Draft Fisheries Management Plan
2019 – 2024

Idaho Department of Fish and Game

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

A Comprehensive Guide to Managing Idaho's Fisheries Resources

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FISHERIES MANAGEMENT PLAN 2019-2024

Suggested Citation:

Idaho Department of Fish and Game. 2019. Fisheries Management Plan 2019 – 2024. Boise, Idaho.

INTRODUCTION

The 2019 – 2024 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 this six-year period. The goals, objectives, and deliverables identified in this plan reflect the desires of anglers and other interested stakeholders regarding conservation and management of Idaho's aquatic resources to benefit the public. Furthermore, upon approval by the Department's Commission, this management plan establishes policy direction for Department personnel that serves to maintain 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 2019 through 2024. 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 provides an overview of the Department's fisheries programs on a statewide basis, and provides Department goals, objectives, and desired outcomes. Department policies and fisheries management programs are described. Results of the 2017 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 is organized by major drainages within the state. A narrative overview describes the location, gives pertinent statistics on use, land management activities, demographics, and describes the habitat and important fisheries in each drainage. Also included is the most recent information on fisheries management issues, challenges and opportunities, and general objectives for each major water body in the state. Objectives for smaller water bodies (e.g. alpine lakes, community ponds) are typically described at a programmatic level for each drainage. This section is intentionally broad and focused on fishery or conservation outcomes rather than specific angling regulations, and is intended to be adaptive to respond to changing biological, temporal, and social climates.

PART 1—STATEWIDE MANAGEMENT

Funding of Programs

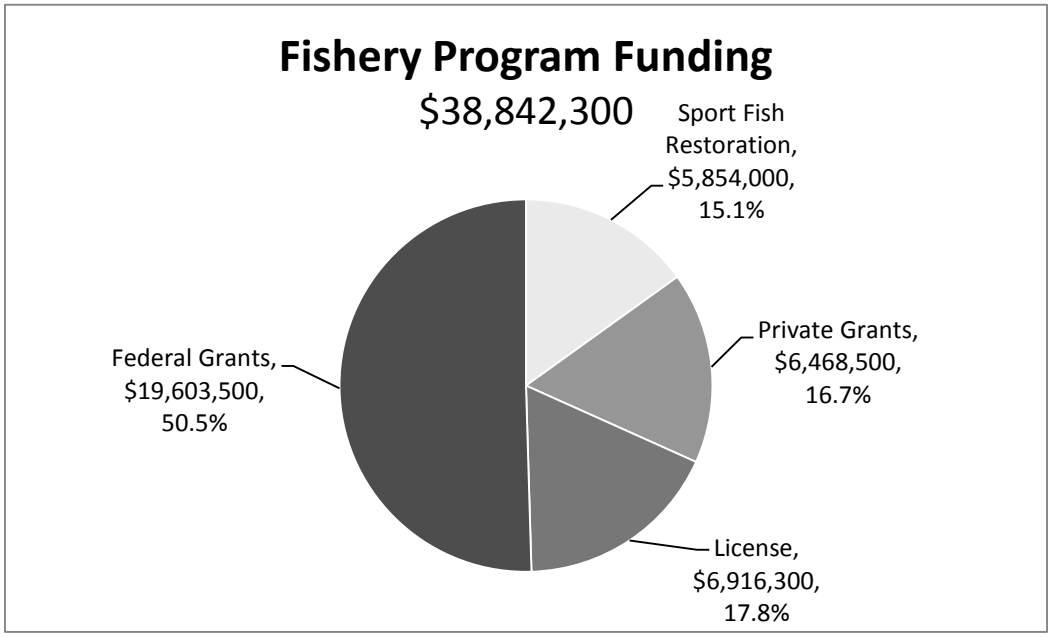
Budget preparation for Bureau of Fisheries activities of the Department will be within the guidelines of this plan as needed to support annual activities and objectives. The Bureau of Fisheries of the Department receives approximately $12.7 million annually from the sale of fishing licenses and through 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 $19.6 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 $6.5 million annually in non-federal or private grants to address specific mitigation and management 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 2013-2018 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 2013-2018 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).



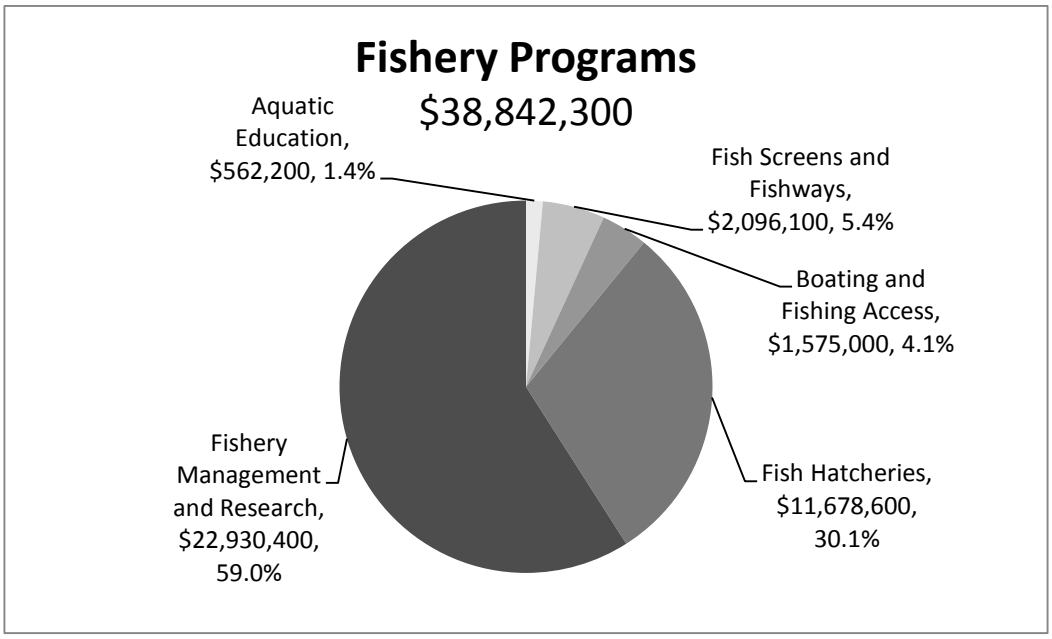


Figure 1. Fishery programs (top panel) and associated fund sources (bottom panel) for fiscal year 2017 for the Idaho Department of Fish and Game's Bureau of Fisheries.

74 Table 1. Summary of accomplishments by program from the 2013-2018 planning period.

Program	2013-2018 Goals	Accomplishments
Increase emphasis on habitat protection and enhancement.	Conduct habitat improvement projects.	Numerous stream fencing, diversion screening, and fish passage projects completed. Reconnected and restored flows in tributaries to mainstem rivers.
	Expand volunteer involvement.	Utilized volunteers and partners in nearly all habitat projects.
	Expand involvement in habitat restoration	Fish habitat program established in 2007with hiring of statewide coordinator and biologists in all but two regions. Hired an additional habitat program engineer in 2012. Completed a 10-year review of the 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. Restored hatchery trout stocking to South Fork Payette River.
	Evaluate potential new species introductions and stock if appropriate.	New or reestablished fisheries for White Sturgeon, Yellow Perch, kokanee, tiger muskie, and Channel Catfish. Introduced tiger trout into eight waters. Expanded 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.	The on-line Fishing Planner has a separate section identifying family fishing waters for each IDFG region. IDFG identifies 115 waterbodies as Family Fishing Friendly.
	Identify sites and initiate development of new fishing waters.	New community ponds with the intent of providing family friendly fishing were created or renovated in the Panhandle (Gene Day Pond), Clearwater (Campbell's Pond), Southwest (Terry Day Pond, Magnolia Pond, Esther Simplot Ponds I and II), Magic Valley (Riley Pond and Freedom Park Pond), Southeast (Wellness Pond), and Upper Snake (2nd Ryder Park Pond) regions.
Continue quality and trophy fishing opportunities.	Manage existing quality and trophy waters.	Produced 7 certified weight state records for 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 main stem rivers.
	Increase public awareness of wild trout values.	Collaborated with Western Native Trout Initiative to promote their "Chasing Natives" fishing campaign, raising awareness about wild trout conservation and fishing. Opened Bull Trout for catch/release records. Built informational signs and fish identification boards, produced and distributed stickers and brochures; press, social media, and TV coverage.
	Monitor status and establish conservation priorities for native trout.	Finalized a multi-state conservation agreement and strategy document for Redband Trout.

Program	2013-2018 Goals	Accomplishments
		Updated status assessment for Bonneville Cutthroat Trout. Participated in and led multi-state native Yellowstone Cutthroat Trout workgroup.
	Reduce potential impacts of hatchery trout on wild trout.	Maintained sterile (triploid) hatchery trout program. Stock sterile Lake Trout in Bear Lake and sterile Brook Trout in Henrys Lake. Developed sterile Westslope Cutthroat for alpine lake stocking programs to reduced conflicts with wild native trout.
	Implement statewide wild trout management program.	Ongoing program to integrate native trout conservation plans with appropriate harvest rules.
Continue emphasis on hatchery trout programs in streams, lakes, and reservoirs.	Designate, sign and publicize locations of put-and-take trout waters.	Signing completed to assist anglers wanting to fish on put-and-take streams. Stocking plans promoted on website and various print and social media.
		Overhauled public fish stocking records to Improve accuracy and timeliness on Department website.
	Concentrate stocking in accessible and heavily fished waters; increase the number and frequency of fish stockings.	Increased overall hatchery trout production to 2011Done in a majority of sites.
	Produce a consistently high quality hatchery product	Increased the average size of catchable hatchery trout in many waters to 12" to improve returns and angler satisfaction.
		Implemented stocking criteria and the Tag-You're It protocols to refine allocation and maximize benefits of hatchery fish.
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. Formalized wild fish monitoring network locations to evaluate management; established wild salmon and steelhead escapement goals.
	Emphasize management for natural production.	Completed 20-year supplementation research project; implement integrated broodstocks to reduce risk and supplement populations at select locations; releasing all natural Chinook that arrive at other hatchery weirs so they spawn naturally.
	Provide continued fisheries for surplus hatchery fish.	Conducted salmon and steelhead fishing seasons each year; developed new opportunities for fall Chinook and Coho Salmon.
	Intensify efforts to improve migration survival.	Department participating in collaborative science processes and in-season migration management forums. Implemented adult and smolt sampling programs at Lower Granite Dam.
Provide additional angling information to the public.	Continue production of maps, brochures and other information.	Reprinted Idaho Fishing and Boating Access Guide in 2013 and 2015.

Program	2013-2018 Goals	Accomplishments
	Finish developing Anglers Guide brochures on lowland lakes and reservoirs. Informative signs and brochures, and use of electronic media. Provide locations of put-and-take stocking sites with signs and maps and informing media. Improve angler ability to identify various fish and increase awareness of regulations.	Comprehensive overhaul of the Idaho Fishing Planner online tool. Newly launched version include detailed stocking information, access maps, and facility descriptions. Now allows anglers to filter waters by numerous criteria. Used IDFG Facebook pages to promote fishing opportunities, record fish, fishing-related articles, fish management activities. Started Instagram page to connect with anglers. Developed multiple YouTube videos on fishing topics Published monthly stocking schedules for each Region on the IDFG website. Stocking data now integrated to each waterbody on the Fishing Planner
Improve condition of boating and fishing access sites.	Continue program of acquiring lease, easement or fee title to key areas to provide angler access. Expend approximately $2,100,000 per year on maintenance or development of new fishing, handicap, docks and boating access facilities.	341 access sites are provided. New fishing and boating access sites were provided during 2013-2018: for all Regions: Panhandle (Gene Day Pond, Steamboat River, Spicer Pond, St. Maries River); Clearwater (Little Salmon River, Campbell's Pond); Southwest (Red Top Pond, Bent Lane-Boise River, Lower Payette River, Terry Day Pond, Magnolia Pond, Molenaar Pond, Esther Simplot Pond complex, Sawyers II); Magic Valley (Riley Pond and Freedom Park Pond); Southeast (Bannock (Wellness) Reservoir); Upper Snake (Teton River, Antelope Creek-Rothwell, Ryder Park Pond #2, Beaver Dick-Henrys Fork, Stone Bridge-Henrys Fork, Camas Creek); Salmon (Lemhi River Access). (Over $12 million spent during the past 6 years on renovations and operations at all our Fishing and Boating Access sites
Develop and promote programs to increase angler participation, with emphasis on recruiting and retaining new anglers.	Create outreach programs/products that increase awareness and excitement about fishing Conduct youth fishing clinics. IDFG will continue to foster cooperative educational programs such as Trout in the Classroom and Idaho Salmon and Steelhead Days.	Created catch-and-release record fish program and web page. Issued 98 catch/release records, 85 for game fish. Produced popular articles, news releases, blog posts, story maps to highlight various fisheries programs and fishing opportunities. "Take Me Fishing" trailer 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. Built database to store Take Me Fishing and Trout in Classroom participant data to evaluate angling recruitment of these events. *Idaho Salmon and Steelhead Days* and *Trout in the Classroom* held annually. Viable *Trout in the Classroom* programs established throughout the state with trout/steelhead eggs provided by IDFG. Aquaria now found in many elementary schools around state.

Program	2013-2018 Goals	Accomplishments
Simplify and standardize fishing rules.	Minimize changes to fishing rules to reduce confusion.	Maintained the 3-year cycle for fishing rules. Combined general rules for salmon and steelhead fishing in the rules book Only exceptions to standard rules and seasons are listed in the rules booklet.
	Increase signage, information, and other means of making rules more understandable.	Maps explaining rules updated for several river systems; numerous special signs developed, fish identification signs developed and placed near streams. Developed Spanish language signage to improve rule compliance for specific fisheries in Magic Valley and Southwest regions. Maintained standardized signage statewide. Developed interactive map for updates on salmon and steelhead fisheries.
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. Worked with partners to gather information on Green Suckers in the South Fork Snake River; sculpin species across Eastern Idaho. Included nongame species as eligible for catch/release state records. Issued 13 such records since 2016.
Develop or update 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.

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77 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	*Oncorhynchus mykiss gairdneri*	N					X			
		Brown Trout	*Salmo trutta*	I		X	X	X	X	X	X	
		Tiger trout	*Salmo trutta x Salvelinus fontinalis*	I					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	

		Species			Drainage[a]							
Common Name	**Family**	**Common Name**	**Scientific Name**	**Origin[b]**	**K**	**P**	**S**	**Pa**	**Sb**	**Sa**	**B**	**I**
		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]		
Pike	Esocidae	Northern Pike	*Esox lucius*	I		X	X					
		Tiger muskellunge (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			

		Species			Drainage[a]							
Common Name	**Family**	**Common Name**	**Scientific Name**	**Origin[b]**	**K**	**P**	**S**	**Pa**	**Sb**	**Sa**	**B**	**I**
		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			
		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			

		Species			Drainage[a]							
Common Name	**Family**	**Common Name**	**Scientific Name**	**Origin[b]**	**K**	**P**	**S**	**Pa**	**Sb**	**Sa**	**B**	**I**
		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			
		Cedar Sculpin	*Cottus schitsuumsh*	N		X	X					
		Torrent Sculpin	*Cottus rhotheus*	N	X	X	X	X	X			
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, generating an estimated $3.4 billion in economic activity. 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. At the time of this survey Idaho's population was 1,584,986 (2017 census 1,716,940) with one in five eligible people residing in Idaho purchasing a fishing license. Based on nearly 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 in 2011. Fishing generated over $548 million in statewide retail sales with an additional $14,962,572 for fishing licenses and permits (IDFG, unpublished data).

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.

The Department will continue to periodically conduct economic surveys of anglers to better understand and communicate the importance of good fisheries management to economic well-being at the statewide and local community levels. The next scheduled statewide survey will be in 2021 and will be designed to provide angler use and economic data comparable to previous surveys.

Fisheries Management in Idaho

Idaho offers incredible diversity in both the habitats and the fish species available to anglers. In much of the state the primary sport fish are native species including Redband 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 non-native game fish that also provide important sport fisheries include hatchery Rainbow Trout, 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.

Fisheries management activities will strive to meet the goals outlined in the Department's 2015 Strategic Plan and in particular the following: "Sustain Idaho's fish and wildlife, and the habitats upon which they depend," and "Meet the demand for hunting, fishing, trapping, and other wildlife recreation." A top priority is to manage populations so that sport fisheries are sustainable and demands are met through natural production of wild or native fish species where feasible. In areas where sufficient fish habitat exists but natural production is inadequate to meet angling demands, fish stocking may be used to increase angling opportunity. Hatchery put-grow-and-take and put-and-take programs are primarily used in heavily-fished, altered habitats to provide recreational fishing, with emphasis given to those areas where a high proportion of hatchery-produced fish are caught by anglers. IDFG uses a variety of harvest rules and fishing gear restrictions on different waters to provide a diversity of sport fishing opportunities. As feasible, new sport 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 conserve lamprey and meet recovery goals for wild steelhead, Chinook, and Sockeye salmon. 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. 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. Commercial fishing operations are regulated by the Department to minimize the potential for adverse effects on sensitive species and 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 Idaho Department of Fish and Game 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 2019-2024 Fisheries Management Plan describes how the Department will attain identified goals of 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. If anticipated or desired results are not attained, the Department will make adjustments as necessary.

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. 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.

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

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.

Public Involvement

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

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

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

Rules

13. 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.

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

Access

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

16. 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 fishing-related recreation.

17. IDFG will actively pursue acquiring easements, leases, or fee-title purchase and development of key areas to provide access for anglers and other recreationists. Priority will be given to easements collaboratively developed with partners and landowners, and in locations where lack of access to a fishery resource is a key limitation for anglers.

18. 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

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

20. Introduction of new 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 risks and benefits of new species introductions before recommending any new fish species for Idaho waters.

Cooperation with other Agencies

21. 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

22. Native American treaty rights will be recognized in the management of fish and wildlife. Treaty rights vary by tribe. Within the scope of their respective treaties IDFG will continue to coordinate with tribal governments and tribal fishery staff to; monitor fish populations, improve fish habitat, plan and implement fisheries, implement hatchery releases (where appropriate for fishery and conservation needs) and conduct necessary fishery enforcement activities.

Outfitting and Guiding

23. 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. IDFG will not recommend issuance of licenses or special use permits where impacts to fisheries resources are biologically unacceptable or the opportunity for non-guided public recreation is significantly impaired.

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

25. 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

26. 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.

27. IDFG will conduct effectiveness monitoring of aquatic habitat restoration actions to describe benefits and refine restoration strategies.

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

29. IDFG will participate in the review of proposed land and water use activities, policies, or programs that could result in significant loss of water quantity and degradation of fish habitat or populations, and will suggest strategies and techniques which avoid, minimize, and mitigate for project impacts.

30. IDFG will review and make recommendations on activities which have the potential to result in significant loss or degradation of aquatic habitats or important recreational fisheries. This will include recommending best management practices, development of protective work windows for in-stream projects, and development of ecologically-based flow recommendations that will maintain or improve fish habitat and fish populations.

31. IDFG will participate in the Federal Energy Regulatory Commission process for licensing hydroelectric projects to ensure that adverse effects to aquatic resources are avoided, minimized, or appropriately mitigated.

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

Mitigation

33. The Department will provide Technical Assistance to decision-making authorities and development interests when impacts to fish habitats or populations are likely. The following guidelines will be applied in efforts to avoid, minimize, and mitigate for impacts to fish habitats and populations.

    a. Recommendations for protection of habitats and populations through avoidance of impacts will be sought as the preferred alternative during project design and permitting phases. Modifications to project designs, locations, timings, etc. designed to avoid potential impacts are the preferred strategy.
    b. Recommendations for minimization of impacts to habitats and populations will be sought when goals of the proposal are not achievable without impacts. Modifications to projects which will reduce, but not eliminate impacts are the next

most preferred strategy. Subsequent mitigations for unavoidable impacts should then be addressed.

c. Recommendations for mitigations (replacements of habitats and fish lost to project affects) should be recommended after avoidance and minimization strategies are employed. In priority order mitigations will be:
    - Acquisition and improvement of alternate habitat will be sought for long-term losses caused by habitat elimination or degradation, as the primary strategy. This form of mitigation should be permanent and include assurances necessary for annual operations, maintenance, and monitoring.
    - Mitigation strategies to replace habitats and habitat values lost should be as nearly equivalent in kind (type of services provided by said habitat) and in location (proximity to habitat lost) as possible. Mitigations of habitat replacement off-site or out-of-kind are less preferable.
    - Mitigations in the form of off-site and out-of-kind efforts may take any form of fisheries restitution and enhancement projects deemed agreeable to all parties.
    - Mitigation as financial restitution for impacts is the lowest priority solution sought by the Department. This form of mitigation is the least likely to be directly translated into efforts to preserve, protect, and perpetuate fish and wildlife resources as is the Department mandate. Where applicable the Department will use standardized methods and established valuation of fish species to calculate appropriate compensation levels.
    - Replacement of fish populations impacted by development may be sought as deemed appropriate, or fish losses may be mitigated by the habitat principles discussed above.

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 and maintain 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 collaborate with a variety of county, state and federal agencies, tribes, non-governmental organizations, and private landowners to develop and implement projects. The majority of funding comes from federal or

private sources; staff also develop proposals and compete for additional funding through grants or other sources.

The hatcheries section raises sport 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 provide 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 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

Idaho's Native Trout and Salmon

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 European settlers to North America. 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 form of Redband Trout), Chinook Salmon, and sockeye salmon are also native Idaho trout. IDFG strives to protect and enhance native trout populations in numbers adequate to ensure long term conservation and 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, healthy 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.

The Department uses the term "native" to refer to indigenous trout species in Idaho drainages. However, there are other non-native game fish species such as introduced rainbow trout, brown trout, and Brook Trout that were stocked generations ago and have established self-sustaining populations. The Department refers to these as "wild" in origin. Some of these "wild" populations are extremely valuable to anglers, particularly introduced rainbow trout. IDFG is entrusted to protect Idaho's native species while also providing sport fishing opportunities to the public. While native trout species are given priority management attention by the Department, nearly all self-sustaining wild trout populations are managed with conservative harvest rules. 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 Cutthroat, Yellowstone Cutthroat, Bonneville Cutthroat, and Redband Trout have been petitioned for listing under the Endangered Species Act. Because the Department has effective conservation and management plans in place and can demonstrate that these species are secure, the U.S. Fish and Wildlife Service has consistently determined that federal protection is not warranted for these four native 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. Waters in the state that support native trout populations are typically managed with restrictive harvest rules such as reduced bag limits minimum sizes, or catch-and-release. In the case of Bull Trout, there is currently a statewide prohibition on harvest, but restoring limited harvest opportunity in select healthy populations remains an important objective for the Department. Over the years, IDFG has taken other significant 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 Department stocking programs in native trout drainages to significantly reduce hybridization with native trout; 4) discontinuing all stocking of rainbow trout in Panhandle Region streams and rivers managed for native Westslope Cutthroat Trout; 5) removing limits and promoting harvest of non-native Rainbow Trout in the South Fork Snake River to protect Yellowstone Cutthroat Trout; 6) implementing a number of non-native species suppression efforts across the state; and 7) establishing a fish genetics lab in 2002 to improve understanding of genetic status in native trout. For all the native trout species, IDFG has also expended considerable effort in monitoring the status and distribution 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

- Use only sterile hatchery trout for stocking programs in native trout habitats;

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

- Continue to enhance the statewide fish habitat program to restore and protect aquatic, riparian, and wetland habitat

- 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

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. 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. Key to the effectiveness of special regulations to protect native trout is the ability of anglers to accurately identify affected species of fish. IDFG research showed many anglers across Idaho had difficulty identifying species of trout, especially Cutthroat Trout, Brook Trout and Bull Trout (Lamansky et al. 2001). This research recommended that fish identification should receive additional emphasis as an aspect of angler education to help achieve wild trout fishery goals.

Cutthroat Trout

The three subspecies of native cutthroat trout in Idaho are the Westslope, Yellowstone, and Bonneville. 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.

IDFG has completed individual management plans for the conservation of Yellowstone Cutthroat Trout (IDFG 2007a), Bonneville Cutthroat Trout (Teuscher and Capurso 2007), and for Westslope Cutthroat Trout (IDFG 2013). Additionally, Idaho is party to multi-state agreements which coordinate and guide the conservation of these subspecies.

Redband Trout

Although taxonomic nomenclature for the wide varieties of Rainbow Trout remains unresolved, those distributed to the east of the Cascade Range and Sierra Nevada are considered Redband Trout, and show major genetic differences from coastal groups. Redband Trout are from three distinct major river basins: the upper Sacramento, Klamath, and Columbia Rivers (Currens et al. 2009), with genetic and morphological data supporting subspecies recognition (Muhlfeld et al. 2015). Redband Trout are widely distributed across 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 differentiating juveniles of these two life forms, Redband Trout in these drainages are included under the steelhead distribution. For management and conservation purposes and to avoid confusion with steelhead, the Department considers Redband Trout be defined as "populations above anthropogenic or natural barriers where the maintenance of an anadromous migratory trait is not currently possible" (IRCT 2016).

The distributions of many Redband Trout populations have been reduced as a result of habitat degradation, fragmentation, nonnative species introductions during the 20th century (Thurow et al. 2007, Muhlfeld et al. 2015). Despite their geographically broad distribution, Muhlfeld et al. (2015) estimated Redband Trout only occupy an estimated 41% of their historical stream distribution within Idaho. In the 1990's, Redband Trout in the Kootenai River Basin and the Snake River between Brownlee Reservoir and Shoshone Falls were separately petitioned for listing under the Endangered Species Act. The US Fish and Wildlife Service determined that listing was not warranted, but the petitions highlighted the need for better understanding of species status and improved conservation efforts.

Currently, several interagency plans guide the management of Redband Trout, but an Idaho-specific plan has yet to be developed. 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). Additionally, IDFG worked with multiple federal, state, tribal partners, and Trout Unlimited on two consecutive related documents to help guide Redband Trout conservation efforts. The first was the 2012 status assessment document (Muhlfeld et al. 2015) that described the current distribution, status, and conservation efforts throughout the western US. This status assessment concluded that Redband were still widely distributed but that their longterm persistence would depend on continued strategic conservations efforts (Muhlfeld et al. 2015). Following the 2012 status assessment, IDFG again worked with a broad spectrum of stakeholders to develop the interior Redband Trout conservation strategy document (IRCT 2016). The IRCT (2016) conservation strategy is a long-term conservation agreement between state and federal agencies, Indian Tribes and Trout Unlimited and functions as a framework to identify, coordinate and prioritize range-wide conservation efforts.

IDFG recommends the following management actions for Redband Trout during this planning period:

- Continue to work with federal, state, tribal partners to implement conservation actions identified in the IRCT (2016) conservation strategy document;

- Continue statewide population and trend monitoring to improve understanding of distribution and abundance;

- Continue stocking only sterile (triploid) trout in areas where Redband Trout and hatchery trout overlap;

- Maintain or reestablish connectivity of current Redband Trout metapopulations;

- Develop and publish a state status assessment for Redband Trout;

- Complete a state IDFG Redband Trout 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. While this designation applies across all of the contiguous distribution in the U.S., Bull Trout remain 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 from Lake Pend Oreille, 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 can outcompete and hybridize with Bull Trout where overlap occurs. The latter threat is particularly true for small isolated Bull Trout populations. Lake Trout also pose a serious threat to the adfluvial form of Bull Trout in larger deep lakes. Bull Trout numbers, along with other native sport fish, have plummeted in Idaho lakes such as Priest Lake where Lake Trout and Mysis shrimp are present. In other similar systems like Upper Priest Lake and Lake Pend Oreille where Lake Trout suppression programs have been implemented, Bull Trout populations appear to be stable or increasing

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.

The U.S. Fish and Wildlife Service completed a final recovery plan for Bull Trout in fall of 2015 For the Idaho portion of the distribution, particularly in the Pend Oreille, Clearwater and Salmon river basins, relatively few ongoing threats were identified. IDFG will continue to work closely with the U.S. Fish and Wildlife Service and other stakeholders in Bull Trout conservation and recovery planning, and will advocate for de-listing those portions of the range where Bull Trout populations are secure and no longer in need of ESA protection. Additionally, ongoing coordination with federal land management agencies such as the U.S. Forest Service is critical due to their large span of control over much of the Bull Trout habitat in Idaho.

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 divergent from other Snake River populations. In 2007, 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 (IDFG 2007b). Conservation actions that address river flows and water conservation are considered ongoing, and will continue to be implemented over the coming period. During this planning period, IDFG will continue collaborating with other agencies and stakeholders to monitor population status, restore habitat, assess disease risk, and work towards obtaining biologically beneficial river and stream flows as possible.

White Sturgeon (Snake and Kootenai Rivers)

<u>Life History and Species Description</u>

The White Sturgeon is the largest freshwater fish in North America. Historical archives from the late 19th and early 20th century describe specimens of up to 18 feet and almost 1,400 pounds. Today, maximum size in the US is smaller, though specimens of up to 11 feet and more than 500 pounds are occasionally captured. Their range in salt water includes the Pacific Coast from Mexico to Alaska, while spawning only occurs in large river drainages including the Sacramento, Columbia and Fraser rivers. Within Idaho, White Sturgeon are native to both the Snake and Kootenai rivers. The original range of White Sturgeon in the Snake River extends from its confluence with the Columbia up to Shoshone Falls, and within a major tributary the Salmon River. However, their range has been extended upstream by stocking, currently reaching as far as the city of Idaho Falls.

White Sturgeon's life history characteristics are unique relative to other Idaho native fishes. Sturgeon first spawn late in life and age at maturity can vary considerably by river reach. For

example, White Sturgeon in the Bliss Reach of the Snake River fist spawn at 10-15 years whereas in the Hells Canyon reach some may not spawn until after 50 years of age. Spawning is periodic, occurring at several-year intervals as substantial energy accumulation is needed for gonadal development. White Sturgeon spawn during spring floods often in highly turbulent canyon reaches of large rivers. Here, sufficient current, turbidity, turbulence, and distances of free-flowing river downstream of spawning locations are necessary for successful egg hatching and larval survival. Growth rates to adulthood are dependent on temperature regimes, food resources, and other factors. White Sturgeon feed on a variety of food items including fish, macroinvertebrates, crustaceans, and bivalves. Larval and small juvenile sturgeon may be highly vulnerable to predation by other fishes. Natural mortality rates of large juvenile and adult sturgeon are low, allowing some individuals to reach old ages (up to or possibly exceeding 100 years).

Historical Declines

White Sturgeon were historically abundant throughout their natal range in Idaho, but declined significantly during the 20th century, though population estimates and movement data from the pre-dam building era do not exist. Population declines are likely due to several factors including overfishing, habitat destruction, poor water quality/pollution, bioaccumulation of contaminants and potentially from ecosystem changes associated with non-native fish and invertebrate introductions (like the Siberian Prawn). Because of their large size and late age of maturity, sturgeons are particularly vulnerable to overfishing (both commercial and recreational), which primarily occurred in the late 19th to the mid-20th century. Due to concerns about population trends, commercial harvest of sturgeon in Idaho was prohibited in 1943. By 1971, even sport harvest was prohibited and fishing for sturgeon became strictly catch-and-release.

White Sturgeon have declined for several reasons, but habitat alteration and fragmentation from dams built from 1900-1960 are the primary factor. Dam construction and the associated changes to river habitat have blocked migrations and altered flows, water temperatures, and nutrient regimes, and have fragmented populations among short disconnected river reaches or reservoirs. This has created small, isolated populations, often with conditions unfavorable for larval survival/recruitment, and also created habitat where predators/competitors with sturgeon can thrive. Prior to dam construction, sturgeon had greater connectivity to long sections of river habitat and downstream populations, allowing sturgeon to access all the part of the river needed to complete their life history. In the Snake River, dams have segmented Snake River sturgeon populations into nine highly altered reaches, most of which no longer have the habitat needed for White Sturgeon to complete their life cycle. Alterations in the annual, seasonal, and daily flow regimes and patterns from water management and hydropower have reduced peak flows, shifted flow timing, and disrupted and reduced sturgeon spawning and recruitment success. Only two reaches currently sustain viable naturally reproducing populations. These reaches are Bliss Dam to C.J. Strike Reservoir and Hells Canyon Dam to Lower Granite Reservoir. While spawning may occur annually, recent research has indicated recruitment occurs less often than previously thought. In the Snake River above Hells Canyon dams eliminated anadromous salmon, steelhead and lamprey, which were an abundant food source for sturgeon. Load following hydropower operations, large-scale irrigation withdrawals and degraded water quality from agricultural irrigation and returns, and industrial activities have also played a role. Sturgeon in Idaho carry high contaminant loads, especially mercury and organo-pesticides, which can affect growth and reproduction, but may also have other effects that are not well understood.

Many of the habitat-related conditions that contributed to the currently depressed state of Idaho's sturgeon populations are complex, difficult to fix, and "continue posing significant challenges to achieving natural populations in the Middle Snake River" (Idaho Power Company 2016). Only two of the nine Snake River populations are, stable or increasing, while the remaining reaches rely on

hatchery supplementation and downstream drift to maintain populations. At the same time, the Kootenai River population remains Endangered, where hatchery stocking also well established. The Department and cooperators intensively monitor and manage White Sturgeon because they are unique, rare, attain a large size, are long-lived, and provide tremendous sport fishing opportunities. The Department manages sturgeon based on geographical range falling into three major sections: (1) the Snake River (and Salmon River) from Lewiston to Shoshone Falls (native), (2) the Snake River above Shoshone Falls (introduced), and (3) the Kootenai River (native, ESA endangered). The next section will describe management of White Sturgeon in the Snake River from Lewiston to Shoshone Falls and above to Idaho Falls. The second section will describe management of White Sturgeon in the Kootenai River.

Snake River Population(s) Management

For the Snake River portions in central and southern Idaho, managing White Sturgeon is directed by several related plans. The Department completed a conservation and management plan for Snake River White Sturgeon in 2008 (IDFG 2008). Based on the recommendations in the IDFG (2008) plan, mitigation actions are detailed in the Idaho Power Company (IPC) Snake River White Sturgeon Conservation Plan (IPC 2015) and their related Conservation Aquaculture Plan for White Sturgeon in the Middle Snake River (IPC 2016).

The IDFG's management goal for Snake River White Sturgeon is to preserve, restore, and enhance populations capable of providing sport-fishing opportunities. The IDFG (2008) White Sturgeon plan emphasizes the following management activities to achieve this goal:

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 IPC 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 IPC have established protocols for investigating, examining, and collecting appropriate samples from mortalities when possible.

As a result of Federal Energy Regulatory Commission (FERC) relicensing for the Middle Snake River projects (between Shoshone Falls and the Hells Canyon Complex), IPC is responsible for implementing a number of protection, mitigation, and enhancement activities to benefit White Sturgeon in the Snake River. The IDFG (2008) management plan for Snake River White Sturgeon provides policy guidance for IPC's newly updated White Sturgeon Conservation Plan (IPC 2015).The Department, other agencies, and Indian tribes collaborated with IPC to develop their conservation plan for the Snake River as part of their FERC relicensing requirements for its Snake River hydropower system. Idaho Power Company's efforts, guided by their conservation plan, intend to mitigate for operational impacts of its hydropower projects on White Sturgeon throughout the Snake River.

As part of their White Sturgeon Conservation Plan (IPC 2015), Idaho Power Company proposed to include conservation aquaculture as one of the protection, mitigation and enhancement strategies for White Sturgeon between Hells Canyon and Shoshone Falls. Until the factors limiting natural productivity can be addressed, "utilizing conservation aquaculture in the interim is an essential tool for supporting recruitment-limited White Sturgeon populations in the Middle Snake River" (IPC 2016). The Conservation Aquaculture Plan for White Sturgeon in the Middle Snake River (IPC 2016) details the implementation of this program and follows the policies regarding stocking hatchery sturgeon laid out by the Department (IDFG 2008).

Catch and Release Fishing

White Sturgeon are extremely long-lived, slow growing, late maturing fish with low mortality rates and infrequent reproduction. As such, they are particularly susceptible to overfishing and even relatively small, long-term increases in mortality rates can cause population declines. Catch-and-release sportfishing for sturgeon is very popular within their existing range, and is increasing in new areas as sportfish populations are established outside their native range through stocking. Increases in angling pressure combined with dead sturgeon occasionally being found with hooks inside of them raised concerns about the impacts that sport fishing may be having on White Sturgeon populations in Idaho. This prompted IDFG to initiate research to evaluate whether rule changes were needed to reduce deep hooking rates (circle hooks vs J hooks), how frequent hooks occurred inside White Sturgeon, and whether the ingested hooks were of concern. Results from this work found that anglers rarely deep hooked sturgeon regardless of hook type (Lamansky et al. 2017). Lamansky and Daw (2015) found that, on average, 21% of sturgeon contained metal inside of them; ingested metal was more prevalent in areas with higher fishing effort and in larger fish (150-250 cm). Sturgeon were able to successfully expel hooks from their body (typically in 1-2 years), and they tended to gain metal at the same rates as they passed it. We are unsure what if any influence this may have on the population dynamics of White Sturgeon population considering that most fish do not have metal in them and many of the fish that do have metal show no external effects. Based on this research, no changes to fishing rules were recommended. The Department will continue to educate anglers about low-impact sturgeon angling techniques and proper fish handling to minimize impacts from catch-and-release fishing.

Hatchery stocking for sportfish populations

The IDFG has introduced hatchery-reared White Sturgeon outside their native range to create additional fishing opportunity. The Southeast Region began stocking reaches of the Snake River in 1990 and the Upper Snake Region began stocking in 2007. These fisheries are expected to be dependent on periodic stocking of hatchery-reared sturgeon. As the conservation aquaculture program has developed, F1 sturgeon eggs have become available more consistently. This has allowed the Department to stock reaches of the Snake River above and below American Falls (above Shone Falls) almost annually. Our current goal is to annually stock 100 White Sturgeon below American Falls, and 300 between American Falls and Idaho Falls (24" mean total length).

Action Items

During this six-year planning period, the Department 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 the Department. Additionally, the Department will update the IDFG (2008) sturgeon plan to reflect results of research during the last 10 years and new larger role of conservation aquaculture. The Department will also evaluate hatchery-supported sturgeon populations above Shoshone Falls to determine the feasibility of providing harvest opportunity in the future. Studies will determine what (if any) options may be available to offer a sustainable level of harvest on existing populations given current stocking and growth rates.

Kootenai River Population Management

The Kootenai River, located in northern Idaho, supports a genetically distinct population of White Sturgeon (Flory 2011). 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. Despite this length of connected river, Kootenai River White Sturgeon are significantly impacted by habitat changes related to water flows alterations and nutrient limitations from Libby Dam. Lack of successful natural reproduction has limited the population as a result of alterations to the natural flow regime, substrate, water temperature, and nutrients following construction of Libby Dam.). In response to a major population decline, the White Sturgeon fishery was closed to harvest in 1984. In 1994, White Sturgeon in the Kootenai River (within the US portion) were listed as Endangered under the Endangered Species Act. Because of the ESA-listing and continued population declines, the Kootenai River was closed to all sturgeon fishing in 1996.

Following the ESA-listing, the US Fish and Wildlife Service (USFWS) issued the Kootenai River White Sturgeon Recovery Plan, which currently guides recovery actions in the basin (USFWS 1999). An updated recovery plan is currently being drafted by the USFWS and will be completed early during this planning period. Recovery actions include conservation aquaculture, flow and temperature management, nutrient addition, public outreach, habitat restoration and research, and population monitoring and evaluation efforts. The Kootenai Tribe of Idaho (KTOI) has released hatchery-origin White Sturgeon spawned from wild broodstock into the Kootenai River annually since 1992. Hatchery sturgeon attempt to address recovery and fill the demographic and genetic gaps resulting from the absence of natural reproduction. To date, the Kootenai Tribe's aquaculture program has released over 290,000 hatchery-origin juvenile White Sturgeon into the Kootenai River basin. Of these, an estimated 13,000 juveniles (under 120 cm) currently occupy the river. The Department's monitoring and evaluation continues to guide and refine implementation of the conservation aquaculture program in an adaptive management framework. The Department will continue to serve on the Kootenai River White Sturgeon Recovery Team and collaborate with the UFWS to complete the updated recovery plan.

Additionally, the Department will work with the USFWS and KTOI to restore a fishery for White Sturgeon in the Kootenai River.

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.

All of the warmwater and coolwater sport fish species in Idaho were introduced, many over a century ago. 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 has greatly increased the diversity of fishing opportunity and presents both opportunities and challenges for IDFG. On the positive side, these species can create productive sport fisheries and provide considerable harvest opportunity in altered or man-made habitats where native sport fish species are rare or absent. The presence of these sport fish species can also be negative when their introduction or expanded distribution affects desirable native fish and trout fisheries through competition and predation.

While a majority of Idaho anglers still prefer trout fishing, many of their preferred waters now also contain introduced warmwater or coolwater species. Bass angling has a strong following in the state, and organized bass fishing tournaments have gained in popularity over the years. Statewide, there are several examples of “two-story” fisheries that have increased angling opportunity using stocked or wild trout and warmwater fish populations in the same waters with adequate habitat for both. However, the stocking costs to maintain a trout fishery typically increase 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 stocked into ponds, reservoirs, and streams where habitats are not capable of supporting wild or natural reproducing populations sufficient to meet angler demand. Hatchery trout are often the only alternative to provide angling and harvest opportunity in smaller waters and community ponds. Hatchery trout stocking generally adheres to one of two methodologies, put-and-take or put-and-grow. The put-and-take stocking model entails the release of catchable-sized (typically 10- to 12-inches) fish into waters where there is intensive angling pressure and long-term survival of the fish is not expected or needed. The put-and-grow stocking model generally plants smaller fry and fingerling-sized fish (3- to 7-inches) into productive waters that support good post-release growth and survival, resulting in good returns to the angler. Because fingerling trout do not survive well or grow to acceptable sizes in flowing waters, most trout stocked into streams will be catchable size. Even catchable-sized hatchery trout typically may not persist very long in flowing waters; therefore, most stocking of flowing waters occurs in areas of high angling pressure where trout are harvested quickly.

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. The percentage of hatchery catchables caught by anglers in flowing waters and larger lakes and reservoirs has traditionally been lower than the percentage caught in smaller lakes and ponds. However, recent Department research has found that catch rates are improved in streams

and larger water bodies by stocking larger fish. Therefore, since 2016, more than half of the catchable trout production of Department hatcheries has been shifted from the traditional 10-inch stocking size to a 12-inch “magnum” size to improve catch rates. Waters that yield high return rates, such as urban ponds and other waters with high angling pressure, continue by and large to be stocked with 10-inch trout.

IDFG will continue to adjust the use of hatchery fish in order to maximize 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 and can now be found in every region of the state. 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 main stem 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 have continued to expand into some waters where they may be 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. Pending public support the Department will consider removing bag limits for Smallmouth Bass in anadromous waters to maximize harvest opportunity.

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 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 appropriate size and bag limits, the increased density of bass reduces young Bluegill densities and allows for improved growth. 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 include 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 most common and preferred target species of anglers, especially in the Snake River system from Swan Falls Reservoir downstream. Channel Catfish reproduce successfully 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 sub-catchable size catfish purchased from commercial hatcheries. 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.

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 caught 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 sustain these prolific keystone predators. As a result, Walleye introduced in the western U.S. typically create conflict with management of other game species, particularly salmonid 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 for 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, all apparently after unauthorized introductions. A rapidly expanding population and growing fishery now exists in Lake Pend Oreille and the Pend Oreille and Clark Fork rivers. These populations originated from Walleye that were introduced illegally or that drifted downstream from illegally introduced populations in Montana. IDFG will monitor these populations and, where practical and necessary to protect other fisheries, will actively suppress Walleye. In 2006, IDFG removed bag limits on Walleye in all waters statewide where they are not being specifically managed.

Because Walleye can significantly impact native fish populations and existing sport fisheries, IDFG will not restrict harvest or allow live weigh-in 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 numerous illegal introductions have occurred and led to establishment of Northern Pike in Hayden, Twin, Blue, Fernan, and Freeman lakes. Northern Pike have only been documented in the Panhandle Region of Idaho.

Northern Pike reach large size, are highly aggressive, and are good eating, making them a desirable sport fish for some anglers. However, Northern Pike predation can negatively impact native species and other sport fish. 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 densities low to minimize predation impacts. IDFG will not restrict harvest or allow live weigh-in 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.

IDFG has over a 40-year history of managing illegally introduced Northern Pike populations. In general, Northern Pike populations have been sustained at fairly low densities under the existing management approach. Angler harvest appears to contribute to maintaining lower population density, with annual exploitation rates typically 30-40%. As a result, IDFG provides liberal harvest opportunity (i.e., no bag limit) and promotes angler harvest. Classifying Northern Pike as game fish and allowing harvest-oriented fishing contests (no live weigh-in) are measures taken to promote angler participation and harvest. Another purpose of classifying Northern Pike as game fish is to prevent spearfishing. IDFG will continue to promote harvest-oriented angling for Northern Pike.

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 in subsequent years.

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. Tiger muskie were first introduced into Little Payette Lake in 1998. The current state record (44.25 pounds) was caught in Little Payette in 2013, and was also recognized as a “Modern Day Muskie” world record. 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 fishery management goals.

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 vulnerable to extinction than species with more widespread distributions. Pacific Lamprey are anadromous fish and face essentially the same threats 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.

IDFG is a signatory to conservation agreements with neighboring states 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. IDFG will pursue funding through State Wildlife Grants and other sources to monitor status and trends for these species.

- 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.

High Mountain Lake Management

Over 3,700 high mountain lakes (HMLs) exist in Idaho, ranging in size from small temporary ponds to large lakes over a mile long. Anglers utilizing lakes in Idaho consistently express the second highest level of satisfaction with their fishing experience behind stream trout fisheries (see the Angler Opinion Survey section of this document). These lakes provide an enhanced fishing experience in scenic country with the opportunity for solitude and remoteness, and are an important component in Idaho's recreation economy, with over 40,000 anglers fishing HMLs each year (IDFG 2007). According to 2011 economic survey data collected by IDFG, anglers took over an estimated 85,000 individual fishing trips to HMLs and generated in-excess of $12 million in statewide retail sales (IDFG 2011 unpublished data).

For the purposes of this document, the Department has defined "high mountain lakes" as remote lakes above 1,500 m (4,920 ft.) elevation, typically with no vehicle access. These lakes occur primarily in remote mountainous backcountry areas and often within wilderness areas. Their remote locations, unique ecosystems, multiple management agencies and complex and varied rules, HMLs present significant challenges for managing recreational fisheries. Limited lake-specific data and limited periods of access complicates HML management (Table 3). To address these issues, a Fishery Management Plan for high mountain lakes in Idaho is needed to standardize sampling protocols, summarize policies and guide future management. For the 2019-2024 planning period, the Department will develop a stand-alone High Mountain Lakes Management Plan specifically for these unique fisheries.

With few exceptions, nearly all HMLs in Idaho were historically barren of fish (Bahls 1992). This situation created a significant opportunity for the Department to meet the growing demand for recreational angling in the mid-20th century. Following the end of World War II, American resource managers saw a new era of public use of its lands and fish/wildlife for recreational pursuits. During this period, fishery managers actively engaged in stream and lake improvement work and changes in stocking policy and methods, and decided that HMLs could provide an untapped source of new fishing waters (Hauck 1950). Although some fish stocked were native to Idaho, they were not always native to certain watersheds. Historically, Brook Trout *Salvelinus fontinalis,* Rainbow Trout *Onchorhynchus mykiss*, Cutthroat Trout *O. clarkii spp*. and other non-native trout were liberally stocked in HMLs, with little attention paid to native aquatic fauna in HMLs basins. In addition, Bull Trout *S. confluentus*, Golden Trout, Brown Trout, and Arctic Grayling *Thymallus arcticus,* have been stocked to provide diverse fishing opportunities and meet specific management needs (IDFG 2007). Currently, most fish stocked in Idaho HMLs are Westslope Cutthroat Trout (about 56% statewide), followed by sterile triploid (3N) Rainbow Trout (29%). Grayling, Golden Trout, and Yellowstone Cutthroat Trout are also occasionally stocked as they are available and requested by regional fisheries managers (Table 3). Stocking is usually done in late August, and occurs on a 1, 2, or 3-year rotation, but ranges from 1-5 years depending on factors such as population failure, angling pressure, and unforeseen logistical problems.

More recently, scrutiny over managing HML fisheries increased (Bahls 1992; Pister 2001; Dunham et al. 2003; Wiley 2003). This scrutiny stems largely from the fact that, in the past few decades, a growing body of evidence has demonstrated that the introduction of salmonids into historically fishless HMLs may have contributed to reduced numbers of invertebrates, amphibians, and other native species that previously did not evolve in sympatry with salmonids (see Dunham et al. 2003 for review). However, state biologists are typically charged with managing HMLs for the benefit of all citizens, many of whom highly value alpine lakes fishing opportunities. For fisheries managers, the dichotomy of providing fishing opportunities in HMLs while protecting native species presents a difficult balancing act, resulting in recent changes in the management of HMLs. The Department recognizes maintaining quality fisheries in HMLs in the future will be influenced by our knowledge of HML ecosystems and how fish stocking programs influence them. Historically, HMLs in Idaho were managed 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. More recently, IDFG uses an adaptive management approach to guide the HML fish stocking 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. Managing HML fisheries will require responsible fish stocking and fish management that takes into account the need for amphibian conservation as well (Table 4).

Management Principles

The IDFG will consider the interests of anglers as well as the biological requirements of native aquatic species when developing HML management strategies. Therefore, management of HML fisheries should (1) strive to provide diverse recreational fishing opportunity, but also (2) be compatible with the long-term persistence of amphibians in these watersheds.

During this six-year planning period, IDFG will develop a HML management plan. We will also continue to evaluate HML management based on the following guidelines.

1. A diversity of suitable fish species will be maintained for the mountain lake management/stocking program. Lakes which “winterkill” with a frequency greater than once in four years will not be stocked.

2. Amphibian and natural fauna will be considered while managing fisheries. 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. Most of the 1,645 HMLs 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 other natural fauna will be considered appropriately as part of IDFG’s HML management plan. We will manage for suitable fishless habitat to ensure the long-term persistence of native aquatic fauna.

3. Management of HMLs in wilderness and national recreation areas will be coordinated closely with the appropriate land management agencies. Guidance in non-federally designated wilderness areas will be directed by the MOU between IDFG and the United States Forest Service (USFS) Northern, Intermountain, and Pacific Northwest Regions that was signed in 2010 for a ten-year period (Appendix 1). 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 HMLs.

4. 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 HML. In federally designated wilderness areas, lakes stocked prior to wilderness designation can continue to be stocked with fish of the same species. Those stocked with aircraft can continue to be stocked with aircraft. Stocking of new lakes or using aircraft to stock lakes not previously stocked with aircraft will require analysis and a decision document from the land management agency.

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

   An assessment of natural reproduction will be a key component of HML surveys. As necessary, stocking rates and frequencies will be adjusted to meet the management goals for each lake. The Department will modify or eliminate stocking where needed to reduce the detrimental effects on existing populations and to reduce costs.

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

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

6. Non-native trout will be reduced when feasible.

   Self-sustaining populations of non-native species may be reduced or eliminated where feasible, to achieve native species conservation goals or other fish management goals. 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 HMLs or improve the Brook Trout fishery by reducing their numbers thereby increasing their size.

Table 3. Number of high mountain lakes surveyed by IDFG regions through 2018.

Region	# of Lakes	Lakes surveyed	Lakes surveyed deeper than 3 m[1]	Lakes surveyed for fish & amph[2]	Lakes with fish	Lakes with fish & amph	Fishless lakes	Fishless lakes with amph
Region 1 – Panhandle	84	40	20	40	25	14	15	9
Region 2 – Clearwater	749	500	256	170	264	199	236	158
Region 3 – Southwest	756	280	77	265	110	39	170	10
Region 4 – Magic Valley	89	34	19	32	25	4	9	3
Region 5 – Southeast	1	0	-	-	-	-	-	-
Region 6 – Upper Snake	72	64	14	46	36	8	4	6
Region 7 – Salmon	1204	636	67	553	303	69	333	123
Region 8 – McCall	811	496	263	481	273	97	224	106
TOTAL	**3766**	**2050**	**716**	**1587**	**1036**	**430**	**991**	**415**

[1]Survey information regarding lake depth is incomplete

[2]Survey information for Amphibians (Amph) was not required prior to 1996

Table 4. Number of lakes surveyed by IDFG regions identifying amphibians and types of salmonids.

Region	# of Lakes	Lakes Surveyed	Lakes Surveyed deeper than 3 m[1]	Lakes Surveyed for Fish & Amph[2]	Lakes with LTS[3]	Lakes with CSF[4]	Lakes with Brook Trout	Lakes with Other Trout Species
Region 1 – Panhandle	84	40	20	40	1	21	11	14
Region 2 – Clearwater	749	500	256	170	173	343	48	223
Region 3 – Southwest	756	280	77	265	5	28	3	107
Region 4 – Magic Valley	89	34	19	32	4	2	1	24
Region 5 – Southeast	1	0	-	-	-	-	-	-
Region 6 – Upper Snake	72	64	14	46	1	4	2	34
Region 7 – Salmon	1204	636	67	553	78	116	43	266
Region 8 – McCall	811	410	190	399	49	111	57	170
TOTAL	**3766**	**1964**	**643**	**1505**	**311**	**625**	**165**	**838**

[1]Survey information regarding lake depth is incomplete
[2]Surveys include visual encounter survey for amphibians in addition to standard fish survey.
[3]LTS = Long toed salamander
[4]CSF = Columbia spotted frog

Special Rules in Resident Fisheries Management

Wild, Quality and Trophy Trout Management

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, native, or hatchery origin. As with all size and bag limits, the necessity of placing a restrictive rule on a waterbody will be dependent on the magnitude of harvest on that water. Many anglers - particularly trout anglers who fish on rivers and streams - choose to voluntarily practice catch and release, regardless of the fishing rule on that waterbody. This choice lessens overall harvest and reduces the need for special regulations in some instances. When considering new rules, Managers must weigh the tradeoff between increasing complexity that results from more complicated rules and the biological benefits that result from additional length or bag limit restrictions.

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

Wild Trout Management – A management program that uses special rules to reduce angler harvest on trout populations that depend entirely on wild production to sustain the population. Wild trout management is appropriate for lakes and streams with suitable habitat to support sufficient natural production, but where growth rates may not be sufficient to produce trophy sized trout on a routine basis, or where angler harvest is sufficiently low as to not impede trout from reaching their biological potential. Typically wild trout management rules incorporate a reduced bag limit without size restrictions.

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. Typically Quality Trout Management rules incorporate a reduced bag limit and a 14 or 16-inch minimum size limit.

Trophy Trout Management - A management program that uses special rules to reduce or delay mortality to provide a population where 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. Typically Trophy Trout Management rules incorporate a reduced bag limit and 20-inch minimum size limit.

For each of the trout management approaches above, size and bag limits may also be accompanied by tackle restrictions where necessary to achieve size structure goals in the fishery, or simply to provide a diversity of angling experiences for the public. The most restrictive rule,

catch-and-release, may be used as part of quality or trophy trout management or in areas where conservation of wild native trout is a priority.

Quality and trophy management may also include seasonal restrictions to reduce mortality on spawning fish or on trout as they concentrate in vulnerable areas, where harvest pressures are high. 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. Because anglers regard seasonal closures as the least preferred management strategy, such closures will only be applied where necessary to meet biological objectives or where public support for closure is strong.

Idaho is fortunate to have many bodies of water that provide large trout without special rules because of high productivity or minimal harvest pressure. These waters will remain under current general management or wild trout management. If and when harvest levels increase to the point where the size structure of the trout population is affected, or 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 or length 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.
>
> **Trophy Bass Management** - A management program using special regulations (typically a 20-inch minimum limit) 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 most common regulation for quality bass management restricts harvest to two fish, with a 12-16 inch protected slot limit or a 16-inch minimum size limit. 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.

Anadromous Fisheries Management

IDFG's long-range goal of the anadromous fish program is to rebuild and preserve Idaho's salmon and steelhead runs to healthy and harvestable levels to provide benefits for all users. Key management objectives to achieve the management goal are: 1) maintain genetic and life history diversity of naturally- and hatchery-produced fish; 2) rebuild naturally- reproducing 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 through sport and treaty fishing; and 6) coordinate Pacific Northwest regional management with Idaho anadromous management to ensure achievement of Idaho management objectives and the long-range program goal.

Idaho's anadromous fish species include steelhead, Chinook Salmon, Sockeye Salmon, Coho Salmon, and Pacific Lamprey. Anadromous fish in Idaho currently occupy most of the accessible habitat, which is found in the Salmon, Clearwater and the Snake rivers (downstream of Hells Canyon dam; (Figure 2). The Department's regulatory authority is limited to hatchery operations, fishery/harvest management, and fish management activities to rebuild salmon and steelhead to meet the long-term goals and objectives. Therefore, a key step toward achieving the long-term goals and objectives is to coordinate and provide technical expertise on anadromous fish to other regulatory or land management agencies, Tribal Fisheries programs and NGOs. Over the life of this management plan, anadromous fisheries management will continue to focus on monitoring and improving the status of wild and natural origin salmon, steelhead and lamprey populations, and continue to manage fisheries targeting hatchery origin salmon and steelhead produced by mitigation hatcheries. The Drainage Management Plans contain specific management actions for all anadromous fish species.

Background

Historically, the Snake River was the Columbia River basin's most productive drainage for salmon and steelhead, supporting more than 40% of all Columbia River Spring and Summer Chinook Salmon and 55% of Summer steelhead (NMFS 2017). Currently, approximately 62% of Idaho's historic spawning and rearing habitat for Spring and Summer Chinook Salmon and Summer steelhead remains accessible (Figure 2). Current habitat is capable of producing up to an estimated 6.7 million Spring and Summer Chinook Salmon smolts and 3.1 million Summer steelhead smolts at 70% of rearing capacity (IDFG 1992). 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 salmon and steelhead are located within areas designated as wilderness or waterways classified as wild and scenic rivers. This increases to over 50% with the inclusion of roadless areas. The declines in run sizes led to federal Endangered Species Act listings of Snake River salmon and steelhead starting in 1991 (see Threatened and Endangered Species section of this plan for details). 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 much lower than the 1960s and early 1970s. Recently, there has been considerable variability in annual abundance, due to a combination of ocean and migratory conditions.

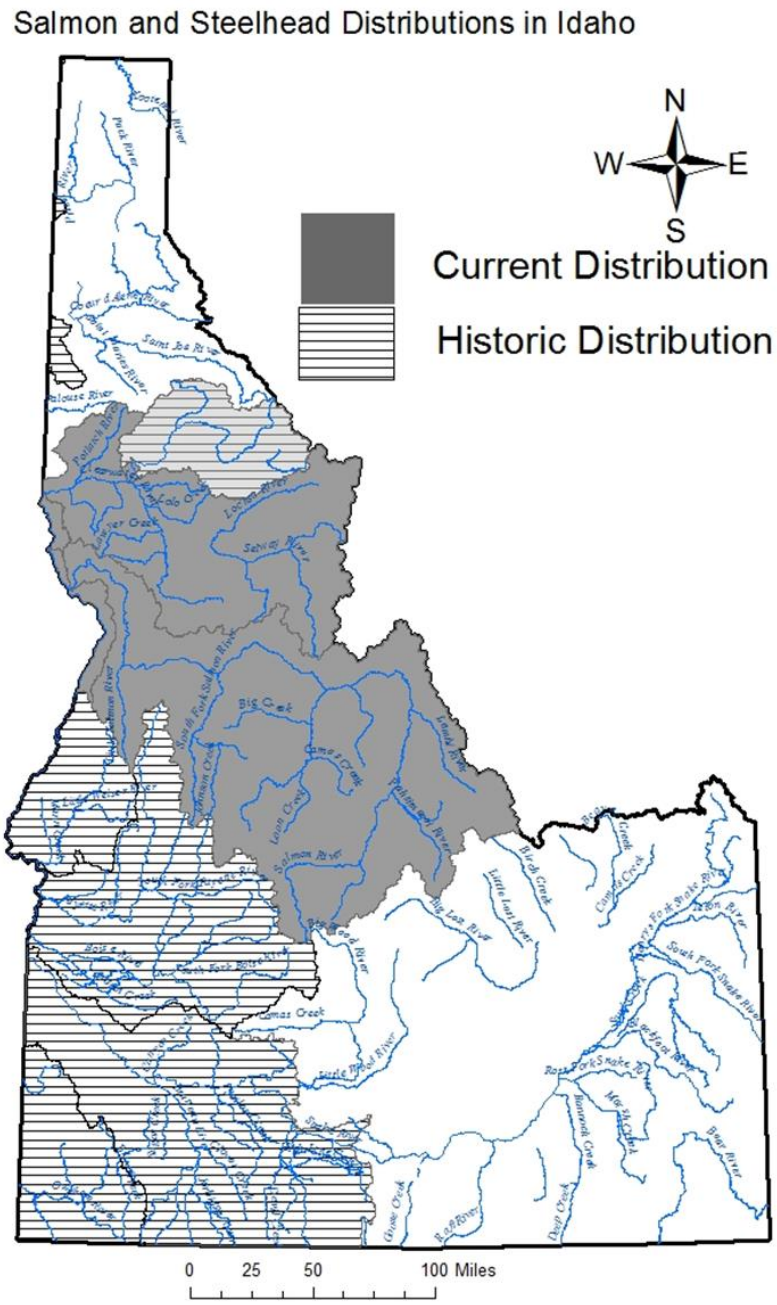

Figure 2. Current and historical range (distribution) of anadromous fish in Idaho

Steelhead

Wild Snake River summer steelhead showed a similar pattern of decline to that of Spring and Summer Chinook Salmon. Abundance declined steadily from the 1960s through the 1990's resulting in their listing at threatened under the ESA in 1997. Hatchery steelhead abundance in Idaho increased from the 1970s and peaked in 2010.

In Columbia River sport and tribal fisheries, summer steelhead are referred to as A-run and B-run for management purposes. The A- and B-run designation was designed to allow differential harvest rates between the two runs. The initial A- and B-run designation was based on migration timing at Bonneville dam, which was correlated to ocean age and adult size. The A-run fish pass Bonneville Dam before August 25th, often spend only one year in the ocean, and originate throughout the Columbia River basin. The B-run fish pass Bonneville Dam after August 25th, predominantly spend two years in the ocean, and are destined primarily for the Clearwater River drainage and the South Fork and Middle Fork of the Salmon River. Historic data is scarce but there are references to B-run summer steelhead being native to the Salmon River tributaries upstream of Challis. Because B-run fish spend an additional year in the ocean, they are generally larger than A-run fish. After the 1980s, the timing of the two runs became indistinct and, beginning in 1999, a length criterion was used instead (e.g., B-run fish ≥78 cm or 30.7 inches).

Genetic monitoring of Idaho summer steelhead refined our understanding of the overlap of life-history diversity of steelhead across drainages with respect to age, size, and run timing. For example, spawning summer steelhead that spend only one year in the ocean are found in all drainages, but the proportion of those fish are much lower in some rivers. While managers still broadly use the A-run B-run classification, genetic stock identification has greatly improved abundance estimates by allowing estimates of the total aggregate run at Lower Granite Dam to be parsed into specific management units by drainage or major population group.

Management actions during this planning period include the continued implementation of the supplementation activities (see the Anadromous Hatchery Chapter); releases of hatchery juveniles for future harvest opportunities; habitat restoration activities to restore and increase historic spawning habitat; screening of irrigation diversions; harvest; and continued monitoring of abundance, productivity and key life-history traits. Summer steelhead fishery management units addressed in this plan include the main stem Snake River, lower main stem Clearwater River, main stem and Middle Fork Clearwater River, North Fork Clearwater River, South Fork Clearwater River, lower main stem Salmon River, middle main stem Salmon River, upper main stem Salmon River, and Little Salmon River. Four artificial production programs in Idaho are also considered to be part of the listed steelhead DPS: Dworshak National Fish Hatchery, Lolo Creek, North Fork Clearwater River and East Fork Salmon River.

Spring and Summer Chinook Salmon

Spring and Summer Chinook Salmon in the Snake River basin are defined by run timing. Snake River Spring and Summer Chinook Salmon enter the Columbia River from March through the end of June. Historic estimates are upwards of one million Spring and Summer Chinook Salmon returning to the Snake River. Numbers declined beginning in the late 1960s and continued this trajectory until reaching record lows in the 1990s. This decline resulted in ESA listing as Threatened in 1992. Current management units for Spring and Summer Chinook Salmon in this plan include the Clearwater and Salmon River drainages and the Snake River downstream of Hells Canyon Dam. Hatchery programs at Pahsimeroi, McCall and Sawtooth in the Salmon River basin are listed under the ESA.

Management actions during this planning period include continued implementation of hatchery supplementation activities (primarily using integrated broodstocks described in the Anadromous Hatchery Chapter of this Management Plan), releases of hatchery smolts for harvest,

implementation of habitat enhancement activities to increase spawning habitat, screening of irrigation diversions, and continued monitoring of abundance, productivity and key life-history traits. Due to many regional efforts, Spring and Summer Chinook Salmon currently fare better than they did in the 1990s but abundance has been highly variable.

Sockeye Salmon

At one time, large runs of Sockeye Salmon returned to spawn along the shorelines and inlets of the Stanley Basin lakes in the upper Salmon River drainage, Idaho. 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 Salmon runs rebounded somewhat but declined steadily from 1960-1990. In 1989 and 1990, trapping on Redfish Lake Creek captured no adult fish. The sockeye captive bloodstock program was initiated in 1991 as a gene-rescue program to avoid extinction of the last remnant Snake River Sockeye Salmon population. The program was initiated just before the listing as endangered under the ESA. During this planning period, the captive broodstock program will continue. Springfield Hatchery will provide up to 1,000,000 smolts for release into Redfish Lake Creek and the Upper Salmon River. Management will focus on rearing and release strategies to improve the survival of migrating Sockeye Salmon smolts from Springfield Hatchery to Lower Granite Dam. The strategy follows the phases developed in the recovery plan and master plan for Springfield Hatchery (IDFG 2010, NOAA 2015a). As a result of this program, natural spawning and juvenile production is occurring in Redfish and Pettit lakes. The captive broodstock program will continue to support Sockeye Salmon production in these lakes and Alturas Lake over the term of this plan.

Fall Chinook

Fall Chinook Salmon are defined by run timing as entering the Columbia River between August and October. Idaho was a key production area for wild Fall Chinook Salmon in the Columbia River basin. The Snake River drainage historically supported two populations of Fall Chinook Salmon: the extant lower main stem population downstream of downstream of Hells Canyon Dam and its tributaries, and the Middle Snake River population upstream of Hells Canyon Dam upstream to Shoshone Falls (extirpated). The Middle Snake River supported the majority of all Snake River Fall Chinook Salmon production until the area became inaccessible due to dam construction. Nine major tributaries to the Middle Snake River (Salmon Falls Creek and the Owyhee, Bruneau, Boise, Payette, Weiser, Malheur, Burnt, and Powder Rivers) were also accessible but most Fall Chinook Salmon spawned in the Snake River. The loss of this upstream habitat area restricted the species to the area downstream of Hells Canyon Dam. Along with range restrictions, Fall Chinook Salmon also experienced significant declines in abundance. Numbers of Fall Chinook Salmon began to decline toward the end of the 1800's and continued declining until in 1990 when only 78 wild adults returned. Due to the hatchery supplementation program and improved migration conditions, Fall Chinook Salmon abundance peaked at over 20,000 wild fish in 2013 and 45,000 hatchery fish in 2014. Both wild and hatchery produced Snake River Fall Chinook Salmon are listed under the ESA.

Coho Salmon

Coho Salmon were native to the lower Clearwater River and its tributaries, including the North Fork Clearwater River, Lochsa River, Selway River, and South Fork Clearwater River. However, these runs were eliminated after the construction of Lewiston and Harpster dams, which did not have adequate passage facilities. The Department conducted supplementation efforts using eyed-eggs from 1962-1968. Following limited success in the form of adult returns, the program was terminated. No fish returned in 1986 and the Snake River Coho Salmon were declared extirpated (Figure 3). A reintroduction program was initiated by the Nez Perce Tribe in 1995 using fish from the lower Columbia River. As a result of these supplementation efforts, Coho Salmon are currently present in the main stem and Middle Fork Clearwater Rivers and support limited sportfishing. Coho Salmon in Snake River drainage of Idaho are not listed under the ESA.

Lamprey

Pacific Lampreys are native to Idaho. Idaho Department of Fish and Game is a signatory to the Conservation Agreement for Pacific Lamprey in the States of Alaska, Washington, Oregon, Idaho, and California (PLCA 2012). The agreement is designed to promote implementation of conservation measures for Pacific Lamprey throughout its range. Historic abundance of Pacific Lamprey in Idaho is not well-documented; however, in recent years range-wide abundances have been increasing due to improvements in upstream passage at hydropower facilities and translocations by Tribal programs in the Snake River basin (Figure 3). Primary management focus in Idaho will be continued monitoring of habitat occupancy with in rivers and streams accessible to anadromous fish, and continued cooperation with Tribal entities on translocations programs in Idaho. The Fisheries Bureau will evaluate priority Pacific Lamprey management units over the planning period.

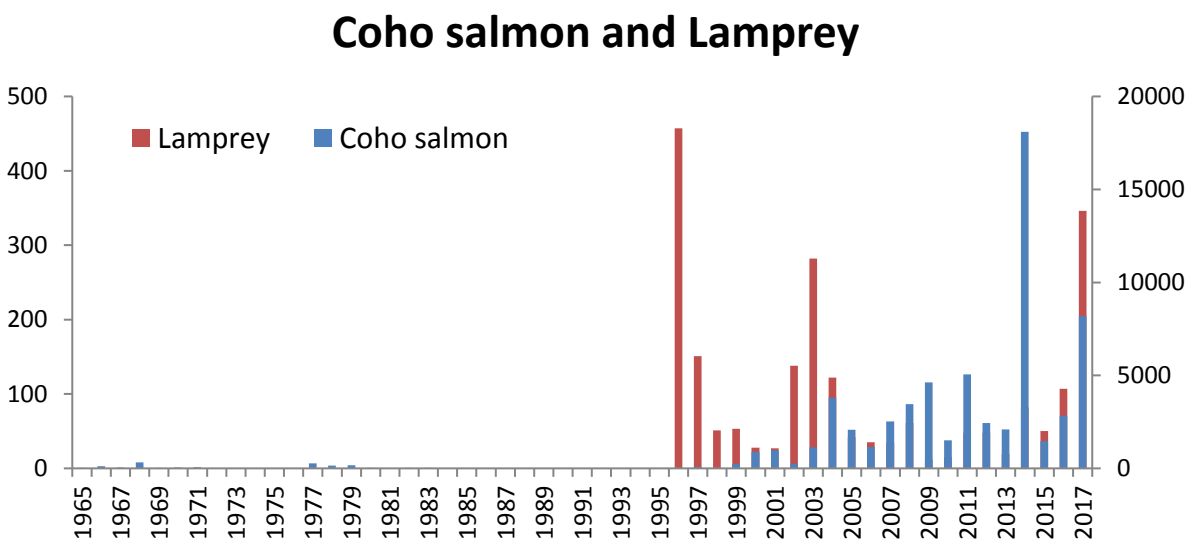

Figure 3. Historic adult passage of Coho Salmon and Pacific Lamprey at the upper most dam and counting facility chronologically in time in the Snake River, 1960-2012. The upper most dams at the times of the fish counts were Lewiston Dam, 1965-1972 and Lower Granite Dam, 1975 to present. For lamprey, the uppermost dam was Ice Harbor, 1965-1975, and Lower Granite Dam, 1975 to present.

Abundance Goals for Salmon and Steelhead

In this Management Plan, we identify escapement goals for wild- and natural-origin Salmon and steelhead to meet Department expectations for both conservation and harvest. Escapement goals identify the number of adult salmon and steelhead needed to seed spawning habitat, provide directed harvest opportunity, and accommodate conservation and supplementation hatchery programs (where currently implemented). Referred to as “healthy and harvestable”, these escapement goals extend beyond the minimum abundance thresholds (M.A.T.) adopted in the ESA recovery plans to consider fish for delisting (NOAA 2015, NOAA 2017a, NOAA 2017b). The M.A.T. targets are minimum targets related to long term extinction risk and do not provide sufficient escapement for full habitat seeding nor do they reflect reasonable harvest opportunity.

Hatchery return goals for salmon and steelhead address mitigation responsibilities associated with the construction and operation of hydropower dams on the lower Snake River, the Columbia River, North Fork Clearwater River and on the Hells Canyon Reach of the Snake River and are independent of the escapement goals for wild- and natural-origin salmon and steelhead. Hatchery mitigation goals exist for Spring and Summer Chinook Salmon, Fall Chinook Salmon, and summer steelhead and are defined in federal statute or in formal mitigation agreements (e.g., Hells Canyon Settlement Agreement 1980). Sockeye Salmon hatchery production is also funded with mitigation dollars but specific, numerical goals have not been defined in mitigation agreements. Existing hatchery mitigation goals are presented in the Anadromous Hatchery Chapter of this Management Plan.

In defining wild- and natural-origin escapement goals, Department scientists relied on a number of resources including: 1) unpublished Department file information that described accounts of historical abundance of salmon and steelhead in the Snake River; 2) previously published Department Management Plans and unpublished management documents that described the need to establish goals as well as identified proposed goals; 3) hatchery mitigation program planning documents that estimated pre-Snake River Dam salmon and steelhead abundance in the Snake River; 4) The Department’s historical redd count database for tributaries of the Salmon River that dates back to the 1950s and Snake River Dam and Lewiston Dam historical adult passage counts; 5) Subbasin Plans produced in the late 1980s and revised in the mid-1990s as part of a Columbia Basin-wide effort spearheaded by the Northwest Power and Conservation Council and funded by the Bonneville Power Administration and 6) other personal and written accounts of habitat carrying capacity and historical abundance.

Columbia Basin Partnership

The Department’s efforts to define healthy and harvestable quantitative escapement goals for salmon and steelhead occurred at the same time as a NOAA-Fisheries led effort was occurring to establish similar goals for all wild- and natural-origin populations of salmon and steelhead in the Columbia Basin. NOAA initiated this effort in 2012 asking stakeholders, states and tribes to identify key challenges facing salmon and steelhead recovery and to help identify long-term solutions in the Columbia Basin. The main recommendation from this process called for NOAA leadership to develop common measures of success for Columbia Basin salmon and steelhead that addressed multiple directives including the ESA delisting, tribal treaty and trust responsibilities and sustainable fisheries mandates (Oregon Consensus and William D. Ruckelshaus Center 2013). Acting on this recommendation, NOAA invited stakeholders, states and tribes to participate in a process to develop common, long-term quantitative objectives for salmon and steelhead. This effort was called the Columbia Basin Partnership. In 2016, the

Partnership reorganized as a Task Force under the Federal Marine Fisheries Advisory Committee process to support its ability to directly advise the Secretary of Commerce (NOAA 2015). This effort is ongoing and scheduled to conclude in early 2019.

Through the Columbia Basin Partnership healthy and harvestable goals for every wild- and natural-origin population of salmon and steelhead in the Columbia River Basin were defined. Idaho played a significant role in the development of escapement objectives for Snake River populations, which were broadly supported by sovereigns including the Governor's Offices of Montana, Washington, Oregon and Idaho and Tribal representatives such as the Columbia River Intertribal Fisheries Council and the Upper Snake River Tribes. Broad support for Snake River goals also came from participating stakeholder groups such as the Idaho Water Users Association, Idaho conservation organizations, Trout Unlimited, sport and commercial fishing interests and others. NOAA's hope for the Partnership Task Force is that it provide a better framework for addressing salmon and steelhead recovery and long-term management. The goals presented as part of this Management Plan are consistent with those developed in the Columbia Basin Partnership process.

Escapement goals are presented as aggregate counts by species (e.g., total tributary escapement goal for all populations of Snake River Spring and Summer Chinook Salmon) (Table 5; Figures 4-7). We also present goals aggregated at the NOAA-defined Major Population Group for Chinook Salmon, Sockeye Salmon and summer steelhead (Table 6).

Table 5. Escapement goals for wild- and natural-origin Snake River salmon and steelhead aggregated at the species level. Ten year average returns to Lower Granite Dam calculated for years 2008-2017. NOAA minimum abundance threshold represents values that NOAA has identified to minimize long-term extinction risk. Proposed escapement goals to the Snake River Basin include populations in Washington, Oregon and Idaho[1]. Proposed escapement goals to Idaho include the component of the Snake River Basin aggregate that returns to spawn in Idaho tributaries[2].

Proposed Wild- and Natural-Origin Salmon and Steelhead Goals	Most Recent 10-yr Average Return to Lower Granite Dam	NOAA Minimum Abundance Thresholds (M.A.T)	Proposd Goals for Snake River Basin[1]	Idaho Component of Basin Goals[2]
Spring/Summer Chinook Salmon	17,300	31,750	127,000	98,000
Fall Chinook	10,489	4,200	14,360	N/A
Summer Steelhead	30,452	21,000	104,500	72,000
Sockeye Salmon	212	2,500	9,000	9,000

1647 Table 6 Escapement goals for wild- and natural-origin salmon and steelhead aggregated by
1648 NOAA-designated Major Population Group, where available.

Wild- and Natural-Origin Spring/Summer Chinook Salmon Major Population Groups	Proposed Goals for Snake River Basin Major Population Group
Grande Ronde/Imnaha , Oregon	24,000
Lower Snake , Washington	5,000
Dry Cleawater, Idaho	11,000
Wet Clearwater, Idaho	15,000
South Fork Salmon River, Idaho	13,000
Middle fork Salmon River, Idaho	22,000
Upper Salmon River, Idaho	37,000
TOTAL SPRING/SUMMER CHINOOK	127,000

Wild- and Natural-Origin Summer Steelhead Major Population Groups	Proposed Goals for Snake River Basin Major Population Group
Clearwater River, Idaho	25,000
Grande Ronde/Imnaha, Oregon	25,000
Lower Snake River, Washington	7,500
Salmon River, Idaho	47,000
TOTAL SUMMER STEELHEAD	104,500

Wild- and Natural-Origin Fall Chinook Major Population Group	Proposed Goals for Snake River Basin Major Population Group
Single Population (Washington, Oregon, Idaho)	14,500

Wild- and Natural-Origin Fall Chinook Major Population Group	Proposed Goals for Snake River Basin Major Population Group
Three Populations, Idaho	9,000

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1650

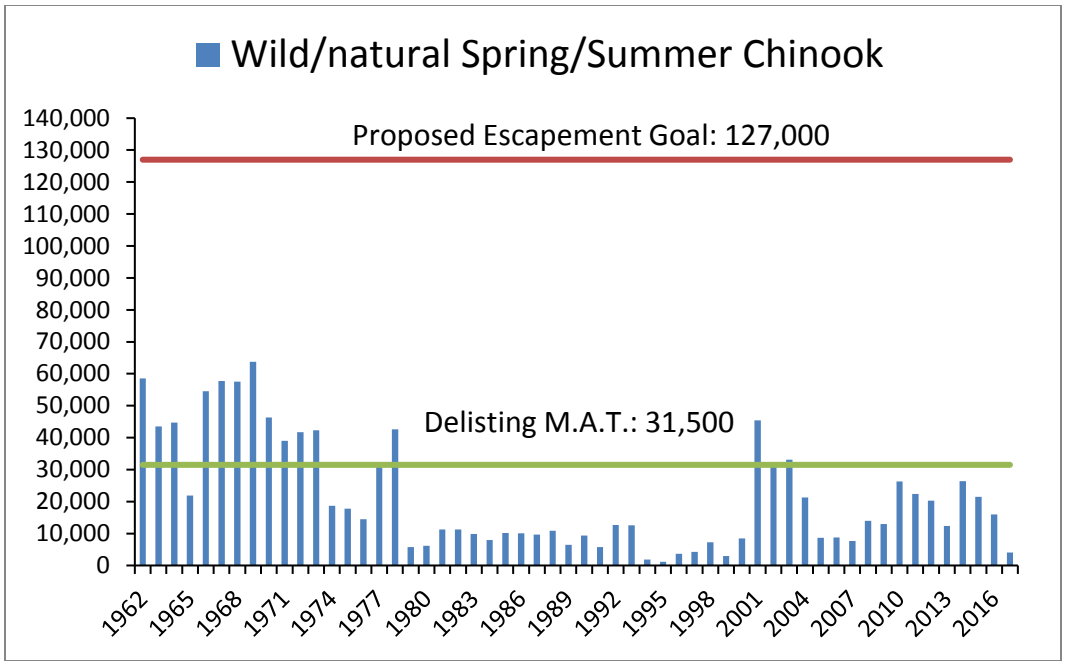


Figure 4. Historic adult passage of spring/summer Chinook Salmon at the upper most dam and counting facility chronologically in time in the Snake River, 1960-2017. The upper most dams at the times of the fish counts were Ice Harbor 1960-1968, Lower Monumental 1969, Little Goose 1970-1974, and Lower Granite 1975 to present. NOAA ESA Minimum Abundance Threshold (M.A.T.) identified by green horizontal line. Escapement goal to tributaries for the aggregate of all populations identified by red horizontal line.

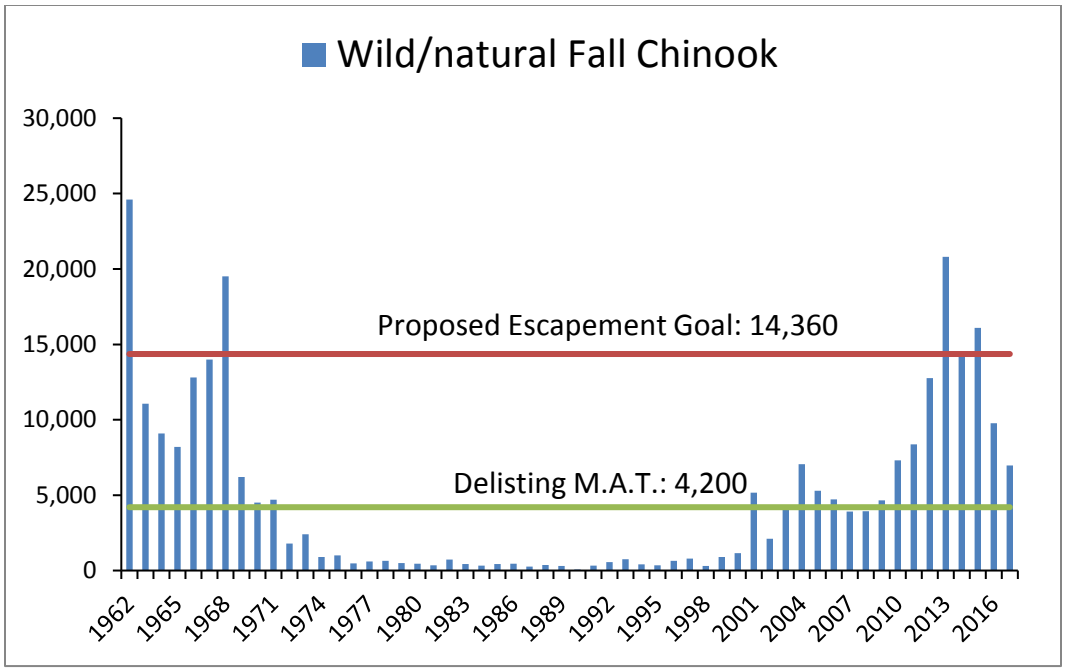


Figure 5. . Historic adult passage of fall Chinook Salmon at the upper most dam and counting facility chronologically in time in the Snake River, 1960-2017. The upper most dams at the times of the fish counts were Ice Harbor 1960-1968, Lower Monumental 1969, Little Goose 1970-1974, and Lower Granite 1975 to present.. NOAA ESA Minimum Abundance Threshold (M.A.T.) identified by green horizontal line. Proposed escapement goal to tributaries for the aggregate of all populations identified by red horizontal line.

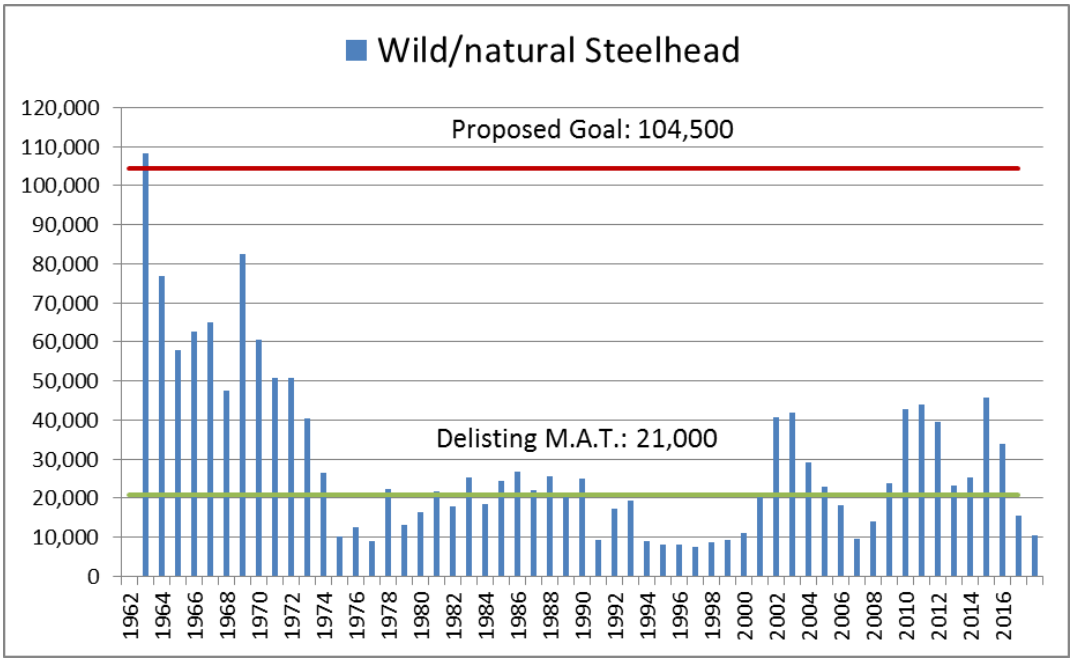


Figure 6. Historic adult passage of wild/natural summer steelhead at the upper most dam and counting facility chronologically in time in the Snake River, 1960-2017. The upper most dams at the times of the fish counts were Ice Harbor 1960-1968, Lower Monumental 1969, Little Goose 1970-1974, and Lower Granite 1975 to present. Wild- and Natural-Origin summer steelhead escapement to , 1962-2017. NOAA ESA Minimum Abundance Threshold (M.A.T.) identified by green horizontal line. Proposed escapement goal to tributaries for the aggregate of all populations identified by red horizontal line.

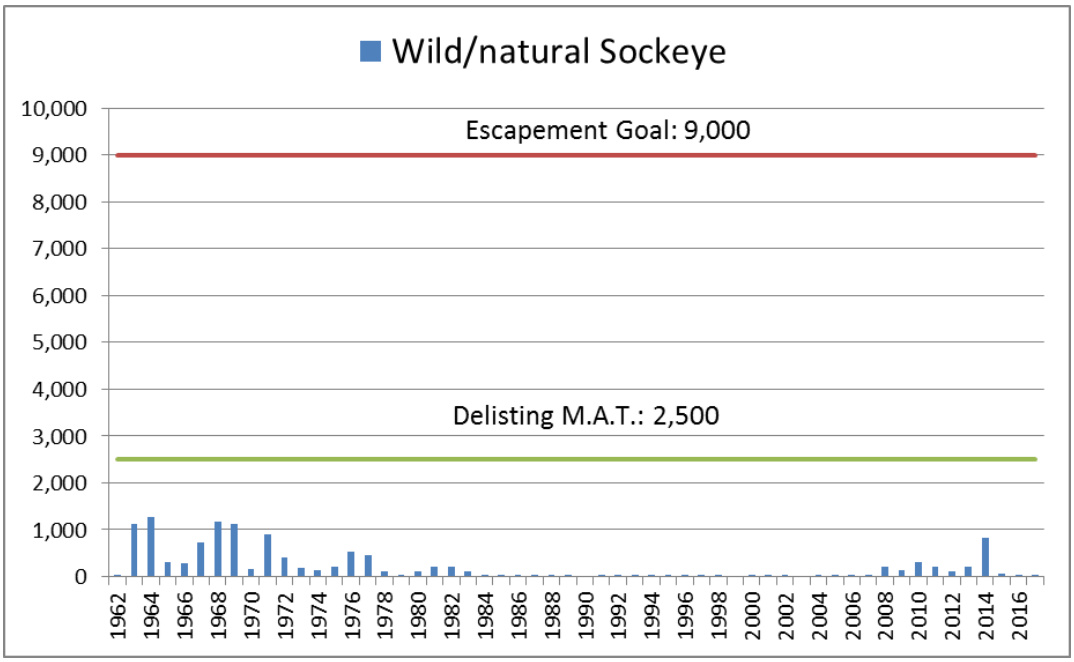


Figure 7. Historic adult passage of wild/natural summer steelhead at the upper most dam and counting facility chronologically in time in the Snake River, 1960-2017. The upper most dams at the times of the fish counts were Ice Harbor 1960-1968, Lower Monumental 1969, Little Goose 1970-1974, and Lower Granite 1975 to present. NOAA ESA Minimum Abundance Threshold (M.A.T.) identified by green horizontal line. Proposed escapement goal to tributaries for the aggregate of all populations identified by red horizontal line.

Columbia River Regional Management Forums

Participation in Columbia River management forums is vital to meeting the long-term goals and objectives. The IDFG engages with state and federal agencies in fisheries management forums (US v OR, Columbia River Compact, Northwest Power and Conservation Council etc.) in the forums to 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. Improvement in juvenile and adult survival associated with migration through the lower Snake and Columbia Rivers provide our best opportunity for enhancement of all salmon and steelhead populations, wild or hatchery, in Idaho (IFGC Policy, May, 1998). The Department will focus expertise on both in season fish passage recommendations and on continuing assessment of transportation and in-river migration conditions for migrating smolts. IDFG will continue to use its technical expertise to improve survival of juvenile and adult salmon and steelhead.

Wild- and Natural-Origin Fish Management

For management purposes, IDFG classifies three groups of salmon and steelhead as follows: wild, natural, and hatchery fish. "Wild-origin Fish" are native fish, produced from populations which have no history or evidence of reproductive introgression with hatchery or non-native fish. These populations are managed without direct hatchery intervention. Natural-origin fish are produced from natural spawning and rearing but may be the offspring of either hatchery or wild parents and or introduced stocks. For example, Spring Chinook Salmon, which spawn in the Clearwater River Basin would produce offspring managed as "natural-origin fish" because the former populations were extirpated and re- established using hatchery-origin fish. In Idaho, "conservation" describes the fishery management strategy applied to most wild- and natural-origin salmon and steelhead populations (see Part 2, Drainage Management Sections) during this planning period. Conservation-oriented strategies seek to maintain a diversity of wild- (without hatchery influence) and natural-origin populations (may have hatchery influence) that are broadly distributed across the range of current anadromous fish habitat.

One of the keystones in maintaining the genetic and life history diversity of Idaho's salmon and steelhead populations was the establishment of wild salmon and steelhead management areas. Wild salmon and steelhead management areas were established intentionally to provide an area where wild fish would have priority management status where there would be no direct hatchery intervention. The wild- and natural-origin fish management areas documented in Table 7 will be maintained over the life of this plan. Many of the areas in Table 7 overlap areas classified as wilderness or Wild and Scenic Rivers. In addition to protecting genetic and life history variation these areas provide control populations for evaluating various management actions and provide insight regarding the effects of environmental variability versus management actions.

Maintaining genetic integrity and diversity of the wild stocks is considered essential to continued production of fish adapted for specific habitat in Idaho rivers and streams, 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" (hatcheries, harvest, habitat, and hydropower) or by natural environmental variables, such as ocean regime, can be capitalized on for rebuilding and recovery.

Table 7. Geographic locations of wild-origin populations of salmon and steelhead.

Spring and 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

Summer 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

Anadromous Fish Hatcheries

Idaho's anadromous hatcheries were established to offset the loss of salmon and steelhead from dam building and operation. Throughout the planning period hatchery produced fish will be used to meet fishery, conservation, and abundance goals. The Department will continue to implement hatchery supplementation strategies where specified in drainage management plans and consistent with fishery and conservation objectives and Federal Permits. Clear benefit as a result of benefit/risk assessment must be demonstrated before considering new interventions using hatchery 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. Use of natural fish in hatchery programs will be in accordance with appropriate hatchery permits and managed to avoid reducing genetic integrity or fitness of the population.

Idaho's anadromous fish management uses hatchery-produced fish as a tool to meet fishery, conservation, and abundance goals (see Fish Hatchery section). Hatchery production occurs in a controlled artificial spawning and rearing environment with hatchery fish released into the natural environment to provide fishing opportunity or to increase population abundance. Releases of hatchery-produced fish are managed to minimize straying as juveniles or adults into non-targeted or wild fish streams. The Department will continue to implement hatchery supplementation strategies where specified in drainage management plans, consistent with fishery and conservation objectives and Federal Permits. Implementation of these measures will be carefully monitored to balance benefits to the receiving populations with potential genetic and demographic risks.

Hatchery 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 hatchery propagation as a safety net for wild- and natural-origin populations that may be at risk of loss of population viability during the next management period. Bringing wild-origin fish into captivity will be considered only if essential for long-term conservation. Use of natural-origin fish

in hatchery programs will be in accordance with appropriate hatchery permits and managed to avoid reducing genetic integrity or fitness of the population.

Salmon and Steelhead Harvest

Opportunities for directed sport fisheries on conservation populations (as defined above) will only be explored when abundances are sufficient. At low abundances, this management strategy prohibits directed harvest and/or angling in order to minimize harvest mortality. In most fisheries natural-origin fish will be classified as "wild" and protected through regulations preventing harvest. Hatchery-origin fish are produced in hatcheries and the majority will be adipose fin-clipped to allow for management of selective harvest fisheries.

The Department will seek to ensure sufficient returns of anadromous fish to Idaho waters through negotiation or legal means to perpetuate both natural- and hatchery-produced runs and to allow Idaho anglers to access their fair share of salmon and steelhead from Idaho in sport fisheries. Efforts will be continued in Columbia River regional and Idaho forums to limit harvest impacts on weak stocks and to ensure a fair share of anadromous fish among the various groups. Historical through current harvest in Idaho sport fisheries is presented below in Figures 8 and 9.

Tribal ceremonial fisheries will continue to take precedence over sport fisheries. The Department 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, tribal and sport fisheries will have the opportunity to access the harvestable share.

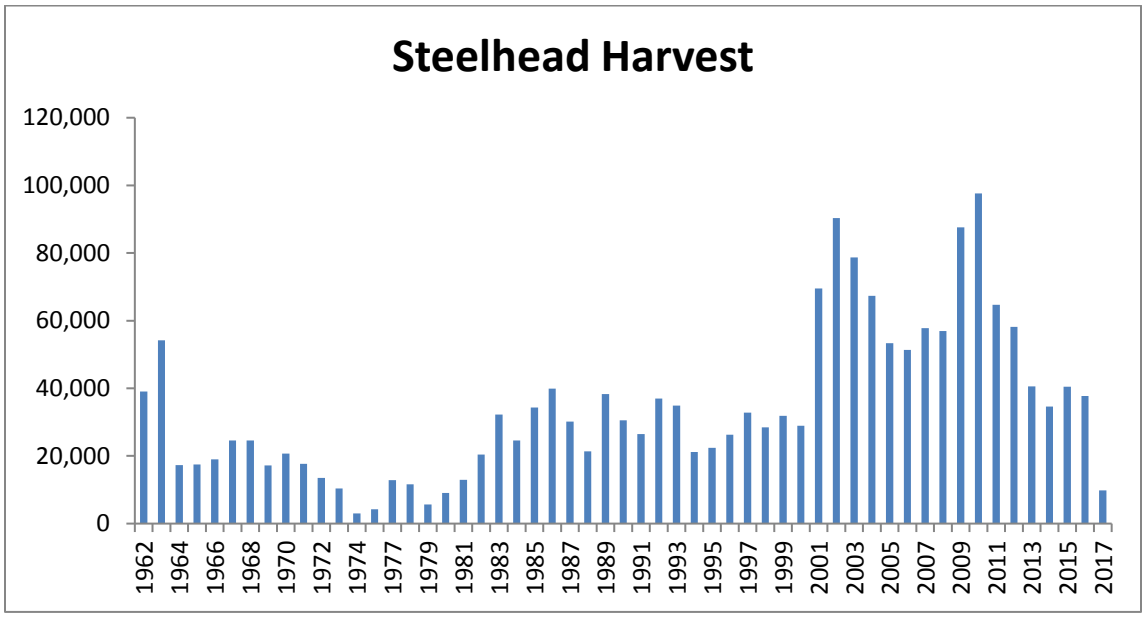


Figure 8. Harvest of summer steelhead in Idaho sport fisheries from 1962-2017. Harvest of wild steelhead was prohibited after XXXX.

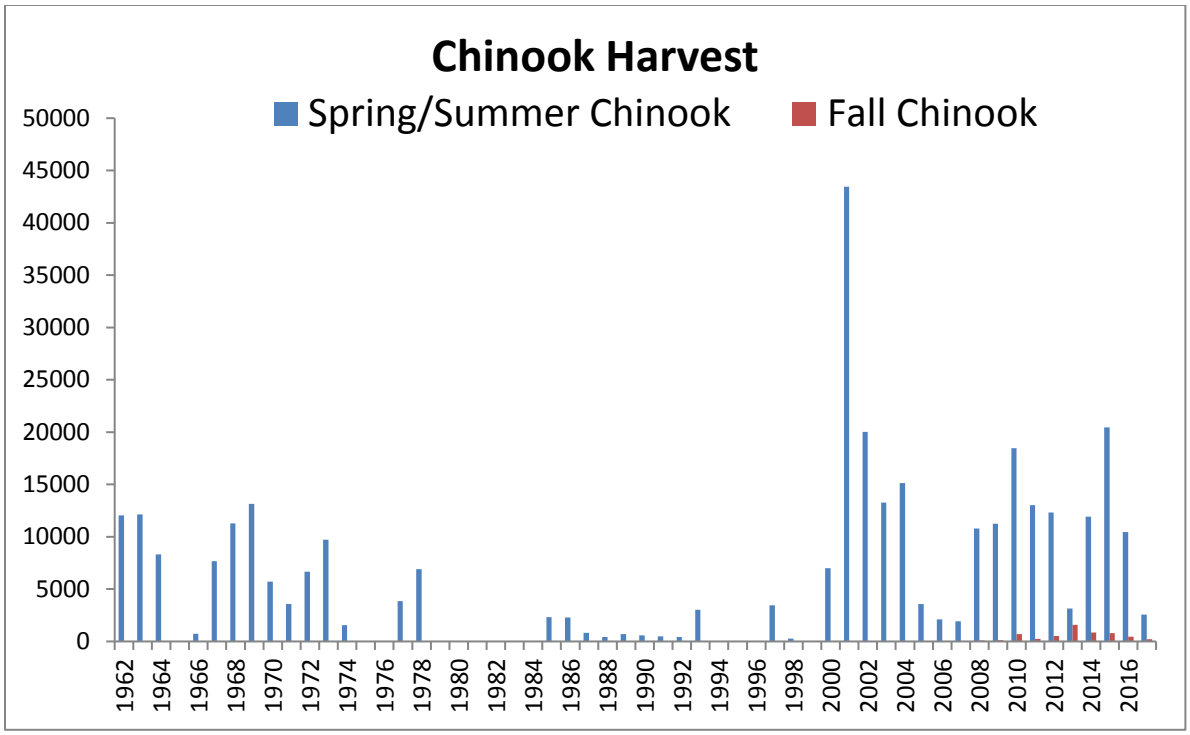


Figure 9: Harvest of adult Spring and Summer Chinook and Fall Chinook in Idaho sport fisheries from 1962-2016. *From 1985-1999 and 2001-2003, jacks were also included in the harvest estimates.

Habitat Enhancement

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 maintain and protect areas with good quality habitat and fish populations and to improve areas where habitat is limiting productivity. Areas of emphasis include increasing floodplain connectivity, creating juvenile rearing habitat, re-connecting tributaries, and improving thermal regimes. Priority watersheds include the upper Salmon River drainage (North Fork Salmon, Lemhi and Pahsimeroi rivers) and the Potlatch River in the Clearwater River drainage.

The Department will continue to partner with landowners in our Salmon Region to implement the Fish Screen Program. This Program is responsible for maintaining over 265 fish screens that keep juvenile salmon and steelhead out of irrigation ditches. Most fish screen installations are on private property necessitating the need to work with land owners to develop agreements (easements) to install and maintain screen installations.

Management activities to increase wild- and natural-origin salmon and steelhead 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- and natural-origin populations of salmon and steelhead will be pursued in collaboration with land managers and private landowners.

Hydropower System

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. 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 an 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 and steelhead as more information is available.

IDFG anticipates incremental improvements in survival from changes in the configuration and management of federal dams and reservoirs during this planning period, through installation of removable spillway weirs and continued refinement of spill management at lower Snake and Columbia River dams. Regional decisions about aspects of operations that affect fish passage through dams and reservoirs, 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 the Current Columbia River Systems Operation Environmental Impact Statement process. Additional expected “out of Idaho” actions affecting the migration corridor include predator management (fish, bird, and mammals) 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. 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 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 and 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).

Fish Hatchery Program

The Department operates 21 fish hatcheries statewide and 10 weir and fish trapping facilities (Figure 10). The first hatchery in Idaho was built in 1907 (Hayspur Hatchery) and still functions as a state-operated hatchery, over 100 years later. The hatcheries raise, manage, and support resident and anadromous fish species using funding from multiple sources including license

sales revenue, the U.S. Fish and Wildlife Service Sport Fish Restoration Program (Dingell-Johnson), and mitigation programs of the Idaho Power Company, Lower Snake River Compensation Plan, Bonneville Power Administration, U.S. Army Corp of Engineers, U.S. Bureau of Reclamation, PacifiCorp, Avista, and the City of Idaho Falls.

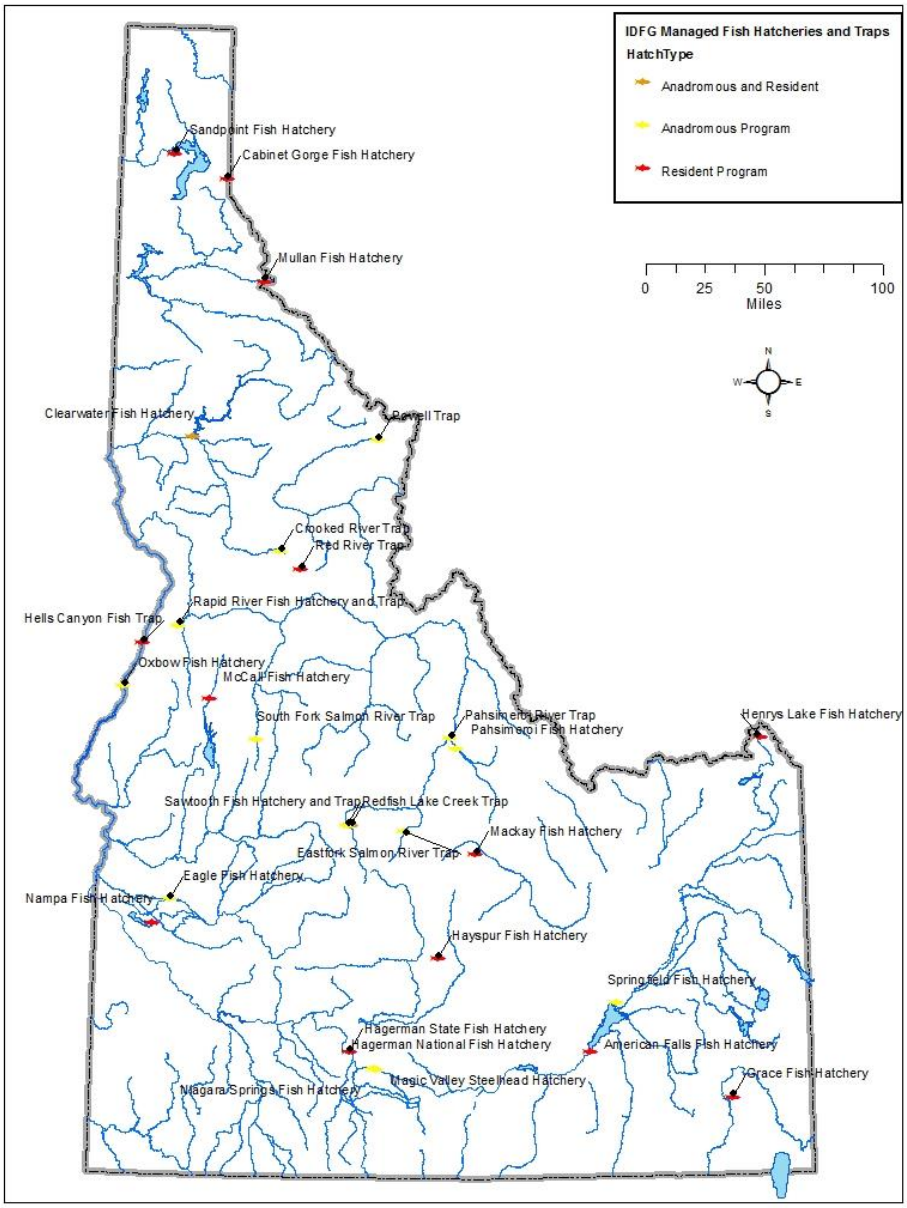


Figure 10. Map of hatcheries and fish trapping facilities in Idaho. The hatcheries that raise resident fish are in red, anadromous fish are in yellow, and those that raise both are in brown.

Resident Fish Hatcheries

On an annual basis, IDFG may stock over 20,000,000 fish from its resident hatcheries. Fish are planted at fry, fingerling, and catchable sizes and represent 19 species, including 3 strains of rainbow trout and both early run and late run kokanee. Most of these fish are utilized in lowland lakes and reservoirs, but approximately 240,000 trout and 17,000 grayling are stocked annually into mountain lakes. Approximately 85% of the total numbers of resident fish released are salmonids, with the other 15% being comprised of Walleye, Channel Catfish, tiger muskellunge, and White Sturgeon. In a typical year, Rainbow Trout represent approximately 19% of the total number of resident salmonids stocked, Cutthroat Trout species represent approximately 8.5%, and kokanee salmon over 70%.

IDFG currently operates eight fish hatcheries dedicated to production of resident salmonids. The American Falls, Grace, Hagerman State, and Nampa fish hatcheries focus primarily on Rainbow Trout production, but also rear and stock multiple other salmonids, as well as tiger muskellunge and White Sturgeon produced at Hagerman. The Mackay Fish Hatchery production represents the statewide program's most diverse, with regional Rainbow Trout, southern Idaho kokanee, and Henrys Lake stocking comprising the majority of the load. The Hayspur Fish Hatchery serves as the Department's Rainbow Trout broodstock facility, supplying eggs to production stations. The Cabinet Gorge Hatchery, built to mitigate for the loss of habitat due to the operation of Albeni Falls Dam, primarily produces kokanee, but also holds a broodstock of Westslope Cutthroat Trout that supplies eggs for statewide management programs. The Henrys Lake Fish Hatchery does not rear fish, but takes Yellowstone Cutthroat Trout eggs from mature fish that return to the hatchery from the lake; these eggs are primarily dedicated to supporting the Henrys Lake fishery, but are also made available for use in other programs statewide. Henrys Lake Hatchery also supplies the program with Rainbow x Cutthroat Trout hybrid eggs. Four other facilities (Clearwater, McCall, Sawtooth, and Hagerman National) stock resident fish in addition to their primary function as anadromous fish hatcheries. There are two additional facilities dedicated specifically to holding and redistribution of catchable-sized Rainbow Trout grown in southern Idaho hatcheries to waters of the Panhandle: 1) the Mullan Fish Hatchery, which is owned by the Shoshone County Sportsman's Association and focuses on stocking in the Silver Valley; and, 2) the Sandpoint Fish Hatchery, which is also the site of the Sandpoint Water Life Discovery Center habitat education and interpretive area. The Department's high mountain lake stocking program is supported by fish production at the Mackay, McCall, and Cabinet Gorge fish hatcheries.

Conserving the genetic purity of wild/natural trout stocks is a Department priority. Therefore, IDFG will stock reproductively sterile Rainbow Trout in waters where the introduction of non-native genetics represents a potential risk to naturally reproducing populations. If there is no genetic risk to native trout species, IDFG may consider supplementing native/natural stocks with non-sterile fish for conservation or sport fishery purposes.

The Hayspur Fish Hatchery produces reproductively sterile triploid Rainbow Trout eggs for the statewide fish production program, allowing sterile fish to be stocked where deemed appropriate. The hatchery adheres to a protocol subjecting eggs to high pressure shortly after they are fertilized, which has proven highly effective in rendering them sterile. Routine monitoring ensures that triploidy induction rates are adequate to minimize the risk hatchery stocking might represent to the genetic integrity of naturally reproducing fish stocks. Annual triploidy induction rates for Rainbow Trout are typically 99% or higher. A small number (<1-4%) of fertile fish may be present in some groups of treated fish that are used for stocking. IDFG will continue to work on perfecting triploidy induction techniques to consistently meet the goal of 99% sterilization. IDFG has conducted research to induce triploidy in other species including Cutthroat Trout, Rainbow x

Cutthroat hybrids, Brook Trout, Lake Trout, tiger trout, landlocked Chinook Salmon, and kokanee. As we develop these sterile hatchery fish, they will be used as appropriate to reduce genetic, competition, and predation risks to native trout while achieving fisheries management objectives. In addition to producing Rainbow Trout from our own broodstock, IDFG also purchases triploid rainbow trout eggs from commercial suppliers. Purchase orders for commercial eggs stipulate the triploidy rate must be at least 95%.

IDFG puts a high priority on fish health in both hatchery and native stocks. IDFG has participated in the development of, and is adhering to, fish health guidelines set forth by the Pacific Northwest Fish Health Protection Committee. The Department's Eagle Fish Health Laboratory provides fish health and diagnostic services to both resident and anadromous hatcheries, assists regional personnel in monitoring disease, diagnosing fish kills, and detecting pathogens 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 endemic disease agents through Departmental activities; and to enhance hatchery fish health and smolt quality to assist in the restoration of salmon and steelhead.

During the previous planning period, data from the Department's Fisheries Research Tag-You're-It program drove changes to the resident hatchery production model. It was determined that 12" hatchery Rainbow Trout stocked into large water bodies were exploited by anglers at a relative rate of up to 70% higher than 10" Rainbow Trout. This finding led to approximately 50% of 10" production being shifted to the larger product.

During this planning period, the resident fish hatchery program will focus on continuing to meet fisheries management needs statewide, working cooperatively with fisheries researchers and managers to maximize program effectiveness in using hatchery products to benefit of anglers and to achieve conservation goals. Hatcheries and hatchery budgets will be used at their maximum capacity to produce fish to achieve these ends. 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. These measures are supported by well maintained, functional hatchery facilities, and the Department therefore will continue to invest in critical hatchery infrastructure such as rearing units, water supply systems, fish stocking equipment, predator exclusion and disease prevention structures, and employee housing. Stocking information is made available to the public through the IDFG website, specifically on the Fish Stocking page and in the Fishing Planner application. 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 salmon and steelhead production and reduced survival that resulted from hydroelectric development on the Lower Snake River downstream of Lewiston, ID, the North Fork of the Clearwater River near Orofino, ID, the Hells Canyon stretch of the Snake River, and the Columbia River. The "anadromous" fishery management classification refers to management of fish species that are spawned and reared in freshwater, but migrate to the ocean as juveniles and return one to several years later as adults. The goal of anadromous hatcheries is to produce fish that can support harvest opportunity on

hatchery-origin fish while protecting wild and natural-origin fish (see Part 2, Drainage Management). Anadromous fish hatcheries in Idaho are operated not only by the Department, but also by the USFWS and Nez Perce Tribe. Plans are in review for a hatchery to be operated by the Shoshone-Bannock Tribes. Current production goals for all anadromous releases in Idaho total approximately 13.5 million spring and summer Chinook Salmon smolts, 4.5 million fall Chinook Salmon smolts, 1.1 million Coho Salmon smolts, 7.9 million steelhead smolts, and 1 million Sockeye Salmon smolts as partial mitigation for losses to Idaho-bound runs. Of these release goals, Department-operated facilities are responsible for: 10.75 million spring and summer Chinook Salmon smolts produced at the Clearwater, Rapid River, Sawtooth, Pahsimeroi, and McCall fish hatcheries; 1 million Sockeye Salmon smolts produced by the Springfield and Eagle fish hatcheries; and, 5.75 million steelhead smolts produced at the Niagara Springs, Magic Valley, Hagerman National, and Clearwater fish hatcheries. Management of IDFG's Chinook Salmon and steelhead hatcheries is focused on producing and releasing juvenile fish to provide harvest opportunity on resulting adult fish returns.

Since the 1970s, hatchery-produced fish have provided the only sport fishing harvest opportunity for anadromous salmon and steelhead in Idaho. Although the primary objective of the hatcheries is to provide harvest opportunity, fisheries can be considered only when: 1) numbers of returning hatchery-produced adults are surplus to hatchery broodstock needs; and, 2) incidental impacts to non-target stocks are minimal. Since 2001, the steelhead hatchery program has regularly met smolt production and adult return goals and has provided consistent fisheries. Smolt-to-adult survivals realized by spring and summer Chinook Salmon produced by Idaho hatcheries has proven to be lower than projections of survival projections that informed the development and size of some hatchery programs, and this has resulted in adult returns that have not met adult mitigation goals established for most facilities. However, some level of harvest opportunity has typically been provided in the Snake River below Hells Canyon Dam and in the Clearwater and Salmon River drainages since 2010.

A secondary objective of the anadromous fish hatcheries is to preserve and rebuild natural stocks. IDFG will continue to carefully assess the risks, benefits, and effectiveness 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-origin fish populations is regionally coordinated. A steelhead supplementation program for the East Fork of the Salmon River using natural steelhead collected at the East Fork Salmon River weir will continue to be implemented during this planning period. The Idaho Supplementation Studies (ISS) for Chinook Salmon were completed during the last planning period. The Department is using results from ISS along with information from other studies, to guide current and future hatchery actions to rebuild natural-origin populations and reduce the risk of hatchery programs on wild and natural-origin populations.

New efforts to integrate natural and hatchery Chinook Salmon production have been initiated and will continue during this planning period. Integrated broodstock programs were initiated at Sawtooth, McCall, and Pahsimeroi hatcheries in 2010. The integrated brood program incorporates natural Chinook Salmon into a portion of the hatchery broodstock. By integrating the hatchery broodstock, managers are attempting to let the natural environment drive selection in hatchery' integrated program populations and therefore reduce risks associated with hatchery-origin fish spawning naturally and maintain long term productivity of the natural populations. The 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 will be particularly advantageous during years of low natural-origin abundance. As natural-origin

abundance increases, the size of the integrated program may increase based on sliding scales developed in the Hatchery Genetic Management Plans. 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 of the natural-origin population is less than needed for spawner-to-spawner replacement.

The Department also raises endangered Sockeye Salmon at the Eagle and Springfield hatcheries. The purpose is to prevent extinction and rebuild population numbers. The Eagle Hatchery serves as a captive broodstock facility where adults are spawned and a portion of the juveniles are reared from egg to adult in captivity as a safety net and gene bank. A second redundant captive broodstock is housed at National Marine Fisheries Service facilities in Washington state. Eggs from each of these facilities are transferred to Springfield hatchery and reared to the smolt life-stage. Springfield Hatchery is the primary production facility for Sockeye Salmon, capable of rearing and releasing up to 1 million smolts. These hatcheries are vital to the continued propagation and enhancement of the species.

IDFG's anadromous hatchery program will: 1) strive to maximize the survival of juvenile fish to adulthood using 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 experimental supplementation programs as appropriate and as guided by current genetic theory and science. Anadromous hatcheries may also be used to help conserve salmon and steelhead populations at high levels of demographic, genetic, or environmental risk until life-cycle survival permits natural rebuilding. IDFG will continue to mark juvenile hatchery fish prior to release so that returning hatchery-produced adults can be identified in selective harvest fisheries, broodstock management, and supplementation programs.

The Department 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. 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.

Numbers of adult hatchery-origin salmon and steelhead returning to the Snake River basin are presented in Figures 11-14. Similar to the suite of escapement goals presented for wild and natural-origin adults, minimum return goals for hatchery-origin adult salmon and steelhead to Lower Granite Dam on the Lower Snake River are also identified.

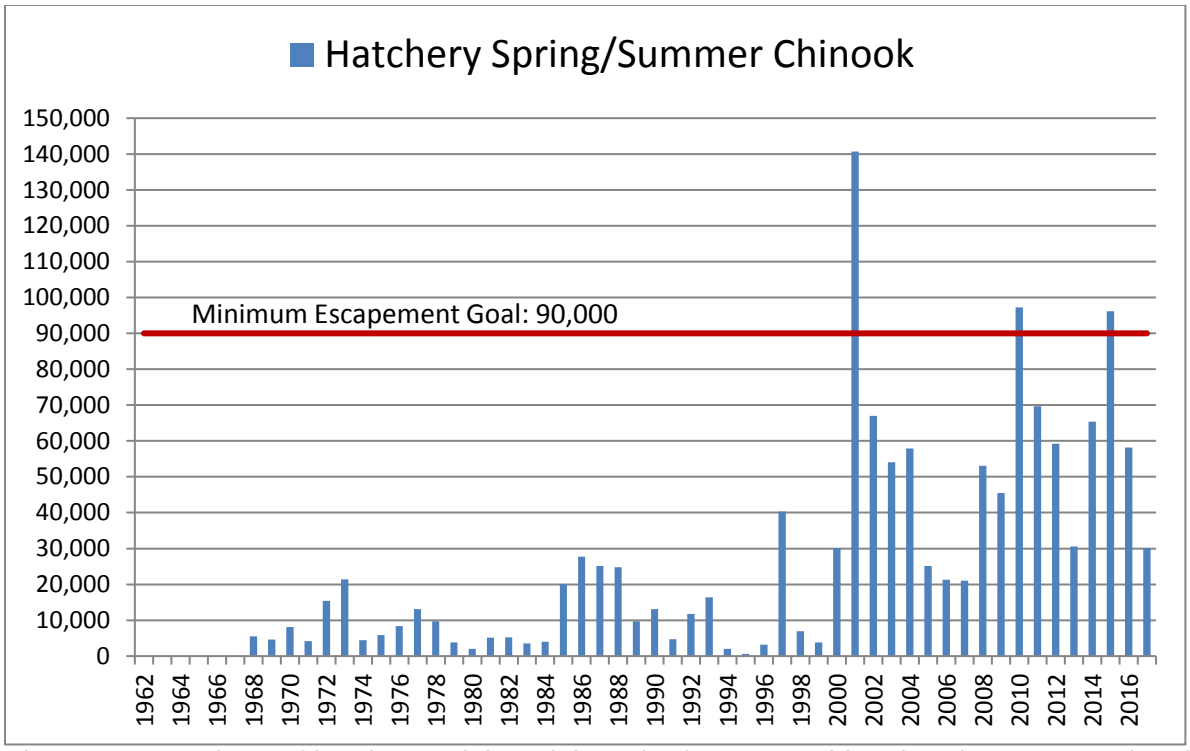


Figure 11. Numbers of hatchery-origin, adult Spring/Summer Chinook Salmon counted at the most upstream Lower Snake River Dam (1968 – 2017).

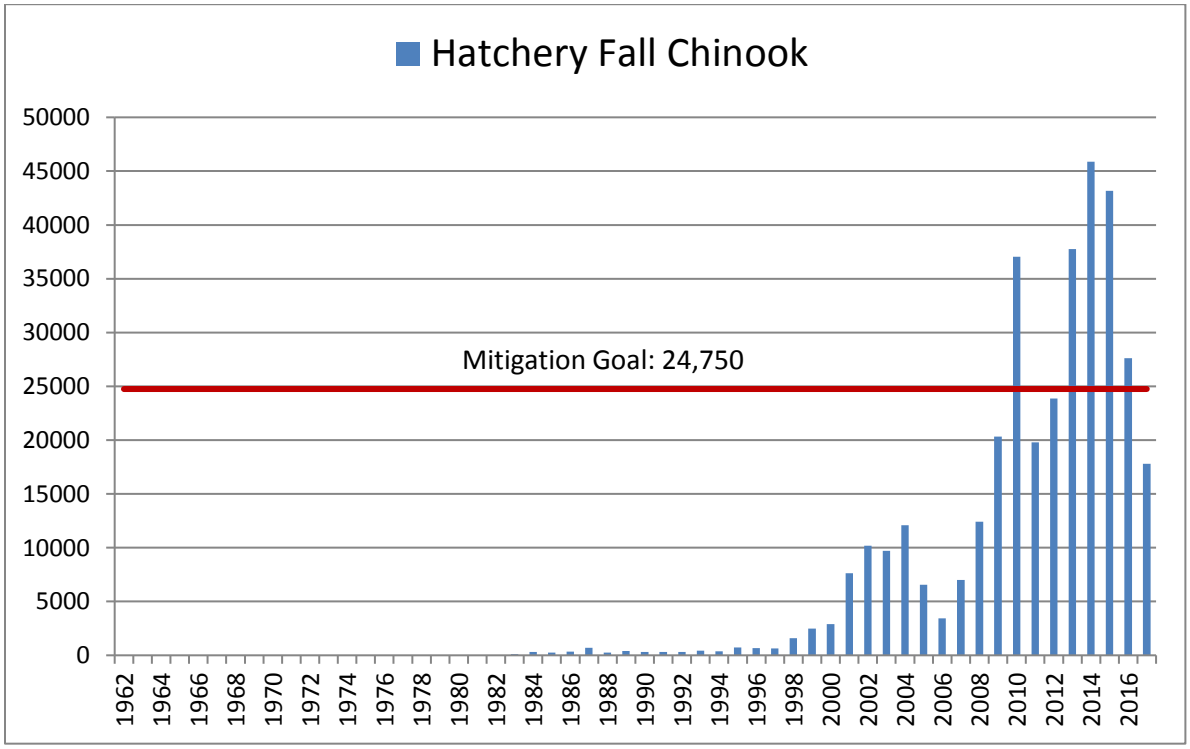


Figure 12. Numbers of hatchery-origin, adult Fall Chinook Salmon counted at Lower Granite Dam on the Lower Snake River (1984 – 2017).

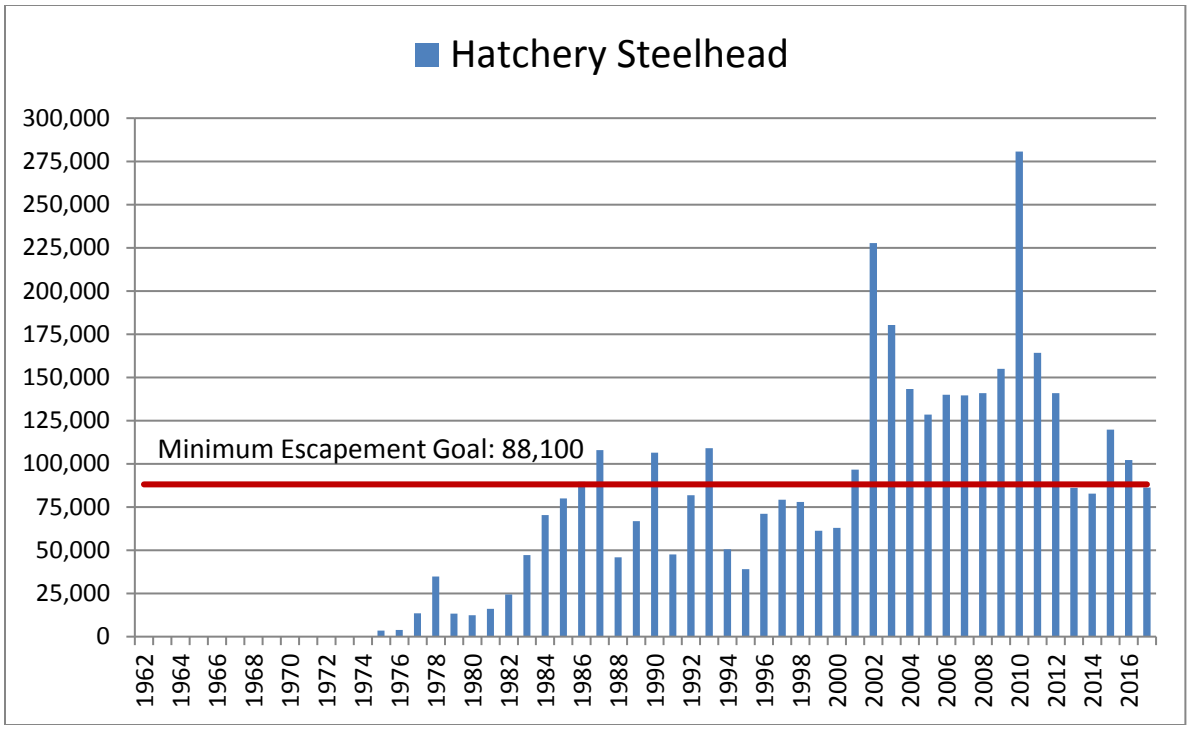


Figure 13. Numbers of hatchery-origin, adult summer steelhead counted at Lower Granite Dam on the Lower Snake River (1975 – 2017).

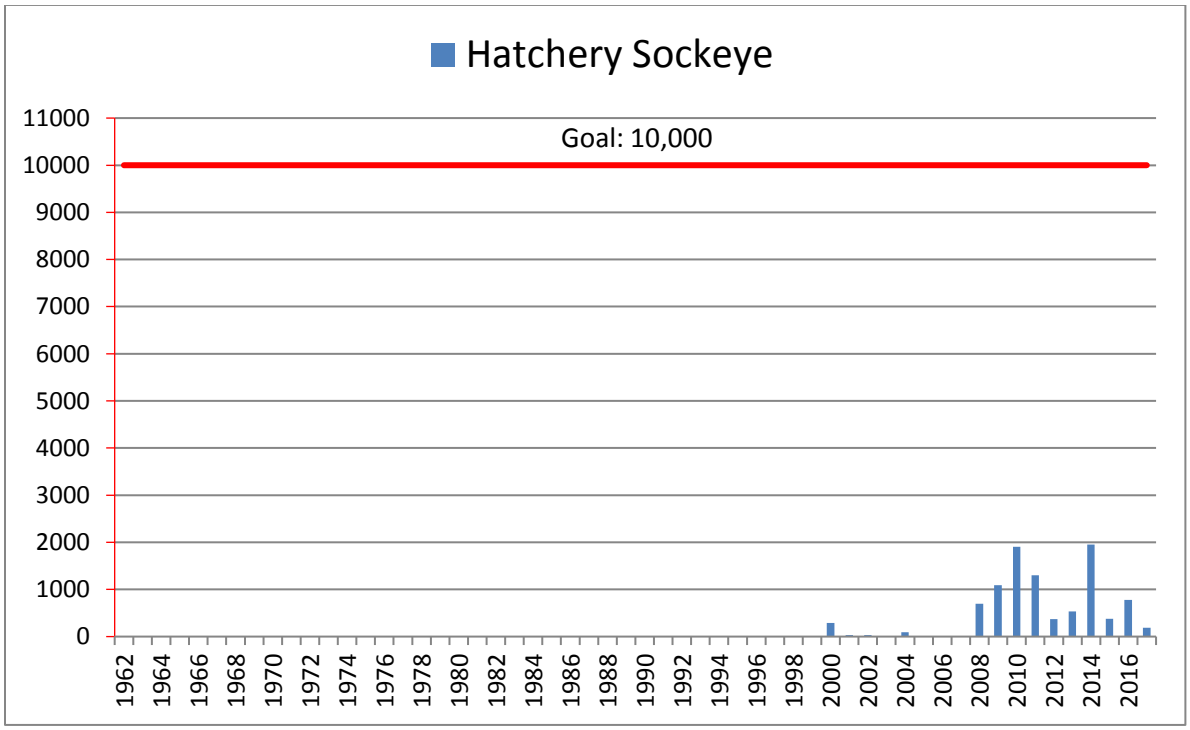


Figure 14. Numbers of hatchery-origin, adult Sockeye Salmon counted at Lower Granite Dam on the Lower Snake River (1999 – 2017).

Fisheries Research and Monitoring Program

Fisheries management is a science-based activity that requires rigorously developed, credible information. That information is obtained through research and monitoring. The mission of the Fisheries Research and Monitoring program is, "To develop and effectively communicate scientifically sound information and tools to enhance the management of Idaho's fisheries." The fisheries research and monitoring section has five organizational components: anadromous fish mitigation and population monitoring, resident fish species mitigation (both 100% Federal funding), program management/technical support (both funded 75% with federal sport fish restoration or Dingell-Johnson funds), and a genetics program which supports research and management. The Fisheries Research and Monitoring Program is funded from Federal, state and private (e.g., Idaho Power Company) funds.

Monitoring is an invaluable and inseparable part of management. In the presence of uncertainty, management is often adaptive; that is, learning is emphasized so that management can be adjusted and improved as understanding is gained. Sources of uncertainty regarding fish populations include: a high degree of annual variability in important processes (e.g., life stage survival), logistical difficulties in making relevant measurements, and imperfect understanding of influential factors. Monitoring efforts should focus on five main questions:

1. What is the status of the target population(s) with respect to the desired level of abundance?
2. How does the status of the target population(s) and habitat conditions change through time and across space?
3. What factors influence the dynamics of the target population(s) of interest?
4. How do management actions affect these influential factors or the status of the population(s) and are the actions achieving the desired objectives?
5. What critical uncertainties need to be addressed to improve information generated by monitoring?

Most populations of anadromous salmon and steelhead are ESA listed. Monitoring of ESA listed populations is integrated with Federal ESA recovery and permitting processes via the Idaho steelhead Monitoring and Evaluation Studies, the Idaho Natural Production project, and the Potlatch and Lemhi Intensively Monitored Watershed projects. Two projects are focusing on implementation of hatchery technologies to maintain genetic diversity, enhance natural populations, and ultimately restore listed natural-origin stocks to harvestable and sustainable levels. These two projects include the Integrated Chinook Salmon and Sockeye Salmon Captive Broodstock projects.

The Department will maintain a host of a anadromous mitigation research and monitoring projects during this next Plan period (Table 8). Recently, IDFG has formalized a three-tiered approach to monitoring of spring and summer Chinook Salmon and steelhead:

Tier 1) Assess ESU/DPS status and trend for Chinook Salmon and steelhead by sampling at Lower Granite Dam. Using genetic tools (genetic stock identification and parental based tagging), estimate fish at Lower Granite Dam by major population group and by populations, where possible;
Tier 2) Intensive monitoring efforts are directed at selected populations to support life cycle modeling, leading to a mechanistic understanding of population dynamics. These efforts are high intensity in nature (known as ‘fish in, fish out’) and occur in locations with a suitable sampling infrastructure (e.g., a weir and rotary screw trap);

Tier 3) Extensive monitoring efforts are directed at the remaining populations. Extensive monitoring is conducted without sampling infrastructure. For Chinook Salmon, extensive monitoring is based on spawning ground surveys. For steelhead, extensive monitoring is based on snorkel surveys of parr abundance.

Genetic tools have evolved rapidly and now play a key role in fisheries management. Anadromous fisheries managers use genetic information to determine age-structure of hatchery returns, estimate productivity metrics (e.g. recruits per spawner), and to monitor stray rates between populations. Genetic stock identification (GSI) and parentage-based tagging (PBT) programs provide information for a suite of fishery management and conservation issues. Importantly, information gained from genetic studies are being used by managers 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, broodstock development, and address genetic concerns in Endangered Species Act petitions.

Table 8. Anadromous salmon and steelhead research, monitoring and evaluation efforts that will be addressed during the 2018-2023 planning period.

Anadromous Mitigation Research and Monitoring Projects	Schedule
Monitor abundance and productivity of naturally produced Chinook Salmon and Sockeye Salmon and steelhead adults and juveniles at key locations.	2018 - 2023
Research and monitor distribution and population-specific life history patterns and characteristics of naturally produced Sockeye, Chinook Salmon and steelhead.	2018 - 2023
Document the contribution hatchery-produced salmon and steelhead make towards meeting management and mitigation objectives.	2018 - 2023
Monitor natural origin salmon and steelhead populations at Lower Granite Dam using genetic stock identification techniques.	2018 - 2023
Monitor Chinook Salmon and steelhead hatchery programs using genetic parental based tagging techniques.	2018 - 2023
Use Chinook Salmon supplementation strategies to increase natural production in select areas.	2018 - 2023
Assist anadromous management programs through the development and implementation of integrated, web-based hatchery database systems (e.g, FINS and Stream Net).	2018 - 2023
Evaluate salmon and steelhead catch-and-release mortality.	2019-2023
Investigate effects of PIT tag loss for monitoring adult salmon and steelhead.	2019-2023

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 9).

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 10). These research questions are being addressed by three separate Dingell-Johnson funded projects entitled Hatchery Trout Studies, Wild Trout Studies, and Lake and Reservoir Trout Studies.

Fish Habitat Program

Resilient and productive fish populations depend on quality aquatic habitats and healthy watersheds. Protecting and restoring fish habitats is critical to maintaining these aquatic resources. While Idaho does possess areas of intact, high quality aquatic habitats, it also contains many miles of streams and rivers that have been degraded through human activities. Human development, agriculture, timber harvest, and mining practices have fragmented and disconnected sections of rivers, negatively influenced natural hydrologic processes and reduced the quantity and quality of available stream habitat in many drainages. The loss of these habitats and habitat-forming processes has resulted in decreased survival and production of many important native fish species, including wild salmon and steelhead.

Protecting and improving fish habitat has consistently been prioritized as the overall most important fish management activity for the department by respondents in several of the past angler opinion surveys. Despite the public support, funding of the department's fish habitat activities is almost entirely through federal and private funds. Restoration work focused on salmon and steelhead is largely funded through Pacific Coast Salmon Recovery Funds (PCSRF) matched with Bonneville Power Administration (BPA) funds, both administered through the Idaho Governor's Office of Species Conservation. Restoration efforts oriented towards resident fish species are generally funded with a mixture of federal, hydropower relicensing, environmental mitigation, or non-government organization (NGO) dollars.

IDFG's earliest fish habitat improvement efforts likely involved the IDFG Anadromous Fish Screen program. This program began receiving regular funding in 1958 as biologists recognized that hundreds of irrigation diversion structures in the Upper Salmon River Basin (USRB) were impeding passage of wild adult salmon and steelhead and entraining hundreds of thousands of smolts. The screen program, funded by the NOAA Mitchell Act and BPA, currently has 12 full time and 17 temporary employees who are responsible for installation, operation, and maintenance of approximately 260 fish screens in the USRB.

2212
2213
2214 Table 9. Resident species mitigation research, 2018-2023.

Resident Mitigation Research Projects	Schedule
Monitor and evaluate effects of temperature, discharge, and habitat enhancements on Kootenai River White Sturgeon migration, spawning and recruitment success.	2018 -2023
Monitor population vital rates of Kootenai River White Sturgeon to determine population status in relation to recovery criteria identified in the Kootenai River White Sturgeon Recovery Plan.	2018 -2023
Evaluate potential factors limiting wild recruitment of Kootenai River Burbot and estimate population rate functions to effectively manage hatchery production.	2018 -2023
Monitor the new Kootenai River Burbot fishery to estimate exploitation and angler catch rates to inform regulations and hatchery production targets.	2018 -2023
Evaluate the effects of nutrient restoration and possibly habitat improvements on native fish communities in the Kootenai River.	2018 -2023
Evaluate limiting factors for rainbow trout growth, survival, and recruitment in the Kootenai River, and develop solutions if needed.	2018 -2023
Evaluate the kokanee stocking program in Lake Pend Oreille to assist in restoration of kokanee and protection of bull trout.	2018-2023
Reduce Lake Trout abundance and evaluate effects of associated predation reduction on kokanee in Lake Pend Oreille.	2018-2023
Monitor rainbow trout population to inform management of sport fishery and evaluate predation potential on kokanee in Lake Pend Oreille.	2018-2023
Monitor bull trout population dynamics to evaluate harvest fishery opportunity in Lake Pend Oreille.	2018-2023
Evaluate trophic dynamics in Lake Pend Oreille to identify limiting factors for kokanee recovery and potential management actions.	2018-2023
Monitor fertilization efforts in Dworshak Reservoir to ensure continued benefits to the fishery.	2018-2023

2215
2216

Table 10. Management needs scheduled to be addressed by discretionary (DJ) research.

Management Need	Schedule
Lake and reservoir studies • What level of predation are cormorants incurring on hatchery trout? • Would the use of circle hooks reduce deep hooking of trout in lentic waters? • How does Hz and other backpack electrofishers settings affect capture efficiency of trout? • Does hatchery trout harvest and catch rates differ in community ponds with 2-fish limits compared to 6-fish limits? • Can we more effectively sample all size classes of Smallmouth Bass?	2015-2020
Hatchery trout studies • Evaluate the effect of size at stocking or timing of stocking on post-release performance for trout stocked in high mountain lakes. • Evaluate the potential for sterilization to improve trophy resident Chinook fisheries. • Evaluate size at stocking on post-release performance for kokanee. • Evaluate the use of baffles in raceways to self-clean fish effluent and to potentially improve post-release performance via exercise training. • Can hatchery trout diet fat content be reduced to save costs and still produce the same return to creel rates?	2015-2020
Wild trout studies • Can YY male Brook Trout stocked in streams and alpine lakes eradicate undesirable populations by skewing sex ratio to 100% male? • Which angler recruitment method is most effective at recruiting new anglers? • Can we use environmental variables to predict alpine lake stocking rates and success? • Can car counters and cameras be used to collect angler effort data more efficiently?	2015-2020

The Fish Habitat Program is currently structured with an emphasis on implementation and evaluation of projects in the Clearwater and Salmon river basins. Although the projects are designed to improve survival and production of wild salmon and steelhead, native resident fish species are exhibiting the earliest positive responses from restoration work (Uthe et al. 2018). Currently there is one dedicated fish habitat biologist for the Potlatch and two for the USBR, the latter including Lemhi, Pahsimeroi, and North Fork Salmon rivers. 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. Findings from the first decade of monitoring fish response to watershed and site level habitat restoration were recently summarized in Uthe et al. (2018). Guidance and

recommendations are also provided in this document for future habitat work and increasing efficiency and effectiveness within the project development process. Additionally, there are now fish biologists in the Panhandle, Upper Snake, and Southeast regions that have a percentage of their time dedicated to fish habitat restoration. The fish habitat program coordinator and three fish habitat engineers are stationed in Boise and provide administrative, policy, and technical support to field staff. The Fish Habitat Engineers, employed through Pacific States Marine Fisheries Commission (PSMFC), are crucial to contracting, design, and construction of IDFG fish habitat projects. While the Southwest and Magic Valley regions do not have fish habitat biologists, we will continue to explore opportunities to enhance the program.

The Bureau of Fisheries habitat restoration program strives to achieve the IDFG mission to preserve, protect, perpetuate, and manage Idaho's fish and wildlife resources by restoring resiliency and productivity of fish populations through habitat improvements. A draft strategic plan for the fish habitat program was developed during the last Fish Management Plan (2013-2018) with direction and input from program staff (Kozfkay 2013). Many of these strategies are also supported by recommendations presented in Uthe et al. (2018) to increase efficiency and effectiveness in implementing meaningful restoration projects. The following principles and strategies will guide prioritization, development, and implementation of fish habitat restoration projects in Idaho.

1. Habitat restoration efforts will be focused on native fish species; priority drainages; and on private lands.

   Strategies:
   a. Identify focal game fish species that are in the greatest need of habitat restoration efforts.
   b. Identify key drainages and sub-drainages for these species.
   c. Develop a project prioritization ranking system that could be used to rank projects across the state or within areas specified by funding entities.
   d. Protect and enhance natural reproduction of native aquatic species.
   e. Provide technical comments and recommend best management practices and/or restoration guidelines for instream or upland projects that could impact important areas of habitat. Look for opportunities to incorporate angler access.

2. Habitat restoration projects will be strategic and implementation will largely focus on addressing limiting factors for fish populations in a given location.

   Strategies:
   a. Ensure that a drainage-wide assessment is performed and limiting factors are identified prior to planning and implementing habitat restoration efforts.
   b. Ensure that any proposed project be designed to ameliorate primary limiting factors.
   c. Ensure that efforts are focused on accomplishing high priority projects.

3. Pre- and post-restoration monitoring efforts will be designed to determine whether focal populations and habitats are responding to restoration efforts in a measurable way.

   Strategies:
   a. Ensure that population and habitat goals are set prior to project implementation.
   b. Monitor fish and habitat responses across a meaningful portion of a focus population's habitat.

4. Hiring, training, and retaining qualified employees are critical to the successful development of the fish habitat section.

   Strategies:
   a. Align staff and resources to meet the goals of the fish habitat program.
   b. Recruit and retain talented employees within the fish habitat program.
   c. Facilitate and provide training for employees by encouraging participation in training opportunities and involvement in professional societies.

5. Broadening the funding base dedicated to fish habitat restoration is essential to meeting species recovery, population, and fisheries goals.

   Strategies:
   a. Investigate opportunities to develop annual funding base for the program that can support project implementation and/or be utilized as match on a competitive basis that accounts for statewide priorities.
   b. Collaborate to create a comprehensive list of grants or funding opportunities for fish habitat projects, so that other regional programs may attempt to utilize similar funding opportunities.
   c. Identify and document creative types of match that have been used by others to allow acquisition of grants requiring non-federal match.

6. Collaboration with traditional and non-traditional conservation partners is of utmost importance for restoring fish habitat.

   Strategies:
   a. Create a list of conservation partners that are actively involved in aquatic habitat restoration and protection in Idaho.
   b. Create a list of non-traditional stakeholders that could act as partners in fish habitat restoration efforts, specifically representatives or coalitions of industries that traditionally have been linked with fish habitat degradation.
   c. Establish relationships with traditional and non-traditional partners to identify commonalities and opportunities for collaboration.

7. Public support and knowledge of the importance of high-quality fish habitat must be increased through educational and outreach efforts.

   Strategies:
   a. Strongly encourage fish habitat staff to “tell the story” of recently completed restoration projects through local media, IDFG outlets, and to the respective professional societies commonly linked with fish habitat degradation.
   b. Develop fish habitat curriculum for inclusion as part of the Trout-In-The-Classroom and Project Wild programs.
   c. Develop a fisheries habitat tab on the IDFG website. Page content should include descriptions of regional programs as well as past and on-going projects.

During the next five years, 2019-2023, IDFG fish habitat program staff will collaborate to make sure these strategies are being followed or implemented.

Fishing and Boating Access Program

Providing access for anglers to fish is a critical and important role of IDFG's fisheries management program. Annually, IDFG works to maintain, enhance and acquire fishing and boating access sites to be used by the public for angling and a variety of outdoor recreation. Each management region of the state, except for the Salmon Region, has a Department access specialist, recognized as a Recreation Site Maintenance Foreman, who work in conjunction with Regional Fisheries Managers and headquarters staff to acquire, develop, maintain, and enhance fishing and boating access areas. Approximately 325 sites are currently in the Fishing and Boating Access Program. The sites provide a multitude of options to the public and may provide fishing access, boat ramps and docks, parking, toilet facilities, and overnight camping opportunities. IDFG does not charge a user fee to utilize fishing or boating access sites. Annual spending is approximately $1.2 million to sustain the Fishing and Boating Access Program. The Department seeks partnerships with state, Federal, county, city and private entities to maintain, enhance, purchase and provide public fishing and boating access to Idaho's aquatic resources and exceptional fisheries. IDFG will strive to maintain and work to improve landowner relations, seek to acquire easements, leasing, or purchase and develop key areas to provide access for anglers to public waters. Additional, fishing docks, boat launch ramps, toilets, and access facilities will be developed, when appropriate, for persons with disabilities in accordance with the American with Disabilities Act (ADA).

In Idaho, most water and lands below the "mean or ordinary high water mark" of navigable streams and rivers is owned by the State. However, anglers are not allowed to trespass across private property to reach fishing access. Public access must be maintained or provided in many areas. When surveyed, anglers regularly indicated that providing access for fishing is a high priority need. IDFG spends about 5% of the fisheries budget on the Fishing and Boating Access Program exclusive of the steelhead and salmon permit account. The steelhead and salmon permit account or set-aside, allocates 50% of the cost of each steelhead and salmon permit to acquire, maintain, and improve access for steelhead and salmon fishing. Additionally, IDFG created a new funding source called FWATER which allocates the sum of five (5) dollars from each fishing license sale for the construction, repair, or rehabilitation of fishing lakes, reservoirs and fishing access. IDFG is also required to spend 15% of the funds it receives from the Sport Fish Restoration Program (Federal Assistance) administered by the U.S. Fish and Wildlife Service, on boating access projects. New fishing and boating access sites will be acquired and developed and boat ramps and docks will be built or existing ones repaired or replaced where appropriate and as needed.

IDFG leads and participates in the construction of fishing ponds and reservoirs throughout Idaho as opportunities arise. When fishing ponds or reservoirs are constructed within close proximity to Idaho communities, the sites are very popular and heavily used. 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. The program also cooperates with local irrigation districts and other entities to help repair dams, spillways, and outlet works to maintain or enhance fisheries. IDFG will continue to work with communities to plan and develop these popular fishing and boating access sites.

Managing overnight and extended stay camping has become a challenge at some of the fishing and boating access sites. More than one third (1/3) of the fishing and boating access sites allow for overnight camping. For those sites that allow overnight camping it is prohibited to leave an unattended camp or vehicle and/or trailer for more than forty-eight (48) hours or to camp or park a vehicle and/or trailer for more than ten (10) consecutive days in any thirty (30) day period. In

addition to users not following camping regulations, excessive trash and minor to significant damage has occurred at some sites. The most complex issue that has arisen has been the misbehavior of individuals that leads to harassment of neighbors and other sportsmen using the site. This has resulted in IDFG either temporarily or permanently closing sites to overnight camping. IDFG will initiate a comprehensive review of camping at our sites and develop strategies for managing camping to help avoid or minimize user and neighbor conflicts.

During the previous six-year planning period a five-year plan was updated for the Fishing and Boating Access program. The plan (Idaho Five-Year Statewide Fishing and Motorboat Access Facilities Plan) covered the time period from 2015 through 2019. Priorities for improving existing sites were developed in the plan and were implemented, as needed, based on funding and statewide and regional priorities. IDFG will begin writing the new five-year plan starting in 2019 which will cover the time period from 2020-2024. Emphasis will be put on assessing the condition of all existing sites, prioritizing improvement projects state-wide, determining areas for new access, and developing a statewide strategy to manage camping.

Aquatic Invasive Species Prevention and Control

Preventing introduction or removing non-desirable fish species (including both native and non-native species) and aquatic invasive non-fish species from Idaho waters is a major focus of fishery management. Aquatic Invasive Species (AIS), including fish, plant and invertebrates are a significant threat to native and recreationally important fish populations, aquatic habitat, and the economy of Idaho. Idaho State Department of Agriculture (ISDA) is the lead agency for directing AIS prevention and control activities while IDFG provides technical assistance, logistical support and helps with outreach and education efforts across the state.

Concern over the introduction of new fish species and the illegal transport of fish species to waterbodies has increased throughout Idaho. 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 of live fish through overnight mail systems for bait, private ponds and aquariums. Legally, all fish and wildlife, except for fish obtained from a Commercial Fish Facility or ornamental and tropical aquarium fish species, require an import permit from IDFG before being brought into Idaho. Additionally, a live fish transportation permit from IDFG is required to transport live fish within Idaho. IDFG will work independently and with ISDA to inform the public of the importation requirements for fish species and will work with other state and federal agencies in controlling undesirable importations and illegal introductions of fish species.

The direct control or removal of undesirable fish populations, in order to improve fishing or to protect native species, can be an effective fisheries management tool. Currently, rotenone is an approved piscicide and has proven useful in removing undesirable species. Applying piscicides requires a permit from the Environmental Protection Agency and notification to ISDA. 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 non-native trout fisheries.

IDFG will assess and implement methods to control or eliminate non-desirable fish species where they pose serious risks to native species persistence and survival. Target species for control may include, but not limited to, brook trout, Lake Trout, brown trout, introduced rainbow trout stocks, Northern Pike, Walleye, bass, and chubs and other forage minnow species. 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-desirable fish species.

Monitoring and preventing the introduction of AIS or noxious species (non-fish) are the most efficient and economical methods of controlling these plants and animals due to the cost of removal and very low chance of success. ISDA designates 16 aquatic plants as AIS or noxious species by state law. ISDA considers at least 11 aquatic invertebrate species as invasive. Non-fish species of immediate concern include the plant, Eurasian water milfoil *Myriophyllum spicatum*, the bivalves, Zebra mussel *Dreissena polymorpha* and Quagga mussel *Dreissena rostriformis bugensis*, and the snail, New Zealand mud snail, *Potamopyrgus antipodarum.* 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 in the following Idaho Counties: Boundary, Bonner, Kootenai, Benewah, Clearwater, Adams, Valley, Washington, Payette, Gem, Boise, Canyon, Ada, Elmore, Owyhee, Gooding, and Twin Falls. Zebra and quagga mussels and New Zealand mud snails 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 and their presence is monitored year-round by IDSA.

The most likely vector for these organisms (mussels and snails in particular) is boats, boat docks, and other equipment used in contaminated waters. These hard structures provide a surface for adult mussels to attach and are then transported unknowingly into Idaho or within Idaho. Public education and border check stations are the primary means to prevent the introduction to the State. IDFG will work with ISDA and other state and federal agencies to increase public and agency awareness of the potential problems and how to maintain clean boats, trailers, waders and other aquatic equipment when traveling from water to water. IDFG will work to ensure our own fisheries personnel are trained to help prevent the movement of AIS while working throughout the state.

Biological

IDFG will continue using sterile hatchery trout to prevent genetic integration with wild or native trout populations. Additionally, IDFG will use sterile predators such as tiger muskie and tiger trout 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.

Chemical

In certain situations, IDFG will consider the use of fish toxicants to remove native and non-native non-desirable 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 "Notify and coordinate with the U.S. Forest Service with sufficient lead time on any piscicide application proposal on NFS lands in Idaho in recognition that under extraordinary circumstances NEPA or other authorizations may be necessary."

Physical

IDFG will consider and employ the use of nets, electrofishing, dewatering, electric and physical barriers, and angling, as is feasible, as physical control methods for native and non-native non-desirable fish species. IDFG will use gill nets and commercial trap nets, as needed, to remove and suppress native, non-native and non-desirable species in lakes. 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 or electric barriers may be constructed and maintained on streams to prevent upstream colonization by non-desirable fish species. IDFG will utilize angler incentive programs to help suppress native, non-native and non-desirable species when warranted and socially acceptable.

Special Management Issues

Endangered Species Act

The Endangered Species Act as amended (ESA) 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 ESA. 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 (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. These listings have been re-affirmed by several five-year status reviews (2005, 2010, 2015). Following the listing of the species, recovery plans were finalized for Snake River sockeye salmon in 2015 (NMFS 2015), Snake River Fall Chinook in 2017 (NMFS 2017) and Snake River steelhead and Spring/Summer Chinook in 2017 (NMFS 2017). These recovery plans are guidance documents developed by state, tribal and federal representatives that identify recovery strategies and actions to address limiting factors.

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 ESA responsibilities in Idaho. The core functions of the Office of Species Conservation are to coordinate federal ESA programs with state agencies; solicit, provide and delegate funding for ESA programs; negotiate agreements with federal agencies concerning endangered species; serve as the state's "one-voice" on ESA policy; provide a mechanism for Idaho citizens to voice ESA concerns; and facilitate collaboration between state, federal, tribal and private stakeholders.

Section 9 of the ESA 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 directly or indirectly "take" listed fish. The ESA 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 ESA and may be implemented.

The federal Endangered Species Act listings add complexity to state management. 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 data collection and analysis, 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.

Monitoring, 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. Information collected by IDFG monitoring has been essential to support management decisions and assess population status.

Changes in IDFG's management of non-listed species are sometimes required to reduce potential adverse effects to listed fishes. 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

The Congressional language that describes State Wildlife Grants and State Wildlife Action Plans explicitly stated that this program was established to provide funds for the States to develop and implement wildlife management and habitat restoration for the "most critical wildlife needs". The priority is for these funds to be used on those species with the greatest conservation need and to address the life history and habitat requirements of such species to preclude the need to list them as threatened or endangered under the Endangered Species Act of 1973 as amended. For the purpose of selecting Idaho species of greatest conservation need (SGCN), IDFG included species (or habitats) that are experiencing known threats that without intervention are likely to continue to decline or to become increasingly vulnerable. In 2015 IDFG developed an updated list of regularly occurring animal species native to Idaho that we regard as SGCN—those species most in need of conservation action. In some cases, the criteria used for species selection resulted in changes in SGCN status (either tier or exclusion) from the 2005 plan. Importantly, omission of a previously designated SGCN (such as Idaho's cutthroat trout subspecies) is not reflective of lack of conservation commitment. Changes reflect new information about (or change in) distribution and abundance, existing species-specific conservation and management plans with access to a wider range of funding mechanisms for conservation actions, or a combination of factors. The complete State Wildlife Action Plan for Idaho can be found on the IDFG website at http://idfg.idaho.gov/swap. The Plan is considered a living document and will be updated/modified as new information becomes available. The current list of Idaho fishes considered SGCN is provided in Table 11.

Table 11. Idaho fishes considered species of greatest conservation need, 2015.

Species
Pacific Lamprey *Entosphenus tridentatus*
White Sturgeon *Acipenser transmontanus* (Kootenai River DPS)
Northern Leatherside Chub *Lepidomeda copei*
Steelhead *Oncorhynchus mykiss* (Snake River Basin DPS)
Sockeye Salmon *Oncorhynchus nerka* (Snake River ESU)
Chinook Salmon *Oncorhynchus tshawytscha* (Snake River fall-run ESU)
Chinook Salmon *Oncorhynchus tshawytscha* (Snake River spring/summer-run ESU)
Bear Lake Whitefish *Prosopium abyssicola*
Bonneville Cisco *Prosopium gemmifer*
Bonneville Whitefish *Prosopium spilonotus*
Bear Lake Sculpin *Cottus extensus*
Burbot *Lota lota*

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 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 native 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. During this planning period IDFG will consider reclassifying bullfrogs as unprotected non-game to better align with Idaho Department of Agriculture, and to provide more flexibility in permitting commercial and recreational harvest.

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.

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 approved fish stocked in a permitted private pond are considered 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 seasons or bag limits. The private fish pond permit does not exempt the pond owner from other permits required by County, State and Federal agencies for water rights, dam construction, screening of inflow and discharge sources, etc., and private ponds must be compliant with the requirements found in IDAPA Code, 36-706 (Private Parks and Ponds).

Idaho has regulated the import, transport, and stocking of fish into private fish ponds since 1976 to prevent the introduction and spread of undesirable and invasive fish species and fish diseases. 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 from IDFG specifying number, species, hatchery origin and destination. This permitting process requires that the fish to be stocked will meet the following criteria prior to stocking:

1. Requested fish species must be compatible with Regional Fishery Management direction,
    a. Regional fisheries managers will determine if a requested species is compatible with current management direction by considering the potential for introduced fish to impact nearby fisheries; the potential to introduce new or undesirable fish species into area waters; and other potential considerations. When beneficial, sterile fish will be required for management consistency. If warmwater species (e.g., bass, Bluegill or catfish) 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. IDFG will not authorize live transportation permits for Walleye or Northern Pike.
2. Fish must be obtained from a disease free source

a. IDFG's Regional office serving the pond owner will provide a list of approved hatchery sources where a pond owner can obtain disease free hatchery fish.
b. Establishing that a private aquaculture facility is free of serious diseases will require an inspection and certification of facilities by a qualified pathologist. 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.

3. Pond must be screened so that stocked fish remain within the pond, and wild fish are excluded from the pond.
    a. Screening Guidelines**:** IDFG recommends that screens be constructed of durable materials that are capable of maintaining integrity in a water and air environment for an extended period of time; screens should have no openings, seams or mesh width greater than the width of the fish being stocked; all water entering or leaving the pond, including runoff and other high water events should flow through a screen consistent with direction above; screens should be maintained and in place at all times while any aquaculture product remains in the pond. All aquaculture products received should be of sufficient size to be incapable of escaping the pond through or around the screen.

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. Additionally, new pond owners are frequently unaware of the IDFG private fish pond and fish transport permit requirements. This situation is potentially a serious threat to established fisheries. IDFG will work with the private fish culture industry and the Idaho State Department of Agriculture (which licenses private hatcheries within Idaho), by annually sending information about private ponds to increase awareness of private fish pond and live fish transport permit requirements, procedures, and the risks of non-native species to public resources.

Special Fishing Opportunities

Community Fishing Waters

IDFG works to provide continued supplies of fish for all Idaho anglers and to respond to the changing needs of society. Idaho is changing quickly due to rapid development and human population growth in many communities. While still mostly a rural state geographically, much of Idaho's growth is occurring in more urban counties of Ada, Canyon, Kootenai, and Twin Falls. Based on 2016 census data, Ada and Canyon counties combined hold 38% of Idaho's population. Not surprisingly, the Southwest Region also accounts for over 40% of fishing license sales annually. Additionally, recent population growth has been linked with increased diversity, as minorities have increasingly become a larger portion of the population (McGinnis-Brown, 2017). Unfortunately, growth, urbanization, and associated societal and cultural shifts often coincide with declining trends in fishing participation (Balsman and Shoup, 2008). Declining fishing participation has been attributed to lack of access or opportunities, time constraints, and an overall change in lifestyle or culture, where nature-based outdoor activities have been devalued.

Community fishing waters may be an important tool for offsetting declines in participation normally associated with growth and urbanization or due to other factors. Community fishing waters serve disparate angler types. Experienced anglers utilize these waters for close to home opportunities, while new or novice anglers may be introduced to the sport at these waters. Demographic data from community pond anglers show these fisheries are primarily used by experienced anglers, while still having about 1/3 of anglers under the age of 15 (Butts et al. 2013). Managing community ponds to provide angling opportunities close to Idaho's major population centers will remain a key element in any angling recruitment, retention, or reactivation efforts. Because of this, aquatic education and outreach efforts such as Free Fishing Day and "Take Me Fishing" Trailer events will occur and be promoted at community fishing waters. When managed properly, community fishing ponds are a vital tool for recruiting and retaining anglers (Eades et al. 2008). Furthermore, community fishing ponds are important in developing support for statewide fisheries programs and help increase angler knowledge, skill level, and concern for the environment (Kellert and Westervelt 1983; Schramm and Dennis 1993; Balsman and Shoup 2008).

Management Direction

IDFG has sought to develop fishing opportunities throughout the state where people, especially beginning anglers, can gain instruction or participate easily in the sport of fishing. More than 50 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. Progress has been made in developing community fishing waters in under-served areas, but gaps still exist. During this planning period, IDFG will look for opportunities to develop new community fishing waters in underserved areas. Due to limited resources, IDFG will seek to work collaboratively to manage existing and develop new community fishing waters with city parks departments, county recreation districts, and other partners. Preferably, waters will be of adequate size, proper nearshore slopes, and adequate depths to support a variety of species, for safety, and to minimize nuisance aquatic plant problems.

Effort/Economics

Fishing effort is high at these waters, resulting in a very high number of trips (often of short duration; Hebdon et al. 2008). Despite the relatively low trip cost, the very high number of trips makes the economic value of these fisheries comparable to some of the state's most popular fisheries. Butts et al. (2013) estimated the community fishing program in the Southwest Region stimulated around $11 million in trip-related spending annually. This of course would be much higher if expanded to community fishing waters statewide and illustrates the benefits of these fishing waters to local economies. Managing community ponds for fishing opportunity is important for both recreational angling and local economies.

Fish Stocking

Fisheries within community fishing waters are most often supported by a combination of stocked trout and self-sustaining populations of warmwater species. These waters typically offer angling for hatchery Rainbow Trout. Trout stocking is often critical to meet angling demand at this type of fishery. 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. Summer water temperatures at ponds are often not suitable for stocking trout. As a result, trout stocking usually stops during summer until waters cool in the fall (Hebdon et al. 2008). Unfortunately, summer stocking cessations coincide with peak fishing effort periods. IDFG will continue to evaluate trout stocking practices and will investigate alternative species where practical to maximize efficiency and benefits provided to anglers. As new community fishing

waters are developed, hatchery trout resources will need to be increased or reallocated to meet this additional demand.

IDFG will continue to maintain populations of warmwater fishes in community ponds for recreational angling. Common warmwater species including Bluegill, Bullhead Catfish, Channel Catfish, Largemouth Bass, Pumpkinseed, and Yellow Perch are introduced to new community waters to create self-sustaining populations. These species and introduction efforts have created popular fisheries. In some ponds, fingerling Channel Catfish (typically around 8" length) have been stocked 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. Establishing warmwater populations in new ponds requires occasional (and often substantial) investment in time to collect and transport these fish from other waters, since IDFG does not have the hatchery facilities needed to produce warmwater fishes.

Management Actions

IDFG seeks to effectively manage community fishing waters to maintain quality fishing. Management actions may include stocking adjustments, species additions, monitoring, rule changes, habitat or access improvements, as well as development of new waters. 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 waters with high fishing effort, hatchery trout maybe removed quickly, necessitating more restrictive harvest regulations. Maintaining the proper balance and size structure between Largemouth Bass and panfish may be the most challenging aspect of community fishing water management. In some ponds, overharvest of Largemouth Bass may lead to poor size structure and predator-prey imbalance (Butts et al. 2016).

Facilities/Access

Community fishing waters often have very simple fish habitat and may be susceptible to nuisance aquatic plant problems. Aquatic plants will be managed using chemical (herbicides), biological (Grass Carp), and physical (drawdowns) methods to balance the needs for controlling nuisance levels, maintaining fishing access and providing adequate fish habitat. Where possible, IDFG will seek to improve in-water and shoreline habitat complexity to increase pond carrying capacity. Also, IDFG will seek to improve riparian habitat condition, especially tree cover which will act to shade nuisance aquatic plants and to provide eventual habitat complexity.

Angler interviews have indicated that nearby amenities are an important aspect when determining where to fish. Because of this the department will work with cities and parks departments to improve access facilities such as fishing docks and restrooms when funding is available.

Commercial Fisheries

Commercial fishing effort and harvest is very low in Idaho. IDFG will provide commercial fishing opportunities to those that desire to put forth the effort and will continue to monitor those fisheries via mandatory reporting. The Idaho Legislature enacted commercial fishing legislation in 1988 to authorize and document the harvest of crayfish and nongame fish for commercial purposes. Later that year, the Commission adopted commercial fishing rules and established a fee structure for the take of these public resources. Some nongame fish have commercial value as animal feed, fish bait, fertilizer, or 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. At times, the Commission may review and approve rules for the commercial take of game fish 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.

Statewide, commercial harvest of nongame fish occur at very low levels. The decline in commercial fishing activity has continued with only occasional interest in harvesting Common Carp in recent years. Occasional, commercial carp fishing occurs on Lake Lowell and in the Snake River system.

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 fisheries. Currently, commercial fishing for crayfish occurs at a low level, with harvest mainly occurring on the Snake River above Hells Canyon Dam. In recent years there has been interest and permits issued to harvest crayfish from the Clark Fork, Pend Oreille and Priest River systems. The effect of commercial exploitation of crayfish on the food availability for game fishes is unknown but is not believed to be a conflict. However, reporting requirements for the commercial license will provide IDFG with continued information during this planning period.

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 incidental harvest of whitefish to 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.

State Record Fish Program

The goal of the Idaho State Record Fish program is to document exceptional catches of Idaho's game and nongame fish. Additionally, this program is intended to generate excitement and

interest about sport fishing opportunities and encourage angling participation by publicly recognizing exceptional fish and the anglers that catch them. The Department will issue Idaho State Record Fish awards for both game species and nongame species, excluding Bullfrogs and crayfish. The Department will recognize both Certified Weight Records and Catch-and-Release Records. IDFG began formally recognizing Certified Weight Records in 1941, though some records are much older. The Catch-and-Release record program began in 2016 as a way to stimulate additional interest and participation, and in recognition that nowadays many angler prefer not to harvest fish.

Existing historical records for species that can no longer be legally harvested will remain in place as Certified Weight Records. All state record species previously awarded will remain as viable categories and will appear in the official list of Idaho record fish published in the Idaho Fishing Seasons and Rules booklet and on the Department's website. White Sturgeon, wild steelhead, wild ocean run Chinook Salmon and Bull Trout may not be harvested and are therefore only eligible for Catch-and-Release Records.

Idaho State Record Fish must be from waters open to public fishing and must be caught using legal methods for that water. Archery and spearfishing records (unprotected nongame fish species only) will be combined into a single category and awarded separately from rod/reel records. No records will be issued for fish caught during salvage seasons, or from fee-fishing facilities or privately owned waters. IDFG does not maintain record fish archives for individual line classes, specific water bodies, or age/gender of anglers.

State records will only be recognized for fish caught using either rod/reel or archery/spearfish (when legal) methods. State record fish will be classified as Certified Weight Records or Catch and Release Records and published along with the method of capture when applicable. Certified Weight Records will be determined by the weight of the fish regardless of length or girth; weight must be measured on a certified scale and presented to IDFG. Catch and Release State Records will be based solely on total length for fish caught on rod/reel tackle. Full program guidelines governing the application process can be found on the Department's State Record Fish website.

The Department may make consider developing additional angler recognition programs to increase sport-fishing interest or raise awareness of native species conservation. Several other nearby states offer various types of "trout slam" programs, which reward anglers for catching multiple species of trout, often within their native drainages. The Department has been helping the Western Native Trout Initiative to develop a multi-state "trout slam" program and plans to participate if launched. This program is still in development, but may launch in 2019. The Department may also consider developing its own "trout slam" program specifically for Idaho.

Angler and Aquatic Education

The IDFG Aquatic Education program promotes participation in recreational fishing through recruitment and retention programming. This is balanced with programs to increase knowledge about the value of Idaho aquatic habitats. IDFG has identified three overlapping components of Aquatic Education that serve to meet these two goals: angler recruitment, retention and reactivation (3R), fishing education, and conservation education. These components are consistent with IDFG's statutory mission to preserve, protect and perpetuate and manage fish and wildlife. Despite national trends showing fishing participation is declining, fishing license sales in Idaho have remained steady or have slightly increased since the 1990's.

However, the percentage of Idahoans fishing has not kept pace with population growth. Additionally, Idaho could be facing similar demographic shifts as other states, where fishing participation is declining as the Baby Boomer generation ages out of participation. This may be particularly relevant to Idaho, where a large part of Idaho's growth comes from an influx of retirees. As Idaho's population grows, the Department could face a declining percentage of Idahoans who participate in fishing. This could potentially decrease social support for the Department's public trust responsibilities to manage Idaho's fisheries resources.

Angler recruitment and retention efforts involve a variety of components aimed at increasing participation in fishing. These include both marketing efforts and direct outreach events. During the last planning cycle, the Department increased marketing and 3R efforts by assembling marketing and 3R committee, including hiring new Marketing Director and Data Analyst. Marketing efforts to promote fishing have increased recently to include online banner ads, social media ads, renewal reminders and e-mail newsletters. Most efforts are intended to encourage anglers to buy licenses more consistently and reduce "churn" rates. 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, posting stocking reports, Free Fishing Day events, the "Take Me Fishing" trailers, rod loaner programs, Family Fishing Waters brochures, and seminars at local tackle vendors. These efforts give anglers the skills, equipment, and/or information they need to have a successful fishing experience. Future efforts will include adding conservation messages to all classes and publications to encourage all anglers to enjoy and protect aquatic resources.

Conservation 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 education efforts should focus: riparian habitat, water quality, water quantity, and angler ethics. Specific stewardship programs are occurring in many regions. The Trout in the Classroom program currently has 140 participating aquariums, some with multiple classes. This program is currently at capacity and cannot be expanded without additional resources. Approximately half of the classrooms participating in Trout in the Classroom include a fishing component during their curriculum. Project WILD teacher workshops now include three fish-related classes: Wild About Salmon, Wild About Fishing (new in 2018), and Wild About River Ecology. Additional outreach includes teacher education trunks and Department participation in various local fairs and water-related events.

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 that draws elementary school children from across the Treasure Valley. Steelhead Days is a similar event held annually in Lewiston with comparable participation. The new Water Life Discovery Center in Sandpoint provides local schools and visitors a place to learn about aquatic habitats. 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 Contests

A segment of the angling public enjoys the competitive atmosphere provided by fishing contests, tournaments and derbies. To help ensure fishing contests, tournaments and derbies do not affect fish populations and help reduce or avoid angler conflict, IDFG administers a permit system. 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 if: 1) an event is planned that has a live-fish weigh-in; or 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. Since 2013, IDFG has issued an average of 216 permits per year and the contest numbers have remained stable over the last several years. Occasionally, conflicts arise when applicants desire to change the contest date or when applicants submit an application too close to the date of the contest (e.g. less than 30 days). IDFG will assess existing procedures for administering fishing contest permits and implement new procedures to help maximize the efficiency and fairness of issuing permits, as needed.

Fishing contest applications are reviewed for consistency with Idaho Administrative Code and by the appropriate Regional Fisheries Manager prior to being approved. 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 tournament applicants for event dates and location. Permit exemptions and additional conditions may be required to minimize or avoid impacts of fishing contests.

Applications are submitted to the Fisheries Bureau at the Headquarters Office in Boise. Applications will be accepted as early as December 1, prior to the calendar year when the contest occurs. Applicants are encouraged to submit the application 30 days prior to the event to allow sufficient time for review and processing. In the event that multiple competing applications are received, tournament organizers will be encouraged to work together to resolve the conflict. If resolution cannot be reached, IDFG will determine an outcome that best meets the needs of the resource, applicants, and other users. General opportunities to fish and hunt will be given priority over organized contests.

IDFG has the authority to permit 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 as allowed by fishing rules to harvest fish.

IDFG has the authority to condition a permit to be a mandatory harvest contest. This permit condition will be applied when the release of target species conflicts with management objectives. Under this permit condition, all tournament-caught fish that are retained for weigh-in must be killed prior to weigh-in. Mandatory harvest conditions will apply for all contests targeting Northern Pike and Walleye in waters where they were illegally introduced. Mandatory harvest of weigh-in fish may also be required for other species in water bodies that have illegally introduced or undesirable fish species.

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. IDFG and the Idaho Outfitters and Guides Licensing Board (IOGLB) cooperate under a Memorandum of Understanding that clearly defines each entity's role and responsibility to the public as it relates to fish and wildlife management and opportunities to utilize state fish and wildlife 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 coordinated by headquarters staff with assistance from the regions, research, hatcheries, and federal partners. The Idaho Fish and Wildlife Information System (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) Standard Lakes Survey, 3) Juvenile Trapping, 4) Spawning Ground Survey, 5) StreamNet, 6) Genetics, 7) Pathology, 8) Hatchery production and stocking, and 9) Aging. Databases currently in development include 1) Scientific Collecting Permit, and 2) salmon and steelhead harvest.

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 Department's Strategic Plan 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 and more focused efforts where sensitive fish species occur or where angler awareness and compliance with rules may be poor. Conservation Officers annually contact over 58,000 licensed hunters and anglers, issuing an average of 3,700 citations and warnings. Additionally, contacts with anglers and hunters provide the conservation officer opportunities to interact, communicate, and educate the public.

Enforcement activities to address specific fisheries issues are prioritized at the regional level by enforcement and fishery personnel. Focused patrols allow individual officers to emphasize activities on federally listed species, species or populations at risk, or popular fisheries when fish are vulnerable. Where needed, enforcement staff may also coordinate efforts of multiple officers and other personnel to address important priorities. In addition to enforcement, Conservation Officers often play a critical role in public outreach and education, raising awareness of fisheries resources and fishing rules.

2017 Angler Opinion Survey

To obtain angler input for development of the 2019-2024 Fisheries Management Plan, IDFG conducted a multimodal Angler Opinion Survey (AOS) using three survey methods including (1) random paper mail, (2) non-random email and (3) an open online survey. The survey included 22 questions (Appendix AOS1). Similar surveys were conducted in 1967, 1977, 1987, 1994, 1999, and 2006 (see Willard et al. 2007). However, in 2011, the size of the survey was significantly reduced to focus instead on more contemporaneous issues. For the 2017 survey, we first reviewed previous AOS surveys and chose primary questions that had the best chance of comparing angler preferences over time and to previous surveys. Many of the core questions remained unchanged from the 2011 survey, while several new questions were added about salmon/steelhead fishing, communications preferences, and experiences with aquatic education programs.

For this chapter, we describe the methods and results of the randomized paper survey only – the most robust and least biased of the survey methods we used. We randomly selected 12,000 anglers that held a fishing license (any license with fishing privileges) valid in 2016. Junior license types (ages 14-17) were not included. The sample selected 1,500 recipients from each IDFG administrative region, as well as 1,500 nonresidents. The printed survey was mailed to each recipient and included a paid return envelope. Additionally, the survey included optional instructions for recipients to complete the survey online. Six weeks after the initial mailing, we mailed a second to all recipients that had not yet responded. The paper survey received 3,048 responses for a return rate of 25.4% (about 10% lower than in 2011).

Anglers were asked to respond to the survey questions based on their last five years of fishing in Idaho. While equal numbers of surveys were mailed out in each Department region, statewide results were weighted based on the proportion of license buyers in each region.

In 2017, there were 330,050 resident license buyers and 129,438 non-resident license buyers in the survey sampling frame. The greatest numbers of resident anglers live in the Southwest (42%) and Panhandle (15%) regions, while the least live in the Salmon Region (1%). This distribution is very similar to the 2011 survey, with Southwest Region having increase by 2% to 42%.

Fishing Habits and Species Preference

Trout remain the most sought after fish in Idaho (Table 12). Anglers wrote in their first, second and third most favorite species from a provided list. We ranked each species by weighting the count in each response category. Trout were by far the most favorite species and received the vast majority of responses for “most favorite”. Bass were ranked second, followed by “anything that bites”. Trout have been the #1 most favorite species in every survey back to the 1970’s. Bass and “anything that bites” are consistently either #2, or #3, so preferences are very strong for at least the top 3 species.

Anglers were asked how often (never, occasionally, often) they fished for a host of fish species over the last five years (Question #2). Over 94% of anglers listed trout as a species they “occasionally” or “often” fished for when combining these scores (Table 13). Similarly, “Anything that bites” was listed second (73%), suggesting that many anglers are generalists or have a low level of specialization. Other popular species included bass (70%), Bluegill/crappie/perch (59%), steelhead (46%) and kokanee (45%).

Table 12. Most favorite fish by rank from Question #1: "From the following list, please write in your three most favorite types of fish that you target most?" Rank was assigned assigning a score to the count of responses as [first favorite + (second favorite x 2) + (third favorite x 3)]. The percent of responses by species are calculated within each column.

Rank	Species	1 Most Favorite	2 Second Favorite	3 Third Favorite
1	Trout	55.1%	17.7%	13.2%
2	Bass	13.2%	21.1%	14.3%
3	Anything that bites	2.8%	3.1%	20.5%
4	Steelhead	7.4%	17.3%	7.5%
5	Bluegill / Perch / Crappie	6.2%	13.0%	10.6%
6	Kokanee	4.5%	8.9%	7.4%
7	Chinook Salmon	3.5%	7.1%	8.3%
8	Catfish / bullhead	2.8%	3.8%	6.5%
9	Walleye	2.6%	3.6%	3.3%
10	Northern Pike	0.8%	1.5%	3.2%
11	White Sturgeon	0.9%	1.1%	2.2%
12	Whitefish	0.1%	1.4%	1.7%
13	Tiger muskellunge	0.0%	0.0%	0.7%
14	Carp / Sucker / Nongame	0.1%	0.3%	0.4%
15	Other	0.0%	0.0%	0.1%

Table 13. Most preferred species of fish sought in Idaho by total anglers from 2013-2017 (Question #2).

Rank	Species	Often	Occasionally	Never
1	Trout	32.1%	10.4%	0.7%
2	Anything that bites	17.6%	9.6%	3.1%
3	Bass	12.4%	13.1%	3.7%
4	Bluegill / Perch / Crappie	8.5%	12.0%	5.1%
5	Steelhead	6.0%	9.5%	6.5%
6	Kokanee	6.4%	8.8%	6.6%
7	Catfish / Bullhead	4.2%	8.2%	7.3%
8	Chinook Salmon	4.1%	7.5%	7.6%
9	Walleye	2.2%	5.1%	9.1%
10	Whitefish	1.8%	4.2%	9.5%
11	Northern Pike	1.9%	3.1%	9.9%
12	Carp / Sucker / Nongame	1.4%	3.3%	10.0%
13	White Sturgeon	1.0%	3.6%	9.9%
14	Tiger muskellunge	0.5%	1.6%	10.9%

We asked anglers to rate their general feeling about various types of fishing experiences they had during the past five-year period (Question #3). This question intended to gauge general public satisfaction about the relative quality of each fishery type. Each fishery was ranked according to the weighted distribution of responses in each category. The top-3 highest rated fishing experiences were trout fishing in rivers/streams, followed by alpine lakes, and lakes/reservoirs third (Table 14). Fishing for Walleye and Chinook Salmon in lakes/reservoirs were the lowest ranked options, but also had fairly low participation rates across the state, which may have affected the results.

Table 14. Fishery types ranked by general experience feeling during the last five years (Question #3).

Rank	Type		Excellent	Good	Fair	Poor	Did Not Participate
1	Rivers / Streams	for Trout	21%	33%	24%	5%	17%
2	Alpine Lakes	for Trout	13%	26%	20%	5%	35%
3	Lakes / Reservoirs	for Trout	12%	37%	27%	7%	18%
4	Lakes / Reservoirs	for Bluegill/Perch/Crappie	8%	23%	18%	5%	46%
5	Lakes / Reservoirs	for Bass	7%	26%	22%	6%	38%
6	Rivers / Streams	for Whitefish	3%	8%	9%	4%	77%
7	Rivers / Streams	for Bass	5%	15%	16%	6%	57%
8	Lakes / Reservoirs	for Kokanee	4%	11%	16%	7%	63%
9	Rivers / Streams	for Catfish	2%	7%	12%	5%	74%
10	Rivers / Streams	for Steelhead	4%	9%	18%	9%	60%
11	Rivers / Streams	for Sturgeon	1%	4%	5%	4%	85%
12	Lakes / Reservoirs	for Catfish	2%	9%	13%	7%	69%
13	Rivers / Streams	for Chinook Salmon	2%	6%	10%	8%	73%
14	Lakes / Reservoirs	for Walleye	1%	4%	8%	7%	80%
15	Lakes / Reservoirs	for Chinook Salmon	1%	3%	6%	23%	66%

Question #4 asked anglers to rate the importance of various factors when deciding what location to fish. We assigned an average score to each factor based on the counts of each category and the number of responses. The highest ranked factors included (1) natural beauty of the area, (2) presence of a favorite kind of fish, and (3) solitude (Table 15). Special fishing rules and the availability of licensed fishing guides were relatively unimportant factors in deciding where to fish. While the ranking of most factors remained largely the same back to the 1999 survey, some factors differed from the most recent 2011 survey. Anglers showed a stronger preference for a "chance to catch a variety of fish" which moved from #13 (2011) to #4 in 2017. The "Chance to catch a big fish" also fell from #3 (2011) to #12 in 2017.

In Question #5, we asked anglers how often they used six types of fishing access methods over the last five years. Most anglers responded having fished from the shore/bank, with 92% responding with either "often" or "occasionally". Figure 15 graphically shows the popularity of different access methods based on the proportion of responses listed within the "often" category so that we can compare across methods. Within the non-motorized category specifically, the percentage of "often" responses increased from 9% (in 2011) to 15% in 2017, suggesting that anglers are using non-motorized boats more often.

Table 15. Factors important to deciding where to go fishing over the last five years, ranked by average weighted score (based on the counts of responses by category) from Question #4.

Rank	Factor	Very Important	Somewhat Important	Neutral/No Opinion	Somewhat Unimportant	Very Unimportant
1	Natural beauty of area	48%	39%	10%	2%	2%
2	Presence of favorite kind of fish	42%	41%	12%	3%	2%
3	Solitude	34%	44%	16%	4%	3%
4	Chance to catch a variety of fish	29%	47%	16%	6%	2%
5	Chance to catch a lot of fish	25%	45%	19%	7%	3%
6	A place my family likes	29%	39%	19%	6%	8%
7	Chance to catch native or wild fish	25%	38%	24%	6%	6%
8	Vehicle access	22%	43%	22%	7%	6%
9	Chance to keep some fish	25%	34%	17%	10%	14%
10	Availability of information on fishing	19%	33%	28%	10%	10%
11	Nearness to camping facilities	15%	36%	27%	11%	11%
12	Chance to catch a big fish	11%	33%	35%	13%	9%
13	Boat ramps and marina facilities present	18%	27%	27%	12%	16%
14	Nearness to home or cabin	9%	35%	31%	11%	13%
15	Hatchery fish stocked	9%	25%	44%	11%	12%
16	Opportunity for activities other than fishing	10%	28%	32%	16%	14%
17	Special rules	8%	14%	44%	12%	22%
18	Availability of licensed fishing guides	4%	8%	29%	16%	42%

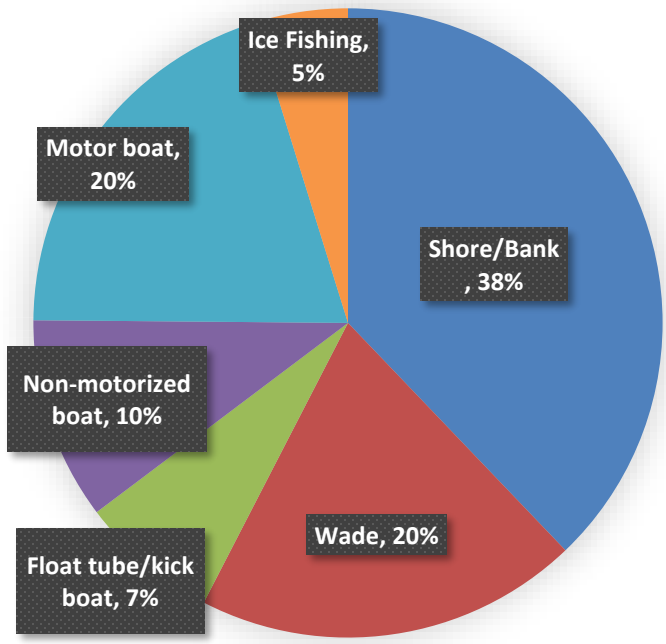


Figure 15. Proportion of each access method indicated within the “often” used category (Question #5).

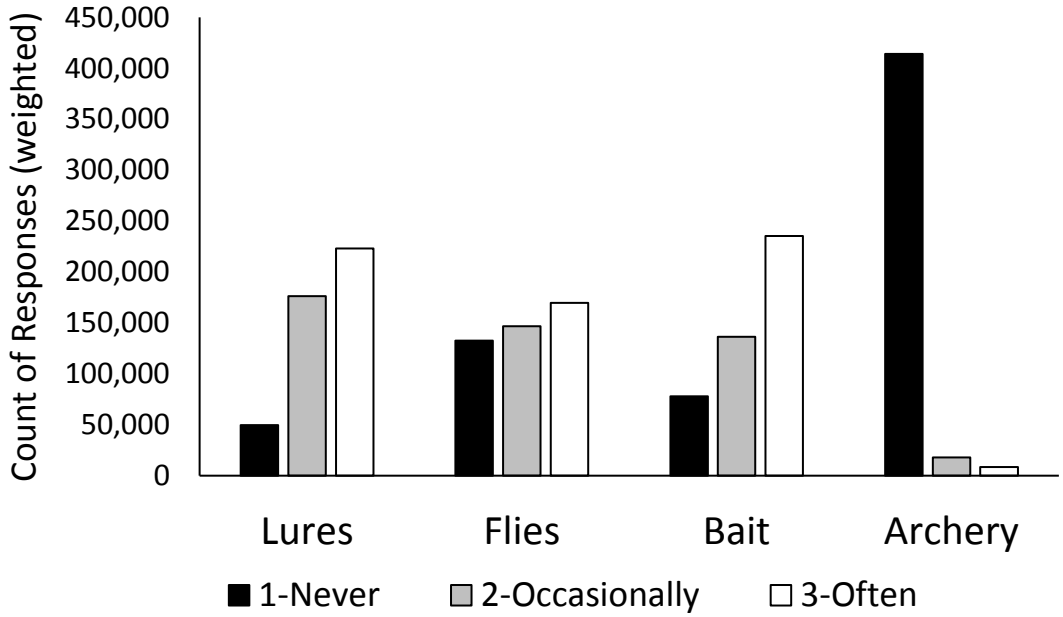


Figure 16. Count of statewide responses (weighted) for how often anglers use each gear type (Question #6). Anglers could mark any category for each gear type.

Anglers indicated they use a variety of fishing tackle, but archery equipment is decidedly much less popular (Figure 16). The utility of this question is limited because of how the question was structured. Anglers could check “occasionally” or “often” for multiple gear types, so it is difficult to compare the relative popularity of each gear. If we calculate the proportion of responses (“occasionally” and “often”) for each gear type, they rank out as lures (36%), bait (33%), flies (28%) and archery (3%), but this is not likely an accurate comparison of the relative popularity of each gear type since anglers were not asked to pick their *most* often used tackle. This question should be restructured for future surveys if comparisons of popularity between tackle types are important.

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 composition and abundance of the fish community. 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 most effectively provide the diversity of fishing anglers want.

The 2017 angler opinion survey included questions regarding angler satisfaction with various fishery types, the importance of Department management activities, special rules, salmon/steelhead fishing, and fishing tournaments. IDFG uses fishing rules as a primary tool to manage fish populations and provide different types of angling experiences. While not without controversy, establishing more restrictive fishing rules is generally supported by the angling public, especially when they understand why it is being done. Responses to these questions will provide guidance to IDFG for managing various fisheries resources across the state.

IDFG carries out a number of activities desired by the public as part of its overall responsibilities for fisheries management in Idaho. Question #7 presented anglers with a list of fish management activities and asked them to rate how important each was to anglers (very unimportant to very important). In Table 16, each fisheries management activity is ranked according to its average weighted score, consistent with previous survey methods. Table 16 shows ranks for each management activity for importance and for how well the Department is performing that activity.

The rankings remain largely unchanged from the 2011 surveys, with anglers consistently citing “protecting and improving fish habitat” as their most important Department management activity. In 2017, about 93% of anglers rated this management activity as either “very important” or “somewhat important”. Using the same criteria (somewhat or very important), “maintaining and improving fishing access sites” (83%) and “managing for native trout fisheries” (78%) were also very important to anglers. Rounding out the top five Department management activities were “providing places for family fishing” (73%) and “managing for quality/trophy trout in rivers and streams” (72%). Managing for “Chinook Salmon fishing in rivers” has increased slightly since 2011, but much more so than the 2006 survey where it was ranked last out of the 10 (slightly different) categories provided. “Conducting classes on how to fish” and “providing new urban fishing ponds” were only rated as important to 25% and 39% of anglers, respectively. As with the 2011 survey, the 2017 survey 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.

Using the same list, we asked anglers to rate how well they though the Department was performing in each activity (Question #8). The top-three ranked activities were “providing places for family fishing”, “protecting and improving fish habitat”, and “managing for native trout fisheries” (Table 16).

Table 16. The relative importance of Department fish management activities (Question #7), and how well the Department is performing them Fisheries management activities (Question #8). Activities are ranked by order of importance based on a mean weighted score from the count of five possible responses ranging from “very important” to “very unimportant”.

Rank-Importance (Q #7)	Rank-Performance (Q #8)	Most Important IDFG Activities
1	2	Protecting and improving fish habitat
2	6	Maintaining and improving existing fishing access sites
3	3	Managing for native trout fisheries (cutthroat trout)
4	1	Providing places for family fishing
5	11	Managing for quality/trophy trout in rivers and streams
6	12	Managing for quality/trophy trout in lakes and reservoirs
7	8	Managing mountain Lake Trout fisheries
8	9	Managing for steelhead fishing
9	13	Managing for Chinook Salmon fishing in rivers
10	4	Managing catch-and-release fisheries
11	5	Providing fisheries information
12	7	Managing catch-and-keep trout fisheries
13	14	Managing for warm water fisheries (bass, crappie)
14	10	Developing new fishing access sites/boat ramps
15	15	Managing for quality/trophy bass fisheries
16	17	Managing and conserving native nongame fish
17	16	Providing new urban fishing ponds
18	18	Conducting classes on how to fish

Rankings for how well the Department is doing remained similar to 2011, with a few notable shifts. Compared to the 2011 survey, “Managing for steelhead fishing” dropped from #3 to #9, and “managing for Chinook Salmon fishing in river” dropped from #9 to #13. Meanwhile, “managing for warm water fisheries” improved from #18 to #14. Anglers ranked the Department’s performance in some activities lower than their priority, suggesting some room for improvement. For example, anglers felt that “maintaining and improving existing fishing access sites” was #2, while it was ranked #6 in terms of how well the Department was doing in that activity (Table 16). Anglers appear to be very happy with the Department’s performance on “providing places for family fishing” and “protecting and improving fish habitat”. However, it looks as if anglers feel IDFG could improve on “maintaining/improving fishing access sites” and managing for quality trout fisheries, since there was a bigger mismatch here in ranked priority vs. performance.

Special Rules

We presented anglers with six options for reducing fish harvest as a method to protecting fish populations and asked to what degree they would support or oppose a number of methods to reduce harvest (ranging from “strongly support” to “strongly oppose”). The most preferred option to reduce harvest was to restrict the number of fish that can be kept, with 86% of respondents answering either “strongly support” or “somewhat support” (Figure 17). Anglers also showed strong support for restricting the size of fish that can be kept (81%), but did not support shortening the fishing season (19%). These preferences suggest anglers would prefer harvest/size restrictions when needed, instead of reduced opportunity from shorter seasons. Preferences for each restriction were very similar to those in the 2011 survey, with a slight increase in the support for “limiting anglers use” (38% in 2011).

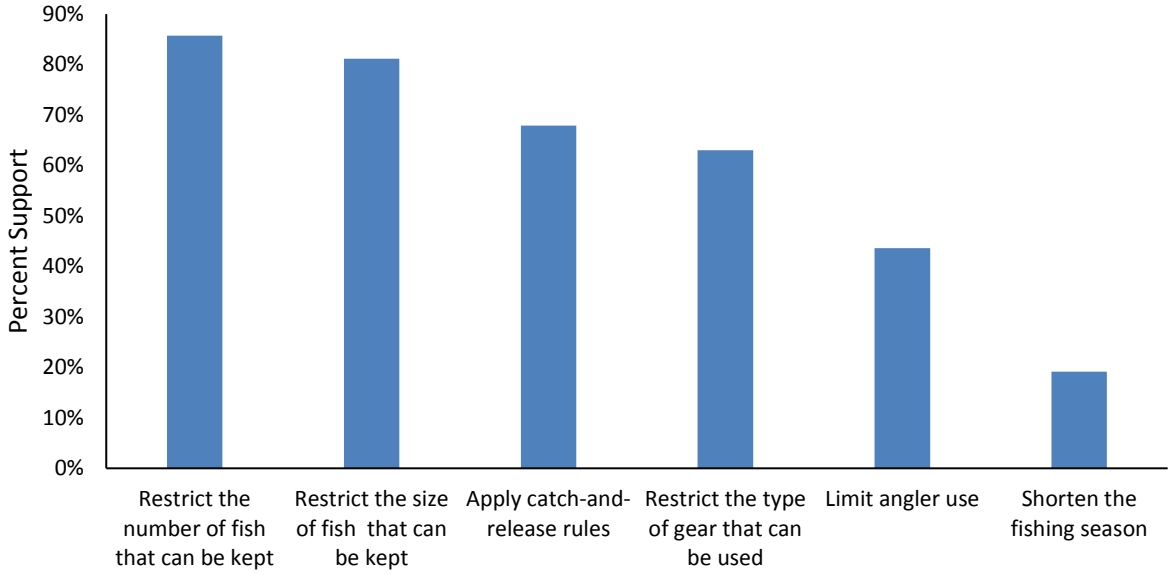


Figure 17. Percent of responses in support (“strongly support” or “somewhat support”) of each option to reduce game fish harvest when necessary to meet management goals.

Chinook Salmon and Steelhead

We asked anglers whether they fished for ocean-run Chinook Salmon or steelhead during the last five years (Questions #10-13). If they had participated, we then asked them to select the style of fishery they most often participated in from a provided list for each species. During the last five years, only 13% of anglers indicated they fished for anadromous Chinook Salmon, while 29% indicated they fished for steelhead. Of those that participated in Chinook Salmon fishing, the most common type of fisheries were anglers fishing large rivers with motorized boats (32%) and large rivers from the shore/bank (30%) (Figure 18). Results were different for steelhead anglers, where the vast majority indicated they used nonmotorized boats on large rivers most often (53%) (Figure 18).

When asked if they had any interest in fishing for anadromous Chinook Salmon or steelhead in the future, 60% of all anglers indicated they were interested in Chinook Salmon, while 69% were interested in steelhead (Question #12).

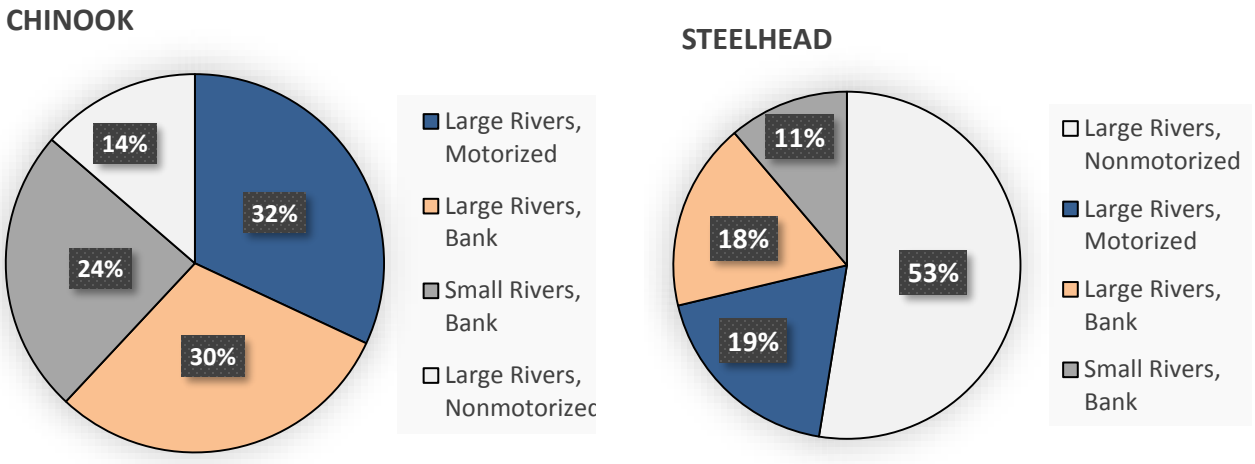


Figure 18. Percent of each type of fishing anglers indicated which type of fishing they do "most often" for ocean-run Chinook Salmon and steelhead.

The Department is interested in understanding how we could improve salmon and steelhead fishing to increase angler satisfaction when participating. Understanding these factors can also help the Department prioritize which management activities to focus on when managing salmon/steelhead fisheries. We asked anglers to rate each factor in a list from "very important" to "very unimportant" for Chinook Salmon and steelhead fishing (Question #13, #14, respectively). We ranked each factor based on the average weighted score from the distribution of the five possible ratings. The top three factors to improving anadromous angling satisfaction were (1) more updates on rule changes; (2) more detailed fishing reports, and (3) improved maintenance as access sites (Table 17). Despite being asked separately, the rankings of each factor were identical between Chinook Salmon and steelhead, suggesting similar preferences for these fisheries.

Table 17. Rank of factors presented to anglers that may improve angling satisfaction with anadromous Chinook Salmon or steelhead fishing. Factors were ranked by mean weighted score of the distribution of five possible ratings from "very important" to "very unimportant". Ranking was identical for both Chinook Salmon and steelhead, so they are combined.

Rank	Factors to improve fishing experience – Salmon / Steelhead
1	More updates on rule changes
2	More detailed fishing reports
3	Improved maintenance at access sites
4	Providing more salmon fishing options closer to home
5	More restrooms near fishing areas
6	Provide more camping areas
7	More easy/handicap bank access to rivers
8	More how-to info on fishing techniques
9	More boat ramps
10	Provide fish cleaning stations

Fishing Tournaments

IDFG manages fishing tournaments to address public concerns that these permitted activities may increase boat traffic, crowd boat launches, and/or negatively affect the overall fishing experience. We asked anglers whether they participated in any kinds of tournaments during the last five years (Question #15), and whether they agree or disagree that fishing tournaments are appropriate for various types of fisheries in Idaho (Question #16). Across the entire sampling frame, only a small percentage of anglers participated in tournaments, with trout (3.4%) and bass (2.3%) having the highest participation (Table 18).

Table 18. Percent of respondents that indicated "yes" as to whether they participated in one of the listed types of fishing tournaments during the last five years.

Percent of anglers participating	Tournament Type
3.4%	Trout
2.3%	Bass
1.7%	Other
1.7%	Steelhead
1.1%	Chinook Salmon (lakes)
0.8%	Kokanee
0.6%	Chinook Salmon (rivers)
0.5%	Walleye

Support for tournaments varied across types, but was greatest for bass in lakes (35%) and trophy fishing in large lakes (32%) (Table 19). Anglers indicated little support for tournaments in rivers for salmon/steelhead (16%) or backcountry trout waters (14%) (Table 19). There was a relatively high percentage (44 - 51%) of respondents who replied with a "neutral/no opinion" answer to these options, which was much higher than in the 2011 survey (27-40%). The data indicate there is no strong consensus among anglers as to how IDFG should handle this important issue. Opinions were close to split for many tournament types and the high neutral/no opinion response rate suggests anglers are either apathetic or conflicted about fishing tournaments. Our sample encompasses a large variety of angler types across the entire state. Participation and opinions regarding fishing tournaments would likely change if the data were examined at finer scales to segment anglers based on demographic factors (age, license type, region of residence) or answers to previous questions. For example, we might expect anglers that indicated "bass" as their most favorite species in Question #1 would likely have higher support for bass tournaments than the statewide average. Finer examination of these data are possible for region-specific needs, but are beyond the scope of this document at a statewide perspective.

Table 19. Percent of respondents that indicated support, opposition, or neutral as to whether tournaments were appropriate by the types listed.

Rank (Most Support)	Tournament Type	Percent Support	Neutral / No Opinion	Percent Opposed
1	Bass in lakes/reservoirs	35%	47%	18%
2	Trophy fishing in large lakes	32%	45%	24%
3	Hatchery-supported trout waters	31%	47%	22%
4	Bass in rivers	28%	51%	22%
5	Kokanee in large lakes	26%	50%	24%
6	Catch-and-release trout waters	22%	47%	31%
7	Quality trout waters	22%	44%	34%
8	Steelhead on large rivers using boats	16%	49%	35%
9	Chinook Salmon on large rivers using boats	16%	49%	35%
10	Backcountry trout waters	14%	45%	42%

Communications Preferences

Questions #17-19 asked anglers to provide feedback on what sources of information they use to plan fishing trips, whether they are interested in receiving fishing-related news and information from the Department, and how they might prefer to receive such information. Friends and family were by far the most important source of information used when deciding where to go fishing when planning a trip (Table 20). Tackle shops, social media friends and the Department website were also important, but much less so.

About 56% of respondents indicated they were interested in receiving fishing-related news and information from the Department. Angler preference for how they receive this information varied by the type of content (Table 21). However, the Department website, e-mail, and postal mail were very important in most categories regardless of content type. The consistent preference for email is particularly interesting because of the relatively low proportion of anglers that have an email address in their customer database profile (only about 15% at this time). Additionally, 44% of respondents checked the “yes” box at the end of the survey to receive email updates. High interest in receiving information and a general preference for email suggest that improving efforts to collect email addresses from anglers should be a Department communications priority. License vendors remain an important source of information for distributing fishing rules, but less so for other types of information. More recently popular methods like Twitter, Instagram, and text messaging do not seem to appeal to the vast majority of anglers. However, these might be important to younger more tech-savvy anglers. A more detailed analysis that filtered responses by angler demographics or other preferences might change the ranks of these communication channels and improve Department communications, marketing and survey efforts.

Table 20. Sources of information for planning where to go fishing in order of importance based on ratings of “never”, “occasionally” or “often”.

Rank	Information Source	% "Often"
1	Friends/Family	46%
2	Tackle shops	23%
3	Social Media - friends	18%
4	Fish and Game website	15%
5	Other websites	11%
6	Social Media - groups	10%
7	Newspapers	6%
8	Fish and Game offices	6%
9	Magazines	5%
10	Online forums	6%
11	Television	3%
12	Radio	2%

Table 21. Communications method ranked by preference for each type of content. Anglers were asked to pick one most preferred method for each content type.

Rank	News	Rules	Reminders	Informative Articles	Opinion Surveys
1	IDFG Website	IDFG Website	E-mail	IDFG Website	Postal mail
2	E-mail	License vendor	Postal mail	E-mail	E-mail
3	Postal mail	E-mail	IDFG Website	Facebook	IDFG Website
4	Facebook	Postal mail	Text message	Postal mail	Public meetings
5	License vendor	Public meetings	License vendor	License vendor	License vendor
6	Instagram	Facebook	Facebook	Public meetings	Facebook
7	Text message	Twitter	Public meetings	Text message	Text message
8	Public meetings	Text message	Twitter	Instagram	Twitter
9	Twitter	Instagram	Instagram	Twitter	Instagram

We asked anglers to report where they used the internet to research fishing information (from four available choices). Only 14% of respondents indicated they did not use the internet, which is slightly lower than the 19% estimated by National Telecommunications and Information

Administration (Idaho Department of Labor, 2017) but slightly higher than the 11% national average reported by the Pew Research Center (Pew Research Center, 2018). Next to home use, mobile devices are very common with anglers accessing the internet, highlighting the importance for developing mobile-friendly content (Figure 19).

Outreach and Eduction

The last two questions of the survey asked anglers to describe their experiences with three common Department outreach activities: “Take-Me-Fishing” trailer clinics, Trout in the Classroom, and Free Fishing Day. We asked anglers to describe whether they participated (Question #21), and how that participation may have influenced their decision to go fishing (and subsequently purchase a fishing license) as a result (Question #22). Only a small percentage of anglers indicated they had ever participated in one of these three programs (Figure 20), with Free Fishing Day having the largest participation (27%). Interestingly, 53% of respondents indicated they had never heard of the Take-Me-Fishing Trailer clinics, while 72% had never heard of Trout in the Classroom. Many first time anglers are often recruited by other anglers. Advertising these programs to increase awareness among current anglers might help refer potential new anglers and improve program success.

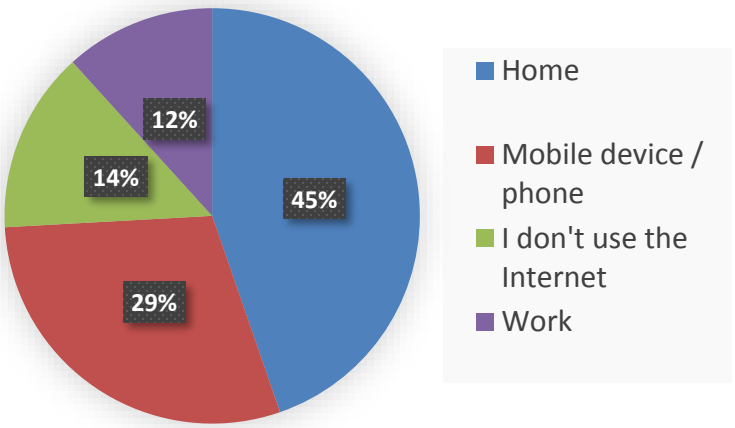


Figure 19. Location where anglers indicated they use the internet to research fishing information.

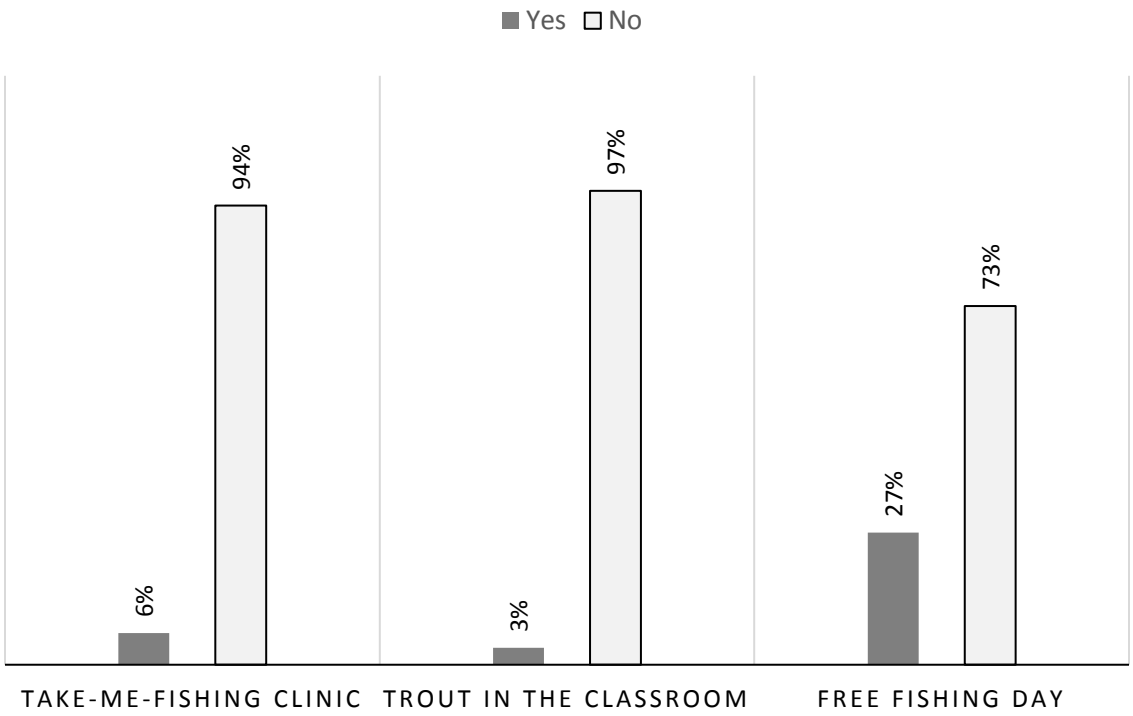
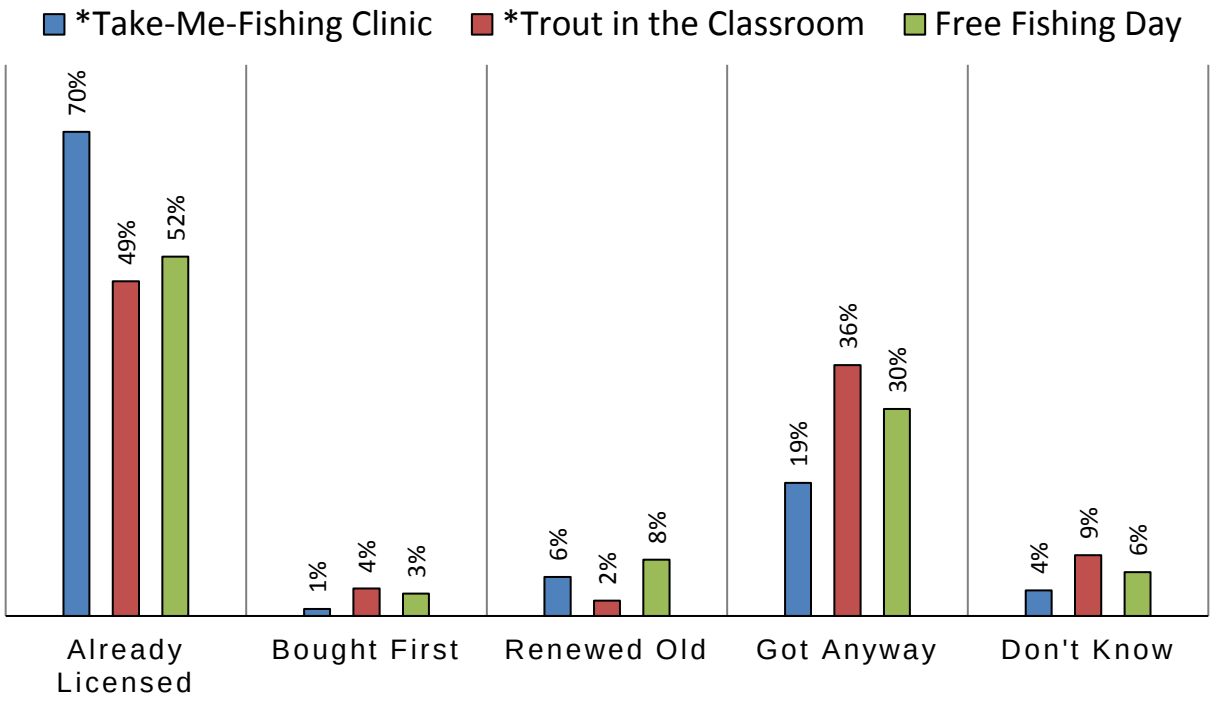


Figure 20. Percent of anglers that indicated they had every participated in one of three common Department outreach programs/events (Question #21).

For tabulating how participation may have affected the decision to continue fishing or purchase a fishing license, we selected only those respondents that indicated they had participated in Question #21. Unfortunately, this left us with a very small number of responses for the Take-Me-Fishing Trailer clinics (n = 164) and Trout in the Classroom (n = 95) (Figured 21). Additionally, the responses for this question suggest anglers were confused or misunderstood the question. Many Trout in the Classroom participants indicated they were “already licensed” or “got one anyway”. This is odd since most participants in this program are children, predominantly under age-14 who do not require fishing licenses. The low sample size and confusing responses suggest this question was not well structured and results may likely be spurious.



* Sample sizes were very low for Take-Me-Fishing-Trailers (n = 164) and Trout in the Classroom (n = 95). For Free Fishing Day, n = 716.

Figure 21. How participation three outreach events/programs may have influenced anglers decision to continue fishing or purchase a fishing license. Responses filtered only for those having selected "yes" to participating in one of these programs in Question #21.

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.

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APPENDIX 1. 2017 ANGLER OPINION SURVEY MAILED TO A SUBSET OF RESIDENT AND NON-RESIDENT ANGLERS.

2017 IDAHO ANGLER OPINION SURVEY

1. What are your three most favorite types of fish you target most? Check one species in each column for your first, second and third most preferred fish.

Species	#1 Most favorite	#2 Second favorite	#3 Third favorite
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 for the following types of fish? Check one box for each species.

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	❑	❑	❑

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

Type of 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	❑	❑	❑	❑	❑

4. Please tell us how important each of the following items are when deciding where to fish. Check 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	❑	❑	❑	❑	❑
Chance to catch a big fish	❑	❑	❑	❑	❑
Chance to catch a variety of fish	❑	❑	❑	❑	❑
Chance to keep some fish	❑	❑	❑	❑	❑
Presence of favorite kind of fish	❑	❑	❑	❑	❑
Hatchery fish stocked	❑	❑	❑	❑	❑
Boat ramps and marina facilities present	❑	❑	❑	❑	❑
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	❑	❑	❑	❑	❑
A place my family likes	❑	❑	❑	❑	❑
Natural beauty of area	❑	❑	❑	❑	❑

5. 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 (canoe, raft, drift boat, kayak etc.)	❑	❑	❑
Motor boat	❑	❑	❑
Ice fishing	❑	❑	❑

6. 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	❑	❑	❑

7. 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	❑	❑	❑	❑	❑
Maintaining and improving existing fishing access sites	❑	❑	❑	❑	❑
Protecting and improving fish habitat	❑	❑	❑	❑	❑
Managing for steelhead fishing	❑	❑	❑	❑	❑
Managing for Chinook Salmon fishing in rivers	❑	❑	❑	❑	❑
Managing for quality/trophy bass fisheries	❑	❑	❑	❑	❑
Managing for native trout fisheries (cutthroat trout)	❑	❑	❑	❑	❑
Providing places for family fishing	❑	❑	❑	❑	❑
Managing for quality/trophy trout in rivers and streams	❑	❑	❑	❑	❑
Managing for quality/trophy trout in lakes and reservoirs	❑	❑	❑	❑	❑
Managing catch-and-release fisheries	❑	❑	❑	❑	❑
Managing catch-and-keep trout fisheries	❑	❑	❑	❑	❑
Managing for warm water fisheries (bass, crappie)	❑	❑	❑	❑	❑
Managing and conserving native nongame fish	❑	❑	❑	❑	❑
Conducting classes on how to fish	❑	❑	❑	❑	❑
Managing mountain Lake Trout fisheries	❑	❑	❑	❑	❑
Providing fisheries information	❑	❑	❑	❑	❑
Providing new urban fishing ponds	❑	❑	❑	❑	❑

8. 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 fishing	❑	❑	❑	❑	❑
Managing for Chinook Salmon fishing in rivers	❑	❑	❑	❑	❑
Managing for quality/trophy bass fisheries	❑	❑	❑	❑	❑
Managing for native trout fisheries (cutthroat trout)	❑	❑	❑	❑	❑
Providing places for family fishing	❑	❑	❑	❑	❑
Managing for quality/trophy trout in rivers and streams	❑	❑	❑	❑	❑
Managing for quality/trophy trout in lakes and reservoirs	❑	❑	❑	❑	❑
Managing catch-and-release fisheries	❑	❑	❑	❑	❑
Managing catch-and-keep trout fisheries	❑	❑	❑	❑	❑
Managing for warm water fisheries (bass, crappie)	❑	❑	❑	❑	❑
Managing and conserving native nongame fish	❑	❑	❑	❑	❑
Maintaining and improving existing fishing access sites	❑	❑	❑	❑	❑
Conducting classes on how to fish	❑	❑	❑	❑	❑
Managing mountain Lake Trout fisheries	❑	❑	❑	❑	❑
Providing fisheries information	❑	❑	❑	❑	❑
Providing new urban fishing ponds	❑	❑	❑	❑	❑

Special Rules

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.

9. 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	❑	❑	❑	❑	❑

Methods to Reduce Harvest	Strongly Support	Somewhat Support	Neutral/No Opinion	Somewhat Oppose	Strongly Oppose
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	❑	❑	❑	❑	❑

10. During the past 5 years, did you fish for ocean-run Chinook Salmon or Steelhead in Idaho? Mark all that apply.

Species	Yes	No
Chinook Salmon – ocean run	❑	❑
Steelhead	❑	❑

11. If you answered YES to #10 above, check what kind of fishing you do most for each species: Check one box for each species.

Preferred Method	Chinook Salmon	Steelhead
Large rivers (i.e. Clearwater, Salmon, Snake rivers) using a motorized boat	❑	❑
Large rivers (i.e. Clearwater, Salmon, Snake rivers) with non-motorized boat (drift boat, raft, etc.)	❑	❑
Large rivers (i.e. Clearwater, Salmon, Snake rivers) by bank/shore/wade	❑	❑
Small rivers (i.e. Little Salmon, SF Clearwater, SF Salmon rivers) by bank/shore/wade	❑	❑

12. Do you have any interest in fishing for ocean-run Chinook Salmon or Steelhead in Idaho in the future?

Species	Yes	No
Chinook Salmon – ocean run	❑	❑
Steelhead	❑	❑

13. For SALMON fishing only, how important would each of the following items be to improving your satisfaction or your experience while salmon fishing in Idaho.

Possible Factors	Very Important	Important	Neutral	Unimportant	Very Unimportant
Provide fish cleaning stations	❑	❑	❑	❑	❑
More detailed fishing reports	❑	❑	❑	❑	❑
More updates on rule changes	❑	❑	❑	❑	❑
More easy/handicap bank access to rivers	❑	❑	❑	❑	❑
More boat ramps	❑	❑	❑	❑	❑
More restrooms near fishing areas	❑	❑	❑	❑	❑
Provide more camping areas	❑	❑	❑	❑	❑
Providing more salmon fishing options closer to home	❑	❑	❑	❑	❑
More how-to info on fishing techniques	❑	❑	❑	❑	❑
Improved maintenance at access sites	❑	❑	❑	❑	❑

14. For STEELHEAD fishing only, how important would each of the following items be to improving your satisfaction or your experience while steelhead fishing in Idaho.

Possible Factors	Very Important	Important	Neutral	Unimportant	Very Unimportant
Provide fish cleaning stations	❑	❑	❑	❑	❑
More detailed fishing reports	❑	❑	❑	❑	❑
More updates on rule changes	❑	❑	❑	❑	❑
More easy/handicap bank access to rivers	❑	❑	❑	❑	❑
More boat ramps	❑	❑	❑	❑	❑
More restrooms near fishing areas	❑	❑	❑	❑	❑

Possible Factors	Very Important	Important	Neutral	Unimportant	Very Unimportant
Provide more camping areas	❑	❑	❑	❑	❑
Providing more salmon fishing options closer to home	❑	❑	❑	❑	❑
More how-to info on fishing techniques	❑	❑	❑	❑	❑
Improved maintenance at access sites	❑	❑	❑	❑	❑

Fishing Tournaments

Fishing tournaments are popular in Idaho, and most require permits from the Department. This helps address some concerns that tournaments might affect general anglers by increasing boat traffic, blocking boat ramps, or crowding prime fishing spots. Please tell us your opinion about fishing tournaments in Idaho.

15. Over the past 5 years, did you participate in any fishing contest/tournament in Idaho that offered a prize based on the number or size of fish caught? Check all that apply.

Tournament/Contest Type	Yes	No
Bass	❑	❑
Trout	❑	❑
Walleye	❑	❑
Kokanee	❑	❑
Chinook Salmon (lakes)	❑	❑
Chinook Salmon (rivers)	❑	❑
Steelhead	❑	❑
Other	❑	❑

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	❑	❑	❑	❑	❑
Chinook Salmon on large rivers using boats	❑	❑	❑	❑	❑
Catch-and-release trout waters	❑	❑	❑	❑	❑
Quality trout waters	❑	❑	❑	❑	❑
Hatchery-supported trout waters	❑	❑	❑	❑	❑

Types of Fisheries	Strongly Agree	Somewhat Agree	Neutral/No Opinion	Somewhat Disagree	Strongly Disagree
Kokanee in large lakes	❑	❑	❑	❑	❑
Backcountry trout waters	❑	❑	❑	❑	❑
Bass in rivers	❑	❑	❑	❑	❑
Bass in lakes/reservoirs	❑	❑	❑	❑	❑
Trophy fishing in large lakes	❑	❑	❑	❑	❑

Please tell us about yourself!

We understand these questions are personal. However, your answers help us better understand current anglers and those who may be interested in fishing in the future. The answers you provide will not be used with your personal information and is for statistical purposes only.

17. How often do you use the following sources of information to find out where to go when you are planning a fishing trip? Please check all that apply.

Source of Information	Never	Occasionally	Often
Tackle shops	❑	❑	❑
Social Media - groups	❑	❑	❑
Social Media - friends	❑	❑	❑
Newspapers	❑	❑	❑
Fish and Game offices	❑	❑	❑
Fish and Game website	❑	❑	❑
Other websites	❑	❑	❑
Online forums	❑	❑	❑
Friends/Family	❑	❑	❑
Magazines	❑	❑	❑
Radio	❑	❑	❑
Television	❑	❑	❑

18. Are you interested in receiving fishing-related news and information from the Idaho Department of Fish and Game?

Yes	❑

No	❑

19. If YES to #18 above, how would you prefer that Fish and Game provide you with this fishing-related information? Please check each option from "most preferred" to "least preferred."

Contact method	Most Preferred	Somewhat Preferred	Neutral/No Opinion	Somewhat Opposed	Strongly Opposed
Public meetings	❑	❑	❑	❑	❑
IDFG website	❑	❑	❑	❑	❑
Facebook	❑	❑	❑	❑	❑
Direct postal mail	❑	❑	❑	❑	❑
E-mail	❑	❑	❑	❑	❑
Pick up at license vendor	❑	❑	❑	❑	❑
Twitter	❑	❑	❑	❑	❑
Text message	❑	❑	❑	❑	❑
Instagram	❑	❑	❑	❑	❑

20. Where do you use the Internet to research fishing information? Check all that apply.

Location	
I don't use the Internet	❑
Home	❑
Work	❑
Mobile phone	❑

Outreach and Education

The Department has several outreach programs to teach new anglers about fishing and encourage people to try it. The "Take-Me-Fishing Trailers" are loaded with fishing tackle and host how-to clinics at many local waters. Trout in the Classroom works with 120 schools to raise trout in classroom aquariums for science education. On Free Fishing Day, people can fish without a license at dozens of events hosted at local waters across the state. We are curious to know if you have participated in any of these programs and how that may have influenced your decision to go fishing.

21. Please describe your participation and experience with these educational programs. Check one for each event.

Program	YES It was great	YES Did not like it	NO. But I know about it	NO. Never heard of it
"Take-Me-Fishing" trailer clinic at local pond/lake	❑	❑	❑	❑
Trout in the Classroom	❑	❑	❑	❑

Program	YES It was great	YES Did not like it	NO. But I know about it	NO. Never heard of it
Free Fishing Day event	❑	❑	❑	❑

22. How did participating in each of these programs influence your decision to continue fishing and whether to get a fishing license? Check one for each program you attended.

Program	Did not participate	Already licensed	Bought my first license	Renewed my old license	Would have gotten one anyway	I don't know
"Take-Me-Fishing" trailer clinics at ponds	❑	❑	❑	❑	❑	❑
Trout in the Classroom	❑	❑	❑	❑	❑	❑
Free Fishing Day event	❑	❑	❑	❑	❑	❑

Thank you for completing this survey! Your opinion is very valuable to us and will help guide the Department's fisheries management in the future.

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 22). 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, landlocked 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, 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. Yield – a management prescription that applies to fish species managed primarily for harvest opportunity. Species such as crappie, Yellow Perch, Bluegill, and catfish are typically abundant, reproduce at high rates, and provide excellent table fare. With few exceptions, these species are managed with no bag or possession limits; research in Idaho indicates this liberal approach is sustainable for these species. For species like bass, Northern Pike, or Walleye yield fisheries may be provided in specific waters where unauthorized introductions occur or where management emphasis is on other species.

G. 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.

H. 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 fingerling or catchable-size fish, which are expected to grow and contribute to the fishery over an extended time. No special regulations are applied.

I. 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.

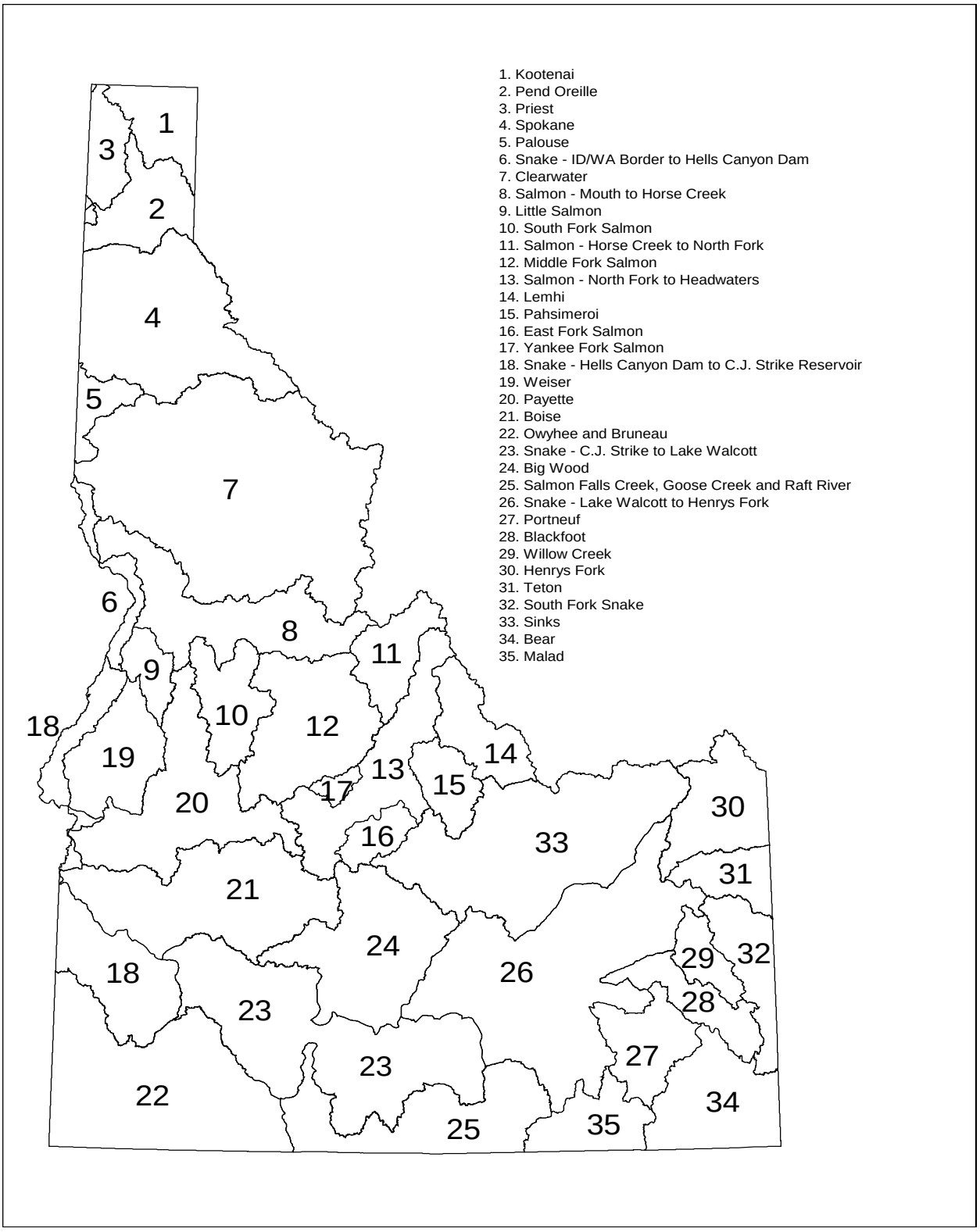


Figure 22. Statewide drainage map for 2013 - 2018 Fisheries Management Plan.

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 three feet per mile.

Inland redband (rainbow) trout are native to the Kootenai River drainage and are present in the main stem 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 trout populations remaining in Idaho tributaries include the adfluvial population from Deep Creek and redband trout that occupy Callahan Creek and portions of the Boundary Creek drainage. Other native salmonids include Westslope Cutthroat Trout, Bull Trout, kokanee, and Mountain Whitefish. Introduced Brook Trout and Brown Trout are present within the drainage. Early spawning kokanee from Kootenay Lake, BC are present in the main stem 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 following entrainment through Libby Dam (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 behind Libby Dam, a fertilizer plant on the St. Maries River (above Lake Koocanusa in BC) that once discharged excessive phosphorus was closed in the 1970s. 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 in Kootenay Lake.

The Kootenai River supports a genetically distinct population of White Sturgeon. The White Sturgeon fishery was closed for conservation purposes in 1984 in response to a major population decline. Lack of successful natural reproduction has limited the population as a result of alterations of the natural flow regime, substrate, water temperature, and nutrients following construction of Libby Dam. The Kootenai River White Sturgeon was listed as an Endangered Species in 1994, and the Kootenai River White Sturgeon Recovery Plan currently

guides recovery actions in the basin. Recovery actions include conservation aquaculture, flow and temperature management, nutrient addition, public outreach, habitat restoration, and research, monitoring, and evaluation. In order to address recovery and fill the demographic and genetic gaps left by the absence of natural reproduction, hatchery-origin White Sturgeon have been spawned from wild broodstock and released into the Kootenai River annually since 1992. Since this time, the Kootenai Tribe's aquaculture program has released over 290,000 hatchery-origin juvenile White Sturgeon into the Kootenai River basin. Of these, an estimated 13,000 juveniles (under 120 cm) currently occupy the river. IDFG monitoring and evaluation data continue to guide and refine implementation of the conservation aquaculture program in an adaptive management framework. IDFG will continue to serve on the Kootenai River White Sturgeon Recovery Team. Additionally, IDFG will work with the USFWS and KTOI to restore a fishery for White Sturgeon in the Kootenai River.

The Kootenai River supports the only native Burbot (ling) population in Idaho. Similar to White Sturgeon, major declines in the Burbot population occurred following construction of Libby Dam. An inability to successfully naturally reproduce has limited the Burbot population and is caused by the same alterations to the river environment by Libby Dam that influence White Sturgeon. As a result, the Burbot fishery was closed in 1992. Burbot were petitioned for listing in February 2000, but it was determined that listing was not warranted. 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. As a result, thousands of juvenile Burbot have been released back into the Kootenai River, and recapture efforts indicate good survival. Because of this success, IDFG is planning to re-open a Burbot harvest fishery in 2019. Research is still being conducted to identify factors limiting natural reproduction of Burbot in the Kootenai drainage. The goal is to restore a self-sustaining population that supports a recreational harvest fishery. IDFG will work with the KTOI in coming years to identify appropriate stocking levels for Burbot and to monitor effects of the re-opened 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 that are migration barriers, 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. Man-made obstructions, diversions, and channelization have eliminated and isolated former trout habitat completely, especially in tributaries draining the west side of the drainage. The Deep, Boundary, and Callahan creek drainages are the largest accessible tributaries of the Kootenai River. Studies indicate most of the current recruitment of Rainbow Trout in the Kootenai River comes from Montana tributaries. Some Rainbow Trout in the Deep Creek drainage were shown to use Deep Creek for spawning and rearing, but spent their adult life in Kootenay Lake, BC (adfluvial life history). In addition, a recent otolith microchemistry project confirmed this work. Efforts in recent years to improve tributary spawning and rearing habitat conditions in Idaho tributaries may 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. Additionally, IDFG worked cooperatively with Montana to open a new boating access site on the Kootenai River just east of the Idaho border near Leonia. This access site has improved angler access to the Idaho portion of the Kootenai River.

Genetic studies indicate that pure strain Redband Trout populations are relatively rare in the drainage. Stocking of coastal strains of Rainbow Trout in Montana, Idaho, and BC for many decades has produced a naturalized wild population. The only known pure strain Redband Trout populations remaining in Idaho tributaries include the adfluvial population from Deep Creek and Redband Trout that usee Callahan Creek and portions of the Boundary Creek drainage. IDFG worked collaboratively with other agencies to develop a Reband Trout Conservation Strategy document in 2016. This document identifies conservation measures that can be evaluated or implemented to benefit Redband Trout in the Kootenai drainage. IDFG will look for opportunities to implement or support conservation measures identified in this document.

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 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 mixed fisheries for trout and warmwater species. Naturalized populations of Largemouth Bass, Black Crappie, Brown Bullhead, Yellow Perch, and Pumpkinseed are present in most lakes. Northern Pike were illegally introduced in Perkins and Bonner lakes prior to 2005, but have not established populations. Channel Catfish, Tiger Muskie and Bluegill fisheries are established in some lakes. Put-and-take Rainbow Trout are stocked in these lakes to provide salmonid fisheries. Burbot stocking recently began in Bonner Lake to diversify angling opportunity and restore ice fishing opportunity for Burbot that is no longer available on the Kootenai River. Trammel net surveys during 2017 and 2018 documented survival and growth of stocked Burbot, so a harvest fishery will be opened in 2019. 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 Yellow Perch with some Largemouth Bass and Pumpkinseed). The reservoir is periodically drained to manage vegetation and enhance waterfowl production. This may actually enhance Yellow Perch fishing by reducing the population and increasing subsequent growth of the fish that remain. Adfuvial Redband Trout migrate from Kootenay Lake, BC to use tributaries above McArthur Lake Dam for spawning and rearing. A fish ladder

on the dam allows access to these tributaries. Warm water from the reservoir results in higher stream temperatures in Deep Creek, which may have negative effects on coldwater fishes, such as Redband Trout and Burbot. Stream temperature monitoring is being conducted to better understand the influence of McArthur Lake Dam on coldwater fishes in the Deep Creek drainage. Strategies for mitigating the effects of elevated stream temperatures will be considered.

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 Westslope Cutthroat Trout and sterile 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 unique species such as Grayling and Golden Trout. In the past, IDFG has cooperated with Montana fishery managers to only stock Grayling in the Callahan (Smith) Lake drainage to minimize impacts to native Redband Trout in Callahan Creek. Montana is now stocking Redband 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. IDFG will maintain these lakes in a fishless condition in order to maintain some natural alpine lake ecosystems for amphibians and invertebrates.

Objectives and Strategies

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

   Strategy: Continue to work with KTOI with nutrient restoration program and evaluate the effects on the fish assemblage with emphasis on Rainbow Trout, Bull Trout and Mountain Whitefish.
   Strategy: 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.
   Strategy: Determine where trout recruitment can be improved in Idaho tributaries through habitat improvement projects.
   Strategy: Work with government agencies, the KTOI, private developers, interested angling groups and local schools to make protection, enhancement and acquisition of fisheries habitat a primary concern in land use decisions.
   Strategy: Following stock assessments, work cooperatively with the KTOI to provide adequate numbers of Burbot to the main stem Kootenai River to support a harvest fishery. Annual monitoring and modeling will provide information to adjust stocking numbers.
   Strategy: Conduct creel surveys to monitor angler harvest and catch rates for Burbot in the Kootenai River.
   Strategy: Work with the U.S. Fish and Wildlife Service and KTOI to restore a White Sturgeon fishery in the Kootenai River.

2. Objective: Restore natural recruitment of Burbot and White Sturgeon.

   Strategy: Estimate spawning success and natural recruitment of White Sturgeon and Burbot in the Kootenai River.

Strategy: Monitor and evaluate White Sturgeon and Burbot vital statistics in response to recovery strategies and adjust strategies as needed.
Strategy: Work with partner agencies to develop and implement conservation aquaculture programs for White Sturgeon and Burbot and identify appropriate release numbers and effective stocking strategies.
Strategy: 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.

Strategy: 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.
Strategy: Improve public access through easements, cooperative agreements or acquisitions. 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%.

Strategy: Periodically evaluate rate of return, catch rate, and angler use on put-and take trout fisheries through routine monitoring.
Strategy: Adjust rate, timing or location of trout stocking to improve rate of return to the creel.
Strategy: Inform anglers of hatchery supported trout fishing opportunities through maps, website, media coverage and signing to improve return to the creel.

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

Strategy: Continue periodic surveys of fish populations to monitor population status and fish growth in relation to physical and biological conditions and fishing rules.
Strategy: Maintain maximum harvest opportunity for warmwater species and stocked trout in most lakes.
Strategy: Evaluate performance of stocked Burbot in Bonner Lake and the effects of angler harvest. Adjust stocking densities and fishing rules as appropriate. Also, monitor the response of other sport fish to Burbot.
Strategy: 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.

Strategy: Develop or enhance fishing and boating access areas through easements, cooperative agreements or purchase. Use funds to build fishing docks for shoreline anglers.

7. Objective: Provide diverse angling opportunities in alpine lakes.

Strategy: Use Westslope Cutthroat Trout and sterile disease-free Rainbow Trout for stocking, but reserve some lakes for unique species (Golden Trout and Grayling) only. Evaluate performance of sterile Westslope Cutthroat Trout to minimize potential impacts to native downstream genotypes.

4055 Strategy: 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 Trout Westslope Cutthroat Trout Burbot Kokanee Mountain Whitefish Bull Trout White Sturgeon	Quality General Conservation	Work toward obtaining more favorable flows and restore productivity to improve habitat conditions for salmonids. Use restrictive regulations to improve the trout fishery. Improve angler access. Provide harvest opportunity and monitor influence of harvest on Burbot conservation goals. Maintain harvest closure in river and tributary streams, but explore possibility of restoring a White Sturgeon fishery. 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 Trout Westslope Cutthroat Trout Brook Trout Burbot Kokanee Bull Trout	General/quality Conservation	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. Maintain harvest closure in tributary streams. Determine critical habitat and improve conditions.
Inaccessible tributaries to Kootenai River	300/	Coldwater	Rainbow Trout Westslope Cutthroat Trout Brook Trout	Wild General	Maintain limited consumptive fishery for small resident trout. Maximize harvest for Brook Trout to provide a consumptive fishery and to reduce competition with Westslope Cutthroat Trout.
Moyie River	25/	Coldwater	Rainbow Trout Westslope Cutthroat Trout Burbot (downstream of dam) Brook Trout	Wild General	Maintain fishery for wild trout with restrictive regulations. Monitor fishery and evaluate the need for more restrictive regulations. Maximize harvest for Brook Trout to provide a consumptive fishery and to reduce competition with Westslope Cutthroat Trout.

Moyie River tributaries	35/	Coldwater	Rainbow Trout Westslope Cutthroat Trout Brook Trout	Wild General	Maintain limited consumptive fishery for small resident trout. Seek ways to increase recruitment from tributary streams Maximize Brook Trout harvest to provide a consumptive fishery and to reduce competition with Westslope Cutthroat Trout.
McArthur Lake	/200	Warmwater Coldwater	Yellow Perch Largemouth Bass Pumpkinseed Rainbow Trout Brook Trout	General Wild General	Maintain harvest-oriented fisheries for warmwater species. Maintain limited consumptive fishery for trout. Seek ways to increase recruitment from tributary streams. Maximize Brook Trout harvest to provide a consumptive fishery.
Smith, Brush, Bonner, and Robinson lakes	/160	Mixed	Rainbow Trout Largemouth Bass Yellow Perch Burbot 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 restrictive regulations on Largemouth Bass in Robinson Lake to provide a quality bass fishery. Stock Burbot in Bonner Lake and monitor fishery and response of other species.
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 unique trophy fishery. Maintain harvest-oriented fisheries for warmwater species.
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	Westslope 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 and sterile Rainbow Trout for stocking, except reserve some lakes for unique species (Golden Trout, Grayling) only. Do not stock currently fishless lakes in order to maintain some natural alpine lake ecosystems.

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, road building, the construction of hydroelectric dams, and introduced non-native species have all taken a toll on 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 the Pend Oreille River and Lake Pend Oreille. The impacts of Albeni Falls and Cabinet Gorge dams on the Lake Pend Oreille fishery have been a primary focus of the mitigation programs, 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 sport fish supported fisheries through the 1930s. Westslope Cutthroat Trout were the most frequently caught species, with abundant harvest of 12-16 inch fish. Large adfluvial Bull Trout were often targeted for harvest in the lake and tributary streams. Accounts of tributaries with an abundance of spawning Westslope Cutthroat Trout and Bull Trout were common in the late-1800s and into the early 1900s. Similarly, a fisheries survey of the Pend Oreille River in the late-1800s reported an abundance of native Westslope Cutthroat Trout and Bull Trout. Spawning runs of Mountain Whitefish historically supported a significant commercial fishery on Lake Pend Oreille.

For the latter half of the 1900s, Pend Oreille was primarily known for abundant kokanee and trophy Rainbow Trout and Bull Trout. During the winter flood of 1933, kokanee became established in Lake Pend Oreille via downstream dispersal from Flathead Lake, Montana, where they had been stocked in 1916 from Lake Whatcom, Washington. Through the mid-1960s, the adult kokanee 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 prey source for piscivorous Rainbow Trout and Bull Trout, and the lake was soon widely-known for its unique trophy fishery. A world-record Rainbow Trout (37 lbs.) was caught in 1947, and the still-current world-record Bull Trout (32 lbs.) was caught in 1949.

Starting in the late-1960s, the kokanee population declined from historic levels due to a combination of factors, including habitat changes, competition with mysid shrimp, and excessive predation mortality. Initial declines appeared to be primarily related to impacts from dams. Cabinet Gorge Dam blocked a run of tributary spawning kokanee. At the same time, Albeni Falls Dam modified the natural annual hydrograph and lake level, thus altering shoreline spawning habitat for kokanee. Starting in 1966, the lake was drawn down an additional five feet in most winters to generate hydropower. These deeper winter drawdowns dewatered shallow kokanee spawning habitat, although recent research showed that more spawning habitat exists below the lowest winter lake elevation that previously thought. IDFG continues to work with the U.S. Army Corps of Engineers to coordinate timing of drawdown to minimize impacts on spawning kokanee. Construction of the Cabinet Gorge Hatchery in 1986 to raise kokanee was mitigation for dam-related losses. Kokanee stocking continues to be used to supplement the wild population. Additionally, in 2017, IDFG completed a kokanee spawning habitat enhancement project in Idlewilde Bay. Over one half mile of new kokanee spawning habitat was created by adding suitable spawning gravel to the lakebed in an area with downwelling currents. Recent research showed high egg incubation success in habitats with downwelling currents, thus creation of similar habitat elsewhere should benefit kokanee. In recent years, wild kokanee production has been high and suggests that kokanee spawning needs are being met.

Kokanee were also negatively influenced by the introduction of mysid shrimp, which were stocked to enhance the food supply for kokanee. Stocking occurred from 1966-1969 and mysids were well-established by 1974. Unfortunately, the daily migration of mysids to the depths of Lake Pend Oreille made them unavailable to kokanee, but they provided an excellent food source for juvenile Lake Trout, which had been present in the system at insignificant densities since 1925. Ultimately, mysids allowed the Lake Trout population to dramatically increase and the added predation from Lake Trout threatened to collapse the kokanee population. Additionally, mysids compete with kokanee for the same zooplankton food source. Current research is focused on better understanding the interactions between kokanee, mysids, and predators. It appears that a sustainable kokanee fishery can be achieved in the presence of mysids, although mysids appear to have lowered the carrying capacity for kokanee. Kokanee recovery was aided by a sudden collapse of mysids in 2011-2012. The reason for this collapse is unknown and mysid densities have only modestly rebounded. Regardless, lower mysid densities have likely benefitted kokanee in recent years.

By the 1990s, the kokanee population was less than 10% of historical levels. Predation mortality became the primary factor driving the population, and kokanee continued to decline. By 2000, predation from multiple sources, but particularly from an exponentially growing Lake Trout population, threatened to collapse the kokanee population. The kokanee fishery was closed in 2000, and an aggressive fishery recovery effort was implemented in 2006. The focus of this effort was reducing predation on kokanee by suppressing Lake Trout abundance. The effort began with removal of the harvest limit on Lake Trout in 2000. Then, a rod-and-reel commercial Lake Trout fishery was opened in 2003. Despite these measures, exploitation was still inadequate to control the expanding Lake Trout 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 that pays anglers $15 for each Lake Trout harvested. Additionally, rules were liberalized to allow use of an unlimited number of fishing rods. These efforts continue to be implemented annually. Combined netting and angler harvest has reduced adult Lake Trout abundance by over 64%. In response, kokanee avoided collapse and a resurgence of the population occurred that has been sustained since 2013. The kokanee harvest fishery was re-opened in 2013 and quickly regained popularity with anglers. In 2014, over 40% of angler effort on Lake Pend Oreille was directed at kokanee. Suppression efforts

will be continued to sustain low Lake Trout density. Simulation models indicate that fishing effort needs to be sustained at the current level for about the next decade to reach the management target of a 90% reduction from peak Lake Trout abundance. Afterwards, models predict that fishing effort can be reduced by over 80% to sustain that abundance level. This will allow the program to transition to a maintenance level of effort that is far less intensive and more cost effective.

Throughout the netting effort, minimizing Bull Trout by-catch has been a central component of program implementation. The Bull Trout population has remained stable despite incidental by-catch mortality that has occurred since 2006. The USFWS has concurred that netting is benefitting the Bull Trout population through reduced predation and competition with Lake Trout and that the action is consistent with the State's Section 6 permit. Using genetic analysis of captured Bull Trout, the potential impacts of netting at the local population level have been evaluated. To date, weaker stocks of Bull Trout have not been adversely impacted by netting. Additionally, all incidentally-caught Bull Trout are tagged before release and current research is using multiple mark-recapture data to evaluate delayed mortality and other Bull Trout demographic responses. Each year, a detailed analysis of the netting program is performed to determine how to best minimize Bull Trout by-catch and maximize Lake Trout removal. We also meet annual with the USFWS to share this information and review changes to the netting program. As the netting program eventually transitions to a reduced maintenance level of effort, Bull Trout by-catch mortality will decrease. The reduced annual mortality should provide opportunity to resume some level of Bull Trout harvest in the sport fishery.

A primary management goal for Lake Pend Oreille is recovery of the trophy Rainbow Trout fishery. An abundant kokanee prey base is required to support this trophy fishery, thus the fishery struggled during years of low kokanee abundance. When kokanee were at risk of population collapse, the AIP was also applied to Rainbow Trout from 2006 to 2012. The intent was to temporarily suppress the Rainbow Trout population to further reduce predation mortality on kokanee and the risk of population collapse. Despite the harvest incentive, exploitation never exceeded 30% and Rainbow Trout abundance did not decline. However, size structure did decline and relatively few trophy fish were caught during these years. With the resurgence of kokanee, the transition was made back to trophy management for Rainbow Trout. The AIP ended when the kokanee fishery was re-opened in 2013, and restrictive harvest rules were restored. Additionally, in response to concerns from anglers, genetic composition of the existing Rainbow Trout stock was evaluated. Results showed that the Lake Pend Oreille stock closely resembled the native Gerrard-strain Rainbow Trout stock in Kootenay Lake, B.C. These results demonstrated that growth potential of the Lake Pend Oreille stock is high and stocking of pure-strain Gerrards to infuse the population was not necessary. Nevertheless, some stocking did occur at the request of anglers, but few of these stocked fish have been documented in the angler catch. Thus, future stocking is not needed to address genetic concerns, and stocked fish do not appear to recruit to the fishery effectively. Sustained high densities of kokanee since 2013 has increased growth rates for Rainbow Trout, and the trophy fishery has steadily improved. Rainbow Trout between 10 and 20 pounds are now caught regularly, with numerous fish over 20 pounds caught annually. Few fish over 25 pounds have been documented, but potential exists for this to improve if kokanee are sustained at high-density. The restored trophy fishery has been very popular, with 40% of the lakewide angler effort in 2014 directed at Rainbow Trout. Additionally, catch-and-release fishing opportunity in the Clark Fork and Pack river drainages during the Rainbow Trout spawning migration has provided enhanced trophy fishing opportunity that is popular with anglers, without compromising the ability to restore the trophy fishery in the lake.

Lake Trout suppression has not only been important for recovering the kokanee and Rainbow Trout fisheries, but has benefitted conservation efforts for native Westslope Cutthroat Trout and Bull Trout populations. The loss of adfluvial Bull Trout following Lake Trout invasions is well-documented throughout the range of Bull Trout. Similarly, the ability to enhance adfluvial Westslope Cutthroat Trout would likely be limited in the presence of an abundant Lake Trout population. Despite declines over the past century, fishery sampling efforts in Lake Pend Oreille tributaries indicate cutthroat trout are widely distributed with stable densities over the past three decades. Standardized surveys were started during the last planning period to monitor relative abundance of Westslope Cutthroat Trout in the lake. This survey will be repeated periodically to monitor the in-lake trend for Westslope Cutthroat Trout. Despite being stable, this adfluvial population is believed to be significantly below historical levels, thus leading to use of restrictive harvest rules. Catch-and-release rules were applied to Westslope Cutthroat Trout throughout the drainage (with the exception of lowland lakes and alpine lakes) in 2011. In addition to restrictive fishing rules, other significant management actions have been taken to improve habitat for Westslope Cutthroat Trout. The re-licensing 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 and support native fish conservation efforts.

The Lake Pend Oreille fishery has dramatically improved in recent years, much of which is attributed to the recovery of kokanee and reduced Lake Trout abundance. Not only has fishing improved for traditionally-valued coldwater species, but the fishery is more diverse than it was historically because of the presence of numerous non-native warmwater and coolwater species, particularly predator species. Impacts that these species have on native species and other desirable sport fish vary and present management challenges. Many of these species at least partially rely on kokanee as a food source, which further highlights the importance of sustaining an abundant kokanee population. The warmwater fishery continues to increase in popularity, although the proportion of angling effort directed at warmwater fish species in the lake was still only 11% in 2014. Smallmouth Bass support a quality fishery and are the most popular warmwater species with anglers. While Smallmouth Bass likely have some negative effects on other native or desirable species, they have yet to be identified as a limiting factor for fisheries management goals. Other non-native species that have received more attention from anglers in recent years include Northern Pike and Walleye, both of which pose greater risks to fisheries in the drainage.

Walleye have emerged as a major threat to sustaining the Lake Pend Oreille fishery. Walleye were illegally introduced into Noxon Reservoir, Montana in the early-1990s. By the early-2000s, Walleye were present at low density in Lake Pend Oreille. A standardized gill net survey for Walleye in Lake Pend Oreille and the Pend Oreille River was first conducted in 2011 and was repeated in 2014 and 2017. Walleye catch rates approximately doubled each time the survey was conducted. Similarly, incidental by-catch of Walleye in Lake Trout suppression nets increased substantially during this time period, and anecdotal reports suggest that angling success also increased. Additionally, research has already identified that Walleye consume kokanee, and they sometimes were the predominant diet item in stomach samples. The rapid population expansion and documented kokanee predation elevated the level of concern about impacts Walleye may have in the Pend Oreille drainage. Negative ecological effects and

difficulties sustaining fisheries have been well-documented in other western U.S. waters where non-native Walleye are established.

In 2018, IDFG staff met with a panel of Walleye experts from the Midwest and eastern Canada to solicit their input on how concerned we should be and what options might exist to manage the Walleye threat. Based on the strong public desire to sustain the existing fisheries in the Pend Oreille drainage, along with the large investment made to restore the kokanee and Rainbow Trout fisheries and conserve and enhance native Bull Trout and Westslope Cutthroat Trout, the expert panel concluded that IDFG should be very concerned about the continued expansion of Walleye. The group unanimously agreed that IDFG should approach this situation by developing an understanding of basic Walleye biology in Lake Pend Oreille to guide future research and management efforts. In addition, the panel recommended evaluating harvest methods to curb Walleye population growth. They concluded that angler harvest alone is unlikely to keep Walleye in-check. Therefore, the panel recommended that IDFG immediately begin evaluating other approaches to increase harvest. While IDFG has not committed to a long-term suppression program, we are currently evaluating the feasibility of using commercial gill nets as a tool to reduce Walleye abundance to a manageable level. At the same time, IDFG is promoting Walleye angling and harvest through public outreach and by sharing Walleye distribution data. Proactive research and management efforts will be continued in the next planning period to minimize negative impacts by Walleye in the drainage.

Currently, Albeni Falls and Cabinet Gorge dams do not have fish passage facilities. However, Avista has been conducting capture and transport of adult Bull Trout and Westslope Cutthroat Trout annually at Cabinet Gorge Dam. Fish are taken to a holding facility at Cabinet Gorge Fish Hatchery and rapid response genetics testing is used to identify if fish originated in Montana. Those fish are then hauled upstream and released. An agreement has been reached to construct a permanent fish passage facility at Cabinet Gorge Dam to restore access for Bull Trout and Westslope Cutthroat Trout to spawning and rearing habitat in Montana. Construction of passage facilities will begin during this management planning period. Construction of fish passage facilities is being considered at both the U.S. Army Corps of Engineers' 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. A temporary fish trap below Albeni Falls Dam is being operated annually by the Kalispel Tribe to capture Bull Trout that originated in Idaho. Additionally, the Kalispel Tribe conducts electofishing below the dam to capture Bull Trout. Bull Trout are moved upstream of Albeni Falls Dam after capture, although this amounts to few fish annually. The connectivity issues at Albeni Falls Dam, along with marginal habitat conditions, result in few Bull Trout occupying the Washington portion of the Pend Oreille River. As a result, reintroduction of Bull Trout in Washington is being evaluated. IDFG has participated in a modeling effort, along with many other project partners, to determine the feasibility of this strategy. The source of Bull Trout for such an effort would likely come from upstream portions of the drainage in Idaho. IDFG is supportive of these efforts if benefits to Bull Trout will be realized without compromising fisheries management objectives in Idaho.

In addition to fish passage facilities, Avista is implementing 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 of 120-130% in the Pend Oreille River down to Albeni Falls Dam. Avista 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. Additionally, the winter drawdown is also flexible within a five foot window, which is an operational change that began during the last planning period. The Pend Oreille River upstream of the dam 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 that sometimes occurred in the past 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 over the past 10-15 years. In a 1992 electrofishing survey of the Pend Oreille River, Smallmouth Bass were virtually non-existent. Smallmouth Bass catch rates increased dramatically in surveys conducted in 2005 and 2010, and have remained stable since then. As Smallmouth Bass catch rates increased, a concurrent decrease in catch rates for Northern Pikeminnow and Redside Shiner was observed. Largemouth Bass have also declined and represented about 2% of the catch in a 2016 electrofishing survey. The recent increase in Walleye in the Pend Oreille River threatens to further change the fish assemblage.

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. Recently, the kokanee population has been robust and commonly has resulted in small size of adult kokanee. In 2016, the daily limit was raised from 15 to 25 kokanee to provide more harvest opportunity. Additionally, Chinook Salmon stocking began in 2016 as part of a statewide research project to evaluate relative performance of diploid and triploid fish. The addition of a kokanee predator will be monitored to determine if continued stocking can benefit kokanee management goals in Spirit Lake. Additionally, stocking of fingerling Westslope Cutthroat Trout has been successful and provides quality trout fishing and harvest opportunity in Spirit Lake.

In addition to Spirit Lake, ten additional lowland lakes in the Pend Oreille River drainage 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 Westslope Cutthroat Trout and Mirror Lake has been 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 Westslope 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 Westslope Cutthroat Trout fry are used to stock mountain lakes to reduce potential impacts to native fish populations downstream. Sterile Westslope Cutthroat Trout will be used when they become available. 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 was re-stocked with Westslope Cutthroat Trout to provide a sport fishery. We will continue to evaluate opportunities to remove threats to native Westslope Cutthroat Trout 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 Strategies

1. Objective: Sustain a kokanee population capable of supporting a consistent harvest fishery and a trophy Rainbow Trout fishery.

   Strategy: Continue Lake Trout suppression with the intent of reducing population abundance to a target of 90% below peak abundance. If this target is reached, reduce fishing effort and transition from full-scale suppression to maintenance suppression. Modeling was recently completed to optimize allocation of netting effort and to guide the transition to maintenance. This work will be used to most effectively implement suppression activities during this management planning period.

   Strategy: Continue the Bonneville Power Administration (BPA) research program to monitor fish population responses to Lake Trout suppression, increased abundance of Walleye, and other management actions. Also, evaluate and implement other mitigation efforts as appropriate.

   Strategy: Maintain hatchery stocking of kokanee fry and evaluate stocking strategies to better determine how to meet kokanee management goals.

   Strategy: Coordinate with U.S. Army Corps of Engineers and BPA to manage timing of fall drawdown in Lake Pend Oreille to minimize impacts to spawning kokanee.

   Strategy: Evaluate food web and nutrient dynamics and the implications for meeting kokanee management goals.

   Strategy: Monitor kokanee population to evaluate response to predator management.

   Strategy: Implement management actions necessary to sustain a trophy fishery for Rainbow Trout.

   Strategy: Monitor Rainbow Trout population dynamics to evaluate response to management actions.

   Strategy: Conduct periodic creel surveys to monitor kokanee and Rainbow Trout effort, catch and harvest.

Strategy: 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 Trout and Bull Trout populations to improve angling opportunity.

Strategy: Minimize Bull Trout by-catch mortality related to suppression netting program through use of adopted best management practices and evaluate impacts of the netting program on the Bull Trout population.

Strategy: Monitor status of Bull Trout populations through redd counts, in-lake population estimates, and/or juvenile trend surveys in tributaries.

Strategy: Monitor relative abundance of Westslope Cutthroat Trout in Lake Pend Oreille using periodic netting surveys.

Strategy: Restore Bull Trout harvest opportunity when population achieves federal recovery plan criteria.

Strategy: Preserve populations of Westslope Cutthroat Trout and Bull Trout by removing non-native species and/or installing barriers in spawning and rearing tributaries where practical.

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

Strategy: Work with Avista and MTFWP to adaptively manage and increase success of Westslope Cutthroat Trout passage efforts at Cabinet Gorge Dam.

Strategy: Monitor abundance, distribution and genetic integrity of Westslope 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.

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

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

Strategy: Increase research and monitoring of Walleye population, including population trends, population dynamics, diet, distribution, sources of recruitment, angler exploitation, and potential impacts in the Pend Oreille system.

Strategy: Test feasibility of suppressing Walleye abundance and implement suppression measures as appropriate.

Strategy: Promote angler harvest of Walleye, including providing liberal harvest opportunity, Walleye distribution information, and other measures as appropriate.

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

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

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

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

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

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

Strategy: Conduct periodic creel surveys to monitor angler effort, catch, and harvest.

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

Strategy: 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

Strategy: Use Westslope Cutthroat Trout and sterile Rainbow Trout for stocking, and reserve some lakes for unique species (Golden Trout and Grayling) only. Evaluate performance of sterile Westslope Cutthroat Trout to minimize potential impacts to native downstream genotypes.

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

7. Objective: Improve fishing and boating access.

Strategy: Develop or enhance fishing and boating access areas through easements, cooperative agreements, or purchase.

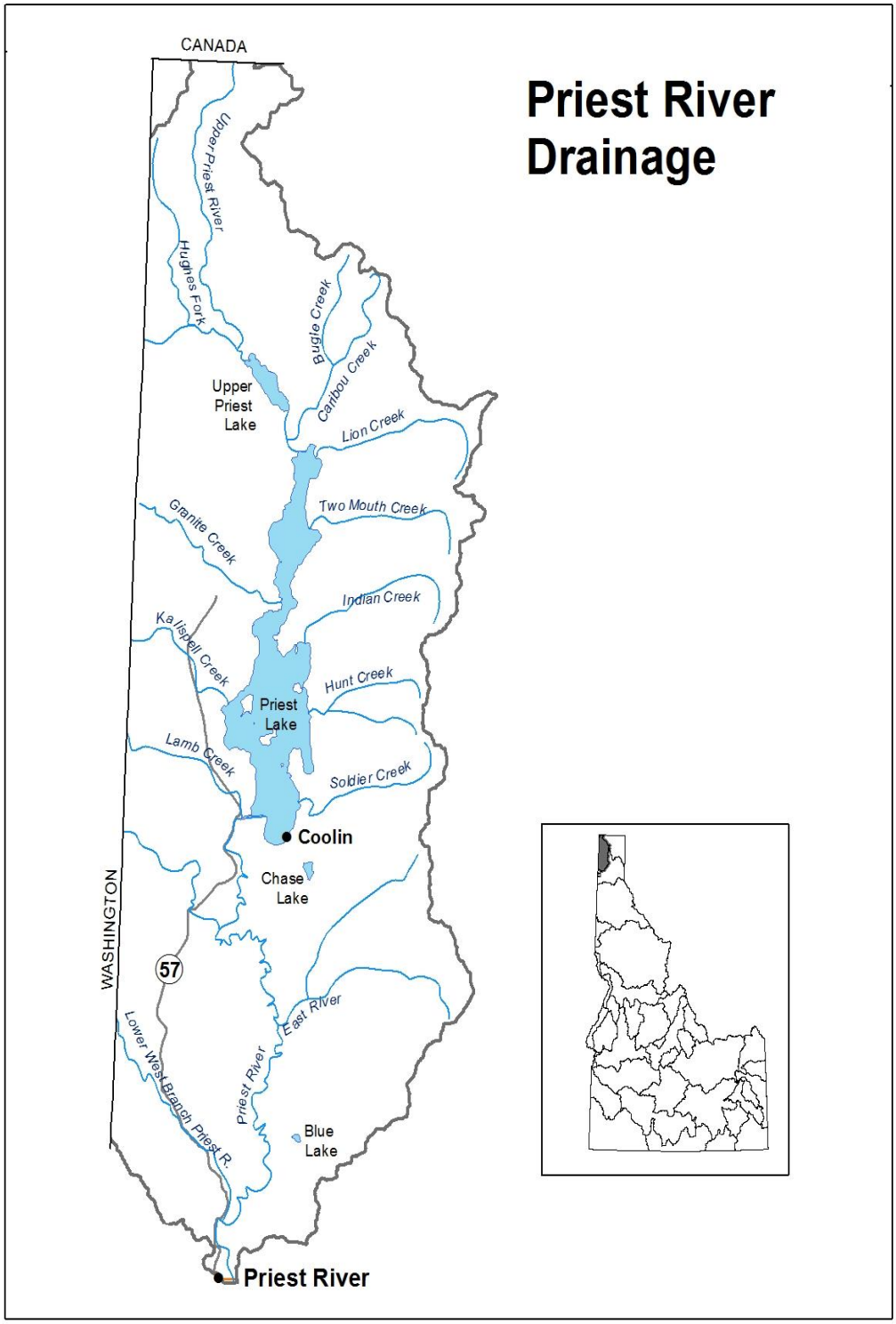
Strategy: Improve fishing and boating access on the Clark Fork River to accommodate increased use of the fishery.

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; restore limited harvest when possible. 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.
			Westslope 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.
			Rainbow Trout	General/Trophy	Sustain trophy fishery for Rainbow Trout population by maintaining conservative harvest rules and managing for kokanee prey base.
			Lake Trout Walleye	Suppression	Utilize angler incentive programs and commercial netting to reduce Lake Trout population. Implement long-term maintenance plan to keep Lake Trout population suppressed. Increase monitoring and research of Walleye population, evaluate suppression feasibility, and implement suppression if appropriate. Encourage angler harvest of Walleye.
			Kokanee Brook Trout Lake Whitefish Mountain Whitefish Brown Trout Largemouth Bass Smallmouth Bass Northern Pike Black Crappie Yellow Perch	General	Sustain yield kokanee fishery. Use hatchery stocking to supplement kokanee population. 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 do not interfere with salmonid management programs. Encourage harvest of Northern Pike to reduce predation on native salmonids and competition with other sportfish.

Clark Fork River and tributaries	11/	Coldwater	Bull Trout	Conservation	No harvest allowed. 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.
			Westslope 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. Work with Avista and USFWS to develop permanent fish passage facility over Cabinet Gorge Dam.
			Rainbow Trout	General/Trophy	Provide seasonal trophy fishing opportunity for adfluvial Rainbow Trout with restricted harvest. Provide harvest opportunity for Rainbow Trout during remainder of year.
			Kokanee Brook Trout Brown Trout 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 Northern Pike to reduce predation on native salmonids and competition with other sportfish.
			Walleye	Suppression	

Pend Oreille River and tributaries	26/8,760	Mixed	Westslope Cutthroat Trout	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.
			Bull Trout	Conservation	No harvest allowed. Educate anglers and increase enforcement to minimize illegal harvest and reduce hooking mortality.
			Rainbow Trout Brown Trout Largemouth Bass Smallmouth Bass Northern Pike Black Crappie Yellow Perch Bluegill Pumpkinseed Bullhead	General	Maintain existing warmwater fisheries where they will not interfere with salmonid management programs. Encourage harvest of Northern Pike to reduce predation on native salmonids and competition with other sportfish. 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.
			Walleye	Suppression	Increase monitoring and research of Walleye population, evaluate suppression feasibility, and implement suppression if appropriate. Encourage angler harvest of Walleye.
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 Trout and put-and-take Rainbow Trout. Monitor the Bluegill and Perch populations 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 Chinook Salmon Brook Trout Largemouth Bass Smallmouth Bass Northern Pike Black Crappie Yellow Perch Bluegill Pumpkinseed	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. Evaluate performance of diploid and triploid Chinook as part of statewide research project. Determine whether Chinook can benefit kokanee management goals and continue stocking after research project ends if appropriate. Encourage harvest of Northern Pike to reduce predation on stocked salmonids and other sportfish.
Shepherd and Gamble lakes	/250	Warmwater	Tiger Muskie Largemouth Bass Black Crappie Yellow Perch Bluegill Pumpkinseed Bullhead	Trophy General	Maintain Tiger Muskie stocking in Shepherd Lake to provide unique 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. Also, stock kokanee fry if necessary to maintain kokanee fishery.
Alpine Lakes (13 in the Pend Oreille River drainage)	/150	Coldwater	Westslope 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 and sterile Rainbow Trout. Reserve some lakes for unique species (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

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3. PRIEST RIVER DRAINAGE

Overview

The Priest River drainage is located in the northwest corner of the Idaho Panhandle in the Selkirk Mountains. The Priest watershed is approximately 600 mi^2 and consists primarily of coniferous forest. Priest Lake and Upper Priest Lake are the two primary fisheries in the drainage. Priest Lake has about 62 miles of shoreline, a surface area of about 23,360 acres, and a maximum depth of 369 feet. Upper Priest Lake has about 8 miles of shoreline, a surface area of about 1,400 acres, and a maximum depth of 103 feet. The level of both lakes is maintained at 2,438 feet in elevation from the end of spring runoff until mid-October by a small dam at the outlet of Priest Lake. Upper Priest Lake is connected to Priest Lake by a channel known as the Thorofare. The Thorofare is about two miles long, 230 feet wide, and generally 5-10 feet deep. At its outlet into Priest Lake, the Thorofare is about 3 feet 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. Numerous other small fisheries exist throughout the drainage including tributaries to Priest and Upper Priest lakes, Priest River and tributaries, several small lowland lakes (e.g., Blue Lake, Chase Lake, Freeman Lake), and a series of high elevation lakes located along the eastern boundary of the drainage in the Selkirk Mountains.

Native sport fishes of the Priest drainage include Westslope Cutthroat Trout, Bull Trout and Mountain Whitefish. Westslope Cutthroat Trout in the drainage exhibit both migratory and resident life histories. Migratory fish rear in tributaries for two to four years prior to migrating to a lake environment. Spawning begins in April and generally ends by mid-June. Strong populations of Westslope Cutthroat Trout are present in most tributaries to Priest Lake and Upper Priest Lake. Status of Priest River tributary trout populations is variable with some having been largely replaced by non-native fishes while others have retained strong native fish assemblages. Bull Trout were once distributed widely in the drainage. Currently, Bull Trout are primarily found in Upper Priest Lake, Upper Priest River, and Middle Fork East River. Bull Trout primarily exhibit a migratory life history, spawning and rearing for several years in tributaries before migrating to a lake environment. Although a migratory life history is dominant in the drainage, a population of Bull Trout located in North Fork Indian Creek is thought to display a resident life history. Juvenile Bull Trout in the tributaries of the Middle Fork East River (Priest River tributary) display a unique migratory pattern by migrating down the Priest River and upstream through the Pend Oreille River to Lake Pend Oreille, rather than a typical exclusively downstream migration from rearing tributaries. Mountain Whitefish are found in low numbers in some of the larger tributaries to Priest Lake and Upper Priest Lake and in higher densities in the Priest River.

The Westslope Cutthroat Trout fishery in Priest and Upper Priest lakes was historically popular, with angler accounts suggesting high catch rates and large fish size. As early as the 1940s, Westslope Cutthroat Trout abundance in these lakes was believed to have declined. A number of factors contributed to this decline, including habitat degradation, over-fishing, and non-native species introductions. Hatchery supplementation was used in an attempt to bolster Westslope Cutthroat Trout in the drainage, but with little observed influence. In 1992, Westslope Cutthroat Trout harvest was closed in the Priest drainage. Although Westslope Cutthroat Trout abundance in Priest Lake is below historical levels, angler data suggests the population has remained relatively stable over the last 60+ years with catch rates varying from 0.2 to 0.6 fish per hour. Angler effort targeting Westslope Cutthroat Trout over the same time period has been consistently low (<10% of total estimated angler effort in angler surveys). Both Upper Priest and Priest lakes currently provide Westslope Cutthroat Trout fishing opportunity with moderate catch rates (≥ 0.5 fish/hour in 2014).

Similarly, Bull Trout were historically more abundant and provided a popular sport fishery in Upper Priest Lake, Priest Lake, and tributaries to the Priest River. Causes of decline for Bull Trout are believed to be similar to Westslope Cutthroat Trout. In particular, the expansion of Lake Trout in Priest Lake was the primary cause of near extirpation of Bull Trout in that part of the drainage. Bull Trout harvest was discontinued in 1984 because of declining abundance. Current catch-and-release fishing opportunity for Bull Trout is effectively limited to Upper Priest Lake where Bull Trout abundance is low, but increasing.

Kokanee were introduced to Priest Lake in the 1930s and 1940s and quickly became the most abundant sport fish, replacing Westslope Cutthroat Trout in popularity. Kokanee provided a high yield sport fishery for anglers from the 1950s through the early 1970s and catch rates were high (>1.0 fish/hour) for small to moderate size kokanee. During this period, kokanee supported most of the angler effort on Priest Lake and Upper Priest Lake. Kokanee catch rates dramatically declined in the 1970s and by the early 1980s the fishery had collapsed. Kokanee predation by a growing Lake Trout population was determined to be the primary cause of collapse. Through the 1980s, millions of kokanee fry were stocked into Priest Lake in an attempt to re-establish a viable fishery. However, hatchery stocking had little influence on the kokanee population. Functionally, the kokanee population collapsed in the 1980s, but kokanee remain in Priest Lake and Upper Priest Lake at low densities. Harvest of kokanee was closed in the late 1980s, but was re-opened in 2011 in an effort to simplify fishing regulations. From 2011 to 2015, Priest Lake anglers experienced moderate catch rates (~0.9 fish/hour) and large average size (14” to 16”) because of an unexpected and short-lived increase in population density. With improvements in kokanee catch rates post-2011, angler effort targeting kokanee increased and represented approximately 20% of the estimated effort in 2014. Despite the short-term density increase, kokanee surveys during this time showed densities remained low relative to other area lakes.

Lake Trout were introduced to Priest Lake by the U.S. Fish Commission in 1925. Lake Trout were a minor component of the fishery for many years, but provided a trophy component when kokanee were abundant. Angler effort targeting Lake Trout began increasing in the mid-1960s, but average catch rates remained low (≤ 0.1 fish/hour) until the late-1980s. The state record Lake Trout of 57½ lbs. was caught in Priest Lake in 1971. Lake Trout abundance increased dramatically in Priest Lake following the introduction of mysid shrimp in the mid-1960s. Although intended to provide a supplemental food source for kokanee, this had limited benefit and instead provided an abundant food source for juvenile Lake Trout. Improved juvenile Lake Trout survival allowed for rapid expansion of Lake Trout in Priest Lake. Higher Lake Trout abundance led to unsustainable levels of predation on kokanee and their population soon collapsed. Subsequently, Lake Trout growth rates declined due to a reduction in available prey. The current Lake Trout population is dominated by abundant and slow-growing fish. Because growth rates are slow, little opportunity exists to improve the size structure of the population. Angler catch rate of Lake Trout has continued to increase since the mid-1980s and was last estimated to be approximately 1.0 fish per hour in 2014. Since reaching high density, Lake Trout have dominated angler interest in the Priest Lake fishery. Although Lake Trout are now the primary target of anglers on Priest Lake, the fishery remains self-sustaining under relatively low angler exploitation.

A number of other introduced fish species occupy Priest Lake including Smallmouth Bass, Tench, Yellow Perch, Largemouth Bass, Rainbow Trout, and Northern Pike. Most have been present in the lake for decades and represent a small component of the fish community. Northern Pike, although documented in Priest Lake, have not been detected in recent surveys. Smallmouth Bass were established in the early 2000s in Priest Lake either by illegal introduction or through migration up the Priest River from the Pend Oreille River. Smallmouth Bass are now

relatively abundant and distributed throughout the lake.

The focus of fishery management on Priest Lake and Upper Priest Lake has been divided since the 1980s when Lake Trout began to dominate Priest Lake. Priest Lake has been managed primarily as a yield Lake Trout fishery since that time, while the focus on Upper Priest Lake has been native fish conservation. Tributaries in the Upper Priest Lake basin have good potential to support high densities of Westslope Cutthroat Trout and Bull Trout because they provide quality stream habitat with little influence from non-native fishes. Lake Trout were not known to be present in Upper Priest Lake until the mid-1980s but became well-established in the 1990s following immigration from Priest Lake through the Thorofare. The negative impact of Lake Trout on native fish species, such as Bull Trout, is a concern. Since 1998, IDFG has implemented a Lake Trout suppression program in Upper Priest Lake to reduce the potential impact of Lake Trout on native fishes. Lake Trout have been removed annually in this effort, typically varying from 1,500 to 5,000 fish annually. In response, Bull Trout and Westslope Cutthroat Trout remain a key component of the fishery and an increase in Bull Trout abundance has been documented. IDFG and partners have evaluated methods for reducing migration of Lake Trout from Priest Lake to Upper Priest Lake with limited success.

In the 2013-2018 Fishery Management Plan period, IDFG entered into an evaluation of Priest Lake and Upper Priest Lake fisheries and potential long-term management alternatives, including identifying which alternative had the most public support. The Priest Lake fishery is popular with a core angler group. However, overall participation in the fishery has declined approximately 50% since the 1950s. The cause of decline in angler effort has not clearly been defined, but has been speculated to include a combination of factors, such as large shifts in the abundance of targeted fish species, increased use by other recreational user groups, and general shifts in public interests. Surveys of public opinion from 2006 and 2012 suggested angler interest in Priest and Upper lakes was divided between maintaining primarily a Lake Trout fishery and enhancing the fishery for kokanee and native fishes. Thus, it was determined that a more detailed evaluation and planning process was needed to inform long-term management decisions. Biological studies and public stakeholder engagement were part of the management planning process. Biological studies included in-depth investigations of Lake Trout population dynamics and population assessments for kokanee, Westslope Cutthroat Trout, Bull Trout, Smallmouth Bass, and mysid shrimp. A public stakeholder group was assembled with representatives of varied interests in angling opportunities on Priest and Upper Priest lakes and their impact on the local community and economy. The stakeholder group was engaged in identifying information needs, reviewing new information, and developing potential management alternatives. This process took place over about a five year period. The evaluation process culminated by sharing information gathered at public meetings around the region. Three possible management alternatives were presented for public input. Alternatives included 1) continuing existing management of Priest Lake as primarily a Lake Trout fishery; 2) restoring a high yield kokanee fishery and enhancing native fish population by suppressing Lake Trout in Priest Lake; and 3) managing for a mixed fishery that provides some increase in kokanee angling opportunity and some benefit to native fishes by partially suppressing Lake Trout in Priest Lake. Continued management of Upper Priest Lake with a primarily focus on native fish conservation and angling opportunity was included in all three alternatives. Both random and non-random survey efforts were used to gauge public support for each management alternative. Results of the public input process showed nearly equal support for the first two alternatives and less support for the third alternative. In the absence of clear support for a change in management direction, existing management will be continued into the future.

Management of Priest and Upper Priest lakes as separate fisheries in perpetuity is a long-term challenge. However, public support for managing the lakes separately and the success of Lake

Trout suppression efforts in Upper Priest Lake to date both lend credence to continuing this type of a strategy. Additionally, outside funding sources have been available to conduct Lake Trout suppression. Managing these lakes separately over the long-term will largely depend on the continued ability to secure adequate funding for Lake Trout suppression in Upper Priest Lake.

The Priest River below Outlet Dam provides little suitable year-round habitat for salmonids. Although complex habitat is relatively abundant, use by coldwater fish species is limited by water temperatures during mid- to late-summer. Priest Lake outflow typically exceeds 70^{o} F, and cold water input from tributaries is minimal. A comprehensive survey of the river in 2011 identified Mountain Whitefish as the most abundant game fish, followed by Smallmouth Bass, Brown Trout and Westslope Cutthroat Trout. Overall, average densities were low and over 90% lower than densities observed in the Coeur d'Alene River. A cooperative Westslope Cutthroat Trout telemetry project with the Kalispel Tribe may help identify, and ultimately protect or enhance, key thermal refuges. In addition, a coldwater bypass concept is being evaluated as a strategy for cooling water temperatures in the Priest River during summer. This approach involves piping cold water from the hypolimnion of Priest Lake into the Priest River at Outlet Dam. A feasibility analysis (social, biological, fiscal) of this concept has been initiated and will continue during the current management plan period. If feasible, development of a coldwater bypass will be pursued. Depending on results of this analysis, further steps may be taken to determine public support, funding availability, and begin implementation.

Objectives and Strategies

1. Objective: Maintain a yield fishery for Lake Trout in Priest Lake.

   Strategy: Monitor Lake Trout population dynamics including relative abundance, growth, and mortality to evaluate the effectiveness of current harvest rules for Lake Trout

2. Objective: Maintain a low density kokanee population and limited harvest fishery in Priest Lake.

   Strategy: Maintain conservative harvest rules for kokanee.

   Strategy: Periodically monitor kokanee abundance.

3. Objective: Maintain and enhance native fish populations in Priest Lake and Upper Priest Lake.

   Strategy: Protect integrity of native Westslope Cutthroat Trout and Bull Trout populations by maintaining conservative rules in the lakes and tributaries.

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

   Strategy: Monitor Bull Trout population status by conducting surveys in Upper Priest Lake tributaries.

   Strategy: Monitor Westslope Cutthroat Trout population status by conducting periodic surveys in Upper Priest Lake and Priest Lake.

   Strategy: Continue annual suppression of Lake Trout from Upper Priest Lake to reduce predation mortality on native fishes.

Strategy: Encourage angler harvest of Lake Trout in Upper Priest Lake to supplement Lake Trout suppression efforts.

Strategy: Evaluate additional or modified methods for reducing Lake Trout abundance in Upper Priest Lake (e.g., gill netting of spawning fish).

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

Strategy: Evaluate potential to increase cold water refugia through habitat acquisition or conservation easements. Implement actions as appropriate.

Strategy: Conduct feasibility analysis (social, biological, fiscal) of a coldwater bypass from Priest Lake to improve coldwater habitat in the Priest River. If feasible, pursue development of a coldwater bypass.

Strategy: Work cooperatively with Kalispel Tribe to improve understanding of Westslope Cutthroat Trout habitat use and movement patterns in the Priest River.

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

Strategy: Continue periodic surveys of fish populations in Blue, Chase, 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 and diversity.

Strategy: Provide liberal harvest opportunity for warmwater species.

Strategy: Provide liberal harvest opportunity for stocked trout where feasible.

6. Objective: Provide diverse angling opportunities in high mountain lakes.

Strategy: Periodically evaluate and adjust stocking rates in high mountain lakes to account for lake productivity, angling pressure, and angler desires.

Drainage: Priest River					
Water	**Miles/acres**		**Fishery**		**Management Direction**
		Type	Species present	Management	
Priest Lake and tributaries	100/23,360	Coldwater	Westslope Cutthroat Trout Bull Trout Kokanee Lake Trout Brook Trout Smallmouth Bass	Conservation Quality General	Manage Priest Lake and tributaries with conservative regulations to protect populations of Westslope Cutthroat Trout and Bull Trout. Maintain a low density and low catch rate fishery for larger (14"-16") kokanee. Maintain a high density and high catch rate Lake Trout fishery for 15" to 20" fish. Provide consumptive fishing opportunities for Brook Trout in Priest Lake tributaries to reduce Brook Trout abundance and offset harvest restrictions on adfluvial Westslope Cutthroat Trout in streams. Provide opportunity and encourage harvest of Smallmouth Bass to offset predation losses on native fish and kokanee.
Upper Priest Lake and tributaries	50/1,400	Coldwater	Westslope Cutthroat Trout Bull Trout Lake Trout Brook Trout Kokanee	Conservation General	Manage Upper Priest Lake and tributaries with conservative regulations to protect populations of Westslope Cutthroat Trout and Bull Trout. Allow liberal harvest of Lake Trout and Brook Trout. Reduce Lake Trout abundance with annual suppression gill netting. Explore alternative methods for reducing Lake Trout abundance in Upper Priest Lake.
Priest River and tributaries	120/	Coldwater	Westslope Cutthroat Trout Bull Trout Brook Trout Brown Trout Mountain Whitefish	Conservation General	Manage Priest River and tributaries with conservative regulations to protect populations of Westslope Cutthroat Trout and Bull Trout. Seek opportunities to develop/enhance cold water habitat. Utilize Priest River tributary Brook Trout populations to provide consumptive fishing opportunities. Remove Brook Trout from tributary streams where feasible and beneficial to native fish populations.

Freeman Lake	/30	Mixed	Rainbow Trout Largemouth Bass Black Crappie Yellow Perch Pumpkinseed Bullhead	Put-and-take General	Stock put-and-take Rainbow Trout to provide a spring trout fishery.
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.
Chase Lake	/100	Warmwater	Largemouth Bass Yellow Perch Pumpkinseed	Quality General	Manage Largemouth Bass harvest with conservative regulations to provide opportunity for quality size fish.
Alpine Lakes (5 stocked in the Priest River drainage)	/41	Coldwater	Westslope 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 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 to maintain some natural alpine lakes.

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4. SPOKANE RIVER DRAINAGE

Overview

The Spokane River upstream of the Idaho, Washington border drains about 3,840 square miles in northern Idaho. Major tributaries in the drainage include the St. Joe, St. Maries and Coeur d'Alene rivers, which all feed into Coeur d'Alene Lake. The Spokane River is the outlet to the lake and flows into Washington. Habitat in the drainage is diverse. 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 of Coeur d'Alene and support important urban fisheries. Numerous mountain lakes are found in the headwaters of the South Fork Coeur d'Alene and St. Joe rivers.

The only sport fish native to the drainage are Westslope Cutthroat Trout, Bull Trout, and Mountain Whitefish. Introduced sport fish include Rainbow Trout, kokanee, Brook Trout, Brown Trout, Chinook Salmon, Largemouth Bass, Smallmouth Bass, Pumpkinseed, Bluegill, Green Sunfish, Yellow Perch, Black Crappie, Brown and Black Bullhead, Channel Catfish, Tiger Muskie and Northern Pike. There have been several reports of Walleye captured by anglers in Coeur d'Alene Lake, but none have been confirmed.

Impoundment of Coeur d'Alene Lake by Post Falls Dam 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 over $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, habitat conservation and restoration, and recreation.

The Spokane River below Post Falls Dam supports a fishery for wild Rainbow Trout and Brown Trout, but populations have fluctuated greatly and generally declined in abundance over the last 20 years. Much of the decline is presumably related to water temperatures. Excessively warm water temperatures in 1992, 1994 and 2003 resulted in declines in the Rainbow Trout fishery. 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 were mandated by the FERC license, but have not produced a detectable population response.

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 Chatcolet and Benewah lakes was excluded from the court decision, but state versus tribal ownership and management remains unresolved. IDFG attempts to work cooperatively with the Coeur d'Alene Tribe to manage fish populations with similar regulations to meet management goals and reduce angler confusion.

Largemouth Bass are well-established throughout the drainage's lowland lakes. The area is noted for excellent Largemouth Bass fishing and fishing pressure continues to increase due to its popularity. Creel surveys and population evaluations indicate that few anglers harvest 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 eight pounds are occasionally caught in the Coeur d'Alene Lake system, which has become a very popular fishing tournament location.

Smallmouth Bass were introduced into Hayden Lake in the mid-1980s and are now abundant. Anecdotal evidence suggests Smallmouth Bass have adversely affected Black Crappie abundance in Hayden Lake. Smallmouth Bass were illegally introduced into Coeur d'Alene Lake in the early 1990s, and have since spread into most of the chain lakes, the lower Coeur d'Alene and St. Joe rivers, and the Spokane River. Quality Smallmouth Bass fishing now exists in Coeur d'Alene Lake and is very popular among anglers. In 2018, Smallmouth Bass were documented in Lower Twin Lake as a result of illegal introduction.

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 high angler exploitation rates. The low densities minimize intraspecific competition, thus growth rates have remained fast. To minimize impacts of Northern Pike on native salmonids and other sport fish, harvest continues to be encouraged with no daily limit or size restrictions and by only allowing harvest fishing tournaments without live weigh-ins. This serves to maintain lower densities that promote fast growth, while also reducing the risk of illegal transport to other waters. Since 2015, IDFG has collaborated with the Coeur d'Alene Tribe to suppress Northern Pike in Windy Bay during several weeks in the spring. This pilot project is designed to reduce predation on adfluvial Westslope Cutthroat Trout by Northern Pike during a period of high overlap near the mouth of Lake Creek. Northern Pike are translocated from Windy Bay to Cougar Bay when enough fish are caught to justify the effort. This is intended to maximize Northern Pike angling opportunity while still providing a native fish conservation benefit. The pilot period is expected to end during this planning period, and decisions regarding long-term implementation will be made based on the response observed in Westslope Cutthroat Trout in Lake Creek.

Kokanee were historically the most sought after sport fish in Coeur d'Alene Lake. In 1979, anglers harvested nearly 600,000 kokanee in over 250,000 angler hours of effort. By 1981, kokanee numbers increased to the point where 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 diversify the fishery. Through the 1980s, the program was successful in creating a limited trophy Chinook fishery with 300-500 fish harvested annually, some of them in excess of 30 pounds. 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 excavating redds, but it became increasingly apparent that the ability to control Chinook abundance was limited.

In the 1990s, 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 pounds. Kokanee densities remained high through the mid-1990s, 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 excavation, 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.

After 30 years of managing the kokanee and Chinook populations, it is evident there are significant limitations to regulating both populations to maintain a consistent balance. In addition to environmental factors affecting kokanee, there is limited ability to influence the Chinook population. A retrospective look at the fishery also demonstrates the impact a healthy kokanee population has on angler effort—both for kokanee and for Chinook. Angler effort from the 1980s through the mid-1990s varied from 200,000 to 250,000 hours, but angler effort was only 154,000 hours in 2009 when the kokanee limit was reduced to six and the Chinook population was depressed, and much of the effort was for warmwater species. During this time, kokanee harvest dropped to under 20,000 from historical highs of over 500,000. Currently, the greatest opportunity to improve consistency of the fishery appears to be improving performance of hatchery Chinook. IDFG continues to monitor hatchery Chinook performance to evaluate hatchery release strategies and various hatchery stocks. In addition, restrictive special harvest rules were implemented on the Chinook population (2 fish daily bag; none under 20 inches) in an effort to improve abundance of older age-classes.

The St. Joe, Coeur d'Alene and St. Maries rivers support populations of resident, fluvial, and adfluvial Westslope Cutthroat Trout. The St. Joe and Coeur d'Alene rivers provide tremendously popular fisheries, primarily for Westslope Cutthroat Trout. IDFG has conducted snorkel surveys on both rivers dating back to the early 1970s. For most of this time, Westslope Cutthroat Trout densities have been much lower 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 Westslope Cutthroat Trout in the drainage, along with increased enforcement, education, and habitat restoration have all helped to improve the Westslope Cutthroat Trout population in recent years. The Coeur d'Alene River now supports average Westslope Cutthroat Trout densities only about one third lower than 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) population exists in the Coeur d'Alene River and lower portions of the North Fork Coeur d'Alene and Little North Fork Coeur d'Alene rivers. However, snorkel surveys indicate that Rainbow Trout and hybrids exist at low densities. Nevertheless, harvest of Rainbow Trout has been promoted with liberal fishing rules. It has become evident that anglers have difficulty reliably interpreting the descriptions, and mistaken harvest of westslope 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 Westslope Cutthroat Trout population, without frustrating anglers or promoting excessive illegal harvest.

Mining, logging and forest development, highway construction and other land uses 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 Westslope Cutthroat Trout and Bull Trout. In 2009,

the U.S. EPA announced a superfund settlement with Asarco that will provide 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 resulted in an 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, U.S. Dept. of Interior, and the U.S. Forest Service. These funds provide tremendous potential to improve aquatic habitat and associated fish populations throughout the drainage.

While fluvial Westslope Cutthroat Trout populations in the drainage (the South Fork Coeur d'Alene River notwithstanding) are generally in good health, abundance of adfluvial stocks in Coeur d'Alene Lake are below historical levels. Shoreline development, loss of quality spawning and rearing habitat in tributary streams, and species introductions have all played a role in the decline of Westslope Cutthroat Trout. In conjunction with the University of Idaho, IDFG began research in 2016 to better understand sources of recruitment for adfluvial Westslope Cutthroat Trout in Couer d'Alene Lake. This information will be used to better prioritize management actions aimed at benefitting this population. Additionally, this research included focused research to better understand Westslope Cutthroat Trout in the St. Maries River drainage. Research and monitoring had not occurred in this drainage for many years. The Coeur d'Alene Tribe is engaged in efforts to restore adfluvial Westslope Cutthroat Trout populations in Lake and Benewah creeks. IDFG has been supportive of these efforts, which entail habitat restoration in key tributaries, estimation of survival and sources of mortality for Westslope Cutthroat Trout, and Northern Pike suppression in Windy Bay.

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 and migrate the length of the St. Joe River to Coeur d'Alene Lake. Redd count trends have declined over time and indicate that Bull Trout currently are at fairly low density. 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 re-establishing 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 Westslope 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 provide harvest opportunity in close proximity. In addition, new ponds have been built to support this type of fishing opportunity, such as Spicer Pond near St. Maries and Gene Day Pond near Osburn.

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 Westslope 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, introduction of mysid shrimp, an increase in Rainbow Trout 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 increasing predation potential. To reduce predation on stocked fingerling trout, the stocking location was moved to the south end of Hayden Lake at Hayden Marina. The change in stocking location did not appear to increase 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. Of the few fish that were harvested, most were hybrids of wild origin. Because the quality trout regulations appeared to have little impact, they were removed in 2011, and the trout fishery is now managed under general rules. Rainbow Trout stocking was discontinued in 2016 in response to low observed return-to-creel. In an effort to improve the coldwater, troll-oriented fishery, IDFG has stocked early-spawning kokanee fry at moderate densities since 2011. Since 2013, kokanee have supported a popular fishery in Hayden Lake. Future monitoring efforts of the kokanee population will focus on optimizing stocking rates and evaluating the presence of wild production to inform management goals associated with maintaining adequate angler catch rates and quality fish size structure.

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. Like many regional lowland lakes, much of the effort has shifted to warmwater angling. Smallmouth Bass were the most frequently caught species, followed by Largemouth Bass, Crappie, Yellow Perch, and Northern Pike. Bluegill have recently become established following illegal introduction and now are common in the angler catch.

Aside from Hayden and Coeur d'Alene lakes, there are an additional 20 lowland lakes in the Spokane River drainage. 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 warmwater fish. Where coldwater 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% (i.e., Hauser Lake, 2-3% returns), 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 constrain 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 Westslope Cutthroat Trout and sterile 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 unique species, such as Grayling and Golden Trout.

Objectives and Strategies

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

   Strategy: Monitor fish populations periodically through snorkel and/or electrofishing surveys to determine if Westslope Cutthroat Trout management objectives are being met.

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

Strategy: Evaluate and improve water quality in Spicer Pond at St. Maries River access site.

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

Strategy: Evaluate potential to develop a new fishing pond at the recently acquired Freeman's Eddy access site on the North Fork of the Coeur d'Alene River.

3. Objective: Maintain genetic integrity of Westslope Cutthroat Trout populations in the Coeur d'Alene and St. Joe rivers drainages.

Strategy: Periodically assess distribution of Rainbow Trout and hybrid trout in the Coeur d'Alene River drainage to monitor introgression risk.

Strategy: Work with anglers and enforcement staff to encourage removal of Rainbow Trout while minimizing incidental/unlawful harvest of Westslope Cutthroat Trout.

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

Strategy: Promote lessons learned from Westslope Cutthroat Trout research in the Coeur d'Alene River to improve habitat critical to their survival.

Strategy: Work with Avista mitigation program and mine waste settlement funds to protect and enhance Westslope Cutthroat Trout and Bull Trout habitat in the Coeur d'Alene and St. Joe river drainages.

Strategy: Use existing Westslope Cutthroat Trout habitat use research relative to Coeur d'Alene and St. Maries rivers to inform habitat protection and enhancement projects under the Avista mitigation program.

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

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

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

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

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

Strategy: 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.

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

Strategy: Continue maintenance stocking of Tiger Muskies and Channel Catfish to maintain popular fisheries.

Strategy: Maintain pelagic fishery in Hayden Lake by stocking kokanee. Monitor for presence of natural reproduction and attempt to limit if necessary. Evaluate angler catch rates, size preferences, and kokanee growth rates. Adjust stocking density as appropriate.

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

Strategy: Continue to monitor kokanee abundance and size using trawl surveys.

Strategy: Evaluate Chinook stocking strategies, stock type, and return-to-creel to improve hatchery contribution to fishery.

Strategy: Continue to assess the Chinook population trend using fall redd surveys.

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

Strategy: Work with the U.S. Forest Service, Avista, Shoshone County and other stakeholders to develop fishing and boating access areas on the Coeur d'Alene River.

9. Objective: Provide diverse angling opportunities in alpine lakes.

Strategy: Use Westslope Cutthroat Trout and sterile Rainbow Trout for stocking, but reserve some lakes for unique species (Golden Trout and Grayling) only. Evaluate performance of sterile Westslope Cutthroat Trout to minimize potential impacts to native downstream genotypes.

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

Drainage: Spokane River					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
Coeur d'Alene Lake and minor tributaries (including Chatcolet, Benewah and Round lakes)	100/31,487	Mixed	Westslope Cutthroat Trout	Quality/Wild	Recognize Coeur d'Alene Tribal management on a portion 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. 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. Maintain restrictive regulations to provide trophy opportunity.
			Kokanee	General	Manage the kokanee population at a level that provides a yield fishery of a size agreeable to anglers and provides prey 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. Maintain Northern Pike populations at low densities 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	General	Maintain trout fishery with wild production. Provide harvest opportunity for trout species.
			Kokanee	Quality	Provide kokanee fishery through stocking and maintain quality size structure by maintaining low density. Evaluate contribution of wild production by periodic monitoring.
			Largemouth Bass Black Crappie	Quality	Provide high catch rates for quality size fish with regulations that limit harvest. Evaluate Largemouth Bass and Black 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 catchable Rainbow Trout to provide a consumptive fishery.
			Kokanee	General	Provide kokanee fishery through stocking.
			Brook Trout Largemouth Bass Northern Pike Black Crappie Yellow Perch Bluegill Pumpkinseed Green Sunfish Bullhead	General	Maintain harvest-oriented fisheries for warmwater species. Encourage 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 unique trophy fishery.
			Largemouth Bass 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	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 other species.
North and South Fork Coeur d'Alene River and tributaries and Little North Fork Coeur d'Alene River and tributaries	600+/	Coldwater	Westslope Cutthroat Trout	Quality	Maximize catch rates and fish size by increasing densities through protective rules. Improve habitat through Avista mitigation program or other funding sources.
			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	Westslope 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. Investigate distribution, status, critical habitat needs and survival during different stages of Bull Trout 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	Westslope Cutthroat Trout	Quality	Recognize Coeur d'Alene Tribal management of the slackwater portion of the St. Joe River. Collaborate 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 Smallmouth Bass Black Crappie Yellow Perch Bullhead Northern Pike	General	Provide liberal harvest opportunity for warmwater fish and encourage harvest of Northern Pike to reduce impacts to other fish populations.
St. Maries River and tributaries above slackwater	350/	Coldwater	Westslope Cutthroat Trout	Quality	Attempt to provide limited harvest opportunity while maintaining quality size structure and densities. Work with Avista Post Falls Dam mitigation program to protect and enhance native salmonid habitat.
			Bull Trout	Conservation	No harvest allowed. Investigate distribution, status, critical habitat needs and survival during different stages of Bull Trout 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	Westslope Cutthroat Trout	Quality	Maintain protective regulations to help conserve the adfluvial Westslope Cutthroat Trout population
			Largemouth Bass Smallmouth Bass Northern Pike Black Crappie Yellow Perch Pumpkinseed Bullhead	General	Maintain consumptive harvest fishing opportunity for warmwater species and encourage harvest of Northern Pike to reduce impacts to other fish populations.
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 impacts 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 and sterile Rainbow Trout. Reserve some lakes for unique fish (Golden Trout and Grayling) only. Do not stock lakes that are currently fishless in order to maintain some natural alpine lakes.

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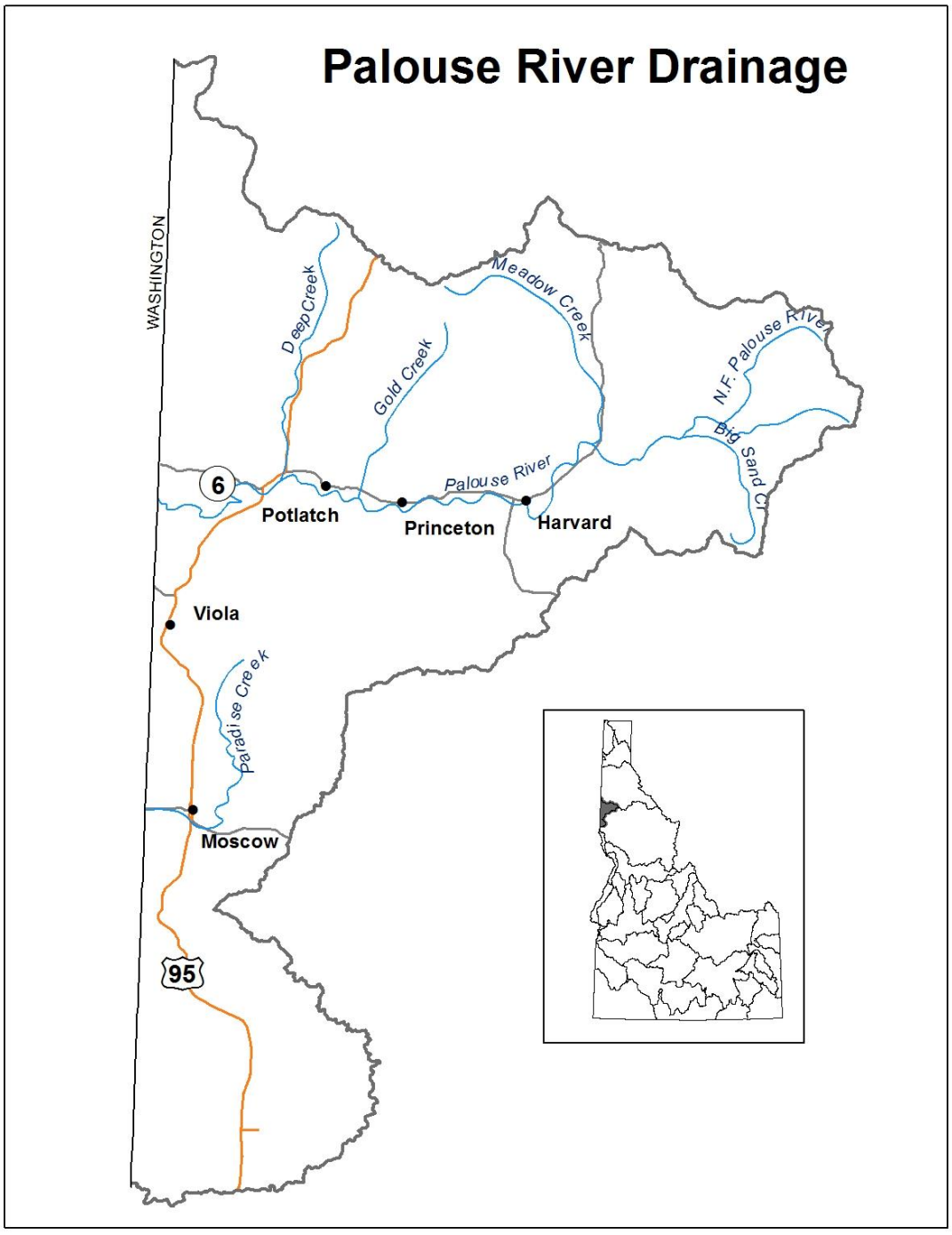

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5. PALOUSE RIVER DRAINAGE

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. Increasing fish populations in the drainage will require substantial improvements in riparian habitat that will increase summer flows, reduce summer water temperatures, and reduce sediment delivery.

Objectives and Strategies

1. Objective: Increase fishing opportunity in the Palouse River drainage

Strategy: Work with public and private landowners to identify areas to develop small reservoir/ponds.

Strategy: Look into opportunities to improve Hordemann Pond in Moscow to provide a year round fishery.

Strategy: Investigate the potential to create new fishing opportunities in Palouse River and/or its tributaries. Explore around Moscow.

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 Brook Trout Warmwater introductions	General General	Provide for fishing opportunities for naturally producing Rainbow Trout and Brook Trout. Investigate possibilities of stocking/introducing fish into the Palouse River.
Palouse River Pond	/1	Coldwater	Rainbow Trout	Put-and-take	Stock catchable rainbow trout to maintain, at a minimum, catch rates of 1.0 trout/hour.
Hordeman Pond	/1	Mixed	Rainbow Trout Warmwater introductions	Put-and-take General	Stock with catchable rainbow trout to maintain, at a minimum, catch rate of 1.0 trout/hour. Make efforts to improve summer carryover by deepening the pond. Investigate costs versus benefits of stocking channel catfish.

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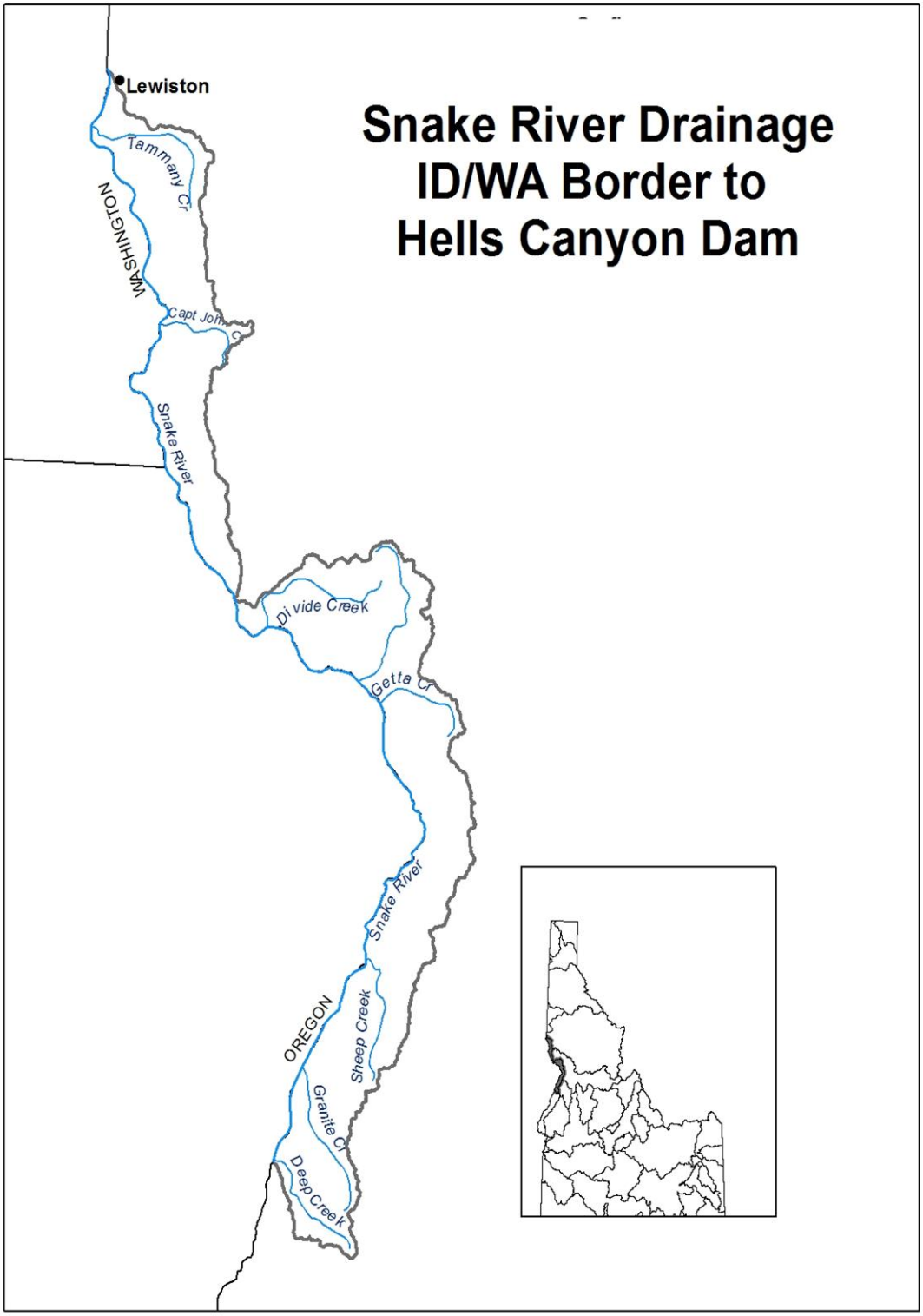

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6. SNAKE RIVER AND MINOR TRIBUTARIES - IDAHO/WASHINGTON BORDER TO HELLS CANYON DAM

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 main stem 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, methyl mercury, 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 pass through this reach of the river. Fall Chinook Salmon also spawn in the main stem 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 main stem 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. Consumptive harvest of naturally produced steelhead is not expected during the next six years. Due to the success of the fall Chinook Salmon program, a Fisheries Management Plan is being developed that would allow some level of harvest of naturally produced fish based on the size of the return.

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 White 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 White Sturgeon population is self-supporting, although recent evidence suggests

recruitment failure has been occurring in many of the past 10 years. We are currently working with Idaho Power to evaluate the reasons for these year class failures and the seriousness of this issue. Numbers of older individuals have increased significantly since consumptive fishing ended over 45 years ago. In recent years, White Sturgeon over 10 feet long have been caught. Tribal treaty harvest and illegal non-treaty poaching are not well documented. The Nez Perce Tribe recently declared a consumption moratorium on White Sturgeon due to the extremely high mercury levels documented in their flesh. As such, it is believed that Tribal Harvest is not significant.

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 Trout and potentially Cutthroat Trout.

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

Objectives and Strategies

1. Objective: Maintain and improve fish habitat and water quality within the Snake River watershed from the ID/WA border upstream to Hells Canyon Dam.

   Strategy: Continue working with land management agencies, County Soil and Water Conservation Districts, 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. Provide information about impacts that land use activities are having on natural production areas.

   Strategy: Minimize impacts or seek mitigation for land use activities that degrade the quality of natural production areas.

   Strategy: Develop and work to obtain flow regimes in the Snake River that improves survival of 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 migration timing and relative abundance indices to aid control of flow augmentation and water storage management.

   Strategy: Maintain involvement with FERC relicensing for the Hells Canyon Dam Complex.

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

   Strategy: Coordinate with NPT, ODFW, and WDFW on stocking of hatchery salmon and steelhead smolts to provide harvest opportunities for returning adults in a manner acceptable to tribal and nontribal anglers.

   Strategy: Evaluate whether rule changes can be made to increase overall angler satisfaction for both salmon and steelhead anglers. Explore using a working Group (ID, OR, and WA representatives) to help develop rule proposals for steelhead fishing on the Snake River.

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

Strategy: Maintain involvement with FERC relicensing process for the Hells Canyon Dam Complex.

Strategy: Explore strategies to expand salmon and steelhead fishing opportunities.

Strategy: Work with NOAA, Tribes, OR and WA to develop an FMEP that will provide harvest opportunities for both natural and hatchery origin fall Chinook Salmon.

3. Objective: Maintain/improve existing natural/wild populations of Chinook Salmon and steelhead.

Strategy: Monitor wild steelhead and Chinook Salmon populations in priority drainages.

Strategy: Develop escapement goals for natural Chinook Salmon and steelhead populations.

Strategy: Use fishing rules that assure Idaho sport fishing is not responsible for declines in natural salmon and steelhead populations.

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

Strategy: Maintain involvement with FERC relicensing for the Hells Canyon Dam Complex:

Strategy: Continue to work with the White Sturgeon Technical Advisory Committee to assess the sturgeon population in the Snake River from Lower Granite Dam to Hells Canyon Dam. Coordinate work with Idaho Power Company to assess recruitment success and factors that may be influencing this success.

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

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

Strategy: 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 to maintain amphibian populations.

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. Hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer/fall hatchery Chinook Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe, Oregon and Washington. Develop FMEP that will allow harvest opportunities for both natural and hatchery fall Chinook Salmon.
			Hatchery Rainbow Trout Smallmouth Bass Channel Catfish Mountain Whitefish	General	Provide harvest opportunities for residualized hatchery steelhead. Provide yield fishery for Smallmouth Bass. Coordinate management and regulations of resident fish with adjoining states.
			Wild Rainbow Trout	Wild	Manage wild juvenile/residualized steelhead to maintain or build populations.
			Bull Trout White Sturgeon	Conservation	Bull Trout and White Sturgeon: no harvest, catch-and-release, only. Follow guidance of White Sturgeon Management Plan. Coordinate with the Nez Perce Tribe, OR, WA and Idaho Power to evaluate White Sturgeon recruitment success and factors that may be influencing it.
Sheep and Granite Creeks		Mixed/ Anadromous	Steelhead Chinook Salmon	Anadromous	Manage for natural production of wild steelhead
			Rainbow Trout	Wild	Manage wild juvenile/residualized steelhead to maintain or build populations. Monitor parr abundance.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only.
Tributaries other than Sheep and Granite Creeks		Mixed/ Anadromous	Steelhead Chinook Salmon	Anadromous	Manage for natural production of wild steelhead.
			Rainbow Trout	Wild	Manage wild juvenile/residualized steelhead to maintain or build populations. Monitor parr abundance.

High mountain 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.		

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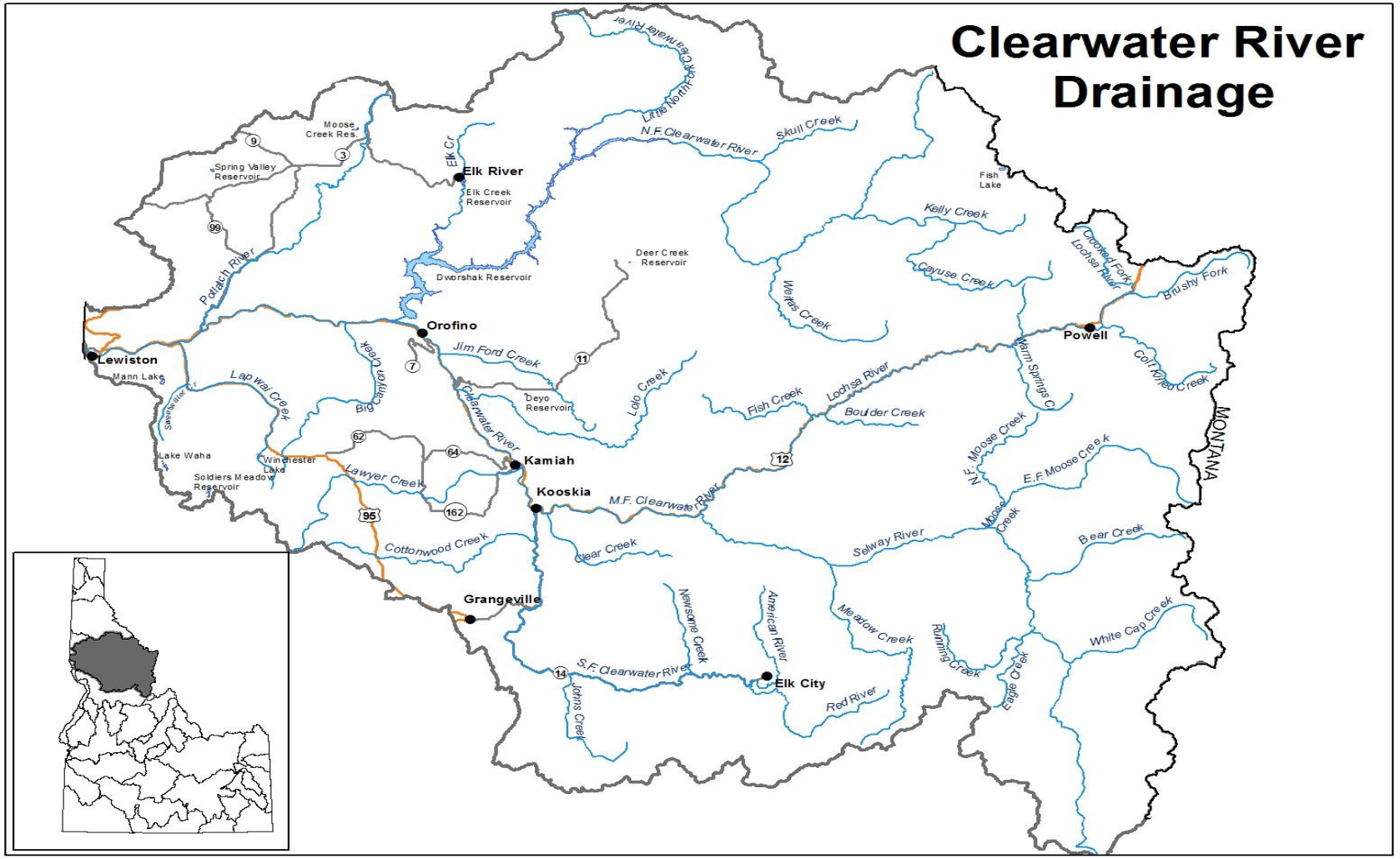
Clearwater River Drainage
Elk River
Elk Creek Reservoir
Moose Creek Res.
Spring Valley Reservoir
Elk Cr
Little North Fork Clearwater River
N.F. Clearwater River
Skull Creek
Fish Lake
Kelly Creek
Crooked Fork
Lochsa River
Brushy Fork
Deer Creek Reservoir
Dworshak Reservoir
Potlatch River
Orofino
Jim Ford Creek
Weitas Creek
Cayuse Creek
Powell
Lewiston
Mann Lake
Lapwai Creek
Big Canyon Creek
Clearwater River
Deyo Reservoir
Lolo Creek
Fish Creek
Lochsa River
Boulder Creek
Warm Springs Cr.
Colt Killed 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 these degraded areas.

Dam construction has greatly influenced anadromous fisheries in the Clearwater River basin. Lewiston Dam was constructed near the mouth of the Clearwater River in 1927 and was responsible for extirpating the entire spring and summer run of Chinook Salmon into the Basin. The dam was removed in 1973 and these runs of salmon have been reintroduced from out-of-basin stocks. Harpster Dam was constructed on the South Fork Clearwater River in 1910 and blocked upstream migrations of all fish. This dam was removed in 1963 and steelhead were reintroduced from Dworshak stock. 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 which remains in place today.

Anadromous fisheries in the Clearwater River basin occur on returns of hatchery released fishes from four hatcheries. Dworshak National Fish Hatchery and Clearwater Fish Hatchery are located near the mouth of the North Fork Clearwater River. Kooskia National Fish Hatchery is located at the mouth of Clear Creek, and the Nez Perce Tribal Fish Hatchery is located along the Clearwater River about 20 miles upstream from its mouth. All four hatcheries work together

to release salmon and steelhead in key areas to provide fisheries for tribal and non-tribal anglers. Clearwater Fish Hatchery raises spring and summer Chinook Salmon and steelhead; Dworshak Hatchery raises spring Chinook Salmon, Coho Salmon, and steelhead; Kooskia Hatchery raises spring Chinook Salmon; and the Nez Perce Tribal Hatchery raises spring and fall Chinook Salmon.

Anadromous management action in the Clearwater will emphasize maintaining existing natural spawning populations of Chinook Salmon and steelhead and preserving good habitat quality. Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives. 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 and summer Chinook Salmon will also be managed for exploitation in these same rivers and the Lochsa River. The IDFG will work with the Nez Perce tribe to develop a long-term management plan that will address how many and where fish will be released to best meet tribal and non-tribal fisheries.

The Clearwater River drainage also supports a myriad of resident fishes and fishing opportunities for them as well. Major trout species include Rainbow Trout, Westslope Cutthroat Trout, Bull Trout, Mountain Whitefish, and Kokanee. Smallmouth Bass are abundant in the Clearwater River upstream of the North Fork Clearwater River. There are 710 documented mountain lakes in the Clearwater River drainage with only 11 of them believed to have historically 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. Dworshak Reservoir is the largest impoundment in the drainage (16,970 acres). Kokanee and Smallmouth Bass provide popular fisheries in this reservoir. A nutrient restoration program for Dworshak reservoir was agreed upon with the U.S. Corps of Engineers in 2017. Nutrient additions have proven effective at benefiting water quality and the abundance/size of both kokanee and Smallmouth Bass. Fishing opportunity in the Clearwater River drainage ranges from quality fisheries with gear and harvest restrictions on Cutthroat Trout to high-yield, consumptive fisheries for kokanee, Bluegill and Black Crappie.

Lamprey ammocoetes of various age classes were documented rearing in portions of the Selway River suggesting some level of production is occurring. Documenting the distribution of lamprey during standardized surveys for salmonid species will be a priority during this planning period.

There are nine lowland lakes in the area, with only one being a natural lake. These lakes are managed mostly as 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 Strategies

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

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

Strategy: Explore opportunities to use flow augmentation from Spring Valley Reservoir and potentially other reservoirs to improve downstream habitat.

Strategy: Explore opportunities to increase steelhead distribution upstream of Big Bear Falls.

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

Strategy: Continue working with land management agencies (Forest Service, Bureau of Land Management, State Department of Lands, NRCS, NOAA, OSC), all of the County Soil and Water Conservation Districts, 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 and instream habitat protection and enhancement. Encourage containment of sediment production areas, including old mining sites. Provide information about impacts that land use activities are having on natural production areas.

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

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

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

a. A high yield fishery for kokanee.
b. Yield and quality fisheries on hatchery produced trout (including tiger trout).
c. Catch-and-release fishing in rivers/streams for Cutthroat Trout, Bull Trout, and steelhead.
d. Quality and harvest fishing opportunities for Cutthroat Trout and Rainbow Trout in rivers and streams.
e. Both yield and quality fisheries for Smallmouth Bass and Largemouth Bass in lakes and reservoirs.
f. Yield fishery for Smallmouth Bass in rivers and streams.
g. Both yield and quality fisheries for trout species in mountain lakes.
h. Both yield and quality fisheries for panfish.
i. Opportunities to harvest hatchery steelhead, and hatchery salmon when run size permits.
j. Harvest opportunities for Channel Catfish
k. Fishing opportunities for tiger muskellunge

3. Objective: Improve and increase fishing access.

Strategy: Develop a management agreement with the Nez Perce Tribe that describes how Mann Lake and Soldiers Meadow Reservoir will be managed in accordance to the Bureau of Reclamation's Environmental Assessment and Finding of No Significant Impact for the Lewiston Orchards Project Water Exchange and Title Transfer. It should be noted that the EA specifies that public access and recreation would be consistent with current opportunities

after the property is transferred to the Bureau of Indian Affairs.

Strategy: As opportunities allow, acquire/secure additional fishing access sites.

Strategy: Maintain our fishing and boating access sites at a level acceptable to the public.

Strategy: Explore opportunities to improve shore fishing opportunities along the Clearwater River near Lewiston.

Strategy: Increase ADA access to popular fisheries including salmon and steelhead.

Strategy: Explore opportunities to improve shore fishing opportunities on Mann Lake.

4. Objective: Maintain/improve existing natural/wild populations of salmon and steelhead.

Strategy: Monitor wild steelhead and Chinook Salmon populations in priority drainages.

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

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

Strategy: Develop escapement goals for natural salmon and steelhead populations.

Strategy: Use fishing rules that assure Idaho sport fishing is not responsible for declines in natural salmon and steelhead populations.

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

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

Strategy: Continue the long-term study to evaluate impacts of current stocking programs on long term probability of persistence of amphibians. Maintain suitable levels of fishless alpine lake habitat to maintain amphibian populations.

6 Objective: Maintain or improve resident fisheries in Dworshak Reservoir.

Strategy: Work cooperatively with U.S. Army Corps of Engineers to maintain the nutrient restoration program aimed at balancing annual levels of base nutrients (nitrogen and phosphorus) to improve water quality and increase zooplankton and fish production.

Strategy: Monitor Smallmouth Bass size, age structure, growth, and mortality.

Strategy: Monitor Cutthroat Trout and Bull Trout abundance, size structure, and exploitation

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

Strategy: Coordinate with NPT and USFWS on stocking of hatchery salmon and steelhead smolts to provide harvest opportunities for returning adults in a manner acceptable to tribal and nontribal anglers.

Strategy: Work with the Nez Perce Tribe to develop long term plans for management of anadromous fisheries in the Clearwater River basin (salmon and steelhead). This plan should address how many and what type of anadromous fishes to stock where in an effort to better meet the needs of both tribal and nontribal fisheries.

Strategy: Evaluate whether rule changes can be made to increase overall angler satisfaction for both salmon and steelhead anglers. Explore using working Groups to help develop rule proposals for salmon and steelhead fishing on the Clearwater River.

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

Strategy: Explore strategies to expand salmon and steelhead fishing opportunities.

Strategy: Work with NOAA, Tribes, OR and WA to develop an FMEP that will provide harvest opportunities for both natural and hatchery origin fall Chinook Salmon.

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.
			Largemouth Bass Yellow Perch Black Crappie Bullhead Bluegill Channel Catfish	General	Provide a yield fishery for Yellow Perch, Black Crappie, and Bluegill. Stock with Channel Catfish to diversify this fishery.
			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 5 to 10 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.
			Black Crappie Bluegill	General	Provide a yield fishery for Black Crappie, and Bluegill.
			Largemouth Bass	Quality	Manage Largemouth Bass to provide fishing opportunities for quality sized fish
			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 5 to 10 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. Increase storage to provide flow augmentation for downstream wild steelhead habitat. Modify infrastructure to accommodate for increased water level fluctuations.

Mann Lake	/106	Mixed	Rainbow Trout	Put-and-take	Stock sterile catchable Rainbow Trout to maintain, at a minimum, catch rates of 0.5 trout/hour.
			Bluegill Channel Catfish Black Crappie	General	Provide a yield fishery for Black Crappie, and Bluegill. Stock with channel catfish to diversify this fishery.
			Largemouth Bass	Quality	Manage Largemouth Bass to provide fishing opportunities for quality sized fish Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every 5 to 10 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. Work on Management Agreement with Nez Perce Tribe to insure public access and recreation is consistent with current opportunities after the title is transferred from BOR to BIA.
Waha Lake	/94	Mixed	Rainbow Trout	Put-and-take	Stock sterile catchable Rainbow Trout to maintain, at a minimum, catch rates of 0.5 trout/hour.
			Smallmouth Bass Yellow Perch Black Crappie Kokanee	General	Provide a yield fishery for Black Crappie, and Yellow Perch. Evaluate the fishery every 5 to 10 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	Kokanee Rainbow Trout	Put-grow-take Put-and-take	Monitor fishery and adjust stocking densities and stock (early vs late) to provide a desirable kokanee fishery. Stock sterile catchable Rainbow Trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Evaluate the fishery every 5 to 10 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. Work on Management Agreement with Nez Perce Tribe to insure public access and recreation is consistent with current opportunities after the title is transferred from BOR to BIA.
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 5 to 10 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. Evaluate effectiveness of drawdown to control vegetation and influence fisheries.
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. Evaluate the Brook Trout population to determine management options Provide a yield fishery for Black Crappie and Bluegill. Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every 5 to 10 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) Tiger trout	Put-and-take Quality	Stock sterile catchable Rainbow Trout, sterile Brook Trout, and tiger trout to maintain, at a minimum, a combined catch rate of 0.5 trout/hour. Manage tiger trout to provide fishing opportunities for quality sized fish Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every 5 to 10 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 General	Stock sterile catchable Rainbow 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 5 to 10 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.
Deyo Reservoir	/56	Mixed	Rainbow Trout Largemouth Bass Bluegill	Put-and-take Quality General	Stock sterile catchable Rainbow Trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Manage Largemouth Bass to provide fishing opportunities for quality sized fish and to control the Bluegill population. Provide a yield fishery for 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.
Robinson's Pond	/2	Coldwater	Rainbow Trout Bluegill Largemouth Bass	Put-and-take General	Stock sterile catchable Rainbow Trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Evaluate use of Grass Carp to control aquatic vegetation.

Snake River Levee Pond	/2	Mixed	Rainbow Trout Channel Catfish	Put-and-take	Stock sterile catchable Rainbow Trout to maintain, at a minimum, catch rates of 0.5 trout/hour. Evaluate introduction of Channel catfish to diversify and add a trophy component of this fishery
Clearwater River from mouth to South Fork Clearwater River	75/	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. Hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer/fall hatchery Chinook Salmon and Coho Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce Tribe.
			Hatchery Rainbow Trout Mountain Whitefish Kokanee Smallmouth Bass	General	Provide harvest opportunities for residualized hatchery steelhead. Allow salvage fishery for kokanee lost through Dworshak Dam when warranted. Provide yield fishery for Smallmouth Bass. Promote Mountain Whitefish fishery.
			Wild Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only.

Potlatch River and tributaries	55/	Mixed/ Anadromous	Steelhead Chinook Salmon	Anadromous Conservation	Manage the entire Potlatch River drainage for wild steelhead. 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 fishing opportunities for steelhead. Consider introductions of spring Chinook Salmon but only in a manner where success of the introductions can be monitored and evaluated. Focus IDFG habitat improvement projects in the Potlatch River watershed using PCSRF, BPA, 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	Manage wild juvenile/residualized steelhead to maintain or build populations. Do not stock trout into flowing waters. Allow stocking of only sterile trout in local ponds.
			Brook Trout Smallmouth Bass	General	Promote reduction of Brook Trout and Smallmouth Bass populations through harvest.
Lolo Creek and tributaries	86/	Coldwater/ Anadromous	Steelhead Chinook Salmon	Anadromous Conservation	Manage for natural production of steelhead. Work with Nez Perce Tribe in restoring anadromous fish populations through planned introductions and habitat improvement projects.
			Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations. Allow stocking of only sterile trout in local ponds.
			Brook Trout Mountain Whitefish	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	Manage for natural production of steelhead. Work with Nez Perce Tribe, action agencies and landowners in restoring anadromous fish populations through planned introductions and habitat improvement projects.
			Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations. Allow stocking of only sterile trout in local ponds.
			Brook Trout Mountain Whitefish	General	Promote reduction of Brook Trout populations through liberal harvest regulations.

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. Hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer/fall hatchery Chinook Salmon and Coho Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe.
			Rainbow Trout Cutthroat Trout	Quality	Use fishing rules to maintain or improve the size structure and abundance of Cutthroat Trout and Rainbow Trout.
			Mountain Whitefish Smallmouth Bass	General	Promote Mountain Whitefish fishery. Provide yield fishery for Smallmouth Bass.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only.
Clear Creek and tributaries	65/	Coldwater/ Anadromous	Chinook Salmon Steelhead Coho Salmon	Anadromous Conservation	Manage for natural production of steelhead. Work with Nez Perce Tribe, action agencies and landowners in restoring anadromous fish populations through planned introductions and habitat improvement projects. Work with action agencies and landowners to improve habitat quality.
			Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations. Allow stocking of only sterile trout in local ponds.
Other Middle Fork tributaries	32/	Coldwater/ Anadromous	Steelhead Chinook Salmon	Anadromous Conservation	Manage for natural production of steelhead. Work with action agencies and landowners to improve habitat quality.
			Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations. Allow stocking of only sterile trout in local ponds
			Brook Trout	General	Promote reduction of Brook Trout populations through liberal harvest regulations.

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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 Salmon 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 warranted.
			Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations.
			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 maintain the nutrient restoration program, and monitor water quality, plankton populations, fish populations. Strive to provide, on average, a 10-inch fish at a catch rate of over 1 fish/hour. This would be a 67% increase in catch rates over pre-nutrient restoration levels. Evaluate the influence nutrient enhancement has on the Smallmouth Bass population.
			Cutthroat Trout	Quality	Use fishing rules to maintain or improve the size structure and abundance of Cutthroat Trout.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only.
Little North Fork Clearwater River and tributaries.	61/	Mixed	Rainbow Trout Cutthroat Trout	Wild	Manage Rainbow Trout and Cutthroat Trout to provide harvest opportunity while maintaining size structure and abundance. No trout stocking into flowing waters. Strive to protect critical habitat and maintain remote fishing opportunity. Monitor changes in size and abundance of fishes by snorkeling trend sites every three to five years.
			Smallmouth Bass Mountain Whitefish	General	Promote reduction of Smallmouth Bass abundance through harvest. Promote Mountain Whitefish fishery.
			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.

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 fishing rules to maintain or improve the size structure and abundance of Cutthroat Trout. Manage wild Rainbow Trout to maintain or build populations. No trout stocking in flowing water. Monitor changes in size and abundance of fishes by snorkeling trend sites two out of four years.
			Mountain Whitefish Kokanee Smallmouth Bass	General	Promote mountain whitefish fishing. Promote reduction of Smallmouth Bass abundance through harvest.
			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	Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance. No trout stocking in flowing water.
			Mountain Whitefish Brook Trout Kokanee	General	Promote Mountain Whitefish fishing. Promote reduction of Brook Trout populations through liberal harvest regulations.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only. Work with USFS to monitor Bull Trout population abundance through established redd trend counts.
Kelly Creek and its tributaries	119/	Coldwater	Cutthroat Trout Rainbow Trout	Quality	Manage Cutthroat Trout and Rainbow Trout with fishing rules to maintain a higher abundance of larger fish. Maintain or improve present habitat. No trout stocking in flowing water. Monitor changes in size and abundance of fishes by snorkeling trend sites two out of four years.
			Mountain Whitefish	General	Promote mountain whitefish fishing.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only. Work with USFS to monitor Bull Trout abundance through established redd trend count surveys.

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. Lakes where successful Brook Trout removal efforts have occurred, stock with Westslope Cutthroat Trout. Evaluate and adjust stocking densities to account for lake productivity and angler pressure.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only.

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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. Hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer/fall hatchery Chinook Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. 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. Promote Mountain Whitefish fishing.
			Wild Rainbow Trout Cutthroat Trout	Quality	Use fishing rules to maintain or improve the size structure and abundance of Cutthroat Trout. Manage wild Rainbow Trout to maintain or build populations. Snorkel established trend sites two out of four years to monitor size and abundance of fishes.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release only on bull trout.
Ten Mile Creek and tributaries	20/	Coldwater/ Anadromous	Steelhead Chinook Salmon	Anadromous	Manage for natural production of steelhead and Chinook Salmon. Work with action agencies and landowners to improve habitat quality.
			Rainbow Trout Cutthroat Trout	Wild	Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance
			Mountain Whitefish	General	
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only.
Johns Creek		Coldwater/ Anadromous	Steelhead Chinook Salmon	Anadromous	Manage for natural production of steelhead and Chinook Salmon. Work with action agencies and landowners to improve habitat quality.
			Cutthroat Trout Rainbow Trout	Wild	Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance
			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	Manage for natural production of steelhead and Chinook Salmon Work with action agencies, NPT, and landowners to improve habitat quality. Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance 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	Manage for natural production of steelhead . Work with action agencies, NPT, and landowners to improve habitat quality. Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance Promote reduction of Brook Trout populations through liberal harvest regulations. 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	Manage for natural production of steelhead . Work with action agencies, NPT, and landowners to improve habitat quality. Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance Promote reduction of Brook Trout populations through liberal harvest regulations. 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	Manage for natural production of steelhead and Chinook Salmon. Work with action agencies, NPT, and landowners to improve habitat quality. Monitor salmon and steelhead productivity. Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance 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	Manage for natural production of steelhead. Work with action agencies, NPT, and landowners to improve habitat quality. Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance Promote reduction of Brook Trout populations through liberal harvest regulations. 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.

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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 Mountain Whitefish Cutthroat Trout Rainbow Trout Bull Trout	Anadromous General Quality Conservation	Manage for natural production of steelhead . Maintain native/natural gene pool of steelhead within the drainage. Consider desires of different angler types when developing fishing rules for hatchery salmon. Hatchery salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer hatchery Chinook Salmon 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. Monitor salmon and steelhead productivity. Promote Mountain Whitefish fishing. Use fishing 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 two out of four years to monitor changes in size and abundance of fishes. No harvest allowed. Catch-and-release, only.
Lochsa River from Wilderness Gateway Bridge to confluence of Colt Killed Creek and Crooked Fork Creek pstream to Brushy Fork Creek	44/	Coldwater/ Anadromous	Steelhead Chinook Salmon Mountain Whitefish Cutthroat Trout Rainbow Trout Bull Trout	Anadromous General Quality Conservation	Manage for natural production of steelhead. Maintain native/natural gene pool of steelhead within the drainage. Consider desires of different angler types when developing fishing rules for hatchery salmon. 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. Promote Mountain Whitefish fishing. Manage Cutthroat Trout and Rainbow Trout with rules to maintain a high abundance of larger fish. No trout stocking in flowing water. Snorkel established trend sites two out of four years to monitor size and abundance of fishes. 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	Manage for natural production of steelhead and Chinook Salmon. Work with action agencies and landowners to improve habitat quality. Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance. No trout stocking into flowing waters. No harvest allowed. Catch-and-release, 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	Manage for natural production of steelhead. Maintain native/natural gene pool of steelhead. Work with action agencies and landowners to improve habitat quality. Coordinate spring/summer/fall hatchery Chinook Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe.
			Mountain Whitefish	General	Promote mountain whitefish fishing.
			Cutthroat Trout Rainbow Trout	Quality	Use fishing rules to maintain or improve the size structure and abundance of Cutthroat Trout and Rainbow Trout. No 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	Manage for natural production of steelhead. Maintain native/natural gene pool of steelhead.
			Mountain Whitefish	General	Promote 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. No 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	Manage for natural production of steelhead and Chinook Salmon. Work with action agencies and landowners to improve habitat quality. Maintain native/natural gene pool of steelhead.
			Mountain Whitefish	General	
			Cutthroat Trout Rainbow Trout	Wild	Manage Cutthroat Trout and Rainbow Trout to provide harvest opportunity while maintaining/improving size structure and abundance. No trout stocking into flowing waters.
			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.

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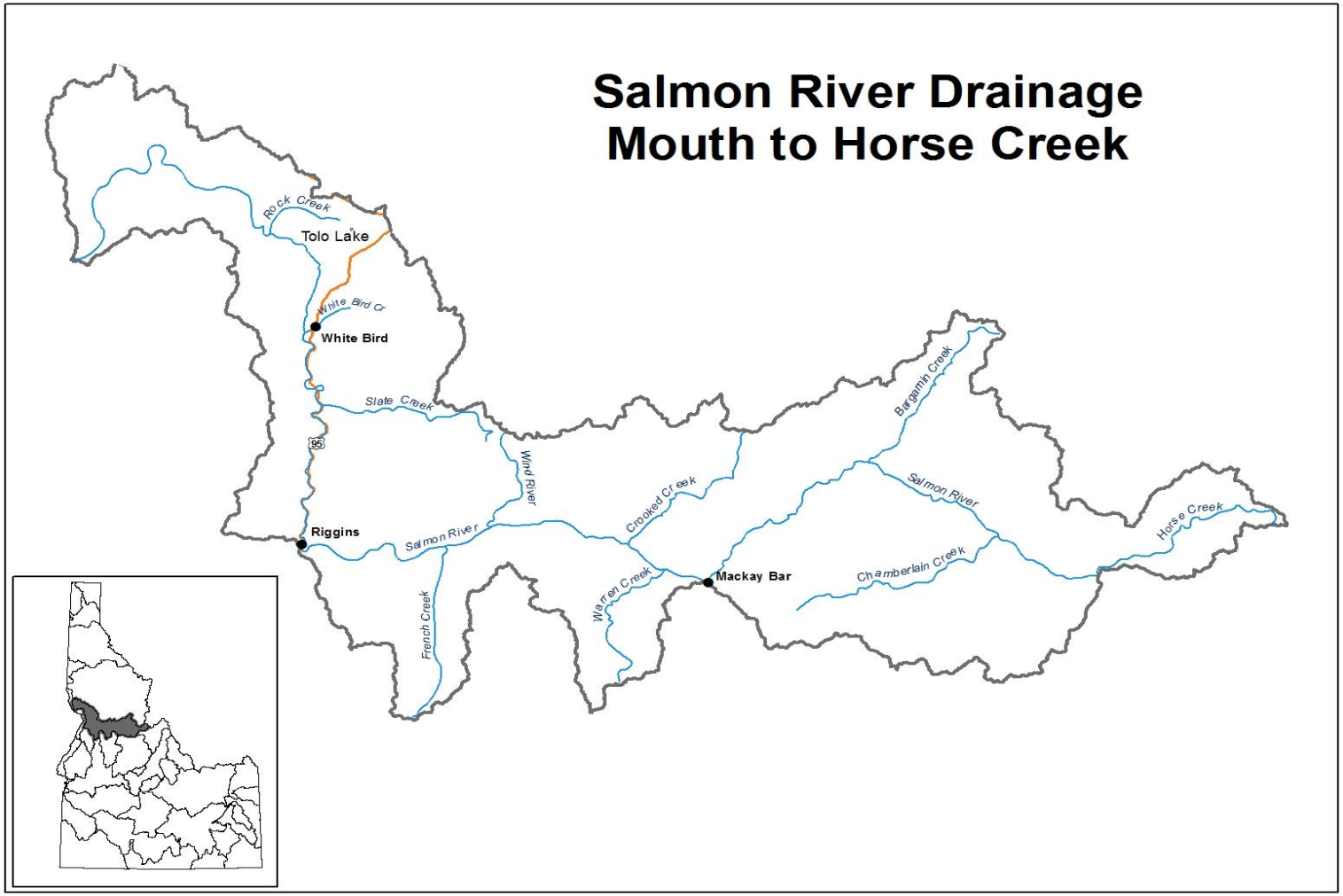
Salmon River Drainage
Mouth to Horse Creek
Rock Creek
Tolo Lake
White Bird Cr
White Bird
Slate Creek
95
Wind River
Riggins
Salmon River
Crooked Creek
Bargamin Creek
Salmon River
Horse Creek
French Creek
Warren Creek
Mackay Bar
Chamberlain Creek

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 Salmon 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. White Sturgeon are also 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 classified 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 2001-2018 and will continue to be when the 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. In 2010, spring/summer Chinook Salmon fishing opportunities were extended from Hammer Creek downstream to Rice Creek Bridge. Fall Chinook Salmon spawning has been documented in this river section periodically since 1993. Starting in 2018, fall Chinook Salmon smolts will be annually released at Hammer Creek as a supplementation and harvest program.

There are 74 miles of roadless 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 (discussed separately). Spring Chinook Salmon production in Slate and Whitebird creeks results from wild fish and strays from the Rapid River program. Chamberlain Creek also supports wild Chinook Salmon and wild steelhead 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. Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives. The main stem 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. Sport fisheries on excess hatchery spring/summer Chinook Salmon will be managed in sections of the main stem 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 main stem hydropower projects in the unprotected portions of the Salmon River. Congressional intent also includes federally authorized projects.

Objectives and Strategies

1. Objective: Maintain and improve fish habitat and water quality within the Salmon River watershed from mouth to Horse Creek.

   Strategy: Continue working with land management agencies (Forest Service, Bureau of Land Management, State Department of Lands), County Soil and Water Conservation Districts, 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. Provide information about impacts that land use activities are having on natural production areas.

   Strategy: Minimize impacts 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.

2. Objective: Maintain/improve existing natural/wild populations of Chinook Salmon and steelhead.

   Strategy: Monitor wild steelhead and Chinook Salmon populations in priority drainages.

   Strategy: Allow natural production to sustain existing natural populations. Do not out-plant hatchery steelhead and spring/summer Chinook Salmon into the main stem or tributaries, from French Creek upstream to the Middle Fork Salmon River, to preserve wild fish genetic resources. Limit hatchery out-planting in tributaries downstream of French Creek to areas devoid of naturally produced anadromous fish.

   Strategy: Develop escapement goals for natural salmon and steelhead populations.

   Strategy: Use fishing rules that assure Idaho sport fishing is not responsible for declines in natural salmon and steelhead populations.

3. Objective: Maintain/Improve fishing access.

Strategy: Maintain our fishing and boating access sites at a level acceptable to the public.

Strategy: Explore opportunities to increase handicap access to popular fisheries including salmon and steelhead.

Strategy: As opportunities allow, acquire/secure additional fishing access sites.

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

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

Strategy: Continue with long-term study to evaluate the impacts the current stocking Strategy has on long term probability of persistence of amphibian. Maintain suitable levels of fishless alpine lake habitat to maintain amphibian populations.

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

Strategy: Evaluate whether rule changes can be made to increase overall angler satisfaction for both salmon and steelhead anglers.

Strategy: Explore strategies to expand salmon and steelhead fishing opportunities.

Strategy: Work with NOAA, Tribes, OR and WA to develop an FMEP that will provide harvest opportunities for both natural and hatchery origin fall Chinook Salmon

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	Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Fishing opportunities for Chinook Salmon should also consider the ability to monitor harvest and minimize wild fish impacts. Coordinate spring/summer/fall hatchery Chinook Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Enhance steelhead fishing opportunity with a combination of A and B strain smolt releases into upstream areas.
			Hatchery Rainbow Trout Mountain Whitefish Smallmouth Bass	General	Provide harvest opportunities for residualized hatchery steelhead. Provide yield fishery for Smallmouth Bass.
			Wild Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations.
			Bull Trout White Sturgeon	Conservation	Bull Trout and White Sturgeon: no harvest, catch-and-release, only. 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	Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Coordinate spring/summer/fall hatchery Chinook Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Enhance steelhead fishing opportunity with a combination of A and B strain smolt releases into upstream areas.
			Hatchery Rainbow Trout Mountain Whitefish Smallmouth Bass	General	Provide harvest opportunities for residualized hatchery steelhead. Provide yield fishery for Smallmouth Bass.
			Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations.
			Bull Trout White Sturgeon	Conservation	Bull Trout and White Sturgeon: no harvest, catch-and-release, only. 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	Consider desires of different angler types when developing fishing rules for hatchery steelhead and salmon. Hatchery steelhead and salmon should be managed to distribute harvest amongst different communities, extend fishing seasons, and reduce excess hatchery brood. Fishing opportunities for Chinook Salmon should also consider the ability to monitor harvest and minimize wild fish impacts. Coordinate spring/summer hatchery Chinook Salmon releases, run size estimates, and computation of 50/50 harvest share with Nez Perce tribe. Enhance steelhead fishing opportunity with a combination of A and B strain smolt releases into upstream areas.
			Hatchery Rainbow Trout Mountain Whitefish Smallmouth Bass	General	Provide harvest opportunities for residualized hatchery steelhead. Promote reduction of Smallmouth Bass populations through harvest.
			Wild Rainbow Trout Cutthroat Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations.
			Bull Trout White Sturgeon	Conservation	Bull Trout and White Sturgeon: no harvest, catch-and-release, only. Follow guidance of White Sturgeon Management Plan.
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	Manage for natural production of steelhead and Chinook Salmon. Work with action agencies and landowners to improve habitat quality.
			Cutthroat Trout Rainbow Trout	Wild	Manage wild juvenile/residualized steelhead and Cutthroat Trout to maintain or build populations.
			Brook Trout Mountain Whitefish	General	Promote reduction of Brook Trout populations through harvest.
			Bull Trout	Conservation	No harvest allowed. Catch-and-release, only.
Tolo Lake	/20	Warmwater	Rainbow Trout Largemouth Bass Black and White Crappie Channel Catfish	General	Regulate boating activity to minimize conflicts with other uses. Evaluate the fishery every 5 to 10 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.
Long Gulch Pond	/5	Coldwater	Rainbow Trout	Put-and-take	Stock sterile catchable Rainbow Trout to maintain, at a minimum, catch rates of 0.5 trout/hour.

Alpine lakes	/546 (Clearwater)	Coldwater	Rainbow Trout Cutthroat Trout Brook Trout Arctic Grayling Golden Trout Rainbow 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.

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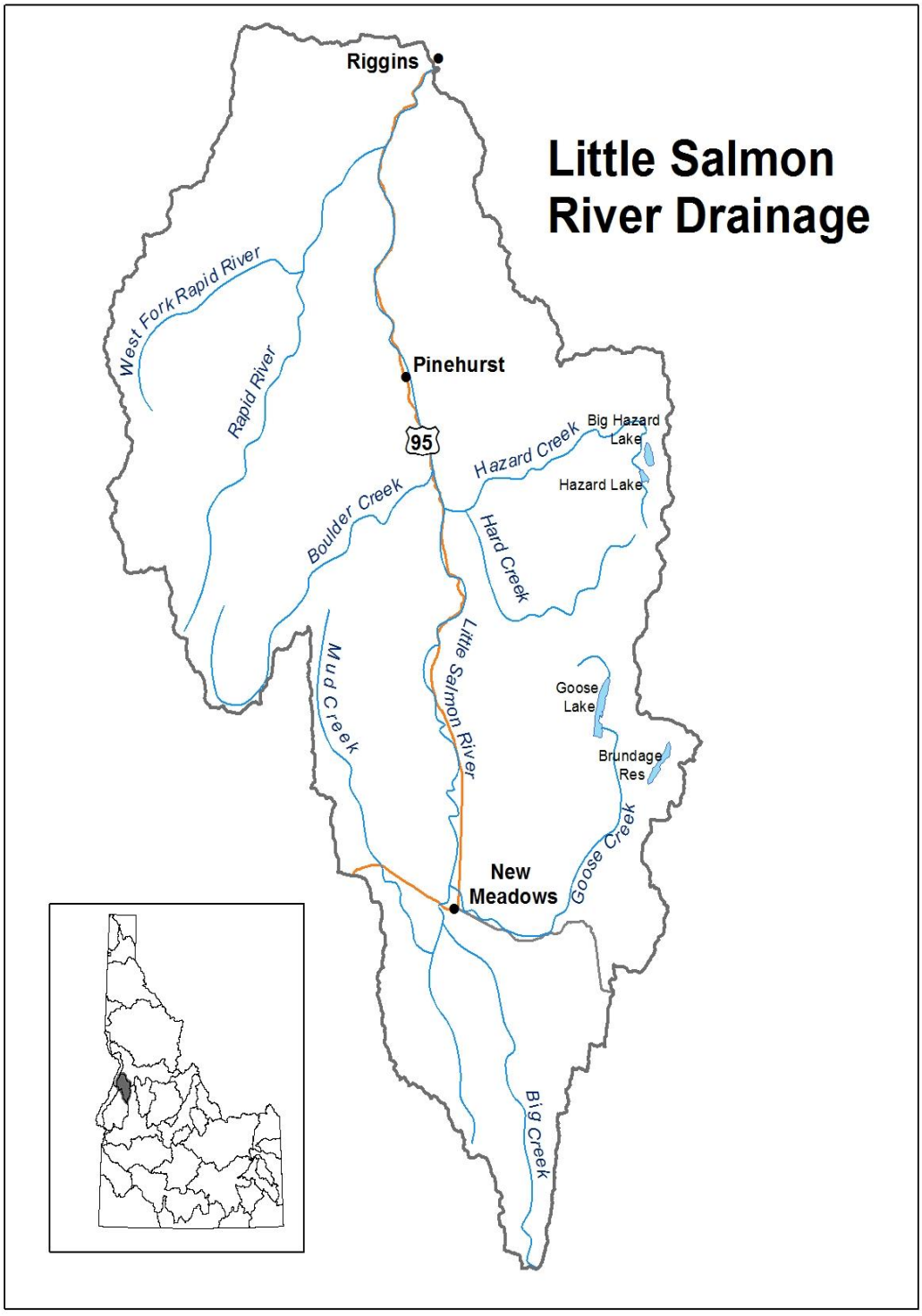
Little Salmon River Drainage
Riggins
Pinehurst
New Meadows
95
West Fork Rapid River
Rapid River
Boulder Creek
Mud Creek
Hazard Creek
Big Hazard Lake
Hazard Lake
Hard Creek
Little Salmon River
Goose Lake
Brundage Res
Goose Creek
Big Creek

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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, 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. Objectives for anadromous natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives.

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 Chinook 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 Salmon.

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 main stem Salmon River near Riggins and in the Little Salmon River. This 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 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 Strategies

1. Objective: Maximize harvest opportunity on hatchery-produced Chinook Salmon and steelhead.

   Strategy: Structure Chinook Salmon seasons to ensure all anglers an opportunity to harvest fair shares of the run.

2. Objective: Maintain/improve existing natural/wild populations of Chinook Salmon and steelhead.

   Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity at select locations.

3. Objective: Improve water quality and fish habitat upstream of the barriers near Round Valley Creek.

   Strategy: 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.

4. Objective**:** Provide a diversity of alpine lake fishing opportunities**.**

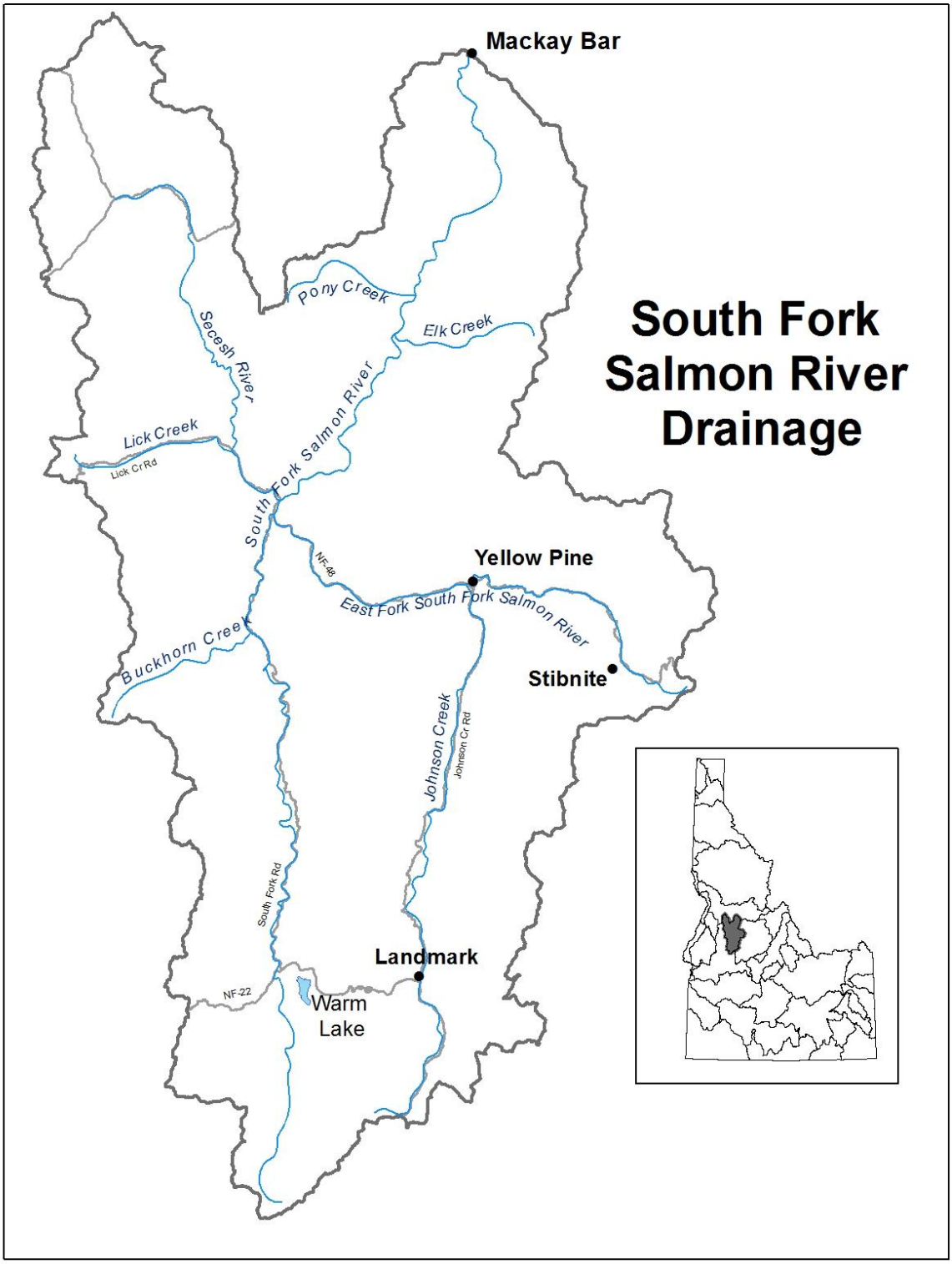
   Strategy: Continue periodic surveys of the alpine lakes in the drainage.

   Strategy: 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. Monitor parr abundance and salmon spawning.
			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 Salmon and Steelhead harvest. Enhance spring Chinook Salmon and steelhead returns to Rapid River trap and allow natural escapement to maximize seeding of spawning and rearing habitat. Annually monitor steelhead abundance, productivity, and life history diversity
			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 strategy 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	Fish Lake is currently closed off to public access by landowner. Continue to work with landowners to allow access to this Department owned water.
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 spawning to maintain good growth.
Goose Lake	/520	Coldwater	Rainbow Trout Brook Trout	General	Supplement with catchable trout for a catch rate of 0.5 fish/hr

			Cutthroat Trout		
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-48
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

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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) 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 Salmon 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 Salmon 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. Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives.

The SFSR is one of only four drainages in the Columbia Basin that supports populations of wild, native steelhead 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. Starting in 2010 and guided by the recently developed Hatchery Genetic Management Plan, a portion of production at McCall Hatchery is integrated with SFSR Chinook of natural origin to provide the benefits listed above. Additionally, returning integrated hatchery-origin fish are released above the South Fork Salmon River weir for natural spawning along with natural-origin returns. The minimum number of spawners is set at 300 fish. If that goal cannot be met with integrated and natural adults, segregated fish are released above the weir. The remaining production at McCall Hatchery is a segregated group of entirely hatchery origin Chinook and will be available for sport harvest as returning adults.

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 2016, to harvest surplus hatchery-origin adult summer Chinook Salmon returning to the SFSR. No sport fishery was conducted in 2017 due to low returns. 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.

The historic mining area at Stibnite which encompasses the headwaters of the East Fork of the SFSR has been consolidated into a new proposed gold mine by Midas Gold. The mining company completed extensive drill exploration in the past 5 years and has filed an operating plan with the USFS and the State of Idaho. The company and the USFS are currently developing an EIS for the proposed operation and mitigation plan. The proposed mining is expected to take 30 years including time for reclamation.

Objectives and Strategies

1. Objective: Preserve genetic integrity of wild, native steelhead and summer Chinook.

   Strategy: 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.

Strategy: Implement Hatchery Genetic Management Plan (HGMP) for South Fork Salmon River summer Chinook hatchery program. The proportion of the hatchery program that is integrated ranges from 15-100% and is dependent on the number of returning natural adults.

Strategy: Utilize the sliding-scale management framework to implement the integrated broodstock program, and 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/improve existing natural spawning populations of salmon and steelhead.

Strategy: Allow natural production to sustain existing naturally produced populations. Limit out-planting of hatchery summer Chinook, other than direct hatchery releases, to support HGMP.

Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity at select locations.

3. Objective: Maintain and improve habitat quality of main stem and tributary production areas.

Strategy: Cooperate with other agencies on habitat projects as opportunities develop. Provide needed fish population assessments to other parties.

Strategy: Cooperate with other entities with the development of the environmental review of the proposed Stibnite Gold Mine. Insure that good monitoring standards for water quality and fish and wildlife values are implemented if the mine project proceeds.

4. Objective: Preserve genetic integrity of native Westslope Cutthroat Trout and Bull Trout. Maintain conservation management to increase population sizes.

Strategy: Maintain catch-and-release fisheries throughout the drainage.

5. Objective: Collect fishery survey data on all waters within the SFSR drainage.

Strategy: Continue to develop and distribute fisheries information.

Strategy: Monitor the success of kokanee fingerling stocking in Warm Lake

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. Monitor parr abundance and salmon spawning.
			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. Monitor parr abundance.
			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. Annually monitor salmon abundance, productivity, and life history diversity from Krassel Ranger Station upstream.
			Steelhead	Conservation	Closed to harvest. Annually monitor steelhead abundance, productivity, and life history diversity from Krassel Ranger Station upstream.
			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.

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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 bloodstock 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. Utilize triploid Kokanee fingerlings stock when available.
			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.

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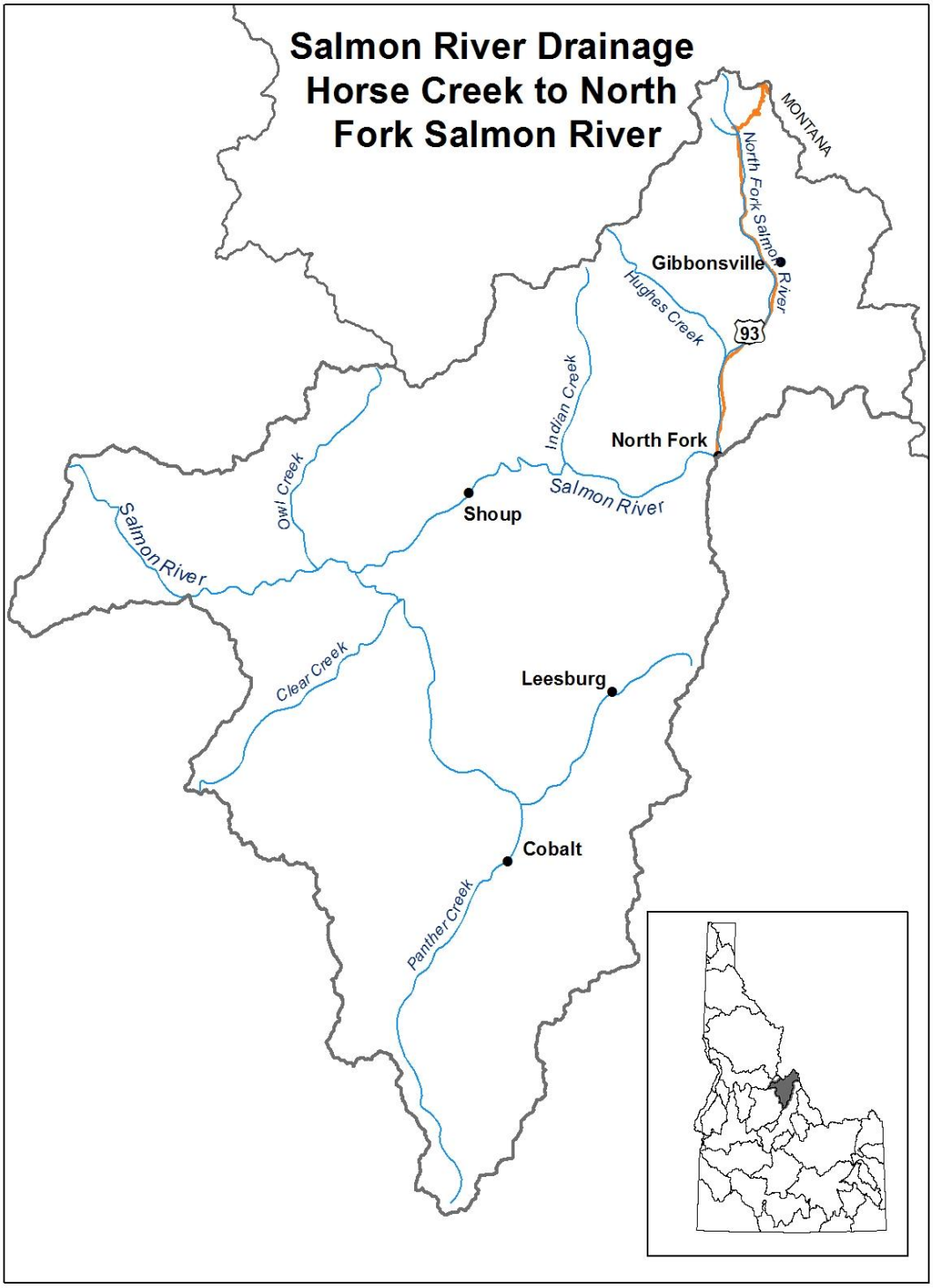

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11. SALMON RIVER DRAINAGE – HORSE CREEK TO NORTH FORK

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 downstream of 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 gage #13307000) measured Salmon River stream flow between Panther and Owl creeks at river mile 207.8 from 1945 to 1981 and 2003 to 2018. Annual mean discharge, ranged from 1,700 cfs in 2004 to 4,587 cfs in 2017 and averaged 2,925 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 designated under the federal Wild and Scenic Rivers System. 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."

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). Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives. The main stem 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.

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.

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 were observed rearing in Panther Creek and only in the lowermost portions of the drainage. However in the last fifteen 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 main stem sample locations throughout the drainage.

In the last two decades substantial mine-site cleanup efforts were implemented to improve the water quality in the Panther Creek drainage. Since that time, water quality has improved and the Shoshone-Bannock Tribes (SBT) have proposed a hatchery program to help return adult Chinook Salmon to Panther Creek. The current SBT plans include an adult Chinook capture facility (weir), as well as a screwtrap and PIT array to estimate juvenile Chinook production and monitor survival. Juvenile Chinook Salmon would be reared at the proposed SBT Crystal Springs Hatchery located near Springfield, ID, and released into Panther Creek. The Crystal Springs Hatchery program will utilize a locally adapted bloodstock developed from a combination of natural adult returns and donor eggs from the Pahsimeroi Hatchery. The rebuilding of this Chinook Salmon population will contribute to recovery objectives as well as benefit tribal and non-tribal anglers. Returns of adult hatchery Chinook Salmon to Panther Creek will provide additional angling opportunities for tribal and non-tribal anglers in the Salmon River and Panther Creek.

The North Fork Salmon River (NFSR) drainage contains about 60 miles of stream, some of which have been negatively impacted by mining, logging, and channelization. These factors have resulted in a loss of instream habitat complexity, and a reduction in suitable spawning, resting, and rearing habitats. It currently supports limited Chinook, steelhead, Bull Trout, and Westslope Cutthroat Trout spawning and rearing. Despite the habitat constraints, the NFSR is one of the colder tributaries to the system and is known to provide thermal refuge for early emigrating smolts during periods when the main Salmon River is too hot. Habitat restoration projects have been implemented annually since 2015, within mostly private property to increase available habitat. These projects are funded by Pacific Coast Salmon Recovery Funds (PCSRF) and match provided by Bonneville Power Administration and Shoshone-Bannock Tribe. Both adult and juvenile Chinook Salmon and steelhead have been observed using habitat structures in restoration areas soon after implementation. Additionally, the local community is very supportive of these restoration projects. Other smaller tributaries to the main Salmon, such as Indian, Colson, and Pine creeks, primarily support steelhead spawning and rearing. Resident and fluvial populations of Redband Trout, Bull Trout and Westslope Cutthroat Trout are also present in these main stem tributaries.

Small numbers of White Sturgeon utilize the main stem river reach however their abundance is likely controlled by limited habitat and extreme icing conditions during the winter. In 2005, an angler-caught White Sturgeon was documented in the Salmon River upstream as far as McKim Creek near river mile 291. In 2016, IDFG sampling documented White Sturgeon in Cronk's Canyon in the Salmon River near river mile 300.

This portion of the main stem Salmon River provides overwintering habitat for Westslope Cutthroat Trout that utilize spawning and summer habitat in the Middle Fork Salmon River, North Fork Salmon River, Lemhi River, and tributaries upstream of Challis.

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 Strategies

1. Objective: Maintain/improve existing natural spawning populations of Chinook Salmon and steelhead.

   Strategy: Allow natural production to sustain existing naturally produced populations. Maintain enforcement efforts to ensure compliance with differential harvest regulations to protect wild steelhead. 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.

   Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity at select locations.

   Strategy: Use fishing rules that assure Idaho sport fishing is not responsible for declines in natural salmon and steelhead populations.

2. Objective: Maintain and improve habitat quality of tributaries.

   Strategy: 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 tributaries, including the Panther Creek and North Fork Salmon River drainages. Continue habitat enhancement and improvement projects in Salmon River tributaries which promote increased pool habitat, large wood recruitment, increased sinuosity and improved riparian conditions.

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.

   Strategy: 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: Maintain/improve the quality of cutthroat trout fishing in the main stem Salmon River.

   Strategy: Use appropriate fishing rules to conserve wild trout in the main stem river.

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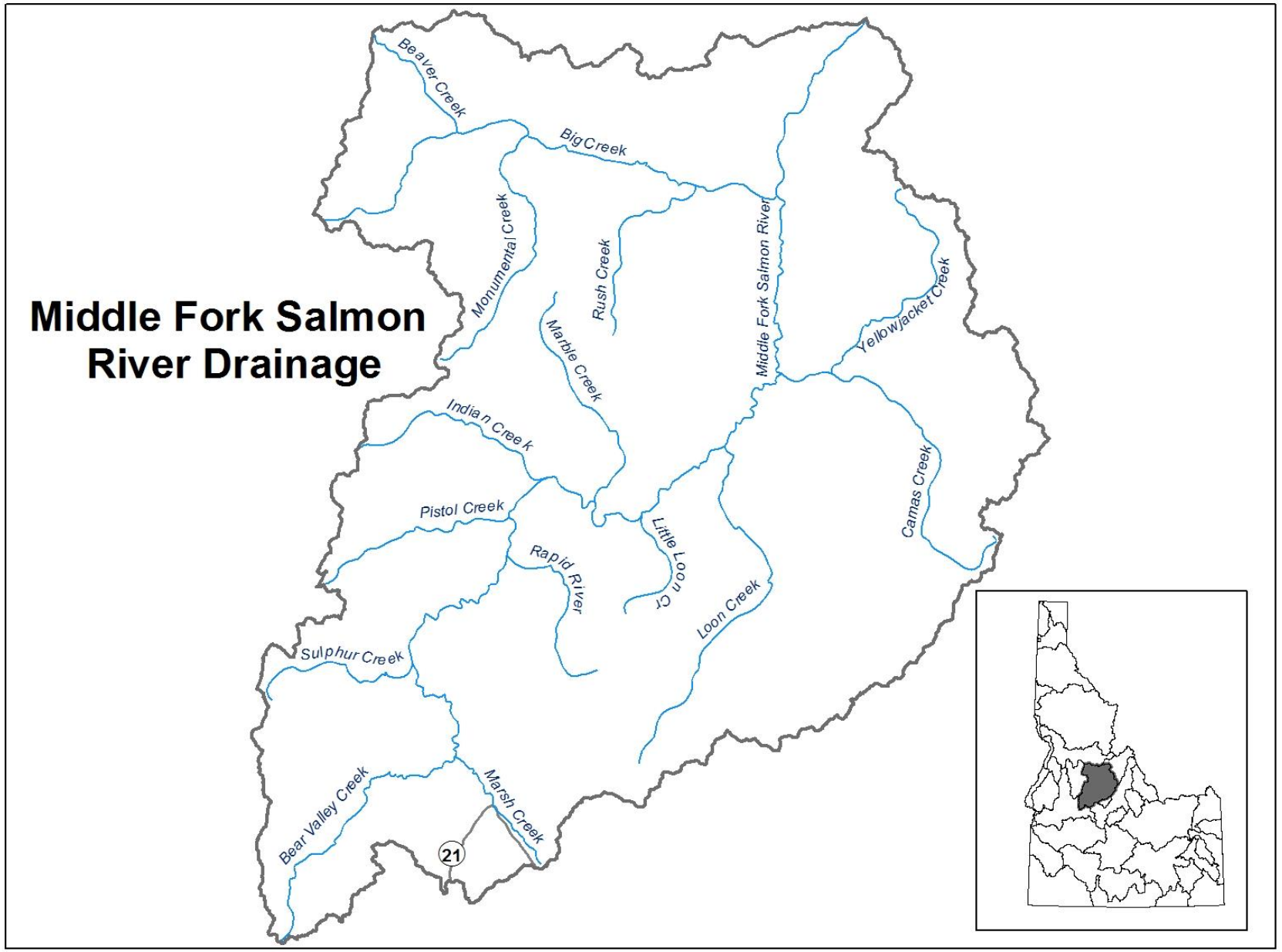
Drainage: Salmon River: Horse Creek to North Fork					
Water	**Miles/acres**	**Fishery**			**Management Direction**
		Type	Species present	Management	
From Horse Creek to North Fork	50/	Coldwater	Bull Trout	Conservation	Closed to harvest. Catch and release, only.
			Cutthroat Trout Redband Trout	Wild	Closed to harvest. Manage wild Rainbow Trout and Cutthroat Trout to maintain or build populations. 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.
			Smallmouth Bass		Provide yield fishery for Smallmouth Bass.
		Anadromous	Wild/natural steelhead Chinook Salmon	Conservation	Maintain adult harvest closure until MFSR and upper Salmon River escapement goals are met.
			Hatchery Chinook 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	Promote reduction of Brook Trout through liberal harvest regulations.
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook Salmon Steelhead	Conservation	Maintain adult harvest closure. Monitor parr abundance.
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. Monitor parr abundance.

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. Monitor parr abundance and salmon spawning .
			Hatchery Chinook Salmon	Anadromous	Provide maximum yield of fish surplus to escapement goals
North Fork Salmon River	22/	Coldwater	Redband Trout Brook Trout	General	Provide harvest fishery supported by natural production. Promote reduction of Brook Trout through liberal harvest regulations.
			Bull Trout Cutthroat Trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook Salmon Steelhead	Conservation	Maintain adult harvest closure. Continue to support habitat restoration activities to increase available spawning and rearing habitat. Annually monitor salmon and steelhead abundance, productivity, and life history diversity.
North Fork Salmon River Tributaries		Coldwater	Redband Trout Brook Trout Cutthroat Trout Whitefish	General	Provide harvest fishery supported by natural production. Promote reduction of Brook Trout through liberal harvest regulations.
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
Alpine Lakes	/233	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.


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: USGS gage #13309220 at the Middle Fork Lodge, near Yellow Pine, Idaho, and USGS gage #13310199 at the mouth of the Middle Fork Salmon River. Annual mean discharge at the Middle Fork Lodge, from 1974 to 1981 and 2000 to 2017 ranged from 582 cfs in 1977 to 2,738 cfs in 2017 and averaged 1,468 cfs. At the mouth of the Middle Fork Salmon River, annual mean discharge from 1994 to 2016 ranged from 1,415 cfs in 2001 to 4,648 cfs in 1997 and averaged 2,807 cfs.

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 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 Salmon 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. Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives.

Although the Middle Fork Salmon River supported a major Chinook Salmon fishery, with annual harvest exceeding 2,000 fish in the late 1960s, non-treaty harvest has not been allowed for Chinook Salmon and steelhead since 1978 because of very low run sizes. Middle Fork Salmon River steelhead are caught incidentally during fisheries in the main stem 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 Chinook Salmon or steelhead in the Middle Fork Salmon River in the next six 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 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 Salmon spawning habitat throughout the entire watershed is surveyed annually by ground or air for number of redds. Spawning ground surveys should cover as much habitat as feasible.

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.

White Sturgeon presence in the Middle Fork Salmon River has long been suspected, but was not documented until 2015, when IDFG snorkel crews observed an adult White Sturgeon near Tappan Falls at river mile 36. Recently, Pacific Lamprey ammocoetes of various age classes were documented rearing in the middle 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 Strategies

1. Objective: Preserve genetic integrity of wild native salmon, steelhead, and resident trout.

   Strategy: Manage hatchery supplemented Salmon River anadromous stocks to minimize straying into the Middle Fork Salmon River.

Strategy: Designated wild anadromous fish sanctuary. No stocking of hatchery fish into the stream environment, and manage stocking of hatchery fish in the main stem Salmon River to minimize straying to the Middle Fork.

Strategy: 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.

Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity at select locations.

2. Objective: Manage resident fisheries for high catch rates and fish size.

Strategy: Use appropriate fishing rules to maintain/improve native trout in the main stem Middle Fork Salmon River and its tributaries.

Strategy: Use appropriate fishing rules in the main Salmon River to maintain/improve Westslope Cutthroat Trout utilizing this portion of the Salmon River as seasonal habitat..

3. Objective: Maintain and improve habitat and water quality of key tributary fish production areas.

Strategy: Work with Forest Service and grazing permittees to reestablish healthy riparian vegetation through livestock management improvements.

Strategy: Participate in grazing allotment management plan reviews. Work with agencies and landowners to eliminate grazing practices that negatively impact fish productivity and survival.

Strategy: Screen all identified irrigation diversions where needed.

Strategy: 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.

Strategy: 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.

Strategy: 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.

Strategy: Continue RM&E programs following Viable Salmonid Population criteria.

7. Objective: Increase ability of anglers to properly identify fish species.

Strategy: 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	Promote reduction of Brook Trout populations through liberal harvest regulations.
		Anadromous	Wild/natural steelhead Chinook Salmon Lamprey	Conservation	Maintain adult harvest closure until MFSR and upper Salmon River escapement goals are met. Monitor parr abundance and salmon spawning. Monitor juvenile lamprey.
Big Creek and tributaries		Anadromous	Wild/natural steelhead Chinook Salmon	Conservation	Continue intensive monitoring as an index population for lower MFSR watershed
Marsh Creek and tributaries		Anadromous	Wild/natural steelhead Chinook Salmon	Conservation	Continue intensive monitoring as an index population for upper MFSR watershed
Bear Valley Creek		Anadromous	Chinook Salmon	Conservation	Monitor parr abundance and salmon spawning. Coordinate with Shoshone-Bannock Tribes in their program to monitor spawning escapement and juvenile production.
Yellowjacket Lake	/5	Coldwater	Redband Trout Cutthroat Trout	General	Stock with sterile catchable Rainbow Trout to provide put-and-take fishery. Assess Westslope Cutthroat Trout fry stocking to provide additional fishing opportunity.
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 Trout 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.

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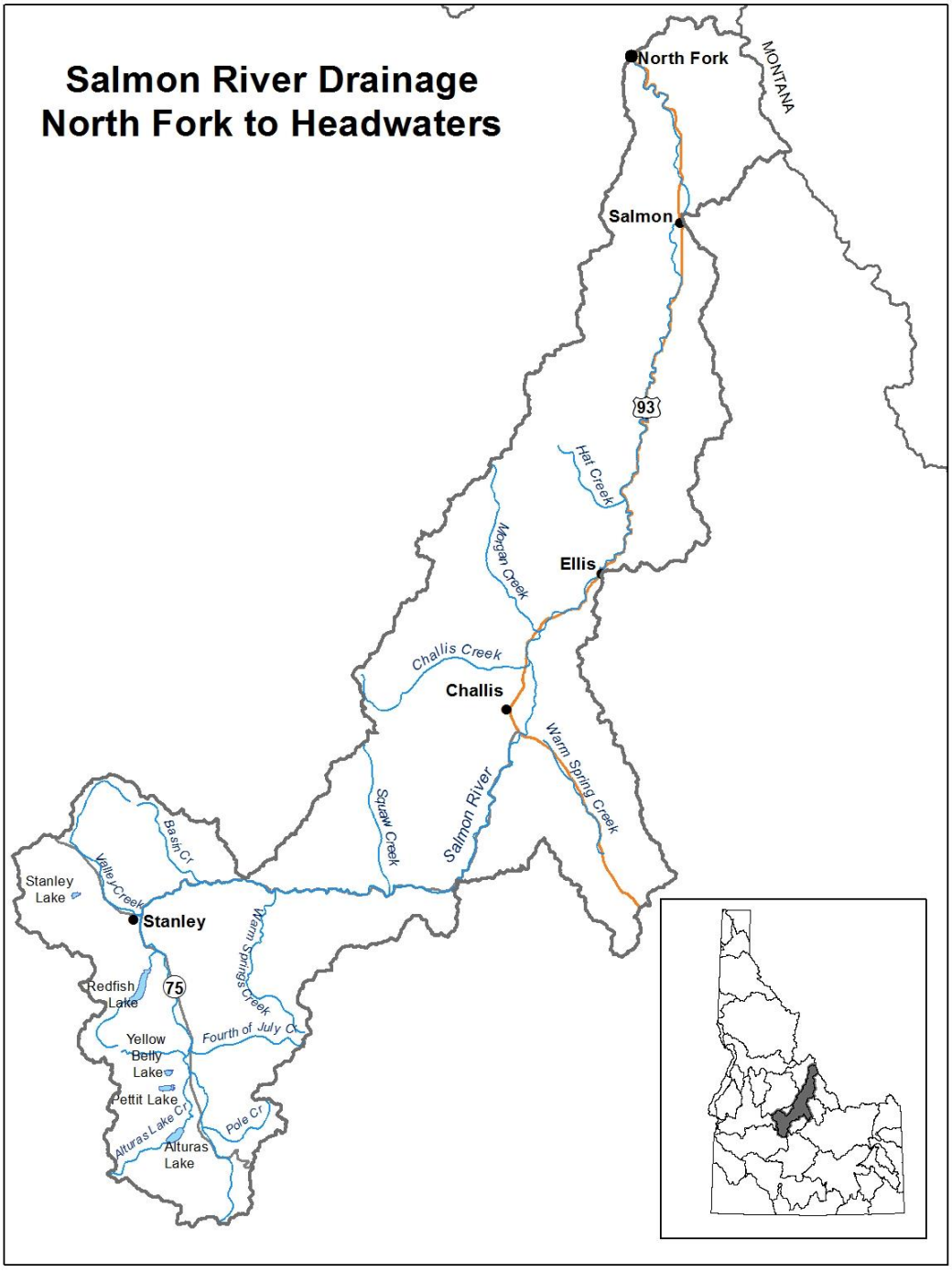
Salmon River Drainage
North Fork to Headwaters
North Fork
MONTANA
Salmon
93
Hat Creek
Morgan Creek
Ellis
Challis Creek
Challis
Warm Spring Creek
Salmon River
Squaw Creek
Basin Cr
Valley Creek
Stanley Lake
Stanley
Warm Springs Creek
Redfish Lake
75
Fourth of July Cr
Yellow Belly Lake
Pettit Lake
Alturas Lake Cr
Pole Cr
Alturas Lake

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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, USGS gage #13302500) from 1913 to 1916 and from 1920 to 2018. Annual mean discharge ranged from 1,024 cfs in 1994 to 3,163 cfs in 1965 and averaged 1,919 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, USGS gage #13296500) from 1922 to 1971, in 1974, from 1977 to 1991, and from 2001 to 2018. Annual mean discharge ranged from 467 cfs in 1977 to 1,856 cfs in 2017 and averaged 984 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 76,000 sterile hatchery rainbow trout are stocked annually in popular waters of the upper Salmon River drainage. Furthermore, fishing regulations in the main stem Salmon River 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.

Recent fluvial trout investigations identified important trout habitats in the main stem Salmon River and associated tributaries. The main stem Salmon River near Salmon is an important overwintering habitat for Bull Trout, Westslope Cutthroat Trout, and Redband Trout. Migrations into the Middle Fork Salmon River, North Fork Salmon River, and Lemhi River by Bull Trout and Cutthroat Trout wintering in this reach have been observed. The main stem Salmon River near Challis is also an important overwintering habitat for Bull Trout, Westslope Cutthroat Trout, and Redband Trout. In the spring and early summer Redband Trout utilize the main stem Salmon River, the Pahsimeroi River, and other tributaries near Ellis for spawning whereas Cutthroat Trout spawning activities occur upstream of Challis in the tributaries between Clayton and Stanley. For

spawning and summer rearing Bull Trout move into tributaries of the upper Salmon river, such as Warm Springs Creek and the East Fork Salmon River. Bull Trout spawning and rearing in upper Salmon River tributaries near Stanley (Yankee Fork Salmon River, Basin Creek, and Fourth of July Creek) demonstrated migrations into the Redfish Lake system for overwintering.

Historically angler use in the Upper Salmon River has focused primarily on steelhead, and Chinook when seasons permitted. Angler use focusing on trout in the Salmon River has increased, particularly between Challis and Stanley, in recent years.

Historically, this drainage supported sustainable anadromous and resident salmonid fisheries. Tributaries of the Salmon River between the North Fork and the headwaters provide critical spawning and rearing habitat, as well as thermal refugia for anadromous and resident species during the summer months. Maintaining or improving connectivity between main stem and tributary habitats is vital to develop sustainable fisheries in this area. Objectives for anadromous natural escapement are provided in the Anadromous Fish Management section of this plan. Both resident and anadromous populations will be monitored to assess their status relative to ESA recovery plans and fishery management objectives.

The main stem 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 Challis to the headwaters contains habitat for main stem 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, and continue maintenance on existing IDFG fish screens. IDFG will also seek to improve access to these spawning and rearing locations.

The Sawtooth hatchery program on the Upper Salmon River includes a conservation component intended to increase the abundance of naturally spawning fish through an integrated supplementation effort. A portion of the bloodstock is comprised of natural-origin adult Chinook. Additionally, returning hatchery-origin fish are released above the Sawtooth weir for natural spawning along with natural-origin returns. The minimum number of spawners is set at 300 fish. If that goal cannot be met, segregated fish are released above the weir. These guidelines are presented in the approved Hatchery Genetic Management Plans. Current monitoring includes ratios of spawners in each location, estimates of survival and replacement rates, and assessment of fish spawning distribution by origin via carcass surveys.

Hatchery steelhead are trapped and spawned at Idaho Power Company's Pahsimeroi Fish Hatchery and at Sawtooth Fish Hatchery, a Lower Snake River Compensation Plan facility. Offspring from these facilities are reared at Niagara Springs and Magic Valley fish hatcheries located on the Snake River in southern Idaho. Juveniles from these programs are transported to the upper Salmon River for release as yearling smolts. The majority of the adult steelhead from these programs return after spending one year in the ocean. IDFG is also working to develop a run of larger hatchery-origin steelhead of which the majority of adults return after spending two years in the ocean. Broodstock for these larger fish, oftentimes referred to as B-run steelhead, is sourced from Dworshak National Fish Hatchery in the Clearwater River basin. The primary objective of the program is to develop a locally adapted Upper Salmon River (USRB) stock of these larger steelhead. To date the program has generally relied on bloodstock from Dworshak National Fish Hatchery to support the program however research has demonstrated that the

locally adapted stock in the upper Salmon River returns at a significantly higher rate than does the Dworshak stock.

In order to increase the number of USRB steelhead produced, the Department will use Pahsimeroi Fish Hatchery as an interim bloodstock collection and spawning site. The Pahsimeroi Fish Hatchery will continue to act as an intermediate bloodstock collection location until a permanent bloodstock collection facility can be constructed. Current plans include working with the Shoshone-Bannock Tribes to construct a weir and trapping facility in the Yankee Fork Salmon River to serve multiple objectives.

The Sockeye program was initiated in 1991. As a result of this program, there is now natural production in Redfish and Pettit lakes. The captive bloodstock program is expected to continue to support Sockeye production in these two lakes and Alturas Lake, over the term of this plan. The completion of the Springfield Hatchery has increased stocking of juvenile Sockeye into Redfish Lake Creek. The Springfield Hatchery program has increased production from ~250,000 smolts to 1 million smolts and is currently investigating and optimizing release strategies to improve post-release juvenile survival into Redfish Lake Creek. The objective of this release plan is to restore an anadromous life-history and transition to re-building the Redfish Lake population with anadromous adults to meet future harvest and ESA recovery objectives. Anadromous Sockeye Salmon are trapped at the Sawtooth Fish Hatchery and Redfish Lake Creek weirs. These returning fish are either produced within the hatchery program (e.g. smolt releases) or from natural spawners (natural and hatchery adults spawning in Redfish, Pettit or Alturas lakes). Anadromous adults are tracked during their upstream migration from Bonneville Dam to Lower Granite Dam. If environmental conditions or other passage barriers preclude natural migration, then trap and transport of sockeye may be implemented.

During the last several decades fishing effort on Stanley Basin lowland lakes has declined appreciably, particularly in Redfish and Alturas lakes, while effort in Stanley Lake has remained steady and/or increased. This is likely due to the elimination of Rainbow Trout stocking in Redfish Lake after 1992, and poor returns of hatchery Rainbow Trout stocked in Alturas Lake, while a one-time stocking of Lake Trout in Stanley Lake in 1975 has developed into a low density, trophy fishery. Additional efforts will be directed into improving angling opportunities in the Stanley Basin Lakes.

In the previous planning period, it was identified that the fishery at Stanley Lake would be monitored and evaluated to help develop a long term management plan. The Lake Trout population has remained relatively small and stable, and the trophy size of Lake Trout has attracted anglers but concerns remain about the potential for Lake Trout to colonize other lakes in the basin and threaten native fish recovery efforts. Starting in the summer of 2017, IDFG formed the Stanley Lake Advisory Committee, comprised of members of the angling public and other parties interested in the future of Stanley Lake to gather input and guide management direction. Meetings occurred in August, September, and October, and began with a history of the lake and discussion of the current issues. Based on the current status of Lake Trout in Stanley Lake and the potential threats that they may pose to other connected lakes in the basin and Sockeye Salmon recovery efforts, the committee decided that some form of action is needed to reduce potential threats while maintaining some form of Lake Trout angling opportunity. The group discussed a wide array of options, from no action to full Lake Trout eradication. Below is a summary of the various management options discussed, as well as the pros and cons, and the feasibility of the options discussed.

Stanley Lake Management Options:

A. <u>No management actions</u> – this option involves no management action to control, reduce, or eliminate Lake Trout and would maintain the current angling regulations,

hatchery trout stocking regime, and periodic monitoring of the fishery. This maintains angling opportunity as-is (quality of which may decline if angler effort and harvest increases and subsequent regulation changes are not made to maintain the fishery), but does not address the potential for Lake Trout to migrate into other Sawtooth Basin lakes. A brief discussion on this ended with group consensus that this was not an acceptable option, given the examples of Lake Trout expansion in other geographic locations.

B. Full removal (elimination of Lake Trout fishery)

1. Mechanical – gillnetting (likely done by contract commercial netting crew). Stanley Lake is a relatively small lake, so removal would be more straight-forward than in other systems, but still involves commitment of time and money. This option may not assure 100% removal, and would likely require some level of annual netting effort.

2. Chemical – This option has a high potential for success, but does not guarantee 100% Lake Trout removal. Chemical treatment would require a large amount of toxicant (i.e. rotenone, antimycin), and has the potential for impacts to fish populations downstream of Stanley Lake. If this option were successful, it would result in loss of the entire Lake Trout fishery as well as native Kokanee, Bull Trout, and Cutthroat Trout populations, and could likely have downstream impacts.

This option, regardless of removal type, does not provide for maintaining any type of Lake Trout fishery. Additionally, chemical treatment would have regulatory and public perception challenges.

C. Transition to sterile Lake Trout population – This option involves some level of mechanical removal of Lake Trout (gillnets, trap nets, chemical) followed by replacement of those individuals with sterile Lake Trout. This management action could potentially be accomplished in a variety of ways:

1. An incremental approach where a portion of the existing Lake Trout population would be removed annually and replaced with an introduction of sterile Lake Trout of similar size to maintain the existing biomass. This would involve size selective removal using gillnets and trap nets over many years. Replacement of adult fish could be accomplished by transplanting adult sterile Lake Trout from a donor source population (potentially Bear Lake), and replacement of juveniles could be accomplished by hatchery production of sterile fish.

2. An accelerated approach which includes large-scale Lake Trout removal, most likely through contracted commercial netters. Lake Trout removal using this option would likely span one to two seasons. As in the staged approach, the Lake Trout fishery would be maintained by transplanting adult sterile Lake Trout from a donor population and stocking juvenile sterile Lake Trout raised at an IDFG hatchery.

Key Points:

-Both strategies would require a commitment from IDFG hatcheries to rear sterile Lake Trout, which is already being done for Bear Lake

(~17,500 annually raised at the Grace Fish Hatchery) and the addition of fish to this hatchery request would be minimal in comparison (<500 annually).

-Both strategies would also require agreement and cooperation from IDFG's Region 5 (Pocatello) staff as well as the Utah Division of Wildlife Resources (UDWR) for the removal and transplanting of sterile adult Lake Trout from Bear Lake, as this waterbody spans both states and is co-managed.

-Either strategy would maintain the Lake Trout fishery. However, because even intensive removal efforts will not be 100% effective, this strategy would not entirely eliminate the risk of fertile Lake Trout leaving Stanley Lake. For example, transitioning to a Lake Trout population that is 90% sterile would reduce risk of establishment in adjacent waters by a similar amount.

-All sterile Lake Trout stocked into Stanley Lake would receive an external mark (fin clip) as well as a PIT tag for identification during subsequent fertile fish removal efforts. PIT tags would also be used to detect any Lake Trout movement at existing PIT arrays in the Upper Salmon Basin, if it were to occur.

-Regarding option C-1, removal efforts over many years and replacement with sterile fish will eventually transition this population to predominantly sterile fish and greatly reduce the risk of establishment in other Sawtooth Basin lakes if migration occurs, but as long as fertile fish are in the population, this method does not provide control over population levels or potential establishment in other lakes. Natural reproduction during this period would increase the time necessary to transition the population to sterile. This scenario would need to be modeled to determine the potential timeline, as small-scale removal would likely be a very long-term project.

D. Transition to all male population – Similar to option C above, this involves mechanical removal of a portion of the population, but is then followed by the introduction of YY male Lake Trout. The Trojan Y chromosome approach (YY males) theoretically would shift the sex ratio of a wild fish population towards males by annually introducing hatchery produced male fish with a YY genotype to spawn with wild females (Gutierrez and Teem 2006). This theory has been modeled across a variety of scenarios and fish species (Teem and Gutierrez 2010, Thresher et al. 2013, Schill et al. 2017). IDFG has developed YY male Brook Trout (Schill et al. 2016) and experiments are currently under way to determine the efficacy of shifting sex ratios, thus reducing and/or eliminating undesirable wild brook trout populations (Kennedy et al. 2016).

Similar to option C above, the YY male strategy could be implemented in either an incremental or accelerated approach. This would involve selective gillnetting removal, followed by biomass replacement of YY hatchery Lake Trout of similar size of those removed. This approach would require YY Lake Trout bloodstock development and rearing space from IDFG hatcheries, and is realistically 15+ years out from implementation. This would maintain the trophy

Lake Trout fishery, and although it doesn't eliminate the risk of Lake Trout leaving Stanley Lake, it does eliminate the risk of establishment of fertile populations in other Sawtooth Basin lakes (assuming success of YY program in converting Stanley Lake Lake Trout population to all male). The biggest drawback to this approach would be the amount of time until implementation and the fact that there will be several generations of fertile Lake Trout persisting within Stanley Lake that could potentially establish populations in other lakes if they emigrate. Any approach using YY male stocking should be modeled to determine the number of years it will take to completely convert the Stanley Lake population to all males. This approach will also depend on results from Brook Trout trials, to determine if this technology can be successful in the wild.

To meet the objective of reducing risk to the surrounding lakes' native fish populations and Sockeye Salmon recovery objectives, while still maintaining Lake Trout angling opportunity, IDFG staff and the Stanley Lake Advisory Committee feel that the best management option for Stanley Lake is to transition the Lake Trout population to sterile in the most expedient manner possible. We believe this can be accomplished by implementing Option C-2 above. Additional future actions may include Option D, if the methods are verified with Brook Trout. This may be critical in converting any remaining fertile Lake Trout into a functionally sterile (all male) population.

The complete Stanley Lake Management Plan also includes a more detailed feasibility assessment for each management option, plus an implementation plan and timeline for the preferred approach. Additionally, at the request of the Advisory Committee, IDFG developed contingency plans for detecting and responding to Lake Trout invasions in other lakes throughout the basin. The full plan is available upon request through any IDFG office.

Objectives and Strategies

1. Objective: Maintain and improve existing natural spawning populations of salmon.

   Strategy: 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.
   Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity at select locations.

2. Objective: Maintain and improve fishing access.

   Strategy: Maintain fishing and boat access sites at a level acceptable to the public; develop boat launches, parking sites and sanitation facilities as necessary.
   Strategy: As opportunities allow, acquire/secure additional public fishing access sites.

3. Objective: Improve the quality of resident trout fishing in the main stem Salmon River during the summer months.

   Strategy: Use appropriate fishing rules to maintain and enhance Cutthroat Trout, Bull Trout and Redband Trout populations in the Salmon River.

   Strategy: Improve tributary habitat and connectivity to provide spawning, rearing and thermal refugia for resident trout populations. Work with federal land managers and private irrigators to alleviate passage problems in main-river and tributaries due to irrigation diversions and dewatering.

4. Objective: Reestablish sockeye natural production in historic rearing lakes using both captive and anadromous adults.

   Strategy: Evaluate reintroductions of sockeye into Redfish, Alturas and Pettit lakes.

   Strategy: Investigate hatchery release strategies and rearing practices to optimize post-release survival and abundance of juvenile Sockeye Salmon and anadromous adult returns.

5. Objective: Maintain and improve fish habitat in main stem and tributaries for all life-stages.

   Strategy: 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 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.

   Strategy: 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.
Strategy: Continue to monitor and evaluate benefits from habitat improvement projects.

Strategy: 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.

Strategy: Work with federal land managers and private irrigators to alleviate passage problems in main-river and tributaries due to irrigation diversions and dewatering.

6. Objective: Improve the return rate of stocked, catchable sized rainbow trout to the creel.
Strategy: Maintain high stocking frequency in heavily used areas and adjust, as needed, if angler distribution patterns change.

7. Objective: As funding and resources permit, evaluate the impacts of various hatchery steelhead release strategies on angler catch rates, adult straying, and resident trout displacement.

Strategy: Describe the effects to angler catch rate of direct hatchery steelhead releases compared to off-site release strategies.

Strategy: Describe the degree and mechanisms of adult hatchery steelhead straying in tributaries.

Strategy: 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	Wild	Enhance populations of wild trout by directing harvest on hatchery fish only (identified by adipose fin clips).
			Redband Trout		
				Put-and-take	
			Rainbow Trout (clipped)	General	
			Whitefish		Stock hatchery trout of catchable size to provide put-and-take fishery.
		Anadromous	Brook Trout		
				Conservation	
			Wild/natural steelhead		
			Chinook Salmon		Maintain adult harvest closure until upper Salmon River escapement goals are met.
				Anadromous	
			Hatchery steelhead		Monitor parr abundance and salmon spawning. Annually monitor salmon and steelhead abundance, productivity, and life history diversity upstream of Sawtooth Fish Hatchery.
			Chinook Salmon		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	General	Provide harvest fishery supported by natural production.
			Cutthroat Trout		
			Brook Trout		
			Whitefish		
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook Salmon	Conservation	Maintain adult harvest closure.
			Steelhead		
Lake Creek upstream from Williams Lake	5/	Coldwater	Redband Trout	Quality	Maintain spring closure to protect spawning Redband Trout.
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	Tiger trout	Put-and-take	Utilize tiger trout as a biological control of overpopulated Redside Shiner. Stock hatchery rainbow trout of catchable size to provide
			Rainbow Trout		
			Cutthroat Trout		

					put-and-take fishery. Explore Westslope cutthroat fry stocking to provide additional fishing opportunity.
Iron Lake	/18	Coldwater	Rainbow Trout Cutthroat Trout	Put-and-take	Stock hatchery rainbow trout of catchable size to provide put-and-take fishery. Assess Westslope cutthroat fry stocking to provide additional fishing opportunity.
Mosquito Flat Reservoir	/37	Coldwater	Rainbow Trout Kokanee Salmon Brook Trout	Put-and-take General	Stock hatchery rainbow trout of catchable and fingerling size to provide a harvest fishery. Explore opportunity of sterile kokanee introductions to enhance fishery.
Bayhorse Lakes	/22	Coldwater	Rainbow Trout Cutthroat Trout	Put-and-take	Stock hatchery rainbow trout of catchable size to provide put-and-take fishery. Assess Westslope Cutthroat fry stocking to provide additional fishing opportunity.
Stanley Lake	/182	Coldwater	Rainbow Trout Brook Trout Lake Trout Kokanee	General	Continue stocking catchable rainbow trout. Assess Westslope Cutthroat fry stocking to provide additional fishing opportunity. Refer to Stanley Lake Management Plan, and implement plans if feasible.
Redfish Lake	/1,502	Coldwater Anadromous	Rainbow Trout Kokanee Bull Trout Sockeye Salmon	General Conservation Conservation	Provide harvest fishery with Westslope Cutthroat Trout and/or sterile catchable Rainbow Trout if feasible. Develop management plan focused on kokanee management. Closed to harvest. Catch-and-release, only. Closed to harvest. Continue efforts to prevent extinction of sockeye salmon.
Yellowbelly Lake	/188	Coldwater	Cutthroat Trout Rainbow Trout Brook Trout Bull Trout	General Conservation	Closed to harvest. Catch-and-release, only.
Pettit Lake	/389	Coldwater Anadromous	Rainbow Trout Brook Trout Cutthroat Trout Kokanee Sockeye Salmon	General Conservation	Experimental reintroduction. Closed to adult harvest.
Alturas Lake	/838	Coldwater Anadromous	Rainbow Trout Kokanee Bull Trout Sockeye Salmon	General Conservation Conservation	Provide harvest fishery with catchable rainbow trout. If resources and time permit, promote kokanee management and recruitment of anglers to the lake. Closed to harvest. Catch-and-release, only. Experimental reintroduction. Closed to adult harvest.
Perkins Lake	/51	Coldwater	Rainbow Trout Whitefish Bull Trout	General Conservation	Provide harvest fishery with catchable Rainbow Trout and some natural production. Closed to harvest. Catch-and-release, only.

Alpine Lakes	/5,000	Coldwater	Rainbow Trout Cutthroat Trout Golden Trout Brook Trout Grayling Bull Trout	General Conservation	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. Closed to harvest. Catch-and-release, only.

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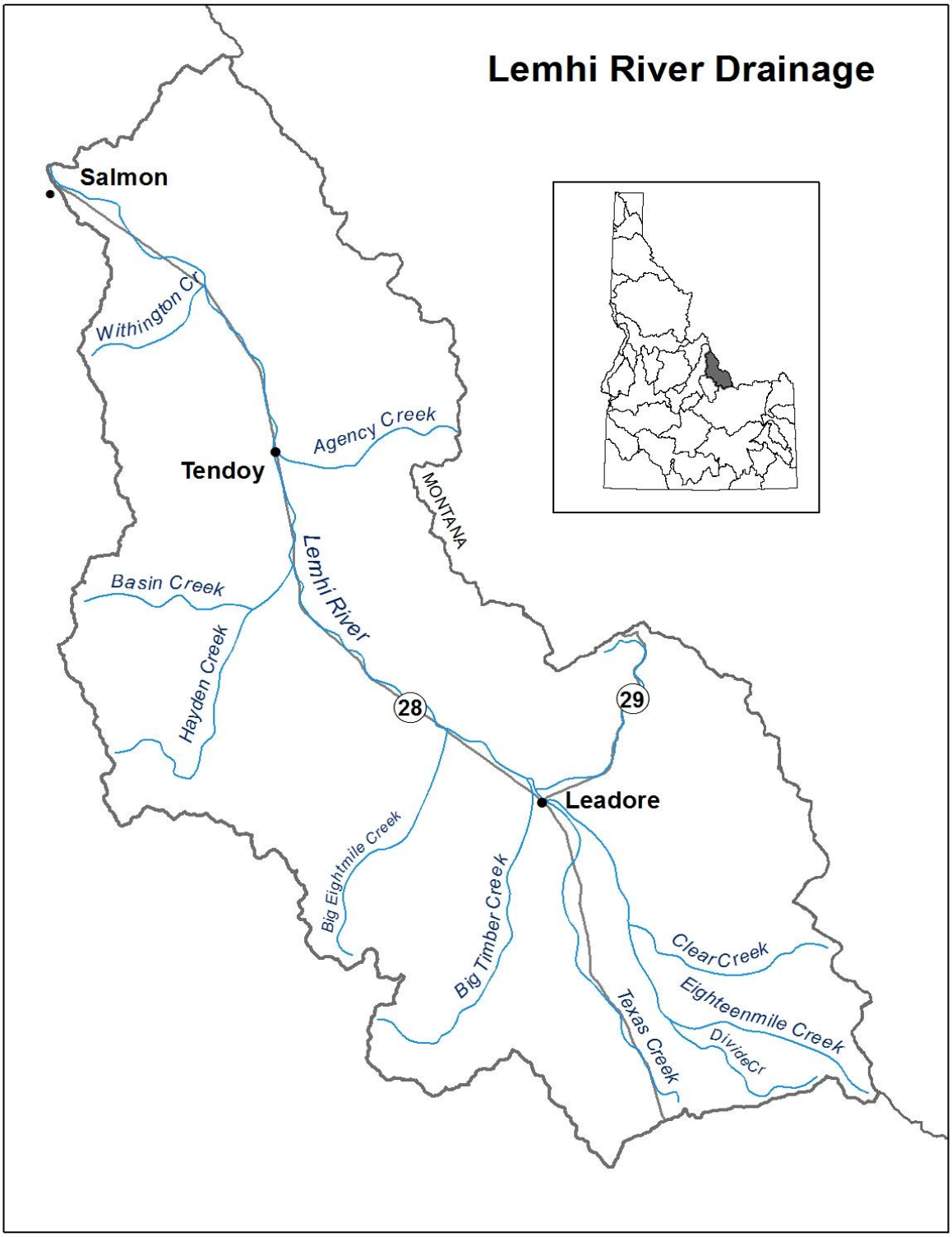

Lemhi River Drainage
Salmon
Withington Cr
Agency Creek
Tendoy
MONTANA
Lemhi River
Basin Creek
Hayden Creek
28
29
Leadore
Big Eightmile Creek
Big Timber Creek
Clear Creek
Eighteenmile Creek
Texas Creek
DivideCr

14. LEMHI RIVER DRAINAGE

Overview

The Lemhi River flows 60 miles from the confluence of Texas and Eighteenmile 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 irrigation diversion approximately 5.75 mi southeast of Salmon, Idaho, from 1994 to 1999 and 2001 to 2018. Annual mean discharge, ranged from 117 cfs in 2004 to 421 cfs in 1998 and averaged 261 cfs.

The valley includes approximately 37,000 acres of land irrigated for hay production and grazing. Irrigation is principally flooding from an extensive system of ditches. All major main stem 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 years, 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. Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives. Results will be used to guide future habitat restoration.

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. Hatchery steelhead were out-planted annually through the 1980s, and in the lower main stem and lower Hayden Creek during the last decade.

Extensive habitat restoration work has been undertaken in the Lemhi River drainage in the past 20 years, including the reconnection of 5 disconnected tributaries. Tributary reconnections have almost doubled the length of stream habitat available to anadromous salmonids. Adult escapement, juvenile rearing, and increased densities of juveniles have been documented in restored habitat. Steelhead spawning has been documented in all reconnected tributaries; however an increase in spring/summer Chinook or steelhead has not yet been detected. Over the next six years, anadromous management actions in the Lemhi River will emphasize maintaining natural spawning populations of spring Chinook and summer steelhead, but may include focused supplementation efforts in newly reconnected or restored habitats.

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 has increased since the early 1990's in response to habitat improvement projects and irrigation diversion screening as well as restrictive regulations (implemented in 1996). Despite increased Redband Trout abundance, the Lemhi River trout fishery remains underutilized due to a limited amount of angler access. There are currently only 6 recognized public access points to the Lemhi

River along its 60 stream miles. There is a need for increased angler access to this resource.

Objectives and Strategies

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

   Strategy: Limit out-planting of hatchery fish to support supplementation research, or to areas devoid of naturally producing populations, including areas associated with habitat and fish passage improvement projects.

   Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity at select locations. Relate fish performance to habitat improvements.

2. Objective: Increase angler access to the Lemhi River.

   Strategy: Negotiate with landowners to increase angler access by establishing fishing by permission, easements or purchases.

3. Objective: Continue to improve flows in main stem river reaches during peak irrigation season.

   Strategy: 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.

   Strategy: Continue evaluation of the current screening program to explore opportunities for improvements.

   Strategy: Install screens in any identified unscreened ditches.

5. Objective: Maintain and improve habitat quality throughout the Lemhi River drainage.

   Strategy: 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 main stem Lemhi River and maintain the quality of the Redband Trout population.

Strategy: Establish long-term population monitoring of the trout population and angler use/success through regularly scheduled surveys.

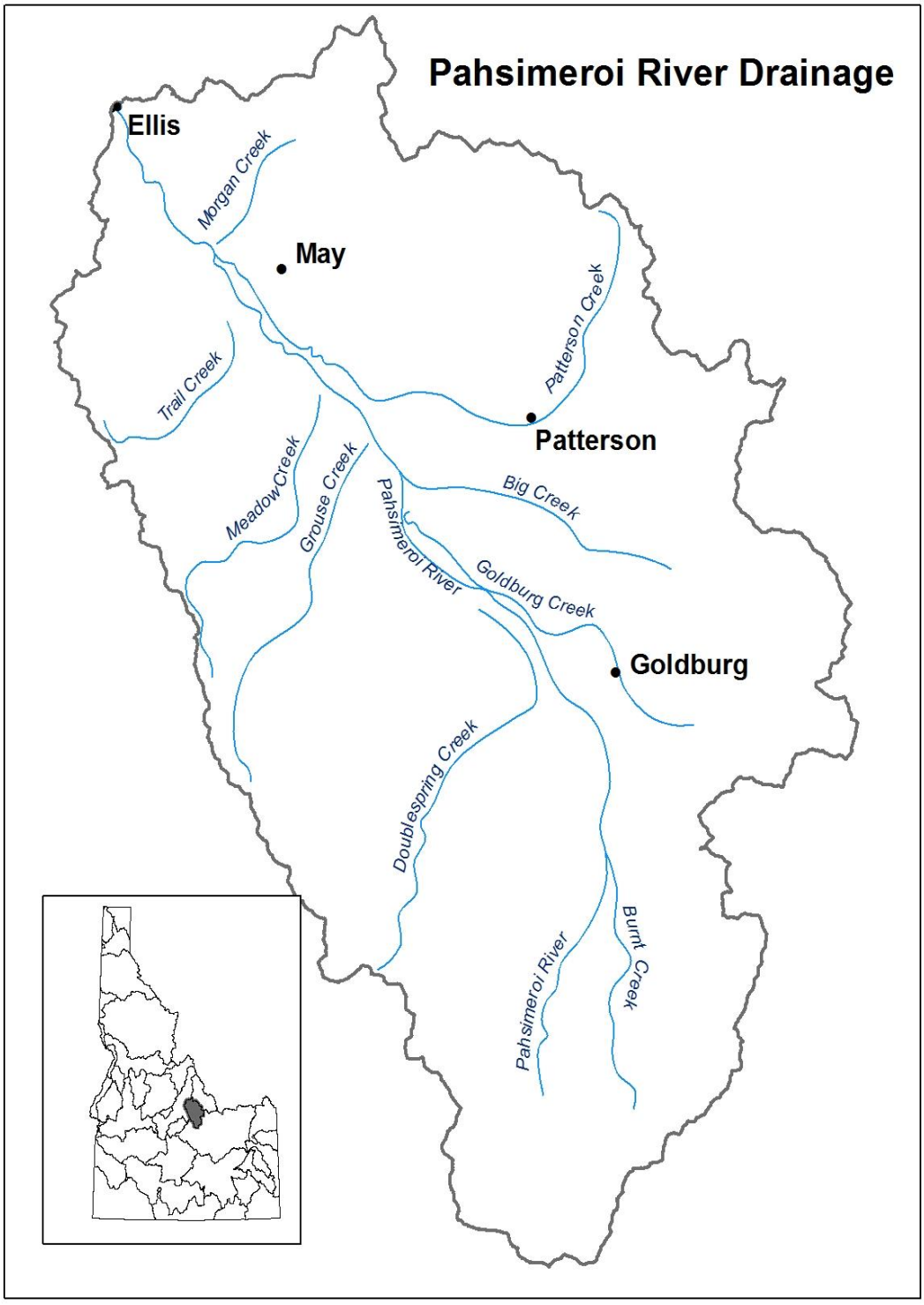
Strategy: Improve connection to tributary environments so fluvial fish have access to main stem environments.

Strategy: Use appropriate fishing rules to maintain and enhance Westslope Cutthroat Trout, Bull Trout, and Redband Trout populations.

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.

Strategy: 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 harvest fishery for naturally produced Redband Trout.
			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. Monitor parr abundance and salmon spawning. Annually monitor salmon and steelhead abundance, productivity, and life history diversity near the mouth and upstream from the Hayden Creek confluence.
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 Bull Trout	Conservation	
			Steelhead	Conservation	Closed to harvest. Catch-and-release, only.
		Anadromous	Chinook Salmon		Closed to adult harvest. Monitor parr abundance and salmon spawning. Annually monitor salmon and steelhead abundance, productivity, and life history diversity from Hayden Creek.
Meadow Lake	/12	Coldwater	Redband Trout Cutthroat Trout	General	Provide put-and-take fishery. Stock Cutthroat Trout fry to increase angling opportunities.
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
Meadow Creek
Grouse Creek
Pahsimeroi River
Big Creek
Goldburg Creek
Goldburg
Doublespring Creek
Pahsimeroi River
Burnt Creek

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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 2018. Annual mean discharge, ranged from 167 cfs in 2004 to 329 cfs in 1985 and averaged 230 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. The Pahsimeroi hatchery program includes a conservation component intended to increase the abundance of naturally spawning fish through an integrated supplementation effort. Starting in 2010 and guided by the recently developed Hatchery Genetic Management Plan, a portion of the production at Pahsimeroi Hatchery is integrated with Chinook of natural origin. Additionally, returning integrated hatchery-origin fish are released above the Pahsimeroi weir for natural spawning along with natural-origin returns. The minimum number of spawners is set at 300 fish. If that goal cannot be met with returning natural and integrated adults, segregated fish are released above the weir. A-run steelhead are also trapped at the weir, and bloodstock for upper Salmon River B-run steelhead may be collected in some years. 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 actions in the Pahsimeroi River will emphasize maintaining existing natural spawning populations of Chinook and steelhead. Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives.

Native resident fish species include inland fluvial and resident Redband Trout, a remnant fluvial Bull Trout population in the main stem and resident populations primarily in tributaries, Mountain Whitefish, and Westslope Cutthroat Trout. Non-native Brook Trout are also present. The number of large fluvial Redband Trout migrating into the Pahsimeroi River is increasing.

Objectives and Strategies

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

Strategy: 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. Implement Hatchery Genetic Management Plan (HGMP) for Pahsimeroi Chinook hatchery program. Monitor abundance, productivity, reproductive success, and life-history diversity.

Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity.

2. Objective: Increase angler access to the Pahsimeroi River.

Strategy: Negotiate with landowners to increase angler access by establishing fishing by permission, easements or purchases.

3. Objective: Minimize loss of juvenile salmon and steelhead to irrigation diversions on streams.

Strategy: Continue evaluation of the current screening program to explore opportunities for improvements.

Strategy: Install screens in any identified unscreened ditches.

4. Objective: Maintain and improve habitat quality throughout the Pahsimeroi River drainage.

Strategy: 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.

Strategy: 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 main stem Pahsimeroi River.

Strategy: Establish long-term population monitoring of the trout population and angler use/success through regularly scheduled sampling surveys.

Strategy: Use appropriate fishing rules to maintain and enhance Westslope Cutthroat Trout, Bull Trout, and Redband Trout populations.

Strategy: 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.

Strategy: 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. Annually monitor salmon and steelhead abundance, productivity, and life history diversity upstream from the Pahsimeroi Hatchery weir. Manage Chinook Salmon as an integrated population, following prescriptions and guidelines in FMEP and HGMP.
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.

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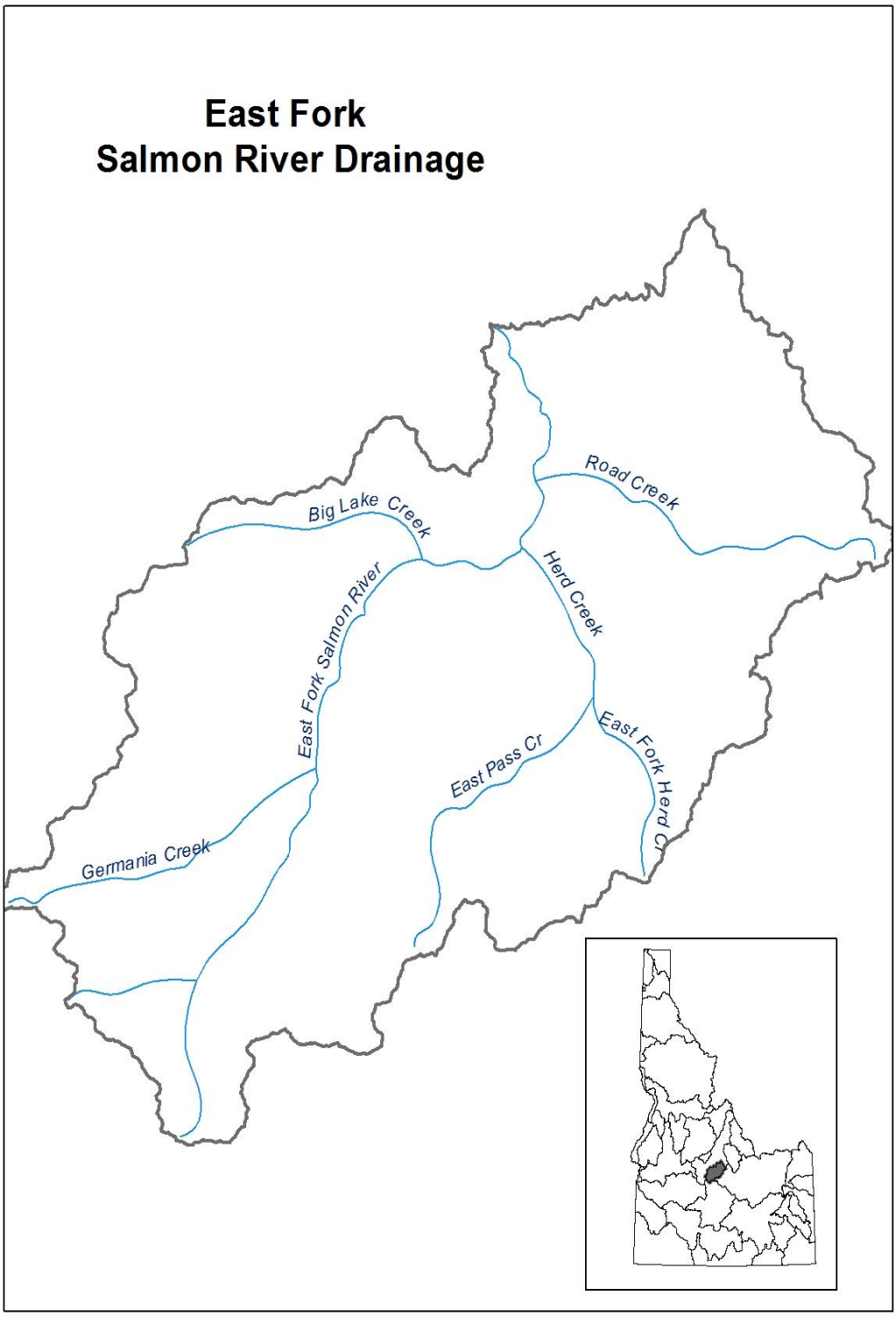
East Fork
Salmon River Drainage
Big Lake Creek
Road Creek
Herd Creek
East Fork Salmon River
East Pass Cr
East Fork Herd Cr
Germania Creek

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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.

In 2015, nearly 276,000 acres, primarily in the East Fork Salmon River drainage, were added to the National Wilderness Preservation System with a 'Wilderness' designation. The three new Wilderness areas are: the Hemingway-Boulders (67,998 acres), Jim McClure-Jerry Peak (116,898 acres), and the Cecil D. Andrus-White Clouds (90,769 acres). These newly designated wilderness areas encompass much of the headwaters and major tributaries to the East Fork Salmon River, as well as 142 high mountain lakes.

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 bloodstock supplementation program. Objectives for anadromous natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives.

The East Fork Salmon River also provides important spawning and rearing habitat for migratory Bull Trout and Westslope Cutthroat Trout that winter in the Salmon River between Challis and Salmon. Migrations between wintering areas in the Salmon River and spawning locations in the East Fork Salmon River and its tributaries average approximately 40 stream miles.

Objectives and Strategies

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

   Strategy: 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.

   Strategy: Monitor wild salmon and steelhead abundance, productivity, and life history diversity.

2. Objective: Maintain and improve fish habitat and water quality.

Strategy: Encourage land and water management that protects and enhances the quality of natural production areas.

Strategy: 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 main stem East Fork Salmon.

Strategy: Use appropriate fishing rules to maintain and enhance Bull Trout, Westslope Cutthroat Trout, and Redband Trout populations.

4. Objective: Improve resident and anadromous juvenile and adult fish passage to and from the Salmon River.

Strategy: Work with landowners to alleviate entrainment passage problems due to irrigation diversions. Screen identified unscreened diversions on the main stem East Fork Salmon River and associated anadromous tributaries.

5. Objective: Increase angler access to the East Fork Salmon River.

Strategy: 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.

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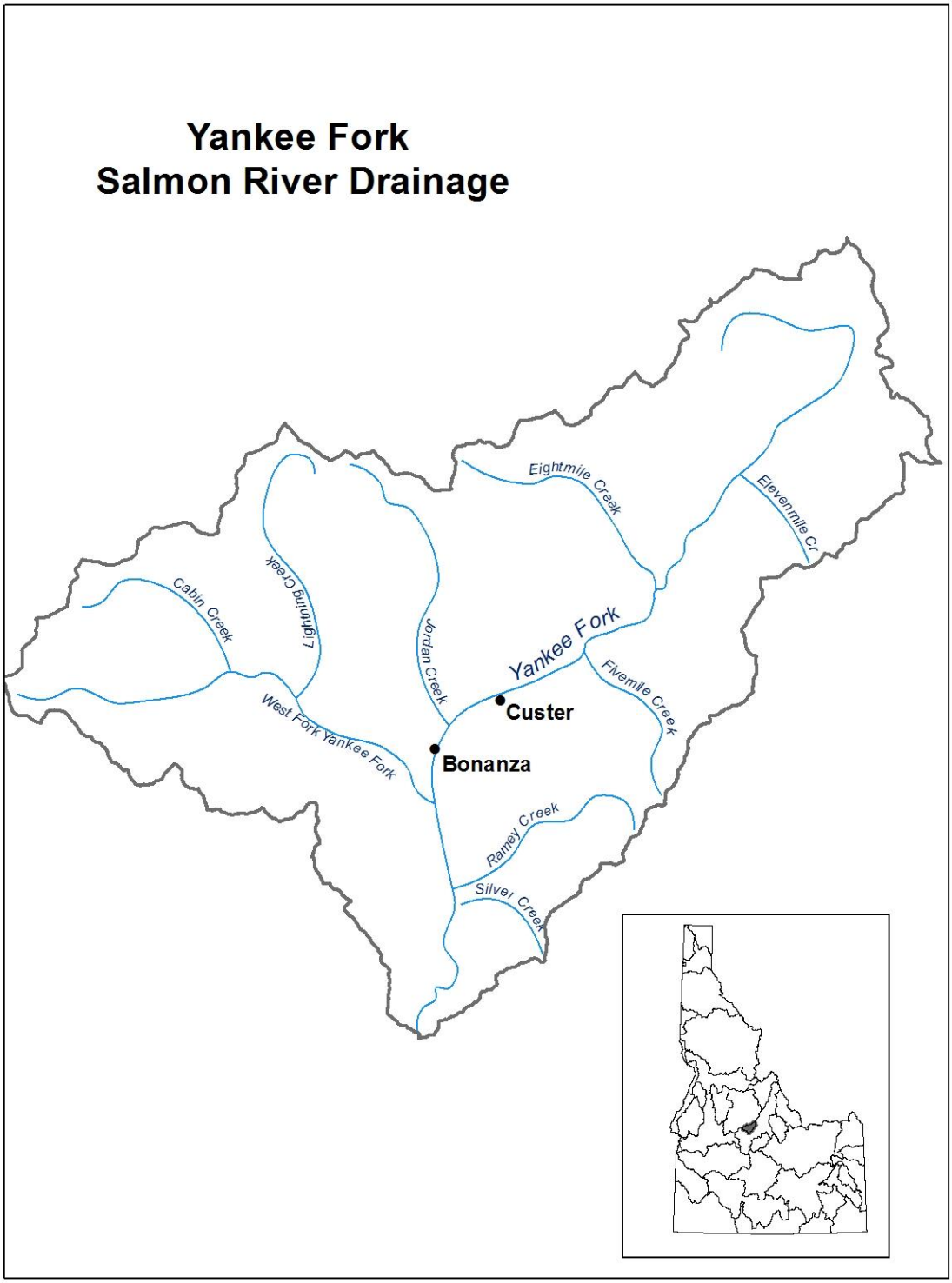
Yankee Fork
Salmon River Drainage
Eightmile Creek
Elevenmile Cr
Cabin Creek
Lightning Creek
Jordan Creek
Yankee Fork
Fivemile Creek
Custer
West Fork Yankee Fork
Bonanza
Ramey Creek
Silver Creek

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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.

The US Geological Survey (USGS) measured stream flow in the Yankee Fork Salmon River (gauge #13296000) near its mouth from 1921 to 1948, and again from 2011 to 2018. Annual mean discharge ranged from 102 cfs in 1926 to 424 cfs in 2017, and averaged 205 cfs.

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 main stem Yankee Fork near the mouth of Jordan Creek. The long-term impacts of this practice are not well known. Since the last planning period, significant efforts have been made to restore fish habitat in the previously dredged reach of the Yankee Fork Salmon River. These efforts have been coordinated through Trout Unlimited, BPA, BOR, USFS, Simplot Corp., the Shoshone-Bannock Tribes, and the State of Idaho, while IDFG has provided technical assistance. Habitat restoration efforts have focused on floodplain connectivity, side channel connection and development, adding stream channel complexity through the addition of large woody debris, as well as riparian enhancement. Habitat restoration projects are ongoing in the Yankee Fork Salmon River drainage to reduce dredge tailings and restore natural river channel characteristics to the stream.

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. Objectives for natural escapement are being developed. Populations will be monitored to assess their status relative to management objectives. Hatchery steelhead have been out-planted into this drainage and will be used for natural production augmentation. Surplus adult hatchery Chinook Salmon from Sawtooth Hatchery are out-planted (when available) into the Yankee Fork drainage to supplement natural spawning, and hatchery smolts are released annually. Monitoring has been coordinated with the Shoshone-Bannock Tribes (SBT) who have recently installed an instream PIT array, screwtrap, and temporary adult weir and trap. Long-term plans for the Yankee Fork Salmon River include the development of a permanent capture facility for use in the SBT Crystal Springs Hatchery program and for establishing the Salmon River B-run steelhead program. The Crystal Springs Hatchery program will utilize a locally adapted bloodstock developed from the Yankee Fork Salmon River and produce an estimated 600,000 smolts for this program. The rebuilding of this Chinook Salmon population will contribute to recovery objectives as well as benefit tribal and non-tribal anglers. Returns of adult hatchery Chinook Salmon to the Yankee Fork will provide additional angling opportunities for tribal and non-tribal anglers.

Native resident species include inland Redband Trout, fluvial and resident Bull Trout and Westslope Cutthroat Trout populations, and Mountain Whitefish. As part of the habitat restoration projects mentioned above, several historic dredge ponds that were stocked with catchable Rainbow Trout have now been converted to side channel habitat. There are three ponds remaining that are still stocked and provide angling opportunity. The Yankee Fork is as a very important spawning area for fluvial Bull Trout that winter in the Redfish Lake system. The drainage also provides spawning and rearing habitat for fluvial Cutthroat Trout which winter downstream in the Salmon River near Challis.

Objectives and Strategies

1. Objective: Maintain/improve existing natural/wild populations of Chinook Salmon and steelhead.

   Strategy: Monitor wild salmon and steelhead abundance.

   Strategy: Use fishing rules that assure Idaho sport fishing is not responsible for declines in Chinook Salmon and steelhead populations.

   Strategy: Coordinate efforts with Shoshone-Bannock Tribes to protect existing Chinook Salmon spawners.

2. Objective: Maintain and improve fish habitat and water quality.

   Strategy: Continue to support the establishment of the dredged portion of the Yankee Fork main stem to a natural state.

   Strategy: 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.

   Strategy: Support the reconnection of tributary habitats to main stem environments in the dredged portion of the drainage where these habitats are disturbed.

   Strategy: 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. Monitor parr abundance and salmon spawning.
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.

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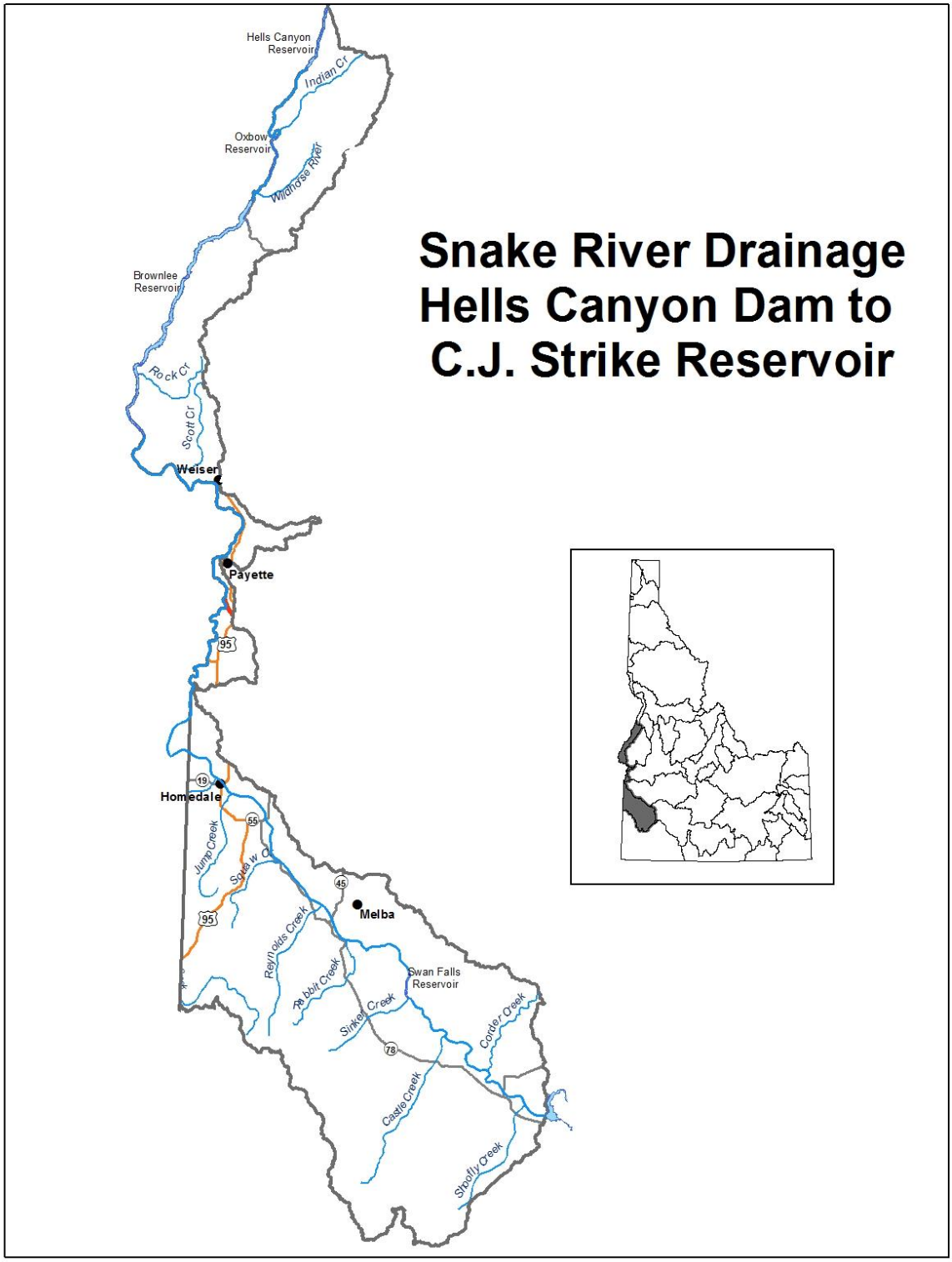

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18. SNAKE RIVER DRAINAGE FROM HELLS CANYON DAM TO C.J. STRIKE DAM

Overview

The Snake River between Hells Canyon and C.J. Strike dams (265 miles) has been greatly altered by impoundments, diversions, and riparian habitat modifications. Within this reach, 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 and form reservoirs that total 12,050 surface acres. There is 154 miles of free-flowing river remaining within this reach. The Snake River impoundments between Hells Canyon and CJ Strike dams support populations of warmwater and coldwater game fish.

IDFG has been participating in the long-term and ongoing relicensing process for the Hells Canyon Complex and was involved in processes associated with establishing new licenses for CJ Strike and Swan Falls dams. 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.

Reservoir fisheries within Brownlee, Oxbow, Hells Canyon, and Swan Falls reservoirs support the primary fisheries in this management area. Smallmouth Bass are widely distributed, abundant, grow to large sizes, and are preferred by many anglers. Panfish, especially crappie, attract many anglers to Brownlee and Oxbow reservoirs during cyclical upswings in abundance. Channel Catfish are highly abundant throughout most of these reservoirs and frequently targeted especially in the Snake River and upper portion of Brownlee Reservoir. Other species such as Bluegill, Largemouth Bass, Flathead Catfish, or White Sturgeon provide fishing opportunity, but compose a minor portion of fish communities and do not support a high amount of fishing effort.

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, and Flathead Catfish. Common Carp and Largescale Sucker compose a significant portion of the biomass. 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, an increasing portion of which are hatchery origin. A recently-completed study indicated that Smallmouth Bass between Brownlee and Swan Falls dams are highly migratory, often moving between main river, reservoir, and tributary habitats. In this portion of the Snake, Smallmouth Bass likely act as one large interconnected population, and are harvested at low rates. Water quality in this reach is generally impaired from excess nutrients, suspended sediments, and high temperatures. These conditions create ideal conditions for aquatic plant growth which reaches nuisance levels at certain times of the year and hampers fishing opportunities.

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, and the Owyhee-Bruneau River Drainage.

Minor or small tributaries to the Snake River within this planning section flow from the Seven Devils, Cuddy, Hitt, 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 with emphasis on restoring habitat or avoiding further habitat degradation.

Objectives and Strategies

1. Objective: Provide a diversity of Smallmouth Bass fishing experiences within the river and main stem impoundments.

   Strategy: Assess age structure, growth, condition, as well as angler use and exploitation of Smallmouth Bass.

   Strategy: Periodically evaluate regulation alternatives designed to increase catch rates for larger Bass in Brownlee, Hells Canyon, or Oxbow reservoirs as well as reaches of the Snake River. Gauge public opinion for alternatives.

2. Objective: Maintain or increase fishing opportunity for White Sturgeon.

   Strategy: Monitor angler catch rates and continue to cooperate with Idaho Power Company in implementing 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 fishery management agencies to monitor abundance, study recruitment, and ensure persistence of White Sturgeon 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) as well as C.J. Strike and Swan Falls. The WSCP will also include actions associated with the Hells Canyon Complex when they are relicensed. The plan is in close alignment with the Department's White Sturgeon Management Plan (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. This might include stocking of hatchery reared fish, egg or larval repatriation, as well as 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.
   d. Monitor growth and survival of recently-stocked hatchery White Sturgeon downstream of CJ Strike and Swan Falls dams. Optimize stocking densities utilizing growth and survival studies.

   Strategy: 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 be especially vulnerable to stresses or mortality associated with angling.

Strategy: Increase angler awareness of White Sturgeon biology and life history, especially habitat requirements necessary for successful recruitment.

Strategy: Publicize sturgeon fishing regulations and proper handling techniques, especially sliding sinker, dropper line, and barbless hook requirements as well as prohibitions on removal from the water, through a variety of media outlets.

3. Objective: Maintain or increase fishing opportunity for panfish, especially crappie, in Brownlee and Oxbow reservoirs.

Strategy: Assess age structure, growth, condition, recruitment, as well as angler use and exploitation of crappie.

Strategy: Publicize crappie population status to inform anglers.

4. Objective: Promote and increase awareness of under-utilized fishing opportunities for Channel Catfish.

Strategy: Publicize population status, fishing locations and access areas, as well as fishing techniques for Channel Catfish.

5. Objective: Maintain or improve native Bull Trout and Redband Trout populations in Snake River tributaries.

Strategy: Monitor distribution and abundance of tributary populations of Bull Trout and Redband Trout.

Strategy: Provide technical assistance regarding proposed land and water management activities of private, state, and federal lands. Where feasible, collaborate with landowners and water managers to improve habitat and water management to restore connectivity between tributaries and the main stem Snake River.

Strategy:Seek opportunities to improve aquatic and riparian habitats for these species.

6. Objective: Ensure appropriate mitigation for operational impacts of Idaho Power Company's hydroelectric facilities on the Snake River.

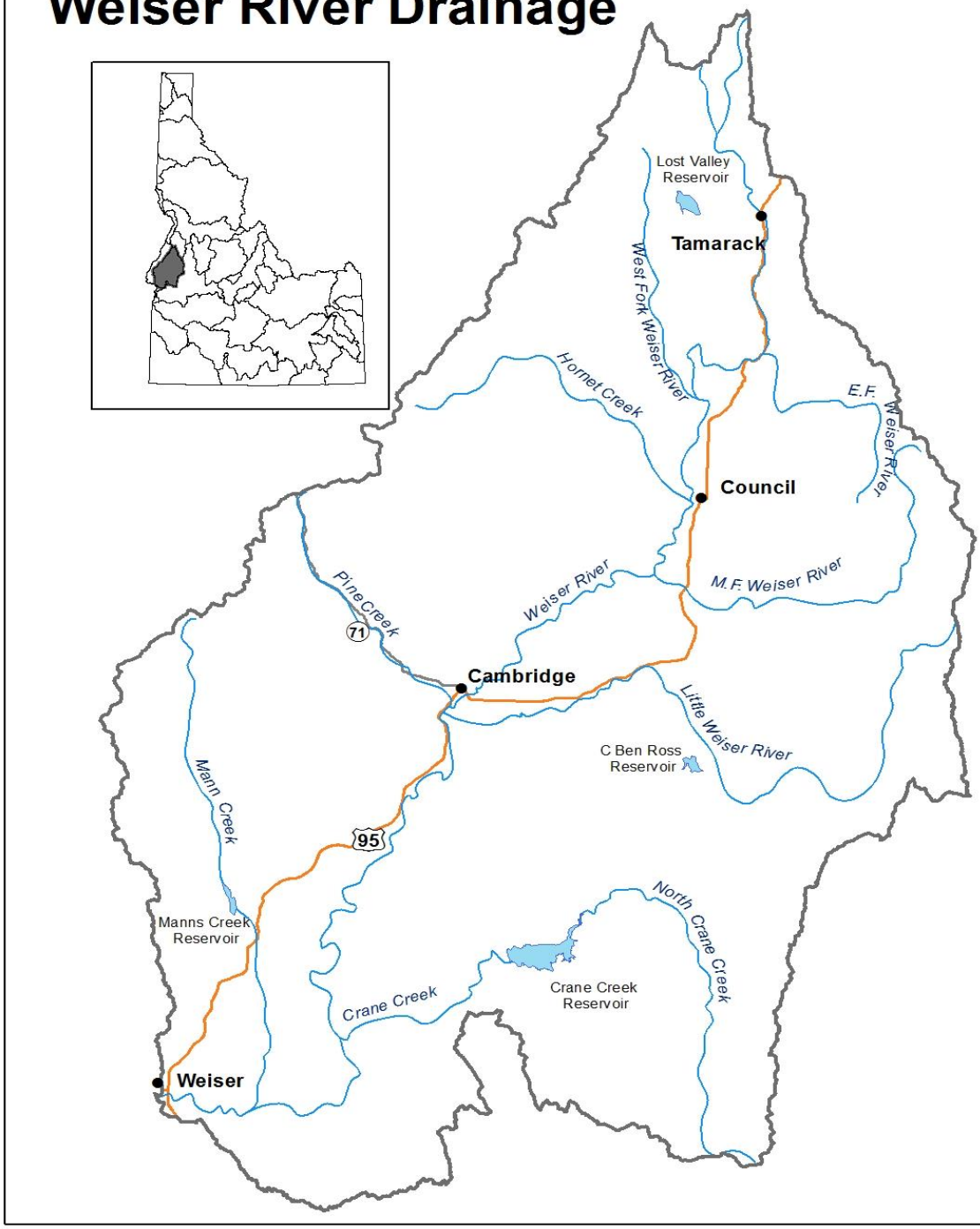
Strategy: Coordinate with Idaho Power Company in the implementation of license conditions required as part of new federal license for the C.J. Strike and Swan Falls dams. Maintain involvement in FERC-relicensing process for the Hells Canyon Complex.

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 White Sturgeon	General Conservation	Monitor growth, age structure, and condition of Smallmouth Bass, catfish, and crappie. Assess angler exploitation of Smallmouth Bass, catfish, and crappie. For crappie, develop methods to predict fishing quality. Seek opportunities to secure additional or improved recreational access for the upstream portion 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 White Sturgeon	General Conservation	Monitor bass and catfish population size, growth, age structure, and condition. Assess angler use, catch and harvest, and satisfaction. Seek opportunities to secure additional recreational access between Swan Falls Dam and Celebration Park. Closed to harvest. Catch-and-release, only. Optimize stocking densities by monitoring growth, survival, and population abundance. 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 and by working with private landowners.
Swan Falls Reservoir	/900	Mixed	Largemouth Bass Smallmouth Bass Bullhead Yellow Perch Bluegill Channel Catfish White Crappie Black Crappie Pumpkinseed Mountain Whitefish Flathead Catfish White Sturgeon	General Conservation	Determine fish population species composition and size structure. Monitor sturgeon population status and mortalities at Swan Falls Dam. Determine sources of adult mortality and ameliorate. 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	General	Manage for native Redband Trout; advocate improved range and riparian management through BLM planning process and by developing partnerships with private landowners
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	Maintain quality fishing opportunities for Smallmouth Bass. Determine population abundance, growth rates, age structure, and exploitation rates.
			White Sturgeon	Conservation	Closed to harvest. Catch-and-release, only. Monitor sturgeon population abundance, angling effort, and catch. Optimize stocking densities. Continue evaluation of angling impacts on local populations. Determine sources of adult mortality and ameliorate. Utilize options outlined in the White Sturgeon Management Plan to improve the fishery.

Weiser River Drainage



19. WEISER RIVER DRAINAGE

Overview

The Weiser River Basin is located in southwestern Idaho. It drains from the Seven Devils Mountains to 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 until entering 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 basin is 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 as total outflows far exceed reservoir storage; however, in the lower drainage, discharge is extremely low during summer 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 main stem storage reservoirs. Private irrigation districts have constructed four reservoirs on tributary streams. Those reservoirs, Lost Valley, Ben Ross, Crane Creek, and Mann 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 reservoirs have gone dry. Mann Creek Reservoir possesses a minimum pool. Ben Ross and Crane Creek reservoirs are best suited for production of warmwater game species. Mann Creek Reservoir supports a mixed fishery of warmwater species, hatchery Rainbow Trout, and Redband Trout (that possess some level of introgression with Rainbow 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 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. Smallmouth Bass from the Snake River and Brownlee Reservoir make spring migrations into this reach, where they generate angling interest. 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 high densities of 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 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.

Isolated populations of Bull Trout occupy individual tributaries to the Little Weiser River, the East Fork Weiser River and Hornet Creek.

Objectives and Strategies

1. Objective: Preserve populations of Bull Trout to meet recovery goals.

   Strategy: Conduct population assessments in the five Bull Trout populations every five years. The five populations are: upper Hornet Creek, upper East Fork Weiser River, Dewey Creek, Anderson Creek and Sheep Creek.

   Strategy: Work with land management agencies and private landowners to preserve and improve habitat. Identify and remedy barriers that hinder 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 maintain or improve population abundance.

   Strategy: Limit hatchery trout to reservoirs and limited stream sections near major access points, such as campgrounds. Use only sterile Rainbow Trout stocks.

   Strategy: Define and sample three to five core Redband Trout populations within the drainage. Collect population data and genetic samples within this planning period.

   Strategy: Work with land management agencies and private landowners to preserve and improve habitat. Identify and remedy barriers that hinder fish migration. Support efforts to provide improved water quality and summer stream flow throughout the drainage.

3. Objective: Create community fishing ponds in underserved areas by working in cooperation with local city or county governments.

   Strategy: Utilize available funds and grants to construct local community fishing ponds.

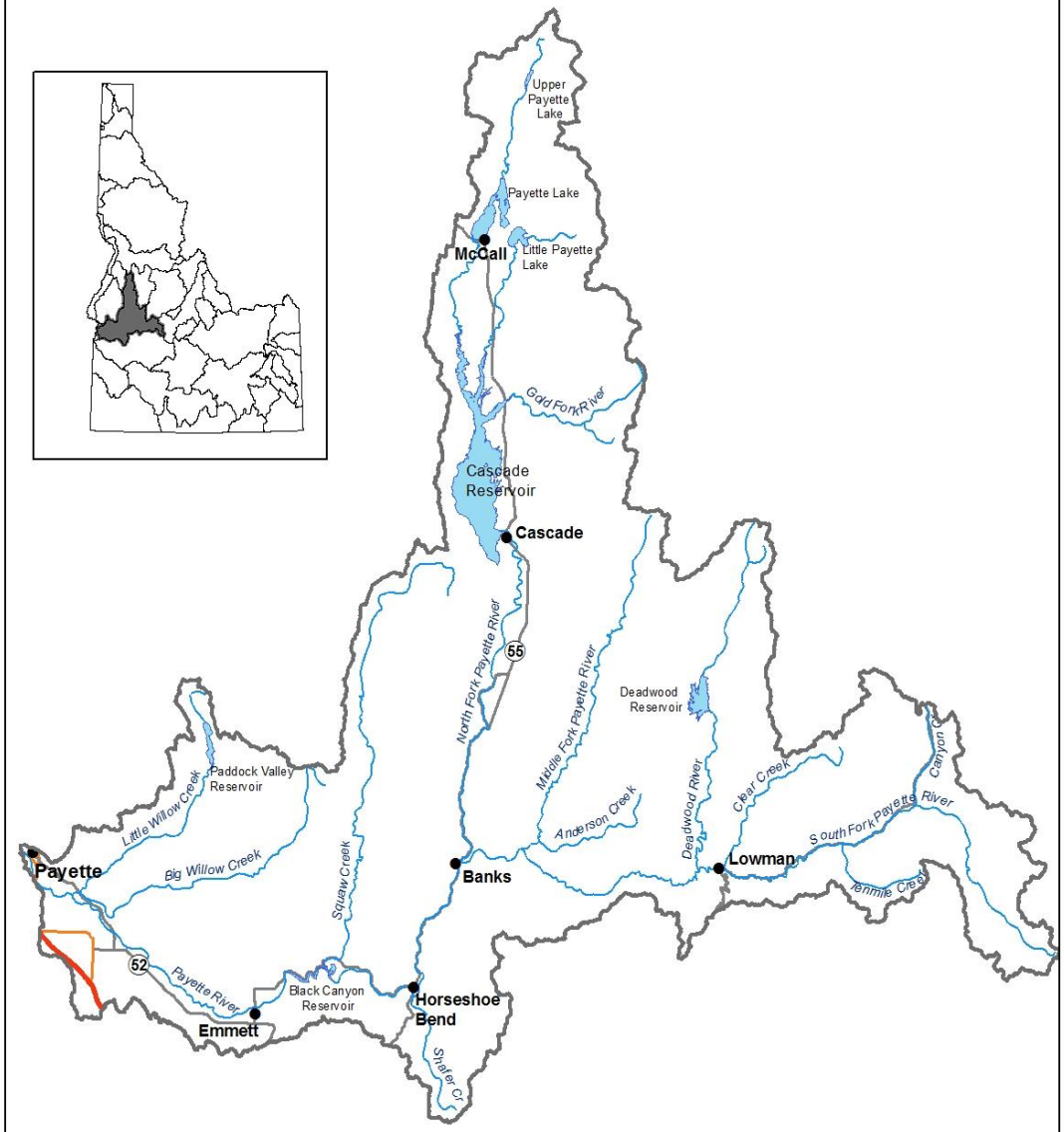
4. Objective: Improve water quality and sport fish population in Crane Creek Reservoir.

   Strategy: Reduce densities and biomass of Common Carp through biological, 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, acquire, and develop fishing and boating access sites with emphasis between Galloway Dam and the mouth.
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. Publicize Smallmouth Bass fishing opportunities in the Weiser River Canyon. 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 and periodically monitor harvest. Adjust stocking practices or regulations as needed. Monitor adfluvial Redband Trout and Largemouth Bass abundances and harvest rates. Determine whether harvest rates are negatively affecting fishery quality. 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 populations 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. 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 12- to 16-inch Rainbow Trout from catchable Rainbow Trout stocking. Expect overpopulation of Yellow Perch on a 5- to 6-year cycle.. Utilize 12 inch stocked triploid Trout and monitor Yellow Perch populations
Weiser Community Pond	/3	Mixed	Rainbow Trout Largemouth Bass Smallmouth Bass Bluegill Bullhead Channel Catfish	Community/Put-and-take	Manage to provide opportunities for novice anglers and youth. Supplement warmwater fish populations as needed by transferring fish. Publicize stocking schedule and fishing trailer events to maximize angler outreach and education.

Payette River Drainage



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20. PAYETTE RIVER DRAINAGE

Overview

The Payette River basin is located 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. Anadromous 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 are the most numerous 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 low-density populations of Redband Trout and is one of the more popular recreational floating rivers in the region. Due to low wild trout abundance, a sterile hatchery Rainbow Trout stocking program was re-instituted on an experimental basis during 2017. 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 have reduced reservoir capacity and habitat quality. Furthermore, a construction project in 2012-2013 and associated reservoir drawdowns led to fish kills and reduced sport fish abundances in the reservoir and the Lower Payette River. Smallmouth Bass have been slow to recover after these fish kills. 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 after a series of 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 Salmon. 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 during August through September of most years.

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 fish populations by fall gillnetting series. Yellow Perch numbers and size have increased and the fishery has rebounded as a destination. Northern Pikeminnow numbers and ratio of adults to juveniles has remained within goals.

High mountain 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 467 high mountain 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 high mountain lakes in the Payette River drainage have self-sustaining populations.

Objectives and Strategies

1. Objective: Provide a diversity of fishing opportunities within the Payette River drainage.

   Strategy: Concentrate hatchery catchable stocking in locations where the highest return-to-creel will occur.

   Strategy: Manage for wild trout where habitat and fish populations will sustain an acceptable fishery.

   Strategy: Increase warm water angling opportunity by acquiring access agreements or title to ponds in the Lower Payette River drainage.

   Strategy: Seek funding for construction of new community fishing waters near underserved municipalities.

   Strategy: Improve land-use management through working with federal, state, and private land owners on proper land uses to increase soil stability in the drainage.

   Strategy: 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.

   Strategy: Continue to provide technical assistance regarding activities that may reduce fish populations, aquatic habitat quality, or access

   Strategy: Work with Valley County and landowners to provide public access to the North Fork Payette River.

3. Objective: Maintain/improve the Payette Lake kokanee fishery by reducing Lake Trout predation.

Strategy: Reduce numbers of Lake Trout with gillnetting efforts and angler harvest over the next planning period; maintain Lake Trout at low densities to improve kokanee survival.

Strategy: Supplement kokanee population with fingerling stocking starting in 2020 and monitor results with kokanee sampling gill nets.

4. Objective: Monitor the Yellow Perch fishery recovery in Cascade Reservoir.

Strategy: Monitor Yellow Perch recruitment with gill net surveys and creel catch rates.

Strategy: Monitor Northern Pikeminnow abundance, size and age structure, with gill net surveys; implement control measures when abundance of adults exceeds management target

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.

Strategy: Continue angler educational signage about Bull Trout identification and no-harvest rules in the drainage.

Strategy: Continue to define and monitor distribution and abundance of Bull Trout.

Strategy: 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**.**

Strategy: Complete surveys of the majority of alpine lakes in the drainage.

Strategy: Modify stocking practices to meet sportfish and conservation objectives.

Strategy: 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.

Strategy: Limit trout stocking to limited stream sections near access points. Use only sterile Rainbow Trout.

Strategy: 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, especially in relationship to federal construction projects at Black Canyon Dam Foster recovery of Smallmouth Bass in this reach by translocating fish. Develop angler access points between Letha, Emmett Segment WMA, and Plaza bridges.
Black Canyon Reservoir	/1,100	Warmwater	Smallmouth Bass Channel Catfish Largemouth Bass Black Crappie Bullhead Bluegill Tiger muskellunge Yellow Perch	General	Monitor fish composition and size structure during this six-year period. Stock or transfer game fish after federal construction projects are completed. Determine if the public is interested in the development of Channel Catfish or tiger muskellunge fisheries. Evaluate if stocking occurs.
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 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. Develop new ponds in underserved areas. Work with City of Fruitland to develop community fishing pond.
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. 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.

Lake Fork Creek from Little Payette to headwaters		Coldwater	Redband Trout Brook Trout	General	
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 Kokanee	General	Maintain as a hatchery-supported fishery due to high angler use and excellent access. Keep year-round season due to public support. Increase fall stocking with hatchery catchable Rainbow Trout. Stock large fingerling Brown Trout to provide diversity and a large fish component to the harvest. Continue kokanee stocking at low density.
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 Arctic 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 Arctic 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 Yellow Perch 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 10 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, 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. Evaluate translocating Smallmouth Bass from other nearby populations.
Upper Payette Lake	/400	Coldwater	Rainbow Trout Brook Trout	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. Investigate introducing kokanee to the lake.
Payette Lake	/5,337	Coldwater	Rainbow Trout Cutthroat Trout Kokanee Lake Trout	General General	Maintain kokanee numbers and therefore average adult kokanee size at 10 to 12 inches through stocking. 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. Reduce lake Trout population by gillnetting. 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. Encourage water managers to improve flow and temperature regimes
Deadwood Reservoir and tributaries	/3,000	Coldwater	Kokanee Cutthroat Trout Rainbow Trout Fall Chinook Salmon Brook Trout Mountain Whitefish	General	Manage kokanee fishery to yield age-three spawners with mean length of approximately 12 inches by controlling escapement or stocking when needed. Monitor kokanee size and year classes with gill net surveys. Monitor self-sustaining population of westslope cutthroat Trout, hybrids, and Rainbow Trout. Evaluate fall Chinook Salmon and fingerling Rainbow Trout stocking.

			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only. Collaborate with BOR to assess abundance and life history, and entrainment losses.

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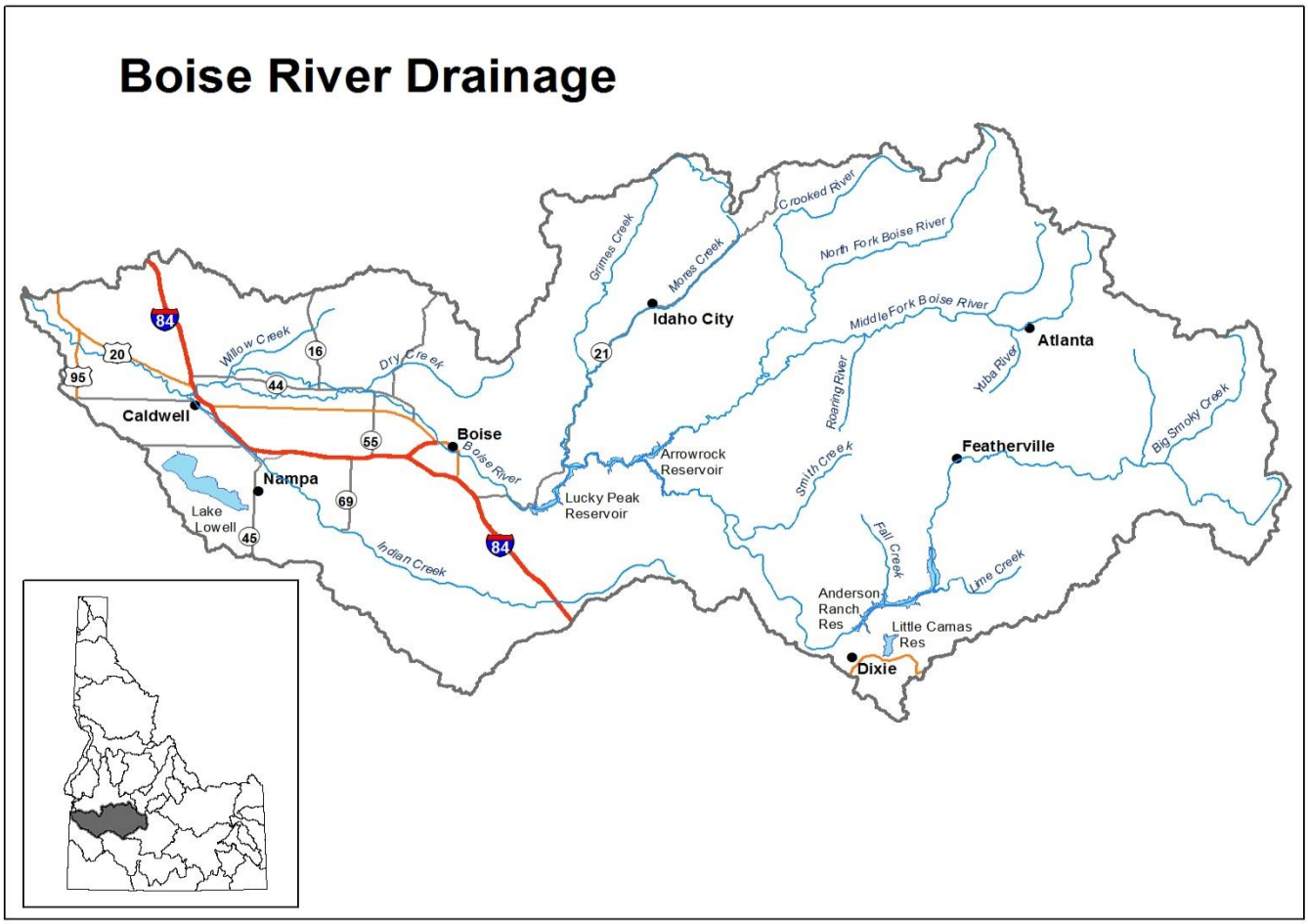
South Fork Payette River from Mouth to headwaters, including tributaries	41/	Coldwater	Redband Trout Cutthroat Trout Brook Trout Mountain Whitefish Rainbow Trout Bull Trout	Wild General Conservation	Periodically evaluate catch rates and wild trout densities with angler interviews and snorkeling surveys. Continue stocking of catchable-sized Rainbow Trout. Utilize sterile trout only and stock near campgrounds and other easily-accessed areas from the mouth of the Deadwood to Ten Mile Creek. Evaluate return-to-creel of stocked trout. 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. Extirpate brook Trout with net and electrofishing removals combined with stocking of YY males.

7202


Boise River Drainage
Idaho City
Atlanta
Featherville
Caldwell
Boise
Nampa
Lake Lowell
Arrowrock Reservoir
Lucky Peak Reservoir
Anderson Ranch Res
Little Camas Res
Dixie
Grimes Creek
Mores Creek
Crooked River
North Fork Boise River
Middle Fork Boise River
Yuba River
Roaring River
Smith Creek
Big Smoky Creek
Fall Creek
Lime Creek
Willow Creek
Dry Creek
Boise River
Indian Creek
84
20
95
16
44
55
69
45
21

7203

21. BOISE RIVER DRAINAGE

Overview

The Boise River basin is located 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 joining the Snake River near Parma at an elevation of 2,100 ft. Major tributaries to the Boise River include the Middle Fork, North Fork, and South Fork, as well as Mores Creek. This basin has an average annual runoff of 2,005,000 acre-feet of water.

The Boise River has three major main stem 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 and are managed to provide for irrigation, flood control, recreation, hydropower, and stream channel maintenance 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 degraded some habitats over a long time creating limitations on fishery productivity, while others habitats are relatively pristine.

From the mouth of the Boise River upstream to near the City of Star, low summer flows and poor water quality limit sport fish production. This section of river supports fair to moderate densities of Smallmouth Bass and channel catfish, though effort is low due to limited access and poor water quality. 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. Wild trout populations steadily increased during the last three decades, but have plateaued recently. Higher abundances are linked to establishment of minimum stream flows and improved water quality. When available, surplus hatchery Chinook Salmon adults are translocated in the summer and hatchery steelhead adults are translocated in the fall, which create intense fisheries. Upstream from Lucky Peak and Arrowrock reservoirs, rivers and streams support Redband Trout, Mountain Whitefish, Bull Trout, Brook Trout, kokanee (during spawning migrations), as well as native nongame fish. Catchable-sized hatchery Rainbow Trout are stocked in some reaches to increase catch rates and provide additional harvest opportunity 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 here. Rainbow Trout and Mountain Whitefish make up the majority of the fish caught. 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%. Recent studies have improved understanding of Rainbow Trout reproduction, over-winter survival, and recruitment as well as tracked long-term trends in juvenile and adult

Rainbow Trout abundance. Juvenile and adult abundances have been relatively stable for the last two decades.

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 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. Fisheries quality is limited by high abundances and biomass of Common Carp and Largescale Sucker as well as by reservoir drawdowns and seasonally poor water quality. 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. Chinook Salmon were reintroduced to Anderson Ranch Reservoir in 2013 and the fishery generated has gained in popularity. The management intent of the reintroduction was to provide a new fishing opportunity that could be sustained by the abundant Kokanee. Although this Chinook population is landlocked, there is evidence of natural production which may result in above optimal reservoir densities. Adfluvial Bull Trout utilize Arrowrock and Anderson Ranch as rearing and wintering habitat. The Rainbow Trout fishery in Arrowrock and Lucky Peak depends primarily on stocked catchable-sized fish. The kokanee fisheries in Arrowrock and Lucky Peak reservoirs are also hatchery-supported primarily. Little Camas Reservoir is a very productive hatchery trout fishery following consecutive good water years but carryover of stocked trout is inconsistent due to frequent drought conditions. Little Camas Reservoir does not have a conservation pool that would assure carryover, and Commission approved salvage orders are common occurrence.

Good spawning conditions in tributary streams provide a continuous but highly variable supply of kokanee in Anderson Ranch Reservoir. Large fires in the South Fork Boise River drainage in 2013 caused multiple drainage washouts. Post fire conditions resulted in repeated tributary washouts that compromised Kokanee spawning habitat and washed out the main access road, which remains unrepaired. 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 since 1983 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 by managing spawner escapement and adjusting 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. Although Anderson Ranch Reservoir kokanee fishery responded well with anglers reporting good catch rates of quality- sized kokanee, this management tool is expensive to implement and is used only when the reservoir densities are extremely high.

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 more than 660,000 residents and visitors. These community waters support some of the most intensive fishing pressure in the state, with more than 5,000 hours per acre per year 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.

High mountain 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 high mountain 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 Strategies

1. Objective: Provide a diversity of fishing opportunities within the Boise River drainage.

   Strategy: Manage for wild trout where habitat and fish populations will sustain acceptable fisheries.

   Strategy: Manage for increased catch rates and fish size in selected stream reaches with quality and trophy trout regulations.

   Strategy: Optimize kokanee stocking densities, timing, and fingerlings sizes for Arrowrock and Lucky Peak reservoirs.

   Strategy: Concentrate hatchery catchable stocking in the locations where the highest return to the creel will occur.

   Strategy: Manage warmwater fisheries to provide a wide variety of sizes and species readily available to the large human population of the Treasure Valley area.

   Strategy: Continue to support and develop community fishing waters and ponds especially in geographically underserved areas, and promote these waters for angler recruitment and education.

   Strategy: 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.

   Strategy: Collaborate with other agencies and private entities for opportunities to protect or improve fish habitat, enhance flows, and remove migration barriers.

   Strategy: 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.

   Strategy: 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.

Strategy: Continue to seek a reduction of extreme drawdowns in reservoirs, such as Arrowrock and Blacks Creek.

Strategy: Continue to seek a formalized agreement that provides for adequate winter flows downstream on Anderson Ranch Reservoir.

Strategy: Continue to seek moderation of rapid increases or decreases of flow in the Lower Boise River for flood control or due to Barber Dam operations.

Strategy: Study water management at Lake Lowell to determine the relationship between fish production and water levels.

5 Objective: Maintain/Improve distribution and population status of Bull Trout.

Strategy: Identify barriers for removal to connect all possible Bull Trout habitat.

Strategy: Reduce deleterious effects from nonnatives, especially Brook Trout.

Strategy: Continue angler educational program about Bull Trout in the drainage.

Strategy: Continue to define and monitor populations of Bull Trout.

Strategy: 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.

Strategy: Investigate alpine lakes for opportunities to create trophy management.

Strategy: Stock a diversity of fish species including sterile cutthroat trout, sterile Rainbow Trout, Golden Trout (in 100% closed basins), and Arctic Grayling.

Strategy: Intermittently evaluate alpine lake fisheries and adjust stocking accordingly.

7. Objective: Provide and maintain fishing and boating access sites throughout the drainage.

Strategy: Increase access to waters with insufficient access by securing property rights and developing sites.

Strategy: Work with local governments to increase or improve access within their jurisdictions.

Strategy: Seek grants and partnership to decrease development and maintenance costs.

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 as well as private landowners to improve water quality and habitat condition. Evaluate fish population, species composition, and size structure. Improve access especially to the downstream portion of this reach by securing easement or property rights and by developing fishing and boating access sites.
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-year intervals. Foster efforts to improve habitat complexity especially in side channels and tributaries to improve trout recruitment
West Parkcenter to East Parkcenter bridge	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 spawning and rearing habitat for Boise River trout.
Treasure Valley Community Fishing Ponds ~ 30 public ponds (e.g. Park Center, Kleiner, Duff Lane,, 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 through mid-summer or when water temperatures become marginal. 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	 Redband Trout Brook Trout Cutthroat Trout Mountain Whitefish Bull Trout	 General Conservation	 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 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 effort periodically. Monitor wild trout abundance and size structure every three years. 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. Implement long-term salmonid monitoring. 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	Quality	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. Implement long-term salmonid monitoring.
			Mountain Whitefish Kokanee	General	
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
South Fork Boise River from Big Smoky Creek to headwaters	15/	Coldwater	Rainbow Trout	Put-and-take	Investigate possibility and pursue funding to construct off-river ponds for put-and-take stocking of trout.
			Redband Trout Mountain Whitefish Kokanee	General	Good quality habitat, however low natural stream productivity limits wild trout growth for acceptable size Rainbow Trout.
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
Big Smoky Creek from mouth to Calf Creek	4/	Coldwater	Rainbow Trout	Put-and-take	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.
			Redband Trout Mountain Whitefish Kokanee	General	Good quality habitat with wild trout potential.
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
Big Smoky Creek from Calf Creek to headwaters	15/	Coldwater	Rainbow Trout	Wild	Maintain limited harvest opportunity.
			Mountain Whitefish	General	
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
Little Smoky Creek	20/	Coldwater	Rainbow Trout	General	Evaluate hatchery program.
			Redband Trout	General	
			Bull Trout	Conservation	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	Wild	Maintain naturally reproducing populations and harvest opportunity.
			Mountain Whitefish	General	
			Bull Trout	Conservation	Closed to harvest. Catch-and-release, only.
North Fork Boise River from mouth to Rabbit Creek	7/	Coldwater	Redband Trout	Wild	Manage for high catch rates (3 fish/hour).
			Mountain Whitefish	General	
			Bull Trout	Conservation	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 Chinook Salmon Bull Trout	General Conservation	Maintain an attractive kokanee fishery for large fish (exceeding 14”), with average catch rates exceeding 0.3 kokanee/hour.. Continue to stock catchable-sized Rainbow Trout. Evaluate status of Smallmouth Bass fishery. Closed to harvest. Catch-and-release, only.
Arrowrock Reservoir	/4,000	Mixed	Smallmouth Bass Yellow Perch Rainbow Trout Mountain Whitefish Bull Trout	General Conservation	Maintain an attractive kokanee fishery for large fish (exceeding 14”), with average catch rates exceeding 0.3 kokanee/hour. Stock annually with catchable-sized Rainbow Trout, and fingerling kokanee. Monitor kokanee escapement and recruitment. Continue to seek minimum conservation pool that provides adequate temperature and oxygen for coldwater fisheries. 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. Investigate public demand for an additional stocked species, Tiger Muskie. Stock if desired by public.
Anderson Ranch Reservoir	/4,740	Mixed	Rainbow Trout Mountain Whitefish Kokanee Yellow Perch Smallmouth Bass Bull Trout	General Conservation	Manage for a mean catch rate of 0.5 kokanee/hour with mean harvest size of 12 to 14 inches. Monitor Chinook population and manage against natural reproduction; implement sterile Chinook hatchery supplementation program. Continue annual angler survey; 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. Evaluate the need for aquatic vegetation control to improve angler access.
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.

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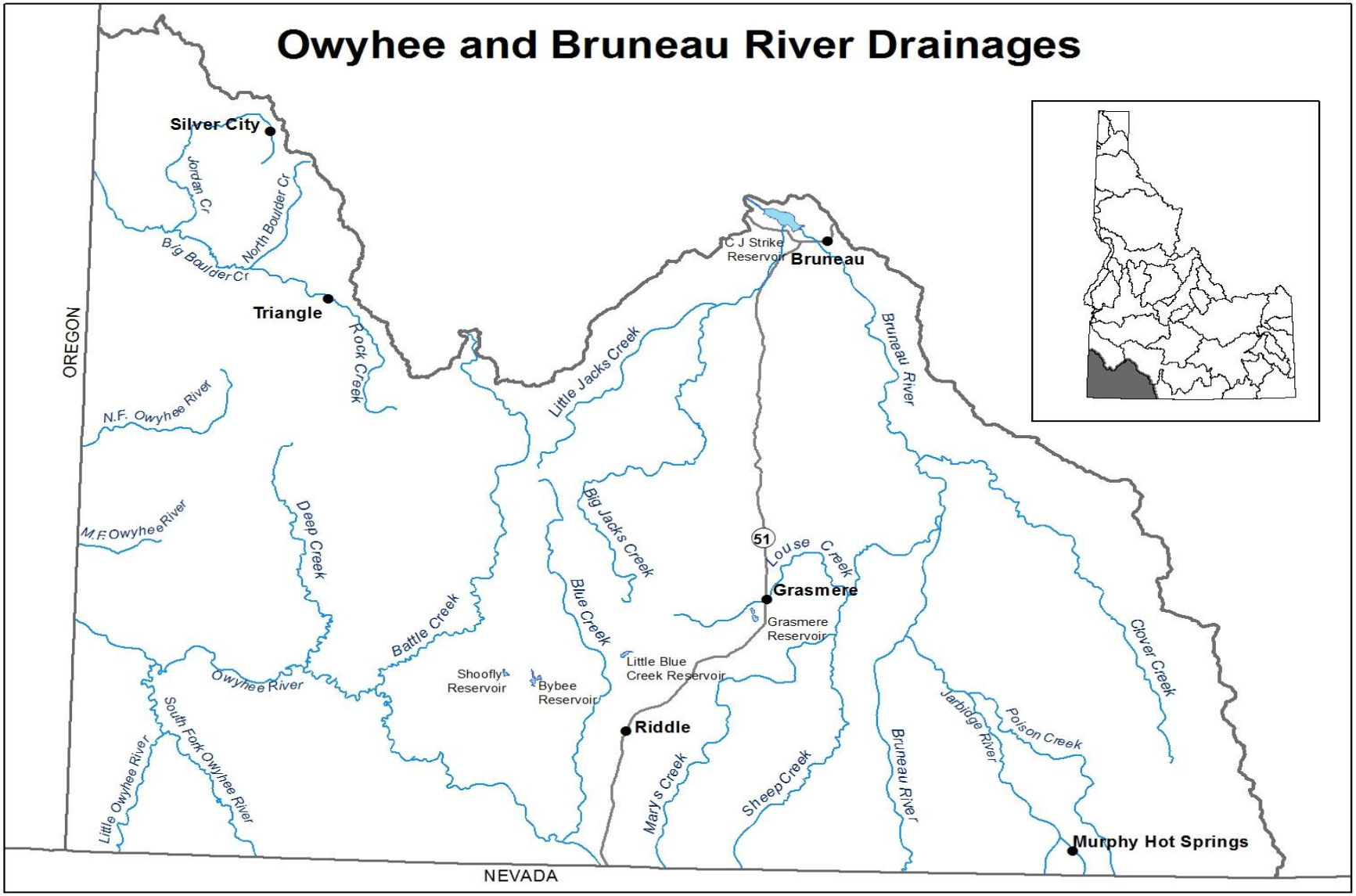
Owyhee and Bruneau River Drainages
Silver City
Jordan Cr
North Boulder Cr
Big Boulder Cr
Triangle
Rock Creek
OREGON
N.F. Owyhee River
M.F. Owyhee River
Deep Creek
Battle Creek
Owyhee River
South Fork Owyhee River
Little Owyhee River
Shoofly Reservoir
Bybee Reservoir
Little Jacks Creek
Big Jacks Creek
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

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22. OWYHEE RIVER DRAINAGE, BRUNEAU RIVER DRAINAGE, AND MINOR TRIBUTARIES SOUTH OF SNAKE RIVER

Overview

The Owyhee and Bruneau River basins are located in southwestern Idaho, southeastern Oregon, and northern Nevada. This basins encompass approximately 11,340 square miles of semi-arid high desert country; of which about 8,000 square miles are within Idaho. Many river sections 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 Jarbridge Mountains to 2,455 feet at the mouth. The Bruneau River has an annual average discharge of 292,000 acre-feet of water. The majority of these basins are public and private rangelands. Cattle grazing is common.

The upper Owyhee River drainage is within the native range of Redband Trout. Due to the unique qualities of this fish, limited potential for development of other fisheries, and the inaccessibility, this entire drainage will be managed to conserve native Redband Trout. Smallmouth Bass have colonized much of the main stem and major tributaries in the Idaho portion of the drainage from downstream sources. Man-made or natural barriers have prevented establishment in some tributaries. Smallmouth Bass eliminate nearly all native fish including Redband Trout soon after colonizing new stream or river segments. For this reasons, low fishing effort, and slow growth rates, Smallmouth Bass are managed with year-round seasons and no minimum length limit. Lahontan Cutthroat Trout are stocked in three reservoirs near Riddle that have no surface connection to the Owyhee River drainage.

From the mouth of the Bruneau River approximately 16 miles upstream to Hot Springs (near two large irrigation diversion dams), water quality and temperatures are not suitable for coldwater species year-round. Native nongame and nonnative fishes utilize this reach and may migrate between the river and CJ Strike Reservoir. Upstream of the diversion dams, the fish community is comprised nearly entirely on native species, seemingly the diversions have acted as barriers for decades and prevented nonnative fish colonization. During 2009, IDFG fortified and improved the upper diversion, Hot Springs, by installing a sloped-velocity barrier with the intention of further reducing the likelihood of nonnative fish colonization upstream. Unfortunately, a few nonnative aquarium species (tilapia and betas) have been introduced to hot springs pools upstream of the diversion, but these species are limited to these habitats due to narrow thermal tolerances. Mountain Whitefish and other native species utilize the middle Bruneau River; however, Redband Trout only use this reach seasonally due to high summer water temperatures. The upper drainage and many headwater tributaries support Redband Trout on a year-round basis. Some angling effort occurs on the more accessible sections and tributary streams of the Bruneau River drainage; however, overall fishing effort is extremely low. A remnant population of Bull Trout exists in the Jarbidge River, a large tributary of the Bruneau, but primarily in headwater reaches in Nevada. The main stem Jarbidge River and Bruneau River in Idaho may provide winter habitat for Bull Trout.

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 Strategies

1. Objective: Conserve and manage Redband Trout.

   Strategy: Monitor established trend sites at ten- to fifteen-year intervals.

   Strategy: Complete drainage assessments to improve knowledge of distribution and abundance of Redband Trout as well as to identify factors limiting populations.

   Strategy: Ameliorate limiting factors which may include restoring habitat, as well as removing or installing barriers.

   Strategy: Repopulate depleted streams where habitat conditions have been restored by translocating native Redband Trout from adjacent drainages.

   Strategy: Work cooperatively with state and federal land management agencies as well as grazing permittees and private landowners to improve riparian and aquatic habitats.

2. Objective: Conserve and mange Bull Trout.

   Strategy: Maintain no harvest rules for Bull Trout in the Jarbridge and upper Bruneau rivers.

   Strategy: Determine seasonal and spatial extent of Bull Trout in the Jarbridge and upper Bruneau rivers in Idaho.

   Strategy: Identify limiting factors and complete projects designed to ameliorate these factors.

   Strategy: Work cooperatively with state and federal land management agencies as well as grazing permittees and private landowners to improve riparian and aquatic habitats.

3. Objective: Improve or Increase reservoir fishing opportunities.

   Strategy: Restock reservoirs with appropriate stocks of fish when drought conditions cause fish kills or de-watering.

   Strategy: Monitor reservoir fish populations and renovate reservoirs with undesirable non-game fish populations that limit the fishery.

   Strategy: Avoid stocking any species that may have deleterious effects to Redband or Bull Trout conservation efforts.

   Strategy: Seek opportunities to construct new fishing reservoirs in cooperation with federal, state, and private landowners.

   Strategy: Seek opportunities to establish cooperative agreements with private landowners to gain access to existing reservoirs.

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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 Trout populations.
North Fork Owyhee River, including tributaries	61/	Coldwater	Redband Trout Smallmouth Bass	Wild General	Maintain wild Redband Trout 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	Wild	
Little Blue Creek Reservoir	/188	Coldwater			Eliminate Lahontan Cutthroat Trout stocking until water quality and quantity improvements are documented.
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.

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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	Wild	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 or improve 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. Closed to harvest. Catch-and-release, only. Monitor Bull Trout population to evaluate recovery.

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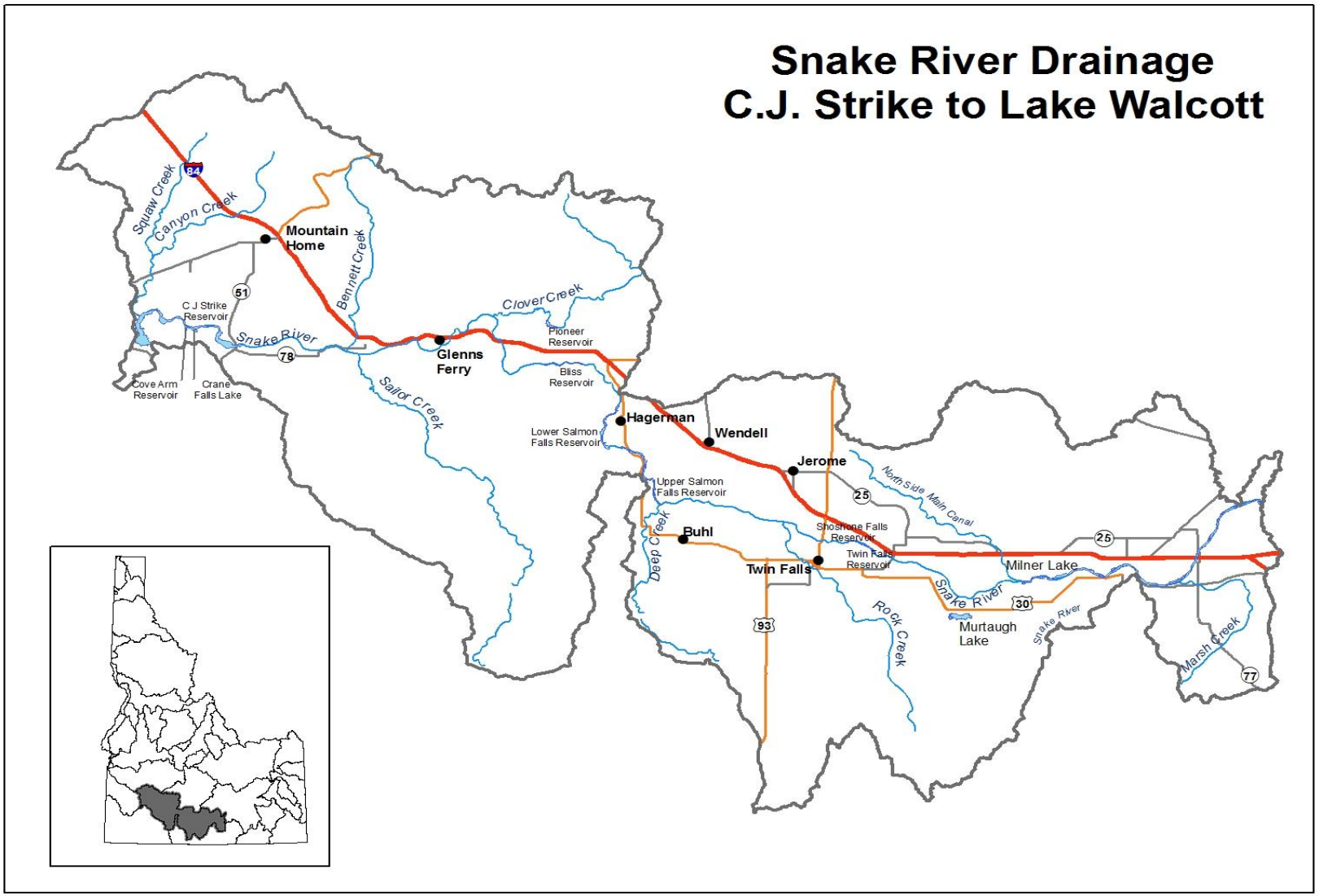
Snake River Drainage
C.J. Strike to Lake Walcott
Squaw Creek
84
Canyon Creek
Mountain Home
Bennett Creek
51
C J Strike Reservoir
Snake River
78
Cove Arm Reservoir
Crane Falls Lake
Glenns Ferry
Clover Creek
Pioneer Reservoir
Bliss Reservoir
Sailor Creek
Lower Salmon Falls Reservoir
Hagerman
Wendell
Jerome
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 TO MINIDOKA DAM

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 Lower Salmon Dam, 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 aquatic vegetation within portions of the river.

Trophy size trout are caught in portions of the Snake River, such as the areas downstream of 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 and Twin Falls dams, an area seriously impacted by low flows during the irrigation season. Many of these hybrid trout attain large sizes, some reaching weights exceeding six pounds. Vinyard Creek, an aquifer spring entering the Snake River on the north side just upstream of Twin Falls, was historically a spawning area for Yellowstone Cutthroat Trout and Rainbow Trout x Cutthroat Trout hybrids; however, habitat loss (decreased spring discharge) has resulted in their extirpation from this drainage.

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.

Within this management area, the main Snake River contains eight reservoirs which are suitable in varying degrees for trout: CJ Strike, Bliss, Lower and Upper Salmon Falls, Shoshone Falls, Twin Falls, Milner and Lake Walcott. All but Lake Walcott were constructed by Idaho Power Company and function as hydroelectric projects. During extreme high or low water years in the Snake River, flushing or hydroelectric load following may reduce reservoir productivity and cause entrainment or emigration of stocked fish 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 CJ Strike, Upper Salmon Falls, Lower Salmon Falls, and Bliss. An annual stocking program of sterile, catchable-size Rainbow Trout was initiated in 2007 as part of the FERC required mitigation. The program provides for both spring and fall stockings at CJ Strike, Centennial Park (near Twin Falls), Upper Salmon Falls Reservoir, Lower Salmon Falls Reservoir, Bliss Reservoir, and downstream of Bliss Dam near King Hill. The BOR-managed Minidoka Dam hydroelectric facility license also has FERC required mitigation to maintain an annual stocking program. Sterile trout are utilized 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 management area occurs between Bliss Dam and C.J. Strike Dam (i.e. the Bliss Reach). Reproduction can be adversely impacted when flows fall below 15K cfs or preferred spawning temperatures are not met or don't coincide with high flows. Hydroelectric load following at the IPC operated Bliss Dam facility can exacerbate poor spawning conditions in low water years. Flows of at least 15,000 cfs for sufficient duration and with preferred temperatures are needed for successful natural reproduction. Successful recruitment has been noted periodically including 2006, 2011, and 2017. Water management that accounts for these needs would be beneficial to the long-term persistence of White Sturgeon in this reach. Recent studies have shown White Sturgeon grow at a rapid rate in this area with some reaching lengths of three feet by their third year. Angler interest in this species is high and they are regarded as exceptionally desirable, even though there is no harvest allowed. White Sturgeon aquaculture has allowed for the stocking of wild-origin, hatchery-raised sturgeon into the river; however, genetic effects need to be monitored to assure diversity is maintained. As part of the 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 state 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.

Warmwater fisheries are available in numerous reservoirs, the main Snake River, and minor tributaries, 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 Black and White Crappie, Largemouth and Smallmouth Bass, Bluegill, Brown Bullhead, Channel Catfish, and Yellow Perch. CJ Strike at times provides high-yield fisheries for crappie and Yellow Perch as well as is a consistent high-quality bass fishery, primarily Smallmouth Bass. 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 Dam. Idaho Power Company began an annual Channel Catfish stocking program in 1993 that continues to date. Recent surveys indicate high numbers of large catfish in the reservoir. 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.

Avian predation by American white pelicans and Double-crested cormorants on hatchery-sustained fisheries represents a substantial management challenge within this management area, especially in small impoundments nearest the Lake Walcott pelican colony. Past research has demonstrated an inverse relationship between the level of predation and the distance from a pelican colony. Management actions to mitigate excessive predation (modified stocking season, night stocking, increased fish size) have not been sufficient to maintain hatchery trout put-and-take fishing opportunities. The Management Plan for the Conservation of American White Pelicans in Idaho 2016-2025 (IDFG 2016) establishes pelican management objectives that may help reduce predation conflicts on public fisheries.

The Snake River has the greatest potential for increasing angler opportunity of any major water in southern 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 Strategies

1. Objective: Improve water quality in the Snake River for fish spawning and rearing and for recreational uses.

   Strategy: Provide technical assistance to WAG to assist in the development of wetlands on irrigation drains and other nutrient rich water sources to filter sediments and nutrients from irrigation returns.

   Strategy: 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.

   Strategy: 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 or maintain Rainbow Trout fishery in C.J. Strike Reservoir.

   Strategy: Develop and employ a panfish monitoring protocol that will improved understanding and all for proper management of crappie and perch populations. Gain understanding of life history, recruitment variability, and harvest patterns. Modify regulations if needed.

   Strategy: Periodically monitor harvest rates of bass as well as size and age structure.

   Strategy: 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. This plan was 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 50,000 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 Idaho Power Company 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. Translocate sturgeon from adjacent reaches with suitable recruitment to reaches with poor recruitment to maximize genetic diversity and maintain stable densities.

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.

Strategy: 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.

Strategy: Continue efforts to preserve undeveloped natural springs with significant fishery values.

6. Objective: Increase opportunity for warmwater and coldwater fishing to meet increased demand.

Strategy: Enhance fishing access to Hagerman WMA fishing ponds including improved signage, trails, addition of fishing docks, and aquatic vegetation control. Evaluate aquatic vegetation loads on high use fishing ponds within the management area. Prioritize control needs and evaluate short and long-term control measures.

Strategy: Attempt to acquire access on existing private ponds or develop new ponds for warmwater fisheries in the area.

7. Objective: Improve fishing in ponds along the Interstate in the Burley/Rupert area.

Strategy: Work with local officials and the public to reduce or suppress Common Carp in the ponds.

Strategy: Implement the Management Plan for the Conservation of American White Pelicans in Idaho 2016-2025.

Strategy: Introduce and develop warmwater fisheries to mitigate poor performing trout supplementation programs.

8. Objective: Enhance fisheries for Largemouth Bass in reservoirs by protecting and enhancing Largemouth Bass habitats.

Strategy: Continue placing artificial reef habitat in C.J. Strike Reservoir in cooperation with Idaho Power Company and Idaho State B.A.S.S. Federation.

9. Objective: Document and understand avian predation throughout the region.

Strategy: Monitor avian predation affects to wild and hatchery sustained fisheries. Implement management actions and objectives outlined in the Plan for the Conservation of American White Pelicans in Idaho 2016-2025.

Drainage: Snake River - C.J. Strike Dam To Minidoka Dam

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	Conduct additional studies to gain better understand panfish population characteristics, recruitment patterns, and angler harvest. 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. Improve angler access.

Bruneau Sand Dunes lakes	/100	Warmwater	Largemouth Bass Bluegill	Trophy General	Evaluate and monitor post-restoration transplants of Bluegill and Largemouth Bass. 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	Pursue formal access prior to developing warmwater fishery.
Pioneer (Clover Creek) Reservoir	/220	Warmwater	Largemouth Bass Bluegill Bullhead	General	Pursue options 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. 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. Improve boating access on Billingsley Creek WMA.
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.
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 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. Develop Largemouth Bass and Bluegill translocation source in off-channel ponds. Use this source to supplement in ponds within this management area as well as others.
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. Evaluate reduced bag and possession limits.
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. Evaluate reduced bag and possession limits. 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 0.5 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 0.5 fish/hour. Preserve aquatic habitat quality of undeveloped aquifer springs.
Devil's Corral Springs	1/	Coldwater	Rainbow Trout	Wild	Preserve aquatic habitat quality of springs, and spawning and rearing access.
Vineyard Creek	0.5/	Coldwater	Cutthroat Trout Rainbow Trout Rainbow Trout x Cutthroat Trout hybrids	Wild	Preserve aquatic habitat quality, and spawning and rearing access of area. Work with land management agencies to control trail development.
All other aquifer springs in Jerome County	0.2/	Coldwater	Rainbow Trout	Wild	Manage as yield fishery. Maintain or improve 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 0.5 fish/hour catch rate.

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. Evaluate reduced bag and possession limit.
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. 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. Protect existing trout habitat.
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 Largemouth Bass and Bluegill sizes. Monitor impacts of illegal stocking. Consider renovating fishery if warranted. Consider predator (tiger muskie) introduction to increase size structure of Largemouth Bass and Bluegill.
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. 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 resident trout 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.
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 and public preferences. Evaluate Channel Catfish supplementation program. Monitor exploitation rates of stocked and carryover Channel catfish.
Murtaugh Reservoir	/827	Warmwater	Channel Catfish Yellow Perch Brown Bullhead	General	Evaluate sportfishery response to aquifer recharge water management.
Wilson Lake	/484	Mixed	Brown Bullhead Yellow Perch Channel Catfish Largemouth Bass Rainbow Trout	General	Evaluate sportfishery potential in relation to aquifer recharge water management shift. Consider warmwater fish transplant if new conditions warrant.
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. Evaluate angler exploitation in renovated pond.
Rupert Gravel Pit Pond	/4	Mixed	Rainbow Trout Bluegill Largemouth Bass	Put-and-take	Cease rainbow trout stocking due to poor habitat quality and overwhelming avian predation. Periodically monitor warm water fishery
Lake Walcott (Minidoka Reservoir)	29/11,850	Mixed	Cutthroat Trout Rainbow Trout Yellow Perch Brown Bullhead	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.

			Smallmouth Bass Largemouth Bass		Monitor impacts of water management changes and seek mitigation if warranted.
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 to protect or improve stream habitat for reproducing populations of trout.

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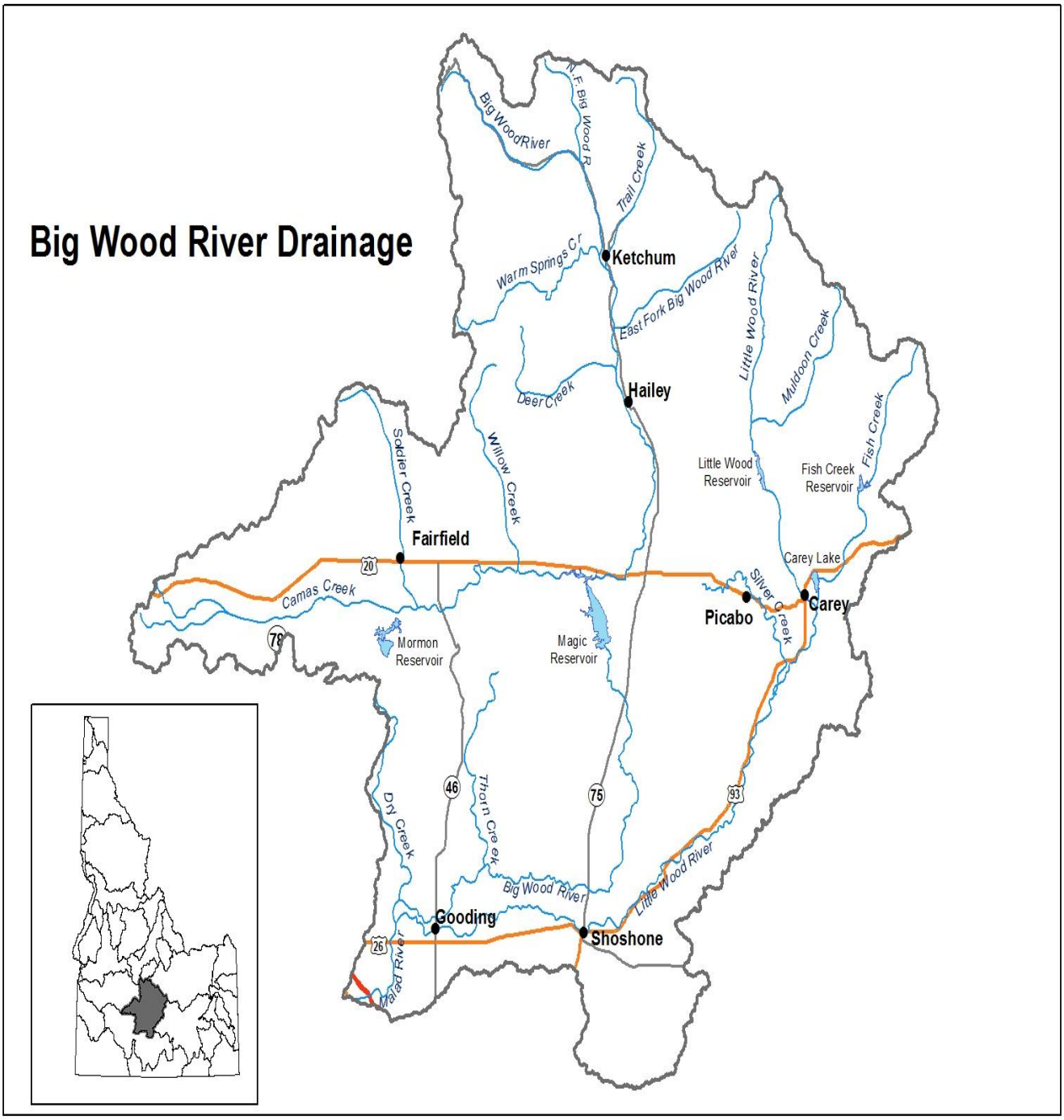
Big Wood River Drainage
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N.F. Big Wood R.
Trail Creek
Ketchum
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East Fork Big Wood River
Little Wood River
Muldoon Creek
Hailey
Deer Creek
Fish Creek
Soldier Creek
Willow Creek
Little Wood Reservoir
Fish Creek Reservoir
Fairfield
20
Carey Lake
Camas Creek
Silver Creek
Picabo
Carey
78
Mormon Reservoir
Magic Reservoir
46
75
93
Dry Creek
Thorn 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 stream, 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 Big 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 comprised of hatchery origin wild Rainbow Trout and Brown Trout which each offer unique fishing experiences. Rainbow Trout are generally more vulnerable to dry fly fishing whereas Brown Trout grow larger than Rainbows and are more often caught during the night with streamer-type techniques. IDFG has monitored the fisheries for nearly 2 decades and documented that Brown Trout are gradually displacing Rainbow Trout. For example, Brown Trout made up 90-95% of trout sampled in a reach within the lower Silver Creek reaches in 2010, 2013, and 2016. The dominance of one species over the other may directly impact the diversity of fishing experience expected by anglers.

Silver Creek has many challenges including decreased flows, increased water temperatures, and possibly increased avian predation. The Department will work with public and private partners to evaluate conditions and seek improvements where feasible. 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 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, and Largemouth and Smallmouth Bass. Tiger muskie and Channel Catfish are periodically stocked 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 high mountain 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 Strategies

1. Objective: Preserve good quality stream habitats and improve degraded stream habitats in the Big and Little Wood and Silver Creek drainages.

   Strategy: Work closely with county planning and zoning agencies and IDWR to prevent channel and riparian degradation and development in natural flood plains.

   Strategy: Work with land management agencies and livestock owners to implement grazing strategies, which will allow for the recovery of riparian systems along streams.

   Strategy: Work with land management agencies and landowners to enhance degraded habitat on Silver Creek main stem and headwater tributaries

   Strategy: Work with state and federal agencies, irrigation districts and landowners on developing wetlands on irrigation returns to improve water quality.

   Strategy: 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.

   Strategy: 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.

   Strategy: 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.

Strategy: Maximize the hatchery trout stocking program efficiency.

Strategy: 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.

Strategy: Seek opportunities to develop community fishing ponds to provide convenient fishing experiences while optimizing the use of IDFG produced hatchery trout.

Strategy: Where feasible, minimize avian predation in areas where predation is suspected to impact the resident fishery. Prioritize heavy predation areas where avian predators and anglers compete, and where predation results in substantial fish population impacts.

3. Objective: Improve reservoir fishing opportunity.

Strategy: Where feasible, work with partners to control aquatic vegetation to maximize access and enhance overwinter survival in pond and reservoir fisheries.

Strategy: Seek minimum pools in reservoir fisheries where feasible.

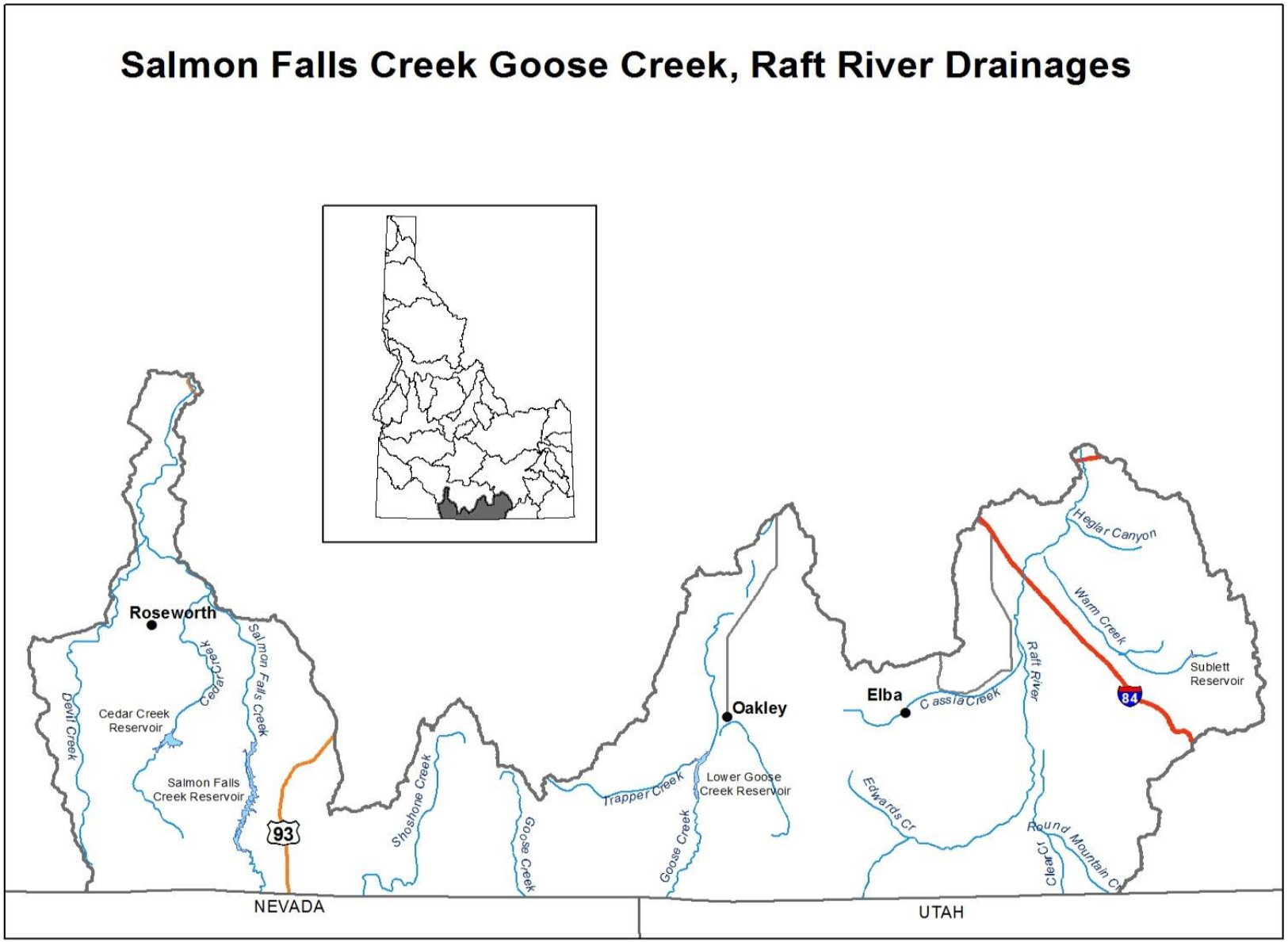
Drainage: Big Wood River

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 0.5 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 Smallmouth Bass	Quality	Achieve catch rates of 0.5 fish/hour. Consider management change if fishery is not maintained under current conditions or if conditions are improved. 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	Achieve catch rates of 0.5 fish / hour. Inform and support tributary restoration and connect efforts.
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. Inform and support tributary restoration and connect efforts.
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. Inform and support tributary restoration and connect efforts.
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 0.5 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 0.5 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 0.5 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/	Mixed	Rainbow Trout Brown Trout Smallmouth Bass	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 0.5 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. Support irrigation efficiency projects provided results would result in more consistent streamflow.
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 0.5 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 0.5 fish/hour. Maintain or improve rainbow trout population. Improve riparian habitat. Work to acquire additional public access. Minimize avian predation impacts upon the resident salmonid population.
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. Minimize avian predation impacts upon the resident salmonid population.

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 and tributaries from public fishing portion of Nature Conservancy property upstream (including tributaries)	10/	Coldwater	Rainbow Trout Brook Trout Brown Trout	Wild	Catch rates of 0.5 fish/hour. Inform landowners/developers of need for maintaining habitat. Explore options to improve water and fish habitat quality.
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 0.5 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 bloodstock culls. Provide catch rate of 1.0 fish/hour.
Grove Creek	5/	Coldwater	Rainbow Trout Brook Trout Brown Trout	Wild	Catch rate of 0.5 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, 0.5 fish/hour.
Dog Creek Reservoir	/95	Mixed	Largemouth Bass Bluegill Rainbow Trout Channel catfish Yellow Perch Tiger muskie Brown bullhead	General Trophy	Supplement fishery with put-and-take rainbow trout fishery in winter months. Evaluate Tiger Muskie fishery and continue supplementation only if angler benefits are realized. 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 0.5 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 0.5 trout/hour. Consider habitat enhancement projects to improve Yellow Perch spawning habitat in low water years. Monitor expansion of Smallmouth Bass population. Maintain liberal regulations to minimize impacts to Yellow Perch population.
Mormon Reservoir	/2,700	Coldwater	Rainbow Trout Yellow Perch	General	Consider tiger trout if forage fish become excessive. Evaluate stocking strategies to maximize rainbow trout returns. Collaborate with public and private groups to control excessive aquatic vegetation to improve angler access and fish habitat.
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. Consider the introduction of Tiger Muskie to improve Largemouth Bass and Bluegill size structure and to provide a new fishing opportunity.
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.
Lava Lake	/20	Coldwater	Rainbow Trout	Put-and-take	Work to secure long-term public access.
Baker Lake	/10	Coldwater	Cutthroat Trout	Trophy	Evaluate existing trophy fishing opportunity. Adjust management accordingly.
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
Cedar Creek
Devil Creek
Salmon Falls Creek
93
Shoshone Creek
Goose Creek
Trapper Creek
Goose Creek
Lower Goose
Creek Reservoir
Oakley
Elba
Cassia Creek
Raft River
Heglar Canyon
Warm Creek
Sublett
Reservoir
84
Edwards Cr
Clear 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. 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 high mountain 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 Strategies

1. Objective: Develop management options for fishing on cyclic Walleye populations in Salmon Falls Creek and Oakley reservoirs.

   Strategy: Maintain five-year rotational monitoring programs for both. Adjust rules and hatchery program accordingly.

   Strategy: Evaluate existing Walleye regulations on Salmon Falls Creek Reservoir. Model short and long-term benefits based on current angler pressure and harvest. Adjust management accordingly.

2. Objective: Implement management programs as outlined in the Management Plan for Conservation of Yellowstone Cutthroat Trout in Idaho.

   Strategy: Evaluate trends in Yellowstone Cutthroat Trout populations at designated monitoring locations.

   Strategy: Work with land management agencies and private landowners on reestablishing connectivity in watersheds and enhancing riparian habitats.

   Strategy: Work with land management agencies on improving degraded riparian habitats with the implementation of improved grazing practices.

   Strategy: Maintain Yellowstone Cutthroat Trout genetic integrity by eliminating stocking or stocking only sterile rainbow trout in cutthroat trout drainages.

   Strategy: Work with local Watershed Advisory Groups to improve water quality.

   Strategy: Expand Yellowstone Cutthroat Trout distribution through translocations of suitable donor stocks into historical habitat.

   Strategy: 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.

3. Objective: Protect Northern Leatherside Chub populations in Goose Creek and Raft River drainages.

   Strategy: Provide information to land management agencies and public on identification, population status and distribution of Leatherside Chub in the drainages.

   Strategy: Work with local regulatory agencies and landowners to minimize impacts of livestock grazing on riparian areas.

4. Objective: Improve water quality for fish habitat in lower reaches of streams in section.

Strategy: 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. Five year interval monitoring of Walleye and angler effort. Evaluate population impacts of existing regulations. 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. Five year interval monitoring of Walleye populations. 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 and tributaries		Coldwater	Cutthroat Trout	Wild	Management emphasis will be on native Yellowstone Cutthroat Trout and nongame fish with conservation status. IDFG should work with BLM, USFS, and private land owners to improve riparian habitat and instream fish habitat
Rock Creek (Rockland area)	21/	Coldwater	Cutthroat Trout Brook Trout	Wild General	Emphasize protection of wild populations of Yellowstone Cutthroat Trout and nongame fish with special status.

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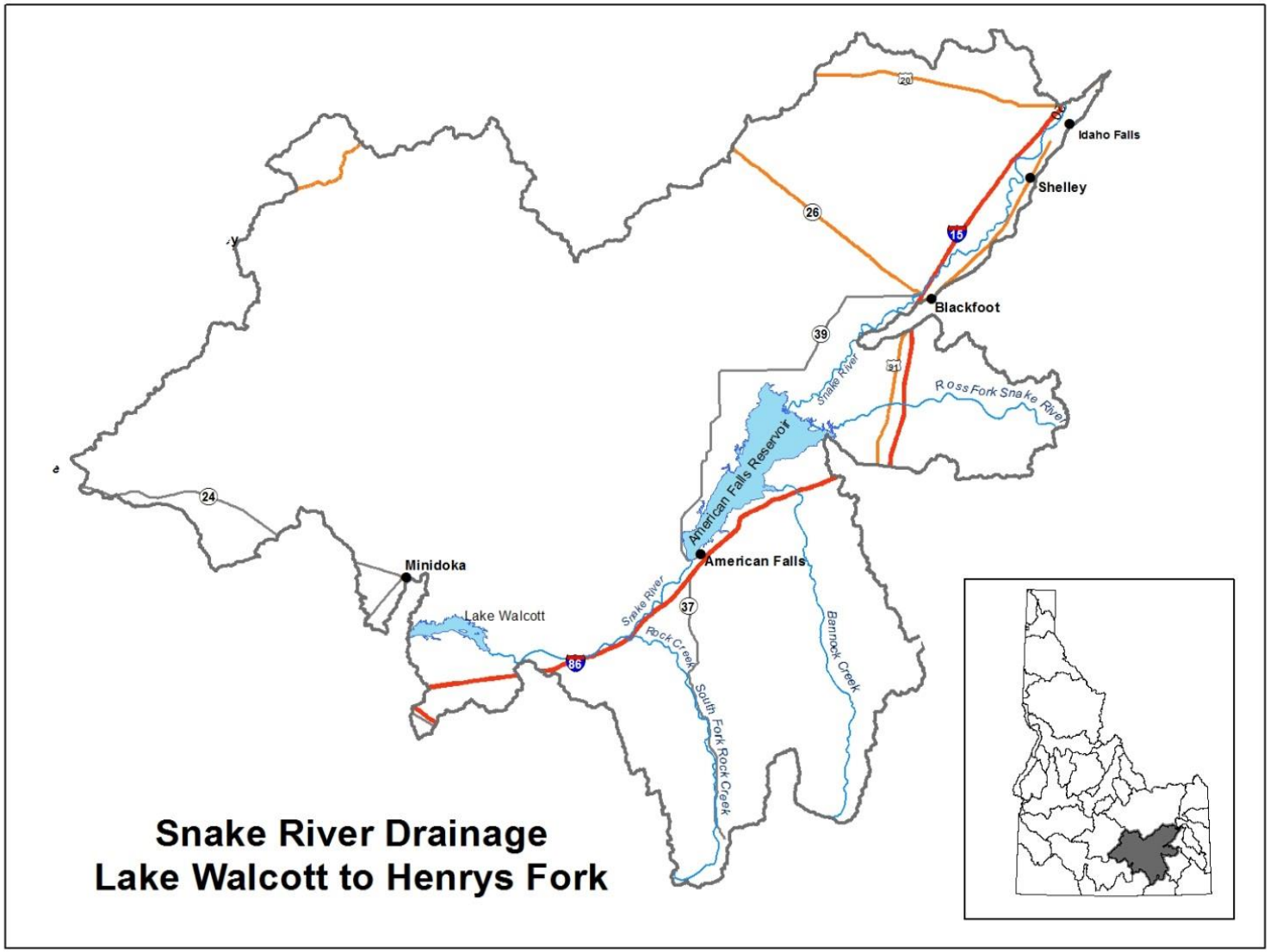
Idaho Falls
Shelley
Blackfoot
Minidoka
American Falls
Lake Walcott
American Falls Reservoir
Snake River
Ross Fork Snake River
Rock Creek
South Fork Rock Creek
Bannock Creek
20
26
15
39
31
24
37
86
Snake River Drainage
Lake Walcott to Henrys Fork

26. SNAKE RIVER – MINIDOKA DAM TO CONFLUENCE OFSOUTH FORK AND HENRYS FORK

Overview

The Snake River from Massacre Rocks upstream to the confluence of the 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 present in fishable numbers in American Falls Reservoir, have not been reported by anglers or fishery biologists in the past 20 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 providing a quality fishing experience for 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 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. Tagging studies show that downriver migration through American Falls Dam begins when the reservoir drops to 30% of full pool. 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 American Falls Dam downriver to Gifford Springs access area,, 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 asked the Department to decrease harvest of bass in the Massacre Rock access site to American Falls reach. Their concern was 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 in 2008.

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 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. The majority of angling occurs from boats and has increased in recent years. 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. More recently, aquifer recharge conducted during winter has added additional variability to flows in this reach. 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, and consideration of non-traditional sturgeon seasons, such as limited harvest opportunity.

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. 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 impacted. IDFG is working with the Bingham County and BOR on a project to isolate the ponds from the river.

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 and fingerling 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. As such, creating a satisfactory trout fishery will require continued hatchery support. Management efforts during this term should focus on continuing to evaluate the effectiveness of fingerling trout stockings as opposed to catchable stockings, and bolstering salmonid populations to create a quality fishery close to a major urban center. Additionally, consideration of a non-traditional sturgeon fishing opportunities should be considered.

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 low flow needs are largely unknown, yet likely have a large impact on fish populations. During the irrigation season and early fall, river flows vary depending on amount released from upriver storage and on amount diverted at each canal. Winter flows are generally low, due to upstream storage of water for irrigation delivery. Although

angler catch rates are typically low, the reach supports a trophy component of wild trout. Brown Trout have been known to exceed 30 inches in this reach, and Rainbow Trout occasionally exceed eight pounds or more. Currently, 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 increase attempts to supplement natural production with fingerling Rainbow and Cutthroat Trout as our hatchery production allows. Habitat and temperature analysis should be conducted to determine if Brown Trout may be a more suitable species in this reach. This reach is recognized as one of the few remaining reaches of the Snake River in eastern Idaho with high potential to improve existing fish populations. Due to the amount of private land along the river, additional public access and boat ramps would be desirable in this reach.

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. Beginning in 2014, tiger trout were stocked in an attempt to reduce Perch abundance, and create a larger, more desirable panfish for anglers. Results from this effort will be evaluated over the course of this plan, and shifts in management towards a warmwater only fishery should be evaluated over the course of this plan. Artificial aeration during winter periods has been used to 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. Additionally, lower lake levels during summer have occasionally resulted in die-offs of hatchery trout. Temperatures should be monitored periodically through summer, and additional means of increasing lake levels should be implemented. 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 one fish per hour. Ongoing efforts to create a second pond in Ryder Park will continue to help address the exceptionally high fishing effort this pond sustains annually. Managing water inputs to keep summer temperatures low will also be a priority through the life of this plan.

Objectives and Strategies

1. Objective: Maintain quality of the Smallmouth Bass fishery from Lake Walcott to American Falls Dam.

   Strategy: Monitor populations and work with Minidoka National Wildlife Refuge to increase boat fishing opportunities.

2. Maintain quality Smallmouth Bass, trout, and White Sturgeon fishing from Eagle Rock to American Falls Dam.

   Strategy: Monitor and evaluate stocking programs and correlated angler success with flow conditions below American Falls Dam.

3. Objective: Consider restoring a Crappie fishery in American Falls Reservoir..

Strategy: Evaluate contemporary water management and stock Crappie if winter storage levels remain high and assessment of potential impacts to downriver fisheries are minimal. .

4. Objective: Improve fishing opportunities at McTucker ponds.

Strategy: Work with Bingham County and the U.S. Bureau of Reclamation to improve restroom facilities, fishing docks, camping locations and other amenities. Connect the ponds to make a single fishery. Isolate the ponds from the river to prevent carp and suckers from entering the ponds.

5. Objective: Improve sport fishing opportunities in the Snake River from Gem State dam to the confluence with Henrys and South Fork confluence.

Strategy: Stock White Sturgeon in the power pools through Idaho Falls, and evaluate the success of this program in the coming years. Evaluate the public's desire to engage in limited sturgeon harvest.

Strategy: Offset limited spawning habitat with fingerling trout stockings; evaluate for effectiveness.

Strategy: Maintain put-and-take trout fishing opportunities where returns meet agency goals.

Strategy: Evaluate thermal and physical habitat through this reach, and consider stocking Brown Trout or other species if biologically warranted and necessary to improve the existing fishery.

Strategy: Maintain trophy component to the existing fishery; evaluate the need for additional regulations to enhance this aspect of the fishery.

Strategy: Work with partners to understand and minimize entrainment and where applicable assess biologically-based low flow recommendations to enhance fish survival.

Strategy: Obtain angler access through easements or acquisition where possible; establish boat ramps where necessary.

6. Objective: Improve size structure of Yellow Perch in Jim Moore (Roberts) Pond.

Strategy: Consider predator introductions or other means to reduce abundance of perch while maintaining high angler catch rates.

Strategy: Search for methods to improve low flows in the lake to improve available habitat and to increase trout survival.

7. Objectives: Improve perch fishery in Market Lake.

Strategy: Relocate perch from Jim Moore Pond to Market Lake and evaluate fishery.

8. Objective: Secure adequate summer flows through Becker Pond in Ryder Park to provide satisfactory summer trout fishery

Strategy: Work with the City of Idaho Falls to secure pumps in the Snake River capable of keeping Becker Pond cool during hot temperatures.

Strategy: Work with the City of Idaho Falls to create an additional pond in Ryder Park to help support the extensive fishing effort that occurs there.

Strategy: Consider stocking warmwater species such as catchable catfish to provide a fishery during the warmer summer months.

Drainage: Snake River-Minidoka Dam 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. Pursue additional angler access Evaluate the impacts of a new water management program upon hatchery trout returns, Evaluate the feasibility of increasing the diversity of the warmwater fishery
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	Trophy	Maintain fishery through stocking large Rainbow Trout to reduce cormorant predation
McTucker ponds	/10	Mixed	Rainbow Trout Green Sunfish Bluegill Channel Catfish 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 or other suitable species. Monitor Smallmouth Bass populations. Closed to harvest. Catch-and-release, only. Implement White Sturgeon Management Plan. Consider alternate regulations for sturgeon if public support and desire exists.
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 or better for all trout. Evaluate and expand stocking of fingerling trout to create desirable fishery. 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 warranted. Consider put-and-take catfish during the summer months.
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. Continue to evaluate predatory species to aid in Perch control.
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.

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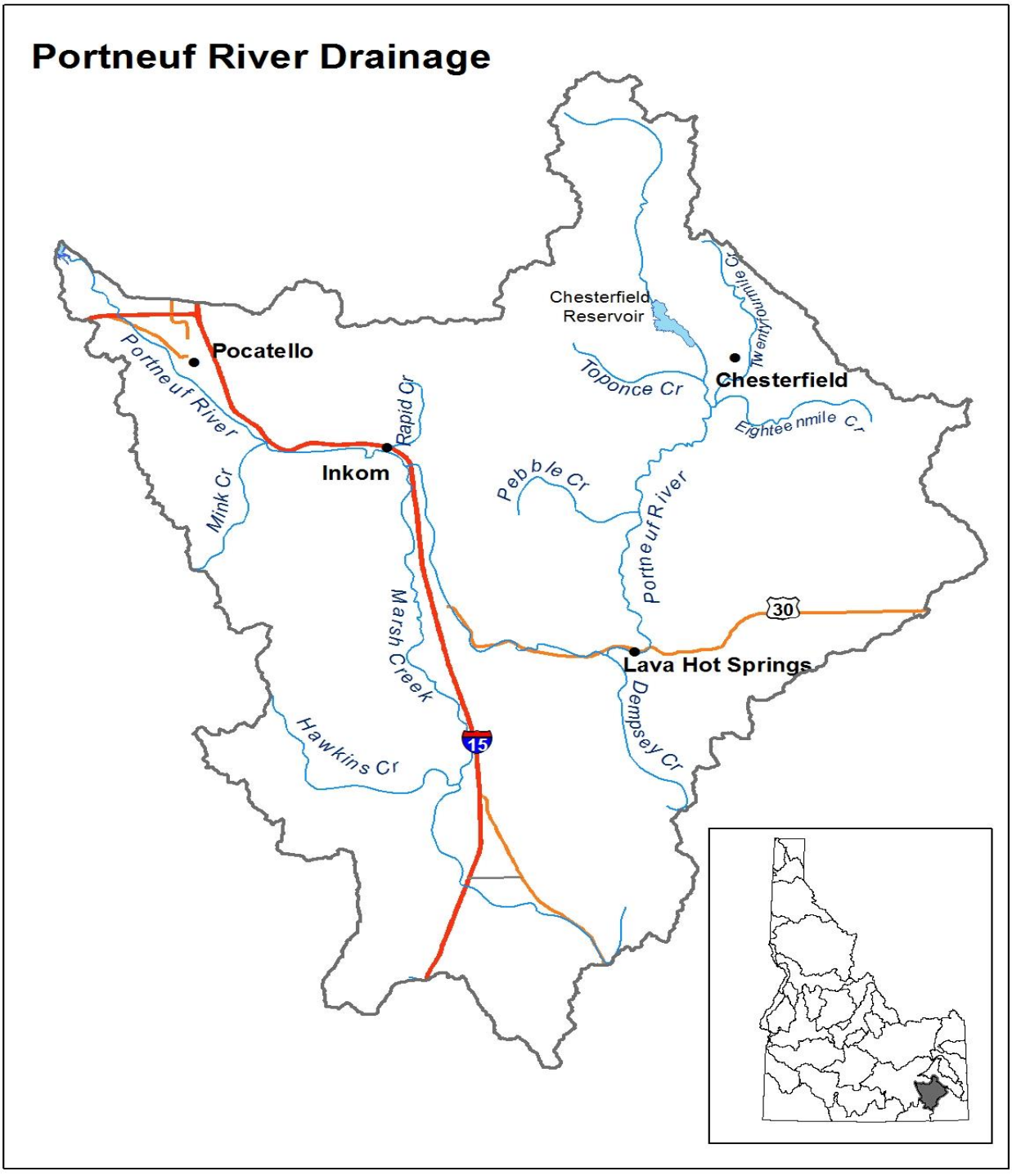
Portneuf River Drainage
Pocatello
Portneuf River
Rapid Cr
Inkom
Mink Cr
Chesterfield Reservoir
Twentyoumile Cr
Toponce Cr
Chesterfield
Eighteenmile Cr
Pebble Cr
Portneuf River
30
Lava Hot Springs
Marsh Creek
Dempsey Cr
Hawkins Cr
15

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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, Bluehead Sucker, 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 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 and lack of riparian vegetation. 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. If illegal introductions continue, chemical renovation will be implemented. In 2015, a second community fishery (Bannock Reservoir) was

built in Pocatello at the newly constructed Wellness Complex. Use at this reservoir exceeds Edson Fichter Pond.

Objectives and Strategies

1. Objective: Improve water quality and trout habitat in Portneuf River from Pocatello upriver to Lava Hot Springs, including Marsh Creek.

   Strategy: 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.

   Strategy: 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.

   Strategy: 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.

   Strategy: 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.

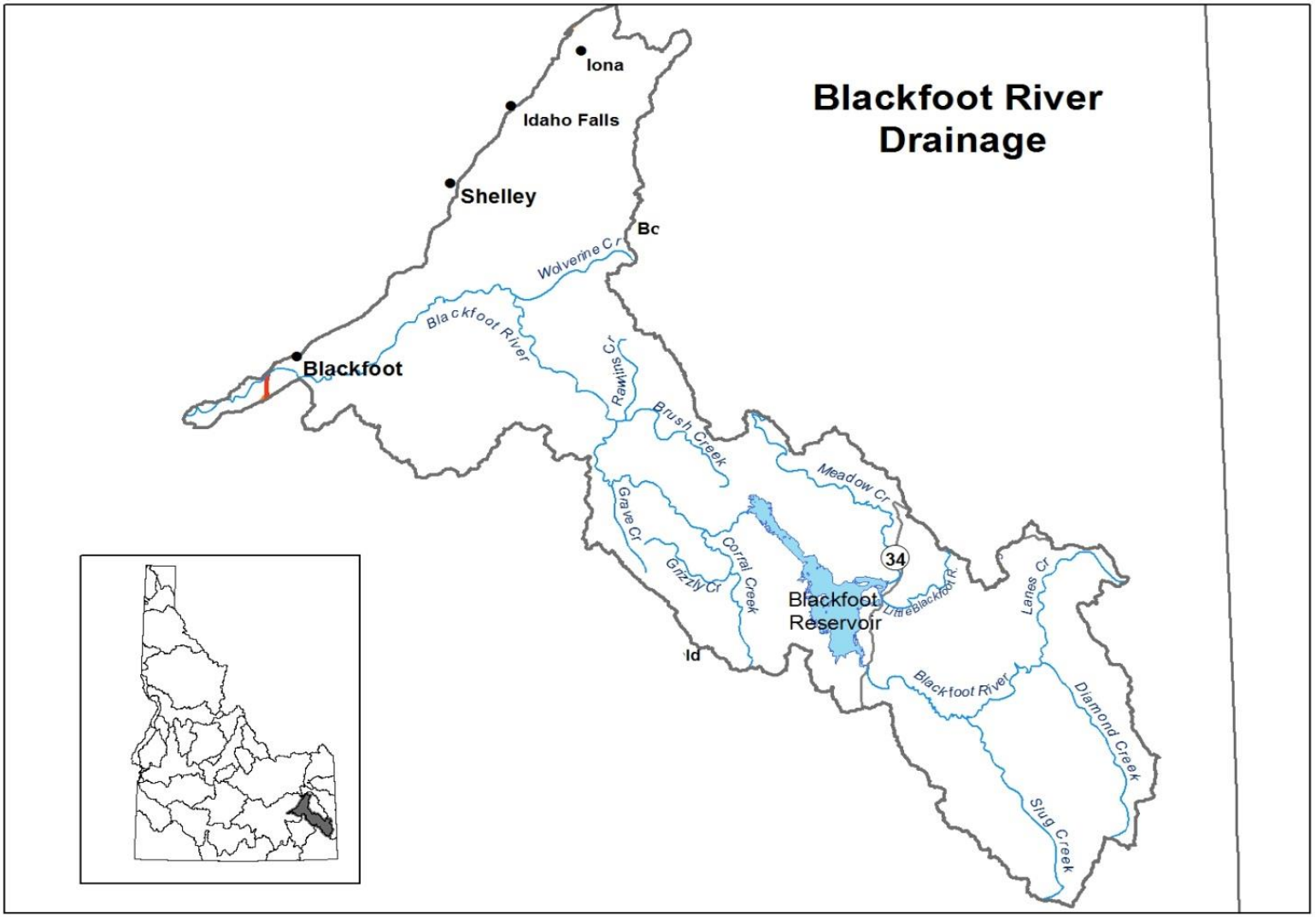
3. Objective: Reduce illegal introductions in Edson Fichter and Bannock Reservoir.

   Strategy: Submit press releases and provide signs to help educate the public on negative impacts from illegal introductions.

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 costs. Increase education notices on illegal fish introductions.
Bannock Reservoir (Wellness Complex in Pocatello)	/6	Coldwater	Rainbow Trout and kokanee	Community	Pond will be managed to maximize fishing opportunities while minimizing stocking costs. Increase education notices on illegal fish introductions.
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.
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 trout.


Blackfoot River
Drainage
Iona
Idaho Falls
Shelley
Bc
Wolverine Cr
Blackfoot River
Blackfoot
Rawlins Cr
Brush Creek
Meadow Cr
Grave Cr
Grizzly Cr
Corral Creek
34
Blackfoot
Reservoir
Littleblackfoot R.
Lanes Cr
Id
Blackfoot River
Diamond Creek
Slug Creek

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 Grays 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 illegal introductions of Yellow Perch and Smallmouth Bass.

Habitat conditions could be improved in the upper Blackfoot River and its tributaries. Several recent habitat projects have been completed to improve riparian habitats. Additional work is needed to improve habitat complexity to increase carrying capacity and reduce bird predation losses describe below. To that end, discussions with the Bear Lake Grazing Associated were initiated in 2017 to begin habitat improvement projects on private land in exchange for grazing parts of the Wildlife Management Area.

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 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.

The Blackfoot River, its tributaries, and 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 from one 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 (BCT) 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 BCT 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 BCT spawners captured in the Little Blackfoot River was poor. Beginning in 1990 the BCT were released in the Blackfoot River. In 1991 the Department attempted to trap all trout ascending the upper Blackfoot River from Blackfoot Reservoir. Trapped BCT 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 BCT 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. Initial minimum estimates of predation were completed using telemetry tagged YCT. To increase sample size, PIT tagging studies were initiated in 2010 and have been completed annually. Average predation rates on juvenile and adult YCT are 30%. The highest rates of predation on both size classes exceeded 70%. The recent studies are completed using PIT tag recoveries and correcting for off-island deposition of PIT tags. Based on those results, pelican predation was identified as the most significant limiting factor preventing YCT recovery. Since the 2015 study was published, AWP populations have declined and are approaching the state management goal. In 2017, predation rates were the lowest measured to date..

Results from past predation studies prompted IDFG to develop a pelican management plan for American White Pelicans. The first plan was completed in 2009 and recently updated in 2016. The plan describes actions to reduce nesting numbers at Blackfoot Reservoir and set a population objective of 700 nesting adults (350 active nests). The last several years, IDFG management actions were successful in nearly reaching that goal.

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 was successful. As a result of management programs, the pelican population is declining. The reduction in bird numbers will allow for alternative stocking programs to be considered (i.e., stocking greater numbers of smaller trout).

Objectives and Strategies

1. Objective: Protect genetic integrity of native Yellowstone Cutthroat Trout in the Upper Blackfoot River.

   Strategy: Continue stocking only sterile Rainbow Trout in Blackfoot Reservoir.

   Strategy: 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.

2. Objective: Establish an appropriate balance between management goals for Yellowstone Cutthroat Trout and American White Pelicans at Blackfoot Reservoir.

   Strategy: Implement the Departments Pelican Management Plan.

3. Objective: Maximize return-to-creel of sterile Rainbow Trout.

   Strategy: Complete a size-at-stocking evaluation to determine if reductions in the American White Pelican numbers will improve return-to-creel of fingerling trout.

4. Monitor escapement of adfluvial Cutthroat Trout spawners from Blackfoot Reservoir into the upper Blackfoot River

   Strategy: 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.

   Strategy: Continue juvenile and adult Cutthroat Trout tagging programs that are used to estimate pelican predation.

6. Objective: Increase the population of Yellowstone Cutthroat Trout in the 6-mile reach on the Blackfoot River Wildlife Management Area.

   Strategy: Complete a habitat restoration project that will increase habitat complexity (pools and cover)

7. Objective: Increase production of Yellowstone Cutthroat Trout on private lands on Lanes and Diamond Creeks, and their tributaries.

   Strategy: Develop grazing agreements to complete habitat projects on private lands in exchange for equitable amounts of grazing on the Blackfoot Wildlife Management Area.

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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 and Smallmouth Bass. Evaluate stocking strategies with reduce bird predation. 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.

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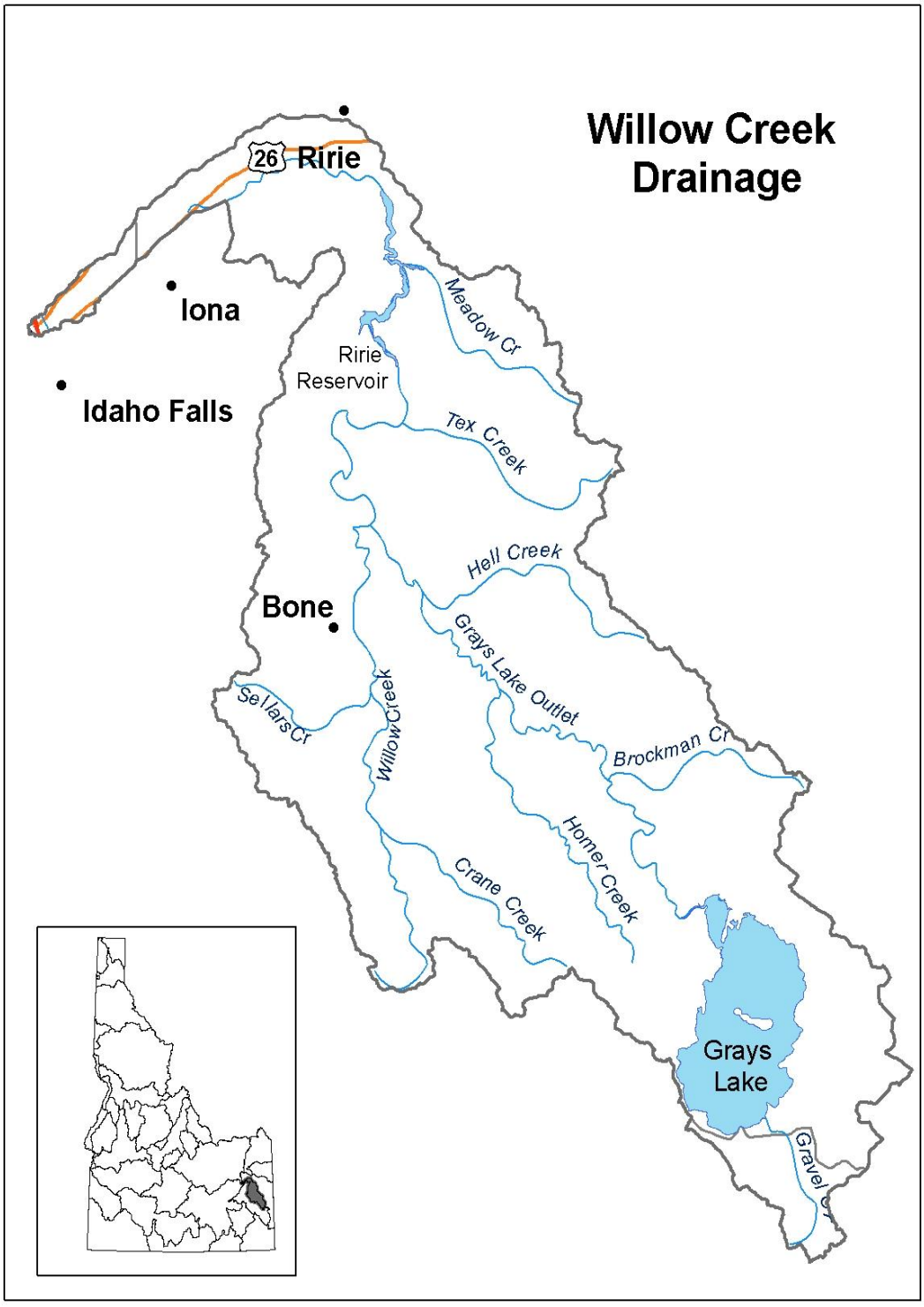
Willow Creek
Drainage
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Ririe
Iona
Idaho Falls
Ririe
Reservoir
Meadow Cr
Tex Creek
Hell Creek
Bone
Grays Lake Outlet
Sellars Cr
Willow Creek
Brockman Cr
Homer Creek
Crane Creek
Grays
Lake
Gravel Cr

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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, which reduces the mean annual flow in this creek. 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, irrigation water storage and recreation. 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 restrictive 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 within the stream channel 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. Due to concerns with icing and resulting flooding, year around flow releases from Ririe Dam are unlikely. 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 2015, angler use was approximately 66,000 hours with a catch rate of 2.7 fish per hour. This fishery is supported primarily through hatchery releases of sterile Rainbow Trout and kokanee, and self-sustaining populations of Smallmouth Bass and Yellow Perch. 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. Initially, evaluation of return-to-creel indicated the program had successfully replaced the Rainbow Trout fishery. However, body condition on Yellowstone Cutthroat Trout suggests they were not foraging as effectively as Rainbow Trout, resulting in poor growth and dissatisfaction among anglers. Dissatisfaction was significant enough that in 2013, we replaced Yellowstone Cutthroat stockings with sterile Rainbow Trout. Angler catch rates on trout have since improved. Kokanee have been stocked since 1990 and the stocking rate was increased in 2002 to improve catch rates. This proved 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. Since 2010, we increased kokanee stocking rates to 310,000 fish, and catch rates increased to 1.0 fish per hour in 2015. Splake were stocked in Ririe Reservoir from 1996 through 1999, but the program was discontinued because of low angler returns. Anglers did harvest two state record splake in 2004

and again in 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. Continued annual population monitoring has documented annual recruitment of Walleye, but populations continue to remain stable at low abundance. 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. Research has shown that it takes seven or eight years for a bass to reach the historic 12" size limit. As such, and with public support, the 12" minimum size limit was removed from bass in 2015. Initial creel surveys show that bass harvest doubled from 1,043 (2010) to 1,965 in 2015. This level of harvest has little ability to impact either the size structure or abundance of bass, and is considered acceptable.

The Yellow Perch fishery fluctuates annually 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 reached an all-time high in 2015.

The 95 miles of streams in the Willow Creek drainage above Ririe Reservoir are mainly in narrow canyons and contain limited populations of 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 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) once 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 main stem 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 nongame species. At least two tributaries also contain nonnative Brook Trout. Though Brown Trout have been stocked and captured in survey work in the past, none have been collected in population surveys over the past decade. Native Cutthroat Trout populations are presently depressed in the drainage but remain viable.

Over-harvest of Cutthroat Trout once contributed to the decline of this species but restrictive harvest regulations combined by a generally low level of effort 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, which has prompted some landowners to seek alternate species for stocking to provide a harvest-oriented fishery in the Willow Creek Drainage. Management will need to be responsive to these requests as possible to avoid frustrated anglers from engaging in unauthorized stockings of undesirable species in the drainage.

Objectives and Strategies

1. Objective: Improve native Cutthroat Trout populations in Willow Creek and tributaries.

   Strategy: Maintain harvest closures on Cutthroat Trout until populations recover sufficiently to support harvest.

   Strategy: Evaluate Brook Trout populations and assess the need/potential for chemical renovations.

2. Objective: Improve riparian habitat through the Willow Creek Drainage.

   Strategy: Work towards habitat and stream flow protection and enhancement.

   Strategy: Seek out opportunities to work with willing landowners to improve riparian areas by using fencing, riparian restoration or other methods.

   Strategy: Implement projects that reduce or eliminate sediment additions to the Willow Creek Drainage; implement bank stabilization projects as possible.

   Strategy: 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 measures that are consistent with Cutthroat Trout conservation.

   Strategy: Continue to stock appropriate numbers of hatchery trout to support angler catch rates of 1.0 fish per hour for hatchery fish.

   Strategy: Stock enough kokanee annually to maintain catch rates of at least one fish per hour, and continue to refine length-at-age and catch rates to optimize the fishery.

4. Objective: Maintain a satisfactory Smallmouth Bass and Yellow Perch fishery in Ririe Reservoir.

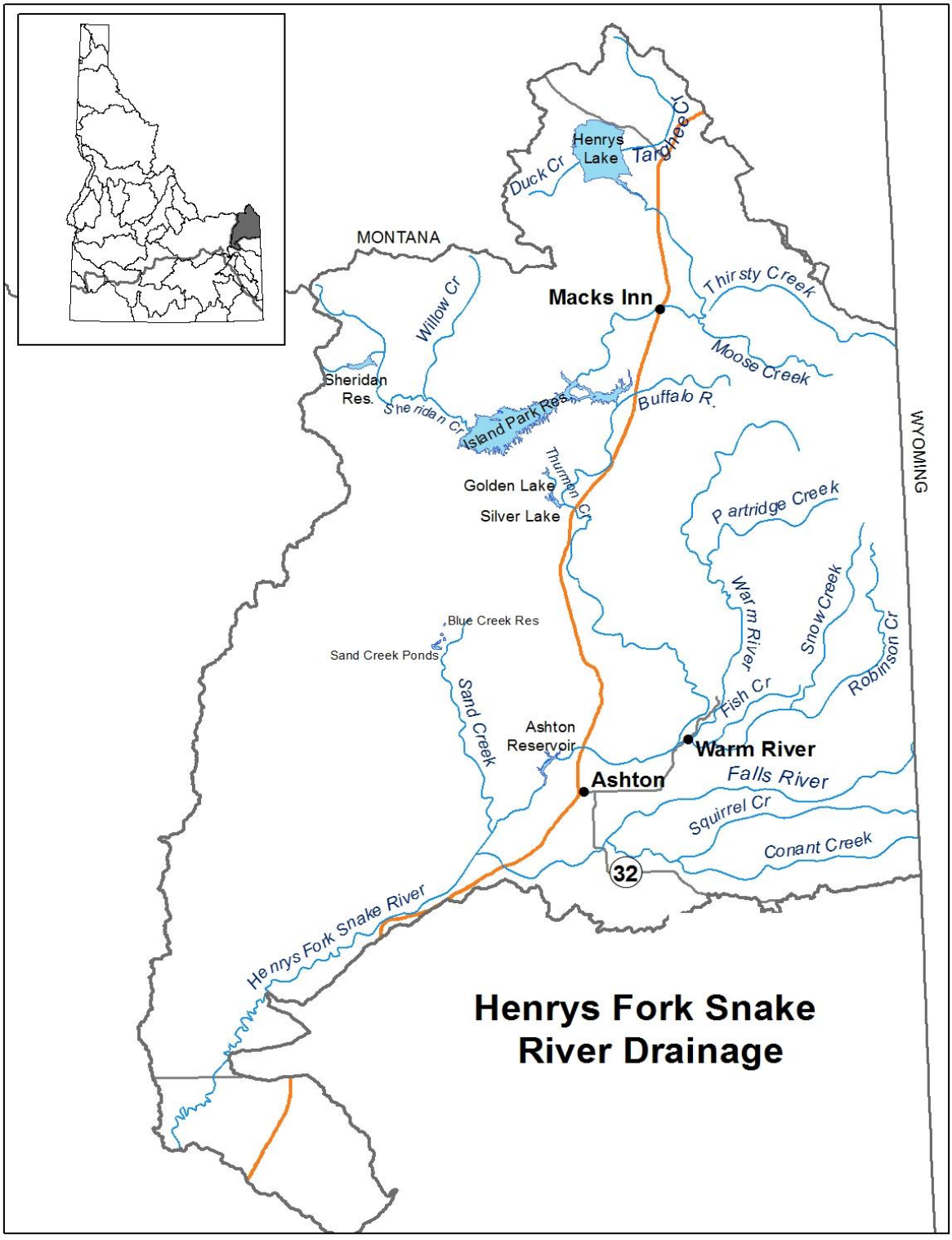
   Strategy: Continue to promote the value of the Yellow Perch fishery during years when reservoir levels create an abundant perch population.

5. Objective: Determine impacts to the recreational fishery from Walleye.

   Strategy: Conduct periodic gill net surveys to monitor Walleye and trout populations.

   Strategy: Continue to monitor kokanee populations, particularly in relation to Walleye abundances.

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	Rainbow Trout	Put-and-take	Trout put-and-take fishery. Stock sufficiently to produce 1.0 fish per hour catch rates or better.
			Kokanee Yellow Perch Smallmouth Bass	General	Put-and-grow kokanee fishery. Maintain catch rates of 1.0 fish/hr with lengths exceeding 10 inches. Continue to monitor angler catch and harvest rates of Smallmouth Bass, and periodically assess growth.
			Walleye	No protection	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. Consider put-and-take opportunities to meet angler desires for harvestable fish in Willow Creek.
All other tributaries	83/	Coldwater	Cutthroat Trout	Wild	Restore wild populations of native Cutthroat Trout through habitat enhancement, spawning closures and no-harvest rules where appropriate.
			Brook Trout	General	Evaluate Brook Trout populations for threat to native populations, and consider chemical renovation where warranted.


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.
Thurman 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

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8675

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 (dams, diversions, etc.), 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, primarily 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. Despite these limitations, this river reach supports wild trout populations, and in recent years has seen an increase in angler use as nearby river reaches continue to crowd and anglers seek less crowded conditions elsewhere.

The section of river from St. Anthony to Mesa Falls is currently producing good numbers of wild Rainbow Trout, with increasing numbers of Brown Trout. Whitefish, which were once abundant appear to be in decline. 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. Over the past several years, trout populations below Chester Dam have increased over prior years, suggesting that these screens have been effective at keeping trout in the river as opposed to in the canal systems. 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, consistent with an increase in natural precipitation. 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 IDFG 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 with restrictive 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 in 2009, caused the reservoir be drained periodically, but it has since stabilized and any impacts to the fish populations appear to have diminished.

Island Park Reservoir is a widely fluctuating irrigation supply 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 Utah 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 any 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 during the fall as opposed to the smaller, standard fingerlings stocked during spring. Preliminary analysis indicates that the screens on the outflow from Island Park can entrain trout smaller than six inches, and moving to a larger fingerling was an attempt to overcome possible entrainment. 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.

Kokanee management in Island Park Reservoir remains a challenge. Fish stockings in Moose and Lucky Dog creeks did not result in a return of adult spawning fish in subsequent years.

Creating artificial redds, which started in 2014 also appears to be ineffective at creating a spawning run back to parent streams. Remnant populations of spawning kokanee can still be found in the Henrys Lake Outlet below the North Big Springs Loop bridge, but adults typically number in the hundreds as opposed to thousands. While screens are present on the intake to the power plant on Island Park Dam, screen spacing is sufficient to allow entrainment of age-1 kokanee. It is possible that entrainment may be sufficient on younger kokanee to be suppressing the population. Alternatively, summer habitat may be limited, particularly in years with substantial drawdowns. Both of these factors should be investigated over the duration of this plan.

Island Park now supports the third known pelican breeding colony in Idaho. This colony was first documented in 2011 although pelicans frequented the Island Park area for decades prior. Since the first documented nests in 2011, this colony has increased annually, becoming the second-largest breeding colony in Idaho in 2017 and prompting concern for impacts on fish resources by professionals and the public. Beginning in 2018, IDFG implemented a hazing program to limit nesting pelicans to no more than 150 nests. Initial efforts in 2018 appear to have been successful, although the logistics of implementing a dissuasion program faces numerous hurdles. Dissuasion efforts will continue through 2020, after which time a full analysis of the cost/benefits of that program will be conducted, and future actions assessed.

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 substantial data shows that these non-game species are responsible for suppressing or interfering with sport fish populations.

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 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. While initial monitoring results via electrofishing indicate the program is successful, it appears the stocking program was unable to create a substantial late run of spawning cutthroat trout. We will continue to monitor this reach, and have adjusted the fishing season to allow anglers to pursue large trout while they are present in this reach. 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. Following this season extension, complaints by anglers about poor fishing have been reduced.

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 April and May. 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. There is need for a small boat ramp somewhere around the Highway 20 Bridge to facilitate recreational use along the Outlet, which would help spread the abundant summer crowds to new waters.

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. Additional research has shown that meeting both the size goal and catch rate goal is unattainable, and that either alternate goals should be developed, or a general recognition that we will cycle periodically between meeting size goals and catch rate goals should occur. Henrys Lake produces large brook trout including the state record of 7 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, although consistent wild recruitment hasn't been substantial to date. 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.

Historically, it has been desirable to understand the contributions of wild fish to the Henrys Lake population. This would allow managers to better adjust stocking rates to get closer to meeting both size and catch rate objectives. Up until 2017, 10% of all hatchery cutthroat and brook trout were adipose fin-clipped annually. During creel and biological surveys, harvested fish were analyzed for clips, providing a basis to assess whether or not hatchery fish comprise a proportionate percentage of the catch. Beginning in 2017, fin clipping was replaced by Parental Based Tagging, where all fish used in hatchery operations were genetically identified and cataloged, and all hatchery produced offspring should be able to be identified. This approach should result in complete identification of wild/hatchery fish, and eliminate error associated with only marking 10% of hatchery fish. To date, the majority of the sport fishery has been maintained by hatchery supplementation despite efforts to improve natural production in Henrys Lake. During 2011 it appeared that natural production resulted in large influx of wild fish to the lake, and an increase in angler catch rates but a reduction in fish size in subsequent years. Since that time, wild production has been minimal. . 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. Based on population trends and growth trends observed in gill netting, stocking was reduced in 2012 to 750,000 cutthroat trout. As population trends became more balanced in 2015, stocking rates were increased to 1 million cutthroat annually, but remain below the suggested 1.3 million fish. Based on gill netting efforts, growth measures and angler catch rates, an adaptive stocking strategy will be necessary to calculate stocking targets for the fishery each year. Recent trends show that the fish population is below the management target of 11 trout per gill net. The reduced stocking rate from 2012 to 2015 can account for a small portion of the decline in abundance, but factors other than stocking are likely affecting trout populations. In particular, an earlier ice off, warmer summer temperatures, increased biological loading (algae blooms) and low winter dissolved oxygen may be reducing trout survival. These factors, and others that may be influencing mortality should be looked at closely over the duration of this plan.

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. 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. Stocking of a hybrid trout created using Gerrard Rainbow Trout crossed with Yellowstone Cutthroat Trout began in 2015 to try to create a larger hybrid. Initial results show the Gerrard cross hybrid performance is less than the normal Hayspur hybrid in regards to hatchery survival as well as growth in the lake. Additional evaluation will continue over the coming period, but if results remain equal to or less than Hayspur hybrids, this program will end.

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. Shortfalls in hatchery Brook Trout availability in 2015 and 2016 caused Brook Trout abundance in gill netting to decline. Increased production in 2017 is hoped to bring this population back in line with management objectives, and once stabilized, the stocking request will remain at 100,000 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 reduced and stabilized. Based on trends in trout growth rates and condition factor, we have seen no clear evidence that the chub population is having a substantial impact on the trout population. Stable isotope analysis shows that trout and chub generally consume different food resources. Diet analysis conducted over the past decade shows that while trout and chub do consume some similar prey items, this overlap is minimal. Given what appears to be lower trout survival in recent years, however, these interactions warrant additional research and analysis. 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 limited 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. A telemetry study conducted in 2017 found that adult Rainbow Trout from the Vernon section of the Henrys Fork migrate into the Fall River to spawn, before returning to the Henrys Fork. As such, the connection between the two rivers is important for both rivers.

Objectives and Strategies

1. Objective: Maintain quality trout fishing in the Henrys Fork from the South Fork confluence upstream to Riverside Campground.

   Strategy: Monitor trout populations in indicator reaches by electrofishing on a regularly scheduled basis and propose regulation changes as biologically and socially necessary.

   Strategy: Work with stakeholders in the lower Henrys Fork to optimize fish screens and ladder below Chester Dam.

   Strategy: Work with partners and stakeholders to improve fish passage and minimize entrainment as supported by life history and migration assessments.

   Strategy: Work with partners and stakeholders to obtain biologically protective stream flows for fish.

Strategy: Identify factors that may be affecting mountain whitefish abundances, and address as possible.

2. Objective: Sustain - a satisfactory fishing experience in the Henrys Fork on the catch-and-release section from Riverside Campground upstream to Island Park Dam.

Strategy: Continue long-term monitoring of trout population and angling success through regularly scheduled sampling surveys.

Strategy: Work for stream flow protection, focusing on flow enhancements that optimize juvenile trout survival.

3. Objective: Manage the Henrys Fork above Island Park Reservoir for satisfactory and diverse angling opportunity.

Strategy: Evaluate stocking practices, size at stocking and frequency of stocking to maximize the angling experience.

Strategy: Monitor and evaluate the impacts of foraging pelicans and cormorants on hatchery and wild trout resources and implement actions to reduce impacts where necessary.

Strategy: Work for biologically meaningful habitat, water quality and stream flow protection and enhancement.

4. Objective: Produce and maintain a quality, consumptive salmonid fishery in Island Park Reservoir.

Strategy: Identify and evaluate stocking strategies that will provide high quality fishing with economic efficiency.

Strategy: Work towards reservoir tributary habitat and stream flow protection and enhancement.

Strategy: 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.

Strategy: Work to identify limiting factors on kokanee salmon and address as possible to create quality kokanee fishery.

5. Objective: Identify factors contributing to mortality of juvenile and adult trout in Henrys Lake, and address as possible.

Strategy: Analyze the impacts of Utah Chub population in Henrys Lake and evaluate management strategies to minimize negative impacts of chubs to the trout fishery.

Strategy: Implement valid water quality monitoring program to gather data on potential factors influencing trout survival, algae blooms and other basic water quality parameters critical to trout survival.

Strategy: Continue annual spring gillnetting surveys to monitor trout population parameters and chub densities.

6. Objective: Conserve and enhance the genetic integrity of the Henrys Lake cutthroat trout population.

Strategy: Continue to refine and implement the Henrys Lake sterile hybrid program.

Strategy: Continue regular genetic monitoring of the Henrys Lake cutthroat trout population.

7. Objective: Enhance contributions from natural reproduction in Henrys Lake.

Strategy: Implement Parental Based Tagging to evaluate hatchery vs wild contributions and to gain insight into hatchery trout performance.

Strategy: 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: Strive to create consistent, balanced fishery that meets management objectives for catch rates and size by adjusting stocking rates to dampen fluctuations in year class strengths.

Strategy: Evaluate stocking methods to improve the size structure of trout and implement results as possible.

Strategy: Adjust hatchery supplementation as needed to maintain size and catch rate goals.

Strategy: Solicit public input on management direction that align public desire, biological sideboards and management direction to provide the most acceptable fishing experience on Henrys Lake.

9. Objective: Evaluate effects of white pelicans on trout in Henrys Lake.

Strategy: Monitor pelican use in key tributaries and lake-wide as possible.

Strategy: 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	Wild General Conservation	Evaluate effects of regulations changes from general season to a reduced bag limit. Evaluate whitefish populations and address limiting factors. 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. Monitor whitefish populations and address limiting factors.
Vernon Bridge to Ashton Dam	3/	Coldwater	Rainbow Trout Brown Trout Whitefish Cutthroat Trout	Wild General Conservation	Evaluate impacts from year-around season extension. Monitor whitefish populations and address limiting factors.
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	Wild 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 flows
Harriman State Park	8/	Coldwater	Rainbow Trout Whitefish	Trophy General	Fly fishing only as access stipulation.
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. Mitigate impacts incurred by predatory birds.
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. Consider alternate stocking strategies to obtain catch rate goals.
Henrys Lake Outlet to Big Springs	2/	Coldwater	Rainbow Trout Brook Trout Whitefish Cutthroat Trout	Conservation Conservation	Evaluate 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. Address limiting factors on trout to improve survival.
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. Implement focused habitat restoration activities on select tributaries.
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.

Buffalo River and tributaries	50/	Coldwater	Rainbow Trout Brook Trout	General	Manage for wild 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

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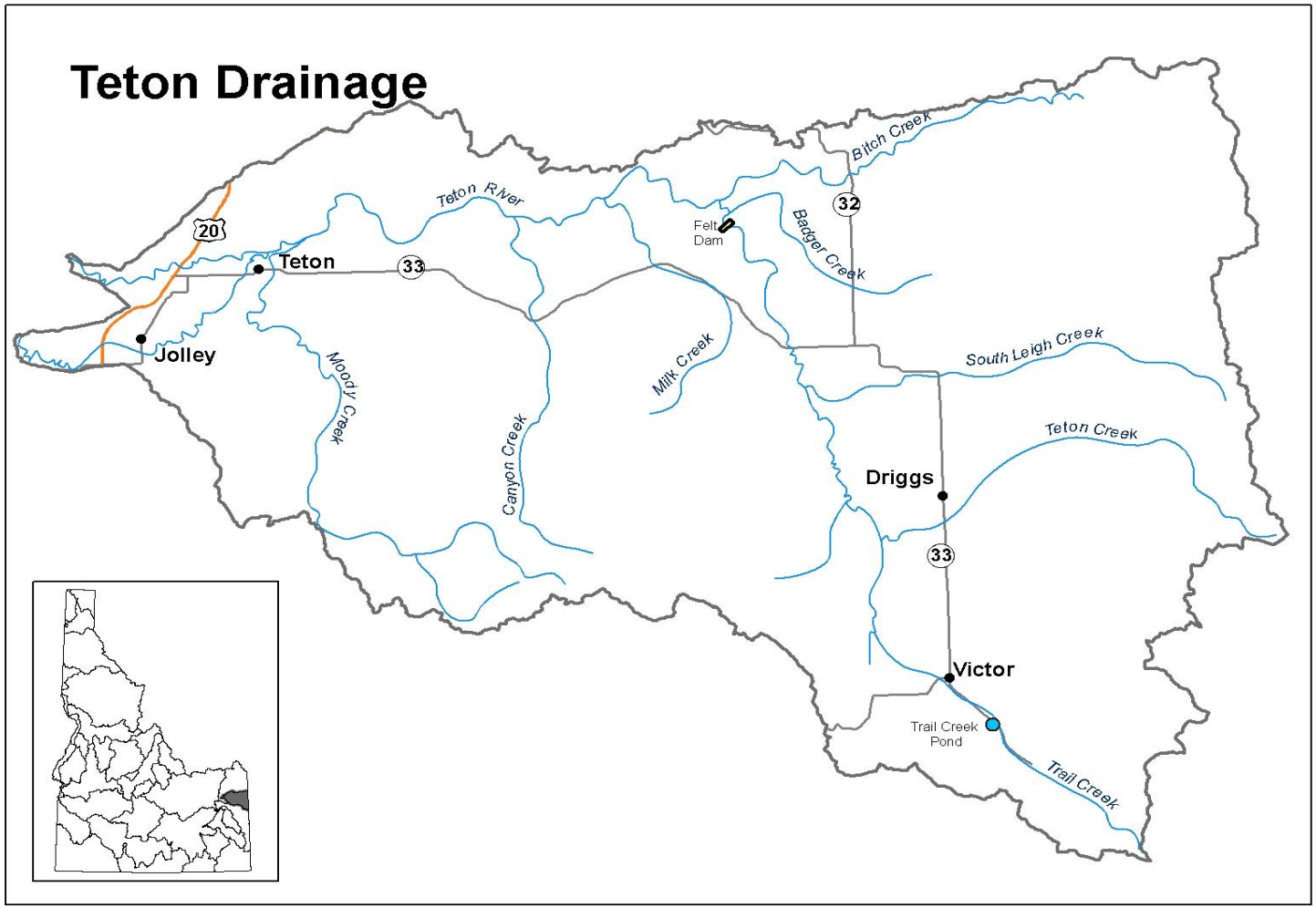
Teton Drainage
Bitch Creek
Teton River
20
Felt Dam
32
Badger Creek
Teton
33
Jolley
Moody Creek
Milk Creek
South Leigh Creek
Canyon Creek
Teton Creek
Driggs
33
Victor
Trail Creek Pond
Trail Creek

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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 for 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.

The Teton River has been managed as a wild trout fishery since the early 1990's. Prior to that, 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. In 2015, the bag limit was removed from Rainbow Trout and unlimited harvest was implemented. Tributaries are now managed with year around fishing with the exception of a spawning closure during the month of June. 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. Efforts to evaluate the conditions (both terrestrial and aquatic) in the Canyon should occur over the next 5 years, and a restoration plan developed to address the limiting factors within the Canyon. Restoration activities should be implemented where biological gains are expected, as time and funding allow.

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. Despite these impacts, a quality trout fishery

with a substantial proportion of Cutthroat Trout exists. Options to improve this reach include flow management to keep both channels wetted and fish screens where appropriate. Angler access is limited through this reach, and should be prioritized over the course of this plan.

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. Alternatively, the decline may more likely be associated with the difficulties of accessing and navigating this reach. There is no easy access that connects anglers to the Canyon until mid-way through the reach, where an old, dilapidated access (Spring Hollow) exists. Above this point, anglers must either slide their boats down the Bitch Creek slide, which is a rough, primitive and difficult access, or they carry their gear and equipment down to the Felt Hydropower plant. Neither option is easy, which limits the amount of use the upper Canyon receives.

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. . Keeping this reach difficult to access - particularly the upper half of the Canyon - will limit angler use, and provide a lightly used resource in a drainage with heavy fishing pressure. The next access below the Bitch Creek slide is the Spring Hollow access, which is being upgraded in 2018 to attract more angler use in an underutilized reach. This will allow greater access by anglers, who can float down to the Teton Dam site, which is also being rebuilt in 2018. These two sites will allow more use and easier access for anglers, and we expect use to increase here over the coming years.

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 and in many cases increased their abundance, in

recent years. Sampling in 2014 and 2016 showed densities of Cutthroat Trout 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. 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.

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. More recently, efforts to engage in aquifer recharge, thereby increasing late summer groundwater flows are on the rise. The intent of these efforts is to increase viability by farmers and agricultural producers, which then keeps ground in agriculture and not housing developments. This would be accomplished by returning to flood irrigation early in the year, and using sprinkler systems as summer progresses. This trend may move away from a more naturally shaped hydrograph, and may negatively impact native fish populations. The alternative of more ground being developed into housing may also negatively impact fish populations. These shifts in water usage in the Valley should be monitored over the course of this plan.

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. The fast pace of development has also resulted in vocalization about crowding on the river, particularly with the onset of non-traditional recreational use such as pleasure floating. Currently, the most common complaint on the Teton River through the Valley is the amount of use the river is receiving, and conflicts between traditional users and recreational floaters. 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 Strategies

1. Objective: Preserve genetic integrity and population viability of wild native Cutthroat Trout.

   Strategy: Do not stock or allow stocking of streams, lakes or ponds with other species of fish that would interbreed or compete with Cutthroat Trout.

   Strategy: Work to obtain special consideration, protection, and improvement of critical Cutthroat Trout habitat in land use decisions.

   Strategy: Consider conservation stocking of Cutthroat Trout in areas where habitat restoration has occurred to bolster natural production and use of newly created habitat.

   Strategy: Protect Cutthroat Trout through catch-and-release regulations.

   Strategy: Identify source populations of nonnative trout, particularly in tributaries, and reduce their abundance as possible.

   Strategy: 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

   Strategy: Identify tributaries with minimal risk of invasion by non-native species as candidates for improving connectivity.

   Strategy: Work with conservation organizations, partner agencies, water users, and developers to increase duration and magnitude of surface flows in selected tributaries.

   Strategy: 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.

   Strategy: Survey main stem Teton River and important tributaries; develop prioritized list of areas in need of habitat improvement and/or fish passage. Implement restoration projects as possible.

   Strategy: 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.

   Strategy: Ensure restoration of habitat or mitigation of habitat loss whenever possible.

4. Objective: Increase consumptive trout fishing opportunity for anglers near population centers.

   Strategy: 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.

Strategy: Seek out new locations to create fishing opportunities using hatchery fish where existing habitat is incapable of supporting healthy, wild populations of trout.

Strategy: Provide harvest opportunity for anglers through the use of hatchery trout where anglers desire that opportunity, and where restrictive rules limit harvest. Sterile Rainbow Trout may be a viable alternative in select locations to meet these objectives while still protecting native fish populations.

Strategy: 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 where these losses are deemed to be having a population-level impact on the resource.

Strategy: 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.

Strategy: Identify and obtain passage around irrigation diversions in cooperation with local irrigators, partner agencies, and conservation organizations.

Strategy: Continue to operate and maintain the South Fork Teton fish ladder; seek out ways to improve fish use of this ladder.

Strategy: Identify barriers and obtain passage through road culverts and other blockages.

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 Unlimited General	Work to improve fish passage and habitat in North and South forks, and work cooperatively with Department wildlife program to restore habitat as possible in Teton Canyon. Seek out opportunities to improve angler access.
Teton River Felt Dam to Trail Creek	22/	Coldwater	Cutthroat Trout Rainbow Trout Brook Trout Whitefish	Conservation Unlimited General	Manage as a wild trout fishery emphasizing efforts to improve Yellowstone Cutthroat Trout population. Work cooperatively to restore connectivity, habitat, and hydrologic regime. Seek out and secure angler access sites.
Teton River Tributaries	111/	Coldwater	Cutthroat Trout Rainbow Trout Brook Trout Whitefish	Conservation Unlimited General	Work cooperatively to restore connectivity, habitat, and hydrologic regime. Strategically implement connectivity projects where risks to isolated populations are minimal. Identify source populations of nonnative species that compete with Cutthroat Trout and address as feasible.
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. Seek out additional opportunities to create urban fisheries.
Packsaddle Lake	/4	Coldwater	Cutthroat Trout	General	Maintain fingerling plants to provide consistent catch rates of at least 1 fish/hr.

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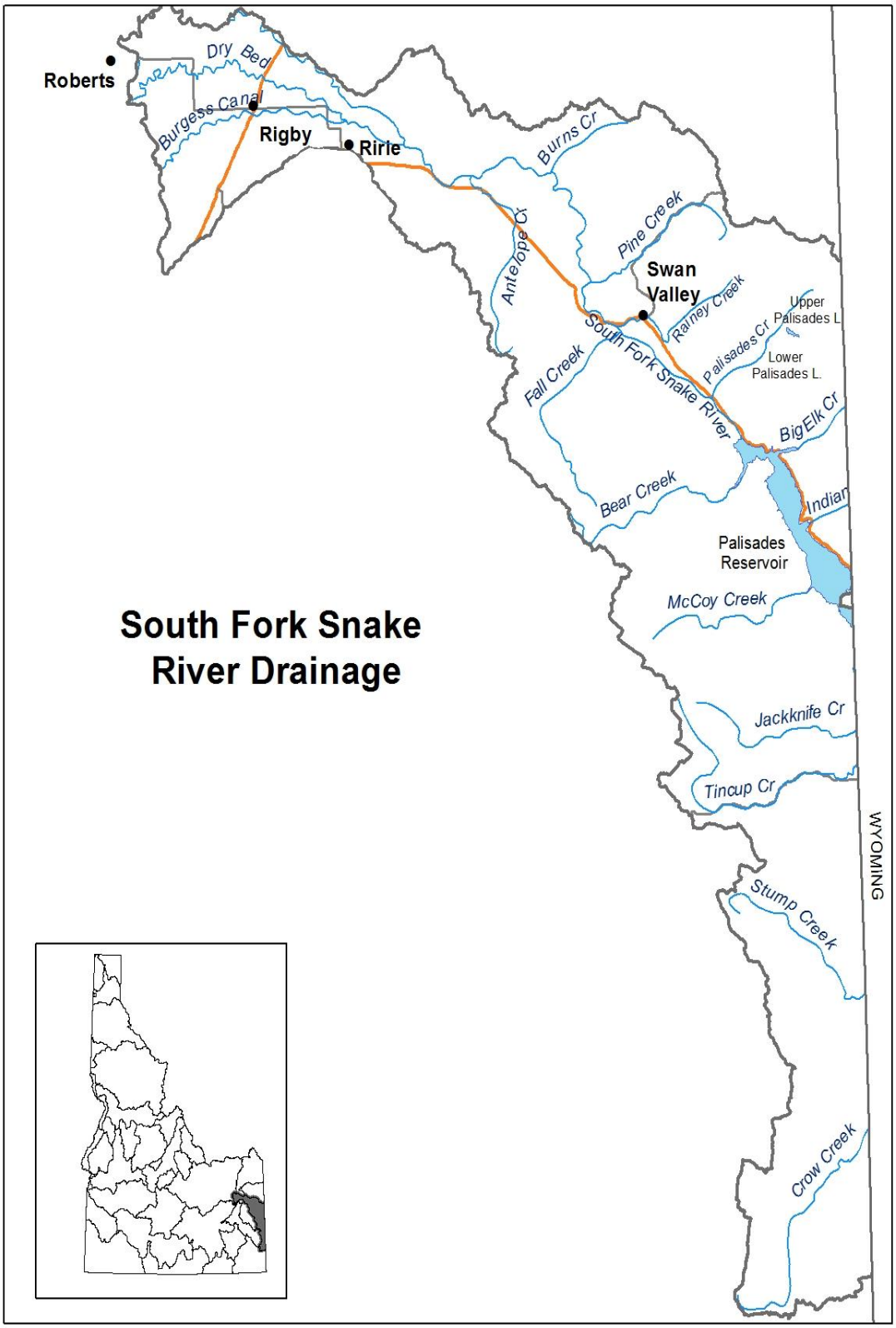
Roberts
Dry Bed
Burgess Canal
Rigby
Ririe
Burns Cr
Antelope Cr
Pine Creek
Swan Valley
Rainey Creek
Upper Palisades L
Palisades Cr
Lower Palisades L.
South Fork Snake River
Fall Creek
Big Elk Cr
Bear Creek
Indian
Palisades Reservoir
McCoy Creek
Jackknife Cr
Tincup Cr
Stump Creek
Crow Creek
WYOMING
South Fork Snake River Drainage

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32. SOUTH FORK SNAKE RIVER DRAINAGE

Overview

For the purposes of this management plan, the South Fork Snake River drainage consists of the main stem 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 Chub (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, Kokanee 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, and the two species now cycle around similar abundances as measured at the Conant sampling reach. The increasing trend in Rainbow Trout abundance is also evident in the angler catch. Wild native Cutthroat Trout supported 71% of the catch in 1996, but only 31% of the catch in 2012. Brown Trout are contributing to the lower proportion of Cutthroat Trout as well, and they now make up a third of the species abundance at the Conant monitoring reach. Due to the continued increase of Brown Trout, removal of the 16" minimum size limit on browns should be considered over the course of this plan.

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 main stem side channel habitat almost exclusively for spawning, Cutthroat Trout used both main stem 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 spring time peak flows are high tend to favor Yellowstone Cutthroat over Rainbow Trout. Conversely, years with lower peak flows during the spring 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, and being of a high magnitude. 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. Our most recent creel survey (2012) estimated angler harvest of Rainbow Trout at 28,282 fish. Efforts will continue to inform angling publics of the risk to the Cutthroat Trout fishery posed by Rainbow Trout and to encourage and increase rainbow and hybrid trout harvest.

Aquatic 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, although recent research suggests entrainment overall in the canal system on the South Fork is not sufficient to cause population level declines in fish abundance. 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.

Palisades Reservoir is managed with general regulations and hatchery supplementation of Yellowstone Cutthroat Trout. Jackson National Fish Hatchery Cutthroat Trout have been stocked as catchables and sub-catchables, with mixed success. Beginning in 2014, stocking of fingerling Cutthroat Trout in the spring was replaced with the stocking of advanced (6”+) fingerlings in September, after irrigation delivery had slowed. This was an effort to reduce exposure of stocked fish to entrainment through the dam, and to increase survival within the reservoir. Palisades Reservoir provides fishing opportunity for bank, boat and ice fishermen. Fishing effort was 22,500 angler hours during 1993, and 44,623 hours in 2015. Lake Trout and Kokanee have been introduced, but only small natural populations have developed. Large fluctuation in water levels (up to 80 vertical feet) and reduced ability to reach spawning areas may affect these open water species and may limit total trout abundance in the reservoir. To counter this, adult spawning

Kokanee have been captured on spawning runs in Big Elk Creek, and transplanted above a weir in Bear Creek since 2015. Returns of successfully spawned offspring from these efforts should occur in 2018 and subsequent years. Existing boating access facilities that service the Palisades Reservoir fishery have become overcrowded due to heavy use during the summer months, and users are asking for additional access areas. The bottleneck in access was exacerbated by security concerns at Palisades Dam, which historically was used to access the Calamity boat ramp on the far side of the Reservoir. Once BOR eliminated the road across the dam as a means for the public to use to access the boat ramp, boaters were required to tow their boats across five miles of washboard, gravel road to get to Calamity. Many boaters are unwilling to do this, and now most use originates at Blowout Canyon. This creates a strong need to obtain additional boat ramp/angler access along the Highway side of the reservoir, and should be prioritized over the coming period. Tributary streams to the South Fork can benefit from in-stream habitat restoration and 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. Beginning in 2018, habitat restoration activities have been focused in the Rainey Creek Drainage, which continually underperforms with regards to spawning runs of Cutthroat Trout. Efforts will continue to focus in this area until notable increases in returns of adult Cutthroat Trout occur.

River use over the past decade has increased substantially compared to the prior decade. River use is managed by the US Bureau of Land Management, who has engaged in exploring methods to reduce overcrowding on the South Fork. A survey of river users was completed in 2015, and to date, no drastic changes have occurred to regulate use. Topics explored by BLM following their survey included implementing a reservation system for camping spots, as well as limiting daily floating trips through a lotter or similar system. Crowding will continue to be an issue to monitor over the course of this plan.

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 Strategies

1. Objective: Preserve genetic integrity and population viability of native Cutthroat Trout.

   Strategy: Do not stock or allow stocking of streams, rivers, reservoirs or ponds with other species of fish that will interbreed with Cutthroat Trout.

Strategy: 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.

Strategy: Manually remove nonnative trout in tributary streams where biologically and physically feasible to create refuges for Cutthroat Trout to spawn in the absence of competing species.

Strategy: Continue to monitor genetic status of wild Cutthroat Trout populations.

Strategy: Protect Cutthroat Trout through protective regulations.

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.

Strategy: Continue outreach effort to emphasize importance of Rainbow Trout suppression through angling and flow management.

Strategy: Work with Bureau of Reclamation and partners to provide a release from Palisades Dam characterized by a spring maximum flow of 24,000 cfs for at least 3 days straight during the third week of May.

3. Objective: Maximize juvenile Cutthroat Trout production from tributaries.

Strategy: Operate and maintain the Palisades Creek and Burns Creek screens in cooperation with local irrigators.

Strategy: Negotiate with local irrigators for maintenance flows in tributaries when possible. Coordinate with IDWR on flow issues that could impact downstream water rights.

Strategy: Implement strategic, prioritized habitat restoration plan in Rainey Creek; monitor fry outmigration as measure of success.

4. Objective: Minimize impacts of land use and development on fish habitat and water quality.

Strategy: 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.

Strategy: Ensure restoration of habitat or mitigation of habitat loss whenever possible.

Strategy: Partner with developers on large projects that incorporate important tributaries within development boundaries, and implement habitat restoration as part of the new development.

5. Objective: Improve the salmonid fishery in Palisades Reservoir.

Strategy: Evaluate Cutthroat Trout hatchery practices, size at stocking, and timing of stocking to maximize survival and return to creel of hatchery products.

Strategy: Maintain restrictive harvest rules for Cutthroat Trout in principal spawning tributaries.

Strategy: Work with partner agencies and conservation groups to restore habitat and connectivity in tributaries.

Strategy: Establish self-sustained spawning runs of kokanee in additional tributaries to Palisades Reservoir. Monitor fry outmigration and returns of adult kokanee as metric of success.

Strategy: Periodically evaluate success of actions to improve Palisades Reservoir with creel surveys.

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.
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 habitat improvement 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 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 impact studies.
Crow Creek and tributaries	25/	Coldwater	Cutthroat Trout Brown Trout	Conservation General	Monitor selenium toxicity to aquatic organisms; address as necessary.
Jackknife Creek and tributaries	12/	Coldwater	Cutthroat Trout Brown Trout	Conservation General	Assess needs for habitat improvement program; implement as necessary.

All other tributaries	354/	Coldwater	Cutthroat Trout	Conservation	Protective rules for 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. Establish self-sustaining kokanee spawning populations in multiple tributaries to increase Kokanee recruitment to the reservoir. Explore options for supplemental stocking of kokanee as needed.
Upper and Lower Palisades Lakes	138	Coldwater	Cutthroat Trout	Wild	Manage for wild trout benefits. Consider removal of restrictive harvest rules.

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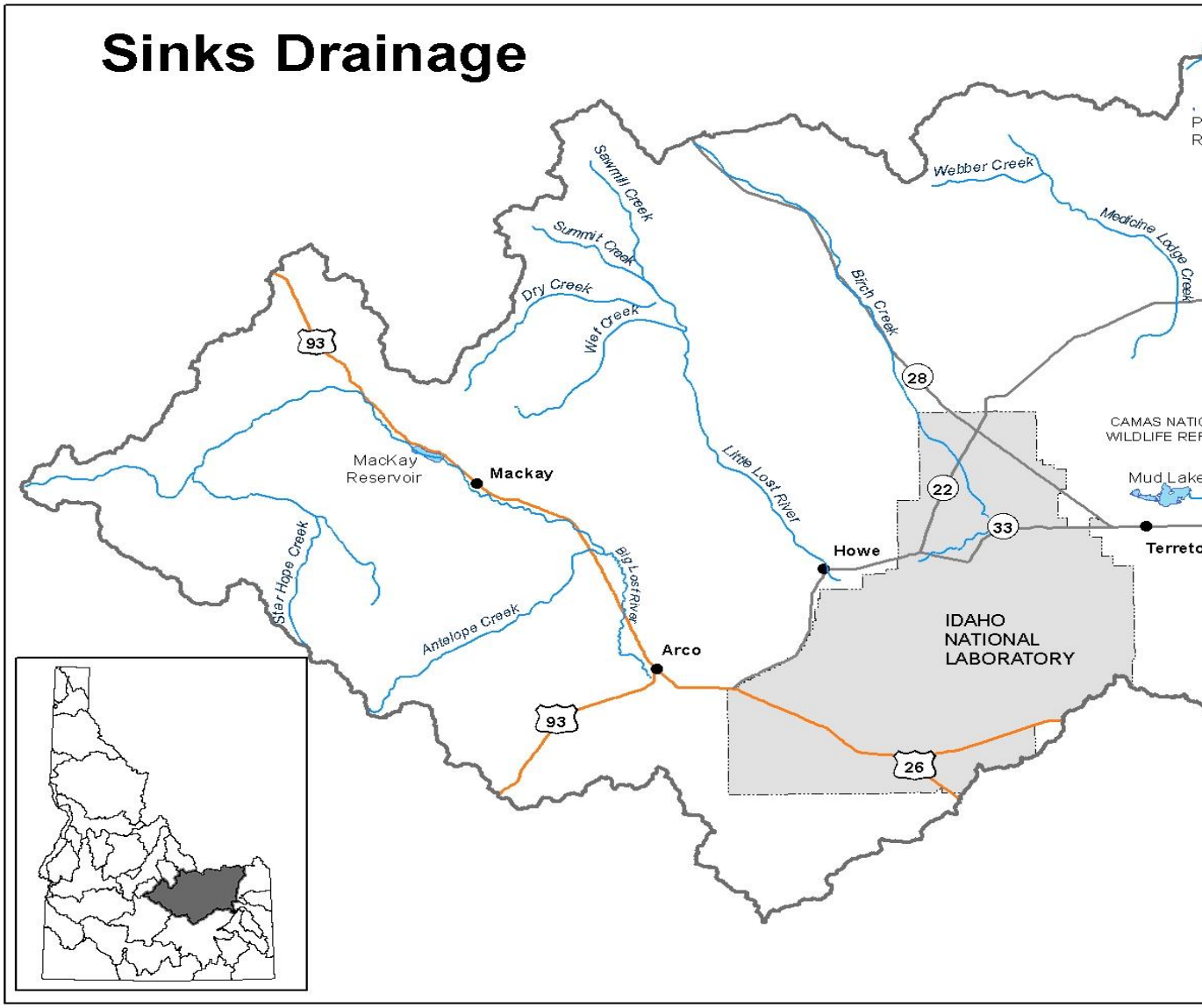

Sinks Drainage
Webber Creek
Medicine Lodge Creek
Sawmill Creek
Summit Creek
Dry Creek
Wet Creek
Birch Creek
93
28
MacKay Reservoir
Mackay
Little Lost River
22
33
Howe
Star Hope Creek
Big Lost River
Antelope Creek
Arco
IDAHO NATIONAL LABORATORY
93
26
Mud Lake

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 headwater tributaries where Brook Trout, Bull Trout, or Cutthroat Trout are dominant. Native Cutthroat Trout and Bull 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. While many headwater stream are in good condition, the quality of stream habitat often declines as the streams approach the Snake River Plain. This decline is typically associated with channel dewatering by irrigation diversions, livestock grazing, agricultural development, channelization, and natural dewatering as flows sink into the Snake River Plain Aquifer. Streams become marginal where they flow into the Snake River Plain due to diversion and freeze out. When streamflow is maintained, and where groundwater inflow is lacking, wintertime air temperatures often cause streams to become icebound and leave their channels. Subsequently, these areas generally provided limited fisheries.

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 bloodstock, or using sterile fish to avoid impacts to native species where appropriate.

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. Historical accounts indicate that Mountain Whitefish were once 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 the Department to develop a conservation and management plan for the Big Lost Whitefish population. It seems evident that the single greatest factor associated with the decline in abundance is dewatering, although recent research suggests disease (Proliferative Kidney Disease) is present in the drainage, which by itself or in combination with other pathogens may be complicating whitefish survival issues. 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. By 2011, all major barriers to whitefish movement, with

the exception of Mackay Reservoir, had been resolved, and whitefish populations had exceeded both distribution and abundance goals established in the management plan. More recent population estimates have documented a return to depressed abundance of Whitefish, perhaps because of disease issues, or other reasons yet to be identified. While many on the ground activities contributed to the rebound in whitefish populations in the early 2010's, a return to better water conditions also helped recovery. Efforts to expand whitefish populations will continue over the next period, and an evaluation of the disease risks or vector presence in the Big Lost Drainage will occur over the duration of this plan. Similar to whitefish, population trends for all trout species in most areas of the Big Lost Drainage sustained a decline between 2012 and 2017, with no clear understanding of the cause of those declines. Additional work to determine the cause of these declines will be prioritized over the course of this plan. 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 a large number of trout and kokanee through the outlet structure of the dam into the Big Lost River. This has limited the ability to manage Mackay Reservoir for a wild trout fishery or to effectively supplement with fingerlings. Catchable Rainbow Trout and naturally reproducing Kokanee 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, which has been observed since 2015. This fishery has improved substantially with a larger minimum pool at the end of the irrigation season in recent years, and the reservoir now supports a robust and popular year around fishery. Of particular interest is the winter ice fishery targeting kokanee. Due to the abundance of kokanee in recent years, coupled with a slowdown in growth, the bag limit was increased to 15 kokanee per person per day in 2015.

The 60 miles of the Big Lost River below Mackay Reservoir has been extensively modified by numerous irrigation diversions and channelized for flood control. 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. Wells have caused groundwater levels to recede, which has dried up many springs that resulted from perched clay layers in the alluvium of the valley floor. As surface water became scarce, more wells were drilled, creating holes in the clay layers of the valley floor. Water flowing along the clay layers then flows down along the well casing, further reducing surface water and exacerbating the problem the wells are trying to address. Well development combined with lower natural flows has reduced or eliminated most salmonid populations downstream from the Moore Diversion. In many years, the river is dewatered near the Blaine Diversion, essentially eliminating an additional 10 miles of perennial stream flow. However, when this portion of the river remains wetted, it 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" in an effort to reduce surface water loss, and concluded this option was not realistic. Regardless, it is likely that additional demands will be placed on the water below Mackay Dam in the coming years, particularly during below-average water years.

Antelope Creek is one of the major tributaries to the Big Lost River, and joins the Big Lost below the Blaine Diversion. As such, it remains isolated from the Big Lost in most years, occasionally connecting during high flow events such as spring runoff. Antelope was once stocked with

Rainbow Trout, but beginning in 2002, was transitioned over to wild trout management due to limited use by anglers coupled with limited hatchery resources. Since that time, the Department has attempted to establish Mountain Whitefish populations by translocating fish that had been salvaged from below irrigation headgates. To date, these efforts have not been successful, and as a result, the Antelope Creek Drainage is without a fishery of sufficient quality to attract many anglers. Given the absence of native salmonids coupled with the inability to establish conservation populations of Mountain Whitefish, the Antelope Creek Drainage provides a unique opportunity to attempt to establish alternate species of salmonids with little risk or jeopardy to other important trout resources. This concept should be evaluated over the period of this plan, and stockings of appropriate alternate species should be implemented where feasible and desirable.

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 the limited angler 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 a 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 the Chilly Diversion is annually dewatered for irrigation and through natural means, and has suffered from long-term stream alteration activity. The river and tributaries upstream of the Chilly Diversion support wild Rainbow Trout, Brook Trout, Cutthroat Trout, and Mountain Whitefish populations. In recent years, angler reports about catching arctic grayling in the Big Lost above Mackay Reservoir have increased. Angler reports were confirmed with electrofishing surveys in 2017 which documented grayling in the Big Lost River above Mackay Reservoir, East Fork Big Lost River, Star Hope Creek, and Lake Creek. Current information on the potential impacts of grayling on Mountain Whitefish populations is lacking; as such we will not stock grayling in the Big Lost Drainage where they can access streams with Mountain Whitefish until additional research is completed to address overlap between these two species.

The Big Lost River from Bartlett Point Road to North Fork and the East Fork Big Lost River from North Fork to West Fork (Star Hope Creek) 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.

Trout populations declined significantly in many stream reaches upstream of Chilly Diversion between the 1980s and 1990s. The causes of the population decline in the early 1990s in the upper drainage are not clear but drought; loss of connectivity with Mackay Reservoir, and disease may be associated with this decline. This reach was surveyed again in 2012, and while trout densities were below the highs of the 1980s, 1990s and 2007, were considered adequate. Additional surveying in 2017 found a greatly depressed trout population, again raising concerns for impacts from disease or possibly flow alterations resulting from earlier snowmelt or similar

environmental changes. As part of the work associated with the Mountain Whitefish recovery plan, fish passage has been provided around all identified barriers in the Big Lost River upstream of the Chilly Diversion. Additionally, Yellowstone Cutthroat Trout have been stocked since 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. A concerted effort to identify limiting factors on trout populations will occur over the course of this plan.

There are several headwater stream reaches in the Big Lost River basin that have excellent fish habitat but do not currently contain fish or fish densities are very low. Collectively, these stream reaches could provide several miles of high quality fishing opportunity if fish could be established in these areas. The lack of native trout in the Big Lost River basin provides a unique opportunity to use hatchery trout to establish fish populations in these areas. This concept will be evaluated over the period of this plan, and introductions of hatchery trout, including species not commonly stocked, will be considered where feasible and desirable.

Fifty-two of the 61 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 Lost River 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 a given drainage, maintain catch rates of at least one fish per hour, and maintain some lakes in each drainage as “fishless” to benefit native nongame aquatic species. 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. The highest densities of Bull Trout are present in the Sawmill Creek drainage. Anglers have reported catch rates in excess of one fish per hour. The Little Lost River has been managed for wild trout 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, reducing habitat impacts of livestock grazing, habitat restoration, 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. The lower portion of Birch Creek is part of a mitigation settlement for the creation of the Hydropower operation that dewaters the lower portions of the creek. In recent years, fish kills have been reported frequently, and the power plant has not been able to meet the mitigation requirements issued by FERC. Additional documentation of fish populations in the mitigation reach will continue, and we will seek to resolve

this discrepancy over the course of this plan. 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 abundant populations of Cutthroat Trout and Brook Trout in some tributaries, although wild Rainbow Trout are the dominant species throughout the drainage. The Medicine Lodge drainage has been managed for wild trout since 1983 and under the wild trout regulation (two trout possession limit) since 1998. Opportunities to restore native Cutthroat Trout to portions of the drainage through eradication of non-native species will be identified and addressed as feasible. 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 Trout, Rainbow Trout 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 Trout 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. Low flows and warm summer temperatures limit trout populations in the lower ends of these streams. Further, the small size of streams found on public ground limit the ability of the Department to provide a quality fishery for the public in the Beaver/Camas drainage. Most large water suitable of sustaining trout populations and a recreational fishery is found on private land. As such, efforts to work with private landowners to establish supplemented populations of trout to create recreational fisheries should be undertaken over the course of this plan. 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 and a cessation in stocking activities in 2010. Hatchery supplementation stopped into the early 2010's when hatchery production constraints resulted in a reprioritization of stocked trout. The limited use by anglers along Beaver Creek and subsequent poor returns of hatchery fish resulted in a cessation of stocking in this drainage. However, a naturally reproducing Brook Trout population is likely capable of supporting current fishing pressure in Beaver Creek. Paul Reservoir, which lies in the Beaver Creek drainage, is managed to provide high catch rates for anglers. The reservoir is stocked annually with fingerling Cutthroat Trout. The program continues to be very successful, with anglers reporting high catch rates and an enjoyable fishing experience.

Mud Lake is located at the lower end of the Beaver/Camas drainage, and is managed for waterfowl production, although it also supports a limited recreational fishery. Mud Lake at one time 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. Decisions by the irrigation company that controls Mud Lake water

management 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 water management in the mid-2000's, winterkills became 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, some Brown Bullhead, low densities of Largemouth Bass and an occasional Tiger Musky. Nongame fish are still present with Utah Chubs and an occasional Utah Sucker. A variety of species have been stocked in an effort to establish fisheries in Mud Lake. Bluegill were introduced from 1983-1985, and an occasional Bluegill is reported being caught by anglers even today. Black Crappie were planted from 1987-1989, however this effort was unsuccessful. Introductions of Tiger Muskie were made into Mud Lake to create a trophy fishery while utilizing the abundant nongame biomass. The occasional Tiger Musky is caught by anglers, and the population is supported by occasional releases of hatchery fingerlings. Smallmouth and Largemouth Bass have been stocked in small numbers in an effort to jump start the population following winter kills, but no stocking has been conducted in many years. A select group of anglers target the bass population each year, and enjoy the opportunity to pursue warmwater species in the Upper Snake Region. 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 Strategies

1. Objective: Improve Mountain Whitefish distribution and abundance in the Big Lost River drainage to levels sufficient to ensure long-term population viability and provide a recreational fishery.

2. Strategy: Implement actions outlined in the Mountain Whitefish Conservation and Management Plan for the Big Lost River Drainage, Idaho.

   Strategy: Work collaboratively with partner agencies, water users, and conservation groups to restore fish passage, install diversion screens, and minimize habitat loss associated with dewatering.

   Strategy: Collect life history, ecology and population abundance and trend information on Mountain Whitefish to better understand factors limiting population.

   Strategy: Investigate potential disease vectors, distribution and other factors that may be limiting whitefish abundances.

3. Objective: Maintain and improve angling opportunities in the Big Lost River drainage.

   Strategy: Continue stocking Yellowstone Cutthroat Trout and other hatchery fish to provide a diverse angling experience.

   Strategy: Work with partner agencies, landowners, and conservation groups to secure perpetual public access to underutilized reaches of the Big Lost.

   Strategy: Identify limiting factors on trout populations, and address with management actions as possible.

4. Objective: Provide a variety of fishing opportunities in the Sinks drainages for native and nonnative game fish ranging from quality to harvest oriented and remote to highly accessible fishing.

Strategy: Protect isolated native Cutthroat Trout populations in the Medicine Lodge, Beaver Creek, and Camas Creek drainages and identify opportunities to restore additional Cutthroat Trout populations within their native range.

Strategy: Continue to manage many small streams in the Sinks drainages for Brook Trout, Cutthroat Trout, and Rainbow Trout or other desirable nonnative salmonids.

Strategy: Identify areas where additional fishing opportunity can be created using hatchery products; Assess for impacts to existing/native stocks; Implement stocking program tailored to provide intended benefits to anglers.

Strategy: 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.

Strategy: Continue to implement regional alpine lakes management plan and ensure consistency with statewide plan upon completion.

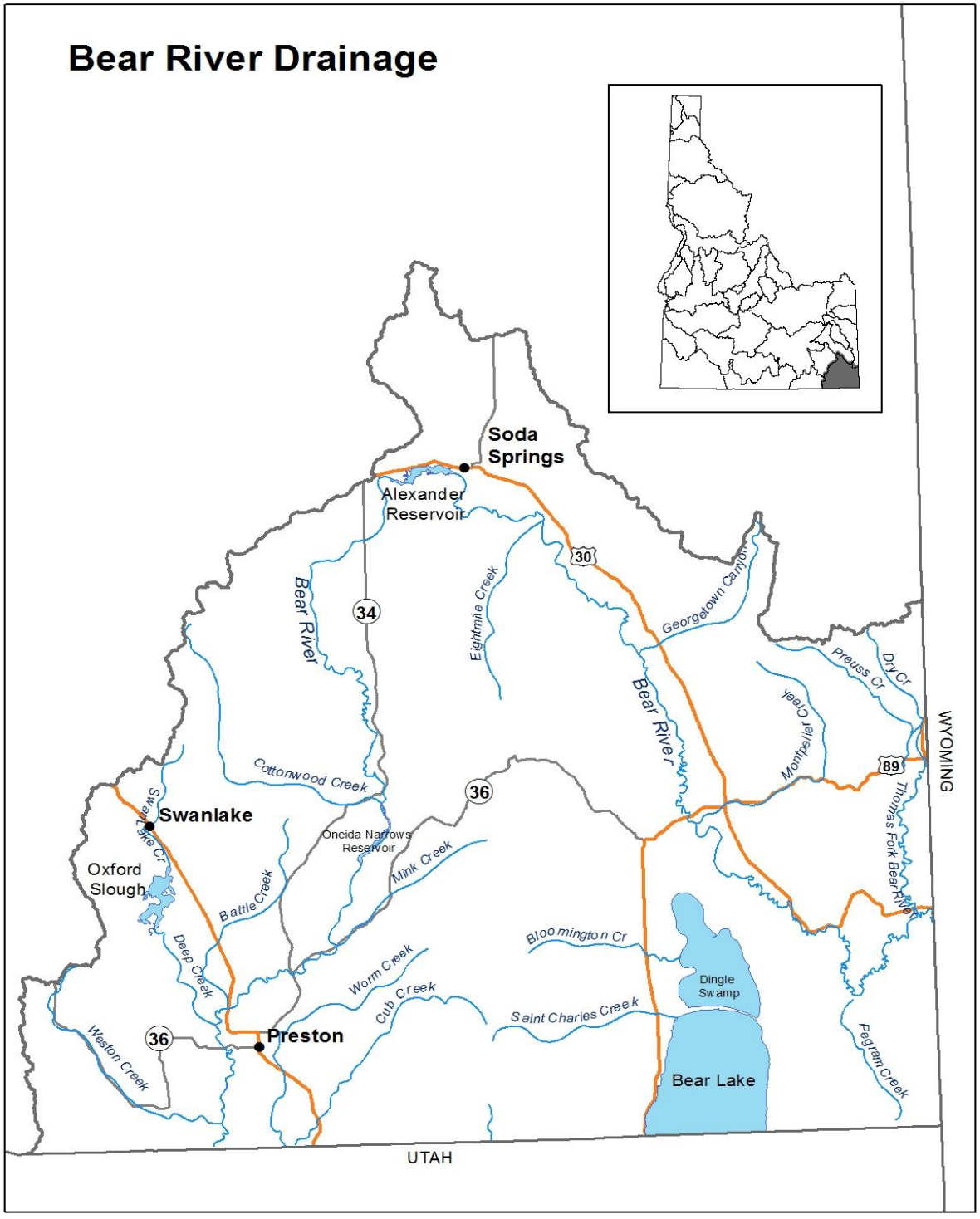
Strategy: Discontinue stocking mountain lakes where natural production is sufficient to meet catch rate objectives.

Strategy: Assess additional mountain lakes to see if expanding stocking opportunities is warranted.

Strategy: Establish stocking programs to create desirable, unique fishing experiences. Given the lack of native salmonids in some areas, alternate species may be useful in creating unique opportunities.

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 Blaine Diversion	22/	Coldwater	none	General	System de-watered regularly in recent years. Good fishery potential during sustained wet years. Candidate reach for hatchery supported fishery during some years.
Big Lost River from Blaine 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.
Antelope Creek Drainage	??/	Coldwater	Brook Trout	General	Evaluate potential for additional hatchery supported fishing opportunity where feasible.
Mackay Reservoir	/1,000	Coldwater	Rainbow Trout Kokanee	Put and take General	Put-and-take fishery for Rainbow Trout. Self-sustaining kokanee fishery; hatchery supplementation when necessary.
Big Lost River from Mackay Reservoir to Chilly Diversion	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 Diversion upstream to Star Hope Creek	45/	Coldwater	Rainbow Trout Brook Trout Cutthroat Whitefish	General Conservation	Evaluate natural reproduction of Cutthroat Trout and use supplementation accordingly. Determine factors limiting trout abundance and address. Consider additional hatchery supported fishing opportunity where feasible. Closed to harvest. Catch-and-release only
Big Lost River tributaries including North Fork, Star Hope Creek, 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. Consider additional hatchery supported fishing opportunity where feasible. Closed to harvest. Catch-and-release only

Little Lost River and tributaries	110/	Coldwater	Rainbow Trout Brook Trout Cutthroat Trout Bull Trout	Wild General Conservation	Manage Bull Trout populations under statewide no-harvest regulation. Cooperatively monitor Bull Trout populations. Encourage Brook Trout harvest. Stock Dry Creek with Cutthroat Trout as needed to maintain fishery. Closed to harvest. Catch-and-release only
Birch Creek and tributaries	32/	Coldwater	Rainbow Trout Brook Trout	Put and take/Wild General	Put-and-take Rainbow Trout fishery to supplement wild trout populations. Monitor impacts from hydropower operations and ensure compliance with FERC mitigation agreement.
Medicine Lodge Creek and tributaries	??/	Coldwater	Cutthroat Trout Brook Trout Rainbow Trout	Conservation General Restricted harvest	Maintain and improve native Cutthroat Trout populations; look for opportunities to create additional fishing opportunities along private lands using Access Yes or similar means.
Beaver/Camas Creek and tributaries	??/	Coldwater	Brook Trout Rainbow Trout Cutthroat Trout	General Conservation	Seek out opportunities to partner with local landowners to create public fishing opportunities where quality fishing experiences are lacking.
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.
Alpine Lakes	/290	Coldwater	Rainbow Trout Cutthroat Trout Brook Trout Golden Trout Grayling Tiger trout	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
30
Eightmile Creek
Georgetown Canyon
Bear River
Preuss Cr
Dry Cr
Montpelier Creek
89
Thomas Fork Bear River
WYOMING
Cottonwood Creek
36
Swanlake
Swan Lake Cr
Oneida Narrows Reservoir
Mink Creek
Oxford Slough
Battle Creek
Deep Creek
Bloomington Cr
Worm Creek
Cub Creek
Saint Charles Creek
Dingle Swamp
Pegram Creek
Weston Creek
36
Preston
Bear Lake
UTAH

9857

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, Northern Leatherside Chub, and Bear Lake Sculpin; and the following introduced species: Rainbow Trout, Brown Trout, Brook Trout, kokanee, 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 main stem 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. 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 main stem 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 Bonneville 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.

Fish Haven Creek is also a significant spawning tributary to Bear Lake. This tributary has been a major focus of restoration with installation of fish screens on all the irrigation diversions and the removal of a fish passage barrier near its confluence with Bear Lake. Redd surveys completed after the barrier removal project show that hundreds of adfluvial Bonneville Cutthroat Trout are spawning in this tributary.

Habitat work in St Charles and Fish Haven creeks markedly changed the Bear Lake fishery. Recent gillnet data, creel results, and adult trout collections at Utah's Swan Creek spawning trap show that wild fish make up over 90% of the Bonneville Cutthroat Trout population. 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 as well as evaluating the potential to allow harvest of naturally produced Bonneville Cutthroat Trout.

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. There is a separate management plan available for Bear Lake that is jointly updated by Utah and Idaho fishery managers (contact the Pocatello regional office for copies of the most recent addition).

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 have been sterile.

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 angling opportunity in the Bear River drainage. Irrigation storage reservoirs

in the Bear River basin include Condie, Foster, Glendale, Johnson, Lamont, Little Valley, Montpelier, Oxford, Treasureton, Twin Lakes, Weston, and Winder reservoirs. Crowther's, Daniels, Pleasantview, and St. John reservoirs are also located within the greater Bear River drainage but are discussed in detail in the Malad River section of this State Management Plan.

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, Deep 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.

Decades of monitoring and a three-year study show that the 12 inch minimum size for harvesting Largemouth Bass was not producing balanced predator/prey populations. Therefore in 2016, a 14 inch minimum size was implemented as the general harvest rule in the southeast region. The impact of that change will be evaluated during the 5-year period of this plan.

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. Anglers frequently report catching fish in excess of 26 inches Largemouth Bass were illegally introduced to the reservoir sometime in the mid-2000s. For the past 5-years, electrofishing has been used try and control the bass population. Continued monitoring and possibly a chemical renovation of the reservoir may be necessary to maintain the highly prized trophy trout fishery.

Objectives and Strategies

1. Objective: Increase number of wild Bonneville Cutthroat spawners and fry production in St. Charles Creek.

   Strategy: Build fish screens on all significant St. Charles Creek diversions.

   Strategy: Seek ways to divert less water from St. Charles Creek.

   Strategy: 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.

   Strategy: 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.

Strategy: 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	Maintain diverse fishing opportunities.
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. 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	Yellow Perch Bluegill Largemouth Bass	General Trophy	Monitor community structure of Largemouth Bass, Bluegill, and Yellow Perch.
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	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	General	Evaluate 14 inch harvest regulation on bass and Bluegill fishery.

			Yellow Perch Largemouth Bass		
Lamont Reservoir	/92	Mixed	Rainbow Trout Largemouth Bass Bluegill Yellow Perch	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 Largemouth Bass	Quality	Consider renovating the reservoir to eliminate illegally introduced Largemouth Bass.
Twin Lakes Reservoir	/446	Mixed	Rainbow Trout Largemouth Bass Bluegill Yellow Perch Crappie	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.
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 Smallmouth Bass	General	
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 Tiger trout Cutthroat Trout Yellow Perch	General	Evaluate impacts of stocking tiger muskellunge and tiger trout to reduce the population 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 General	 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.
All other Bear River tributaries (not stocked) are managed for wild Cutthroat Trout, 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. Monitor increases in wild Cutthroat Trout and evaluate efficacy of reducing stocking of hatchery trout and consider harvest of wild Cutthroat Trout. Continue monitoring programs. Implement interagency Bear Lake Management Plan.
Fish Haven Creek	10/	Coldwater	Cutthroat Trout Brook Trout	Conservation General	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.

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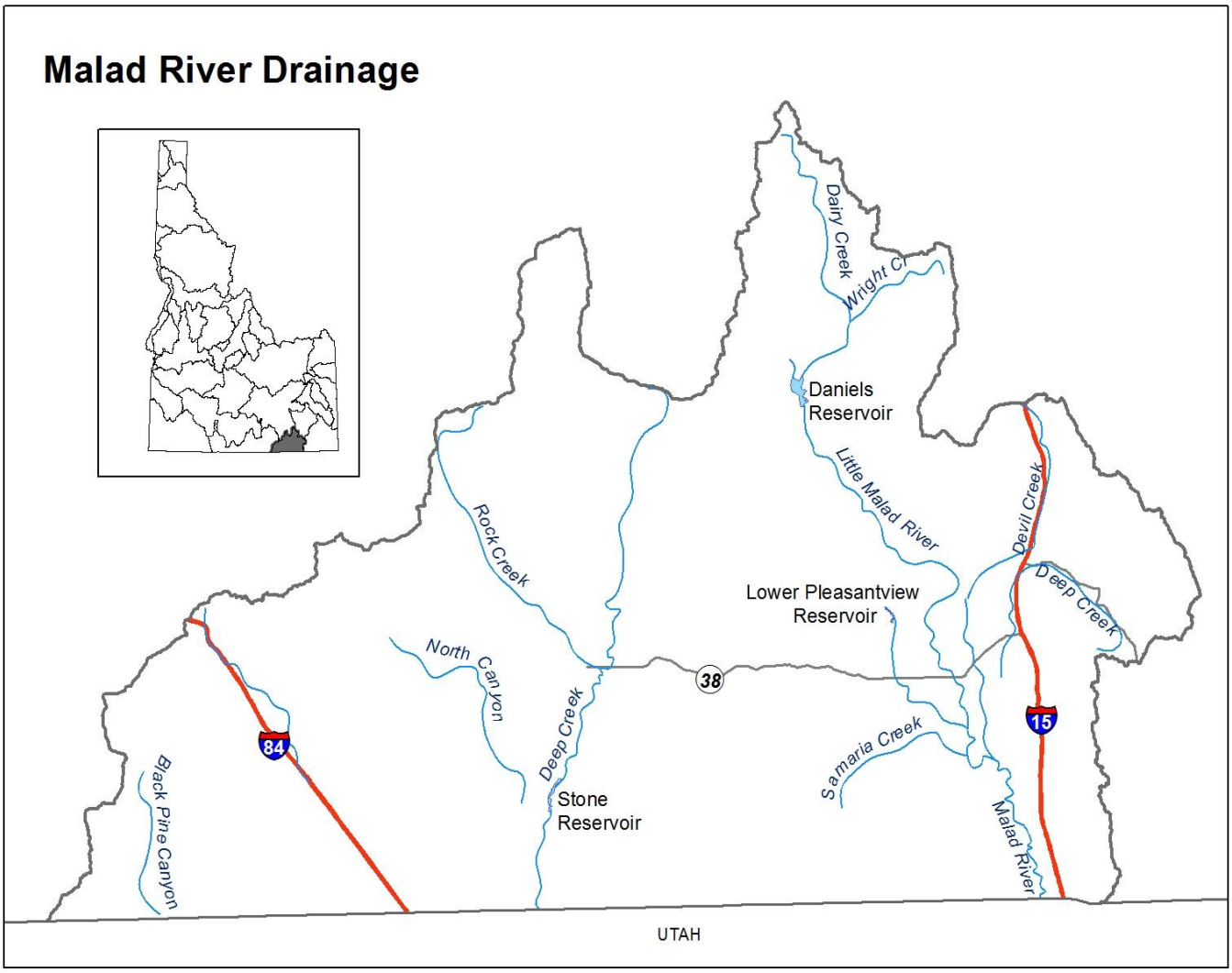

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35. MALAD RIVER DRAINAGE

Overview

Streams in the Malad River drainage total 83 miles and cover 86 surface acres. Fish species found in this drainage 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 angling occurs at Daniels, Deep Creek, Devil Creek, Crowther's, and Stone reservoirs. Stream surveys in the 1990s and again in 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.

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.

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 began with an illegal introduction. No bass have been restocked and the trout fishery appeared to be more robust because of that change. However, in 2017 Largemouth Bass were once again observed in Deep Creek Reservoir. In 2016, the irrigation company that manages water levels closed the reservoir to all boats. The purpose of the closure was to reduce the risk of invasive mussel introductions. Anglers continue to fish from shore and during ice cover. Stocking effort was reduced to account for the loss in boating access.

Devil Creek Reservoir (142 acres) is a popular hatchery Rainbow 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 Reservoir is managed for put-and-take hatchery Rainbow Trout as well as Largemouth Bass and Bluegill. Pleasantview Reservoir (47 acres) is managed as a put-and-take hatchery Rainbow Trout fishery. 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 hatchery Rainbow Trout annually and has self-sustaining populations of Largemouth Bass and crappie.

Objectives and Strategies

1. Objective: Maintain the trophy trout fishery at Daniels Reservoir.

   Strategy: 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.

   Strategy: Alter the outlets of road culverts to decrease difference in water height below and within the culverts.

3. Objective: Restore the quality of the Crowther's Reservoir rainbow trout fishery.

4. Objective: Improve angler access to Stone Reservoir.

   Strategy: Work with the local irrigation district to minimize district imposed public access restrictions.

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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	Maintain trophy trout fishery.
Deep Creek Reservoir	/183	Coldwater	Bonneville Cutthroat Trout Rainbow Trout Largemouth Bass	General	Pursue a liberal Largemouth Bass harvest rule to facilitate the removal of this illegally introduced species.
Devils Creek Reservoir	/142	Mixed	Bonneville Cutthroat Trout Rainbow Trout Kokanee Largemouth Bass	General	Evaluate kokanee stocking program. Monitor bass population.
Crowther's Reservoir	33	Coldwater	Rainbow Trout Largemouth Bass Bluegill	General	Monitor bass and Bluegill populations.
St. Johns Reservoir	/48				Seek opportunities to partner with Malad Valley Irrigation Company to rebuild the dam.

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