve in-stream flows through critical review of water right applications, and by working with private irrigators and irrigation districts to pursue water savings projects. Work with IDWR on ways to provide enhanced flows.

Drainage: Lemhi River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Lemhi River	60/	Coldwater	Redband trout	Quality	Provide fishery for naturally produced redband trout ≥ 14 inches.
			Brook trout Whitefish	General	Maximize brook trout and whitefish harvest.
			Cutthroat trout Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon	Conservation	Closed to adult harvest
Lemhi River tributaries	420/	Coldwater	Redband trout Brook trout Whitefish	General	Provide fishery for naturally produced trout. Maximize brook trout and whitefish yield.
			Cutthroat trout	Conservation	
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon		Closed to adult harvest.
Meadow Lake	/12	Coldwater	Redband trout	General	Provide put-and-take fishery.
Alpine Lakes	/421	Coldwater	Redband trout Cutthroat trout Brook trout Grayling	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When feasible use sterile westslope cutthroat and rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural wilderness values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with USFS. Evaluate the control of stunted brook trout populations with experimental measures.


Pahsimeroi River Drainage
Ellis
Morgan Creek
May
Patterson Creek
Trail Creek
Patterson
MeadowCreek
Grouse Creek
Pahsimeroi River
Big Creek
Goldburg Creek
Goldburg
Doublespring Creek
Pahsimeroi River
Burnt Creek

15. PAHSIMEROI RIVER DRAINAGE

Overview

The Pahsimeroi Valley lies between the Lemhi and Lost River mountain ranges. Water percolates through a broad, pervious alluvial fan in the upper valley and enters the Pahsimeroi River through ground water and springs lower in the valley. Therefore, productivity in the river is higher than most streams in the upper Salmon River basin. The drainage is approximately 845 square miles.

The US Geological Survey (USGS) measured stream flow in the Pahsimeroi River near its mouth at Ellis, Idaho, from 1985 to 2011. Annual mean discharge, ranged from 167 cfs in 2004 to 329 cfs in 1985 and averaged 229 cfs.

It is suspected that before agricultural development, the Pahsimeroi River seasonally flowed 49 miles from the confluence of the East and West Forks to the Salmon River at river mile 304. Now most of the bottom lands of the Pahsimeroi Valley are privately owned and heavily irrigated (particularly in the lower drainage) for hay and grazing. Flows in the Pahsimeroi River are interrupted at several locations on the valley floor due to irrigation withdrawal. During the irrigation season several river sections are inaccessible to fish for spawning and major tributaries are dewatered almost year-round.

An anadromous fish hatchery on the Pahsimeroi River, owned and funded by Idaho Power Company and operated by the Department, mitigates for lost anadromous production above the Hells Canyon dam complex. The main hatchery and weir are located within one mile of the mouth of the river. Summer Chinook salmon are trapped and reared at the facility. A-run steelhead are also trapped at the weir. However, the offspring are reared at fish hatcheries in the Hagerman Valley. Adult steelhead returning to the Pahsimeroi Hatchery contribute substantially to the steelhead fishery in the upper Salmon River.

Anadromous management action in the Pahsimeroi River will emphasize maintaining existing natural spawning populations of Chinook and steelhead.

Native resident fish species include inland fluvial and resident redband trout, a remnant fluvial bull trout population in the mainstem and resident populations primarily in tributaries, mountain whitefish, and westslope cutthroat trout. Non-native brook trout is also present.

Objectives and Programs

1. Objective: Maintain existing natural spawning populations of salmon and steelhead.

   Program: Allow natural production to sustain existing, naturally producing populations. Limit out-planting of hatchery fish, other than direct hatchery releases to support supplementation research and areas devoid of naturally producing salmon and steelhead.

2. Objective: Improve angler access to the Pahsimeroi River.

   Program: Negotiate with landowners to establish fishing by permission, easements or purchases.

3. Objective: Minimize loss of juvenile salmon and steelhead to irrigation diversions on streams.

   Program: Continue evaluation of the current screening program to explore opportunities for improvements.

   Program: Install screens in any identified unscreened ditches.

4. Objective: Maintain and improve habitat quality throughout the Pahsimeroi River drainage.

   Program: Continue to work cooperatively with willing landowners through the Upper Salmon Basin Watershed Project, in priority areas, to maintain and enhance critical spawning and rearing areas for resident and anadromous fishes.

   Program: Assist the efforts of The Nature Conservancy and the Lemhi Land Trust to secure conservation easements in priority areas within the watershed to protect and expand critical fisheries habitats.

5. Objective: Manage for quality resident trout fishing in the mainstem Pahsimeroi River.

   Program: Maintain protective fishing regulations on all cutthroat trout and redband trout less than 14 inches in the mainstem river.

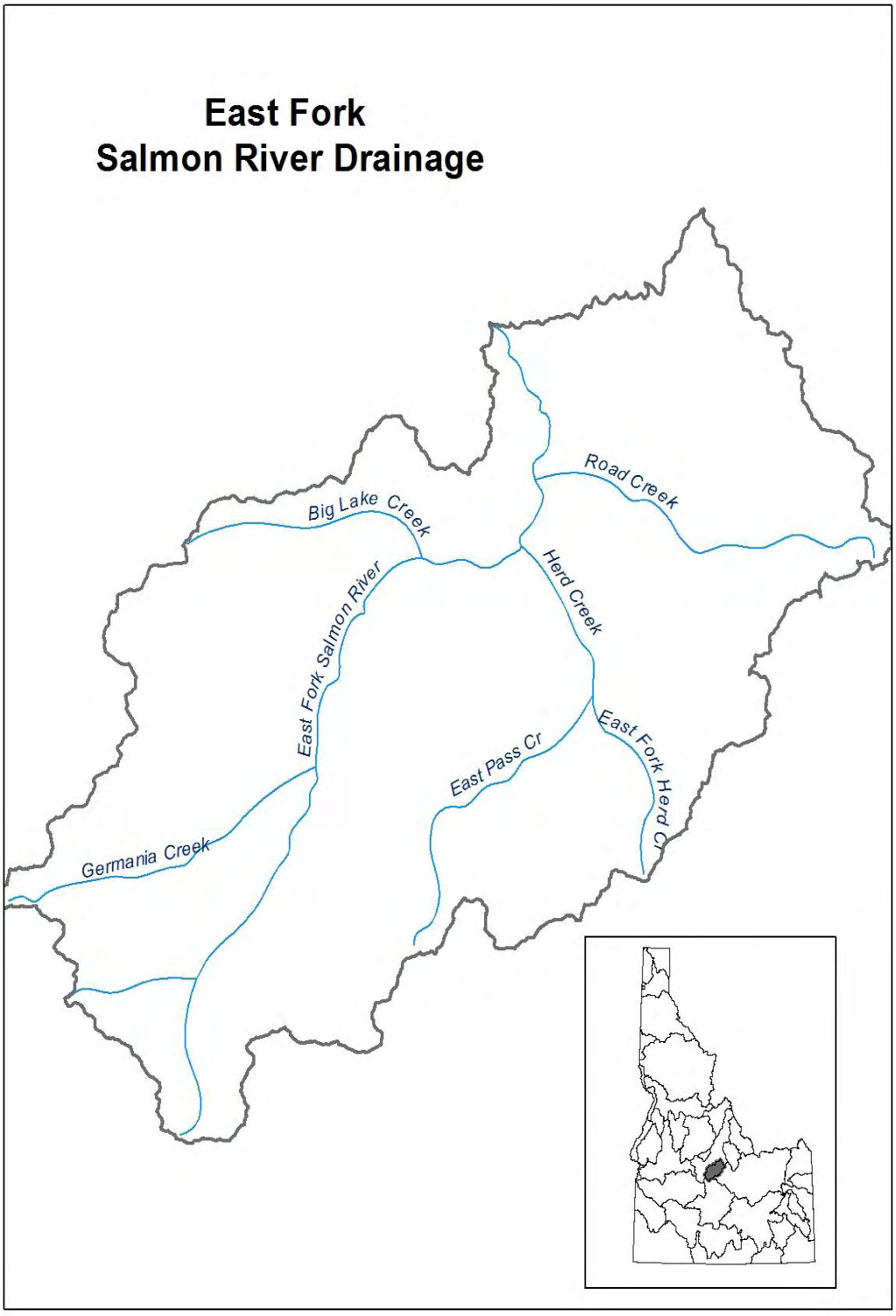
   Program: Pursue the reconnection of tributaries through improved irrigation delivery systems, dry year lease options, and/or permanent leases.

6. Objective: Correct fish passage impediments such as irrigation diversions, road culverts, and dewatered stream segments that delay or restrict anadromous and resident fish access thermal refugia and to spawning and rearing tributaries.

   Program: Cooperate with Lemhi and Custer County's, BLM and the US Forest Service (USFS) in identifying, prioritizing, and constructing fish passage improvement structures for culverts. Identify and screen or repair irrigation diversions where needed. Assist the Upper Salmon Basin Watershed Project and others to reconnect tributary streams. Maintain or improve in-stream flows through critical review of water right applications, and by working with private irrigators and irrigation districts to pursue water savings projects. Work with IDWR on solutions such as water lease/rentals, source switches or minimum flow agreements.

Drainage: Pahsimeroi River

Water	Miles/acres	Fishery			Management Direction
		Type	Species present	Management	
Pahsimeroi River	59/	Coldwater	Redband trout	Quality	Provide fishery for naturally produced trout ≥ 14 inches.
			Brook trout Whitefish	General	Maximize brook trout and whitefish yield.
			Cutthroat trout Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon	Conservation	Trap sufficient numbers of hatchery Chinook salmon and steelhead for production programs.
Pahsimeroi River tributaries	227/	Coldwater	Redband trout Brook trout Whitefish Cutthroat trout	Wild	Provide harvest fishery for naturally produced trout. Maximize brook trout and whitefish yield.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon	Conservation	Closed to adult harvest.
Alpine Lakes	/200±	Coldwater	Rainbow trout Brook trout Cutthroat trout Golden trout Grayling	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When feasible use sterile westslope cutthroat and rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural wilderness values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with USFS. Evaluate the control of stunted brook trout populations with experimental measures.
Carlson Lake	/6	Coldwater	Brook trout	General	Improve size structure of fish through population reduction efforts.


East Fork
Salmon River Drainage
Big Lake Creek
Road Creek
Herd Creek
East Fork Salmon River
East Pass Cr
East Fork Herd Cr
Germania Creek

16. EAST FORK SALMON RIVER DRAINAGE

Overview

The East Fork Salmon River flows 33 miles from the confluence of the South and West Forks before entering the Salmon River at river mile 343. The drainage area is 540 square miles and includes the White Cloud Peaks to the west and the Boulder Mountains to the south.

The US Geological Survey (USGS) measured stream flow in the East Fork Salmon River about 4 miles upstream of its mouth from 1929 to 1939 and from 1974 to 1981. Annual mean discharge, ranged from 122 cfs in 1934 to 390 cfs in 1974 and averaged 231 cfs.

Water supply and quality in the upper drainage is excellent for fish spawning and rearing. In the lower drainage, the river bisects a zone of volcanic soils, which are highly erosive. Lack of vegetative cover, channelization, diking, woody debris removal, and livestock grazing in the riparian zone can result in substantial sediment loads in the river, particularly during spring runoff.

The drainage supports runs of spring and summer Chinook salmon and summer steelhead trout. The East Fork is an important tributary for salmon spawning and rearing in the upper Salmon River drainage. A trapping facility, constructed in 1984 at approximately river mile 18, collects natural and hatchery steelhead as part of the Sawtooth Hatchery operation. Naturally-produced steelhead are collected for an experimental local broodstock supplementation program. Biologists also monitor Chinook salmon and bull trout populations at this facility. Beginning in the late 1990s, a Chinook salmon captive rearing research program was initiated to evaluate this strategy as short-term approach to species preservation. Juvenile Chinook salmon removed from the East Fork Salmon River, are reared to maturity in a hatchery then released back into their native river. This program's main strategy was to prevent cohort failure, especially during years of very poor returns.

Objectives and Programs

1. Objective: Maintain existing natural spawning populations of salmon and steelhead.

   Program: Limit out-planting of hatchery fish, other than direct hatchery smolt releases, to support supplementation research and areas devoid of naturally producing populations of spring and summer salmon and summer steelhead.

2. Objective: Maintain and improve fish habitat and water quality.

   Program: Encourage land and water management that protects and enhances the quality of natural production areas.

   Program: Continue to work cooperatively with willing landowners through the Upper Salmon Basin Watershed Project, in priority areas, to maintain and enhance critical spawning and rearing areas for resident and anadromous fishes.

3. Objective: Improve the quality of resident trout fishing in the mainstem East Fork Salmon.

   Program: Maintain restrictive fishing regulations for cutthroat trout in the mainstem river.

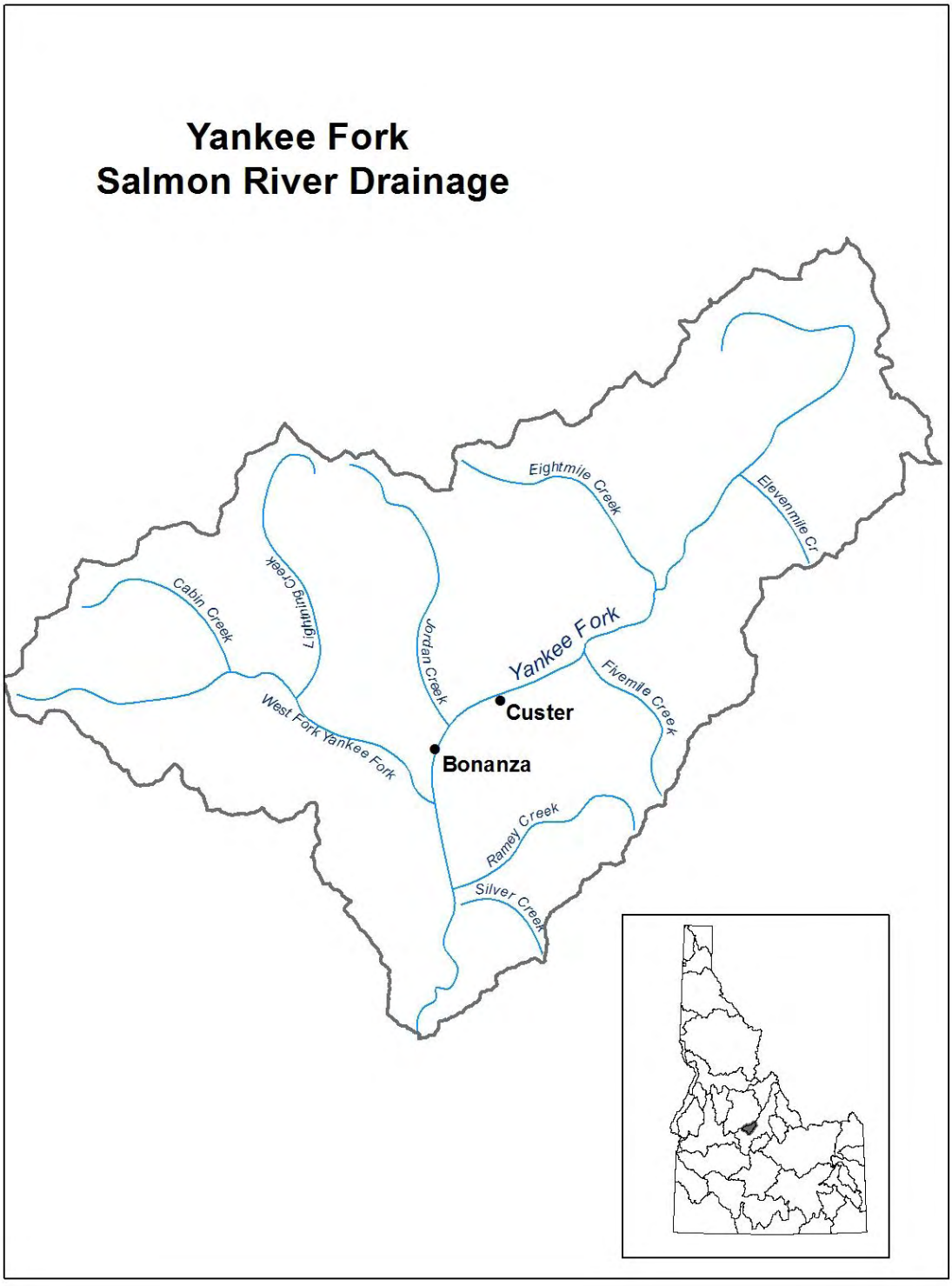
4. Objective: Improve anadromous juvenile and adult fish passage to and from the Salmon River.

   Program: Work with landowners to alleviate entrainment passage problems due to irrigation diversions. Screen identified unscreened diversions on the mainstem East Fork Salmon River and associated anadromous tributaries.

5. Objective: Improve angler access to the East Fork Salmon River.

   Program: Negotiate with private landowners to establish fishing access by permission, easements, or purchases.

Drainage: East Fork Salmon River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
East Fork Salmon River	33/	Coldwater	Redband trout Whitefish	General	Provide fishery for naturally produced trout. Maximize whitefish yield.
			Bull trout Cutthroat trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon	Conservation	Closed to adult harvest.
East Fork Salmon River tributaries	199/	Coldwater	Redband trout Whitefish Cutthroat trout	Wild	Provide fishery for naturally produced trout. Maximize whitefish yield.
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon	Conservation	Closed to adult harvest.
Jimmy Smith Lake	/62	Coldwater	Redband trout	Wild	Provide fishery supported by natural production. Investigate and implement management action to maintain and improve the size structure of the resident redband trout population which may include, improved access, and/or additional sterile predator introductions.
Herd Lake	/30	Coldwater	Redband trout	Wild	Provide fishery supported by natural production. Investigate and implement management action to maintain and improve the size structure of the resident redband trout population which may include, improved access, and/or additional sterile predator introductions.
Alpine Lakes		Coldwater	Rainbow trout Brook trout Cutthroat trout Golden trout Grayling	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When feasible use sterile westslope cutthroat and rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural wilderness values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with USFS. Evaluate the control of stunted brook trout populations with experimental measures.


Yankee Fork
Salmon River Drainage
Eightmile Creek
Elevenmile Cr
Cabin Creek
Lightning Creek
Jordan Creek
Yankee Fork
Fivemile Creek
Custer
West Fork Yankee Fork
Bonanza
Ramey Creek
Silver Creek

17. YANKEE FORK SALMON RIVER DRAINAGE

Overview

The Yankee Fork Salmon River flows 26 miles from its headwaters to the Salmon River at river mile 367.1. The drainage area is 195 square miles. Soils are primarily Idaho Batholith granitic, which results in low productivity streams.

Gold was discovered in the drainage in 1873 and the towns of Custer and Bonanza developed into thriving mining communities along the banks of the Yankee Fork. Until the late 1930s, gold was extracted by placer mining. In 1938 a large dredge was constructed and operated from 1939-1942 by the Silas Mason Company. After World War II the dredge was reactivated and operated until 1952. It was estimated that $11 million worth of gold was extracted (at market values effective at the time of mining) from approximately eight miles of Yankee Fork and Jordan Creek. Mining activity continues today throughout the drainage and particularly in the Jordan Creek drainage. Hecla Mining Company has had a continuing problem with subsurface discharge of chemicals into Jordan Creek. Hecla now diffuses leaching chemicals into the mainstem Yankee Fork near the mouth of Jordan Creek. The long-term impacts of this practice are not well known. During this planning period there will be efforts to improve spawning and rearing habitat in the previously dredged reach of the main-stem. These efforts will be coordinated through Trout Unlimited, BPA, BOR, USFS, Simplot Corp., and the State of Idaho. IDFG will provide technical assistance for this effort.

Secondary roads border the entire length of Jordan Creek and the Yankee Fork upstream to McKay Creek. The lower West Fork is accessible by road and the remainder of the stream is bordered by a trail.

Despite the extensive mining, Yankee Fork continues to support small runs of spring and summer Chinook salmon and summer steelhead trout. Hatchery steelhead have been out-planted into this drainage and will be used for natural production augmentation. During the last decade, when fish were available, spring Chinook smolts were released into the Yankee Fork for the same purposes. A Chinook captive rearing research program was initiated in the West Fork Yankee Fork to evaluate this strategy as a short-term approach to species preservation. Juvenile Chinook salmon removed from the West Fork Yankee Fork are reared to maturity in a hatchery, and then released into their native river. This program's main strategy was to prevent cohort failure, especially during years of very poor returns.

Native resident species include inland redband trout, fluvial and resident bull trout and westslope cutthroat trout populations, and mountain whitefish. Several historic dredge ponds are stocked with catchable rainbow trout during the summer months that provide a popular local fishery. The Yankee Fork was recently identified as a very important spawning area for fluvial bull trout originally from Redfish Lake and the mainstem Salmon River. The drainage likely supports fluvial cutthroat trout in addition to redband trout and whitefish.

Objectives and Programs

1. Objective: Preservation of Chinook and steelhead by harvest closures.

   Program: Coordinate efforts with Shoshone-Bannock Tribes to protect existing Chinook salmon spawners.

2. Objective: Maintain and improve fish habitat and water quality.

   Program: Continue to support the establishment of the dredged portion of the Yankee Fork mainstem to a natural state.

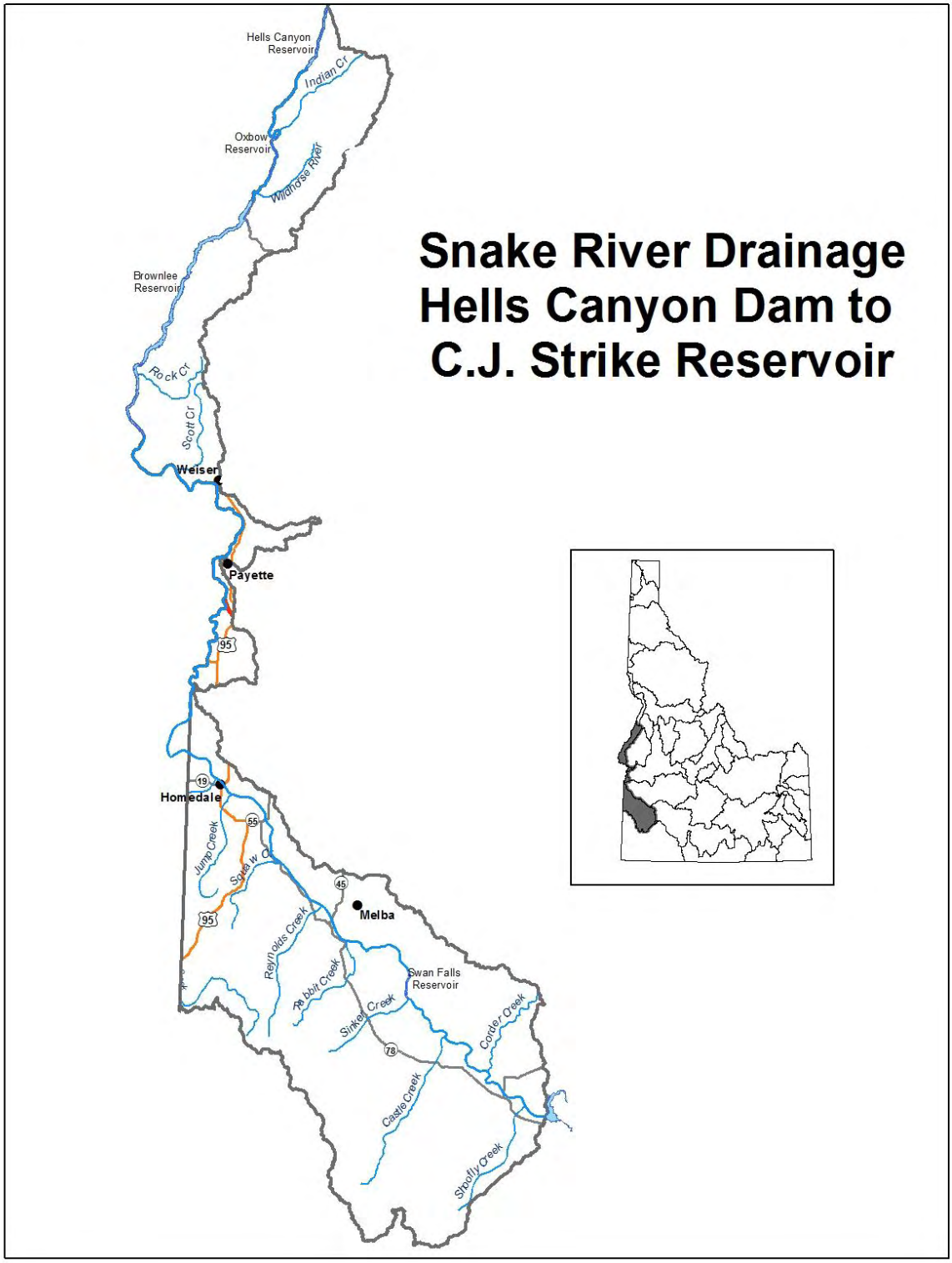
   Program: Reduce impacts of mining activity to fish populations and habitat by continuing to work with agencies such as the U.S. Forest Service and Department of Water Resources, mining companies, and private consultants to provide adequate protective measures in licensing and permitting agreements.

3. Objective: Improve the resident and anadromous fisheries in the Yankee Fork system.

   Program: Support the reconnection of tributary habitats to mainstem environments in the dredged portion of the drainage where these habitats are disturbed.

   Program: Explore feasibility, risks, and opportunity of using hatchery tools for re-establishing naturally spawning Chinook and steelhead populations in the Yankee Fork watershed.

Drainage: Yankee Fork Salmon River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Yankee Fork and West Fork Salmon River	30/	Coldwater	Redband trout Whitefish	Wild	Provide fishery supported by natural production.
			Bull trout Cutthroat trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook salmon Steelhead	Conservation	Closed to adult harvest. Supplement with hatchery releases. Develop harvest strategies.
Yankee Fork Salmon River tributaries excluding West Fork	70/	Coldwater	Redband trout Whitefish Cutthroat trout	Wild	Provide fishery supported by natural production
			Bull trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Steelhead Chinook salmon	Conservation	Closed to adult harvest. Supplement with hatchery releases. Develop harvest strategies.
Yankee Fork Dredge Ponds	/10	Coldwater	Rainbow trout	Put-and-take/ Community	Provide put-and-take fishery. Protect spawning steelhead adults when managing for this fishery Maintain summer time stocking of sterile rainbow trout to provide harvest opportunity.


Snake River Drainage
Hells Canyon Dam to
C.J. Strike Reservoir
Hells Canyon Reservoir
Indian Cr
Oxbow Reservoir
Brownlee Reservoir
Rock Cr
Scott Cr
Weiser
Payette
95
19
Homedale
55
Jump Creek
45
Melba
Reynolds Creek
Rabbit Creek
Swan Falls Reservoir
Sinker Creek
78
Castle Creek
Stoddy Creek

18. SNAKE RIVER DRAINAGE FROM HELLS CANYON DAM TO C.J. STRIKE RESERVOIR

Overview

The Snake River between Hells Canyon Dam and C.J. Strike Reservoir (265 miles) has been greatly altered by impoundments and diversions. Within this reach of river, Idaho Power Company has constructed five major dams: Hells Canyon, Oxbow, Brownlee, Swan Falls, and C.J. Strike. These dams impound 111 miles of river with a total of 27,400 surface acres of water. There is 154 miles of flowing water remaining within this reach. The Snake River impoundments between Hells Canyon Dam and the State Highway 51 Bridge support populations of warmwater and coldwater game fish.

IDFG has been involved in the issuance of a new federal license to operate the C.J. Strike Hydroelectric Project, participates in the long-term and ongoing relicensing process for the Hells Canyon Complex, and is involved in the process for relicensing Swan Falls. From these licensing processes, certain mitigation programs designed to protect or enhance aspects of aquatic resources are or will be required of Idaho Power Company. These actions where appropriate will be incorporated into fishery management decisions of the Department.

Major tributaries to the Snake River between Hells Canyon Dam and C.J. Strike Reservoir include the Weiser, Payette, Malheur, Boise, Owyhee, and Bruneau rivers. The Malheur is entirely in Oregon and will not be discussed in this plan. The other major tributaries are covered separately in this plan under the major headings of Weiser River Drainage, Payette River Drainage, Boise River Drainage, Owyhee River Drainage, and Bruneau River Drainage.

Minor or small tributaries to the Snake River within this planning section flow from the Seven Devil Mountains, Cuddy Mountains, Hitt Mountains, and the Owyhee Mountains. Streams draining the semi-arid Owyhee Mountains flow through deep, rugged canyons; many flow intermittent during the warm summer months. The remaining small tributaries drain high elevation, mountainous terrain. Most small tributaries to the Snake River and impoundments, which are capable of supporting fish, contain native inland redband trout. The headwaters of some of these streams also support bull trout. These species will be given management priority to protect native stocks from overharvest and habitat degradation.

From Brownlee Reservoir upstream to Walters Ferry, the Snake River flows through a broad, flat plain with low gradient, few rapids or riffles, and many large islands. This section of river supports a diversity of warmwater species, including smallmouth bass, channel catfish, largemouth bass, crappie, bluegill, pumpkinseed, sunfish, and flathead catfish. From Walters Ferry upstream to Swan Falls Dam, the Snake River flows through a narrow canyon with boulder strewn rapids and large, deep pools. The primary fishery upstream from Walters Ferry consists of smallmouth bass, channel catfish, and white sturgeon.

Objectives and Programs

1. Objective: Provide a diversity of smallmouth bass fishing experiences within the river and mainstem impoundments.

   Program: Evaluate regulation alternatives and public support for special regulations that would increase catch rates for larger size classes of bass in Brownlee and/or Hells Canyon reservoirs, in addition to Oxbow Reservoir.

Program: Assess current growth, condition, and angler exploitation of smallmouth bass.

2. Objective: Enhance fisheries for largemouth bass in reservoirs by increasing largemouth bass habitats.

   Program: Continue placing artificial reef habitat in C.J. Strike Reservoir in cooperation with Idaho Power Company and Idaho State B.A.S.S. Federation.

3. Objective: Maintain or increase fishing opportunity for white sturgeon.

   Program: Monitor angler catch rates and continue to cooperate with Idaho Power Company in developing and implementing the Snake River White Sturgeon Conservation Plan (WSCP). The WSCP is a plan developed by Idaho Power Company during the period 1991-2005 in coordination with the Department and other fishery management agencies to monitor white sturgeon abundance in the Snake River between Shoshone Falls and Lewiston, Idaho. Implementation of the WSCP is required of Idaho Power Company as part of the issuance of new federal licenses to operate the Middle Snake River Projects (Upper Salmon Falls, Lower Salmon Falls, Bliss) and C.J. Strike. The WSCP will also include actions associated with the Hells Canyon Complex and Swan Falls when they are relicensed. The plan is in close alignment with the Department's Draft White Sturgeon Management Plan (to be finalized in 2007). Actions in the WSCP include:

   a. Monitoring of white sturgeon population size and age structure;
   b. Evaluating supplementation options of white sturgeon populations with native stocks where necessary to maintain future options to utilize suitable spawning or rearing habitats. This might include hatchery reared fish or translocation of wild fish;
   c. Researching potential options to increase survival rates of various life stages of white sturgeon. One important aspect of this research is to understand early life history habitat needs and factors potentially limiting white sturgeon survival.

   Program: Assess effects of catch-and-release angling on white sturgeon populations, and evaluate regulation changes if needed to protect white sturgeon during periods when they may especially vulnerable to stresses associated with angling.

4. Objective: Increase angler awareness of the white sturgeon biology and life history. Emphasize proper fishing techniques and tackle, so anglers can minimize mortality when fishing for sturgeon.

   Program: Revamp the out-of-print brochure on white sturgeon fishing to include sliding sinker and barbless hook requirements and redistribute.

   Program: Refine the video on sport fishing for white sturgeon in Idaho. Emphasis will be on proper tackle and technique with a substantial amount of biology, life history, and conservation information included.

5. Objective: Protect native bull trout and redband trout populations in Snake River tributaries.

   Program: Monitor distribution and abundance of tributary populations of bull trout and redband trout.

   Program: Offer appropriate and accurate responses to proposed land and water management activities of private, state, and federal entities. Advocate for improved habitat and water management to restore connectivity between tributaries and the mainstem Snake River.

6. Objective: Seek mitigation for operational impacts of Idaho Power Company's hydroelectric facilities on the Snake River.

   Program: Coordinate with Idaho Power Company in the implementation of license conditions required as part of new federal license for the C.J. Strike Project. Maintain Department involvement in the FERC relicensing process underway for the Hells Canyon Complex and Swan Falls.

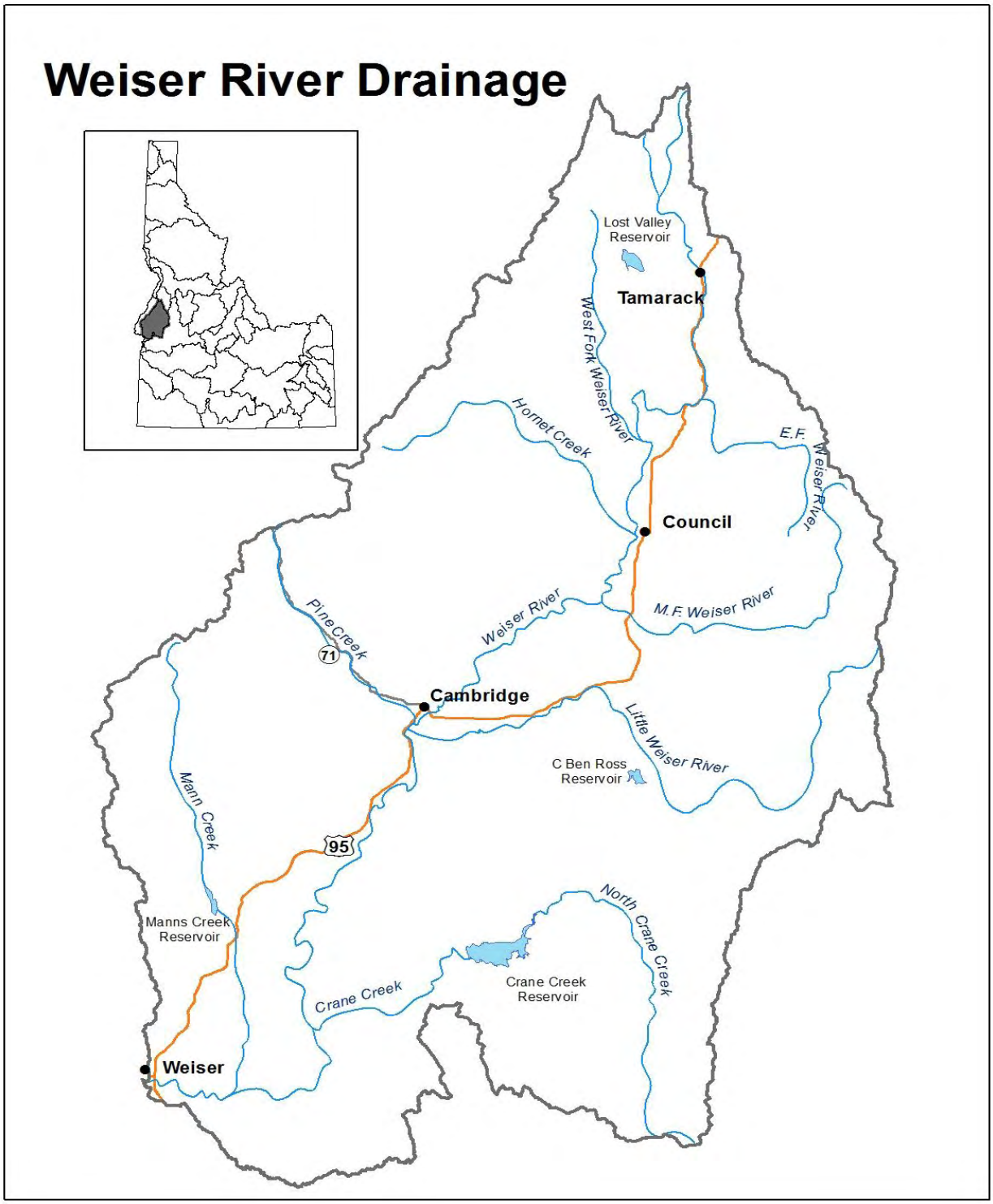
7. Objective: Monitor panfish fisheries in the Hells Canyon Complex reservoirs.

   Program: Assess current growth, conditions, age structure, larval production, and angler exploitation of panfish populations; especially crappie.

Drainage: **Snake River - Hells Canyon Dam to C.J. Strike Dam**					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Hells Canyon Reservoir	26/2500	Mixed/ Anadromous	Steelhead	Anadromous	Maintain limited fishery with hatchery steelhead when adult fish are available.
			Rainbow trout Smallmouth bass Largemouth bass Channel catfish Bluegill Crappie Yellow perch Bullhead Kokanee	General	
			Sturgeon	Conservation	Closed to harvest Catch-and-release, only.
Oxbow Reservoir	12/1150	Mixed	Smallmouth bass Largemouth bass	Quality	Maintain and evaluate quality bass regulations.
			Rainbow trout Bluegill Crappie Yellow perch Channel catfish	General	
			Sturgeon	Conservation	Closed to harvest Catch-and-release, only.
Indian Creek		Coldwater	Redband Trout Brook Trout	General	Monitor all trout populations every three years at established sampling stations. Coordinate with Idaho Power Company fish sampling and mitigation efforts.
			Bull Trout	Conservation	Coordinated with USFWS on bull trout status and recovery planning. Closed to harvest Catch-and-release, only.
Tributaries to Snake River and reservoirs	110/	Coldwater	Rainbow trout Redband trout	Wild	Bull trout and redband trout will receive management priority in drainage.
			Bull trout	Conservation	Closed to harvest Catch-and-release, only.
			Brook trout	General	

Brownlee Reservoir	55/15,000	Mixed	Smallmouth bass Largemouth bass Bluegill Black crappie White crappie Yellow perch Bullhead Rainbow trout Channel catfish Flathead catfish Sturgeon	General Conservation	Document current bass and catfish growth and condition. Monitor crappie and other panfish populations, and develop methods to predict fishing quality. Seek to maintain strong year classes of panfish. Assess angler exploitation of smallmouth bass and crappie. Seek opportunities to secure additional recreational access on the upper end of the reservoir. Evaluate options in the White Sturgeon Management Plan to improve angling experience. Closed to harvest. Catch-and-release, only.
Snake River from Brownlee Reservoir to Swan Falls Dam	121/	Mixed	Largemouth bass Smallmouth bass Channel catfish Flathead catfish Bluegill White crappie Black crappie Bullhead Yellow perch Pumpkinseed Rainbow trout Mountain whitefish Sturgeon	General Conservation	Monitor bass and catfish population size, growth, and condition. Assess angler use, catch and harvest, and satisfaction. Closed to harvest. Catch-and-release, only. Continue evaluation of angling impacts on local populations. Utilize options outlined in the White Sturgeon Management Plan to improve the fishery.
Reynolds Creek	25/	Coldwater	Redband trout	General	Improve production of native redband trout by seeking improved range and riparian management through BLM planning process.
Swan Falls Reservoir	/900	Mixed	Largemouth bass Smallmouth bass Bullhead Yellow perch Bluegill Channel catfish White Crappie Black Crappie Pumpkinseed Mountain whitefish Flathead catfish Sturgeon	General Conservation	Determine fish population species composition and size structure. Monitor sturgeon population status and mortalities at Swan Falls Dam, if any. Closed to harvest. Catch-and-release, only. Utilize options outlined in the White Sturgeon Management Plan to improve the fishery.

Castle Creek	41/	Mixed	Redband trout Black crappie	General	Manage headwaters for native redband trout; advocate improved range and riparian management through BLM planning process.
Snake River from Swan Falls Reservoir to C.J. Strike Dam	25/	Mixed	Largemouth bass Smallmouth bass Channel catfish Bullhead Flathead catfish Black crappie White crappie Bluegill Pumpkinseed Warmouth Yellow perch Rainbow trout Mountain whitefish	General	Enhance smallmouth bass fishery by seeking modification of peaking and flow fluctuations below C.J. Strike Dam. Maintain quality fishing opportunities for smallmouth bass.
			Sturgeon	Conservation	Closed to harvest. Catch-and-release, only. Monitor sturgeon population, angling effort, and catch. Assess effects of catch-and-release fishing on sturgeon survival and recruitment. Utilize options outlined in the White Sturgeon Management Plan to improve the fishery.


Weiser River Drainage
Lost Valley Reservoir
Tamarack
West Fork Weiser River
Hornet Creek
E.F. Weiser River
Council
M.F. Weiser River
Weiser River
Pine Creek
71
Cambridge
Little Weiser River
C Ben Ross Reservoir
Mann Creek
95
Manns Creek Reservoir
North Crane Creek
Crane Creek
Crane Creek Reservoir
Weiser

19. WEISER RIVER DRAINAGE

Overview

The Weiser River Basin lies in southwestern Idaho. It drains from the Seven Devils Mountains on the north, Cuddy Mountain to the west, and the West Mountains to the east. The drainage flows in a southwesterly direction for about 112 miles where it drains into the Snake River near the City of Weiser. Elevations in the drainage vary from 8,000 feet in the mountains to 2,090 feet at Weiser. The Weiser River drains a basin area of 1,660 square miles, primarily in low, rolling foothills dissected by many small streams. It has an average annual runoff of 742,000 acre-feet of water. Runoff during the spring is essentially unregulated, but in the lower drainage summer discharge is extremely low as much of the flow is diverted for irrigation. Late summer flows in the lower 18 miles are supplemented by releases from Crane Creek Reservoir.

The Weiser River has no mainstem storage reservoirs. Private irrigation districts have constructed four reservoirs on tributary streams. Those reservoirs, Lost Valley, Ben Ross, Crane Creek, and Manns Creek, have a total storage capacity of about 83,000 acre-feet of water. All were constructed to provide irrigation benefits, and typically fill during the spring runoff period and become extremely low in the late summer and early fall. In extremely dry years, Crane Creek, Ben Ross, and Lost Valley have gone dry. Ben Ross and Crane Creek reservoirs are best suited for production of warmwater game species. Manns Creek Reservoir supports a mixed fishery of warmwater species, hatchery rainbow trout, and native redband trout. All three reservoirs support populations of largemouth bass and crappie. Crane Creek Reservoir is currently impacted by a large population of common carp which contribute to poor water quality in the reservoir and downstream and low productivity for sport fish. Ben Ross Reservoir is managed for quality largemouth bass fishing. It also has bluegill, black crappie and white crappie that provide prey for the bass and a general fishing opportunity.

Lost Valley Reservoir can be an excellent rainbow trout fishery but has a history of problems associated with stunted yellow perch. It has routinely been chemically reclaimed when the perch population increases to the point it reduces growth of both the trout and perch.

From the mouth of the Weiser River upstream to Galloway Dam, the river supports a marginal warmwater fishery. Low summer flows and poor water quality limit fishery production in this section of river. From Galloway Dam upstream to Cambridge, the river supports a limited fishery for rainbow trout and smallmouth bass. Upstream from Cambridge, redband trout, mountain whitefish, and nongame fish dominate the fish community. Tributaries to the Weiser River, which have not been adversely impacted by agricultural practices or stream alterations, support excellent populations of native redband trout. These streams will be managed to conserve redband trout, and hatchery trout stocking will be limited to sterile rainbow trout in areas with high angler use.

Scattered populations of bull trout occupy individual tributaries to the Little Weiser River, the East Fork Weiser River and Hornet Creek.

Objectives and Programs

1. Objective: Preserve populations of bull trout to meet bull trout recovery goals.

   Program: Conduct population assessments in the five bull trout population every five years. The five populations are: upper Hornet Creek, upper East Fork Weiser River, Dewey Creek, Anderson Creek and Sheep Creek.

   Program: Work with land management agencies to preserve and improve habitat. Identify and remedy migration barriers that prevent fish migration. Support efforts to provide improved water quality and summer stream flow throughout the drainage above Little Weiser River. Install efficient irrigation diversions with fish screening.

2. Objective: Preserve redband trout genetic integrity and population abundance.

   Program: Limit hatchery trout to reservoirs and limited stream sections near major access points, such as campgrounds. Use only sterile rainbow trout stocks.

   Program: Define and sample three to five core redband trout populations within the drainage. Collect population data and genetic samples within this planning period.

3. Objective: Create community fishing ponds in underserved areas by working in cooperation with local city or county governments.

   Program: Utilize available funds and grants to construct local community fishing ponds.

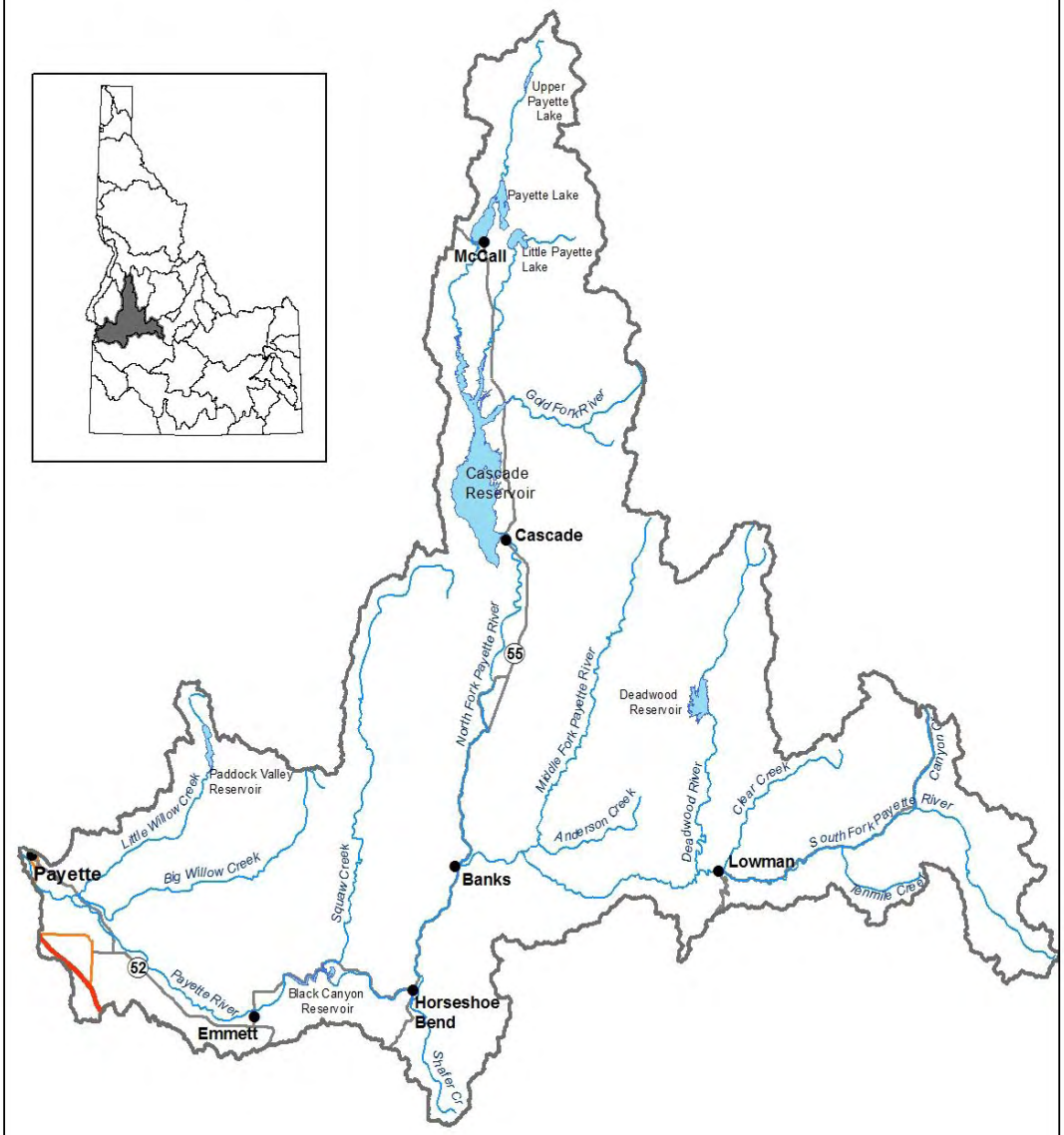
4. Objective: Improve water quality and sport fish population in Crane Creek Reservoir.

   Program: Reduce densities and biomass of common carp through chemical or mechanical means.

Drainage: Weiser River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Weiser River from mouth to Little Weiser River	36/	Mixed	Smallmouth bass Channel catfish Rainbow trout Mountain whitefish	General	Evaluate current fishery and angler satisfaction. Identify limiting factors and seek to reduce their impacts on fish production. Improve fish passage at Galloway Dam. Identify and procure fishing access sites.
Weiser River from mouth of Little Weiser River upstream including tributaries not listed below	196/	Mixed	Rainbow trout Redband trout Brook trout Smallmouth bass Mountain whitefish Bull trout	Wild General Conservation	Redband trout will be managed to conserve native populations. Use only sterile hatchery rainbow trout for stocking programs. Closed to harvest. Catch-and-release, only.
Little Weiser River and tributaries	62/	Coldwater	Rainbow trout Redband trout Brook trout Mountain whitefish Bull trout	Wild trout General Conservation	Redband trout will be managed to conserve native populations. Use only sterile hatchery rainbow trout for stocking programs. Closed to harvest. Catch-and-release, only.
Middle Fork Weiser River and tributaries	28/	Coldwater	Rainbow trout/ Redband trout Brook trout Mountain whitefish Bull trout	Wild General Conservation	Maintain 0.5 fish/hour catch rates on naturally-produced and hatchery rainbow trout. Continue limited hatchery plantings on Middle Fork near campgrounds only. Redband trout will receive priority management. Closed to harvest. Catch-and-release, only.
West Fork Weiser River and tributaries	36/	Coldwater	Rainbow trout Redband trout Brook trout Mountain whitefish Bull trout	Wild General Conservation	Redband trout will be managed to conserve native populations. Use only sterile hatchery rainbow trout for stocking programs. Closed to harvest. Catch-and-release, only.
Mann Creek Reservoir (Spangler Reservoir)	/281	Mixed	Rainbow trout Redband trout Largemouth bass Black crappie	General	Maintain catchable rainbow trout stocking. Monitor adfluvial redband trout abundance and harvest during the spring spawning period. Identify upstream man-made barriers in spawning tributaries and work with fishing clubs and USFS to improve or replace migration obstacles.

Crane Creek Reservoir	/2,200	Warmwater	Largemouth bass Bullhead White crappie Channel catfish	General	Evaluate sport fish population structure periodically. Investigate fishery renovation to remove carp during a prolonged drought period.
C. Ben Ross Reservoir	/353	Mixed	Largemouth bass Bluegill Crappie Bullhead Rainbow trout	Quality General	Maintain quality bass regulation. Monitor status every 4-5 years. Supplement forage fish population with white crappie and bluegill and assess forage population three years later. Evaluate the feasibility of constructing habitat structures.
Lost Valley Reservoir	/633	Coldwater	Rainbow trout Brook trout Yellow perch	General	Maintain 0.5 to 1.0 fish/hour catch rates on 10- to 16-inch rainbow trout from catchable rainbow trout stocking. Expect overpopulation of yellow perch on a 5- to 6-year cycle, and chemically eradicate the reservoir when the perch population retards trout growth or becomes a serious nuisance to anglers.
Weiser Community Pond	/3	Mixed	Rainbow trout Largemouth bass Smallmouth bass Bluegill Bullheads Channel catfish	Community/Put-and-take	Manage to provide opportunities for novice anglers and youth. Supplement as needed with locally supplied fish. Evaluate bag limit changes to balance stocking costs with providing angling opportunities. Publicize stocking schedule and fishing trailer events to maximize angler outreach and education.

Payette River Drainage



20. PAYETTE RIVER DRAINAGE

Overview

The Payette River basin lies in southwestern Idaho. Its headwaters originate in the Sawtooth and Salmon River mountains at elevations over 10,000 feet. The drainage flows in a southwesterly direction for over 175 miles where it empties into the Snake River near the city of Payette at an elevation of 2,125 feet. The Payette River basin comprises about 3,240 square miles.

Principal tributaries are the North and South Forks of the Payette River. The North Fork drains about 950 square miles and the South Fork about 1,200 square miles. The Payette River has an average annual discharge into the Snake River of 2,192,000 acre-feet of water. Irrigation accounts for the largest water use, with about 160,000 acres of irrigated farmland. This system also provides water for recreation, hydroelectric generation, mining, and logging. The drainage is comprised of primarily granitic soils, which are highly erosive.

Due to the wide range in elevation, the Payette River has a variety of fish and fish habitats. Salmon and steelhead were eliminated in the drainage by Black Canyon Dam in 1924. From its mouth to Black Canyon Dam, the river supports a mixed fishery for coldwater and warmwater species. Mountain whitefish make up the bulk of game fish in this section of river, with smallmouth bass, largemouth bass, channel catfish, black crappie, and flathead catfish making significant contributions. Upstream from Black Canyon Dam, the gradient of the river increases with coldwater species increasing in abundance. The South Fork of the Payette River supports fair populations of inland redband trout and is one of the more popular recreational floating rivers in the region. The North Fork of the Payette River has been severely altered by railroad and highway construction and provides only a marginal fishery for salmonids. However, in unaltered sections such as the Cabarton reach, the North Fork is productive for salmonids.

There are six major impoundments in the Payette basin, Black Canyon, Sagehen, Paddock, Cascade, Horsethief, and Deadwood, and several small impoundments and natural lakes with increased storage, such as the three Payette lakes. Impoundments in the Payette basin primarily serve irrigation needs with flood control and recreation providing additional benefits. Black Canyon Reservoir provides only marginal fish habitat. Sand from upstream land disturbances has covered most habitats. After a series of good water years, Paddock Reservoir, on Big Willow Creek, can produce a good fishery for largemouth bass, bluegill, black crappie, and brown bullhead, but during drought years, these populations decline precipitously. Lake Cascade on the North Fork was once the most heavily fished water in the state. Deadwood Reservoir provides a popular fishery for kokanee, rainbow trout, cutthroat trout, and fall Chinook. A population of adfluvial bull trout also exist in the reservoir. Deadwood is currently the state's primary egg source for early-spawn kokanee with an egg-take operation on the Deadwood River occurring annually in August through September.

Lake Cascade near the city of Cascade received a great deal of investigation during the last planning period to restore the once popular yellow perch fishery. Investigations revealed that the yellow perch fishery likely collapsed due to a combination of factors including poor water quality possibly resulting in adult fish kills, and predation from northern pikeminnow on juvenile yellow perch. In the last planning period the Department stocked over 860,000 adult yellow perch and reduced the northern pikeminnow population by seventy-five percent. Fish management activities since have been directed at monitoring the results of those efforts.

Alpine lakes within the Payette River drainage provide anglers with a variety of fishing opportunity. Rainbow trout, cutthroat trout, rainbow trout x cutthroat trout hybrids, golden trout, and arctic grayling are stocked in alpine lakes within the drainage. Brook trout are also present in a number of lakes, but in many cases have stunted and alternative management may be warranted. There are a total of 178 alpine lakes in the Payette drainage. Many of these lakes are too small to support a fishery. IDFG presently stocks approximately ninety of the alpine lakes in the Payette River system. A number of alpine lakes in the Payette River drainage have self-sustaining populations.

Objectives and Programs

1. Objective: Provide a diversity of fishing opportunities within the Payette River drainage.

   Program: Concentrate hatchery catchable stocking in locations where the highest return-to-creel will occur.

   Program: Manage for wild trout where habitat and fish populations will sustain an acceptable fishery.

   Program: Increase warm water angling opportunity by acquiring access agreements or title to ponds in the Lower Payette River drainage.

   Program: Seek funding for construction of new community fishing waters near underserved municipalities.

   Program: Improve land-use management through working with federal, state, and private land owners on proper land uses to increase soil stability in the drainage.

   Program: Pursue a land purchase or easement to secure public access to Paddock Reservoir. Also, promote water conservation measures in the drainage and attainment of a minimum conservation pool.

2. Objective: Maintain riparian and floodplain values for fish and public access.

   Program: Continue to comment and provide accurate fish and wildlife data to local planning bodies.

   Program: Work with Valley County and landowners to provide public access to the North Fork Payette River.

3. Objective: Maintain the kokanee fishery and large-fish/mature nature of the lake trout population in Payette Lake.

   Program: Maintain lake trout trophy regulations to maximize numbers of large, mature fish.

   Program: Supplement kokanee population with fingerling stocking and monitor results.

4. Objective: Monitor the yellow perch fishery recovery in Cascade Reservoir.

   Program: Monitor yellow perch recruitment with gill net surveys and creel catch rates.

Program: Monitor northern pikeminnow abundance, size and age structure, with gill net surveys.

5. Objective: Conserve and enhance existing bull trout populations in the Gold Fork River drainage and Squaw Creek and South Fork and Middle Fork Payette drainages.

   Program: Continue angler educational signage about bull trout no-harvest rules in the drainage.

   Program: Continue to define and monitor distribution and abundance of bull trout.

   Program: Work with the Forest Service and other parties to identify fish passage barriers and prioritize culvert replacements or other passage solutions.

6. Objective**:** Provide a diversity of alpine lake fishing opportunities**.**

   Program: Complete surveys of the majority of alpine lakes in the drainage.

   Program: Investigate additional alpine lakes for different management actions such as brook trout suppression by stocking sterile predators.

7. Objective: Preserve redband trout genetic integrity and population abundance.

   Program: Limit trout stocking to limited stream sections near access points. Use only sterile rainbow trout.

   Program: Define and sample three to five core redband trout populations within each major fork. Collect population data and genetic samples to represent each population.

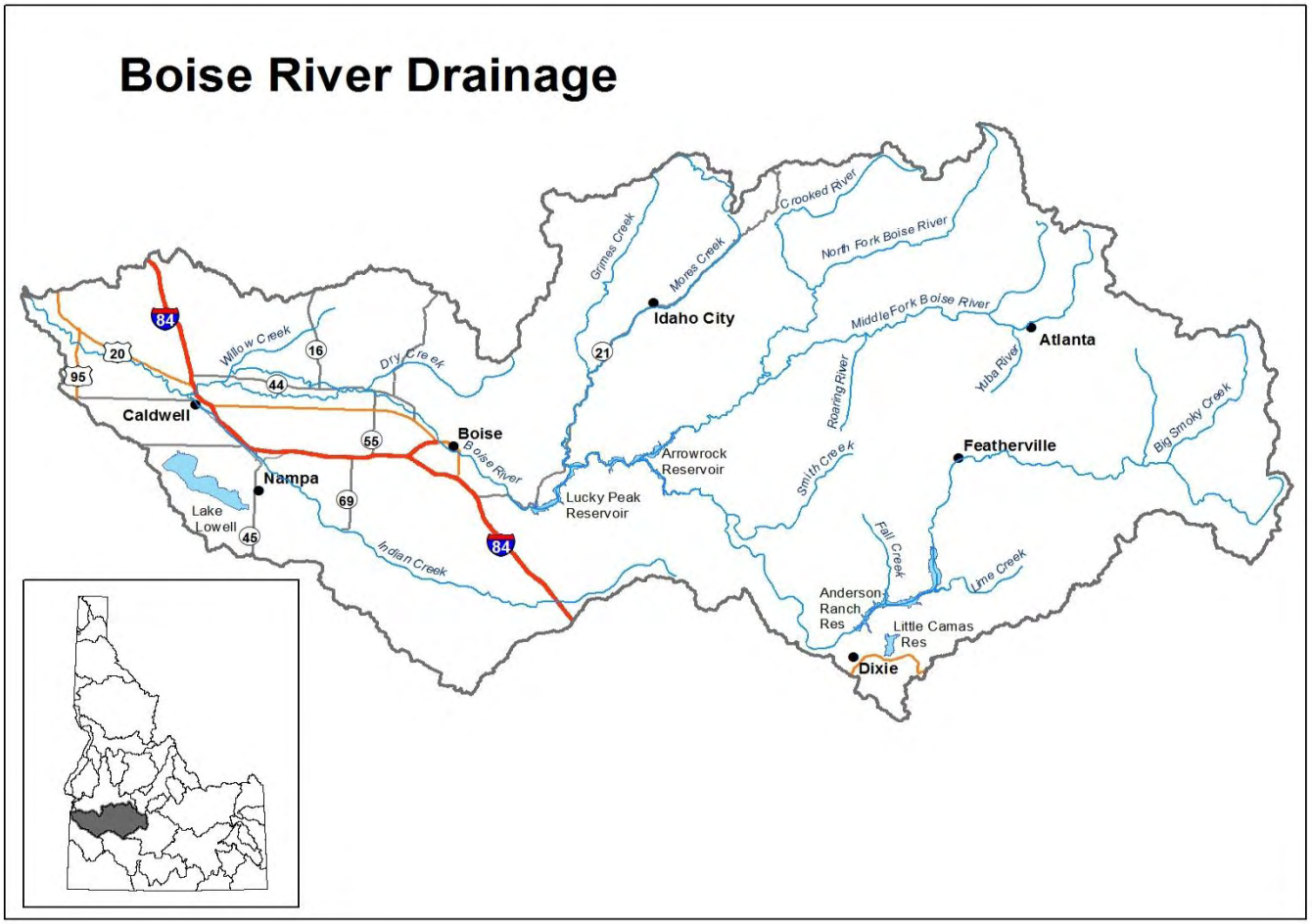
Drainage: Payette River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Payette River mouth to Black Canyon Dam	72/	Mixed	Smallmouth bass Channel catfish Largemouth bass Flathead catfish Bullhead Mountain whitefish Rainbow trout	General	Monitor fish populations. Determine catch rates and angler satisfaction for the existing fishery. Consider quality smallmouth bass regulation. Develop angler access points near Letha and Hwy 95 bridges and float-and-fish brochures for this area.
Black Canyon Reservoir	/1,100	Warmwater	Smallmouth bass Largemouth bass Black crappie Bullhead Bluegill Yellow perch	General	Monitor fish composition and size structure during this six-year period. Determine if a channel catfish fishery can be created in Black Canyon Reservoir through translocation of adult fish from Snake River.
Black Canyon to South Fork/North Fork Confluence	107/	Coldwater	Rainbow trout Mountain whitefish Bull trout	General Conservation	Maintain as a non-stocking native fishery. Evaluate fish and habitat by visual and snorkeling techniques. Closed to harvest. Catch-and-release, only.
Emmett Airport and Sawyers ponds	/8	Mixed	Largemouth bass Bullhead Bluegill Pumpkinseed Channel catfish Rainbow trout	General	Monitor fish composition and size structure. Add appropriate stocks of fish to provide an improved fishery. Evaluate channel catfish stocking. Monitor and treat Eurasian water milfoil as needed. Enhance shoreline vegetation and add artificial habitat structures.
Paddock Reservoir	/1,302	Mixed	Largemouth bass Black crappie Bullhead Bluegill Rainbow trout	General	Monitor recovery of warmwater fish populations following drought periods. Supplement populations as necessary.
Warmwater lowland ponds and reservoirs	/200	Warmwater	Largemouth bass Bluegill Pumpkinseed Bullhead Smallmouth bass Channel catfish Black crappie	General	Maintain warmwater populations to use for maximum local fishing opportunity. Use stunted stocks for introduction into new water. Inventory and more intensively manage waters on public lands. Monitor and treat Eurasian water milfoil and other nuisance plants as needed.
Squaw Creek and Willow Creek	71/	Mixed	Redband trout Bull trout	Wild Conservation	Maintain native stocks. Monitor status and distribution of redband trout. Work with private and public entities to improve riparian and upland conditions. Closed to harvest. Catch-and-release, only. Monitor bull trout populations in upper Squaw Creek drainage. Work with federal agencies to remove migration barriers.

Sagehen Reservoir	/180	Coldwater	Rainbow trout Redband trout	Put-and-take General	Maintain stocking program with sterile rainbow trout catchables Monitor spawning tributaries to Sage Hen Reservoir, and contribution of adfluvial redband trout to the reservoir. Inventory tributary stream to develop a management plan for the natural spawning stocks.
North Fork Payette River from Banks to Cascade Dam, including tributaries	74/	Coldwater	Redband trout Yellow perch Mountain whitefish	Wild General	Manage for wild trout. Stock sterile catchables in Payette River below Cascade Dam only.
North Fork Payette River from Tamarack Fall Bridge to Lardo Dam	24/	mixed	Rainbow trout Redband trout Mountain whitefish Brook trout Kokanee Smallmouth bass	Put-and-take General	Work with landowners and land management agencies to protect riparian and floodplain.
North Fork Payette River from Payette Lake to headwaters, including Fisher Creek and other tributaries	34/	Coldwater	Rainbow trout Brook trout Redband trout Mountain whitefish Kokanee	Put-and-take General	Concentrate supplemental hatchery trout in high angler use areas, only near Ponderosa Park. Protect spawning habitat for kokanee. Maintain spawning season closure for kokanee.
Gold Fork River and tributaries	49/	Coldwater	Rainbow trout Brook trout Kokanee Redband trout Bull trout	Put-and-take General Conservation	Concentrate supplemental hatchery trout in high angler use areas. Improve natural trout production in drainage. Assess opportunity to seek habitat improvements in drainage by contacting private landowners and land management agencies. Continue with plans with NRCS and Irrigation Co. to remove Gold Fork Diversion and rebuild upstream with new fish friendly structure. Closed to harvest. Catch-and-release, only.
Lake Fork Creek from mouth to Little Payette Lake, including tributaries	37/	Coldwater	Redband trout Rainbow trout Kokanee Brook trout Smallmouth bass	General	Assess fish losses occurring in Lake Irrigation District canal and laterals through biological sampling. Screen canals found to cause significant fish losses.

Lake Fork Creek from Little Payette to headwaters		Coldwater	Rainbow trout Redband trout Brook trout	Put-and-take General	Concentrate supplemental hatchery trout in high angler use areas. Evaluate return to creel and adjust stocking strategy as needed.
Boulder Creek and tributaries	17/	Coldwater	Redband trout Brook trout	General	Enhance natural trout production in drainage. Work with landowners and land management agencies to improve fish habitat.
Valley County ponds	/1,247	Coldwater	Rainbow trout	General	Develop diversity and increase fishing opportunity for trout in area ponds by working with landowners to allow public access. Construct small community fishing ponds.
Horsethief Reservoir	/1,270	Coldwater	Rainbow trout Brook trout Brown trout	General	Maintain as a hatchery-supported fishery due to high angler use and excellent access. Keep year-round season due to public support. Monitor perch population and take appropriate management actions to eliminate perch when necessary. Stock large fingerling brown trout to provide diversity and a large fish component to the harvest.
Tripod Reservoir		Coldwater	Rainbow trout	General	Maintain catch rate of 0.5 trout per hour of sterile rainbow trout. Investigate feasibility of developing into redband trout fishery and brood source.
Trophy Mt. Lakes		Coldwater	Rainbow trout Cutthroat trout Grayling	Trophy	Monitor success of trophy trout regulations and evaluate need for additional waters.
All other alpine lakes	/1,386	Coldwater	Rainbow trout Arctic grayling Brook trout Cutthroat trout Brown trout	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When and where appropriate, use sterile rainbow trout or westslope cutthroat trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with other management entities. Evaluate the control of stunted brook trout populations with experimental measures.
Cascade Reservoir	/28,300	Mixed	Rainbow trout Kokanee Coho salmon Yellow perch Channel catfish Black crappie Smallmouth bass Tiger muskie	General	Manage Cascade Reservoir for both yellow perch and salmonid species as co-equals. Monitor yellow perch and northern pikeminnow population. Aggressively reduce adult northern pikeminnow numbers if they reach 15 greater than 350 mm per gill net night and 75% of the northern pikeminnow greater than 350 mm, in the reservoir. Seek to improve warmwater fishing opportunity. Improve tributary habitat condition and access for natural trout production. Continue strong support for water quality improvement studies and encourage timely implementation. Creel surveys will be done to assess angler use and harvest and assist in evaluating and refining trout stocking policy if needed. Stocking program of at least two salmonids in the reservoir to enhance fishing success and opportunity. Evaluate smallmouth bass, channel catfish, and black crappie population status and potential.

Little Payette Lake	/1,450	Mixed	Rainbow trout Smallmouth bass Tiger muskie Kokanee	General Trophy	Monitor nongame fish, trout, and tiger muskie populations. Allow harvest of kokanee. Continue tiger muskie program to utilize sucker and pikeminnow populations. Remove spawning northern pikeminnow and sucker from lake or creek with rotenone and/or lake trapping.
Upper Payette Lake	/400	Coldwater	Rainbow trout Brook trout Splake	General	Maintain as hatchery-supported system due to high catch rate and excellent return rate. Explore feasibility of alternative species. Maintain catch rates of at least 0.5 fish/hour.
Payette Lake	/5,337	Coldwater	Rainbow trout Cutthroat trout Kokanee Lake trout	General Trophy	Maintain kokanee numbers and therefore average adult kokanee size at 10 to 12 inches through stocking manipulation. Monitor kokanee numbers both in lake and in spawning runs. Protect adult kokanee in North Fork Payette River during spawning. Supplement kokanee and monitor results. Monitor lake trout population and maintain as trophy size fish by using restrictive size and bag limits. Employ net pen rearing techniques to produce catchable size rainbow trout for release into the lake and as a point of interest to visitors to the area. Encourage wise land management use in adjacent watersheds to maintain high water quality.
Middle Fork Payette River to Silver Creek and up Silver Creek to above Silver Creek Plunge bridge	23/	Coldwater	Rainbow trout Cutthroat trout Redband trout Mountain whitefish Brook trout Bull trout	Put-and-take Conservation	Put-and-take with sterile catchable rainbow trout. Evaluate catch rates and angler satisfaction. Monitor populations using established snorkeling transects. Develop a community fishing pond near Garden Valley. Closed to harvest. Catch-and-release, only.
Middle Fork Payette River upstream from Silver Creek and above bridge directly above Silver Creek Plunge	53/	Coldwater	Redband trout Cutthroat trout Mountain whitefish Brook trout Bull trout	Wild Conservation	Non-stocking, retain as a native fishery. Monitor populations using established snorkeling transects. Closed to harvest. Catch-and-release, only.
Deadwood River from mouth to Deadwood Dam, including tributaries	30/	Coldwater	Redband trout Mountain whitefish Bull trout	Wild Conservation	Wild trout management. Closed to harvest. Catch-and-release, only. Collaborate with BOR to assess abundance and distribution.
Deadwood Reservoir and tributaries	/3,000	Coldwater	Kokanee Cutthroat trout Rainbow trout Fall Chinook salmon Brook trout Mountain whitefish Bull trout	General Conservation	Manage kokanee fishery to yield four-year-old spawners with mean length of approximately 13 inches by controlling escapement on an annual basis. Monitor kokanee size and year classes with annual hydroacoustic surveys. Monitor established self-sustaining population of westslope cutthroat trout. Evaluate fall Chinook and fingerling rainbow trout stocking. Closed to harvest. Catch-and-release, only. Collaborate with BOR to assess abundance and life history, and entrainment losses.

South Fork Payette River from Mouth to headwaters, including tributaries	41/	Coldwater	Redband trout Cutthroat trout Brook trout Mountain whitefish Rainbow trout Bull trout	Wild General Conservation	Maintain wild trout fishery. Evaluate catch rates and wild trout densities with angler interviews and snorkeling surveys. Closed to harvest. Catch-and-release, only.
Clear Creek	22/	Coldwater	Redband trout Mountain whitefish Bull trout	Wild General Conservation	Wild trout management. Closed to harvest. Catch-and-release, only.
Bull Trout and Martin Lakes	/90	Coldwater	Brook trout Rainbow trout	General/Put-and-take	Put and take rainbow trout stocking. Suppress brook trout abundance to increase average length.


Boise River Drainage
Caldwell
Nampa
Lake Lowell
Boise
Boise River
Idaho City
Arrowrock Reservoir
Lucky Peak Reservoir
Atlanta
Featherville
Anderson Ranch Res
Little Camas Res
Dixie
Willow Creek
Dry Creek
Indian Creek
Grimes Creek
Mores Creek
Crooked River
North Fork Boise River
Middle Fork Boise River
Roaring River
Yuba River
Big Smoky Creek
Smith Creek
Fall Creek
Lime Creek
84
20
95
16
44
55
69
45
21

21. BOISE RIVER DRAINAGE

Overview

The Boise River basin lies in southwestern Idaho and drains an area of 4,100 square miles. The headwaters of the Boise River originate in the Sawtooth Mountains at elevations in excess of 10,000 ft. It flows in a westerly direction for about 200 miles before emptying into the Snake River near Parma at an elevation of 2,100 ft. Major tributaries to the Boise River include the North Fork Boise River, the South Fork Boise River, Middle Fork Boise River, and Mores Creek. This basin has an average annual runoff of 2,005,000 acre-feet of water.

The Boise River has three major mainstem impoundments, Anderson Ranch, Arrowrock and Lucky Peak reservoirs and one large off-stream impoundment, Lake Lowell. The four large reservoirs have a combined storage capacity of 1,143,249 acre-feet of water. The Boise River reservoirs supply water storage for irrigation, flood control, recreation, hydropower, and in-stream flows.

Because of the wide range in elevations, geographic features and water uses, the Boise River has a great variety of habitat types and fish species. The drainage includes the major population center in the state, has over 250,000 acres of irrigated cropland and some of Idaho's earliest mining, logging and hydroelectric developments. Human-caused impacts have severely degraded some habitats over a long period of time creating severe limitations on fishery productivity.

From the mouth of the Boise River upstream to Star, low summer flows and poor water quality limit sport fish production. This section of river supports a fair fishery for largemouth bass, smallmouth bass, and channel catfish. From Star upstream to Lucky Peak Dam, the river changes from a warmwater to a coldwater fishery. Mountain whitefish make up the bulk of the game fish biomass, with hatchery rainbow trout, wild rainbow trout, and brown trout supporting the bulk of the fishing opportunity. When available, surplus hatchery Chinook salmon adults are stocked in the summer and hatchery steelhead adults are stocked in the fall, which create intense fisheries. Upstream from Lucky Peak and Arrowrock reservoirs, rivers and streams contain redband trout, mountain whitefish, bull trout, and hatchery-supported kokanee populations. Brook trout, redband trout and cutthroat trout occur in some tributary streams. Due to heavy angling pressure exerted on these streams, catchable-sized hatchery rainbow trout supplement wild populations in easily-accessible areas. The Middle Fork Boise from the North Fork confluence up to Atlanta Dam is managed for wild trout, as is the South Fork Boise River downstream from Anderson Ranch Dam.

The South Fork Boise River between Arrowrock Reservoir and Anderson Ranch Dam was the first designated quality trout stream segment in southwestern Idaho, and remains the premier wild trout fishery in the southwest region. Rainbow trout and mountain whitefish make up the majority of the fish caught in the South Fork. The rainbow trout fishery is managed with trophy regulations. In 1978, anglers caught an estimated 19,150 rainbow trout and released 18,059 (94%). In 1988, anglers caught an estimated 18,400 rainbow trout and released 99%. Between 1988 and 2002, angler effort increased 66%.

A 1988 creel survey of the South Fork Boise River between Featherville and Big Smoky Creek estimated effort at 365 hours/mile. Hatchery rainbow trout made up over 80% of fish checked in anglers creels but the overall return total creel rate was only 21%, indicating hatchery fish needed to be more efficiently utilized. Hatchery fish are now stocked only at campgrounds in the lower

portion of this area and the upper section above Beaver Creek is being managed as a wild trout area.

Popular reservoir fishing opportunities exists at Lake Lowell, Lucky Peak, Arrowrock, Anderson Ranch and Little Camas. The Lake Lowell fishery consists primarily of largemouth bass, smallmouth bass, yellow perch, black crappie, bluegill, and channel catfish. Arrowrock, Lucky Peak, and Anderson Ranch reservoirs provide "two-story" fisheries with smallmouth bass occupying the warm, inshore waters and rainbow trout and kokanee dominating the cold, mid-water fishery. The rainbow trout fishery in all three reservoirs depends heavily on stocked catchable or fingerling size fish and the kokanee fisheries in Arrowrock and Lucky Peak reservoirs are also hatchery-supported. Little Camas Reservoir is a very productive hatchery trout fishery during good water years. Neither Arrowrock nor Little Camas reservoirs have a conservation pool and both have a history of extreme drawdown during drought years.

Good spawning conditions in tributary streams provide a continuous supply of kokanee in Anderson Ranch Reservoir. Anderson Ranch is one of the more popular kokanee fisheries in southern Idaho, and anglers harvested an estimated 40,000+ kokanee in 1979, 34,000 in 1985, and 29,000 in 1997. Kokanee populations in the reservoir have fluctuated significantly from 1983 through 2010 due to extreme high and low water conditions in the drainage and overstocking of fall Chinook salmon in the early 1980s. Ongoing studies of kokanee populations are being used to develop models to reduce population fluctuations through variations in escapement and hatchery supplementation. A weir has been constructed and successfully used to limit kokanee spawners during two excess production years (2008 and 2009) as well as a site to secure kokanee eggs for the Department's hatchery program when needed. The Anderson Ranch Reservoir kokanee fishery responded well with anglers reporting good catch rates of quality- sized kokanee.

Within the Treasure Valley, the lower Boise River and a complex of approximately 30 community ponds provide diverse and close-to-home fishing opportunity for over 500,000 residents and visitors. These urban waters support some of the most intensive fishing pressure in the state, with over 5,000 hours per acre on some ponds. Both the river and pond fisheries are supplemented with hatchery rainbow trout which provide much of the harvest opportunity. Most ponds also contain self-sustaining warm water fish communities, and some are stocked with channel catfish. These waters are all managed as yield fisheries, and are an important component of angler recruitment in the Southwest Region.

Alpine lakes within the Boise River drainage provide anglers with a variety of fishing opportunity. Rainbow trout, cutthroat trout or brook trout are found in many lakes. Arctic grayling and golden trout provide fisheries in a few alpine locations. There are 224 alpine lakes in the Boise drainage. Most of these lakes are too small to support a fishery. IDFG presently stocks 68 of the alpine lakes in the Boise River system.

Objectives and Programs

1. Objective: Provide a diversity of fishing opportunities within the Boise River drainage.

   Program: Concentrate hatchery catchable stocking in the locations where the highest return to the creel will occur.

Program: Manage for wild trout where habitat and fish populations will sustain acceptable fisheries.

Program: Manage for increased catch rates and fish size in selected stream reaches with quality and trophy trout regulations.

Program: Manage warmwater fisheries to provide a wide variety of sizes and species readily available to the large population of the Treasure Valley area.

Program: Develop ponds in the upper South Fork Boise River and Smoky Creek drainages for planting sterile catchable rainbow trout.

Program: Continue to support and develop community fishing ponds especially in geographically underserved areas, and promote these waters for angler recruitment and education.

Program: Continue to work with municipalities to pursue improvements at existing community ponds, such as fish habitat structures, aquatic plant control, handicapped access, docks, restrooms, and parking.

2. Objective: Seek improved land and water management practices that significantly protect and enhance fish habitat.

Program: Collaborate with other agencies and private entities to protect and enhance flows, fish habitat, and remove migration barriers.

Program: Provide riparian vegetation objectives to land management agencies where grazing, development, or other activities have degraded riparian zones.

3. Objective: Monitor effects of land management activities, fishery regulations, and other human activities on fish habitat and fish populations.

Program: Collect standardized trend data on habitat and fish populations at established sites throughout the Boise River drainage.

4. Objective: Seek changes to reservoir management and stream flows that benefit fish.

Program: Continue to seek a designated minimum conservation pools in reservoirs that are affected by extreme drawdowns, such as Arrowrock and Blacks Creek reservoirs.

Program: Study water management at Lake Lowell to determine the relationship between fish production and water levels.

Program: Determine which water levels in Anderson Ranch Reservoir result in downstream losses of bull trout and/or failed kokanee escapement. Develop reservoir management plans and work with the Bureau of Reclamation to avoid or mitigate losses.

5 Objective: Improve distribution and population status of bull trout.

Program: Identify barriers for removal to connect all possible bull trout habitat.

Program: Continue angler educational program about bull trout in the drainage.

Program: Continue to define and monitor populations of bull trout.

Program: Continue to coordinate with the Bureau of Reclamation on bull trout studies in Arrowrock Reservoir, Anderson Ranch Reservoir, and upper Boise River drainage.

6. Objective: Provide a diversity of alpine lake fishing opportunities.

Program: Investigate alpine lakes for opportunities to create trophy management.

Program: Stock a diversity of fish species including sterile cutthroat trout, sterile rainbow trout, golden trout (in 100% closed basins), and arctic grayling.

Program: Intermittently evaluate alpine lake fisheries and adjust stocking accordingly if necessary.

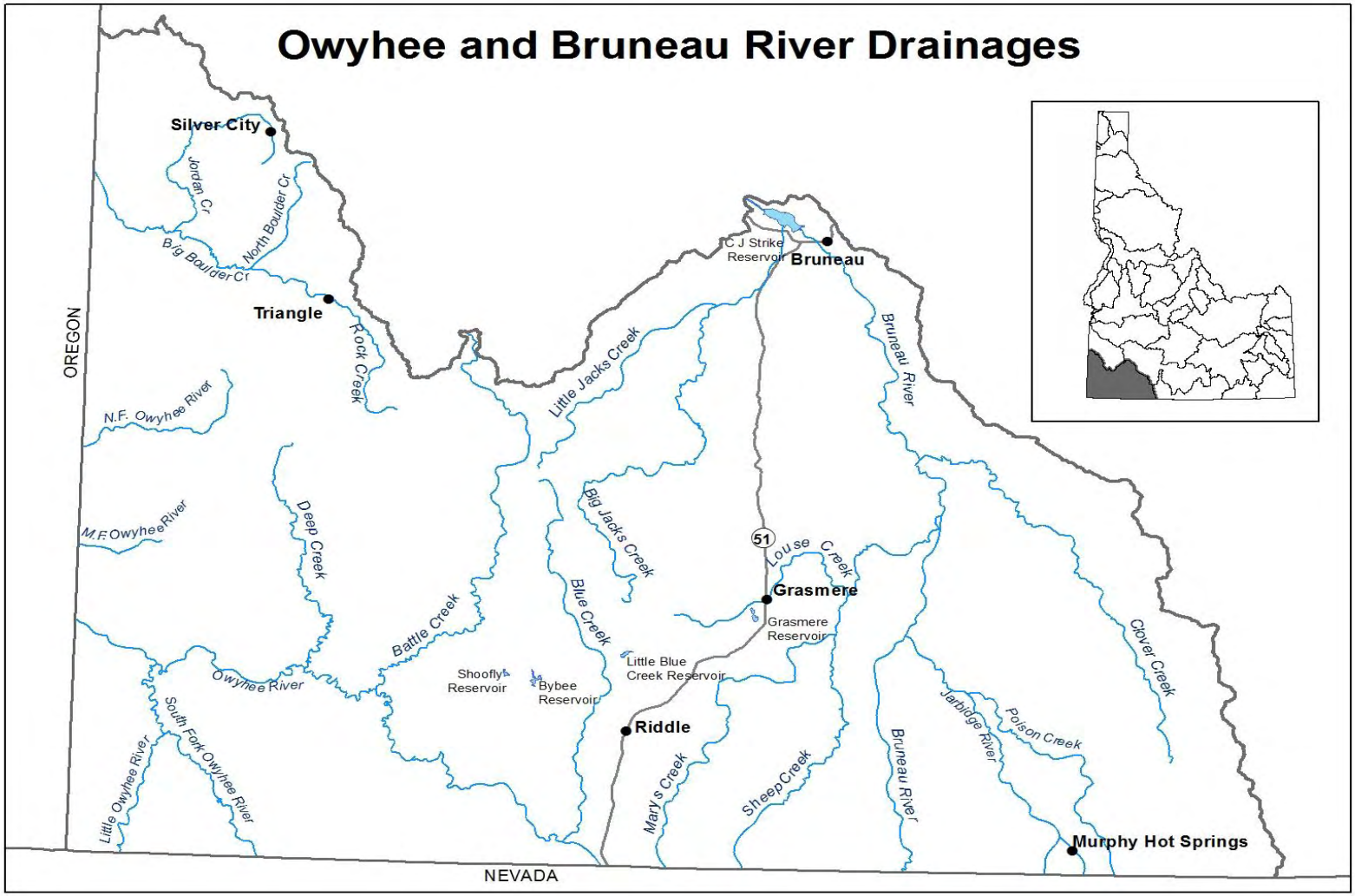
Drainage: Boise River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Boise River mouth to Star	34/	Mixed	Rainbow trout Mountain whitefish Largemouth bass Smallmouth bass Channel catfish Black crappie	General	Work with state and federal regulatory agencies to improve water quality and habitat condition. Evaluate fish population, species composition, and size structure. Determine angler satisfaction with current fishery.
Boise River Star to Lucky Peak	25/	Coldwater	Rainbow trout Steelhead Chinook salmon Brown trout Mountain whitefish	Put-and-take General	Work with state and federal regulatory agencies and private groups to improve water quality, flow regimes, and habitat conditions. Stock with catchable rainbow trout year-round, hatchery-produced adult steelhead, and Chinook salmon seasonally if available. Monitor wild fish populations at three to five year periods.
East Boise footbridge to Loggers Creek Diversion	4/	Coldwater	Rainbow trout Brown trout Mountain whitefish	Quality	Monitor abundance and size structure of wild trout populations. Maintain quality regulation if it is enhancing population structure.
Mores Creek		Coldwater	Rainbow trout Mountain whitefish Bull trout	General Conservation	Work with regulatory agencies to enhance habitat. Stock with catchable rainbow trout. Closed to harvest. Catch-and-release, only.
Boise River Drains	92/	Coldwater	Rainbow trout Brown trout Mountain whitefish	General	Work with communities and regulatory agencies to improve water quality and habitat conditions. Improve angler access.
Loggers Creek	2/	Coldwater	Rainbow trout Brown trout Mountain whitefish	General	Manage as a nursery stream to provide fish to Boise River.
Treasure Valley Community Fishing Ponds ~ 30 public ponds (e.g. Park Center, Kleiner, Duff Lane, Bob Rice, Wilson Ponds, Caldwell)		Mixed	Rainbow trout Largemouth bass Smallmouth bass Bluegill Bullheads Channel catfish	Community/Put-and-take	Manage to provide opportunities for novice anglers and youth. Supplement as needed with locally supplied fish. Evaluate bag limit changes to balance stocking costs with providing angling opportunities. Publicize stocking schedule and fishing trailer events to maximize angler outreach and education.
Middle Fork Boise River from Arrowrock Reservoir to North Fork Boise River	11/	Coldwater	Rainbow trout Redband trout Mountain whitefish Bull trout	Put-and-take General Conservation	Stock with catchable rainbow trout following high water period until Labor Day. Evaluate return to the creel of hatchery trout. Monitor angler use and satisfaction with current fishery. Closed to harvest. Catch-and-release, only.

Middle Fork Boise River from North Fork to Atlanta Power Dam	32/	Coldwater	Redband trout Cutthroat trout Brook trout Mountain whitefish Bull trout	Quality General Conservation	Manage for high catch rates on wild fish. Closed to harvest. Catch-and-release, only.
Middle Fork Boise River from Atlanta Power Dam to Sawtooth Wilderness Boundary	4/	Coldwater	Rainbow trout Redband trout Brook trout Cutthroat trout Mountain whitefish Bull trout	Put-and-take General Conservation	Stock with sterile catchable rainbow trout following high water period until Labor Day. Evaluate return of hatchery trout. Seek opportunities to develop catch-out pond for planting catchables. Closed to harvest. Catch-and-release, only. Maintain the Kirby Dam fish ladder. Work with regulatory agencies to ensure enforcement of operational mandates.
Middle Fork Boise River upstream of Sawtooth Wilderness Boundary and all tributaries	30/	Coldwater	Redband trout Brook trout Cutthroat trout Mountain whitefish Bull trout	Wild General Conservation	Manage for high catch rates and low angler densities. Manage for wild fish. Closed to harvest. Catch-and-release, only.
South Fork Boise River from Arrowrock Reservoir to Neal Bridge		Coldwater	Rainbow trout Redband trout Mountain whitefish Bull trout	General Conservation	Manage for harvest opportunity for stream trout and mountain whitefish. Closed to harvest. Catch-and-release, only.
South Fork Boise River from Neal Bridge to Anderson Ranch Dam	10/	Coldwater	Rainbow trout Redband trout Mountain whitefish Bull trout	Trophy Conservation	Manage for high catch rates for large fish. Monitor angler catch rates and wild trout abundance and size structure every three years. Assess tributaries for spawning habitat potential and prioritize reconnection projects. Closed to harvest. Catch-and-release, only.
South Fork Boise River from Anderson Ranch Reservoir to Beaver Creek	26/	Coldwater	Rainbow trout Redband trout Mountain whitefish Kokanee Bull trout	Put-and-take General Conservation	Good quality habitat with wild trout potential. Evaluate hatchery trout returns and adjust accordingly. Continue to prioritize camping access areas for stocking locations. Operate kokanee weir to limit kokanee escapement during unusually high production years. Closed to harvest. Catch-and-release, only. Work with BOR to establish long-term adfluvial bull trout monitoring program.

South Fork Boise River from Beaver Creek to Big Smoky Creek	10/	Coldwater	Redband trout Mountain whitefish Kokanee Bull trout	Quality General Conservation	Good quality habitat for wild trout although growth is slow due to the low stream productivity. Manage for quality >14-inch wild rainbow trout to increase natural reproduction. Closed to harvest. Catch-and-release, only.
South Fork Boise River from Big Smoky Creek to headwaters	15/	Coldwater	Rainbow trout Redband trout Mountain whitefish Kokanee Bull trout	Put-and-take General Conservation	Investigate possibility and pursue funding to construct off-river ponds for put-and-take stocking of trout. Good quality habitat, however low natural stream productivity limits wild trout growth for acceptable size rainbow. Closed to harvest. Catch-and-release, only.
Big Smoky Creek from mouth to Calf Creek	4/	Coldwater	Rainbow trout Redband trout Mountain whitefish Kokanee Bull trout	Put-and-take General Conservation	Evaluate hatchery trout returns and adjust stocking accordingly. Continue to prioritize camping access areas for stocking locations. Investigate possibility and pursue funding to construct off-river ponds for put-and-take stocking of trout. Good quality habitat with wild trout potential. Closed to harvest. Catch-and-release, only.
Big Smoky Creek from Calf Creek to headwaters	15/	Coldwater	Rainbow trout Mountain whitefish Bull trout	Wild General Conservation	Maintain limited harvest opportunity. Closed to harvest. Catch-and-release, only.
Little Smoky Creek	20/	Coldwater	Rainbow trout Redband trout Bull trout	General General Conservation	Evaluate hatchery program. Investigate possibility and pursue funding to construct off-river ponds for put-and-take stocking of trout. Closed to harvest. Catch-and-release, only.
All other streams in South Fork Boise River drainage upstream from Anderson Ranch Reservoir	277/	Coldwater	Redband trout Mountain whitefish Bull trout	Wild General Conservation	Maintain naturally reproducing populations and harvest opportunity. Closed to harvest. Catch-and-release, only.
North Fork Boise River from mouth to Rabbit Creek	7/	Coldwater	Redband trout Mountain whitefish Bull trout	Wild General Conservation	Manage for high catch rates (3 fish/hour) and low angler densities. Closed to harvest. Catch-and-release, only.

Rabbit Creek to Deer Park (Hunter Creek)	13/	Coldwater	Rainbow trout Redband trout Mountain whitefish Bull trout	Put-and-take General Conservation	Manage for high yield and moderate angler densities. Closed to harvest. Catch-and-release, only.
Deer Park to headwaters and all tributaries	41/	Coldwater	Redband trout Mountain whitefish Bull trout	General Conservation	Manage for high catch rates (3 fish/hr) and low angler densities. Closed to harvest. Catch-and-release, only.
Lucky Peak Reservoir	/2,850	Mixed	Smallmouth bass Yellow perch Rainbow trout Kokanee Bull trout	General Conservation	Evaluate status of smallmouth bass fishery. Maintain an attractive kokanee fishery for large fish (exceeding 14"). Continue to stock catchable sized rainbow trout. Closed to harvest. Catch-and-release, only.
Arrowrock Reservoir	/4,000	Mixed	Smallmouth bass Yellow perch Rainbow trout Mountain whitefish Bull trout	General Conservation	Continue to seek minimum conservation pool. Stock annually with 8" or larger rainbow trout, and fingerling kokanee. Monitor kokanee escapement and recruitment. Evaluate status of smallmouth bass fishery. Closed to harvest. Catch-and-release, only.
Lake Lowell	/10,000	Mixed	Largemouth bass Smallmouth bass Channel catfish Bluegill Yellow perch Black crappie Pumpkinseed Rainbow trout Cutthroat trout	Quality General	Determine angler use and harvest rates. Manage bass with primary emphasis on quality fishery. Monitor panfish harvest. Assess productivity, forage fish abundance, and panfish recruitment. Evaluate channel catfish stocking program. Reduce common carp and largescale sucker abundance
Anderson Ranch Reservoir	/4,740	Mixed	Rainbow trout Mountain whitefish Kokanee Yellow perch Smallmouth bass Bull trout	General Conservation	Emphasize kokanee. Continue developing model to evaluate escapement and recruitment goals to achieve 1.0 kokanee/hour with mean size of 12 to 14 inches if productivity allows. Improve trout fishing through hatchery program and public awareness. Maintain smallmouth bass to diversify fishing opportunity. Closed to harvest. Catch-and-release, only.
Little Camas Reservoir	/1,455	Mixed	Rainbow trout Smallmouth bass	General	Use fall fingerling plants to improve carryover in high water years. Seek minimum pool to maximize hatchery rainbow trout carryover.
Mountain Home Reservoir		Mixed	Rainbow trout Largemouth bass Bluegill	General	Stock with rainbow trout when water levels allow. Monitor bass and bluegill recovery following drought. Work with irrigation companies to leave conservation pool so trout can overwinter.
Indian Creek Reservoir	195	Warmwater	Largemouth bass Bluegill	Quality	Assess whether water table and hydrological conditions are sufficient to warrant continued attempts to rebuild fisheries.

Featherville dredge ponds	/3	Coldwater	Rainbow trout	Put-and-take	Continue stocking hatchery rainbow trout. Provide 1.0 fish/hour.
Trinity Lakes	/25 /3	Coldwater	Rainbow trout Cutthroat trout	Put-and-take General	Accessible by road. Stock annually with catchables. Stock cutthroat trout fingerlings for diversity.
Other alpine lakes	/801	Coldwater	Rainbow trout Cutthroat trout Golden trout Brook trout Arctic grayling	General	Continue aerial stocking to provide fisheries that are consistent with lake productivity and angler pressure. Discontinue or reduce stocking in lakes with natural reproduction. When and where appropriate, stock sterile rainbow trout. Reserve some lakes for specialty fish (golden trout and grayling). Maintain natural values by leaving some lakes fishless to provide for native fauna and to maintain natural alpine lake ecosystems. Collect baseline data on lakes in cooperation with other management entities. Evaluate the control of stunted brook trout populations with experimental measures.


Owyhee and Bruneau River Drainages
Silver City
Jordan Cr
North Boulder Cr
Big Boulder Cr
Triangle
Rock Creek
OREGON
N.F. Owyhee River
M.F. Owyhee River
Deep Creek
Battle Creek
Owyhee River
South Fork Owyhee River
Little Owyhee River
Shoofly Reservoir
Bybee Reservoir
Little Jacks Creek
Big Jacks Creek
Blue Creek
C J Strike Reservoir
Bruneau
Bruneau River
51
Louse Creek
Grasmere
Grasmere Reservoir
Little Blue Creek Reservoir
Riddle
Mary s Creek
Sheep Creek
Bruneau River
Jarbidge River
Poison Creek
Clover Creek
Murphy Hot Springs
NEVADA

22. OWYHEE RIVER DRAINAGE, BRUNEAU RIVER DRAINAGE, AND MINOR TRIBUTARIES SOUTH OF SNAKE RIVER

Overview

The Owyhee River and Bruneau River basins lie in southwestern Idaho, southeastern Oregon, and northern Nevada. This basin encompasses approximately 11,340 square miles of semi-arid high desert country, of which about 8,000 square miles lies within Idaho. In the higher bench lands of the Bruneau and Owyhee, the rivers and their tributaries flow through deeply incised canyons. Elevations in the Owyhee drainage range from 7,800 feet in the Owyhee Mountains to 2,400 feet at the Snake River. The Owyhee River has an annual average discharge of 661,500 acre-feet of water at the Oregon/Idaho border. Elevations in the Bruneau drainage range from over 10,000 feet in the Jarbidge Mountains to 2,455 feet at the mouth. The Bruneau River has an annual average discharge of 292,000 acre-feet of water.

Most of the upper Owyhee River drainage and tributaries contain populations of native redband trout. Due to the unique qualities of this fish and the inaccessibility of the Owyhee drainage, this entire drainage will be managed to conserve native redband trout. Smallmouth bass have colonized much of the mainstem and major tributaries in the Idaho portion of the drainage, and are managed under year-round seasons with no minimum length limit. Smallmouth bass eliminate nearly all native fish including redband trout soon after colonizing new stream segments. Lahontan cutthroat trout are stocked in four reservoirs near Riddle and outflows do not reach the Owyhee River drainage.

The Bruneau River drainage is the only large drainage in southern Idaho with fish communities comprised entirely of native species. Irrigation diversion structures approximately 10 miles upstream from the mouth have apparently prevented smallmouth bass and other non-native species from entering the upper drainage. A remnant population of bull trout exists in the Jarbidge River, primarily in Nevada. The mainstem Jarbidge River and Bruneau River in Idaho may provide winter habitat for native trout. Populations of native redband trout exist in many tributaries. Redband trout are widely distributed; however, some local populations have been adversely affected by land management activities and drought.

From the mouth of the Bruneau River upstream to the hot springs (near the diversions), the water quality is not suitable to support coldwater species year-round. Significant angling pressure occurs on the more accessible streams of the Bruneau River drainage, but pressure is extremely light on most of the relatively inaccessible streams. The Jarbidge River downstream from the confluence of the East Fork and West Fork, and the Bruneau River are utilized for float trips.

The Bruneau River, West Fork, lower East Fork, lower Sheep Creek, and Jarbidge River have been recommended for National Wild Rivers status.

Livestock grazing on some tributary streams has impacted fish habitat, and efforts will continue to work with landowners and land management agencies to improve habitat.

Objectives and Programs

1. Objective: Manage stream and reservoir fisheries to preserve the genetic integrity of native redband trout.

Program: Stock other species of fish only in reservoirs that will not pose a threat to preserving redband trout, and use only sterile rainbow trout in waters connected to redband trout streams.

Program: Restock depleted streams with redband trout where habitat conditions have been restored by collecting fish from adjacent drainages that contain native redband trout.

2. Objective: Monitor trends in redband trout abundance.

Program: Monitor established trend sites in streams at ten to fifteen year intervals.

3. Objective: Work cooperatively with state and federal land management agencies and grazing permittees to improve riparian and aquatic habitats.

Program: Establish riparian vegetation objectives in management plans that annually provide 80% of the potential, riparian vegetation mass to be in place prior to the occurrence of high spring flows.

Program: In cooperation with the BLM, monitor stations on major tributaries of the Owyhee and Bruneau river systems to determine trends in riparian conditions, aquatic habitat, temperature, and fish production.

4. Objective: Increase reservoir fishing opportunities.

Program: Seek opportunities to construct new fishing reservoirs in cooperation with federal, state, and private landowners.

Program: Seek cooperative agreements with private landowners to gain access to existing reservoirs.

Program: Restock reservoirs with appropriate stocks of fish when drought conditions cause fish kills or de-watering.

Program: Monitor reservoir fish populations and renovate reservoirs with undesirable non-game fish populations that limit the fishery.

5. Objective: Maintain or improve bull trout and redband trout populations in the Jarbidge River drainage.

Program: Maintain no harvest rules for bull trout on river and tributaries.

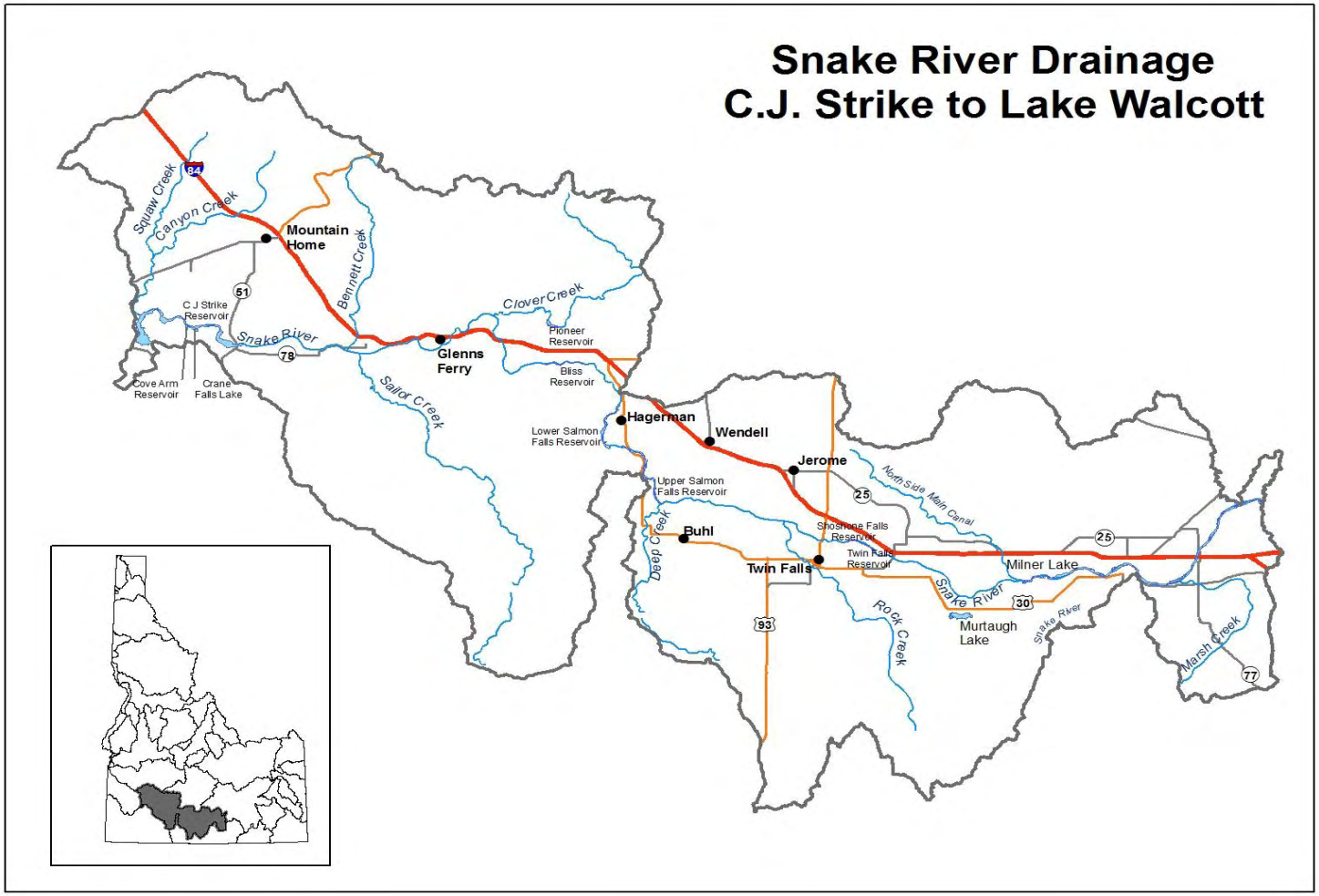
Program: Support efforts by state and federal agencies to remove man-made migration barriers.

Program: Encourage state and federal agencies to improve riparian habitat, especially on the plateau streams.

Program: Provide information to public on bull trout presence, identification, and proper handling techniques.

Drainage: **Owyhee River**					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Owyhee River (downstream of the South Fork) including tributaries	239/	Mixed	Redband trout Smallmouth bass	Wild General	Evaluate current growth, size and age structure, and exploitation. Maintain wild redband populations.
North Fork Owyhee River, including tributaries	61/	Coldwater	Redband trout	Wild	Maintain wild redband populations.
South Fork Owyhee River, including tributaries	95/	Mixed	Redband trout Smallmouth bass	Wild General	Evaluate current growth, size and age structure, and exploitation. Maintain wild redband populations. Work with Nevada Department Wildlife to avoid stocking trout that pose hybridization risks.
Owyhee River (South Fork to Nevada state line), including tributaries (except Deep Creek, Battle Creek, and Blue Creek	12/	Mixed	Redband trout Smallmouth bass	Wild General	Evaluate current growth, size and age structure, and exploitation. Maintain wild redband trout populations.
Deep Creek, including tributaries	142/	Coldwater	Redband trout	Wild	Evaluate current growth, size and age structure, and exploitation. Maintain wild redband trout populations.
Battle Creek, including tributaries	103/	Coldwater	Redband trout	Wild	Evaluate current growth, size and age structure, and exploitation. Maintain wild redband trout populations.
Blue Creek, including tributaries	139/	Coldwater	Redband trout Cutthroat trout	Wild General	Investigate feasibility of treating drainage above reservoir to eliminate pikeminnow.
Little Blue Creek Reservoir	/188	Coldwater	Cutthroat trout	General	Stock annually with Lake Lenore strain of Lahontan cutthroat trout fingerlings. Sample periodically.
Grasmere Reservoir	/213	Coldwater	Redband trout Cutthroat trout	General	Stock annually with Lake Lenore strain of Lahontan cutthroat trout fingerlings. Sample periodically.
Shoofly Reservoir	/85	Coldwater	Cutthroat trout	General	Stock annually with Lake Lenore strain of Lahontan cutthroat trout fingerlings. Sample periodically.
Bybee Reservoir	/70	Coldwater	Cutthroat trout	General	Stock annually with Lake Lenore strain of Lahontan cutthroat trout fingerlings. Sample periodically.
Payne Creek Reservoir	/55	Coldwater	Cutthroat trout	General	Eliminate Lahontan cutthroat trout stocking until water quality and quantity improvements are documented.

Drainage: Bruneau River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Bruneau River mouth to upper diversion dam	10/	Warmwater	Smallmouth bass Channel catfish Rainbow trout	General	Manage for smallmouth bass, channel catfish, and seasonal rainbow trout fisheries. Monitor water temperatures.
Big Jacks Creek, Little Jacks Creek and tributaries	24/	Mixed	Redband trout Smallmouth Bass	Wild General	Manage for redband trout. Work with BLM and private land owners to improve riparian habitat.
Bruneau River from upper diversion dam to West Fork, including tributaries (except below)	314/	Coldwater	Redband trout Mountain whitefish Bull trout	Wild General Conservation	Manage for redband trout and bull trout. Work with BLM and private land owners to improve riparian habitat. Protect from invasion or introduction of non-native species Preserve upper diversion structure to prevent upstream invasion by non-native species. Closed to harvest. Investigate status.
East Fork Bruneau River (Clover Creek) and tributaries	165/	Coldwater	Redband trout Brook trout Mountain whitefish Bull trout	Wild General Conservation	Maintain wild trout populations. Work to improve riparian habitats. Maintain and evaluate fish ladder at Clover Creek Crossing. Closed to harvest. Investigate status.
Blackstone Reservoir	/85	Coldwater	Redband trout Sterile rainbow trout	General	Maintain wild redband trout populations and stock sterile hatchery rainbow trout if water level agreement is reached with dam operators. Investigate for trophy trout management.
Sheep Creek (including Mary's Creek)	143/	Coldwater	Redband	Wild	Maintain existing populations of redband trout.
West Fork Bruneau River and tributaries	103/	Coldwater	Redband trout Mountain whitefish Bull trout	Wild General Conservation	Manage for native redband trout and bull trout. Work with Nevada Fish and Game to eliminate stocking of trout that would threaten future of redband trout. Monitor populations at established sites. Closed to harvest. Catch-and-release, only.
Jarbidge River and tributaries	87/	Coldwater	Redband trout Mountain whitefish Bull trout	Wild General Conservation	Work with collaborative group to maintain or enhance wild populations of native trout. Catch rate of 0.7 fish/hour. Closed to harvest. Catch-and-release, only. Monitor bull trout population to evaluate recovery.


Snake River Drainage
C.J. Strike to Lake Walcott
Squaw Creek
Canyon Creek
84
Mountain Home
Bennett Creek
51
C J Strike Reservoir
Snake River
78
Glenns Ferry
Clover Creek
Pioneer Reservoir
Bliss Reservoir
Cove Arm Reservoir
Crane Falls Lake
Salmon Creek
Hagerman
Lower Salmon Falls Reservoir
Wendell
Jerome
North Side Main Canal
Upper Salmon Falls Reservoir
25
Deep Creek
Buhl
Shoshone Falls Reservoir
Twin Falls Reservoir
Twin Falls
Milner Lake
Snake River
30
93
Rock Creek
Murtaugh Lake
Snake River
Marsh Creek
77

23. MAIN SNAKE RIVER - C.J. STRIKE DAM TO LAKE WALCOTT

Overview

Trout habitat in the main Snake River is currently poor to fair throughout most of the free-flowing reaches between C.J. Strike Reservoir and Lake Walcott. Trout habitat is best in the section in C.J. Strike Reservoir and between Shoshone Falls and King Hill, where large volumes of spring flow are discharged into the Snake River from the Snake River Plain aquifer. An approximate average discharge of 5,900 cfs (4.3 million acre-feet/year) flows from these springs along the north bank of the Snake River. These springs include 11 of the 65 springs in the United States with an average discharge exceeding 100 cubic feet per second. Water quality from these springs has been excellent but continuing development of the springs for commercial aquaculture and increasing levels of nutrients in the ground water is lowering water quality in the springs and river. Development of springs has reduced available trout spawning habitat. Additional water quality problems are occurring in the river and tributaries from excessive nutrients and sediments from agricultural and municipal discharges in the surface waters. Due to these discharges, depleted night-time oxygen levels have been a problem along with excessive vegetation along portions of the river.

Trophy size trout are caught in portions of the Snake River, such as the areas below Minidoka Dam and Upper Salmon Falls Dam. Species of trout present are rainbow trout, brown trout, cutthroat trout, and rainbow trout x cutthroat trout hybrids. The cutthroat trout and rainbow trout x cutthroat trout hybrids are found mainly in the area between Milner Dam and Twin Falls Dam, an area seriously impacted by low flows during the irrigation season. Many of these hybrid trout attain large sizes, some reaching weights of over six pounds. Vinyard Creek, an aquifer spring entering the Snake River on the north side just above Twin Falls, is historically a spawning area for Yellowstone cutthroat trout and rainbow trout x cutthroat trout hybrids. Vinyard Creek supports the most downstream population of Yellowstone cutthroat trout remaining in Idaho.

Many of the minor tributary streams entering the Snake River also contain good trout habitat and support good populations of wild trout, primarily naturalized rainbow trout and native inland redband trout. Some of the streams, especially the springs, are utilized for spawning by trout from the Snake River.

The main Snake River contains seven reservoirs which are suitable in varying degrees for trout: Bliss, Lower and Upper Salmon Falls, Shoshone Falls, Twin Falls, Milner and Lake Walcott. All but Lake Walcott were created by Idaho Power Company hydroelectric projects. During extreme high or low water years in the Snake River, flushing or hydroelectric load following may reduce reservoir productivity and cause stocked fish to emigrate from Snake River reservoirs. Many of the smaller lakes, ponds and reservoirs close to the Snake River are also highly suitable for rainbow trout. Several of the Snake River hydroelectric projects operated by Idaho Power Company have been issued new federal licenses including Upper Salmon Falls, Lower Salmon Falls, and Bliss. As part of the Mitigation programs associated with these new licenses, with these new licenses, an annual stocking program of sterile, catchable-size rainbow trout was initiated in 2007. The program provides for both spring and fall stockings at Centennial Park (near Twin Falls), Upper Salmon Falls Reservoir, Lower Salmon Falls Reservoir, Bliss Reservoir, and below Bliss Dam near King Hill. Fish released are sterile to avoid potential impacts to wild trout.

White sturgeon are found in varying numbers in the Snake River from Shoshone Falls downstream to C.J. Strike Dam. The only consistent, naturally reproducing white sturgeon population in this drainage occurs in the free flowing river between Bliss Dam and C.J. Strike Reservoir. Spawning by white sturgeon is negligible or non-existent in other reaches within this drainage area. However, reproduction can be adversely impacted in certain below average water years when Idaho Power Company is aggressively load following at Bliss Dam. Reproduction may also be negatively affected by upstream water management in the Snake River. Recent studies have shown white sturgeon grow at a rapid rate in this area with some reaching lengths of over nine feet. Angler interest in this species is high and they are regarded as exceptionally desirable, even though the fishery is on a catch-and-release basis. White sturgeon culture has allowed the stocking of hatchery origin fish into the river, however there needs to be additional evaluation of the previously released fish due to concerns about effects on wild population genetics and competition. As part of the new licenses issued to operate hydroelectric projects in this reach of the Snake River, Idaho Power Company developed a Snake River White Sturgeon Conservation Plan (WCSP). The WSCP was developed in coordination with the Department and other fish management agencies. The WSCP requires Idaho Power Company to monitor abundance of white sturgeon populations in this section of the river and to evaluate methods of improving survival and reproductive success. The WSCP is in close alignment with the Department's White Sturgeon Management Plan finalized in 2008.

Areas with warmwater fisheries are fairly numerous in the main Snake River and minor tributary drainages, but a great demand exists for more waters of this type in the populated portions of the drainage. Major warmwater species present in the Snake River and surrounding waters are largemouth and smallmouth bass, bluegill, brown bullhead, channel catfish, and yellow perch. Milner Reservoir offers a quality smallmouth bass fishery that has benefited from changes in dam operations in 1992. Channel catfish were stocked almost annually in the main Snake River in this area between 1965 and 1972. Periodic releases have been made in the Snake River and nearby waters since 1972 and self-sustaining populations have become established between Bliss Dam and C.J. Strike Reservoir. Idaho Power Company began an annual channel catfish stocking program in 1993. Recent surveys indicate strong numbers of large catfish in the reservoir. Bullhead angling is excellent in Wilson Lake where the fish reach sizes over two pounds. Good populations of largemouth and smallmouth bass are found in impoundments on the Snake River, and some waters in the Hagerman area produce good angling for large bluegill.

The Snake River has the greatest potential for increasing angler opportunity of any major water in the southern portion of Idaho. Daily load following, lack of adequate stream flows especially during irrigation season, deteriorating water quality, and loss of spawning areas and connectivity appear to be the factors most significantly affecting fish populations in the Snake River.

Objectives and Programs

1. Objective: Improve water quality in the Snake River for fish spawning and rearing and for recreational uses.

   Program: Assist in the development of wetlands on irrigation drains and other nutrient rich water sources to filter sediments and nutrients from irrigation returns. Identify 319 grant funding opportunities and provide technical assistance to WAG.
   Program: Work with regulatory agencies, Bureau of Reclamation, and irrigation companies to improve water management in the Snake River to enhance flows during white sturgeon spawning period.

Program: Work with Idaho Department of Water Resources to define conditions under which water can be diverted for aquifer recharge while not impacting fish or riparian resources.

2. Objective: Enhance the rainbow trout fishery in C.J. Strike Reservoir.

   Program: Cooperate with Idaho Power Company in the implementation of a rainbow trout stocking plan required as part of the new federal license for the operation of the C.J. Strike Hydroelectric Project developed in consultation with the Department and other management agencies. The plan requires that Idaho Power Company annually stock 50,000 catchable-size (3/pound) rainbow trout in the spring months following receding flows (prior to July 1) and 25,000 catchable-size rainbow trout in the fall months after reservoir turnover. Stocked rainbow trout will be triploid (sterile) to avoid potential introgression with wild stocks.

3. Objective: Preserve, restore, and enhance populations of white sturgeon capable of providing sport fishing opportunities.

   Program: Monitor angler catch rates and continue to cooperate with Idaho Power Company in the implementation of the Snake River White Sturgeon Conservation Plan (WSCP). The WSCP is a plan developed by Idaho Power Company in coordination with the Department and other fish management agencies to monitor white sturgeon abundance in the Snake River between Shoshone Falls and Lewiston, Idaho. Implementation of the WSCP is required of Idaho Power Company as part of the issuance of new federal licenses to operate three of its four Middle Snake River hydroelectric projects (Upper Salmon Falls, Lower Salmon Falls, Bliss) and C.J. Strike Reservoir. The WSCP is in close alignment with the Department's White Sturgeon Management Plan (IDFG 2008). Actions in the WSCP include:

   a. Monitoring of white sturgeon population size and age structure;

   b. Evaluating supplementation options of white sturgeon populations with native stocks where necessary to maintain future options to utilize suitable spawning or rearing habitats;

   c. Researching potential options to increase survival rates of various life stages of white sturgeon. One important aspect of this research is to understand early life history stage habitat needs and factors potentially limiting white sturgeon survival; and

   d. Evaluating the feasibility of upstream passage of white sturgeon transportation operations to reestablish connectivity between isolated white sturgeon populations.

4. Objective: Increase angler awareness of the white sturgeon biology and life history. Emphasize proper fishing techniques and tackle, so anglers can minimize mortality when fishing for sturgeon.

   Program: Revamp the out of print brochure on white sturgeon fishing to include sliding sinker and barbless hook requirements and redistribute.

Program: Develop a video on sport fishing for white sturgeon in Idaho. Emphasis will be on proper tackle and technique with a substantial amount of biology, life history, and conservation information included. Video will be posted on department's YouTube page and distributed via social media and sturgeon fishing brochure.

Program: Assess effects of catch-and-release angling and environmental impacts on white sturgeon populations, and evaluate regulation changes, if needed.

Program: White sturgeon populations may be supplemented with native Snake River stocks where necessary and as approved by the Department to maintain future management options including sport fishing opportunity.

5. Objective: Maintain existing and recover lost spring habitat along the Snake River in the Snake River aquifer area for Shoshone sculpin and redband trout spawning and rearing habitat.

Program: Continue strong efforts to preserve undeveloped natural springs with significant fishery values.

Program: Work with Idaho Department of Parks and Recreation to develop a management plan for Box Canyon to maintain native vegetation communities and fish species.

6. Objective: Increase opportunity for warmwater and coldwater fishing to meet increased demand.

Program: Determine the feasibility of modifying water management at Hagerman WMA to improve warmwater fisheries in the Anderson Ponds if compatible with waterfowl management.

Program: Collaborate with WMA management to repair or replace water management infrastructure in disrepair to enhance water management capabilities to benefit water quality and habitat.

Program: Eliminate or reduce common carp numbers in Hagerman WMA fishing ponds to restore maximum sportfish production.

Program: Attempt to acquire access on existing private ponds or develop new ponds for warmwater fisheries in the area.

Program: Develop fishing opportunities at the Clear Lakes Grade ponds.

7. Objective: Improve fishing in ponds along the Interstate in the Burley/Rupert area.

Program: Work with local officials and the public to develop a management plan to reduce common carp in the ponds.

Program: Work with USFWS on controlling or managing fish eating birds at the ponds or develop a species or trout size stocking program to provide a fishery under current conditions.

Program: Introduce and develop warmwater fisheries to mitigate poor performing trout supplementation programs.

8. Objective: Enhance fisheries for largemouth bass in reservoirs by increasing largemouth bass habitats.

Program: Continue placing artificial reef habitat in C.J. Strike Reservoir in cooperation with Idaho Power Company and Idaho State B.A.S.S. Federation.

Drainage: Snake River - C.J. Strike Dam To Lake Walcott

Water	Miles/acre	Fishery			Management Direction
		Type	Species Present	Management	
C.J. Strike Reservoir	/7,500	Mixed	Largemouth bass Smallmouth bass Channel catfish Bluegill Yellow perch Pumpkinseed Bullhead White crappie Black crappie Warmouth Rainbow Trout Mountain whitefish	General	Add habitat structures to attract panfish and improve angler success. Collaborate with Idaho Power to increase hatchery catchable trout stocking and conduct comprehensive creel surveys. Supplement Idaho Power stocking efforts of rainbow trout, as needed.
			Sturgeon	Conservation	Closed to harvest. Catch-and-release, only. Monitor status of sturgeon population. Implement White Sturgeon Management Plan.
Crane Falls Lake	/84	Mixed	Largemouth bass	Trophy	Monitor bass and panfish abundance and size structure.
			Bluegill Pumpkinseed Black crappie Bullhead Rainbow trout	General	Maintain suitable alkalinity levels by pumping the lake down as needed. Add warmwater fish habitat structures and improve riparian cover.
Cove Arm Reservoir	/76	Mixed	Largemouth bass Bluegill Pumpkinseed Black crappie Bullhead Channel catfish		Monitor species composition and size structure. Add warmwater fish habitat structures.
Snake River from Loveridge Bridge to Bliss Dam	47.3/	Mixed	White sturgeon	Conservation	Closed to harvest. Catch-and-release, only. Emphasize high quality white sturgeon fishery and habitat protection.
			Rainbow trout Brown trout Mountain whitefish Channel catfish Smallmouth bass Largemouth bass Yellow perch	General	Work with collaborators to evaluate FERC required rainbow trout stocking program. Determine if stocking is necessary to maintain fishery for catfish. Improve angler access.

Bruneau Sand Dunes lakes	/100	Warmwater	Largemouth bass Bluegill	Trophy General	Evaluate trophy bass rule and adjust as needed to maintain trophy fishery. Cooperate with State Parks in promoting fishery. Maintain water levels with pumping program. Monitor and control carp populations.
Blair Trail Diversion Reservoir	/15	Mixed	Rainbow trout Bluegill	Put-and-take General	Put-and-take fishery.
Morrow Reservoir	/60	Warmwater	Largemouth bass Bluegill Brown bullhead Black crappie	General	Manage as yield fishery. Pursue formal access prior to developing warmwater fishery.
Pioneer (Clover Creek) Reservoir	/220	Warmwater	Tiger muskie Largemouth bass Bluegill Bullhead	General	Investigate methods to increase capacity and recharge levels.
Bliss Reservoir	5/250	Mixed	White sturgeon Rainbow trout Largemouth bass Smallmouth bass Channel catfish	Conservation General	Closed to harvest. Catch-and-release, only. Implement the White Sturgeon Management Plan.
Backwaters of Bliss Pool to Lower Salmon Falls Dam	8/	Mixed	White sturgeon Rainbow trout Brown trout Mountain whitefish Channel catfish Smallmouth bass Largemouth bass Yellow perch	Conservation General	Closed to harvest. Catch-and-release, only. Implement the White Sturgeon Management Plan. Cooperate with Idaho Power Company in the Lower Malad River Construction of fish passage structures at the Malad hydroelectric (FERC required) may enhance fluvial and Malad resident rainbow trout populations. Evaluate potential for quality or trophy fishery and implement a program if socially and biologically acceptable.
Lower Salmon Falls Reservoir	7/840	Mixed	White sturgeon Rainbow trout Largemouth bass Channel catfish Bluegill	Conservation General	Closed to harvest. Catch-and-release, only. Implement the White Sturgeon Management Plan. Continue annual rainbow trout stockings in the Bell Rapids area. Evaluate bass rules.

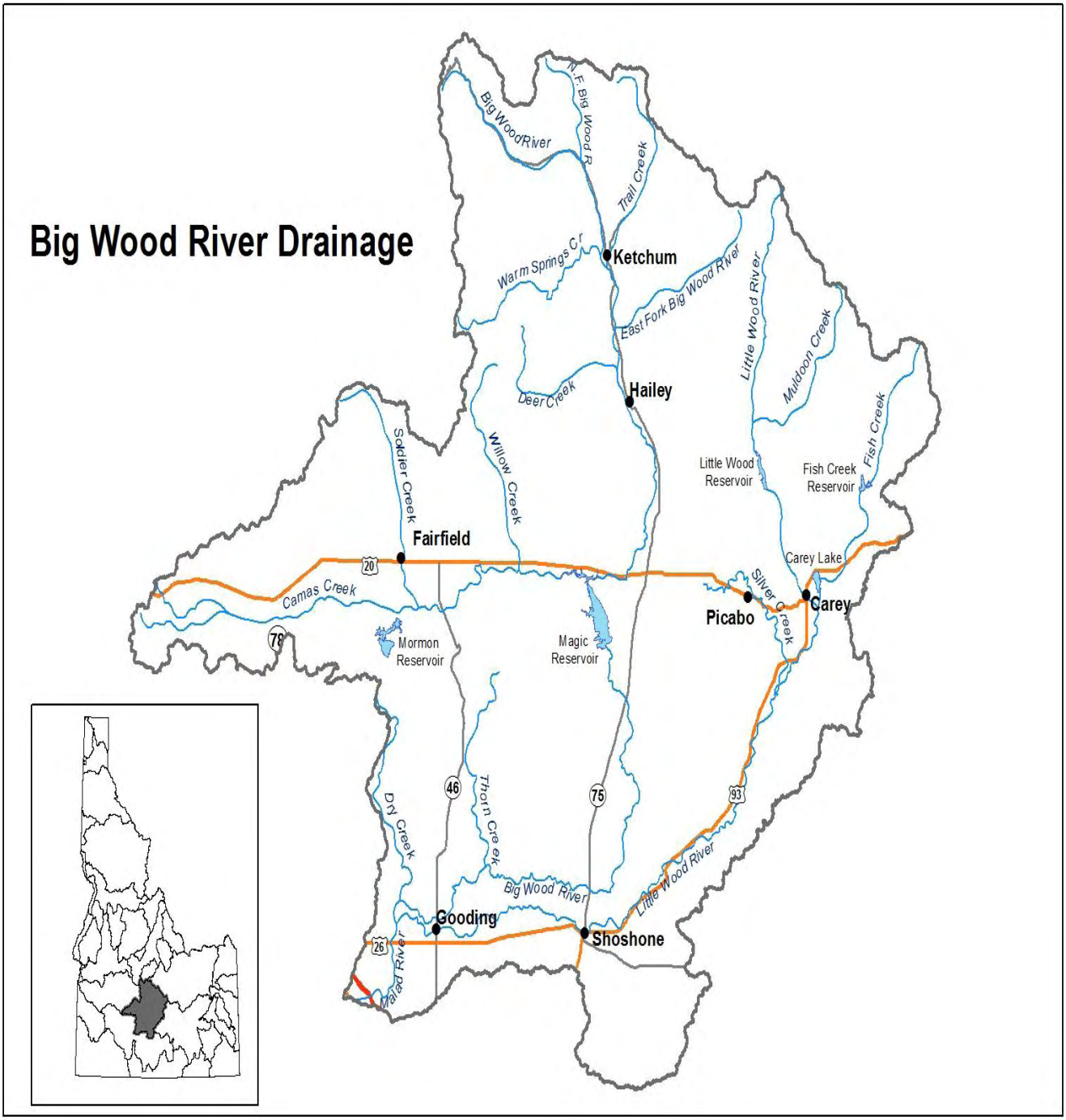
Upper Salmon Falls Reservoir	5/810	Mixed	White sturgeon Rainbow trout Largemouth bass Smallmouth bass Channel catfish	Conservation General	Closed to harvest. Catch-and-release, only. Implement the White Sturgeon Management Plan.
Billingsley Creek from mouth to Tupper Grade Crossing	5.5/	Coldwater	Rainbow trout Brown trout	Trophy	Evaluate annual stocking of brown trout. Mitigate impacts of any future commercial fish rearing operations. Place necessary requirements on any proposed hydropower projects to protect fisheries and wildlife values. Maintain catch rate of approximately 0.5 trout/hour. Evaluate collaborative options to restore this reach optimizing salmonid habitat.
Billingsley Creek from Tupper Grade Crossing to Vader Grade	2.5/	Coldwater	Rainbow trout Brown trout	General	Evaluate annual stocking of brown trout. Manage for quality-size trout. Maintain catch rate of approximately 0.5 trout/hour. Fly fishing rule currently required as condition of free public access. Seek access options that would promote float-through fishing opportunities.
Billingsley Creek from Vader Grade Crossing to headwaters	1/	Coldwater	Rainbow trout Brown trout	General	Maintain catch rate of approximately 0.5 trout/hour.
Riley Creek from headwaters to State Hatchery water diversion	2.5/	Coldwater	Rainbow trout	Wild	Maintain wild trout populations between state and national hatcheries with maximum harvest to reduce disease potentials at hatchery. Manage lower portion in conjunction with other WMA waters.
Riley Creek from State Hatchery water diversion to mouth	2.5/	Mixed	Rainbow trout Largemouth bass Bluegill Channel Catfish White Sturgeon	General Conservation	Maintain wild trout populations between state and national hatcheries with maximum harvest to reduce disease potentials at hatchery. Manage lower portion in conjunction with other WMA waters. Closed to harvest. Catch-and-release, only. Implement the White Sturgeon Management Plan.
Deep Creek, mouth to Twin Falls Highline Canal	16/	Coldwater	Rainbow trout	General	Manage as yield fishery. Maintain satisfactory in-stream flow.
Mud Creek	8/	Coldwater	Rainbow trout	General	Maintain adequate minimum in-stream flows.
Cedar Draw Creek from mouth to Twin Falls Highline Canal	12/	Coldwater	Rainbow trout Brown trout	General	Continue assistance with state, federal, and private personnel on clean water project on stream. Maintain adequate minimum in-stream flows and other environmental protection at hydro sites and fish hatcheries.
Cedar Draw Creek from Highline Canal to headwaters	2/	Coldwater	Rainbow trout Brown trout	General	Continue assistance on ongoing clean water project.

Frank Oster lakes, and Riley Creek impoundments	/30	Mixed	Rainbow trout Largemouth bass Bluegill	General General	Limit boat impacts on resources. Maintain catch rate of 0.5 fish/hour with catchable rainbow trout.
All other lakes and ponds on the Hagerman Wildlife Management Area	/35	Mixed	Rainbow trout Largemouth bass Bluegill Channel catfish	Put-and-take General	Limit boat impacts on resources. Continue dredging operation to improve habitat in cooperation with land management personnel. Maintain catch rate of approximately 0.5 fish/hour. Improve bluegill spawning habitat. Set season dates in the West Pond to minimize impacts on nesting waterfowl. Consider West Highway Pond for improved water quality and trophy bass.
Thousand Springs Nature Conservancy Area/Sand Creek	2/	Coldwater	Rainbow trout	Wild	Preserve unique aesthetic qualities of area. Manage for native wild trout and preserve Shoshone sculpin.
Box Canyon Springs	1.2/	Coldwater	Rainbow trout	Wild	Preserve unique aesthetic qualities of stream and fish species. Maintain adequate in-stream flow for aquatic life and riparian habitat. Maintain very high standards for protection of stream environment. Work with Idaho Parks and Recreation to development low impact public use opportunities. Manage on a wild trout basis and to preserve Shoshone sculpin.
Banbury Springs	0.2/	Coldwater	Rainbow trout	Wild	Preserve unique aesthetic qualities of area and oppose development, which would adversely impact area. Manage on a wild trout basis, with approximate catch rate of 0.7 fish/hour. Maintain adequate in-stream flow in all stream channels. Preserve Shoshone sculpin.
All other aquifer spring in Gooding County	10/	Coldwater	Rainbow trout	General	Manage as yield fishery. Maintain catch rate of approximately 0.7 fish/hour. Preserve quality of undeveloped aquifer springs.
Devil's Corral Springs	1/	Coldwater	Rainbow trout	Wild	Preserve aesthetic qualities of area.
Vinyard Creek	0.5/	Coldwater	Cutthroat trout Rainbow trout Rainbow trout x cutthroat trout hybrids	Wild	Preserve aesthetic qualities of area. Work with land management agencies to control trail development. Protect unique population of cutthroat trout and hybrid trout, which spawn and rear in stream, along with associated habitat. Manage for 1.0 fish/hour; change regulations if necessary.
All other aquifer springs in Jerome County	0.2/	Coldwater	Rainbow trout	Wild	Manage as yield fishery. Maintain water quality and spawning and rearing access.
Niagara Springs Wildlife Management Area ponds	/8	Coldwater	Rainbow trout	Wild	Maintain trophy fishing opportunity. Manage for catch rates of 0.5 fish/hour. Work to optimize spawning habitat. Evaluate existing pond habitat and make appropriate enhancements.
Crystal Lake	/8	Coldwater	Rainbow trout	Put-and-take	Put-and-take for 0.7 fish/hour catch rate. Continue cooperative program with Clear Springs Trout Company to stock fish.

Filer Ponds		Mixed	Rainbow trout Largemouth bass Bluegill	Put-and-take Community General	Support access requirement for kids pond. Stock regularly with hatchery rainbow trout as needed to maintain catch rate of approximately 0.5 fish/hour. Investigate methods of controlling avian predator impacts upon the sport fishery.
Rock Creek from mouth to Twin Falls Highline Canal	8/	Coldwater	Rainbow trout Brown trout	Put-and-take General	Continue cooperation with local and state agencies to continue Rock Creek rural clean water projects. Continue stocking hatchery rainbow and brown trout at high use sites. Coordinate rainbow trout stocking with the College of Southern Idaho Hatchery. Assure adequate minimum in-stream flows and other environmental protection at hydropower sites. Work to improve fish passage. Experiment with rainbow trout fingerlings to improve catch rates to 0.7 fish/hour. Year-round season. Evaluate return rates of stocked hatchery trout, alter hatchery requests accordingly
Rock Creek from Twin Falls Highline Canal to Headwater	37/	Coldwater	Rainbow trout Brook trout	Put-and-take General	Evaluate stocking program for effectiveness. Work with land management agencies to improve habitat for natural reproducing populations.
Backwaters of Upper Salmon Falls Reservoir to Shoshone Falls, also flowing water between upper and lower Salmon Falls dams	30.4/	Mixed	Sturgeon Rainbow trout Brown trout Mountain whitefish Channel catfish Largemouth bass Smallmouth bass Yellow perch	Conservation General	Closed to harvest. Catch-and-release, only. Implement the White Sturgeon Management Plan. Maintain Dolman Rapids as large-size trout water. Discourage proposed hydropower projects, which may jeopardize fisheries
Shoshone Falls Reservoir	1.2/60	Mixed	Rainbow trout Smallmouth bass	General	
Dierkes Lake	/100	Mixed	Rainbow trout Largemouth bass Bluegill Smallmouth bass Channel catfish	Put-and-take General	Put-and-take for rainbow trout. Work to improve bass/bluegill fishery. Consider tiger muskie introduction.
Backwaters of Shoshone Falls Reservoir to Twin Falls Dam	1/	Mixed	Rainbow trout Smallmouth bass	General	Manage as a yield fishery with approximate catch rate of 0.5 fish/hour.
Twin Falls Reservoir	1/96	Mixed	Cutthroat trout Rainbow trout Rainbow trout x cutthroat trout hybrids Smallmouth bass	Conservation General	Emphasize protection of native cutthroat trout and rainbow trout x cutthroat trout hybrid populations. Discourage any project, which would increase size of reservoir. Manage as a unit with reach upstream to Murtaugh Bridge.
Backwaters of Twin Falls Reservoir to Murtaugh Bridge	11.6/	Mixed	Cutthroat trout Rainbow trout x cutthroat trout Rainbow trout Smallmouth bass	Conservation General	Emphasize maintenance of trophy fishery. Evaluate potential for improved trout management with special regulations. Evaluate potential for developing smallmouth bass fishery. Work to improve summer flows.

Murtaugh Bridge to Milner Dam	8.5/	Coldwater	Cutthroat trout Rainbow trout Smallmouth bass	Conservation General	Work on improving habitat through improved flow management. Evaluate potential for spawning in Dry Creek. Seek mitigation for loss of bypass channel at Milner Dam.
Milner Reservoir (including Minidoka Dam spillway)	37/3,000	Mixed	Rainbow trout Mountain whitefish Smallmouth bass Largemouth bass Yellow perch Brown bullhead Channel catfish	General	Emphasize establishment of self-sustaining warmwater fish species. Continue stocking of channel catfish – promote catfish fishery. Improve warmwater fish habitat by placing cover structures on reservoir bottom. Work with state and federal agencies to increase angler access and to optimize water management to benefit resident fisheries. Discourage any reductions in minimum flows through the Minidoka Dam spillway area. Evaluate angling pressure (tournament and non-tournament) on smallmouth bass populations and adjust management direction to conform with findings.
Murtaugh Reservoir	/827	Warmwater	Channel catfish Yellow perch Brown bullhead	General	Low winter pool limits fishery potential.
Wilson Lake	/484	Mixed	Brown bullhead Yellow perch Channel catfish Largemouth bass Rainbow trout	General	Continue to emphasize high quality bullhead angling in the lake. Consider other introductions, including tiger muskie, smallmouth bass, and bluegill. Work to retain minimum pool or increased winter storage.
Emerald Lake	/40	Mixed	Rainbow trout Channel catfish Largemouth bass Bluegill	Put-and-take General	Stock regularly with hatchery rainbow trout as needed to maintain catch rate of approximately 0.5 fish/hour. Investigate methods of controlling avian predators impact on the sport fishery. Monitor newly established warmwater bass/bluegill fishery. Supplement if warranted.
Ponderosa Pond (Connor Pond)	/25	Mixed	Rainbow trout Largemouth bass Bluegill	Put-and-take General	Stock with hatchery rainbow trout. Investigate methods of controlling avian predator impacts upon the sport fishery. Monitor re-established largemouth bass and bluegill population. Supplement if warranted.
Freedom Park Pond	/1	Coldwater	Rainbow trout	Put-and-take	Put-and-take fishery for rainbow trout. Consider establishing as youth-only water. Work to control aquatic vegetation to maximize access.
Rupert Gravel Pit Pond	/4	Mixed	Rainbow trout Bluegill Largemouth bass	Put-and-take	Put-and-take fishery for rainbow trout. Consider a complete restoration of the fishery if conditions permit.
Lake Walcott (Minidoka Reservoir)	29/11,850	Mixed	Cutthroat trout Rainbow trout Yellow perch Brown bullhead Smallmouth bass Largemouth bass	Conservation General	Stock catchable rainbow trout on an annual basis. Monitor bass and trout populations and adjust management direction to conform to findings. Work with state and federal agencies to increase angler access and to optimize water management to benefit resident fisheries.

All other streams in drainage except Salmon Falls, Rock, and Goose creeks and Raft River and north side springs drainages	166/	Mixed	Rainbow trout Cutthroat trout Rainbow trout x cutthroat trout hybrid Brown trout Smallmouth bass Largemouth bass Bluegill	General	Manage for yield fishery. Work with public and private land managers on improving stream habitat for reproducing populations of trout.


Big Wood River Drainage
Big Wood River
N.F. Big Wood R.
Trail Creek
Warm Springs Cr
Ketchum
East Fork Big Wood River
Little Wood River
Muldoon Creek
Deer Creek
Hailey
Fish Creek
Soldier Creek
Willow Creek
Little Wood Reservoir
Fish Creek Reservoir
Fairfield
Carey Lake
20
Camas Creek
Silver Creek
Picabo
Carey
78
Mormon Reservoir
Magic Reservoir
46
75
93
Thorn Creek
Dry Creek
Big Wood River
Little Wood River
Gooding
Shoshone
26
Malad River

24. BIG WOOD RIVER DRAINAGE

Overview

The Wood River basin has a drainage area of over 2,990 square miles. Major drainages in the Wood River system are the Big Wood and Little Wood rivers. At its lower end, the Big Wood River is also known as Malad River. Flows from the Wood River drainage are controlled for irrigation and flood control by four major reservoirs: Magic, Little Wood River, Fish Creek and Mormon. Approximately 144,000 acres are irrigated from reservoir storage and other diversions. Hydroelectric power facilities are currently in operation at Magic Dam, Little Wood River Dam, the confluence of the Big Wood and Little Wood rivers, the Little Wood near Shoshone, Malad River upstream of the Malad George State Park, and the Malad River dams.

This drainage contains some of the most productive trout streams, lake and reservoir habitat in south central Idaho. Nearly all the major rivers, streams, lakes, reservoirs and ponds are suitable for trout. Rainbow trout are the most important game fish species in the drainage, but the lower Little Wood River and Silver Creek support excellent brown trout populations, and portions of the drainage sustain high populations of brook trout. Wild trout populations varying from fair to excellent are found in most of the streams in the drainage. Brown trout have established wild populations in the Big Wood River in the section from the backwaters of Magic Reservoir to about Stanton Crossing, and significant and steadily increasing numbers of brown trout are now found in the reservoir. Excellent populations of wild trophy rainbow trout are found in the Big Wood River between Magic Dam and the Richfield Canal in good water years; and in Silver Creek and its main tributaries. During good water years, trophy rainbow trout are produced in Richfield Canal. The Big Wood River from Hailey to Ketchum produces trophy rainbow trout with restrictive fishing rules. Both wild and hatchery brown trout (fry and fingerling plants) reach trophy size in the lower Little Wood River and Silver Creek. Wild trout populations are supplemented with catchable rainbow trout in portions of several heavily fished streams. Loss of habitat from floodplain development, irrigation diversions, livestock grazing, and hydropower development has negatively impacted fish populations.

Silver Creek provides a premier blue ribbon trout stream fishing opportunity. The fishery is made up of hatchery origin wild rainbow trout and brown trout which both offer unique fishing experience. Rainbow trout are generally more vulnerable to dry fly fishing whereas brown grow larger than rainbows and are more often caught during the night with streamer-type techniques. IDFG has monitored the fisheries for nearly a decade and have documented that brown trout are gradually displacing rainbow trout. For example, in 2010, brown trout made up 90% of trout sampled in a transect within the lower Silver Creek reaches. The dominance of one species over the other may directly impact the diversity of fishing experience expected by anglers. IDFG will continue monitoring the fishery and begin exploring options to restore trout species balance to maximize the angler experience.

The trout fisheries in the reservoirs are largely dependent on annual plantings of hatchery fish, although Magic and Little Wood River reservoirs do contain some wild trout. Trout fisheries in the larger reservoirs are normally maintained by fingerling planting but receive catchable plants following droughts or heavy drawdown periods. Drought conditions have exacerbated the aquatic vegetation loads supported in some pond and reservoir fisheries. Without long-term drought relief, vegetation control will likely be needed to maximize access and enhance winter carryover of hatchery trout.

Good populations of warmwater game fish are found in many waters of the Wood River drainage, mainly in reservoirs, lakes and ponds. The principal warmwater fish species present are yellow perch, bluegill, largemouth and smallmouth bass. Tiger muskie are found in Dog Creek Reservoir.

Angler pressure is high in portions of the drainage. One of the most intensely fished stream sections in the area is the Big Wood River between Gimlet and the mouth of Prairie Creek. An increasing demand by anglers for more trophy fisheries has led to establishing more restrictive regulations on the Big Wood River and Silver Creek. Magic Reservoir is the largest reservoir in the drainage and receives the highest angler pressure of any water in the Magic Valley Region.

There are 16 alpine lakes that support fish in this drainage. These lakes are all relatively productive and most of them support high quality rainbow trout and cutthroat trout angling. The lakes are normally stocked by helicopter every third year. Arctic grayling have been stocked in one alpine lake in the drainage and have done very well. Baker Lake is managed with a trophy trout rule to provide anglers with the opportunity to have a quality alpine lake fishery.

Objectives and Programs

1. Objective: Preserve good quality stream habitats and improve degraded stream habitats in the Big and Little Wood and Silver Creek drainages.

   Program: Work closely with county planning and zoning agencies and IDWR to prevent channel and riparian degradation and development in natural flood plains.

   Program: Work with land management agencies and livestock owners to implement grazing strategies, which will allow for the recovery of riparian systems along streams.

   Program: Work with land management agencies and landowners to enhance degraded habitat on Silver Creek mainstem and headwater tributaries

   Program: Work with state and federal agencies, irrigation districts and landowners on developing wetlands on irrigation returns to improve water quality.

   Program: Work with BLM and the public on reestablishing native riparian shrubs and trees along the Little Wood River between Silver Creek and Richfield, Idaho to reduce water temperatures during summer months.

   Program: Work with partners to enhance Big Wood River trout habitat immediately downstream of Magic Dam (tailrace).

2. Objective: Improve returns of hatchery fish and reduce impacts on wild trout populations in streams.

   Program: Work with the Little Wood River Irrigation District on the development of an irrigation system which would provide flows in the river between Carey and Silver Creek in good water years.

   Program: Maximize the hatchery trout stocking program efficiency.

Program: Estimate harvest in stream stocking and adjust the Department stocking program to maximize the hatchery trout returns. Consider eliminating stock site if returns are consistently low.

Program: Seek opportunities to develop community fishing ponds to provide convenient fishing experiences while optimizing the use of IDFG produced hatchery trout.

3. Objective: Improve reservoir fishing opportunity.

Program: Where feasible, work with partners to control aquatic vegetation to maximize access and enhance overwinter survival in pond and reservoir fisheries.

Program: Seek minimum pools in reservoir fisheries where feasible.

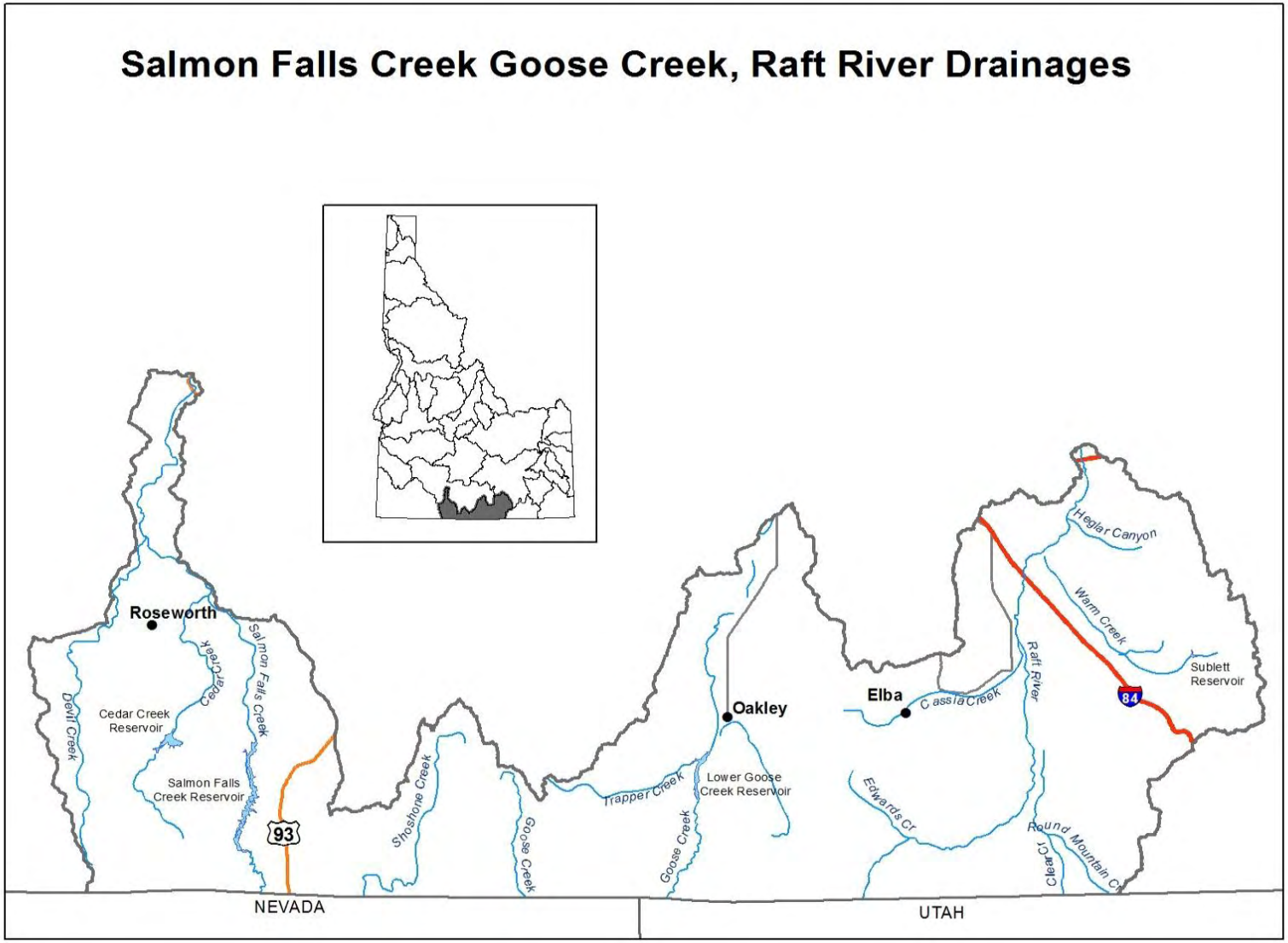
Drainage: Big Wood River

Water	Miles/acre	Fishery			Management Direction
		Type	Species Present	Management	
Big Wood (Malad) River from mouth to I-84 Bridge	3/	Mixed	Rainbow trout Smallmouth bass	Wild General	Wild trout populations. Maintain catch rates at 0.7 fish/hour. Evaluate population impacts of increased fish passage at hydroelectric facilities.
Big Wood River from I-84 Bridge to Richfield Canal Diversion	60/	Mixed	Rainbow trout Smallmouth bass	General	Evaluate potential of hydro mitigation ponds for put-and-take fishery. Maintain smallmouth bass fishery.
Big Wood River from Richfield Canal diversion upstream to Magic Dam	3/	Coldwater	Rainbow trout Brown trout	Quality	Maintain trophy size of fish and achieve catch rates of 0.7 fish/hour. Change management if fishery not maintained under current conditions. Work to maintain minimum flow for fish survival and prevent entrainment loss.
Big Wood River from Magic Reservoir upstream to Glendale diversion	14/	Coldwater	Rainbow trout Brown trout Brook trout	General	Establish catch rate goals based on ability to get year-round water. Evaluate angling impact to spawning brown trout.
Big Wood River from Glendale diversion upstream to Mile 122 Bridge on Highway 75	12/	Coldwater	Rainbow trout Mountain whitefish Brook trout	Quality	Improve habitat and river stability using native woody material where possible. Oppose further flood plain development. Catch rate goal of 1.0 fish/hour.
Big Wood River from Mile 122 Bridge on Highway 75 upstream to mouth of North Fork	14/	Coldwater	Rainbow trout Mountain whitefish Brook trout	Trophy	Manage as wild trout water. Improve habitat and river stability using native woody material where possible. Work with Blaine County to minimize and mitigate for floodplain development. Maintain catch rate 1.0 fish/hour.
Big Wood River from mouth of North Fork to headwaters	18/	Coldwater	Rainbow trout Brook trout Mountain whitefish	Put-and-take	Yield fishery for wild and hatchery trout and mountain whitefish. Maintain catch rate of 0.7 fish/hour.
Trail Creek mouth to Wilson Creek	9/	Coldwater	Rainbow trout Brook trout	Put-and-take	Stock with catchable rainbow trout to provide catch rates of 0.7 fish/hour. Work to provide fish passage for Big Wood River spawners. Investigate possibility of developing off river ponds for put-and-take stocking.
Warm Springs Creek from mouth to Rooks Creek campground	11/	Coldwater	Rainbow trout Brook trout	Put-and-take	Stock with catchable rainbow trout to provide catch rates of 0.7 fish/hour. Evaluate potential of wild trout only status. Investigate possibility of developing off river ponds for put-and-take stocking.
Richfield Canal	14/	Coldwater	Rainbow trout	General	Stock fish in low water years to provide 0.5 fish/hour. Seek year-round flow in canal to maintain fishery.
Little Wood River from mouth to Shoshone (Milner-Gooding Canal)	18/	Warmwater	Smallmouth bass	General	Maintain as smallmouth bass fishery.

Little Wood River from Shoshone to Dietrich diversion dam	17/	Coldwater	Rainbow trout Brown trout	Put-and-take	Stock hatchery rainbow trout in potential high use areas to increase opportunity. Work to provide year-round flows and fish passage for this reach.
Little Wood River from Dietrich diversion dam to downstream boundary of Bear Track Williams State Recreation Area	10/	Coldwater	Rainbow trout Brown trout	General	Brown and rainbow trout fishery with catch rate of 0.5 trout/hour. Make supplemental plantings of sterile rainbow trout and/or brown trout as needed and evaluate. Develop habitat improvement program in conjunction with BLM.
Little Wood River through Bear Track Williams State Recreation Area	3/	Coldwater	Rainbow trout Brown trout	Trophy	Quality brown and rainbow trout fishery with catch rate of 0.5 fish/hour. Fly fishing only, catch-and-release basis as an access stipulation. Improve riparian conditions. Stock catchable rainbow or brown trout as needed.
Little Wood River from upper boundary Bear Track Williams State Recreation Area to mouth of Silver Creek	4/	Coldwater	Rainbow trout Brown trout	General	Brown and rainbow trout fishery with catch rate of 0.7 fish/hour. Develop improvement program in conjunction habitat with BLM. Stock catchable rainbow or brown trout as needed.
Little Wood River from mouth of Silver Creek to canal diversions north of Carey	13/	Coldwater	Rainbow trout Brown trout	General	Support proposed in-stream flow through area to develop fishery.
Little Wood River from canal diversions to dam	3/	Coldwater	Rainbow trout Brown trout	Put-and-take	Stock hatchery rainbow trout to provide fishery and evaluate. Work for year-round flow downstream to diversions.
Little Wood River from Little Wood Reservoir upstream to second bridge	2/	Coldwater	Rainbow trout	Put-and-take	Continue stocking program in high use area at campground.
Little Wood River from second bridge above Little Wood Reservoir to headwaters	20/	Coldwater	Rainbow trout Brook trout	Wild	Maintain wild trout fishery with catch rates of 0.7 fish/hour.
Silver Creek from mouth upstream to county road bridge near Picabo	14/	Coldwater	Rainbow trout Brown trout	Wild General	Wild trout fishery with average catch rate of 0.7 fish/hour. Maintain or improve rainbow trout population. Improve riparian habitat. Work to acquire additional public access.
Silver Creek from county road bridge north of Picabo to Highway 20 Bridge at Milepost 187	6/	Coldwater	Rainbow trout Brown trout Mountain whitefish	Quality	Catch rate of 1.0 fish/hour. Improve riparian habitat. Work to acquire additional public access. Implement long-term monitoring program. Evaluate salmonid species composition and manage accordingly. Work with Federal and State agencies and landowners to improve fish habitat.

Silver Creek and tributaries upstream of Highway 20 Bridge at Milepost 187 Bridge and Sullivan Lake within Nature Conservancy property	8.5/	Coldwater	Rainbow trout Brown trout Mountain whitefish	Trophy	Work cooperatively with the Nature Conservancy to provide high quality fishing experience on their property. Maintain catch rate of 1.0 fish/hour. Implement long-term monitoring program. Evaluate salmonid species composition and manage accordingly. Work with Federal and State agencies and landowners to improve fish habitat.
Stalker Creek from public fishing portion of Nature Conservancy property upstream (including tributaries)	10/	Coldwater	Rainbow trout Brook trout Brown trout	Wild	Catch rates of 0.7 fish/hour. Inform landowners/developers of need for maintaining habitat.
Loving Creek, from Nature Conservancy boundary upstream to headwaters, except Hayspur Hatchery grounds	3/	Coldwater	Rainbow trout Brook trout Brown trout	Wild	Maintain catch rate of 0.7 fish/hour.
Loving Creek, (Butte Creek) Hayspur Hatchery grounds	1/	Coldwater	Rainbow trout Brown trout Brook trout	Trophy	Maintain habitat for trophy fishery in new stream channel. Catch rates of 1.0 fish/hour.
Gavers Lagoon	/1	Coldwater	Rainbow trout	Put-and-take	Stock with catchable rainbow trout and occasional broodstock culls. Provide catch rate of 1.0 fish/hour.
Grove Creek	5/	Coldwater	Rainbow trout Brook trout Brown trout	Wild	Catch rate of 0.7 fish/hour.
Camas Creek	50/	Coldwater	Rainbow trout Brown trout	Wild	Investigate potential for fishery development. Improve habitat where feasible to increase carrying capacity.
All other streams in Big Wood River drainage	265/	Coldwater	Rainbow trout Brook trout Brown trout	Wild	Maintain or improve existing habitat to increase carrying capacity for resident fish and spawning and rearing of migratory fish. Where habitat is suitable, 0.7 fish/hour.
Dog Creek Reservoir	/95	Mixed	Largemouth bass Bluegill Rainbow trout Channel catfish Yellow perch Tiger muskie Brown bullhead	General Trophy	Supplement warmwater fishery with put-and-take rainbow trout fishery in winter months. Continue use of tiger muskie to utilize forage species. Investigate use of water level management to control vegetation and carp reproduction.
Thorn Creek Reservoir	/126	Coldwater	Rainbow trout	General	Cooperate with BLM to improve carryover of water and fish in low water years. Catch rate of 0.7 fish/hour. Work to enhance boat access.

Magic Reservoir	/3,776	Mixed	Rainbow trout Brown trout Yellow perch Smallmouth bass	General	Emphasize rainbow trout fishery with large annual fingerling rainbow trout stockings and limited catchable rainbow trout stockings after extreme drawdown. Maintain overall catch rate of 1.0 trout/hour on opening weekend of general season and 0.5 trout/hour through remaining season. Consider habitat enhancement projects to improve yellow perch spawning habitat in low water years.
Mormon Reservoir	/2,700	Coldwater	Rainbow trout Yellow perch	General	Consider brown trout if forage fish become excessive. Work to acquire minimum pool. Evaluate stocking strategies to maximize rainbow trout returns.
Carey Lake	/200	Warmwater	Largemouth bass Bluegill Yellow perch Brown bullhead Channel catfish	General	Yield warmwater fishery. Conduct fish population and limnological studies of lake to aid in assessing fisheries and to determine management direction. Cooperate with habitat managers to maintain adequate water volume to prevent winterkill.
Little Wood River Reservoir	/575	Coldwater	Rainbow trout	General	Maintain fishery with fingerling and catchable rainbow trout stocking. Maintain catch rate of 1.0 fish/hour for ice fishery and 0.5 fish/hour in summer.
Fish Creek Reservoir	/516	Coldwater	Rainbow trout Brook trout	General	Collaborate with Federal and State agencies, landowners, and irrigation districts to investigate funding options to repair Fish Creek Dam. Pursue minimum pool. Evaluate trophy trout management potential is dam is repaired.
Lava Lake	/20	Coldwater	Rainbow trout	Put-and-take	Evaluate potential for improving fishery using restrictive regulations. Work to maintain access.
Baker Lake	/10	Coldwater	Cutthroat trout	Trophy	Maintain trophy fishing opportunity.
Upper Box Canyon Lake	/2	Coldwater	Brook trout	General	Evaluate methods to control brook trout numbers.
All other stocked alpine lakes (total of 11; 3 in Little Wood River drainage and 8 in Big Wood River drainage)	/80	Coldwater	Cutthroat trout Rainbow trout Arctic grayling Brook trout	General	Maintain diverse angling opportunity by stocking different lakes with different species. Stock every three years in cooperation with USFS to provide catch rates of 0.5 fish/hour.


Salmon Falls Creek Goose Creek, Raft River Drainages
Roseworth
Cedar Creek Reservoir
Salmon Falls Creek Reservoir
Devil Creek
Cedar Creek
Salmon Falls Creek
93
Shoshone Creek
Goose Creek
Oakley
Trapper Creek
Goose Creek
Lower Goose Creek Reservoir
Elba
Cassia Creek
Edwards Cr
Raft River
Heglar Canyon
Warm Creek
Sublett Reservoir
84
Black Cr
Round Mountain Cr
NEVADA
UTAH

25. SALMON FALLS CREEK, GOOSE CREEK, ROCK CREEK AND RAFT RIVER DRAINAGES

Overview

There are four major drainages south of the Snake River between C.J. Strike Reservoir and Massacre Rocks - Raft River, Goose Creek, Rock Creek and Salmon Falls Creek. The four drainages have a combined drainage area of over 6,870 square miles. Three major reservoirs: Oakley, Salmon Falls Creek, and Roseworth; and one minor reservoir, Sublett Reservoir, store water for irrigation and flood control. These reservoirs all support trout fisheries varying from fair to excellent. Sublett Reservoir has wild trout reproduction in tributary streams.

All of these drainages have streams that support good wild trout populations. Species found in different portions of the area are rainbow trout, Yellowstone cutthroat trout, brown trout, and brook trout. Populations of native cutthroat trout are found in the Raft River and Goose Creek drainages. Native cutthroat trout populations in some areas have declined as a result of land uses degrading habitat, water diversions, and introduction of non-native species, particularly rainbow trout. Programs for maintaining or improving existing cutthroat trout populations and restoring remnant populations will be emphasized. Northern leatherside chub, an uncommon Protected Nongame Species, is present in the Goose Creek and Raft River drainages.

Beaver ponds furnish much valuable trout habitat on many of the smaller streams of the Raft River and Goose Creek drainages. Large portions of streams in the Raft River, Goose Creek and Salmon Falls Creek drainages have been degraded by overgrazing and poor land use practices.

Salmon Falls Creek Reservoir was completed in 1912 and until the spring of 1984 was considered a closed system. As a result, it has received plantings of many species of fish through the years. Record snows in the drainage caused the reservoir to fill and spill for the first time in the spring of 1984. No evidence has been found to indicate that any fish survived the spill below the reservoir. It currently has a greater variety of game fish species than any other reservoir in the area. Game species currently in the reservoir are rainbow trout, Yellowstone cutthroat trout x rainbow trout hybrids, brown trout, yellow perch, black crappie, smallmouth bass, largemouth bass, and walleye. Salmonids are maintained by hatchery stocking. Walleye and kokanee are the two most recent additions and both species have done well; however kokanee stocking was halted in 2010 when no kokanee were harvested despite increased stocking levels. With the addition of walleye, numbers of nongame fish have declined and an additional forage species, the spottail shiner, has been introduced to supplement the forage base.

The walleye fishery in Salmon Falls Creek Reservoir is very popular with anglers. An angler survey undertaken on the reservoir in the summer of 1995 indicated approximately 2,900 walleye were taken by anglers and the number taken per year has been steadily increasing. Trophy-size walleye are occasionally caught in the reservoir with two state record fish being caught during the last 5 years. Naturally reproducing walleye populations tend to be very cyclic with a few years of strong age classes followed by years of low numbers. Walleye forage is also influenced heavily by walleye abundance which contributes to the walleye cycles and may impact walleye growth. Trout fishing remains good in the reservoirs with the stocking of larger catchable rainbow trout and limited numbers of fingerling Yellowstone cutthroat trout x rainbow trout hybrid fingerlings.

Angling pressure varies considerably throughout the drainages. It is high on Roseworth, Sublett and Salmon Falls Creek reservoirs, but is relatively light on streams in the Salmon Falls Creek

and Raft River drainages. Easily accessible streams in the Goose Creek and Rock Creek drainages receive high public use.

There are three alpine lakes which support game fish in the Raft River drainage. These include the two Independence Lakes on Mount Independence near Oakley and Lake Cleveland on Mount Harrison. The Independence Lakes have good cutthroat trout and arctic grayling populations that result from fry plantings. Lake Cleveland is accessible by road, and the fishery is maintained by catchable rainbow trout stockings and fingerling cutthroat trout.

Objectives and Programs

1. Objective: Develop management options for fishing on cyclic walleye populations in Salmon Falls Creek and Oakley reservoirs.

   Program: Establish five-year rotational monitoring programs for both reservoirs to determine year class strength. Adjust rules and hatchery program accordingly.

2. Objective: Improve forage fish populations in Salmon Falls Creek and Oakley reservoirs for walleye.

   Program: Improve habitat for forage fish spawning and rearing during low water years by working with local fishing clubs to create additional structure for yellow perch spawning and rearing.

3. Objective: Implement management programs as outlined in the Management Plan for Conservation of Yellowstone Cutthroat Trout in Idaho.

   Program: Evaluate trends in Yellowstone cutthroat trout populations at designated monitoring locations.

   Program: Work with land management agencies and private landowners on reestablishing connectivity in watersheds and enhancing riparian habitats.

   Program: Work with land management agencies on improving degraded riparian habitats with the implementation of improved grazing practices.

   Program: Maintain Yellowstone cutthroat trout genetic integrity by eliminating stocking or stocking only sterile rainbow trout in cutthroat trout drainages.

   Program: Work with local Watershed Advisory Groups to improve water quality.

   Program: Expand Yellowstone cutthroat trout distribution through translocations of suitable donor stocks into historical habitat.

   Program: Work with Federal and State agencies, landowners, and irrigation districts by reducing competition (brook trout) or hybridization risk (rainbow trout) in the Goose and Raft River drainages.

4. Objective: Protect Northern leatherside chub populations in Goose Creek and Raft River drainages.

Program: Provide information to land management agencies and public on identification, population status and distribution of leatherside chub in the drainages.

Program: Work with local regulatory agencies and landowners to minimize impacts of livestock grazing on riparian areas.

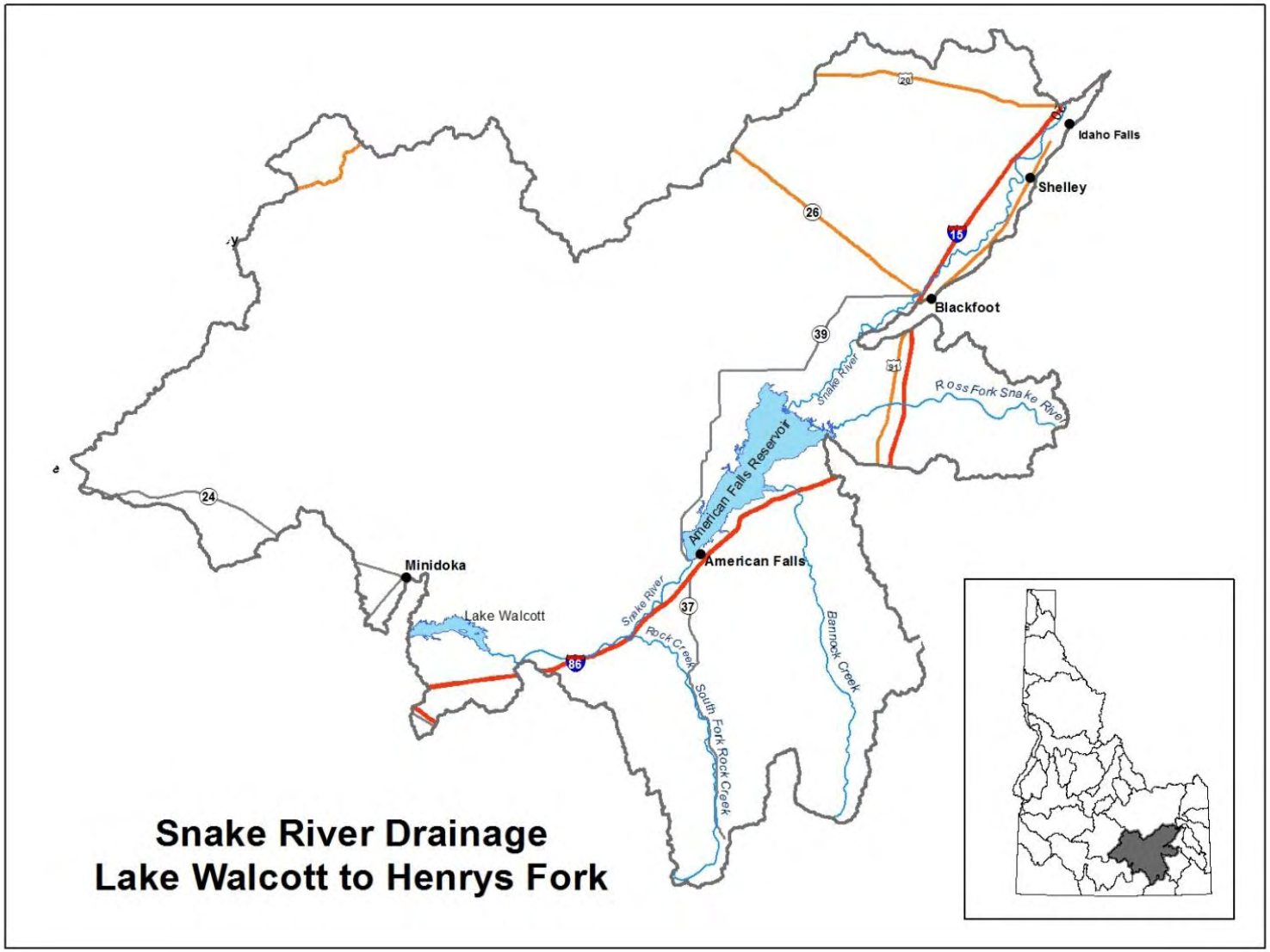
5. Objective: Improve water quality for fish habitat in lower reaches of streams in section.

Program: Work with regulatory agencies and landowners to reduce sediment and nutrient loads in streams flowing into the Snake River.

Drainage: Salmon Falls Creek, Rock Creek, Goose Creek, and Raft River Drainages

Water	Miles/acre	Fishery			Management Direction
		Type	Species Present	Management	
Salmon Falls Creek from mouth to Balanced Rock Park	26/	Mixed	Rainbow trout Smallmouth bass	Put-and-take General	Stock catchable rainbow trout at Balanced Rock Park. Allow increased harvest of smallmouth bass.
Salmon Falls Creek from Balanced Rock to Salmon Falls Creek Dam	18/	Mixed	Rainbow trout Brook trout Smallmouth bass	General	Maintain wild trout fishery. Allow increased harvest of smallmouth bass.
From backwaters of Salmon Falls Creek Reservoir to Nevada border	7/	Mixed	Rainbow trout Brown tout Mountain whitefish Smallmouth bass Walleye	General	Maintain wild trout fishery.
Shoshone Creek from Nevada border to mouth of Big Creek	10/	Coldwater	Rainbow trout Brown trout	Wild General	Work with USFS and BLM to improve habitat through grazing and beaver management.
Shoshone Creek from mouth of Big Creek to headwaters	12/	Coldwater	Rainbow trout	Wild	Work with USFS and BLM to improve habitat through grazing and beaver management.
Big Creek from mouth to headwaters	14/	Coldwater	Rainbow trout Brown trout	Wild General	Work with USFS and BLM to improve habitat through grazing and beaver management.
All other streams in Salmon Falls Creek drainage	57/	Coldwater	Rainbow trout	Wild	Evaluate need for harvest restrictions to maintain native trout where present.
Salmon Falls Creek Reservoir	/3,400	Mixed	Walleye Rainbow trout/steelhead Rainbow trout hybrids Yellow perch Smallmouth bass Black crappie	General	Monitor angling pressure and harvest. Annual monitoring of both walleye and walleye forage species. Establish fishing rule options depending on walleye population characteristics. Emphasize species diversity. Evaluate return rates of stocked hatchery trout, alter hatchery requests accordingly.
Oakley Reservoir (Goose Creek Reservoir)	/1,350	Mixed	Walleye Rainbow trout Yellow perch	General	Monitor angling pressure and harvest. Annually, evaluate walleye natural recruitment and forage. Supplement walleye population when necessary. Evaluate return rates of stocked hatchery trout and adjust as necessary.
Goose Creek (above Oakley Reservoir		Coldwater	Rainbow trout Cutthroat trout Brook trout	General	Management emphasis will be on native Yellowstone cutthroat trout and nongame fish with conservation status. IDFG should work with BLM and USFS to improve riparian habitat and water quality. Coordinate with Nevada Dept. of Wildlife on cutthroat conservation measures and sampling.

Roseworth Reservoir (Cedar Creek Reservoir)	/1,500	Coldwater	Rainbow trout	General	Emphasize rainbow trout in reservoir. Improve carryover with fall fingerling plants in good water year. Catch rate of 0.5 fish/hour. Evaluate return rates of stocked hatchery trout, alter hatchery requests accordingly.
Raft River		Coldwater	Cutthroat trout	Wild	Management emphasis will be on native Yellowstone cutthroat trout and nongame fish with conservation status. IDFG should work with BLM and private land owners to improve riparian habitat and water quality.
Rock Creek (Rockland area)	21/	Coldwater	Cutthroat trout Brook trout	Wild General	Emphasize protection of wild populations of Yellowstone cutthroat and nongame fish with special status.


Idaho Falls
Shelley
Blackfoot
Minidoka
American Falls
Lake Walcott
American Falls Reservoir
Snake River
Ross Fork Snake River
Rock Creek
South Fork Rock Creek
Bannock Creek
20
26
15
39
31
24
37
86
Snake River Drainage
Lake Walcott to Henrys Fork

26. SNAKE RIVER - LAKE WALCOTT TO CONFLUENCE OFSOUTH FORK AND HENRYS FORK

Overview

The Snake River from Massacre Rocks upstream to the confluence of the North (Henrys) and South forks encompasses a variety of habitat types. This section extends approximately 125 miles, of which approximately 20 miles is flooded by American Falls Reservoir. Fish species found in this reach include the following native species: mountain whitefish, Yellowstone cutthroat trout, Utah chub, longnose dace, speckled dace, redside shiner, Utah sucker, Bluehead sucker, mountain sucker, and mottled sculpin; and the following introduced species: white sturgeon, rainbow trout, brown trout, brook trout, common carp, brown bullhead, channel catfish, green sunfish, bluegill sunfish, smallmouth bass, largemouth bass and yellow perch. Crappie, once were present in fishable numbers in American Falls Reservoir, have not been reported by anglers or fishery biologists in the past 15 years. Because of the impacted nature of this drainage, the abundance of nonnative fish, and the inability to successfully eradicate nonnatives and establish native fish, management priority for this drainage will focus on both native and introduced species.

The six miles of river from Eagle Rock upstream to American Falls Dam is a popular trout and smallmouth bass fishery. This section is noted for quality size trout, many of which are between 16 and 20 inches long. Most trout in this reach are hatchery stocked rainbow trout, but a small percent are feral brown trout and native Yellowstone cutthroat trout. A fishing rule of six trout, of which only two may be over 16-inches long, was implemented in 1998 to reduce harvest on large trout. Fish and fish population size is dependent on the amount of water retained in American Falls Reservoir. The regulations were modified again in 2011, to provide a winter catch-and-release fishery.

Some of the trout stocked in American Falls Reservoir annually leave the reservoir to the Snake River below in mid to late summer due to a combination of high water temperature, low dissolved oxygen and in some years, severe drawdown and associated high turbidity. Minimum allowable dissolved oxygen in water flowing from the reservoir into the river is 3.5 mg/L at all water temperatures. To satisfy water rights for storage, flows below American Falls Dam are commonly reduced to near 350 cfs. during the winter. This is 4% of mean annual flow which greatly reduces river width and depth and allows anchor ice to form. Flows less than 10% of mean annual flow cause severe degradation to fishery resources.

From Eagle Rock down through Lake Walcott, the smallmouth bass fishery has greatly expanded between the years 2000 and 2006. Bass tournaments centered on the Massacre Rocks boat launch increased from two in 2000 to 10 in 2006, as bass anglers recognized the increasing opportunity to catch quality size smallmouth bass. Boaters are not allowed in 19 of 44 miles between Lake Walcott Dam and American Falls Dam. Additionally road access is very limited to this reach. The boat closure is a US. Fish and Wildlife Service rule within the Minidoka National Wildlife Refuge. This rule greatly reduces angler use. In a June 2005 electrofishing survey, of the bass sampled in isolated areas of the reach closed to boats that were at least 7 inches long, 30% of these were also at least 17 inches long and ranged from 8 to 13 years in age. In the reach above Massacre Rocks State Park, where boating is allowed, no bass 17 inches or larger were sampled. Total annual mortality in the boat-closure reaches was 25%. In reaches where boats are allowed, total annual mortality was 45%. A 2006 telemetry study documented that some of the large bass from the boat-closure reach seasonally migrate into areas accessible by boat anglers.

Numerous anglers have asked the Department to decrease harvest of bass in the Lake Walcott to American Falls reach. Their concern is that with increasing fishing effort, quality of the bass population will decline. In response to those concerns and the measured harvest rates, a two bass (any size) limit was implemented from Gifford Springs upstream to American Falls Dam.

American Falls Reservoir covers 58,078 surface acres and has a usable storage of 1,671,300 acre-feet. This is a popular fishing reservoir, with an estimated 26,000 rainbow trout harvested and 125,000 hours fishing during years when water volume has been sufficient in previous years for a multiple age class population to accumulate. During consecutive drought years, when the reservoir is drained annually to near 3% volume, catch rate decreases as does fishing effort. American Falls Reservoir is stocked annually with both catchable and fingerling size trout in early May and September. Trout grow 9 to 16-inches or more during the year following stocking. Most trout caught range in size from 1.5 to 3 pounds and most are of hatchery origin. Use of fingerlings stocked in the reservoir and river above the reservoir were evaluated and found to be successful for developing a river and reservoir fishery. In addition, a smallmouth bass fishery developed in American Falls Reservoir during the 1995-2000 period. Department electrofishing surveys first documented numerous bass in multiple age classes in 1997. The first bass tournaments were held in 1999 and have been held annually since that time. Yellow perch have been present in American Falls Reservoir for decades. However, anglers rarely encounter large numbers of harvestable sized perch. Frequent years of severe drawdown may flush most of the perch from the reservoir. American Falls Reservoir also contains an abundance of nongame fish, primarily Utah sucker, common carp, and Utah chub. Over 90% of fish caught in gillnets in American Falls Reservoir are nongame fish. The smallmouth bass fishery in American Falls Reservoir should benefit from this food source.

The Snake River from the backwaters of American Falls Reservoir upstream to Tilden Bridge, a distance of approximately 20 miles, produces quality size trout. The river in this area has limited public access because of private land and the Fort Hall Indian Reservation. Numerous springs arise on the reservation in the area known as the Fort Hall Bottoms located near the upper end of American Falls Reservoir and between the Portneuf River on the south and the Snake River on the north. The springs produce approximately 1,800,000 acre-feet of water annually, more than enough to fill American Falls Reservoir. The two largest of the reservation springs are Clear Creek (7 miles long) and Spring Creek (11 miles long). These are considered high quality spawning and rearing streams and are managed by the Shoshone-Bannock Tribes.

The Snake River flows 37 river miles from Tilden Bridge upstream to the Gem State Power Dam and runs through a mixed cottonwood riparian forest. Water is diverted from the river at numerous points in this reach and entrainment and biological minimum flows are largely unknown. During the irrigation season and early fall, river flows vary depending on amount released from upriver storage and on amount diverted at each canal. Previous research has documented low catch rates for trout in this stretch of river. Hatchery rainbow trout comprised the majority of the catch. However, large wild rainbow trout, brown trout, and cutthroat trout also are caught in this reach. Large numbers of rainbow trout are stocked in this reach. Beginning in 2011, white sturgeon have been stocked in this stretch of river to provide a recreational fishery. Efforts over the coming period will include evaluation of the success of this program.

This river reach is most easily accessed by boat. Additional access for boat and bank anglers would enhance the value of this fishery.

Reservoirs and ponds along the Snake River in this area include Springfield Reservoir, McTucker Ponds, Jensen Grove, Crystal Springs, and Rose Pond. Springfield Reservoir covers 66 surface

acres and is kept full during summer to facilitate water flow into irrigation canals. Due to excessive predation by birds, mainly double-crested cormorants, fish stocking and fishing rules were changed in 1998. It was no longer practical to stock fingerling and catchable size trout. A decreased number of larger trout (16 to 17 inches long) are now stocked in late October when most of the migratory fish-eating birds have migrated south. Anglers may keep only two trout, which must be at least 20-inches long and only artificial flies or lures are allowed. This change has been opposed by some anglers and applauded by others. Angling pressure has increased as compared to the year immediately prior to the change. McTucker Ponds are eight small gravel pits covering a total of 25 surface acres. These ponds are located near the upper end of American Falls Reservoir on the northwest side of the Snake River. The two ponds at the east end of the complex are stocked frequently with catchable size trout and the remaining ponds are stocked with channel catfish. Largemouth bass and bluegill have been stocked in the ponds in the past . These ponds were renovated with rotenone in 2003 following a high water event in 1997 that connected the McTucker Ponds with the Snake River. This brought nongame fish species from the Snake River and most of the stocked warmwater fish probably left. These ponds were restocked in the spring of 2004. In 2005 several fishing docks were placed on the ponds to enhance fishing opportunities. As of 2006, warm water species were abundant in the ponds, although most were young. In 2011, the ponds were again flooded by the Snake River and it is likely that the warm water component of the fishery has been lost. Due to the expense and the short term benefits derived from rotenone renovations at McTucker Ponds, the Department is considering a management change focused on a put-and-take rainbow trout fishery.

Rose Pond is located north of Blackfoot and contains rainbow trout, bluegill, and largemouth bass. In 1997 it connected with the Snake River and now contains nongame fish. The pond is reduced from over 20 surface acres in summer to less than three shallow acres in winter as the ground water level recedes. Therefore very few trout survive the winter. Nearby, Jensen Grove and Crystal Springs ponds are managed as put-and-take rainbow trout fisheries.

The Snake River from the Gem State project to the outflow of the upper Idaho Falls Power Plant is primarily a put-and-take hatchery rainbow trout fishery. Beginning in 2007, white sturgeon have been planted in the power pools through Idaho Falls to provide a recreational fishery. IDFG and the City of Idaho Falls stock this reach with hatchery catchable rainbow trout. Hatchery rainbow trout provide the majority of the angler catch in this reach but native Yellowstone cutthroat trout, wild rainbow trout, and brown trout are also important components of the fishery. The hydropower impoundments in this section reduce available spawning habitat, block upstream migration of spawning trout and provide less productive trout habitat than run of the river reaches. Management efforts during this term should focus on evaluating the effectiveness of fingerling trout stockings as opposed to catchable stockings.

The remainder of the upper Snake River from the Idaho Falls Upper Power Plant to the confluence of the Henrys Fork and South Fork (39 miles) supports a popular local fishery for large rainbow trout, brown trout, and cutthroat trout. Water is diverted from the river at numerous points in this reach and entrainment and biological minimum flows are largely unknown. During the irrigation season and early fall, river flows vary depending on amount released from upriver storage and on amount diverted at each canal. Although angler catch rates are typically low, the reach supports a limited trophy component of wild trout. Brown trout have been known to exceed 30 inches in this reach. No hatchery stocking occurs above the upper power plant pool although there are hatchery fish stocked in the uppermost power pool. The fishery in this area declined following the 1976 Teton Dam failure due to silt deposition and a resulting loss of spawning habitat. Despite this loss of habitat, limited natural reproduction does occur for the trout species listed above. Because of hatchery space limitations and very poor return to the creel in this

fishery, this river reach will not receive catchable hatchery trout. We will attempt to supplement natural production with fingerling rainbow and cutthroat trout as our hatchery production allows.

Reservoirs and ponds along the Snake River in this area supporting fisheries include Jim Moore (Roberts) and Market Lake, both of which are owned by IDFG, and Becker (Ryder Park) Pond, which was created in 2011. Jim Moore Pond covers 35 surface acres and is managed with catchable rainbow trout but also supports a stunted yellow perch population. Artificial aeration during winter periods has offset past winter kills in Jim Moore Pond. Because of the increased survival and stunting of perch, options to control perch abundance should be explored. Market Lake WMA water channels historically contained yellow perch, bullhead catfish and Utah chubs. The Market Lake WMA waterfowl marsh has been renovated into new management units connected by newly dredged canals. These canals provide the majority of fish habitat at Market Lake and should improve fishing opportunities for yellow perch and bullhead catfish. During drought conditions angling opportunities at Market Lake are severely limited. Becker (Ryder Park) Pond was created through a partnership between the City of Idaho Falls, IDFG and local contributors. The pond is managed for high catch rates in excess of 1-fish per hour.

Objectives and Programs

1. Objective: Maintain quality of the smallmouth bass fishery from Lake Walcott to American Falls Dam.

   Program: Coordinate with the Fish and Wildlife Service on boating access within the Minidoka National Wildlife Refuge considering potential impacts on wildlife.

2. Objective: Maintain quality trout fishery from Eagle Rock to American Falls Dam.

   Program: Work with IDWR, irrigation companies, and Idaho Power to develop a flow regime to benefit the coldwater fishery below American Falls Dam – especially during the non-irrigation season.

3. Objective: Maintain boating access and seek an adequate minimum conservation pool in American Falls Reservoir.

   Program: Work with the Bureau of Reclamation, Idaho Department of Water Resources, Bonneville Power Administration, and water users to secure a minimum conservation pool in American Falls Reservoir. An adequate minimum conservation pool level should target keeping at least one boat ramp accessible for anglers and maintain enough depth and surface area to minimize entrainment losses of game fish. It should also be targeted to minimize water quality impacts from sediment entrainment, and maintain some rocky shoreline habitat to encourage smallmouth bass to remain in the reservoir environment.

4. Objective: Protect and restore native Yellowstone cutthroat trout in the Snake River from headwaters of American Falls Reservoir to Gem State Dam.

   Program: Advise angling public of the opportunity and ascertain angler interest in closing harvest to cutthroat trout while maintaining current limit on rainbow trout and brown trout.

Program: Consider stocking fingerling Yellowstone cutthroat trout as hatchery production and finances allow; evaluate for effectiveness.

5. Objective: Improve fishing opportunities at McTucker ponds.

   Program: Work with Bingham County and the U.S. Bureau of Reclamation to improve restroom facilities, fishing docks, camping locations and other amenities.

6. Objective: Improve sport fishing opportunities in the Snake River from Gem State dam to the confluence with Henrys and South Fork confluence.

   Program: Stock white sturgeon in the power pools through Idaho Falls, and evaluate the success of this program in the coming years.

   Program: Offset limited spawning habitat with fingerling trout stockings; evaluate for effectiveness.

   Program: Maintain put-and-take trout fishing opportunities where returns meet agency goals.

   Program: Maintain trophy component to the existing fishery; evaluate the need for additional regulations to enhance this aspect of the fishery.

   Program: Work with partners to understand and minimize entrainment and where applicable assess biologically-based minimum flow to enhance over-winter survival of sport fish.

7. Objective: Improve size structure of yellow perch in Jim Moore (Roberts) Pond.

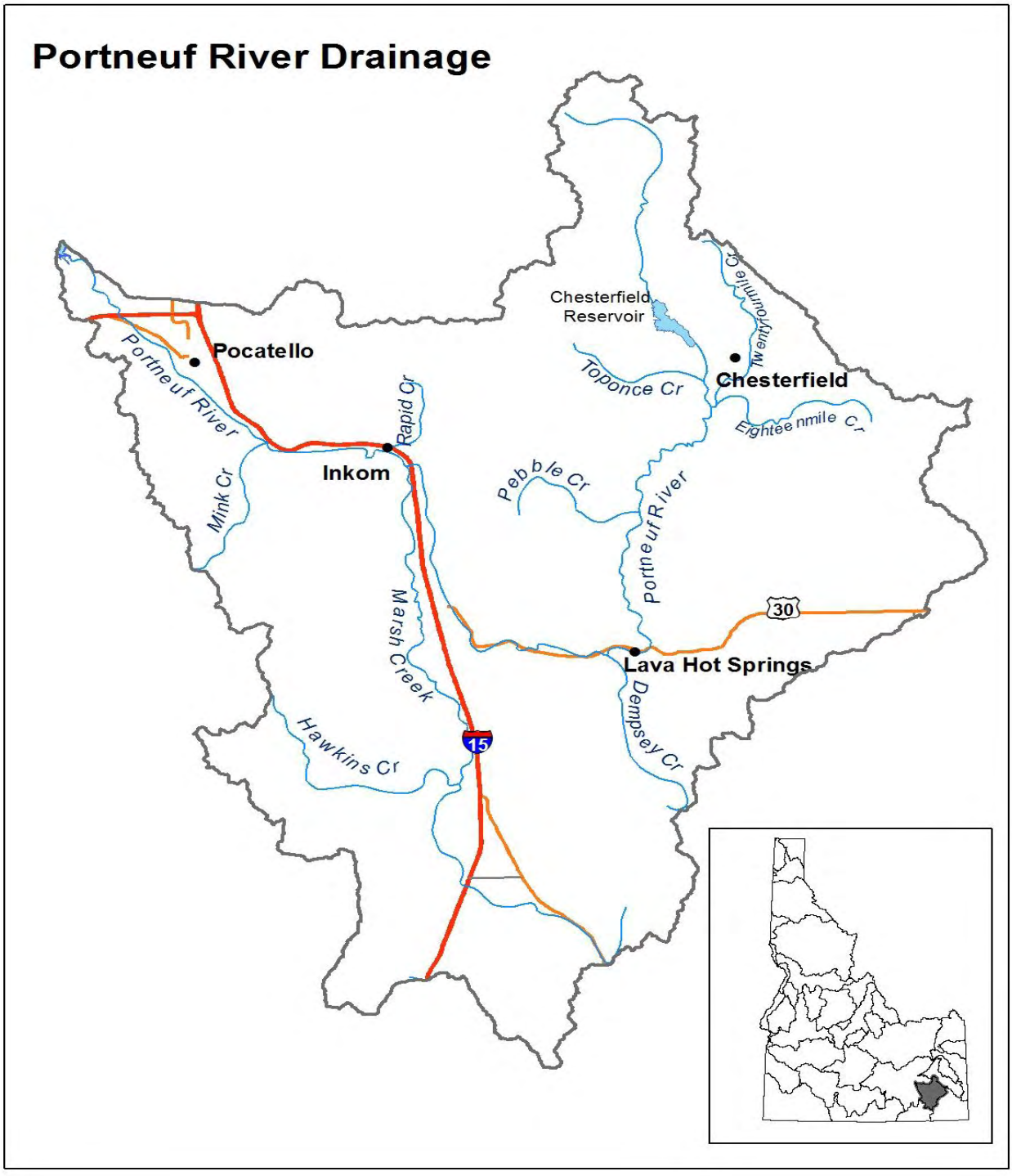
   Program: Consider predator introductions or other means to reduce abundance of perch while maintaining high angler catch rates.

8. Objectives: Improve perch fishery in Market Lake.

   Program: Relocate perch from Jim Moore Pond to Market Lake and evaluate fishery.

Drainage: Snake River-Lake Walcott to Confluence of South Fork and Henrys Fork					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Lake Walcott	/8241	Mixed	Rainbow trout Smallmouth bass Cutthroat trout Yellow perch	General	Evaluate angler access options on Minidoka National Wildlife Refuge with USFWS. Work with BOR to provide stable winter water levels to benefit fish habitat.
Snake River from eastern boundary of Minidoka Wildlife Refuge to Eagle Rock	8/	Mixed	Rainbow trout Brown trout Smallmouth bass Cutthroat trout	General	Assess angler desires for quality bass management.
Snake River from Eagle Rock to American Falls Dam	7/	Mixed	Rainbow trout Brown trout Smallmouth bass White sturgeon Cutthroat trout	General Conservation Quality/Wild	Annually monitor the opening day of the harvest season for trout for catch rate, effort and fish condition. Closed to harvest. Catch-and-release, only. Implement White Sturgeon Management Plan. Maintain quality trout rules.
American Falls Reservoir	/56,000	Mixed	Rainbow trout Cutthroat trout Brown trout Smallmouth bass	General	Develop a fishery management plan for reservoir using research findings and public input.
Rock Creek and tributaries	55/	Coldwater	Cutthroat trout Rainbow trout	Quality General	Develop angler access. Work with other agencies to minimize grazing impacts through NRCS programs
Springfield Lake	/66	Coldwater	Rainbow trout	General	Assess public support and potential partners to increase water depth.
McTucker ponds	/10	Mixed	Rainbow trout green sunfish bluegill largemouth bass	Put-and-take	Work with federal land management partners to improve facilities.
Rose Pond	/5	Coldwater	Rainbow trout.	General	Work with county and state highway Departments to deepen ponds. Frequent connection with the Snake River precludes warm water fish management.
American Falls Reservoir to Gem State Dam	57/	Coldwater	Cutthroat trout Brown trout Rainbow trout Mountain whitefish Sturgeon	Quality General Conservation	Maintain the current fishery with catchable and fingerling size rainbow trout stocking. Closed to harvest. Catch-and-release, only. Implement the White Sturgeon Management Plan.

Gem State Dam to outflow of Idaho Falls upper power plant	12/	Coldwater	Rainbow trout Brown trout Whitefish Smallmouth bass Cutthroat trout Sturgeon	General Quality Conservation	Maintain catch rate for all trout to 0.5 fish/hr. Stock catchable rainbow trout. Monitor smallmouth bass populations. Closed to harvest. Catch-and-release, only. Implement White Sturgeon Management Plan.
Idaho Falls upper power plant to South Fork	39/	Coldwater	Cutthroat trout Brown trout Rainbow trout Whitefish	Quality General	Maintain conservative cutthroat trout limit. Improve angler boat access. Manage for catch rates of 0.5 fish/hour for all trout. Implement experimental supplemental stocking of fingerling trout. Maintain trophy component to the trout fishery.
Becker (Ryder Park) Pond	/1	Mixed	Rainbow trout	Community	Stock with catchable trout to maintain 1.0 fish/hour catch rate. Supplement with warmwater species as conditions and fish allow.
Jim Moore (Roberts) Pond	/35	Coldwater	Rainbow trout Yellow perch	Put-and-Take General	Catchable rainbow trout stocked in spring and fall. Control stunted perch population.
Market Lake	/545	Warmwater	Yellow perch Bullhead	General	Work with habitat managers to maintain warmwater fishery. Emphasis on yellow perch. Consider supplemental stocking of perch as needed.


Portneuf River Drainage
Pocatello
Portneuf River
Inkom
Mink Cr
Rapid Cr
Chesterfield Reservoir
Toponce Cr
Chesterfield
Eighteenmile Cr
Pebble Cr
Portneuf River
Marsh Creek
30
Lava Hot Springs
Dempsey Cr
Hawkins Cr
15

27. PORTNEUF RIVER DRAINAGE

Overview

The Portneuf River and tributaries total 297 miles of stream, and drain nearly 1,300 square miles. In addition, there are four irrigation storage reservoirs in the drainage covering 1,704 surface acres. Fish species found in this drainage include the following native species: Yellowstone cutthroat trout, Utah chub, speckled dace, redside shiner, Utah sucker, mountain sucker, Paiute sculpin and mottled sculpin; and the following introduced species: rainbow trout, brown trout, brook trout, and common carp. Mountain whitefish may be in the lower reach of the Portneuf River below Pocatello as they are present in American Falls Reservoir. This lower reach is mostly on the Fort Hall Indian Reservation and has not been surveyed by the Department.

The Portneuf River begins upstream of Chesterfield Reservoir on the Fort Hall Indian Reservation and flows into American Falls Reservoir. From this confluence upriver to Siphon Road the Portneuf River is also on the Fort Hall Reservation. The Shoshone-Bannock Tribes manage their reaches of the river as well as a portion of Chesterfield Reservoir that is on the reservation. From American Falls Reservoir upstream to Pocatello the river receives considerable spring water and has desirable water temperatures for trout. The reach from Pocatello upstream to Marsh Creek contains very few trout, receives very little fishing pressure, and is severely impacted by sediment, irrigation withdrawals, damaged stream banks and high water temperatures. Additionally, the Portneuf River, where it flows through Pocatello, was channelized and directed through a flat-bottom, vertical sided cement flume that is a partial barrier to upstream movement. From the confluence of Marsh Creek upstream to the Portneuf/Marsh Valley Canal diversion, silt is less of a problem, but low flows caused by irrigation diversions adversely affect the populations of feral brown trout, the main game species in this area. Much of the sediment in the lower Portneuf River comes from Marsh Creek.

Conditions improve upriver from the Portneuf/Marsh Valley diversion since very little water is diverted upriver. Also, during the summer, water is added to this reach from Chesterfield Reservoir for water users approximately 20 miles downriver at the Portneuf/Marsh Valley Canal. From the Portneuf/Marsh Valley Canal upstream to Lava Hot Spring, a distance of approximately four miles, the main problem for fish is severe bank erosion caused mostly by livestock in riparian areas. This area contains a mixture of hatchery and natural rainbow trout, brown trout, and cutthroat trout. The 16 miles from Lava Hot Springs upstream to Kelly-Toponce Road Bridge once supported an excellent native cutthroat trout population and was a very popular fishery. In 1979, an estimated 7,000 anglers fished 17,300 hours and caught 3,000 wild rainbow trout, 4,200 hatchery rainbow trout, and 900 cutthroat trout in this area. Sampling in this area indicates the trout population was composed of 69% wild rainbow trout, 19% hatchery rainbow trout, and 12% cutthroat trout.

Harvest of wild trout on the river declined in the late 1980s to a few hundred fish annually and was so low that restrictive regulations would not have been effective. IDFG, angler groups, the Natural Resource Conservation Service and landowners began a cooperative effort to correct sediment problems in the Portneuf-Marsh Valley Canal Company's "outlet canal," the channelized reach below Chesterfield Reservoir. This reach was identified as one of the major contributors to high sediment loads in the river below.

This 10-mile reach upstream from the Kelly-Toponce Road Bridge to Chesterfield Reservoir had been extensively damaged by stream channel alterations and contained few trout. From Chesterfield Reservoir upstream, the river has a base flow less than 10 cfs and has significant beaver activity.

Beginning in 2004, the approximately 5 mile reach of the upper Portneuf River between the Pebble Area Bridge and the Kelly-Toponce Road Bridge changed to catch-and-release for native cutthroat trout. Additionally, stocking of rainbow trout in this reach was discontinued. In 2011, to simplify the river reach designations in the rule booklet and facilitate continued enhancement of cutthroat trout populations, the no-harvest rule for cutthroat trout was changed to include all of the Portneuf River upstream of Lava Hot Springs.

In the 1996-2000 period, reduction in sediment occurred due to the following projects:

1. Improvement of existing riparian corridor fences.

2. Construction of additional corridor fences.

3. Development of a DEQ/Soil Conservation District project to exclude live stock from and re-vegetate the outlet canal.

4. Development of a Portneuf-Marsh Valley Canal Company, Idaho Department of Water Resources and Department of Fish and Game project to construct grade control structures in the channelized reach below Chesterfield Reservoir.

Major tributaries to the Portneuf River include Mink, Rapid, Marsh, Dempsey, Fish, Pebble, and Toponce creeks. They may serve as spawning areas for trout from the Portneuf River and nursery areas for fluvial trout. However, trout movement and the importance of these tributaries to the river are unknown. Fish Creek has a population of Yellowstone cutthroat trout, but due to its geological isolation between travertine waterfalls and now between hydroelectric project dams, a fluvial life history for Fish Creek trout is not possible. Toponce Creek is diverted into Chesterfield Reservoir during the non-irrigation months and into irrigation ditches during the summer. There is no ability for native cutthroat trout to have a fluvial life history. Currently, Pebble Creek is the most functional tributary for Portneuf River fluvial cutthroat trout.

Four irrigation reservoirs are located in this drainage: Hawkins, Wiregrass, Chesterfield, and Twenty-four Mile. The lack of suitable spawning areas precludes the development of wild trout fisheries in these waters. The 1992 chemical renovation of fish remaining in the mostly-drained Chesterfield Reservoir and inlet stream eliminated carp. Utah chubs are native to the upper basin and rebuild in numbers and size during years when there is adequate carry-over water between irrigation seasons. When a perennial water interval begins, trout are stocked and grow very rapidly. Trout stocked as 9 inch catchables the first year grow to 18 to 20 inches and 2.5 to 3.5 lbs by the following summer. Concurrent restoration of the Utah chub population causes trout growth to slow in following years. The limit on trout was reduced from six to three in 1998 and to two in 2002. The former reduction was a response to public concern.

In 2011, the Edson Fichter community fishing pond was constructed in Pocatello by the Department. Local donations contributed significantly to construction. The pond is extremely popular with over 10,000 visitors to the pond during the first four months of use. The pond will be managed as a put-and-take rainbow trout fishery.

Objectives and Programs

1. Objective: Improve water quality and trout habitat in Portneuf River from Pocatello upriver to Lava Hot Springs, including Marsh Creek.

   Program: Seek participants in NRCS Continuous Signup Conservation Reserve Program. Participate in the Portneuf River Watershed Council to seek new opportunities to make improvements.

2. Objective: Improve conditions for native trout in the Portneuf River from Lava Hot Springs to Chesterfield Reservoir.

   Program: Maintain existing riparian corridor fences on private land. Seek additional riparian fencing projects on the river and tributaries. Obtain renewed 10-year access and fence maintenance agreement with King Creek Grazing Association.

   Program: Work with private landowners, the NRCS, NGOs, and others to improve habitat conditions on Pebble Creek.

   Program: Reduce the number of hatchery trout stocked. Trout stocking was discontinued in the reach between the Pebble Area and Kelly-Toponce road bridges in 2004 as part of an effort to improve conditions for native Yellowstone cutthroat trout.

   Program: Seek funding for a full-time technician and seasonal aide to maintain riparian corridor fences, seek new fencing projects on private land in coordination with other natural resource agencies and solicit grants for fencing projects.

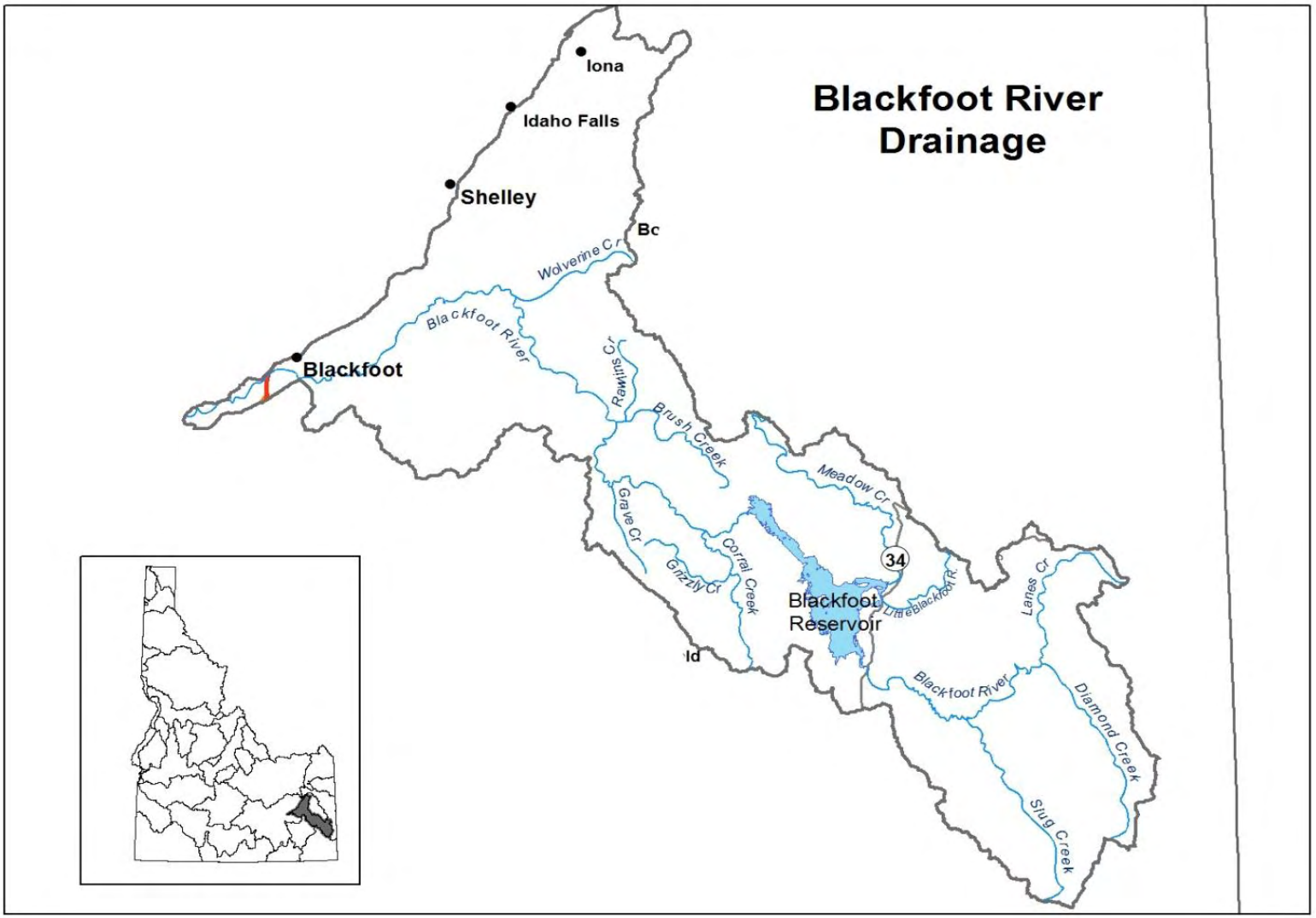
3. Objective: Monitor use of the community fishing pond in Pocatello.

   Program: Work with the Caribou Conservancy, Inc. on securing storage water rights in Chesterfield Reservoir to maintain a minimum reservoir pool and increase mid-summer flows in the Portneuf River downstream of McCammon.

Drainage: **Portneuf River**

Water	Miles/acre	Fishery			Management Direction
		Type	Species Present	Management	
Portneuf River from American Falls Reservoir to Marsh Creek, including Marsh Creek upstream from the Fort Hall Reservation	12/	Coldwater	Rainbow trout Brown trout Cutthroat trout	General Quality	Stock catchable size rainbow trout in the Edson Fichter area upstream of Pocatello when water quality and quantity allow. Pursue better water quality and quantity management.
Edson Fichter Pond	/3.5	Coldwater	Rainbow trout	Community	Pond will be managed to maximize fishing opportunities while minimizing stocking.
Portneuf River from Marsh Creek to Marsh Valley Canal diversion	20/	Coldwater	Brown trout Rainbow trout Cutthroat trout	General Quality	Stock catchable rainbow trout.
Marsh Creek	40/	Coldwater	Cutthroat trout Brown trout Rainbow trout	Wild General Put-and-take	Work with landowners to improve habitat. Seek better irrigation return flow quality through NRCS projects and IDEQ regulation.
Hawkins Reservoir	/54	Coldwater	Rainbow trout	General	Stock catchable size rainbow trout in early spring. Water supply is often insufficient for fish survival by the end of the irrigation season in drought years.
Wiregrass Reservoir	/6	Coldwater	Rainbow trout	Put-and-take	Stock catchables in early spring. Determine if angler use warrants continuation of the stocking program.
Portneuf River from Marsh Valley Canal to Lava Hot Springs	7/	Coldwater	Rainbow trout Brown trout Cutthroat trout	Put-and-take General Quality	Work on access permits with Lava Hot Springs Chamber of Commerce and landowners. Limit hatchery stocking zone to the upper three miles near town. Improve riparian habitat.
Portneuf River from Lava Hot Springs to Chesterfield	23/	Coldwater	Rainbow trout Brown trout Cutthroat trout	Quality Wild	Seek public access from landowners. Reduce sediment problems via upstream habitat improvement in canal and tributaries. Maintain riparian corridor fences and access agreements with landowners. Monitor habitat improvement and fish population after canal and stream bank improvements mature. Pursue permanent easements for walk-in public access and maintenance of riparian corridor fences.
Chesterfield Reservoir	/1,600	Coldwater	Cutthroat trout Rainbow trout Rainbow trout x cutthroat trout hybrids	General	Stock catchable size rainbow trout when Utah chubs limit survival and growth of fingerlings.
Portneuf River above Chesterfield Reservoir		Coldwater	Cutthroat trout	Wild	This reach is on the Fort Hall Indian Reservation. It contains many large beaver ponds and contains Utah chubs which are a source for repopulation of Chesterfield Reservoir after rotenone renovations.
Pebble Creek	10/	Coldwater	Cutthroat trout Rainbow trout	Wild Put-and-take	Seek habitat improvement project opportunities.
Toponce Creek	12/	Coldwater	Cutthroat trout Rainbow trout	Wild Put-and-take	

24-Mile Reservoir	/44	Coldwater	Rainbow trout x cutthroat trout hybrid Rainbow trout	Trophy	Maintain moderate stocking rate. Stock with fingerling cutthroat trout and rainbow trout.


Blackfoot River Drainage
Iona
Idaho Falls
Shelley
Bc
Wolverine Cr
Blackfoot River
Blackfoot
Rattlesnake Cr
Brush Creek
Meadow Cr
Grave Cr
Corral Creek
Grizzly Cr
34
Blackfoot Reservoir
Little Blackfoot R.
Lanes Cr
Blackfoot River
Diamond Creek
Slug Creek
Id

28. BLACKFOOT RIVER AND TRIBUTARIES

Overview

The Blackfoot River and tributaries total 346 miles. Blackfoot Reservoir covers 18,000 surface acres and contains 350,000 acre-feet of water at full capacity. The Blackfoot River is the reservoir's major tributary and has a mean annual flow of 168 cfs. The river upstream from the reservoir extends 35 miles to its origin at the confluence of Lane and Diamond creeks. Flow is also diverted from Greys Lake via Meadow Creek for additional storage water. Fish species found in this drainage include the following native species: mountain whitefish, Yellowstone cutthroat trout, Utah chub, longnose dace, speckled dace, redside shiner, Utah sucker, mountain sucker, Paiute sculpin, and mottled sculpin, Northern leatherside chub; and the following introduced species: rainbow trout, brook trout, common carp, and yellow perch.

Habitat conditions generally are fair in the upper reaches and tributaries, with a few exceptions due to livestock grazing and irrigation diversions. One of the largest phosphate ore reserves in the United States is located in this drainage. Environmental problems associated with phosphate mining have largely been undetermined to date. However, there is an on-going investigation into effects of elevated levels of selenium related to phosphate mining on the fish and wildlife in the upper Blackfoot River drainage.

Most large (over 18-inches long) trout caught downstream from Blackfoot Reservoir probably escaped from the reservoir. Good rearing conditions in tributaries and reduced limits for Yellowstone cutthroat trout have allowed cutthroat trout numbers to increase in the lower river above Wolverine Creek. Mountain whitefish are the dominant gamefish species in the river downstream from Wolverine Creek. Department personnel encourage the Shoshone-Bannock Tribes to obtain minimum flows for the river during the non-irrigation season. However, increased flows are unlikely in years when the Blackfoot Reservoir is low. After an extended drought such as occurred from 1987 to 1992 and again from 2000 to 2005, at least two consecutive years of above normal precipitation are required to refill Blackfoot Reservoir.

Trout harvest from Blackfoot Reservoir is almost entirely hatchery rainbow trout. Native cutthroat trout must be released. Cutthroat trout made up about 90% of the catch from the river and tributaries upstream from Slug Creek. However, naturally spawning rainbow trout were plentiful in the upper Blackfoot River in 2000. Since then the region has undertaken several rainbow trout removal efforts and only sterile rainbow trout are stocked in Blackfoot Reservoir.

The Blackfoot River, its tributaries, and the Blackfoot Reservoir serve integral roles in the life history and ecology of native cutthroat trout. Mature cutthroat trout from the reservoir ascend the river in April and May and enter upper tributaries or the main river channel to spawn in late May and June. Most of the progeny rear in the tributaries for varying periods up to two years. Some juvenile cutthroat trout then migrate to Blackfoot Reservoir and remain for a year or more until they are ready to return to the river to spawn.

Studies completed on the reservoir and river in the 1970s and 1980s indicated that the native cutthroat trout population was being over exploited. Size and number of cutthroat trout caught had decreased significantly prior to 1985. Regulations to offset this decline were implemented in 1985 but were ineffective. An evaluation of the cutthroat trout population made in 1988 showed that the river fishery had completely collapsed.

In 1983, the Department began stocking Bonneville cutthroat trout from Bear Lake in Blackfoot Reservoir. These fish were reared for one year in the Grace Hatchery prior to release as five-inch fingerlings. The Bonneville trout were treated with morphaline at the hatchery prior to release, and were planted in the Little Blackfoot River at its mouth. The stream also was treated with morphaline to attract fish at the time of spawning. This planting location and morphaline treatment were attempts to prevent interbreeding of the native Yellowstone cutthroat with the introduced Bonneville cutthroat subspecies. Egg survival from Bonneville cutthroat trout spawners captured in the Little Blackfoot River was poor. Beginning in 1990 the Bonneville cutthroat trout were released in the Blackfoot River. In 1991 the Department attempted to trap all trout ascending the upper Blackfoot River from Blackfoot Reservoir. Trapped Bonneville cutthroat trout were to be removed from the river to prevent them from spawning and possibly interbreeding with wild cutthroat trout. This program failed since the trap was not effective except during low flows. At high flows the weir was over topped by water and all fish passed. Stocking of Bonneville cutthroat trout in the Blackfoot system was terminated in 1995.

A major management planning effort was initiated in 1988 for the entire Upper Blackfoot System. Since 1990, all wild cutthroat trout caught in the reservoir have had to be released. From 1990 through 1997 only two cutthroat trout over 18 inches could be taken per day on the river. Since 1998 all cutthroat trout have had to be released on the upper Blackfoot River and tributaries. No bait fishing is allowed on the river upstream of the reservoir. Computer modeling to simulate the wild trout population indicated that 12 to 15 years would be necessary under these regulations before the wild cutthroat trout fishery could be restored to 1959-60 levels. The 1987-1992 droughts got this program off to a slow start. As of the year 2001, restoration appeared good with large numbers of spawners observed on spawning grounds and upper river anglers reporting good catches of large cutthroat trout. However, the population crashed to all-time lows by 2006 due to bird predation.

Documentation of American white pelican (AWPE) predation impacts on Yellowstone cutthroat trout (YCT) began in 2002 and includes estimates of pelican exploitation on YCT, evaluation of bird scarring rates, and use of automated digital photography. To date, findings include two separate estimates of direct predation on migrating YCT using radio telemetry. The most recent minimum estimate was completed in 2007, where 9 of 27 (33%) radio-tagged YCT were consumed by nesting AWPE. In 2004, 70% of the upriver migrating YCT were injured by birds as evidenced by fresh scars. Since 2007, remote cameras have been deployed along the Blackfoot River to record hourly use by AWPE. Over 40,000 digital images have been analyzed providing counts of peak pelican foraging numbers, changes in foraging behavior related to water conditions, and diel foraging patterns. Bird scarring rates and the digital photography results suggest that pelican predation impacts on migrating cutthroat trout are inversely proportional to river flows.

Predation results prompted IDFG to develop a pelican management plan. Implementation of the plan began in 2010, with the return of badgers and skunks to one of the pelican nesting islands on Blackfoot Reservoir. Those species were removed from the nesting islands in the early 1990s to enhance goose production. The presence of badgers may discourage pelican nesting on the island. A nesting exclusion fence was also tested in 2010. The exclusion fence covered about 50% of a second island used by nesting AWPE. Aerial photographs and ground surveys confirmed that no AWPE nested within the exclosure during the entire nesting season, which suggests that non-lethal methods may exist for controlling AWPE recruitment in the future.

Only one out of 50 rainbow trout stocked at catchable size and one out of 300 rainbow trout stocked at fingerling size was caught in the 7-month long 2001 creel survey. There is very little

fishing on Blackfoot Reservoir during winter so these numbers are close to total annual catch. Because the cost to raise and stock fingerlings is much less than for catchables, the cost per catchable caught was $32.15 and the cost per fingerling caught was $8.49. Due to the increase in fish eating birds at Blackfoot Reservoir, all stocking is now done late in the fall, after pelicans and cormorants have migrated south. Early indications are that the fall stocking program has been very successful. Increased angler use and improved catch rates have been reported by anglers.

Objectives and Programs

1. Objective: Improve migration conditions in spawning tributaries of the Blackfoot River from its mouth upriver to Blackfoot Reservoir.

   Program: Repair potential migration barrier on Miner Creek below the highway bridge.

2. Objective: Protect genetic integrity of native Yellowstone cutthroat trout in the Upper Blackfoot River.

   Program: Continue stocking only sterile rainbow trout in Blackfoot Reservoir.

   Program: Install signs to help anglers distinguish among rainbow trout, cutthroat trout, and their hybrids and inform them of the need to harvest rainbow and hybrids.

3. Objective: Establish an appropriate balance between management goals for Yellowstone cutthroat trout and American white pelicans at Blackfoot Reservoir.

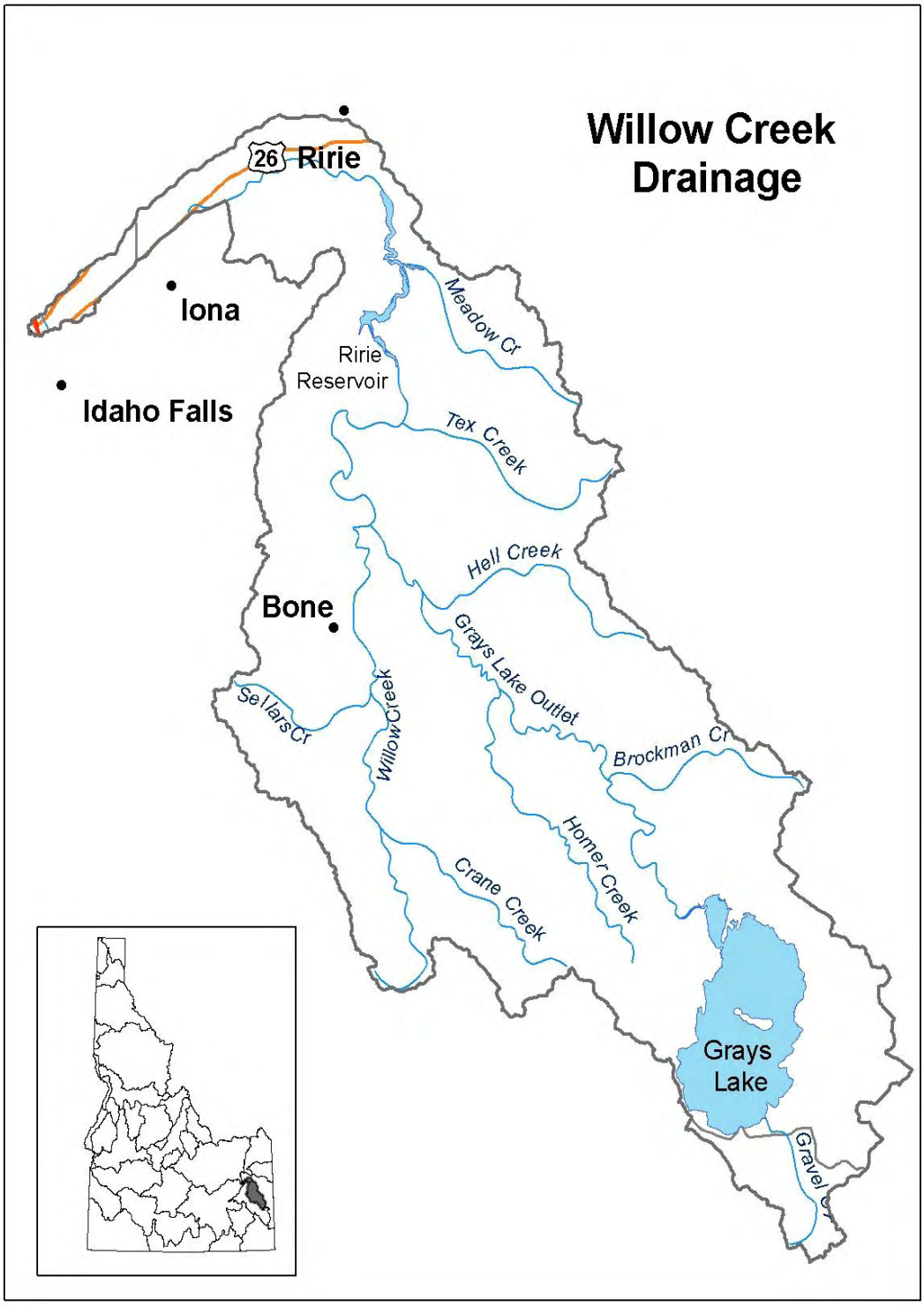
   Program: Implement the Departments Pelican Management Plan.

4. Monitor escapement of adfluvial cutthroat trout spawners from Blackfoot Reservoir into the upper Blackfoot River

   Program: Operate the electric weir in May and June to count adult cutthroat spawners, determine degree of wounds from predaceous birds, and remove rainbow trout and examine for sterility.

   Program: Continue juvenile and adult cutthroat trout tagging programs that are used to estimate pelican predation.

Drainage: Blackfoot River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Blackfoot River from mouth to equalizing reservoir	14/	Coldwater	Rainbow trout Mountain whitefish Cutthroat trout	General Quality	Survey fish population, habitat, temperature, and water quality relative to potential hatchery trout fishery.
Blackfoot River from equalizing reservoir to Wolverine Creek	18/	Coldwater	Rainbow trout Mountain whitefish Cutthroat trout	General Quality	
Blackfoot River from Wolverine Creek to Rawlins Creek	14/	Coldwater	Rainbow trout Mountain whitefish Cutthroat trout	General Quality	Assess potential for habitat improvement. Improve fish passage from river into tributaries.
Blackfoot River from Rawlins Creek to Cutthroat trout Campground	11/	Coldwater	Rainbow trout Cutthroat trout	General Quality	Stock sterile rainbow trout at Cutthroat and Sagehen campgrounds.
Blackfoot River from Cutthroat trout Campground to Government Dam	10/	Coldwater	Rainbow trout Cutthroat trout	Put-and-take Quality	
Corral Creek		Coldwater	Rainbow trout Brook trout Cutthroat trout	Put-and-take trout General Wild	
Other Blackfoot River tributaries from mouth to Government Dam		Coldwater	Cutthroat trout	Wild	
Blackfoot Reservoir	/18,000	Coldwater	Rainbow trout Cutthroat trout	General Conservation	Stock sterile rainbow and maintain cutthroat populations. Determine status of illegally stocked yellow perch. Continue to assess impacts of avian predators on cutthroat trout.
Blackfoot River and tributaries above the reservoir	60/	Coldwater	Rainbow trout Brook trout Cutthroat trout	General Quality	Develop angler access throughout drainage. Work on habitat improvement, particularly on upper valley tributaries. Remove rainbow trout and rainbow trout hybrids. Continue to assess impacts of avian predators on cutthroat trout.


Willow Creek
Drainage
26
Ririe
Iona
Idaho Falls
Ririe
Reservoir
Meadow Cr
Tex Creek
Hell Creek
Bone
Grays Lake Outlet
Sellars Cr
Willow Creek
Brockman Cr
Homer Creek
Crane Creek
Grays
Lake
Gravel

29. WILLOW CREEK DRAINAGE

Overview

Major tributaries to Willow Creek are Grays Lake Outlet and Cranes, Meadow, and Tex creeks. Since 1924, up to 20,000 acre-feet of water a year has been diverted from the Willow Creek drainage to Blackfoot Reservoir through Clark's Cut Canal. The construction of Ririe Dam, a rock-face, earth-filled structure, was completed by the Corp of Engineers in 1976. The reservoir has a total capacity of 80,540 acre-feet, a surface area of 1,470 acres, and is managed for priorities of flood control and irrigation water storage. The reservoir is drawn down to 35,000 acre-feet annually by November 1 to provide winter flow storage (flood control). Although the fisheries in the Willow Creek Drainage are faced with substantial habitat and flow related challenges, the persistence and recent expansions of native Yellowstone cutthroat trout make managing for native fish a priority for this drainage. Although the Willow Creek drainage is managed under wild trout rules, the Department will consider supplemental hatchery releases on a case-by-case basis where fish populations have been impacted or where substantial habitat restoration projects have resulted in newly created habitat becoming available.

The 20 miles of Willow Creek below Ririe Dam are controlled for irrigation and flood control. This segment of Willow Creek is annually dewatered to keep ice buildup from causing floods near Idaho Falls. Maintaining a wild fishery in this area is only feasible with minimum year-long releases below Ririe Reservoir, although numerous trout from irrigation ditches which flow into Willow Creek via the South Fork Snake River and those entrained through the dam provide a seasonal fishery. Prior to dewatering lower Willow Creek in 1976, the catch rate was 0.44 trout/hour with 10,500 hours (5,600 angler days) of effort expended, annually. No creel survey has been conducted in recent years; however, aside from the reach of Willow Creek immediately below Ririe Dam, the fishery is now largely non-existent

Ririe Reservoir, 20 miles from Idaho Falls, has developed into a popular fishery and it supports one of the most intensive salmonid reservoir fisheries in Idaho. In 2010, angler use was approximately 68,000 hours with a catch rate of 0.5 fish per hour. This fishery is supported primarily through hatchery releases of cutthroat trout and kokanee, and a self-sustaining population of smallmouth bass. In 2001 the trout stocking program was shifted from triploid rainbow trout to fine-spotted Yellowstone cutthroat trout to protect the genetic integrity of upstream populations. Evaluation of return-to-creel has indicated the program has successfully replaced the rainbow trout fishery. However, body condition on Yellowstone cutthroat trout suggests they are not foraging as effectively as rainbow trout, resulting in poor growth and dissatisfaction among anglers. Kokanee have been stocked since 1990 and the stocking rate was increased in 2002 to improve catch rates. This has been effective, as demonstrated by catch rates for kokanee, which improved from 0.04 fish/hour in 1993 to 0.28 fish/hour in 2010. Much of this is due to an increasingly popular ice-fishery. Thirty percent of the effort in 2010 was during the ice-fishery which was non-existent in 1993. Splake were stocked in Ririe Reservoir from 1996 through 1999, but the program was discontinued because of low angler returns. Anglers, however, have harvested two state record splake in recent years (2004 and 2006), demonstrating the program was successful in producing fish in excess of ten pounds over time. In 2009, walleye were captured in gill nets and appear to have established a naturally reproducing population. This new species was likely introduced illegally by anglers, and appears to be maintaining a low abundance. Steep banks and limited access restrict bank fishermen to < 5% of the effort.

Smallmouth bass were introduced into Ririe Reservoir from 1984 to 1986. A self-reproducing population has developed from the original introductions. The smallmouth bass fishery in Ririe Reservoir is limited by the short growing season at this latitude and altitude. Smallmouth bass growth will not approach growth rates in lower elevation, western Idaho impoundments. Because of the limited growth potential in the reservoir, we will not likely achieve proportional stock densities above 20 to 30.

The yellow perch fishery has fluctuated in recent years, largely due to the drawdown of the reservoir and the loss of inundated littoral areas. As the reservoir levels have improved over the past several years, the yellow perch fishery has recovered and large catches of 7-10 inch perch are common. Angler catch rates on yellow perch were the highest in 2010 than in any other year back to 1993.

The 95 miles of streams in the Willow Creek drainage above Ririe Reservoir are mainly in narrow canyons and contain brook trout and genetically pure Yellowstone cutthroat trout. Water flows vary from extremes of several thousand cubic feet per second during runoff to a few cubic feet per second in late summer and winter. Intense grazing combined with a drought conditions have contributed to poor riparian habitat in the upper watershed. Water quantity and quality has suffered as a result. The Natural Resource Conservation Service (NRCS) has identified the Willow Creek drainage as one of the ten worst soil erosion areas in the United States. A water quality program has been initiated to reduce loss of top soils and improve the water quality of Willow Creek above Ririe Dam. Riparian habitat improvement through improved grazing management is a high priority on both state and private lands. IDFG is working with the NRCS, the Eastern Idaho Grazing Association, and other local groups to facilitate improvements in resource management practices.

Cutthroat trout in the mainstem areas of Willow Creek and Grays Lake Outlet are likely dependent on downstream movement from tributary spawning and nursery areas. Most tributaries of Willow Creek contain native populations of Yellowstone cutthroat trout and/or non-native brook trout. Though brown trout have been stocked and found in the past, none have been collected in population surveys conducted from 2000 through 2005. Native cutthroat trout populations are presently depressed in the drainage but remain viable. Low flows and degraded habitat have impacted many of the smaller headwater tributaries in the Willow Creek drainage. With a return to normal snowpack years the Department will consider supplemental hatchery releases on a case-by-case basis where fish populations have been impacted. This may include those drainages managed as wild trout.

Over-harvest of cutthroat trout once contributed to the decline of this species but restrictive harvest regulations have reduced angling exploitation as a threat. Cutthroat trout presently dominate the catch in some tributaries; however, angling effort has been minimal in recent years. Hatchery catchable rainbow trout and brown trout fingerlings are no longer stocked in the Willow Creek drainage above Ririe Reservoir. No wild rainbow trout have been found in the Willow Creek drainage and genetic surveys in 1999 and 2000 have documented that Willow Creek cutthroat trout are free of rainbow trout introgression. Since 2011, the Willow Creek Drainage has been closed to all harvest of cutthroat trout.

Objectives and Programs

1. Objective: Restore native fluvial cutthroat trout populations in Willow Creek and tributaries.

   Program: Maintain spawning closure in principal spawning tributaries

2. Objective: Improve riparian habitat through the Willow Creek Drainage.

   Program: Work for habitat and stream flow protection and enhancement.

   Program: Seek out opportunities to work with willing landowners to fence off riparian areas

   Program: Implement projects that reduce or eliminate sediment additions to the Willow Creek Drainage; implement bank stabilization projects as possible.

   Program: Work to improve habitat and stream flow protection and enhancement to provide adequate spawning habitat for reservoir salmonids.

3. Objective: Maintain a desirable salmonid fishery in Ririe Reservoir, emphasizing cutthroat trout conservation.

   Program: Stock catchable cutthroat trout on a schedule that provides high quality fishing with economic efficiency.

   Program: Evaluate the performance of sterile rainbow trout to see if improvements in growth can offset catch rate differences between rainbow and cutthroat trout.

   Program: Stock enough kokanee fry annually to maintain catch rates of at least one fish per hour, and continue to evaluate length-at-age and catch rates to optimize the fishery.

4. Objective: Maintain a satisfactory smallmouth bass and yellow perch fishery in Ririe Reservoir.

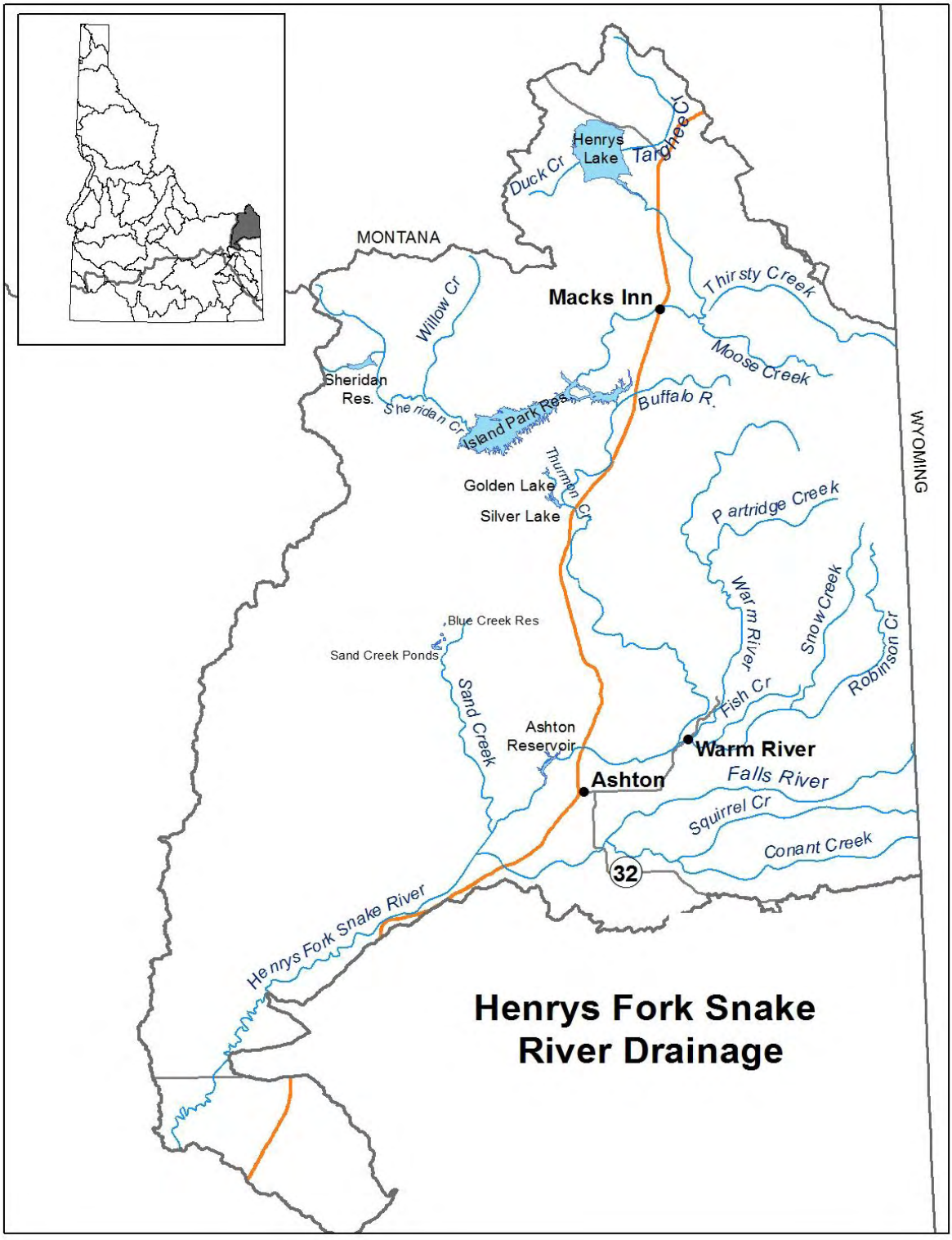
   Program: Continue to promote the value of the yellow perch fishery during years when reservoir levels create an abundant perch population.

   Program: Assess public opinion on the smallmouth bass fishery and determine whether harvest opportunity is more important than attempting to maintain a quality size structure.

5. Objective: Determine impacts to the fishery from walleye.

   Program: Conduct annual gill net surveys to monitor walleye and trout populations.

Drainage: Willow Creek					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Willow Creek from Eagle Rock Canal to Ririe Dam	5/	Coldwater	Cutthroat trout	General	Area seasonally de-watered.
Ririe Reservoir	/1,470	Mixed	Cutthroat trout Kokanee Yellow perch Smallmouth bass Walleye	Put-and-take General No protection	Trout put-and-take fishery. Put-and-grow kokanee fishery. Maintain catch rates of 1.0 fish/hr with lengths exceeding 10 inches. Evaluate tradeoff between harvest versus size structure and adjust bass length limits accordingly Implement actions to reduce walleye abundance as possible
Willow Creek and Grays Lake Outlet above Ririe Reservoir	80/	Coldwater	Cutthroat trout	Wild	Restore wild populations of native cutthroat trout through no- harvest regulations and habitat enhancement. Consider fingerling cutthroat trout supplementation as water conditions allow.
All other tributaries	83/	Coldwater	Cutthroat trout Brook trout	Wild General	Restore wild populations of native cutthroat trout through habitat enhancement, spawning closures and no-harvest rules.


MONTANA
WYOMING
Henrys Lake
Targhee Cr
Duck Cr
Macks Inn
Thirsty Creek
Willow Cr
Moose Creek
Sheridan Res.
Sheridan Cr
Island Park Res.
Buffalo R.
Thurmon Cr
Golden Lake
Silver Lake
Partridge Creek
Warm River
Snow Creek
Robinson Cr
Blue Creek Res
Sand Creek Ponds
Sand Creek
Fish Cr
Ashton Reservoir
Warm River
Ashton
Falls River
Squirrel Cr
Conant Creek
32
Henrys Fork Snake River
Henrys Fork Snake River Drainage

30. HENRYS FORK SNAKE RIVER DRAINAGE

Overview

The Henrys Fork drainage provides one of the most important rainbow trout fisheries in the state. Important tributaries include the Buffalo, Warm, Fall, and Teton rivers. Major still water fisheries in the drainage are Henrys Lake, Island Park Reservoir and Ashton Reservoir. The Teton River is discussed as a separate drainage.

The Henrys Fork from St. Anthony to Big Springs attracts anglers from throughout the nation. A major part of the fishing pressure is from tourists traveling to Yellowstone National Park. An economic survey conducted in 2004 estimated that anglers spent nearly 170,000 angler days in the Henrys Fork drainage from May through September, and that the fishery generated nearly $30 million to the local economy. Similarly, a Department economic survey in 2011 showed that Fremont County, which encompasses most of the Henrys Fork drainage, ranked first out of the 44 counties in Idaho in terms of angler spending. This study, which calculated effort for the entire year, estimated that anglers made over 165,000 fishing trips in Fremont County and spent over $61 million during angling trips. Because of the impacted nature of this drainage, the abundance of nonnative fish, and the inability to successfully eradicate nonnative fish and establish native fish, combined with input from our angling public, this drainage will be managed for both native and introduced species.

Management of the Henrys Fork from the mouth to Island Park Dam will emphasize wild, natural populations of rainbow trout, brown trout and cutthroat trout without hatchery supplementation. The Henrys Fork Snake River below St. Anthony suffers from impacts of irrigation withdrawals and low flows, which limit salmonid populations, though the channel complexity and diversity between St. Anthony and the confluence with the Teton River is high and offers good seasonal trout habitat. The habitat below the confluence of the Teton River is severely degraded as a result of the Teton Dam failure and flood in 1976.

The section of river from St. Anthony to Mesa Falls is currently producing good numbers of wild rainbow trout, with lesser but increasing numbers of brown trout. Whitefish are abundant. Screens to exclude trout were recently added to irrigation diversions on the Crosscut and Last Chance canals as part of a FERC licensing project on the Chester Dam, and to the Dewey Canal below Ashton Dam. These are the first canals on the Henrys Fork to be screened. The Henrys Fork from Riverside Campground to Island Park Reservoir supports a world famous wild rainbow trout fishery. Catch rates and trout population sizes declined steadily through the 1980s and early 1990s due to changes in Island Park Reservoir water management. Both rebounded significantly in 1993 after the 1992 draining and chemical renovation of Island Park Reservoir. However, a sediment event resulting from the drawdown of Island Park Reservoir in 1992 deposited a large quantity of fine sediment in the Harriman Ranch area, which impacted habitat in this area. Angler satisfaction has varied since this event, although trends since approximately 2008 show angler satisfaction with the fishery is high. Densities of trout have increased since 2008, with improvements in winter flow management from Island Park Dam. Research conducted by Montana State University and the Department from 1995 through 2005 and ongoing research have verified the importance of winter flows in the Box Canyon reach. Higher flows from Island Park Dam through the winter result in higher overwinter survival of juvenile trout and subsequent recruitment to the fishery below Island Park Reservoir. Implementation of a congressionally mandated Drought Management Plan has improved communications and planning around winter discharges. We will continue to work cooperatively with stakeholders to maximize wild trout

production below Island Park Dam. This reach will remain a wild trout fishery, managed under catch-and-release regulations.

Ashton Reservoir is annually supplemented with 34,370 catchable rainbow trout as part of a mitigation agreement with PacifiCorp, the operator of Ashton Dam. This reach will continue be designated as high catch rate fishery appropriate for beginner anglers and managed for a yield fishery under general regulations. Substantial repair work on Ashton Dam has been ongoing since 2009, which has required the reservoir be drained periodically. Once repairs are completed, the reservoir and our management program will return to normal. Construction should be complete in 2013.

Island Park Reservoir is a widely fluctuating irrigation reservoir with a mean surface area of 8,400 acres. Historically, the reservoir has provided an important fishery for rainbow trout and kokanee, with catch rates up to 0.6 fish/hour. The reservoir has a long history of being chemically renovated to reduce non-game fish (primarily chubs and suckers) abundance and improve the sport fishery. Most recently, the reservoir was chemically treated in 1992. However, the fishery did not benefit as expected. Catch rates for the three years following the 1992 renovation failed to exceed 0.4 fish/hour. Following the 1992 renovation, utilization of alternative species of salmonids were stocked in an effort to identify a piscivorous sportfish that would take advantage of the abundant chub forage base. Lahontan cutthroat trout were stocked from 1993 to 1997 and splake were stocked from 1995 through 1998. Subsequent monitoring indicated that both species performed as well as, but no better than rainbow trout and kokanee, and therefore the Lahontan cutthroat trout and splake stockings were discontinued. Considering the poor response of the fishery combined with the delivery of several thousand tons of sediment to the Henrys Fork below Island Park Dam, the social and economic cost of the renovation greatly outweighed the benefits of the 1992 treatment.

The fishery continued to decline through 2005, largely due to the drought and reservoir drawdown. Analysis of gillnet and angler catch rates clearly demonstrate the relationship between winter carryover and fish populations. However, the most important factor influencing angler and gillnet catch rates is the stocking rate in the years prior. The decline in the fishery is likely the result of factors associated with the drought that were concurrent with a decrease in stocking rates. At the same time fish populations were being adversely impacted by the reservoir drawdown, the stocking program was modified, both in terms of number and type of fish. Diploid rainbow trout were replaced with triploid rainbow trout, and the annual fingerling plant was reduced, in part to accommodate the program of supplementing the Henrys Fork above the reservoir with cutthroat trout fingerlings. Since this time, we have returned to stocking diploid rainbow trout, and since 2009 have been stocking lesser numbers of six-inch advanced fingerling trout as opposed to the smaller, standard fingerlings. Preliminary analysis indicates that the screens on the outflow from Island Park can entrain trout smaller than six inches. In addition, starting in 2009, we began stocking half of our kokanee request in Moose Creek and at Big Springs to improve survival and possibly instill a spawning instinct in our hatchery fish.

Management direction for Island Park will focus on refining stocking techniques and densities to maximize angler catch rates. The effectiveness of the supplementation program will be monitored by creel and gillnet surveys. Efforts to suppress the non-game fish population, either by chemical treatment or stocking piscivorous fish will be deferred until after evaluation of the benefits of the enhanced stocking program.

From Island Park Reservoir upstream to the Henrys Lake Outlet, the Henrys Fork provides a yield fishery supported primarily by supplemented hatchery catchable rainbow trout, with some

additional natural production. Population surveys have indicated the occurrence of good numbers of large rainbow trout in the river above Island Park Reservoir in early May. These fish are presumably spawning migrants from Island Park Reservoir. However, electrofishing surveys in late May suggest the majority of the migrants return to the reservoir prior to the historical opening weekend of fishing season, and were largely unavailable to anglers in the upper river. Beginning in 2002, the Department began stocking Yellowstone cutthroat fingerlings in this reach of river, with the intent of creating a later run of spawning fish from Island Park Reservoir. Initial monitoring results via electrofishing indicate the program is successful, with the majority of sampled fish being cutthroat trout. More recent surveys also show the presence of cutthroat trout, but also documented fluvial rainbow trout populations. We will continue to monitor the abundance of fluvial and migratory cutthroat as a result of this program, and have now adjusted the fishing season. Since 2011, anglers can fish this reach of the river all year long, and have the ability to encounter any migratory fish originating in Island Park Reservoir.

Henrys Lake outlet is a low gradient stream section, which flows through an intensively used, privately owned cattle grazing area. Angler effort is concentrated below Henrys Lake Dam downstream to Highway 20. During years of above normal discharge from Henrys Lake, trout emigration from Henrys Lake supports a very popular fishery. Cutthroat trout spawning in the three miles below Henrys Lake Dam is very obvious, with extensive angler pressure during the early weeks of the season. Depending on outflow from Henrys Lake, summer flows and water temperatures may result in emigration of trout from the upper reaches of the outlet downstream to the Henrys Fork. Additionally, low winter stream flows occasionally result in dewatering in the upper section of Henrys Lake Outlet. Opportunities to fence protective riparian zones will be pursued. Several miles of the Henrys Lake Outlet have been channelized in an effort to improve water conveyance to lower river water users. Efforts by private conservation groups have restored portions of the Henrys Lake Outlet to the natural stream channel, thereby reducing erosion and sediment delivery from the channelized reach. Efforts to reduce sediment inputs and stabilize banks should continue.

Henrys Lake is a shallow, highly productive lake covering 6,500 acres in the headwaters of the Henrys Fork. It has a long history of supporting high quality sport fishery for large, native cutthroat trout. Since 1924, IDFG has collected cutthroat trout eggs for use in maintaining cutthroat trout fisheries in many areas of the state, including Henrys Lake.

Henrys Lake has been managed as a quality/trophy trout water since 1976. Catch rate goals are 0.7 fish/hour with management goals having a catch rate of about 0.45 fish/hour for cutthroat trout, 0.15 fish/hour for hybrid trout and 0.10 fish/hour for brook trout. Size goals are 20% of hybrid trout over 20 inches, 10% cutthroat trout over 20 inches and 5% of brook trout over 17 inches. Prior management plans have suggested this size goal should be based on fish harvested by anglers. However, due to the variability in angler harvest preferences, size goals measured from gill net catch should be more reflective of the at large population and should be the measure used to evaluate this goal. Henrys Lake produces large brook trout including the state record of 7.2 lbs. Efforts to improve natural production in tributaries date back to 1981, when cooperative agreements between the Department, the Henrys Lake Foundation, and area ranchers were developed to improve riparian and in-stream spawning and rearing habitat through protective fencing of spawning tributaries. A significant contribution to that effort was made in 2005, when marginally passable culverts on Targhee and Howard creeks were replaced with bottomless arch bridges to facilitate fish passage. Results from 2006 trapping efforts have documented substantial natural recruitment from Targhee Creek as a result of this effort. Fish losses to irrigation ditches have also been reduced by cooperative diversion screening projects. Riparian fence and screen

maintenance will continue on Duck Creek, Howard Creek, Targhee Creek, and Kelly Springs, and evaluations of trout recruitment from these spawning tributaries will continue in future years.

To assess hatchery fish contribution, 10% of all hatchery cutthroat and brook trout are adipose fin-clipped annually. During creel and biological surveys, harvested fish are analyzed for clips, providing a basis to assess whether or not hatchery fish comprise a proportionate percentage of the catch. Based on these annual assessments, the majority of the sport fishery has been maintained by hatchery supplementation despite efforts to improve natural production in Henrys Lake. However, data collected from 2005 to 2011 suggest natural reproduction is increasing, and may now be contributing up to an additional 300,000 adult cutthroat trout as of 2011. Analysis of catch rates and fish stocking data from the past 30 years show angler catch rates are driven by the number of fish stocked 2-3 years previously. However, a similar analysis between stocking rate and fish size shows some decrease in growth with very high levels of stocking. The extreme of these relationships was observed from 1981 through 1984 when 2,000,000 or more cutthroat trout fingerlings were released annually. By 1984, cutthroat trout populations had dramatically increased with a total catch rate of 1.7 fish/hour and 163,000 hours of effort. However, increased densities of cutthroat trout depressed growth rates, compromising the management goals of Henrys Lake. Based on the interdependent relationships between stocking rate, angler catch rates, and mean size, the Department identified an annual cutthroat trout stocking goal of 1.3 million fingerlings to optimize the fishery. This was initiated in 2003, and will continue to be evaluated in future gill net and creel surveys. Current estimates of contributions from natural reproduction suggest a reduction in the 1.3 million fingerlings stocked is warranted. Based on this information, an adaptive stocking strategy will be developed, and used annually to calculate stocking targets for the fishery each year.

The Henrys Lake hybrid trout fishery is now supported entirely by the production of sterile hybrid trout to protect the genetic integrity of the cutthroat trout population. Sterile hybrid trout (approximately 200,000) have been stocked annually since 1998. Development of new sterilization methods that use pressure as opposed to heat, have improved triploidy induction rates to over 99%. Based on angler catch, survival and growth of fingerlings is comparable to diploid hybrids. Creel surveys have documented many hybrid trout exceeding ten pounds, suggesting triploid fish may outperform diploid hybrid trout in terms of maximum age and growth. Genetic surveys of the Henrys Lake cutthroat trout population have documented a modest level of rainbow trout introgression (14%), low level of back-crossing (10%) and an essentially genetically pure stock of cutthroat trout in the lake. Additional analysis of the genetic status of Henrys Lake should occur during this period to evaluate the influence of the sterilization project on the cutthroat population.

Brook trout stocking was discontinued in 1999 as part of a statewide reduction in hatchery production. It was also believed that natural reproduction would be sufficient to maintain the management plan objective of 0.1 brook trout/hour. However, by 2002, the lack of recruitment to the brook trout fishery was evident, and fin-clip analysis demonstrated that the brook trout fishery was based almost entirely on hatchery supplementation. An on-site angler opinion survey in 2002 demonstrated the strong public desire to maintain the brook trout fishery in Henrys Lake. Brook trout stocking was re-implemented in 2003 with the use of sterile triploids. Angler creel and gill net data have demonstrated good survival and recruitment of the triploid fingerlings. Current stocking rates are providing a high catch rate fishery of quality brook trout.

Utah chubs were discovered in Henrys Lake in 1993 during annual gill net surveys. Utah chubs are viewed as a serious nuisance species in regulated reservoir impoundments and pose a potential threat to the Henrys Lake fishery. Gill net surveys from 1993 to 2009 showed an

increasing trend in chub numbers, although recent data suggests this trend has reversed consistent with a likely increase in trout biomass due to increased natural reproduction. Based on growth rates and condition factor, we have seen no evidence that the chub population, to date, is having any impact on the trout population. In fact, it appears that the increase in wild production of cutthroat is sufficiently abundant to have slowed growth of trout and to have reduced chub abundance. Diet analysis completed in 2011 shows that trout are consuming more fish than in prior surveys, likely due to more intense competition for food resources. This trend is likely reflected in the decrease in chub abundance. As such, it is possible that trout and chubs will continue to balance their abundances in relation to available resources. We will continue to monitor this relationship over the coming period.

Warm River is a major tributary to Henrys Fork, providing catch rates of 1.0 trout per hour or better. Warm River base flow is provided by large springs six miles upstream from its confluence with the Henrys Fork. Warm River has large sections of good spawning gravel and fairly constant temperatures, which make it ideal for trout spawning. Rainbow trout and brown trout migrate from the Henrys Fork to spawn in Warm River during spring and fall, respectively. Due to the lack of spawning habitat in Henrys Fork between Ashton Dam and Mesa Falls, Warm River is critical to the maintenance of wild rainbow trout and brown trout populations for this section of the Henrys Fork. Due to the strong catch and release ethic practiced by many anglers fishing the Henrys Fork and Warm River, seasonal closures are no longer necessary to protect trout populations in this area. The season was extended in 2011 and now provides additional angling opportunity year around.

The Fall River is the largest Henrys Fork tributary. The Fall River is managed under a split season (catch and release from Dec 1 through Memorial Day Weekend, then a two-fish limit with no harvest of cutthroat trout) and supports an excellent wild rainbow trout fishery with catch rates of 1.0 fish/hour or better. The lower four miles of the river is seasonally degraded by irrigation water withdrawals. The remainder of the drainage is in good condition, although naturally low flows and warm temperatures during the summer may limit adult trout abundance. Population estimates through the 2000's indicate an abundance of juvenile rainbow trout, and a lack of adults. Anecdotal information from anglers indicates fish over 16 inches are common through early June, suggesting the Fall River supports a run of spawning rainbow trout from the Henrys Fork. Additional research should focus on the relationship between the Fall River and Henrys Fork trout populations as time allows.

Objectives and Programs

1. Objective: Maintain quality trout fishing in the Henrys Fork from the South Fork confluence upstream to Riverside Campground.

   Program: Monitor trout populations in indicator reaches by electrofishing on a regularly scheduled basis and propose regulation changes as biologically and socially necessary.

   Program: Work with stakeholders in the lower Henrys Fork to better understand the effectiveness of the newly installed fish screens and ladder below Chester Dam.

   Program: Work with partners and stakeholders to improve fish passage and minimize entrainment as supported by life history and migration assessments.

2. Objective: Sustain high catch rates in the Henrys Fork on the catch-and-release section from Riverside Campground upstream to Island Park Dam.

   Program: Continue long-term monitoring of trout population and angling success through regularly scheduled sampling surveys.

   Program: Work for stream flow protection and enhancement, focusing on winter flow enhancements to optimize juvenile trout over-winter survival.

3. Objective: Manage the Henrys Fork above Island Park Reservoir for satisfactory and diverse angling opportunity.

   Program: Evaluate effects of regulation changes and monitor angler use and behavior during the newly extended fishing season.

   Program: Evaluate benefits to the Henrys Fork and Island Park Reservoir fisheries associated with the fingerling fine-spotted Yellowstone cutthroat trout stocking program in the Big Springs to Flat Rock reach, and adjust the program accordingly.

   Program: Work for habitat and stream flow protection and enhancement.

4. Objective: Produce and maintain a quality, consumptive salmonid fishery in Island Park Reservoir.

   Program: Identify and evaluate stocking strategies that will provide high quality fishing with economic efficiency.

   Program: Work towards reservoir tributary habitat and stream flow protection and enhancement.

   Program: Continue to manage Island Park Reservoir for optimum trout production goals to ensure strong escapements of spawning rainbow trout and kokanee upstream through the upper Henrys Fork to Moose Creek, Big Springs, and Henrys Lake Outlet.

5. Objective: Understand the status of Utah chub population in Henrys Lake and evaluate management strategies to minimize negative impacts of chubs to the trout fishery.

   Program: Continue annual spring gillnetting surveys with emphasis on trend chub data.

   Program: Continue to evaluate predation on chubs by Yellowstone cutthroat, hybrids, and brook trout.

6. Objective: Conserve and enhance the genetic integrity of the Henrys Lake cutthroat trout population.

   Program: Continue to refine and implement the Henrys Lake sterile hybrid program.

   Program: Continue regular genetic monitoring of the Henrys Lake cutthroat trout population.

7. Objective: Enhance contributions from natural reproduction in Henrys Lake.

   Program: Evaluate contributions from natural reproduction and adjust stocking request accordingly.

   Program: Continue to work with the Henrys Lake Foundation and others to screen irrigation diversions, fence riparian areas and restore connectivity in tributary reaches.

8. Objective: Increase the size and number of trophy trout in Henrys Lake.

   Program: Evaluate methods to improve the size structure of trout and implement results as possible.

   Program: Assess effects from recent fishing season regulation changes.

   Program: Adjust hatchery supplementation as needed to maintain size and catch rate goals.

9. Objective: Evaluate effects of white pelicans on trout in Henrys Lake.

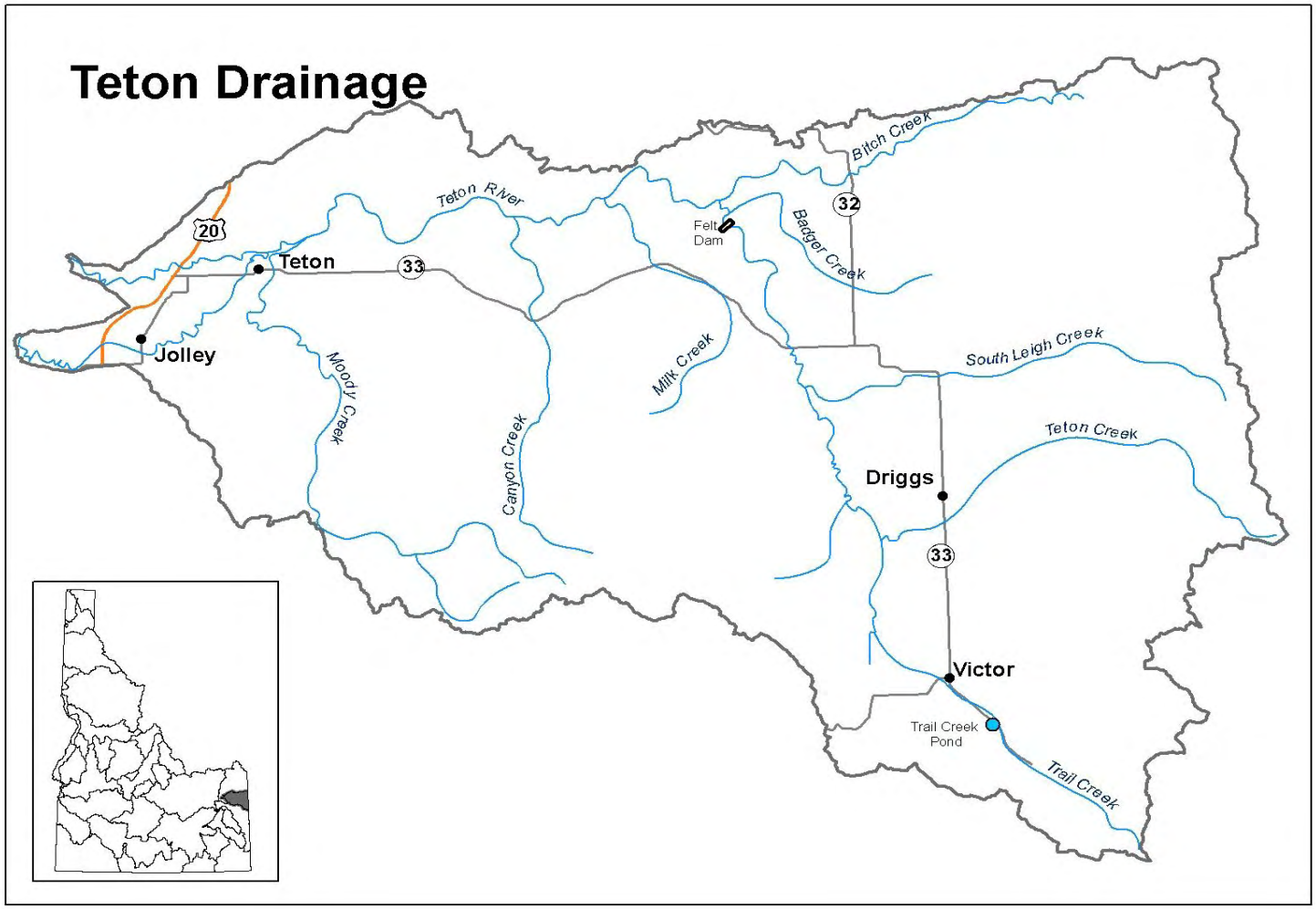
   Program: Monitor pelican use in key tributaries and lake-wide as possible.

   Program: Work with partner agencies and NGO's to mitigate or alleviate impacts to the trout population from pelican predation.

Drainage: Henrys Fork Snake River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Mouth to St. Anthony	30/	Coldwater	Rainbow trout Brown trout Whitefish Cutthroat trout	General Conservation	Maintain general regulations and harvest opportunity as warranted, but consider consistent regulations for the entire lower river. Investigate life history and migration patterns in lower Henrys Fork. Implement conservative harvest prescription for cutthroat trout.
St. Anthony to Vernon Bridge	10/	Coldwater	Rainbow trout Brown trout Whitefish Cutthroat trout	Wild General Conservation	Evaluate screen and fish ladder effectiveness at Chester Dam. Continue to improve fish passage and minimize entrainment.
Vernon Bridge to Ashton Dam	3/	Coldwater	Rainbow trout Brown trout Whitefish Cutthroat trout	Wild General Conservation	Socially driven spawning season closure for rainbow trout. Consider biological and social impacts of year around season and implement as possible.
Ashton Dam to U.S. 20 Bridge	4/400	Coldwater	Rainbow trout Brown trout Whitefish	Put and Take General	Stock catchable rainbow trout to maintain catch rates of at least 1.0 fish/hr.
U.S. 20 Bridge to Riverside Campground	37/	Coldwater	Rainbow trout Brown trout Whitefish Cutthroat trout	Quality General Conservation	Maintain as wild trout fishery with year-round season.
Riverside Campground to Island Park Dam, except Harriman State Park	9/	Coldwater	Rainbow trout Whitefish	Trophy General	Maintain wild rainbow trout fishery, Work with irrigation community and partners to optimize winter flows
Harriman State Park	8/	Coldwater	Rainbow trout Whitefish	Trophy General	Fly fishing only as access stipulation. Catch-and-release to produce trophy fish.
Island Park Reservoir (up to McCrea Bridge)	/8,400	Coldwater	Rainbow trout Cutthroat trout Brook trout Kokanee Whitefish	General	Put-and-grow fishery for rainbow trout and kokanee. Supplemental catchable rainbow trout stockings. Improve catch rates to 1.0 fish per hour.
Tributaries to Island Park Reservoir	45/	Coldwater	Rainbow trout Brook trout Cutthroat trout	General Conservation	Work to improve habitat in tributaries as opportunities arise.

McCrea Bridge to Henrys Lake Outlet	9/	Coldwater	Rainbow trout Brook trout Whitefish Cutthroat trout	General Quality	Put-and-take fishery on catchable rainbow trout. Put-grow-take fishery on cutthroat trout. Evaluate cutthroat trout fingerling stocking program.
Henrys Lake Outlet to Big Springs	2/	Coldwater	Rainbow trout Brook trout Whitefish Cutthroat trout	Conservation Conservation	Consider disturbance impacts to from various activities to spawning and rearing fish. Implement appropriate rules to alleviate or mitigate impacts.
Henrys Lake Outlet	12/	Coldwater	Cutthroat trout RB x CT hybrids Rainbow trout Brook trout Whitefish	Quality General	Work collaboratively to improve habitat that will sustain a perennial fish population.
Henrys Lake	/6,500	Coldwater	Cutthroat trout RB x CT hybrids Brook trout	Trophy	Hatchery supplementation of cutthroat trout hybrid trout and brook trout. Manage to produce catch rates of 0.7 fish/hr with 0.45 cutthroat trout/hr, 0.15 hybrid trout/hr, and 0.10 brook trout/hr.
Henrys Lake Tributaries	13/	Coldwater	Cutthroat trout Brook trout	Conservation General	Manage for spawning and rearing of cutthroat trout. Continue irrigation ditch screening and riparian fencing program.
Warm River and tributaries except Robinson Creek	92/	Coldwater	Rainbow trout Brook trout Whitefish Brown trout Cutthroat trout	General Conservation	Maintain wild trout population. Supplemental put-and-take fishery in heavily fished areas of Warm River. Maintain catch rates of 1.0 fish/hr.
Warm River from mouth of Robinson Creek to Highway 47 Bridge	0.2/	Coldwater	Rainbow trout Brown trout Brook trout Whitefish	Conservation	Spawning, rearing, and fish observation area.
Robinson Creek and tributaries	91/	Coldwater	Rainbow trout Brook trout Whitefish Brown trout Cutthroat trout	General Conservation	Maintain wild trout population. Consider conservative harvest strategy for of cutthroat trout.

Buffalo River and tributaries	50/	Coldwater	Rainbow trout Brook trout	General	Manage for wild brook trout and rainbow trout.
Moose Creek and tributaries	6/	Coldwater	Rainbow trout Brook trout Kokanee	General	Manage for wild trout. Reestablish kokanee spawning run.
Sand Creek WMA	/167	Coldwater	Rainbow trout Cutthroat trout Brook trout	General	Maintain catch rate of at least 1.0 fish/hr
Silver Lake	/220	Coldwater	Cutthroat trout	Conservation	Administrative closure by Harriman State Park to protect waterfowl and natural features.
Golden Lake	/220	Coldwater	Rainbow trout Brook trout Cutthroat trout	Conservation	Golden Lake and Thurmon Creek drainage upstream managed for native cutthroat trout population


Teton Drainage
Bitch Creek
Teton River
20
Felt Dam
32
Badger Creek
Teton
33
Jolley
Moody Creek
Milk Creek
South Leigh Creek
Canyon Creek
Teton Creek
Driggs
33
Victor
Trail Creek Pond
Trail Creek

31. TETON RIVER DRAINAGE

Overview

The Teton River originates on the west slope of the Teton Mountains and drains 890 square miles to its confluence with the Henrys Fork near Rexburg. The Teton River in eastern Idaho provides an important coldwater fishery to recreational anglers. It is one of the few remaining rivers in the greater Yellowstone ecosystem that support native Yellowstone cutthroat trout. Also pursued by anglers are rainbow trout, brook trout, and, to a limited extent, brown trout and mountain whitefish. The fishery enjoys regional, if not national, acclaim that supports a growing tourism economy in the local area. The presence of generally high quality habitat, relative abundance of native fish, and relative health of this drainage combined with input from our angling public make managing for native fish a high priority for this drainage. Although the Teton drainage is managed under wild trout rules, the Department will consider supplemental hatchery releases on a case-by-case basis where fish populations have been impacted or where substantial habitat restoration projects have resulted in newly created habitat becoming available. These releases should only be used to establish new populations of native fish, not to provide additional recreational opportunity.

The Teton River has been managed as a wild trout fishery since the early 1990's. Prior to that date, the fishery was supplemented annually with both fingerling cutthroat trout and catchable rainbow trout. Fingerling supplementation was discontinued in 1992 and catchable rainbow trout supplementation was discontinued in 1994. The cutthroat trout fishery has been managed with increasingly restrictive regulations since 1990, when a slot limit was imposed. In 2006, in response to continuing declines in the Yellowstone cutthroat population, cutthroat harvest was eliminated in the Teton River and its tributaries. In 2011, the river was opened to year around fishing, with catch and release from December through May. Tributaries are now managed with year around fishing with the exception of a spawning closure from April 1 through June 30. All other game fish in the drainage are managed under general regulations.

The most profound anthropogenic factor associated with the Teton River and its fishery was the construction and subsequent collapse of the Teton River Dam. The U.S. Bureau of Reclamation (BOR) built Teton Dam in 1975 to provide irrigation water and for flood control. The reservoir pool inundated 43 miles of the Teton River up through the scenic Teton River canyon as well as several kilometers of lower Canyon Creek, an important cutthroat trout spawning tributary. On June 5, 1976, the dam failed when the reservoir was nearly full, irreversibly altering the fluvial habitat and the fishery through the canyon and lower river.

The Teton River can be described as three separate reaches: the lower river, the canyon reach, and the valley reach. The lower Teton extends from the Henrys Fork Snake River confluence upstream 37 km (via the South Fork) or 52 km (via the North Fork) to the Teton Dam site northeast of Newdale. The river splits into the North and South Forks approximately midway. Both forks flow downstream to a separate confluence with the Henrys Fork Snake River. Fish habitat in the lower Teton has been extensively degraded with agriculture development, with deposition and channelization during and after the Teton Dam collapse, and with post-flood reconstruction of the stream channels and diversion structures. Complete dewatering of the stream channel, as well as fish kills from herbicides flushed from irrigation canals, is common in this section. None of the numerous diversions in the lower river are screened to prevent juvenile or adult fish entrainment. Only one (the Rexburg City Ditch) of the many diversion

structures on the lower river now has a fish ladder. Options to improve this reach include flow management to keep both channels wetted and fish screens where appropriate.

The canyon reach extends from the Teton Dam site upstream to Harrops Bridge. The fishery in the canyon reach was severely and permanently degraded by the collapse of Teton Dam, which resulted in the loss of a unique cottonwood floodplain, of dark timbered hillsides, and of a channel type that was relatively easy to access, float, and fish by the general angler. Prior to the construction and collapse of the Teton Dam in 1976, the river supported a trout fishery with an overall catch rate of 1.31 fish/hour and a total catch of 7,600 fish in 1975. The trout fishery in the Teton canyon has declined markedly in the 25 years following the Teton Dam collapse. Total catch in the Teton canyon had declined to 4,000 fish by 2000. The decline came despite the shift to wild trout management, special protective regulations, and catch and release fishing. During the same time period, the harvest rate declined from 0.95 to 0.07 fish/hour, and total harvest declined from about 6,200 to 127 fish. This decline may reflect a decline in the population due to major changes in Teton River hydrology and geomorphology – the primary driver of stream structure and function – that was caused by the dam collapse.

Access to the Teton canyon is difficult. There are limited roads and trails to the river and floating can be difficult because of the lengthy slackwater reaches separated by hazardous whitewater rapids. The Bureau of Reclamation has finalized a Resource Management Plan in which they describe their intent to provide only minimal upgrades and improvements to existing access points. For this reason, it is unlikely that the Teton Canyon will see a significant increase in angler use in the near future. That said, anglers are starting to discover effective ways to navigate the Canyon, which now provides a limited but popular fishery. The quality of the fishery has improved in recent years, likely as a result of better water conditions. Recent publicity from fishing shows on television that feature the Teton Canyon has brought attention to this overlooked resource.

The upper Valley reach extends from Harrops Bridge upstream 43 km to the confluence of Little Pine and Warm creeks west of Victor. The entire section is low gradient and meandering. Although there are no dams or irrigation diversions on the main river, habitat quality has declined with livestock grazing, heavy sedimentation, and widening of the stream channel. Teton River Enhancement Program (TREP) activities have focused on ameliorating these limiting factors, primarily through riparian fencing. Since the implementation of the program the Department has developed cooperative fencing, pasture management, and livestock non-use agreements with landowners to protect and improve riparian habitat in tributaries and river sections. Many of these agreements have now been shifted over to the landowners to continue, as funding for TREP has largely gone away.

The Yellowstone cutthroat trout population in the Teton Valley increased from about 40 to 55 fish/ha after special regulations were implemented in 1990, but then decreased to about 20 fish/ha from 1995 to 2000. By 2003, the population had collapsed to less than 2 fish/ha. Since 2003, cutthroat populations have maintained their abundance, and even increased in recent years. Sampling in 2010 and 2011 showed densities of cutthroat that were similar to or slightly below the high densities found during the 1980s suggesting that environmental conditions and habitat improvement projects are having an effect on trout in the Teton River. Conversely, trout abundance in general has increased in recent years to densities that approach or exceed the long term average for most sampling locations where we have long term data.

A hydrologic assessment of the drainage by Idaho State University indicates that the hydrologic regime has shifted with irrigation practices in the past century. Prior to irrigation, the river was a snowmelt dominated system, exhibiting a pronounced peak associated with spring runoff. With the implementation of flood irrigation using surface flows from tributaries, the hydrology shifted to a groundwater dominated system, characterized by the absence of a pronounced peak. In recent years, a conversion from flood irrigation to sprinkler irrigation has restored some of the natural shape to the hydrograph, however, the system is still groundwater dominated. The hydrologic shift has likely played a significant role in the fish population characteristics. Concurrent research by Idaho State University demonstrates that, in general, native Yellowstone cutthroat trout dominate fluvial systems characterized by their natural snowmelt dominated hydrology, whereas rainbow trout are found in greater abundance in systems with a dominant groundwater influence. Long-term persistence of the fluvial Yellowstone cutthroat population likely depends on successful restoration of the natural hydrology, including a naturally shaped hydrograph and increased magnitude and duration of tributary flows as well as protection of the few remaining streams that demonstrate this natural hydrograph such as Bitch Creek

The changing demography of the Teton Valley has resulted in decreased habitat degradation associated with traditional land use impacts, such as cattle grazing. However, the rapid pace of development, much of it associated with riparian areas has offset much of the benefit to the ecosystem. Conservation organizations such as the Friends of the Teton River and The Teton Regional Land Trust have been instrumental in developing collaborative efforts to protect and restore important riparian and aquatic habitat in the valley. IDFG will continue to work with conservation organizations and partner agencies on such efforts to improve fish access to spawning and rearing habitat, and to restore the natural hydrology to improve the fluvial cutthroat trout population. IDFG will also prioritize habitat restoration that benefits cutthroat trout in the Teton Drainage. IDFG will continue to monitor the success of the management program in conserving the native cutthroat trout resource and meeting public angling expectations.

Objectives and Programs

1. Objective: Preserve genetic integrity and population viability of wild native cutthroat trout.

   Program: Do not stock or allow stocking of streams, lakes or ponds with other species of fish that would interbreed or compete with cutthroat trout.

   Program: Work to obtain special consideration, protection, and improvement of critical cutthroat trout habitat in land use decisions.

   Program: Consider conservation stocking of cutthroat trout in areas where habitat restoration has occurred to bolster natural production and use of newly created habitat.

   Program: Protect cutthroat trout through catch-and-release regulations.

   Program: Continue to monitor genetic status of wild cutthroat trout populations.

2. Objective: Restore connectivity and natural hydrology, as possible, to improve spawning, rearing migration success of Yellowstone cutthroat trout

   Program: Identify tributaries with minimal risk of invasion by non-native species as candidates for improving connectivity.

Program: Work with conservation organizations, partner agencies, water users, and developers to increase duration and magnitude of surface flows in selected tributaries.

Program: evaluate options to manage water more effectively in the lower Teton resulting in a reduction or elimination of dewatering events in this area.

3. Objective: Minimize impacts of land use and development on fish habitat and water quality.

Program: Survey mainstem Teton River and important tributaries; develop prioritized list of areas in need of habitat improvement and/or fish passage. Implement restoration projects as possible.

Program: Work with government agencies, private landowners and developers, and conservation groups to make protection and enhancement of fish habitat and water quality a primary concern in land use decisions.

Program: Ensure restoration of habitat or mitigation of habitat loss whenever possible.

4. Objective: Increase consumptive trout fishing opportunity for anglers near population centers.

Program: Continue to stock fishing ponds adjacent to the Teton River at a rate to provide high, consistent catch rates; seek out additional opportunities to create similar fisheries in the Teton Valley.

Program: Inform anglers of quality fishing opportunities through maps, brochures, media coverage, and signs.

5. Objective: Minimize loss of juvenile fish to irrigation diversions and tributary de-watering.

Program: Educate and negotiate with local irrigators for minimum stream flows when possible. Coordinate with IDWR on water issues that potentially impact water rights.

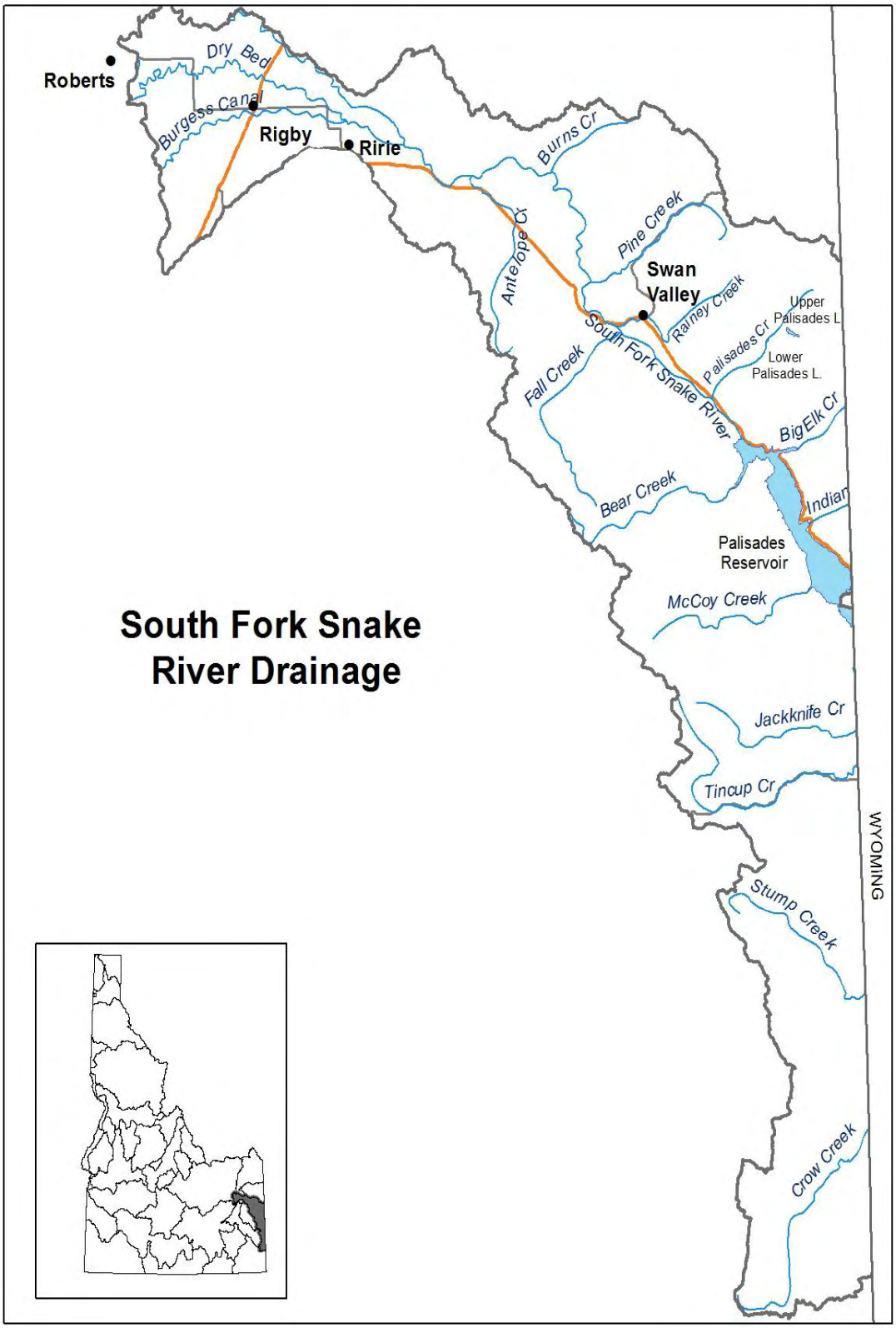
6. Objective: Obtain adult fish passage around or through barriers.

Program: Identify and obtain passage around irrigation diversions in cooperation with local irrigators, partner agencies, and conservation organizations.

Program: Continue to operate and maintain the South Fork Teton fish ladder; seek out ways to improve fish use of this ladder.

Program: Identify barriers and obtain passage through road culverts.

Drainage: Teton River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Teton River North and South Forks, mouth to Felt Dam	78/	Coldwater	Cutthroat trout Rainbow trout Whitefish	Conservation General	Work to improve fish passage and habitat in North and South forks, and work cooperatively with Department wildlife program to restore native vegetation as possible in Teton Canyon.
Teton River Felt Dam to Trail Creek	22/	Coldwater	Cutthroat trout Rainbow trout Brook trout Whitefish	Conservation General	Manage as a wild trout fishery emphasizing efforts to improve Yellowstone cutthroat trout population. Work cooperatively to restore connectivity, habitat, and hydrologic regime.
Teton, Fox, Trail, Bitch, Badger, Moody, Canyon creeks	27/	Coldwater	Cutthroat trout Rainbow trout Brook trout Whitefish	Conservation General	Work cooperatively to restore connectivity, habitat, and hydrologic regime.
All other tributaries	84/	Coldwater	Cutthroat trout Brook trout Rainbow trout	Conservation General	Protect and/or improve habitat.
Trail Creek Pond, Rexburg City Ponds	/2	Coldwater	Rainbow trout	Put and take	Maintain catchable plants to provide catch rates of at least 1 fish/hr and 40% return to the creel. Maintain handicapped access.
Packsaddle Lake	/4	Coldwater	Cutthroat trout	General	Maintain fingerling plants to provide consistent catch rates of at least 1 fish/hr.


Roberts
Dry Bed
Burgess Canal
Rigby
Ririe
Burns Cr
Antelope Cr
Pine Creek
Swan Valley
Rainey Creek
Upper Palisades L
Palisades Cr
Lower Palisades L.
South Fork Snake River
Fall Creek
Big Elk Cr
Bear Creek
Indian
Palisades Reservoir
McCoy Creek
Jackknife Cr
Tincup Cr
Stump Creek
Crow Creek
WYOMING
South Fork Snake River Drainage

32. SOUTH FORK SNAKE RIVER DRAINAGE

Overview

For the purposes of this management plan, the South Fork Snake River drainage consists of the mainstem and tributaries from its confluence with the Henrys Fork upstream to the Idaho-Wyoming State boundary, including Palisades Reservoir and tributaries as well as the Salt River tributaries that originate in Idaho (including Jackknife, Tin cup, Stump, and Crow creeks). Fish species found in this reach include the following native species: mountain whitefish, Yellowstone cutthroat trout, Utah chub, longnose dace, speckled dace, redside shiner, Northern leatherside (formerly known as leatherside chub), Utah sucker, Bluehead sucker, mountain sucker, Paiute sculpin and mottled sculpin; and the following introduced species: rainbow trout, brown trout and brook trout. The presence of high quality habitat, relative abundance of native fish, and relative health of this drainage combined with input from our angling public make managing for native fish a high priority. Although the South Fork drainage is managed under wild trout rules, the Department will consider supplemental hatchery releases on a case-by-case basis where fish populations have been impacted or where substantial habitat restoration projects have resulted in newly created habitat becoming available.

From Palisades Dam to the confluence with the Henrys Fork, the South Fork supports a world-renowned fishery and one of the most important Yellowstone cutthroat trout populations in their historical range. Currently, the population of rainbow trout and associated genetic introgression poses the biggest single threat to the long-term persistence of the native cutthroat trout population. Though rainbow trout were a negligible component of the trout population until the late-1980's angler and electrofishing surveys showed a steady increase in the rainbow trout population until 2003, when they were as abundant as cutthroat trout in the upper reaches of the river. In 2009, rainbow trout significantly outnumbered cutthroat trout for the first time since sampling began. This not only has implications to the conservation of a native trout population, but to the popularity of the fishery as well. Wild native cutthroat trout supported 71% of the catch in 1996, but only 35% of the catch in 2005. Consequently, catch rates, which were 1.1 fish/hr in 1996, had declined to 0.84 fish/hr in 2005. Brown trout offer the opportunity to catch a trophy fish, as demonstrated by the current state record brown trout weighing 26.4 lbs, which was caught from the South Fork.

IDFG is working on three fronts to protect and maintain an abundant cutthroat trout population. First, weirs and fish collection traps have been constructed on the four main tributaries to allow collection of cutthroat and rainbow trout spawners. Research was initiated in 1996 to determine the status of the rainbow trout and rainbow trout x cutthroat hybrid trout populations and described timing and location of rainbow trout, hybrid, and cutthroat trout spawning activity. Whereas rainbow trout and hybrid trout used mainstem side channel habitat almost exclusively for spawning, cutthroat trout used both mainstem side channel and tributary habitat. Following these results, permanent trapping facilities were constructed to allow regional personnel to block escapement of rainbow trout and hybrid spawners and allow passage of genetically pure cutthroat trout spawners. Based on phenotypic examination, cutthroat trout are passed upstream, whereas rainbow and hybrid trout are transported to catch-out ponds. Although early efforts to trap and block these tributaries were only partially successful, recent reconstructions and new designs appear to be much more effective than past efforts.

Second, the Department has been working with Idaho State University and the Bureau of Reclamation to identify and implement flow regimes that are beneficial to cutthroat trout and

detrimental to rainbow trout. A comprehensive analysis suggests the magnitude and shape of the spring runoff flows may have a significant effect on the ratio of rainbow to cutthroat trout recruits. In summary, years where a spring time maximum peak to low winter flow ratio exceeds 15:1 tend to favor Yellowstone cutthroat over rainbow trout. Conversely, years with a ratio of less than 10:1 resulted in greater recruitment of rainbow trout relative to cutthroat trout. As we accumulate more data, it becomes apparent that not only is the shape of this curve important, the timing is equally important with the peak occurring approximately the third week of May. Shaping of winter and spring flows to maximize benefits to cutthroat trout will continue, and will be refined based on results from annual population surveys.

Finally, the Department implemented an aggressive program combining regulation changes and public outreach in 2003 to encourage harvest of rainbow trout. Regulation changes included catch-and-release for cutthroat trout in the South Fork and the main tributaries and removal of the limit on rainbow and hybrid trout. Additionally, the year-round season was extended from the Heise Cable to Palisades Dam to allow anglers an opportunity to target spawning rainbow trout. The rule changes were accompanied by a public awareness effort and distribution of identification aids to help anglers recognize rainbow and hybrid trout. These efforts and others continue today. By 2005, rainbow trout harvest, which had been negligible prior to the effort, had increased to over 6,000 fish annually. Unfortunately, as anglers got accustomed to this new program, harvest dropped off. Beginning in 2009, we implemented an incentive program to encourage anglers to harvest rainbow trout. Coded wire tags were placed in the snout of captured rainbows, which were then released. Anglers turn in the heads of their rainbow trout to collect a potential reward of up to $1000. Efforts will continue to inform angling publics of the risk to the cutthroat trout fishery posed by rainbow trout and to encourage rainbow and hybrid trout harvest.

Habitat in the South Fork main-stem is generally in good condition. The lower 20 miles of the river is impacted by low water during late fall and winter due to irrigation diversions and reduced flows from Palisades Reservoir. Loss of fish from the river to these irrigation diversions often creates good seasonal fisheries in the canals. The largest diversion, an old side channel of the river called the Great Feeder or Dry Bed, is 20 miles in length and provides adequate habitat to support a trout fishery. However, de-watering of the Dry Bed annually in the spring for head-gate maintenance results in a loss of fish and a two-week annual salvage season is in effect. Efforts to ascertain the number of fish entrained into this and other canals will help evaluate the impact of operating these unscreened canals over the next study period and will be a priority for the fisheries program.

Palisades Reservoir is managed with general regulations and hatchery supplementation. Jackson National Fish Hatchery cutthroat trout are stocked as catchables and sub-catchables. Palisades Reservoir provides fishing opportunity for bank, boat and ice fishermen. Fishing effort was 22,500 angler hours during 1993, but no creel data is available for recent years. Lake trout and kokanee have been introduced, but only small natural populations have developed. Large fluctuation in water levels (up to 80 vertical feet) may affect these open water species and may limit total trout abundance in the reservoir.

Tributary streams to the South Fork can benefit from habitat restoration and modified grazing management for riparian restoration. Trout Unlimited and numerous partners have completed projects to reconnect and improve habitat on Garden and Pritchard creeks, as well as restoring perennial flows on Rainey Creek. Further, due to this collaborative effort, nearly all irrigation

diversions on these tributaries are now screened. IDFG will continue to support reconnect efforts where isolated cutthroat trout populations are not put at risk to rainbow trout invasion.

Salt River (Wyoming) tributaries which originate in Idaho include Jackknife, Tin cup, Stump, and Crow creeks. These tributaries will be managed for restricted cutthroat trout harvest to protect and/or restore populations. Fisheries interaction between the Salt River and its tributaries and Palisades Reservoir is not clearly understood. Idaho is cooperating with Wyoming to define fish movements to better manage this system.

Tin Cup Creek receives 2,000 catchable size finespot cutthroat trout from Wyoming Game and Fish Department's Auburn Hatchery. These are the only hatchery fish stocked in Idaho's Salt River tributaries.

Phosphate mining in tributaries that flow into Crow and Stump creeks has altered habitat and in some cases exposed flow to oxidized seleniforous rock. Investigations by state and federal agencies and industry are ongoing to determine the potential effect of elevated selenium on the fish community, with special emphasis on Yellowstone cutthroat trout.

Objectives and Programs

1. Objective: Preserve genetic integrity and population viability of wild native cutthroat trout.

   Program: Do not stock or allow stocking of streams, rivers, reservoirs or ponds with other species of fish that will interbreed or compete with cutthroat trout.

   Program: Continue to refine and evaluate effectiveness of fish trapping weirs on Burns, Pine, Rainey, and Palisades creeks and operate as possible to manage those tributaries strictly for cutthroat trout spawning and production.

   Program: Manually remove nonnative trout in tributary streams where biologically and physically feasible to create refuges for cutthroat trout to spawn in the absence of rainbow trout.

   Program: Continue to monitor genetic status of wild cutthroat trout populations.

   Program: Protect cutthroat trout through catch-and-release restrictions.

2. Objective: Decrease population of rainbow and hybrid trout and maintain at no more than 10% of species composition as indexed by the Conant monitoring site.

   Program: Continue outreach effort to emphasize importance of rainbow trout suppression through angling and flow management.

   Program: Work with Bureau of Reclamation and Idaho State University to provide a release from Palisades Dam characterized by a spring maximum to winter minimum flow ratio of at least 15:1.

3. Objective: Minimize loss of juvenile fish to irrigation diversions and stream dewatering.

   Program: Operate and maintain the Palisades Creek and Burns Creek screens in cooperation with local irrigators.

   Program: Negotiate with local irrigators for maintenance flows in tributaries when possible. Coordinate with IDWR on flow issues that could impact downstream water rights.

   Program: Evaluate entrainment rates and the costs and feasibility associated with fish exclusion devices on large canals on lower mainstem of the South Fork, and pursue funding as appropriate.

4. Objective: Minimize impacts of land use and development on fish habitat and water quality.

   Program: Work with government agencies, private landowners, developers, and interested conservation groups to make protection and enhancement of fish habitat and water quality a primary concern in land use decisions.

   Program: Ensure restoration of habitat or mitigation of habitat loss whenever possible.

5. Objective: Maintain a satisfactory salmonid fishery in Palisades Reservoir.

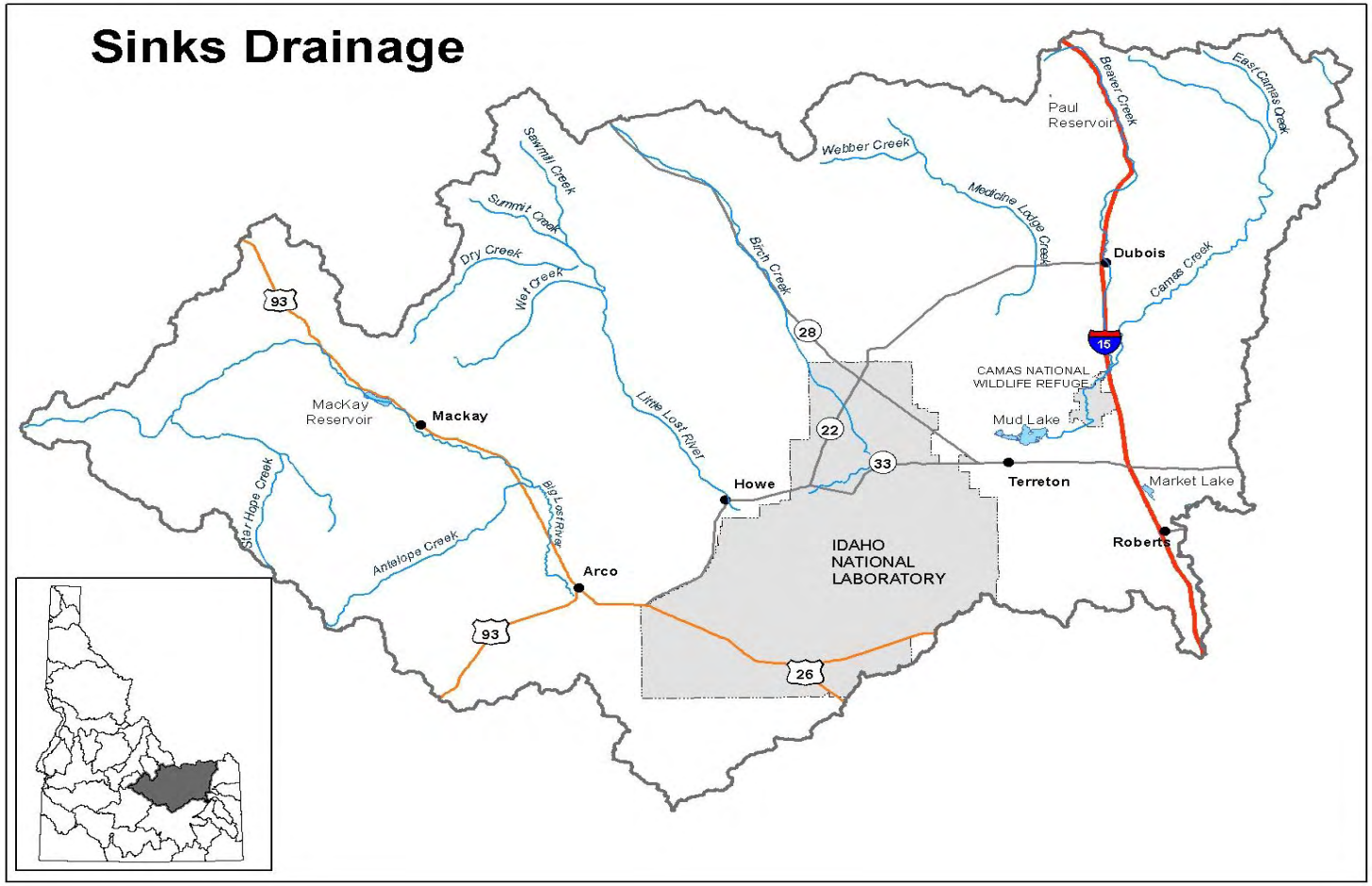
   Program: Continue stocking hatchery cutthroat trout from Jackson National Fish Hatchery of a variety and size and on a schedule, which provides high quality fishing with economic efficiency.

   Program: Maintain restrictive harvest rules for cutthroat trout and consider late season openers in principal spawning tributaries if monitoring and/or public desires indicates need for doing so.

   Program: Work with partner agencies and conservation groups to restore habitat and connectivity in tributaries.

Drainage: South Fork Snake River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
South Fork Snake River mouth to Palisades Dam	63/	Coldwater	Cutthroat trout Brown trout Rainbow trout Whitefish	Conservation Quality Unlimited harvest General	Maintain and restore Yellowstone cutthroat trout population through rainbow trout harvest, flow management, and tributary management.
Dry Bed Canal	32/	Coldwater	Cutthroat trout Rainbow trout Brown trout Whitefish	General	April salvage season Lewisville to Ririe. Evaluate entrainment and determine options to reduce as needed.
Burns, Pine, Rainey, and Palisades creeks	38/	Coldwater	Cutthroat trout Rainbow trout	Conservation Unlimited harvest	Conserve resident cutthroat trout populations. Use weirs to block escapement of rainbow trout. Enhance stream habitat and cutthroat trout recruitment with riparian livestock management and diversion screening.
McCoy Creek and tributaries	35/	Coldwater	Cutthroat trout Brook trout Rainbow trout Brown trout	Conservation General	Maintain protective regulations for cutthroat trout; general regulations for all other trout species.
Tincup Creek from Idaho line to Highway 34 Bridge	12/	Coldwater	Cutthroat trout Brown trout	Quality General	Maintain finespot cutthroat stocking program.
Tincup Creek from Highway 34 Bridge to Headwater	8/	Coldwater	Cutthroat trout Brown trout	Quality General	Maintain "semi-primitive" access to the fishery.
Stump Creek and tributaries	12/	Coldwater	Cutthroat trout Brown trout Brook trout	Conservation General	Work with federal agencies on habitat rehabilitation and selenium studies.
Crow Creek and tributaries	25/	Coldwater	Cutthroat trout Brown trout	Conservation General	Work with other agencies to ensure that phosphate mining does not lead to selenium toxicity to aquatic organisms.
Jackknife Creek and tributaries	12/	Coldwater	Cutthroat trout Brown trout	Conservation General	Assess needs for habitat improvement program.

All other tributaries	354/	Coldwater	Cutthroat trout	Conservation	No harvest of cutthroat trout. Enhance habitat with riparian livestock management.
Palisades Reservoir	16,100	Coldwater	Cutthroat trout Rainbow trout Brown trout Lake trout Kokanee	General	Put-and-grow fishery for cutthroat trout.
Upper and Lower Palisades Lakes	138	Coldwater	Cutthroat trout	Wild	Manage for wild trout benefits.


Sinks Drainage
Paul Reservoir
Beaver Creek
East Camas Creek
Webber Creek
Medicine Lodge Creek
Sawmill Creek
Summit Creek
Dry Creek
Wet Creek
Birch Creek
Dubois
Camas Creek
93
28
15
CAMAS NATIONAL WILDLIFE REFUGE
MacKay Reservoir
Mackay
Little Lost River
Mud Lake
22
33
Howe
Terreton
Market Lake
Star Hope Creek
Big Lost River
Antelope Creek
Arco
IDAHO NATIONAL LABORATORY
Roberts
93
26

33. SINKS DRAINAGES

Overview

The Sinks drainages include the Big Lost and Little Lost rivers, Birch, Camas, Beaver and Medicine Lodge creeks drainages, all of which sink into the upper Snake River Plain aquifer. Rainbow trout, of generally small size, are the predominant fish throughout the drainages, except for some headwaters and a few minor tributaries where brook trout and cutthroat trout are dominant. Native bull trout and cutthroat trout are maintaining fishable populations in some limited areas. Whitefish are found only in the Big Lost River drainage. Stream quality and fish populations vary from excellent to poor where streams alternately intersect and perch above the groundwater table or enter irrigation ditches. Streams become marginal where they flow into the Snake River Plain due to diversion and freeze out. Where groundwater inflow is lacking, wintertime air temperatures often cause streams to become icebound and leave their channels. Severe habitat degradation has occurred to most streams due to past and/or present grazing practices on private and public range land. Natural flood events have also severely impacted some drainages such as Wildhorse Creek in the Big Lost River drainage.

Irrigation diversions often dewater the lower segment of most drainages, yet productivity is generally high due to large amounts of groundwater input. Drought conditions periodically impact many of the smaller headwater tributaries in the Sinks drainages. As environmental conditions improve, the Department will consider supplemental hatchery releases on a case-by-case basis where fish populations have been impacted. This may include those drainages managed for wild trout. Preference will be given to relocating trout from nearby streams, using an appropriate brood stock, or using sterile fish to avoid impacts to native species.

The Big Lost River is the largest of the Sinks Drainages covering 1,992 sq. miles. The Big Lost River originates in the Pioneer, Boulder, Lost River, and White Knob mountain ranges and flows down the Big Lost River Valley and then onto the Snake River Plain where it terminates at the Big Lost River Sinks. Major tributaries include East Fork, Star Hope Creek, Wildhorse Creek, North Fork, Thousand Springs Creek, Alder Creek, Pass Creek, and Antelope Creek.

Twelve species of fish have been documented in the basin. Common game fish found in the drainage are rainbow trout, cutthroat trout, brook trout, and mountain whitefish. Alpine lakes in the drainage are also stocked with or have naturally reproducing populations of golden trout and grayling, and Mackay Reservoir supports a reproducing population of kokanee. Mountain whitefish are the only game fish native to the drainage. Based on microsatellite DNA analysis, the population is believed to have been isolated in the Sinks Drainages for over 150,000 years. It is likely that a large volcanic eruption associated with the Yellowstone Hot Spot eliminated all fish life in the Sinks Drainages about 600,000 years ago. Historical accounts indicate that mountain whitefish were widely distributed and relatively abundant in the Big Lost River basin. Recent declines in the distribution and abundance of the mountain whitefish population have led to the development of a conservation and management plan for the Big Lost population. It seems evident that the single greatest factor associated with the decline is dewatering exacerbated by the sustained drought. Key elements of the conservation and management plan are restoring passage over irrigation diversions, identifying opportunities for increasing surface flows in currently dewatered reaches, assessing impacts of entrainment and prioritizing opportunities for screening. Additionally, the Department instituted no harvest regulations for mountain whitefish in the Big Lost River drainage in 2006. As of 2011, all major barriers to whitefish movement have been removed, and whitefish populations have exceeded both distribution and abundance goals established in the management plan. While many on the

ground activities contributed to this success, a return to better water conditions also helped recovery. Efforts to expand whitefish populations will continue over the next period. Management priority for the Big Lost Drainage will emphasize protection of mountain whitefish, but will also focus on providing a recreational fishery supported by rainbow trout, Yellowstone cutthroat trout and brook trout.

Mackay Reservoir, built in 1916, is an irrigation supply reservoir having a maximum capacity of 44,500 acre-feet and a minimum pool of 125 acre-feet. Pool levels below 4,600 acre-feet occur during dry years, causing flushing of most trout and kokanee through the outlet structure of the dam into the Big Lost River. This limits the ability to manage Mackay Reservoir for a wild trout fishery or to effectively supplement with fingerlings. Catchable rainbow trout comprise the majority of fish caught with some brook trout and wild rainbow trout present. Kokanee comprise a significant component of the reservoir fishery in years with sufficient carryover and winter pool. This fishery has improved substantially with a return to more normal water years in the 2008-2011 time frame, and the reservoir now supports a robust and popular year around fishery. Of particular interest is the winter ice fishery targeting kokanee. Efforts should focus on documenting the effects of angler harvest on the reservoir's fish population with particular emphasis on the winter ice fishery.

The 60 miles of the Big Lost River below Mackay Reservoir has been extensively modified by numerous irrigation diversions and channelized for flood control, which has destroyed about 25% of the channel. Drought conditions affected the Sinks drainages from 1987 through 2004. During that period, water storage and natural stream flows did not meet irrigation demand, which resulted in extensive development of wells in the area from Mackay to the Idaho National Laboratory boundary. Well development combined with lower natural flows has reduced or eliminated most salmonid populations downstream from the Moore Diversion. From 2001-2004 the river was dewatered near the Blaine Diversion, essentially eliminating an additional 10 miles of perennial stream flow. In recent years, this portion of the river has remained wetted, and now houses a population of both trout and mountain whitefish. A collaborative study in the mid-2000's evaluated the feasibility of restoring the stream channel through the "Darlington Sinks", and concluded this option was not realistic. If it had been, channel drying events below the Moore Diversion could have possibly been avoided.

From the Blaine Diversion to Mackay Reservoir, the Big Lost River supports wild rainbow trout, brook trout and whitefish populations. The fishery in the 5-10 miles below Mackay Dam is exceptional in terms of rainbow trout growth rates and densities. Not surprisingly, this fishery has grown in popularity in recent years, and access has become an issue. IDFG has worked, and will continue to work with partner agencies and landowners to provide access to the public through easements, purchases, and landowner agreements. Recently, the Department secured two permanent access points in the lower river – one at the Mine Hill Bridge, and the other at the Blaine Diversion. There is still need for one or two additional access points between the Mine Hill Bridge and Stennett access points. Fishery assessments in recent years indicate the majority of rainbow trout in this reach are of wild origin, and that the fishery is not based on entrainment from Mackay Reservoir. Despite the increasing popularity of the fishery, exploitation appears to be minimal based on tag returns, creel surveys and catch curves. The prevalence of catch-and-release anglers and the limited access to the river, limit the need for restrictive rules.

The Big Lost River from Mackay Reservoir upstream to Chilly Bridge is annually dewatered for irrigation and has suffered from long-term stream alteration activity. From Chilly Bridge upstream, the river and tributaries support wild rainbow trout, brook trout, and whitefish populations. The mainstem and East Fork of the Big Lost River were managed under a quality trout regulation of

two trout over 14 inches from 1988 until 2000. However, the population did not improve as a result of the regulation change, and the reach was returned to general regulations after it became apparent that angling exploitation was not suppressing the population. The causes and magnitude of the rainbow trout population decline in the early 1990's in the upper drainage are not clear. Indeed, the evidence that the historical population above Mackay Reservoir was much greater than present is largely anecdotal. However, evidence does suggest that drought; loss of connectivity with Mackay Reservoir, and whirling disease may be associated with a decline in the trout population. This reach will be surveyed again in 2012, but recent surveys (2007) show that populations have increased, and densities of trout now rival those in the 1980's and 1990's. As part of the work associated with the mountain whitefish recovery plan, all identified barriers in the upper river have been removed. Additionally, Yellowstone cutthroat trout have been stocked beginning in 2000, and the species now contribute substantially to the fishery in the Big Lost. Stocking continues, but natural reproduction is common, as with all species in this drainage.

Thirty-six of the 46 actively managed alpine lakes in the Upper Snake Region are located in the Big Lost River drainage. Guidelines for regional mountain lake management were jointly established with the Mackay Ranger District of the Salmon Challis National Forest. The goals of the program are to maximize the effective use of hatchery introductions, manage for a diversity of species within given drainage, maintain catch rates of one fish per hour or better, and maintain lakes in each drainage as "fishless" to benefit native nongame aquatic species. Beginning in 2003, the Department began collecting data that will be used to develop an alpine lakes management plan for the region. Concurrently, a statewide management plan is under development, and should be incorporated into the management program for the Big Lost drainage. IDFG will continue to work cooperatively with the Forest Service to survey lakes and ensure the goals of the program are being met.

The Little Lost River drainage contains primarily wild rainbow trout and bull trout, although brook trout are abundant in some of the headwater areas. Yellowstone cutthroat trout are also found in one stream in the Little Lost drainage. Highest densities of bull trout are present in Sawmill Creek and the upper Little Lost River. Anglers have reported catch rates in excess of one fish per hour. The Little Lost River has been managed on wild trout production since 1983, and under wild trout regulations (two trout possession limit) since 1993. Bull trout harvest has been closed (concurrent with the state-wide bull trout harvest closure) to protect this important population. As a result of the Threatened status of bull trout, the Department has worked cooperatively on a recovery plan for the Little Lost drainage. Management actions have emphasized increasing fish passage around barriers, improving connectivity among tributaries and minimizing impacts from brook trout. Efforts to increase public awareness of the presence and identification of bull trout have been effective and will continue. IDFG will continue to monitor the fish populations throughout the drainage, and will evaluate the effectiveness of the restricted possession limit over the coming period. The presence of bull trout in combination with suitable habitat will make managing for this species a priority in the Little Lost River.

Birch Creek provides a high catch rate fishery supported primarily by hatchery supplementation, with additional contribution from a moderately abundant wild rainbow trout population. Birch Creek is a popular destination fishery for consumption oriented anglers, and has been managed as a Family Fishing Water since 2002. This designation changed in 2011, but the fishery continues to be managed as a high catch rate destination for new and young anglers. The fishery is stocked regularly from early May through September. Birch Creek will continue to be monitored and will be managed to provide high catch rates consistent with prior management goals. No salmonids are native to Birch Creek, so management will focus on nonnative species to provide a desirable experience for anglers.

Electrofishing surveys of the Medicine Lodge drainage have found good populations of cutthroat trout and brook trout present in some tributaries, although wild rainbow trout are the dominant species throughout the drainage. The Medicine Lodge drainage has been managed on wild trout production since 1983 and under the wild trout regulation (two trout possession limit) since 1998. Opportunities to restore native cutthroat to portions of the drainage through eradication of non-native species will be identified and addressed as possible. Evaluation of the effectiveness of the reduced possession limit will be evaluated over this period. Because of the impacted nature of this drainage, the abundance of nonnative fish and the inability to successfully eradicate nonnative fish and establish native fish, combined with input from our angling public, this drainage will be managed for both native and introduced species.

The Beaver/Camas Creek drainage includes Mud Lake, Beaver and Camas creeks as important waters. High density populations of wild cutthroat, rainbow and brook trout exist in most streams in the headwater areas. However, allopatric populations of native cutthroat trout (those without brook trout or rainbow trout) are limited. Despite the broad distribution of rainbow and brook trout, there are a limited number of streams where non-native species can likely be eradicated and subsequently prevented from recolonizing. IDFG will work to identify such candidate streams and work with stakeholders to restore native cutthroat trout populations where feasible and supported by the public. Water conditions limit trout populations in the lower ends of these streams. Because of the impacted nature of these drainages, the abundance of nonnative fish, and the inability to successfully eradicate nonnative fish and establish native fish, combined with input from our angling public, these drainages will be managed for both native and introduced species.

Fish populations and interest in fishing Beaver Creek have declined during the 2000's as a result of the drought. Hatchery supplementation has continued annually through early summer, however, flows and water temperatures have limited the ability to stock throughout the season. Further, abundant willow complexes hamper attempts to fish from the shoreline. A naturally reproducing brook trout population is capable of supporting current fishing pressure in Beaver Creek. Based on these factors, the Department removed Beaver Creek from the stocking rotation, and will rely on natural reproduction to provide a fishery here. Paul Reservoir, which lies in the Beaver Creek drainage, is managed to provide easy access and high catch rates. The reservoir is stocked annually with fingerling cutthroat trout. The program continues to be very successful, with anglers reporting high catch rates and a quality fishing experience.

Mud Lake originally contained large numbers of cutthroat trout, but high summer temperatures, fluctuating water levels and low winter dissolved oxygen have greatly decreased the suitability for trout. Mud Lake has lacked a coldwater fishery since water management changes in the early 1960s impacted Camas Creek and Mud Lake water quality. Experimental introductions of Lahontan cutthroat trout began in 1990 to evaluate this subspecies potential under existing high alkalinity and temperature conditions. Since introduction, Lahontan cutthroat trout provided a limited fishery, primarily during the winter ice season. Recent decisions by the irrigation company that controls water releases have resulted in substantial drawdowns of the lake during the fall and into the winter. Prior to these drawdowns, winter fish kills were periodically encountered due to the large amount of vegetation and shallow depths of the lake. Following this shift in management, winterkills are now common and limit the ability of Mud Lake to provide a fishery.

Presently, the Mud Lake fishery is supported by a small population of yellow perch, and some brown bullhead. Nongame fish are still present with Utah chubs and Utah suckers the major species. A variety of species have been stocked in an effort to establish fisheries in Mud Lake. Bluegill were introduced from 1983-1985, but no population developed and black crappie were

planted from 1987-1989, however this effort was also unsuccessful. Introductions of tiger muskie were made into Mud Lake to create a trophy fishery while utilizing the abundant nongame biomass. Tiger muskie were planted as fingerling releases every three years, however, only a small target fishery developed, and few anglers benefited from the program. The slow growth rates combined with the frequent winterkills greatly limit the potential to develop a successful fishery. Smallmouth and largemouth bass have been stocked in small numbers in an effort to jump start the population following winter kills. IDFG will not pursue an active stocking program in Mud Lake until water management is refined to the point where winterkills are uncommon events. Efforts should be made to work with the irrigation community to see if changes can be made that would benefit the fishery.

Objectives and Programs

1. Objective: Restore mountain whitefish distribution and abundance in Big Lost River drainage to levels sufficient to ensure long-term population viability and provide a sport fishery.

   Program: Work collaboratively with partner agencies, water users, and conservation groups to restore fish passage, install diversion screens, and minimize habitat loss associated with dewatering.

   Program: Collect life history, ecology and population abundance and trend information on mountain whitefish to better understand factors limiting population.

2. Objective: Maintain and improve angling opportunities in the Big Lost River drainage.

   Program: Continue stocking of fine-spotted Yellowstone cutthroat trout.

   Program: Work with partner agencies, landowners, and conservation groups to secure perpetual public

3. Objective: Provide a variety of fishing opportunities in the Sinks drainages for native and nonnative game fish ranging from quality to harvest oriented, remote to highly accessible fishing.

   Program: Protect isolated cutthroat trout populations and identify opportunities to restore additional cutthroat trout populations.

   Program: Continue to manage many small streams in the Sinks drainages for brook trout and rainbow trout.

   Program: Manage Paul Reservoir and Birch Creek as high catch rate fisheries supported by hatchery supplementation.

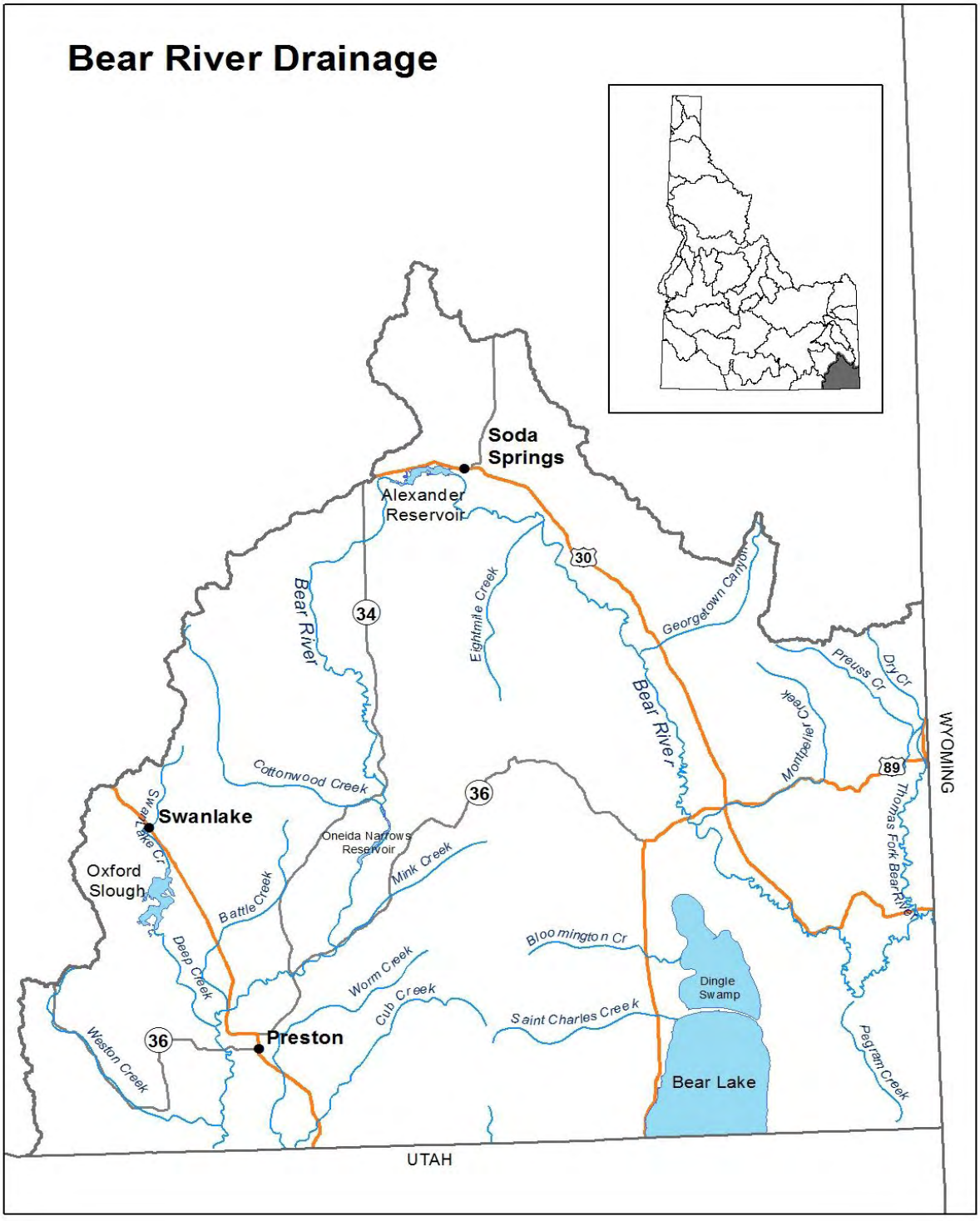
4. Objective: Effectively use hatchery and wild trout to provide diverse and satisfactory fishing opportunities in alpine lakes.

   Program: Complete regional alpine lakes management plan and ensure consistency with statewide plan upon completion.

Program: Discontinue stocking mountain lakes where natural production is sufficient to meet catch rate objectives.

DRAINAGE: Sinks - Big and Little Lost Rivers, Birch, Medicine Lodge and Camas Creeks					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Big Lost River within Idaho National al Laboratory (INL) property	5/	Coldwater	none	None	All access closed by INL. System annually de-watered.
Big Lost River from INL boundary to Moore Diversion	22/	Coldwater	none	General	System de-watered regularly in recent years. Good fishery potential during sustained wet years.
Big Lost River from Moore Diversion to Mackay Dam	20/	Coldwater	Rainbow trout Brook trout Whitefish	Wild Conservation	Maintain wild trout populations. Secure public access. Closed to harvest. Catch-and-release, only.
Mackay Reservoir	/1,000	Coldwater	Rainbow trout Kokanee	Put and take General	Put-and-take fishery for rainbow trout.
Big Lost River from Mackay Reservoir to Chilly Bridge	15/	Coldwater	Rainbow trout Brook trout Whitefish	General Conservation	Seasonally de-watered through diversions and natural sinks. Closed to harvest. Catch-and-release only
Big Lost River from Chilly Bridge upstream to West Fork	45/	Coldwater	Rainbow trout Brook trout Cutthroat Whitefish	General Conservation	Evaluate natural reproduction of cutthroat trout and use supplementation accordingly. Closed to harvest. Catch-and-release only
Big Lost River tributaries: including North Fork, West Fork, Upper East Fork, Wildhorse, and Summit creeks	232/	Coldwater	Rainbow trout Brook trout Cutthroat trout Whitefish	General Conservation	Use supplemental put-and-take stocking in areas of high use. Evaluate success of cutthroat trout supplementation. Closed to harvest. Catch-and-release only
Little Lost River and tributaries	110/	Coldwater	Rainbow trout Brook trout Bull trout	Wild General Conservation	Manage bull trout population under statewide no-harvest regulation. Cooperatively monitor bull trout populations. Encourage brook trout harvest. Closed to harvest. Catch-and-release only
Birch Creek and tributaries	32/	Coldwater	Rainbow trout Brook trout	Put and take	Put-and-take rainbow trout fishery to supplement wild trout populations.

Medicine Lodge Creek and tributaries	64/	Coldwater	Rainbow trout Brook trout Cutthroat trout	Wild General Conservation	Maintain populations of wild trout.
Mud Lake	/7,000	Mixed	Yellow perch	General	Provide warmwater fishery primarily supported by perch. Work with irrigators to improve capacity of Mud Lake to support fish
Camas National Wildlife Refuge (Camas Creek and ponds)	9/600	Warmwater	Yellow perch	Closed	Closed for waterfowl sanctuary.
Remainder of Camas Creek and tributaries	70/	Coldwater	Rainbow trout Brook trout	General	Identify opportunities to restore native cutthroat to isolated streams. Implement with public support.
Beaver Creek from mouth to Spencer	22/	Coldwater	Rainbow trout Brook trout Cutthroat trout	Wild trout Conservation	De-watered seasonally.
Beaver Creek and tributaries above Spencer	18/	Coldwater	Rainbow trout Brook trout Cutthroat trout	Wild Trout Conservation	Evaluate natural reproduction and wild trout management
Alpine Lakes	/290	Coldwater	Rainbow trout Cutthroat trout Brook trout Golden trout Grayling	General	Maintain present fishery by use of hatchery fry where needed to achieve at least 1.0 fish/hr. Adjust stocking rates and frequency to correspond to lake size, productivity, natural production and public use. Discontinue stocking where natural reproduction is sufficient to produce catch rates of at least 1.0 fish/hr.


Bear River Drainage
Soda Springs
Alexander Reservoir
Bear River
34
Eightmile Creek
30
Georgetown Canyon
Bear River
Preuss Cr
Dry Cr
Montpelier Creek
89
Thomas Fork Bear River
WYOMING
Cottonwood Creek
36
Swanlake
Swanlake Cr
Oneida Narrows Reservoir
Mink Creek
Oxford Slough
Battle Creek
Deep Creek
Bloomington Cr
Worm Creek
Cub Creek
Saint Charles Creek
Dingle Swamp
Weston Creek
36
Preston
Bear Lake
Pegram Creek
UTAH

34. BEAR RIVER AND TRIBUTARIES

Overview

The Bear River and its major tributaries comprise 524 river and stream miles. There are a number of irrigation storage reservoirs in the drainage. Bear Lake, the largest lake in the drainage, covers 70,000 surface acres of which 32,000 are in Idaho and 38,000 are in Utah. Fish species found in this reach include the following native species: mountain whitefish, Bear Lake whitefish, Bonneville cisco, Bonneville whitefish, Bonneville cutthroat trout, Utah chub, longnose dace, speckled dace, redside shiner, Utah sucker, Bluehead sucker, mountain sucker, Paiute sculpin, mottled sculpin, leatherside chub, and Bear Lake sculpin; and the following introduced species: rainbow trout, brown trout, brook trout, kokanee salmon, green sunfish, bluegill, smallmouth bass, largemouth bass, black crappie, white crappie, yellow perch, walleye, common carp, and channel catfish.

Habitat for trout in the Bear River is marginal due to high, turbid irrigation flows in summer and marginal flows during winter when water is being stored in Bear Lake. Power facilities have been detrimental to fishing because reservoirs associated with them have rapid turnover, and block spawning migrations. The Bear River receives the heaviest fishing pressure in the tail waters of Oneida dam and in the Black Canyon area. Sediments settle out in these two reservoirs so that water transparency is relatively high in the tailrace reaches. About 1/3 of the flow in the Black Canyon comes from springs. A new minimum flow of 63 cfs below Grace Dam adds to these spring flows. The only time discharges could be less than 63 cfs is during drought years after releases from Bear Lake have been curtailed and natural flow is insufficient to meet irrigation demand at the Last Chance Diversion upriver from Grace Dam. Harvest in these areas is primarily hatchery rainbow trout. There is no legal harvest of cutthroat trout in the mainstem Bear River. IDFG has stocked walleye into Oneida Reservoir since 1974. Walleye disperse both up and downriver and have created locally popular fisheries, especially during spawning migrations. IDFG would consider terminating walleye stocking in this reservoir when and if walleye inhibit restoration of native Bonneville cutthroat trout and after discussion with the angling public.

Smallmouth bass were introduced into the Bear River in the tail-water reach of Alexander Dam in 1990. Bass dispersed downriver and established populations in Oneida Reservoir and the adjacent reaches of the Bear River. Smallmouth bass now contribute regularly to the reservoir and river fisheries.

Brown trout were stocked in several reaches of the Bear River up until 1998. Stocking was terminated to assist with restoration of Bonneville cutthroat trout. Brown trout were most successful as a put-and-grow fishery downriver from Oneida Dam. A residual population of naturally spawning brown trout remains in this reach, but at a much lower density than before stocking was ended.

Bonneville cutthroat is the only native trout in the Bear River system. Abundance of this species is low in the Bear River and in many of its tributaries. When the Federal Energy Regulatory Commission issued a new federal license in 2003 for PacifiCorp to continue operating the Bear River Hydroelectric Project, they required PacifiCorp to fund numerous projects to aid in the restoration of Bonneville cutthroat trout. Projects implemented so far include collection and analysis of trout from tributaries and reaches of the mainstem Bear River for genetic analysis, radio telemetry of fluvial Bonneville cutthroat trout, numerous irrigation screens that prevent entrainment losses, conservation easements, establishment of a conservation hatchery for native cutthroat trout, and many riparian fencing projects. One of the PacifiCorp projects, Cove

Hydroelectric Project, was decommissioned to restore 1.3 miles of the Bear River and to connect the Bear River from Oneida Dam upriver to Grace Dam.

Main tributaries to the Bear River include the Malad and Cub rivers, Thomas Fork, Bloomington, Paris, Montpelier, Georgetown, Stauffer, Skinner, Eight-Mile, Whiskey, Trout, Williams, Cottonwood and Mink creeks. Although most of the Cub River is in Idaho, Cub River enters the Bear River in Utah where water and substrate quality are marginal for trout and most of the fish present are non-game species, channel catfish, and walleye.

St. Charles Creek is a major spawning stream for cutthroat trout from Bear Lake. Many of the trout in St. Charles Creek are lost into irrigation diversions. In recent years the Department, working in coordination with a multi-agency and private landowner/water user working group has cost shared with USFWS grants to install fish screens on major diversions. This work is ongoing. Also, the USFWS constructed dikes in the Bear Lake Refuge to isolate a branch of St. Charles Creek to prevent cutthroat trout from being lost into Mud Lake and the Bear River. To reduce the potential for hybridization with cutthroat trout, the Department is considering a rotenone renovation of St. Charles Creek to remove all trout and then restock with native cutthroat trout from Swan Creek, a Bear Lake tributary in Utah. In addition, chemical renovation would greatly reduce or remove brook trout which compete with native cutthroat trout and likely prey on cutthroat eggs and fry.

Fish Haven Creek should also be a significant spawning tributary to Bear Lake, but most, and frequently all, of the water is diverted for irrigation through much of the summer. Additionally, the lower 150 feet of Fish Haven Creek has been confined within a covered cement flume. That culvert was removed in 2009 and all of the irrigation ditches were screened. Redd surveys completed in 2010 showed that over 200 cutthroat from the lake spawned in the tributary. Moreover, recent gillnet data, creel results, and adult trout collections at Utah's Swan Creek spawning trap show increases in naturally produced populations. Over the next 5-years, both state management agencies will be monitoring the trends in natural production to determine if reductions in hatchery stocking can be implemented without negatively impacting the fishery.

Bonneville cutthroat trout was petitioned for listing under the Endangered Species Act in February 1998. The USFWS determined that the petition was not warranted in part because of the new information that genetically pure cutthroat were present in numerous tributaries of the Bear River and because of numerous planned projects to improve conditions for Bonneville cutthroat trout.

Headwater tributaries of the Thomas Fork contain populations of Bonneville cutthroat trout that were identified in 1979 and 1981. From 1993 through 2005 Bonneville cutthroat trout were documented in approximately 65% of Bear River tributaries. The upper ten miles of the Cub River contain wild cutthroat trout and receives heavy fishing pressure. Wild cutthroat trout harvest decreased with initiation of a two-cutthroat trout limit on streams and a two-cutthroat trout over 16-inches limit on rivers in the early 1990's. No-harvest rules for Bonneville cutthroat trout were implemented for the mainstem Bear River in 2006 and on all the Bear River tributaries in 2013.

Most tributaries to the Bear River support populations of self-sustaining cutthroat, brook, brown and/or rainbow trout. Highest concentrations of trout are found in the middle and upstream sections. Trout in the lower sections are affected by low summer flows and high temperatures resulting from irrigation withdrawal and riparian degradation. Catchable size sterile rainbow trout are planted in accessible streams where habitat conditions and returns to anglers are favorable and there is a recent history of fish stocking. Beginning in 1999, the Department phased in

stocking of sterile rainbow trout. Since 2001, all rainbow trout stocked in the Bear River system had been treated to induce sterility.

A number of irrigation reservoirs support gamefish populations in the Bear River drainage and if sufficient water remains at the end of an irrigation season excellent growth and overwinter survival occur. Most are stocked with hatchery rainbow trout. In addition, several also contain spiny-rayed game fish such as bluegill, yellow perch and largemouth bass. These reservoirs provide the majority of fishing opportunity in the Bear River drainage. Irrigation storage reservoirs in the Bear River basin include Condie, Crowthers, Foster, Glendale, Johnson, Lamont, Little Valley, Montpelier, Oxford, Pleasantview, Treasureton, Twin Lakes, Weston, and Winder reservoirs. St. John Reservoir near Malad has been drained since about 2002 because the dam leaks.

Condie, Foster, Glendale, Johnson, Lamont, Twin Lakes, Weston and Winder reservoirs contain largemouth bass. All these reservoirs except Devil Creek Reservoir contain warmwater prey species of bluegill, yellow perch or crappie. In recent years, largemouth bass were illegally stocked in Devil Creek and Treasureton reservoirs.

Condie Reservoir is managed for trophy bass, with a 20-inch minimum size limit. Yellow perch were illegally stocked in Condie Reservoir in the late 1980s, which decreased bluegill growth. IDFG stocked tiger muskie at Condie Reservoir in 1995, 1997, and 2000 to increase predation on perch and provide an additional trophy species. In a 2003 lowland lake survey, it appeared that the abundance of catchable size bass and bluegill had decreased. Possible causes considered were decreasing nutrients in the inflow as local dairies reduced the flow of effluents into local streams and direct predation by large tiger muskie. Tiger muskies have not been restocked at Condie Reservoir. Recent bass surveys show a balanced population of quality sized bass in Condie Reservoir.

Quality bass rules are in effect at Glendale and Weston reservoirs. Due to slow growth rates of bass in southeast Idaho, some protection of bass 12 to 16 inches long is necessary to maintain populations of quality size bass that can be enjoyed on a catch-and-release basis.

Trophy trout rules have been in effect at Treasureton Reservoir since 2008. This water is very popular with catch-and-release anglers who enjoy the opportunity to catch large trout. In 2010, anglers reported catching fish in excess of 26 inches. In a fall 2010 electrofishing survey, 25% of the trout caught exceeded 24 inches total length.

Bear Lake historically contained cutthroat trout that matured at a large size, some exceeding 20 pounds. Due to over fishing, irrigation diversions, and other factors, this population was reduced to a low level as early as the 1930s. As a restoration measure, Utah Department of Natural Resources takes eggs from mature fish which ascend Swan Creek, rears young fish in a hatchery for one year, and then releases them back into Bear Lake. IDFG is protecting and restoring habitat in St. Charles Creek for Bear Lakes Bonneville cutthroat trout spawners. Three fish screens have been constructed and approximately two miles of heavily grazed stream banks have been protected with riparian corridor fences. IDFG stocks 17,500 lake trout fingerlings annually. Utah and Idaho agencies agreed to this program since very few naturally produced lake trout occur in the lake. Due to concern that stocked lake trout might eventually form self-sustaining populations and negatively impact the lake's four endemic species, the Department developed a technique to produce sterile lake trout that would be stocked into Bear Lake. The process took three annual spawning seasons from 2002 through 2004, the first two, mostly

unsuccessful years using temperature shock to the eggs and the third and successful year using pressure treatment.

As mitigation for damage caused to Bear Lake fisheries by diverting Bear River water into Bear Lake, and by the sedimentation associated with failures of the causeway dike in 1993, Utah Power and Light connected the Big Creek Branch of St. Charles Creek to Bear Lake in 1995. This was intended to increase the spawning and rearing habitat for Bear Lake cutthroat trout and reduce loss of juvenile cutthroat trout to irrigation diversions. A graduate student study in 2001 documented that cutthroat trout migrating into the Big Creek branch of St. Charles Creek would then escape through into Mud Lake and then into the Bear River though breaches in the stream channel. These fish and their spawn were then lost from the Bear Lake system. In 2004 through 2006, the Fish and Wildlife Service closed the breaches. This effort was part of the work initiated through the St. Charles and Fish Haven watersheds working group that was initiated in 2002.
This working group has resulted in better working relations between agencies and irrigators, more consideration for the needs of fish, and to construction of a fish screen on the North Field Diversion Ditch.

In addition to Bonneville cutthroat trout, Bear Lake contains four endemic fish species. These are Bear Lake whitefish, Bonneville whitefish, Bonneville cisco, and Bear Lake sculpin. Monitoring programs, harvest goals, and management priorities for Bear Lake are included in an interagency management plan for Bear Lake.

Objectives and Programs

1. Objective: Increase number of wild Bonneville cutthroat spawners and fry production in St. Charles Creek.

   Program: Build fish screens on all significant St. Charles Creek diversions.

   Program: Seek ways to divert less water from St. Charles Creek.

   Program: Reduce numbers of brook and rainbow trout in St. Charles Creek through chemical renovation or by active removal and liberal fishing limits.

2. Objective: Improve habitat for Bonneville cutthroat trout.

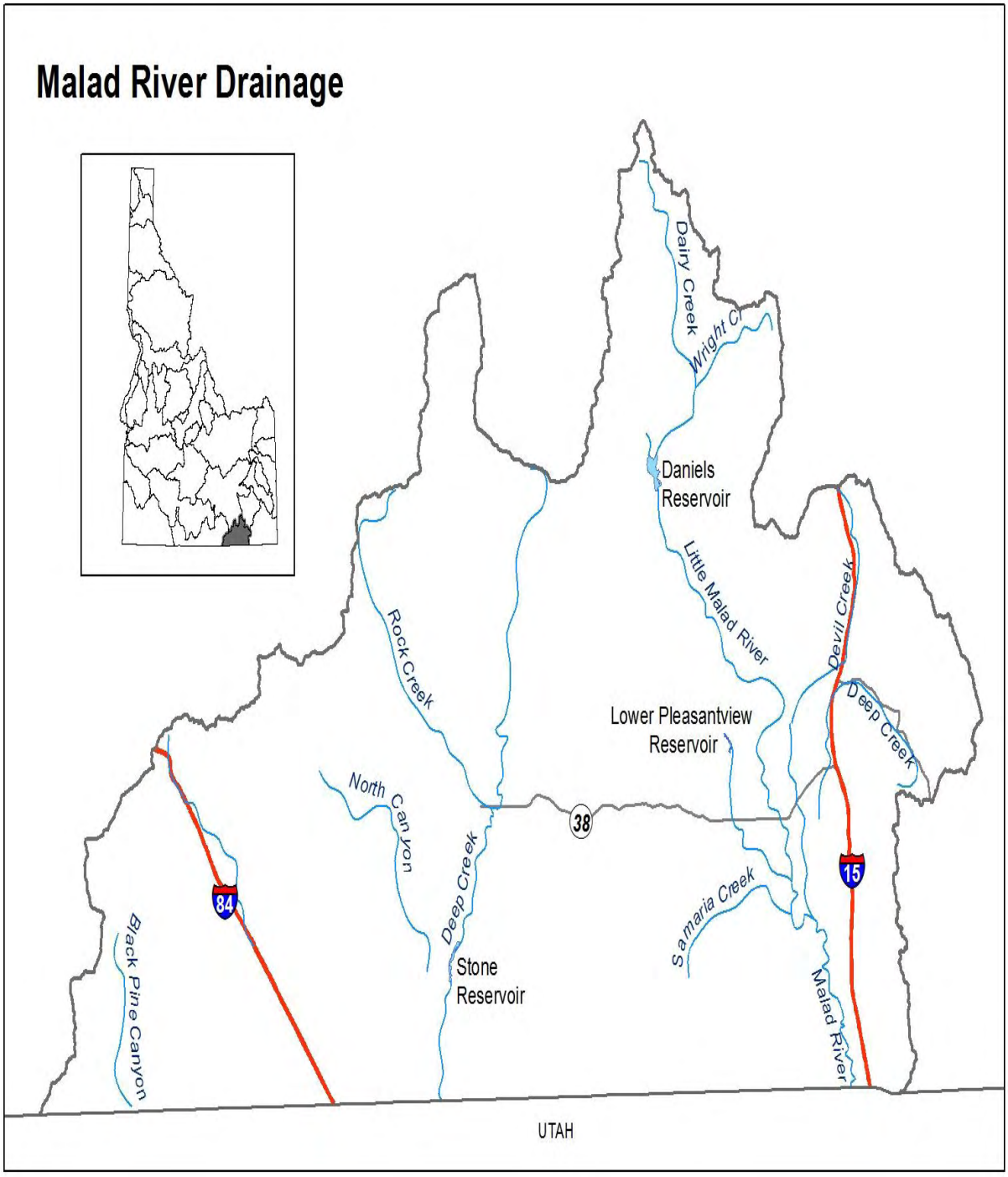
   Program: Cooperate with PacifiCorp and other interested parties to implement and monitor FERC license conditions to protect and enhance Bonneville cutthroat trout in the Bear River system.

   Program: Seek participants in NRCS Continuous Signup Conservation Reserve Program to protect stream banks from impacts of livestock grazing.

Drainage: Bear River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Bear River from Utah state line upstream to Highway 91	30/	Mixed	Channel catfish Brown trout Walleye Cutthroat trout	General Conservation	Seek opportunities to improve spawning habitat for Bonneville cutthroat trout.
Bear River from Highway 91 to Oneida Dam	2.5/	Coldwater	Cutthroat trout Rainbow trout Walleye Mountain whitefish Brown trout Smallmouth bass	Conservation General	Seek opportunities to improve conditions for native Bonneville cutthroat trout. Maintain the high-use fishery through sterile rainbow trout stocking and (or) native cutthroat trout supplementation.
Oneida Reservoir	/500	Mixed	Yellow perch Walleye Smallmouth bass	General	Assess angler support for removing limits on walleye and or for terminating the walleye stocking program
Bear River from Oneida Narrows Reservoir headwaters to Grace Dam.	31/	Mixed	Cutthroat trout Rainbow trout Walleye Mountain whitefish Brown trout Smallmouth bass	Conservation General	Work with landowners and water users on tributaries to restore native cutthroat populations. Assess angler support for removing limits on walleye and smallmouth bass to reduce potential negative interactions with cutthroat trout. Monitor Bonneville cutthroat trout populations in the river and primary tributaries to determine the success of the conservation hatchery and habitat restoration programs.
Condie Reservoir	/117	Mixed	Rainbow trout Yellow perch Bluegill Largemouth bass Tiger muskie	General Trophy	Monitor community structure of largemouth bass, bluegill and yellow perch once tiger muskie decline in the fish community.
Foster Reservoir	/146	Mixed	Rainbow trout Largemouth bass Bluegill Crappie Yellow perch	General	Evaluate percentage return-to -creel at least once this planning period, and document status of warmwater fish community now that the irrigation company leaves more water in the reservoir at the end of the irrigation season.
Glendale Reservoir	/230	Mixed	Rainbow trout Bluegill Crappie Largemouth bass Yellow Perch	Put-and-take General Quality	Evaluate percentage return-to-creel at least once this planning period. Document status of crappie populations.

Johnson Reservoir	/50	Mixed	Rainbow trout Bluegill Yellow perch Largemouth bass Tiger muskie	Put-and-take General	Evaluate bass supplementation strategy to improve bluegill fishery.
Lamont Reservoir	/92	Mixed	Rainbow trout Largemouth bass Bluegill Yellow perch Tiger muskie	Put-and-take General	Continue to manage for harvest opportunities.
Oxford Reservoir	/20	Coldwater	Rainbow trout	General	Determine rainbow trout growth rate and over winter survival.
Treasureton Reservoir	/143	Coldwater	Rainbow trout	Quality	Evaluate the impacts of the new trophy trout rule. Consider renovating the reservoir to eliminate illegally introduced largemouth bass.
Twin Lakes Reservoir	/446	Mixed	Rainbow trout Largemouth bass Bluegill Yellow perch	Put-and-take General	Continue to manage for harvest opportunities.
Weston Reservoir	/112	Mixed	Rainbow trout Yellow perch Largemouth bass	General Quality	Monitor bass and perch populations. Work with private landowners on a long-term access agreement.
Winder Reservoir	/94	Mixed	Rainbow trout Largemouth bass Bluegill Yellow perch	Put-and-take General	Continue providing diverse, harvest-oriented fishing opportunities. Supplement as necessary to maintain fishery.
Bear River from Grace Dam, to Soda Point Dam	5/	Mixed	Rainbow trout Mountain whitefish Smallmouth bass Cutthroat trout	Put-and-take General Conservation	Evaluate fishery and monitor minimum flow.
Alexander Reservoir	/1,165	Mixed	Cutthroat trout Yellow perch Channel catfish Rainbow trout	General	Evaluate the channel catfish stocking program. Determine if channel catfish are reproducing.
Bear River from Alexander Reservoir to Bear Lake	79/	Coldwater	Rainbow trout Mountain whitefish Cutthroat trout	Put-and-take General Conservation	Reduce turbidity. Cooperate with PacifiCorp and others on fishery mitigation and in NRCS projects to achieve this goal. Develop an appropriate stock of native cutthroat trout for supplementation through the conservation hatchery program.
Montpelier Reservoir	/120	Coldwater	Rainbow trout Cutthroat trout Yellow Perch	Put-and-take General	Evaluate impacts of stocking tiger muskellunge to reduce overpopulation of yellow perch.
Bloomington Lake	/10	Coldwater	Cutthroat trout	General	Supplement fish population as necessary with local fish sources.
Little Valley Reservoir	/60	Coldwater	Rainbow trout Cutthroat trout	General	Supplement fish population, when necessary to maintain fishing opportunities for public.
Cub River	15/	Coldwater	Cutthroat trout Rainbow trout	Quality Put-and-take	Stock rainbow trout only at Willow Flats camp ground

Other Bear River tributaries that are stocked with rainbow trout catchables: Trout, Whiskey, Eight Mile, Georgetown, Paris and Bloomington.	44/	Coldwater	Rainbow trout Brook trout Brown trout Cutthroat trout	Put-and-take General Wild	Stock rainbow trout near established campgrounds. Encourage harvest of brook and brown trout. Work with private landowners on upper Trout and Whiskey creeks to restore habitat and Bonneville cutthroat trout.
All other Bear River tributaries (not stocked) and are managed for wild cutthroat trout with some feral brown, rainbow and brook trout.	44/	Coldwater	Cutthroat trout Brook trout Brown trout Rainbow trout	Wild General	Emphasize native fish management and habitat restoration efforts. Implement monitoring program identified in the Idaho Conservation plan.
St. Charles Creek.	20/	Coldwater	Cutthroat trout Brook trout Rainbow trout	Conservation General	Continue to improve habitat and fish passage conditions in St. Charles Creek. Look for ways to increase natural spawning success, and to minimize losses into irrigation canals. Selectively remove rainbow and brook trout. Allow harvest of all trout species after spawning season is over to encourage removal of rainbow and hybrids and to encourage support for this program. Consider chemical treatment to reduce non-native trout populations.
Bear Lake	/70,000	Coldwater	Cutthroat trout Lake trout Bonneville cisco Bear Lake whitefish Bonneville whitefish	Quality	Coordinate with Utah DWR to optimize conditions for native species. Stock sterile lake trout to provide trophy fishery. Continue monitoring programs. Implement interagency Bear Lake Management Plan.
Fish Haven Creek	10/	Coldwater	Brook trout Cutthroat trout	Conservation	Monitor natural production to determine contribution to the lake population.
Thomas Fork Creek		Coldwater	Cutthroat trout	Conservation	Participate in USFS and NRCS habitat improvement programs. .
Preuss Creek		Coldwater	Cutthroat trout	Conservation	Emphasize native fish management and habitat restoration efforts.
Dry Creek		Coldwater	Cutthroat trout	Conservation	Emphasize native fish management and habitat restoration efforts.
Giraffe Creek		Coldwater	Cutthroat trout	Conservation	Emphasize native fish management and habitat restoration efforts.
Bear River from Stewart Dam to Wyoming border		Coldwater	Cutthroat trout Mountain whitefish Brown trout	Conservation General	Monitor cutthroat trout population.


Malad River Drainage
Dairy Creek
Wright Cr
Daniels
Reservoir
Little Malad River
Devil Creek
Deep Creek
Rock Creek
Lower Pleasantview
Reservoir
North Canyon
Deep Creek
38
84
15
Samaria Creek
Malad River
Stone
Reservoir
Black Pine Canyon
UTAH

35. MALAD RIVER DRAINAGE

Overview

Streams in the Malad River drainage total 83 miles and cover 86 surface acres. Fish species found in this reach include the following native species: Bonneville cutthroat trout, Utah chub, longnose dace, speckled dace, Utah sucker, mountain sucker, and mottled sculpin; and the following introduced species: rainbow trout, common carp, brown bullhead, channel catfish, green sunfish, and largemouth bass.

The Malad River has excessive suspended sediment, mostly silt substrate, and eroded banks. Irrigation withdrawals in summer and storage in winter limit flows. These conditions inhibit restoration of native fluvial trout fisheries. Most fishing in the Malad River drainage occurs within Daniels, Deep Creek, Devil Creek, Crowthers, and Stone reservoirs. Stream surveys in the 1990s and 2000 documented the presence of Bonneville cutthroat trout in First, Second, and Third creeks that are tributaries to Deep Creek Reservoir east of Malad City. Efforts may begin in this management cycle to manage Deep Creek Reservoir and its tributaries for native Bonneville cutthroat trout.

Daniels Reservoir has trophy trout rules, i.e., a limit of two trout, which must be at least 20 inches long and use of bait is prohibited. In 1994, anglers fished an estimated 29,555 hours (80 h/acre) on 375 acre Daniels Reservoir. Boat and tube anglers accounted for 78% of the fishing effort and 74% of the catch. Catch rates averaged 0.7 trout/hour. Anglers harvested an estimated thirty-nine trout or 0.1% of their catch. Harvested trout averaged 20.3 inches. May through September were the most heavily fished months; however, best catch rates occurred early in the ice-fishing season, December when anglers averaged 0.7 trout/h. If the ice-fishing season roughly corresponded to the months of January, February, March, and December, then ice fishing would have accounted for 18% of effort and 27% of the catch for 1994. Natural reproduction of trout occurs in the Little Malad Spring that flows into Daniels Reservoir.

The Deep Creek Irrigation Company drained Deep Creek Reservoir in 2004 to make needed repairs to their outlet structure. This eliminated a fishery for largemouth bass that had begun with an illegal introduction. No bass have been restocked and the trout fishery appears more robust because of that change. Tributaries to Deep Creek Reservoir contain genetically pure “southern” Bonneville cutthroat trout. This is the northern most location where the southern Bonneville has been documented. IDFG, in coordination with the Caribou National Forest, will take measures toward protecting stream habitat and increasing use of Deep Creek Reservoir by cutthroat trout.

Devil Creek Reservoir (142 acres) is a popular hatchery-trout and kokanee fishery less than a mile from, and within view of Interstate Highway 15. Non-game fish over populated this reservoir in the late 1990s. Department personnel renovated Devil Creek Reservoir with rotenone in 1999 and restocked with rainbow trout and kokanee in 2000. Crowthers and Pleasantview (47 acres) Reservoirs are managed for put-and-take trout. St. Johns Reservoir (48 acres) was permanently drained in 2003 when a significant leak in the dam occurred. This was a loss of a popular fishery for bluegill, yellow perch, crappie and largemouth bass.

Stone Reservoir is located on Deep Creek in Curlew Valley approximately six miles north of Snowville, Utah. It is stocked with rainbow trout annually and has self-sustaining populations of largemouth bass and crappie.

Objectives and Programs

1. Objective: Maintain the trophy trout fishery at Daniels Reservoir. Consider stocking Bonneville cutthroat trout.

   Program: Obtain Bonneville cutthroat trout eggs from First, Second and Third creeks in the Deep Creek drainage. Rear progeny for brood stock and produce young for Daniels and Deep Creek reservoirs.

   Program: Seek improved riparian and stream bed conditions on the Little Malad Spring.

2. Objective: Improve fish passage for Bonneville cutthroat in tributaries of Deep Creek Reservoir.

   Program: Alter the outlets of road culverts to decrease difference in water height below and within the culverts.

   Program: Capture Bonneville cutthroat trout from First, Second and Third creeks in the Deep Creek drainage and rear them to brood stock size. Rear fingerlings and stock them into First, Second and Third creeks and into Deep Creek and Daniels Reservoirs.

3. Objective: Restore the quality of the Crowthers Reservoir rainbow trout fishery.

4. Objective: Improve the quality of the game fish fishery in Stone (Curlew Valley) Reservoir.

   Program: Work with the local irrigation district to see if common carp can be eliminated in the reservoir. If necessary, consider using triploid grass carp to control vegetation.

Drainage: Malad River					
Water	**Miles/acre**	**Fishery**			**Management Direction**
		Type	Species Present	Management	
Malad River from Utah border upstream to Malad City	15/	Warmwater	Brown Bullhead Channel catfish Green sunfish	General	Improve riparian conditions
Malad River tributaries	65/	Coldwater	Cutthroat trout	Wild	Improve riparian conditions and inspect culverts to ensure that there are no problems for upstream passage.
Daniels Reservoir	/375	Coldwater	Bonneville cutthroat trout Rainbow trout	Trophy	Add Bonneville cutthroat to the stocking program when available. Consider genetic risk and strain for stocked rainbow trout.
Deep Creek Reservoir	/183	Coldwater	Bonneville cutthroat trout Rainbow trout	General	Add Bonneville cutthroat to the stocking program when available. Consider genetic risk and strain for stocked rainbow trout.
Devils Creek Reservoir	/142	Mixed	Bonneville cutthroat trout Rainbow trout Kokanee Largemouth bass	General	Evaluate kokanee stocking program. Monitor bass population.
Crowthers Reservoir	33	Coldwater	Rainbow trout	General	Monitor bass and bluegill populations.
St. Johns Reservoir	/48				Encourage Malad Valley Irrigation Company to rebuild the dam.