

Dirk Kempthorne, The Governor of the State of Idaho

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Dirk Kempthorne, Governor

NEWS RELEASE

FOR IMMEDIATE RELEASE

October 8, 2003

03:096

KEMPTHORNE ADMINISTRATION SIGNS SALMON RIVER CONSERVATION DEAL

(CHALLIS) Governor Dirk Kempthorne formalized an agreement today with federal, tribal, and private partners that will provide a framework for the long-term protection of endangered native fish species and their habitat.

The agreement, brokered by Governor Kempthorne's Office of Species Conservation, provides a framework for a wide range of long-term conservation activities aimed at reducing irrigation-related practices known to limit the productivity of species like bull trout, steelhead, and salmon. It runs through the end of 2004.

The agreement, signed this morning in Challis, also provides the opportunity for participating landowners and other irrigators in the upper Salmon River Basin to receive certain assurances of protection from federal enforcement of the Endangered Species Act, while conservation measures are pursued on their property.

"This agreement and its predecessor, the Lemhi River Agreement, demonstrate Idaho's commitment to the conservation of fish and fish habitat," said Kempthorne. "When you talk about salmon and steelhead conservation in the Upper Salmon you have to recognize the private landowners are the key."

In 2001, a similar agreement was brokered for irrigators in the Lemhi River Basin resulting in more than 100 successful conservation projects in that drainage -- such as irrigation ditch modification and stream bank stabilization.

"Partners in this effort have agreed to continue to work together in a creative partnership to establish a process for voluntary compliance with ESA, while encouraging the implementation of measures to ensure the conservation of listed species such as bull trout, salmon, and steelhead," said Bill Shake, the Special Assistant to the Regional Director for the U.S. Fish and Wildlife Service. "This agreement will provide short-term benefits for aquatic species in the area while we continue to work with our partners to develop a long-term conservation strategy."

U.S. Senator Mike Crapo praised the Upper Salmon River agreement. Crapo chairs the Senate Environment and Public Works Subcommittee on Fisheries, Wildlife and Water, which holds jurisdiction over many of the issues contained in the agreement.

"I know the others in the Idaho delegation join with me in congratulating Governor Kempthorne on the signing of this important conservation agreement," Crapo said. "The funding we have diligently labored on for salmon recovery will find a good home with these projects and I congratulate those on the Lemhi and Salmon Rivers who are involved with the demonstration projects benefiting both ranchers and anadromous fish."

Kempthorne said the partnership between federal partners like the U.S. Fish and Wildlife Service and NOAA Fisheries, and local property owners and irrigators demonstrated on this agreement is essential for reaching similar arrangements in the future.

"With this agreement we are able to incentivize land owner participation," Kempthorne said. "For too long, the Endangered Species Act has hung heavily over the Upper Salmon Basin's ranching and farming community. This agreement reflects my belief that incentives and certainty, not threats and litigation, are the keys working to with land owners for the benefit of Idaho's anadromous runs."

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Return to October Press Releases

Upper Salmon River Basin
Conservation Memorandum of Understanding
2003

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State of Idaho
*Governor's Office of Species Conservation,
Idaho Depts. of Fish and Game, Water
Resources, Environmental Quality, Lands,
and Agriculture*

U.S. Department of Interior
Fish and Wildlife Service

U.S. Department of Commerce
*National Oceanic and Atmospheric
Administration's, National Marine
Fisheries Service (NOAA-Fisheries)
Shoshone Bannock Tribes*

Salmon River Coalition

The landowners and water users of the upper Salmon River drainage come into partnership with the State, acting through the Upper Salmon Basin Watershed Project and other state government entities, and U.S. Fish and Wildlife Service (USFWS), and NOAA-Fisheries; together referred to as the Services, and the Shoshone Bannock Tribes, to address land and water needs in the basins of the Salmon River drainage. These parties intend to participate in the negotiation of a long-term program for the conservation of fish and fish habitat which individuals may voluntarily participate and receive, in return, appropriate incidental take authorization and protection under the Endangered Species Act (ESA) for activities associated with water diversion. This Agreement is between the State and the Services. The State in partnership with the Upper Salmon Basin Watershed Project will implement the Agreement. The area covered by this agreement is the working area of the Upper Salmon Basin Watershed Project (USBWP) and described in Section I, A, 4. This Agreement outlines the tasks and schedules that will lead to the long-term program. In addition, this Agreement specifies objectives to be met and measures to be implemented during the negotiation of the long-term plan that illustrates substantial progress toward conservation goals. Lastly, this Agreement creates the opportunity for individuals who are participating in the implementation of the interim measures to receive, in return and for so long as substantial progress is maintained, certain assurances from the Services related to enforcement activities under the ESA. The term of this Agreement will be from the date of signature through the end of the 2004 irrigation season, and may be renewed upon written agreement of the parties (Section II, F).

I. ACTIONS COMPLETED TO DATE.

- A. State, federal, tribal, and private partners have organized and coordinated their individual efforts through the Upper Salmon Basin Watershed Project (USBWP). Appendix A describes the state and private partners and their official relationships.
1. The USBWP is an entity of Idaho State Government that proposes, ranks, funds, and carries out conservation projects with participating landowners. The USBWP is

overseen by an Advisory Board comprised of state, federal, tribal, and private persons and advised by a Technical Team of corresponding membership.

2. The USBWP enhances coordination between the Custer and Lemhi Soil and Water Conservation Districts (SWCD), and among the many individual conservation programs and initiatives of several state, federal, and private entities.
 3. All conservation work conducted through USBWP or individually by the State or a landowner is governed by enforceable contracts or regulations of the relevant agencies or partners.
 4. The working area of the USBWP is the Salmon River Basin, from the Middle Fork of the Salmon River, upstream to its headwaters in the Stanley Basin, including tributaries. This roughly corresponds to the boundaries of Custer and Lemhi Counties, Idaho. Lands included under this agreement are intended to include primarily private land, and public land with associated private land irrigation activities.
- B. Appendix B to this agreement describes several decades of conservation work by multiple state agencies, tribes, and landowners that have benefited fish and water conservation in the Upper Salmon River area. The conservation results of these projects include stream bank stability, riparian zone function, sediment and erosion reduction, protective screening and consolidation of irrigation works, reconnection of dewatered stream reaches, and conservation easements.
- C. The State, tribes, and other parties are continuing to work on a plan to prioritize conservation projects. This prioritization scheme may be incorporated into the long term plan described in section III and will be compatible with Subbasin Planning, draft recovery plans for bull trout, chinook salmon and steelhead, and SRBA.
- D. The State, through its natural resources agencies as described in Appendix C, has been implementing and monitoring fish conservation and related programs concerning private and state land use, fish population and habitat management, irrigation, and water quality.
- E. In 2003, the Idaho Department of Water Resources ordered Water District 73 to install headgates and measuring devices on diversions.
- F. The Shoshone Bannock Tribes have been active in salmon supplementation, the Tribal Resource Management Plan, Habitat Enhancement Program, Sub-basin Planning, Watershed Assessment, Feasibility Study (Appendix B).

II. IMMEDIATE ACTIONS

- A. IDWR is establishing and will continue to establish water districts, leading to installation of headgates and measuring devices in irrigation diversions, according to the schedule attached as Appendix D.

- B. IDWR, BLM and USFS are currently participating in an effort to locate irrigation points of diversion using GPS technology. Information is being collected concerning the location of headgates, screens and measuring devices as part of that effort. The state will make these locations available for analysis by the USBWP by sub-watershed according to the following schedule:
1. Lemhi: end of 2003.
 2. Pahsimeroi: end of 2004.
 3. Administrative Basin 75: end of 2005.
 4. Digitize location data for Administrative Basins 71 and 72: no later than 2006.
- C. The IDFG Screen Shop will continue developing, testing, and monitoring fish screen designs for diversions in the Salmon River drainage. Plans will be developed with participating landowners for monitoring fish screen operations, including any necessary provisions to allow monitoring on private lands. Monitoring results of this program shall be documented by IDFG and be available to the Parties and the public. Funding for fish screens has been provided and is being provided by IDFG, USFWS, OSC, private landowners, NOAA-Fisheries and BPA. The IDFG will continue to work with NOAA-Fisheries and the FWS on screen design.
- D. The USBWP, with the assistance of the parties, will design and initiate biologically based assessments intended to determine the specific conservation needs of listed fish in each appropriate subbasin (Appendix E). These assessments are intended, over time, to increase confidence that conservation actions envisioned in this agreement and the long-term agreement are increasingly directed at the ecological functions known to limit the productivity of fish. The assessments will be initiated according to a schedule developed by the USBWP Technical Team.
- E. The State and participating landowners, will jointly commit to completing projects associated with, the USBWP partners throughout the upper Salmon River basin listed in the USBWP database in 2003, including at least nine projects: Mill Creek pipeline; Lemhi River, Goddard offstream water development; Salmon Golf Course water transfer; Salmon River, Sell fence; Eighteenmile Creek, Kruckeberg fence; Panther Creek, Jones fence & head gates; and Salmon River, Philips fence; Twelvemile Creek reconnect; Hat Creek reconnect. Projects for 2004 will be agreed upon and scheduled by priority through the USBWP cooperative effort among the tribes and state and federal agencies. The parties recognize that this agreement outlines a multi-year conservation effort.
- F. Participating landowners will enroll their lands in the state fish conservation program by determining which of the following items on their lands they will carry out immediately, and which they will carry out with technical assistance available from USBWP partners, and which do not apply. The state will provide a checklist for these items indicating for each enrollee which items can, and therefore will be completed immediately, or should, and therefore will be added to the project schedule, or will be verified as not applicable to the enrolled lands. The State will ensure that each participating landowner will be held responsible to implement the greatest amount of fish conservation practicable immediately, and will commit to participate in projects that require more resources to implement than can be secured immediately.

1. Landowners who take water from the upper Salmon River basin, will install headgates and measuring devices either permanently or temporarily accordingly with plans for other work on their diversion such as moving, consolidating, or screening the diversion.
2. Implement procedures for ramping down headgate shut-off where needed to ensure fish passage to main channel at the end of 2003 irrigation season. Landowners with whom IDFG has developed specific ramp-down procedures will follow those procedures. Landowners without specific procedures will follow the general approach described in Appendix F. Results of 2003 ramp-down will be monitored by IDFG to improve procedures for future seasons for each Water District and participating landowners.
3. Berms and dams will be constructed at the minimum height and span to reasonably divert the amount of water claimed and diverted at that point and will be identified for replacement with permanent fish-safe diversion structures.
4. Water will be left in-stream when not in use.
5. Identify fish barriers in streams and schedule for allowing passage.
6. Promote practices that will protect wetlands, that contribute ecological functions necessary for listed fish, and preserve underground water supply to enhance late season stream flow run-off.
7. Consolidate diversion works, where feasible, in order to more efficiently provide flows through stretches of streams that are prone to dewatering or have flows insufficient for fish.
8. Continue riparian protection to increase streambank stability, where necessary, on public and private property.
9. Assist with planning and installation of riparian protection on identified Confined Animal Feeding Operations (CAFO's) and Animal Feeding Operations (AFO's) as defined by Idaho Department of Agriculture, along tributaries, or help to relocate operations. Implement riparian protection and restoration actions in other areas where land use is causing a reduction in ecological functions for fish.
10. Install off-stream livestock water sites where practical and needed to protect riparian habitat.
11. Identify and pursue opportunities to increase efficiency of water use and conveyance: considering the hydrology of the subbasin and apply saved water to stream flows in accordance with mechanisms identified by the state.
12. Agree to schedule on-site monitoring of conservation practices by agency personnel.

13. Agree to notify the state, via the USBWP, of any problems that arise in carrying out this agreement, and understands that any party who believes a provision of this agreement is not being met will notify other parties and all parties will implement a resolution process. This requirement shall be satisfied when, upon notification that an issue exists, representatives from each party meet promptly and attempt to resolve the issue.
14. Assist with monitoring of cooperatively-placed Shoshone Bannock Tribes Stream Side Incubators.

G. The State shall:

1. Continue its role in the Lemhi Agreement and draft long-term conservation plan, and recognize that Parts II and III of this agreement depend upon the accomplishment of commitments in those Lemhi documents.
2. Secure a water management agreement with willing parties holding senior water rights on the Pahsimeroi River, assigning these rights by lease, purchase, donation, or other means to remain in the stream channel to be diverted only below river mile 17.3 (Hooper Lane Bridge) if and when adequate flows remain there (to be determined as monitoring data accumulate). The state will try to secure 12 cubic feet per second of flow or more in natural stream channels in the Pahsimeroi Valley for fish conservation prior to irrigation season 2004 through the Water Transactions Program of IDWR.
3. Help complete the Falls Creek project (tributary to the Pahsimeroi River) by:
 - i. developing the Water Saving MOU (by August 2003 with leadership from IDWR).
 - ii. installing fish screens (by Fall 2003 with leadership from IDFG).
4. Hat Creek (tributary to the Salmon River): develop and implement restoration plan.
5. Mainstem Salmon River between Alturas Lake Creek and Pole Creek: Ensure a stream flow of at least 25 cfs as measured just upstream from Alturas Lake Creek.
6. Provide connectivity flows to the most critical stream reaches in at least two streams from the Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin (SHIPUSS) developed by the USBWP Technical Team that have high quality habitat that is not currently accessible due to dewatered conditions (Appendix F).
7. Identify and pursue mechanisms under state law and policy to apply saved water to stream flows without injury or forfeiture to water users. The IDWR Water Transactions Program Schedule is:
 - i. 2003: Fourth of July Phase 1 (Sawtooth Valley), Morgan Creek-Panther Creek, Big Hat Creek.

- ii. 2004: Little Morgan Creek, Pahsimeroi River at Furey Lane, Fourth of July Creek Phase 2, Bohannon Creek.
 8. Identify and pursue opportunities for willing landowners to voluntarily reduce irrigated acreage for all or part of a year and forgo diversion of all or part of their water rights without forfeiture.
 9. Direct water masters to implement ramp-down procedures (with leadership from IDWR).
 10. Provide the Services by March of each year with a list of participating landowners, with documentation of where they operate and what commitments they have made to implement fish conservation on their lands, upon landowner enrollment.
 11. Agree that any party who believes a provision of this agreement is not being met will notify USBWP and all parties will implement a resolution process to avoid the need to withdraw conservation commitments and regulatory assurances. This requirement shall be satisfied when, upon notification that an issue exists, representatives from each party meet promptly and attempt to resolve the issue.
- H. In the interest of beginning necessary assessments of "environmental baseline" for development of the long-term plan, the USBWP will coordinate the inventory information gained from enrollments with inventory work conducted by cooperating agencies. The USBWP will produce an inventory and monitoring plan to attach to this agreement.
- I. The agencies will come together to develop a plan by 2004 outlining future headgate and measuring device requirements consistent with Appendix D.
- J. The USBWP will schedule a workshop in early December each year to review the progress made and develop plans for work and monitoring in the coming year. Issues and concerns from the previous year will be submitted and resolved as a part of this workshop.
- K. Planning and Monitoring
1. The parties will implement the annual Monitoring Plans, described in Section J., to accomplish the following objectives.
 2. The parties will ensure that all instream structures, such as diversions, road crossings, berms and dams will be designed, constructed and operated so that they are passable by upstream and downstream migrating fish, and screens will be installed, all consistent with the NOAA-Fisheries criteria when anadromous fish are currently present or are expected to be present after reconnection, and according to IDFG and USFWS direction when no present or potential anadromous habitat exists.

3. The parties agree to notify NOAA-Fisheries and/or the USFWS of incidental take of a listed species within 48 hours of discovery of the take. NOAA-Fisheries, Don Anderson, 208-378-5792, USFWS, Carmen Thomas, 208-378-5243.
- L. The Tribes will allow input on tribal projects conducted by their Fish and Wildlife Department, Salmon River Habitat Enhancement Program, Pacific Coastal Salmon Recovery Fund, Sockeye management, and Interagency Supplementation Study.

III. LONG-TERM CONSERVATION

- A. The USBWP, including its partner organizations such as Custer and Lemhi SWCD's, Salmon River Coalition, tribes, various irrigation districts, other landowner representatives, and state agencies will form a negotiating committee by April 1, 2003, to partner with the Services in meeting the goals of this agreement. The negotiating committee will be organized through the USBWP Advisory Board.
- B. Roles and responsibilities of participants in the long-term conservation program will be as follows:
 1. In developing the long-term conservation program, the USBWP negotiating committee will gather and present the individual contributions of its partners to the program.
 2. In implementing the long-term conservation program, the USBWP and its partners anticipate that they will coordinate their individual and collective efforts as an established state program with reporting accountability.
- C. Parties will draft the long-term conservation program by 31 Dec 2004, and amend the draft as necessary based on the best available data, including monitoring data resulting from this MOU.
 1. The parties agree to utilize, to the maximum degree possible, existing planning documents in the development of the long-term conservation program.
 2. The parties expect elements of the proposed long-term conservation program to correspond with elements of conservation plans of covered lands and species and to include the economic, custom, and cultural goals of the population in the affected area.
- D. Environmental Review or Analysis of Decision
 1. The final decision to approve a long-term agreement will be made by each of the parties in sufficient consideration of the effects of the agreement on fish populations, recovery goals, statutory requirements, and local economies (including the unique cultural and life style aspects of the local economies and tribal traditions).

2. The long-term conservation program will include continuing measures and means by which the parties will adapt the program to new information and conditions.
3. The annual December workshop will continue during the long-term conservation program.

IV. FUNDING

- A. The parties design and implement the long-term program to meet the conservation goals recognizing that funding levels may increase or decrease from one fiscal year to the next.
- B. The Service(s) shall cooperate and provide, to the extent funding is available, assistance to the USBWP as detailed in the long-term conservation program. They will identify existing funding programs and assist, where appropriate, the USBWP in obtaining funding to develop and implement fish and habitat conservation projects.
- C. State agencies, as partners in the USBWP, shall cooperate and provide, to the extent that adequate funding is available, technical assistance and conservation commitments as detailed in the long-term conservation programs.
- D. Participating landowners shall cooperate and provide support for funding initiatives, cost-shares and conservation commitments, including labor, equipment, and other in-kind contributions.

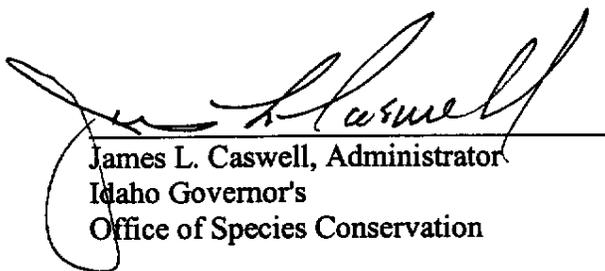
V. ENFORCEMENT

- A. It is the responsibility of the USFWS and NOAA-Fisheries to investigate and take appropriate enforcement action with respect to potential violations of the ESA. The Services carry out their mission to protect listed species not only through investigations and enforcement, but also through fostering relationships with individuals, companies and industries who seek to minimize the risk of effect on such species. The services will focus enforcement, as they have in the past, on those entities that take protected fish with disregard for their actions and the law. Based on the commitments described in this memorandum, including the parties' commitment to secure appropriate authorization for any incidental take of ESA listed species that may occur, enforcement action is not the preferred course in this instance. However, if water use or any other activity intended to be covered by this memorandum results in a potential "take" of a listed species, the Service and NOAA-Fisheries will investigate and document the alleged violation.
- B. The USFWS and NOAA-Fisheries will exercise their discretionary authority and not prioritize an enforcement referral for unauthorized incidental take of a listed fishes if measures identified in this conservation plan are implemented as outlined in this agreement. This exercise of enforcement discretion will apply to water diversion and associated activities intended to be covered by this Agreement, conducted by landowners participating in and in compliance with this Agreement for and exercising otherwise lawful rights within the boundaries of the upper Salmon River basin, and shall not apply to any intentional "take" of ESA listed species.

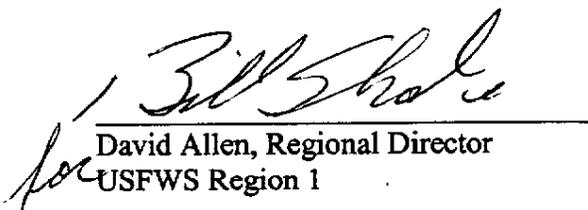
VI. SIGNATURES

State of Idaho

U.S. Fish and Wildlife Service

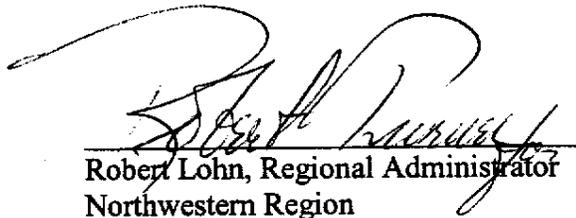


James L. Caswell, Administrator
Idaho Governor's
Office of Species Conservation



David Allen, Regional Director
USFWS Region 1

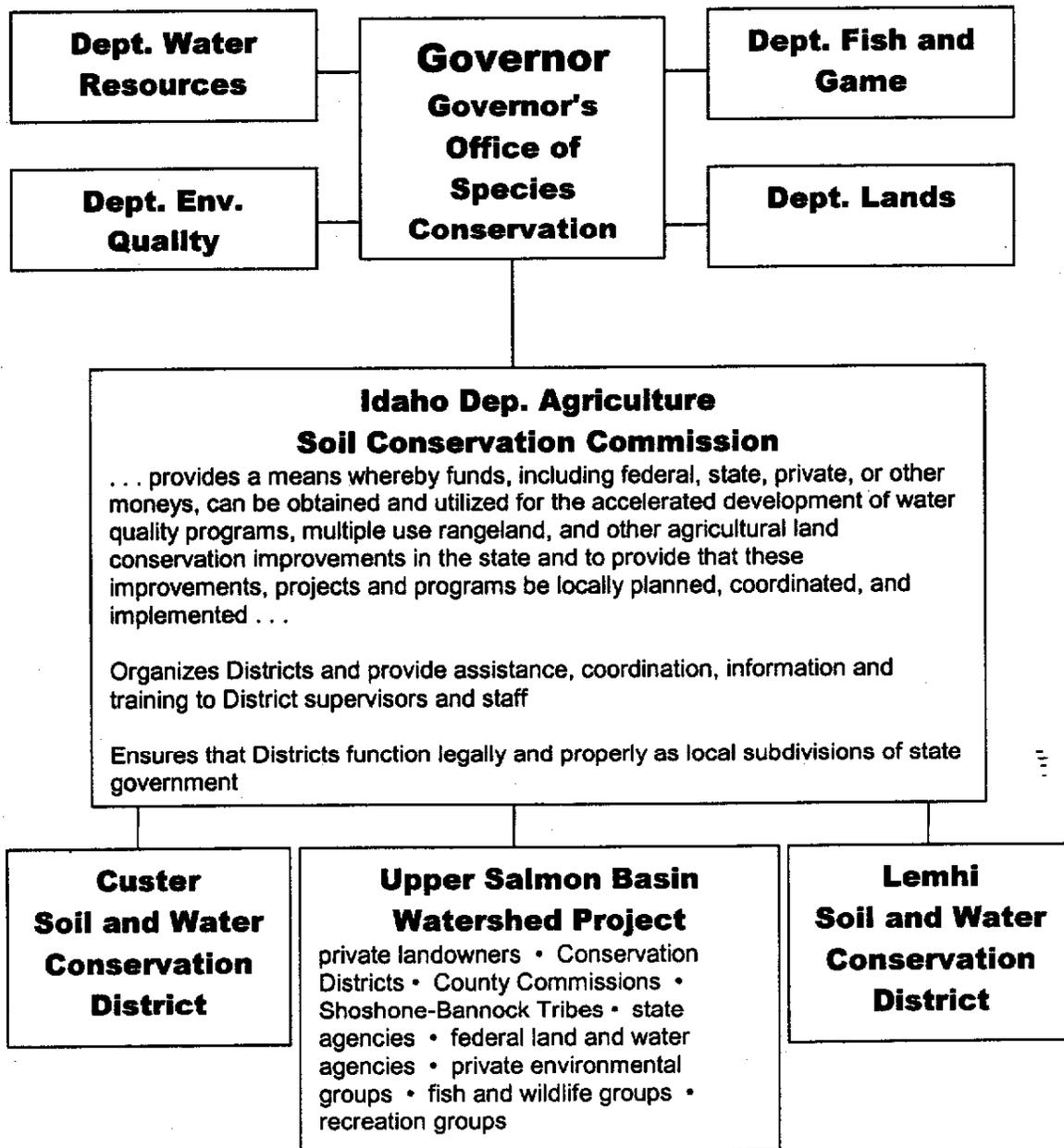
NOAA-Fisheries



Robert Lohn, Regional Administrator
Northwestern Region

Appendix A – USBWP Partners and their Relationships

Location of USBWP in Governor's Natural Resource Cabinet



Appendix B – Past Projects and Program Accomplishments

Soil Conservation Commission

Upper Salmon Basin Watershed Project Summarization List As of 2/19/2003

105 Projects Total

- 29 Irrigation Diversion Cons/Mod/Elim
- 13 Migration Barrier/Fish Passage Improvements
- 20 Bank Stabilization Projects
- 43 Fence Projects (+ 8 projects that are listed as bank stabilization proj., but had some fencing involved.)

29 Irrigation Diversion Cons/Mod/Elim. Projects

- Pashimeroi (4 projects)
- Lemhi (15 projects)
- East Fork (1 project)
- U. Salmon (4 projects)
- Salmon-Panther (5 projects)

13 Migration Barrier/Fish Passage Improvement Projects

- Pashimeroi (2 projects)
- Lemhi (7 projects)
- East Fork (2 project)
- U. Salmon (1 projects)
- Salmon-Panther (1 projects)

20 Bank Stabilization Projects

- Pashimeroi (3 projects)
- Lemhi (8 projects)
- East Fork (5 project)
- U. Salmon (4 projects)
- Salmon-Panther (0 projects)

43 Fence Projects

- Pashimeroi (7 projects) 11.38 miles fenced
- Lemhi (23 projects) 38.85 miles fenced
- East Fork (14 project) 11.51 miles fenced
- U. Salmon (4 projects) 5.92 miles fenced
- Salmon-Panther (3 projects) 2.72 miles fenced

(-there is an additional 8 projects that are listed under bank stabilization projects., but had some fencing involved on them.)

	Irrigation Diversion Mod/Cons/Elim Projects	Migration/Passage Projects	Bank Stabilization Projects	Fence Projects
Pahsimeroi	4	2	3	7
Salmon-Panther	5	1	0	3
Upper Salmon	4	1	4	4
East Fork	1	2	5	14
Lemhi	15	7	8	23

Department of Agriculture

Since 2000, ISDA has administered the portion of Idaho's Clean Water Act project pertaining to animal feeding operations. This program requires that animal feeding operations comply with the zero discharge of manure and runoff mandated in state law (IDAPA 02.04.14-15).

To implement this program, ISDA inspects facilities and assists in designing improvements to bring them into compliance. Activity under the program for Confined Animal Feeding Operations and Animal Feeding Operations to date follows:

- | Regulatory
Inspections | Technical Assistance | Facilities Brought into
Compliance | Facilities on
Compliance
Schedules |
|---|---|---|---|
| <ul style="list-style-type: none"> • 25 Facilities • 87 Total
Inspections | <ul style="list-style-type: none"> • 21 Facilities | <ul style="list-style-type: none"> • 11 Facilities | <ul style="list-style-type: none"> • 14 Facilities |

Department of Fish and Game

- 1958 – 1966: constructed more than 200 screens on the mainstem Salmon River and tributaries.
- Present: approximately 220 gravity diversion fish screens in operation.
- 1958 – present: inspection, maintenance, and monitoring of screens, and access roads and bridges.

Department of Water Resources

Administering 17 active water districts in the upper Salmon River area in which headgates and measuring devices are installed and maintained.

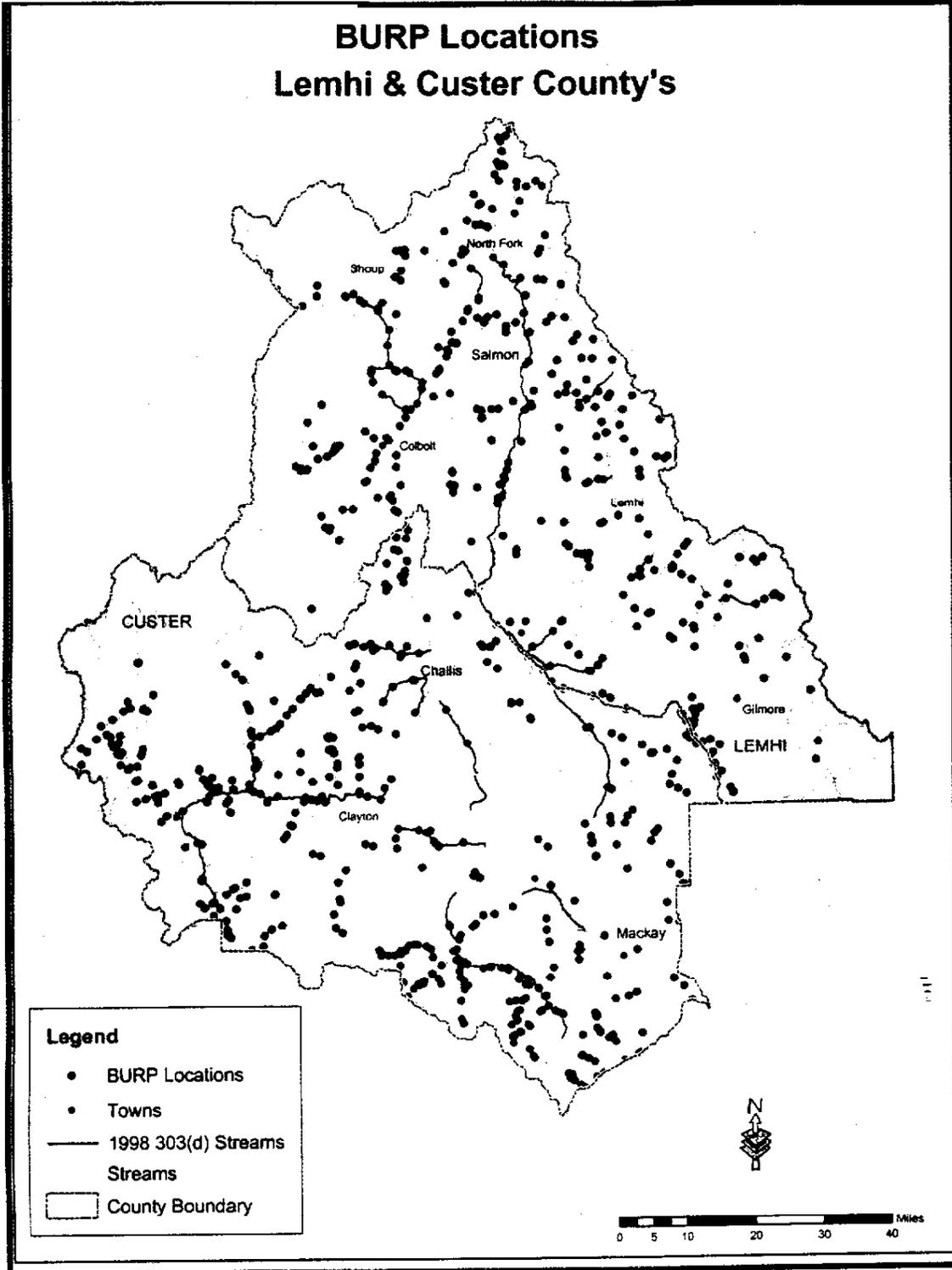
Department of Lands

- Since 1997, when IDL adopted its current Vegetation Management Policy, Eastern Idaho Area personnel have completed Resource Assessments on over 60,000 acres (of a total 64,000 under grazing leases, and grand total of 67,380 acres).
- Each Resource Assessment includes a focus on wildlife, specifying presence of federally designated threatened and endangered species, and adding appropriate management to the grazing lease.
- Project: Pahsimeroi River 1997. In cooperation with a grazing permittee and the BLM, constructed 0.5 mile of fence on state endowment land to create a riparian pasture involving state and BLM lands. The riparian pasture will allow controlled grazing on 5 miles of the Pahsimeroi River to maintain/improve habitat for bull trout.
- Project: Big Gulch 2001. Put 8,000 acres of state lands in the Big Gulch grazing allotment under a management plan to maintain and restore riparian habitat and prevent entrainment of fish in irrigation ditches. In 2001, IDL, in cooperation with our grazing lessees, constructed 1.5 miles of fence to exclude grazing on approximately 1.25 miles of Big Gulch to maintain/improve habitat for bull trout.

Department of Environmental Quality

- Has conducted 5 "subbasin assessments" of 4th order HUCs in Custer and Lemhi Counties:
 - Lemhi River
 - Middle Salmon River – Panther Creek
 - Pahsimeroi
 - Upper Salmon River
 - Little Lost River
- Identified 43 water-quality limited stream segment on 39 streams (per §303(d) of Clean Water Act)
- Has conducted 647 BURP (Beneficial Use Reconnaissance Project) surveys in the Upper Salmon Basin (see figure; note: 1,200 anadromous sites in place statewide)
- For water-quality limited 303(d) streams, has developed 18 TMDLs and 2 implementation plans covering 12 of the TMDLs to achieve water quality standards and fully support aquatic species

BURP Locations Lemhi & Custer County's



Appendix C – State Fish Conservation and Related Programs

Soil Conservation Commission

- Administers the Upper Salmon Basin Watershed Project (hereafter, USBWP) and the Conservation Districts (offices, staff, USBWP Coordinator position)
- Conservation Districts work with landowners to develop conservation projects, and communicate with USBWP
- USBWP Advisory Board, supported by Technical Team, provides analysis, project ranking, reporting, and some project management.
- Manages habitat projects (e.g., BPA mitigation funds, Farm Bill?)

Department of Agriculture

Administers the portion of Idaho's Clean Water Act project pertaining to animal feeding operations. This program requires that animal feeding operations comply with the zero discharge of manure and runoff mandated in state law (IDARM 02.04.14-15).

Department of Fish and Game

- Provides staff and resources to negotiate and develop Conservation Plans with private landowners, water users, local entities, and state and federal agencies (Phase 1 –Plan Development) Budget estimate: \$260,000 for 1 year.
- Provides staff and resources to conduct appropriate levels of monitoring and evaluation to ensure threats to bull trout and other listed fishes have been removed and landowners and water users are meeting the terms and conditions of the plan (Phase 2 – Implementation) Budget estimate: \$240,000 for outyears (annual?)
- Maintains geo-referenced database of irrigation diversions including information about fish presence and screening status.
- Manages habitat projects (e.g., Mitchell Act, BPA mitigation funds, Fisheries Restoration and Management Act)

Department of Water Resources and the Water Resource Board

- Provides Director's Reports for water claims per the Snake River Basin Adjudication
- Administers Water Districts

- Manages water transaction projects with the Water Resource Board, through the Idaho Water Transaction Program described in the Biological Opinion for the Federal Columbia River Power System under Action 151, and the Northwest Power and Conservation Planning Council's Columbia Basin Fish and Wildlife Program Measure A-8. Essentially this program funds innovative measures for enhancing stream flow.
- Water Resource Board:
 - administers the state's water bank for flow and storage
 - formulates comprehensive state water plans for each of the state's river basins, waterways or other geographic areas
 - administers the state's minimum stream flow program

Department of Lands

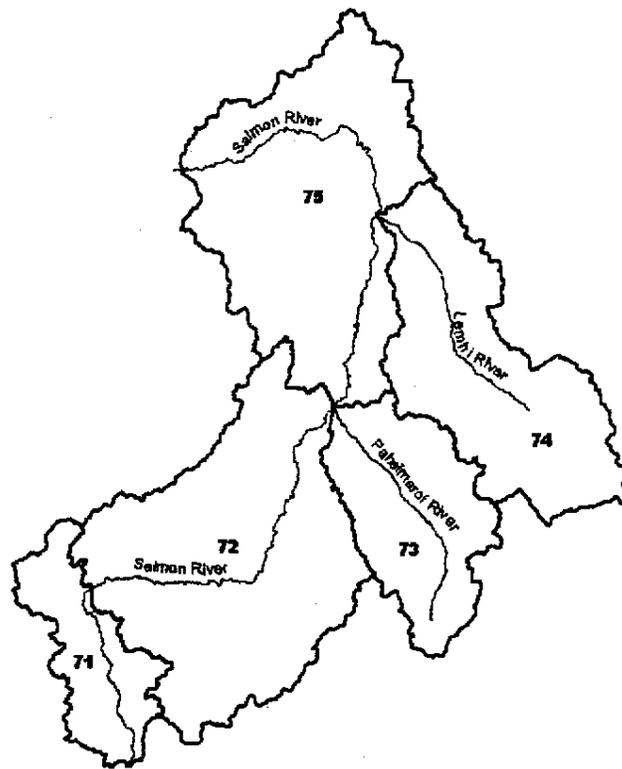
- Manages 67,380 acres of state endowment lands in such a manner as to secure the maximum long-term financial return to the endowment beneficiary.
- Develops land management objectives based on general land classifications (e.g., rangeland, timberland) and maintaining and restoring riparian habitat and meeting or exceeding state water quality standards.
- Coordinates with state and federal agencies for monitoring management objectives and projects to meet habitat improvement and water quality objectives, and provide technical assistance (hydrologist, fisheries biologist) as needed.

Department of Environmental Quality

- Develops water quality standards to fully support aquatic species
- Conducts "subbasin assessments" of 4th order HUCs (schedule?)
- Maintains a list of water-quality limited streams (per §303(d) of Clean Water Act)
- Provides Beneficial Use Reconnaissance surveys

For water-quality limited (303-d) streams, develop TMDLs and implementation plans to achieve water quality standards and fully support aquatic species

Appendix D – Schedule for Establishing or Reorganizing Water Districts



Basin No.	Phase I: secure Partial Decree from SRBA ¹ Court	Phase II: Establishment or reorganization of Water Districts
71	Done	<p>This becomes possible after a Partial Decree is issued for the Basin and federal claims for Wild and Scenic River water rights are resolved.</p> <p>We will insert dates for this schedule when that becomes possible.</p>
72	Done	
73	Director's Report ² scheduled to be submitted to SRBA November 2004	
74	Director's Report scheduled to be submitted March 2004	
75	Director's Report scheduled to be submitted December 2005	

¹ Snake River Basin Adjudication

² A Director's Report is the state's evidence before the SRBA court and precedes the court's partial decree.

Appendix E – Assessment Components and Schedule

The purpose of the assessments listed in Appendix E is to describe the activities covered by the Upper Salmon MOU, describe impacts of those activities on salmonids and their habitats, and to identify specific measures that would minimize and mitigate adverse impacts of those activities. The information generated will be used to assess success of minimization and mitigation measures stipulated by the Upper Salmon MOU and to identify future minimization and mitigation measures that will be necessary for successful implementation of long term conservation plans.

Assessment 1: Inventory of irrigation diversions.

Information needed:

- Location (Point of Diversion) described as GPS coordinates and verified.
- Description of water right (maximum instantaneous rate, volume per season, amount and location of lands irrigated).
- Description of lands actually irrigated, estimates of consumptive use, and estimates of timing and location of return flows.
- Status of measuring devices and headgates.
- Screening status.
- Species present currently and potentially if reconnected.

Sources of information:

- BLM irrigation diversion survey for BLM and USFS lands.
- IDFG (screen shop) data.
- IDWR water rights data.
- Future surveys and studies conducted by appropriate State and/or Federal agencies.

Assessment 2. Identification of dewatered stream channels.

Information needed:

- Locations of stream reaches that regularly go dry or that may not go completely dry but have obvious dewatering problems (GPS coordinates for start and end of dry or dewatered reaches).
- Reason for drying or dewatering.
- Species affected.

Sources of information:

- USFS and BLM surveys.
- IDFG Screen Shop data.
- Ongoing Bureau of Reclamation and USGS stream surveys.
- Future surveys and studies conducted by appropriate State and/or Federal agencies.

Assessment 3. Response of fish populations to natural flow variations and management actions.

Information needed:

- Baseline fish population data.
- Fish population data taken during and after implementation of management actions.

Sources of information

- Data from screw traps operated on the Lemhi, Pahsimeroi, East Fork Salmon, and Salmon Rivers.
- Redd count data.
- Historic data (e.g. Lemhi weir reports, etc).
- Future fish population studies in reaches where management actions are proposed.

Assessment 4. Stream reach specific assessments

Information needed:

- Identification of stream reach specific impacts on salmonids and salmonid habitat.
- Options for minimizing and mitigating stream reach specific impacts on salmonids and their habitats. Options for minimizing and mitigating impacts may include:
 1. Installation of structures to minimize fish entrainment in specific irrigation diversions (i.e. screening, fish exclusion weirs on return flow ditches, etc.).
 2. Maintenance of structures that reduce fish entrainment.
 3. Elimination and consolidation of diversions.
 4. Protection, maintenance, and enhancement of riparian habitats.
 5. Protection and enhancement of stream flow.
 6. Establishment of irrigation practices that minimize impacts on fishes.

Sources of information:

- Information generated by Assessments 1 and 2 described above.
- Holistic assessments of watersheds (tributary streams) and stream reaches (mainstem rivers) that will consider and address all threats to salmonids and their habitats.

Products

- Initial reports will summarize all data collected as of the end of the 2003 irrigation season and will be included in the Upper Salmon monitoring report for the 2003 irrigation season.
- Annual updates will be incorporated into annual monitoring reports as needed.
- Final reports will be incorporated in the long term plan or plans for conservation of ESA listed salmonids in the Upper Salmon River. Assessment 3 will probably develop into an ongoing study of fish response to management actions that will be used in adaptive management of long term conservation plan(s).

Table 1: Summary of existing assessments.

Source	Purpose	Area of Coverage		Information provided in assessment document														
				Aquatic habitats and species						Terrestrial habitats and species								
		Watersheds)	Ownerships)	Watershed (including riparian) conditions	Channel conditions and dynamics	Water quality	Habitat quantity, quality, and connectivity	ESA-listed species status and management	Non-listed species status and management	Monitoring programs and trend data	Landscape dynamics	Habitat quantity, quality, and connectivity	ESA-listed species status and management	Non-listed species status and management	Monitoring programs and trend data			
SNRA	Bull trout life history, impacts of various land management activities, and known bull trout distribution.	Main Salmon - EFSR to Peach Cr.	Federal, private	X			X	X										
USFS - CRD, BLM	Chinook salmon life history, impacts of various land management activities, and known chinook distribution.	Pahsimeroi HUC	Federal, private	X	X	X	X			X								
SNRA	Bull trout life history, impacts of various land management activities, and known bull trout distribution.	Valley Creek only	Federal, private	X			X	X										
SNRA/BLM	Steelhead life history, impacts of various land management activities, and known steelhead distribution.	Main Salmon - EFSR to Peach Cr.	Federal, private	X			X	X										
BLM/USFS	Steelhead life history, impacts of various land management activities, and known steelhead distribution.	EFSR only and tribs	Federal, private	X			X	X										
BLM/USFS	Bull trout life history, impacts of various land management activities, and known bull trout distribution.	EFSR only and tribs	Federal, private	X			X	X										

Upper Salmon Basin Watershed Project	Project setting, Planning process, action plan, M and E, Coordination	Lemhi, Pahs, EFSR, Main	Federal, private	X			X			X				
Upper Salmon River Interagency Technical Advisory Team/DEQ	Bull trout life history, impacts of various land management activities, known bull trout distribution, problem assessment, recommendations.	Panther upstream	Federal, private	X			X	X						
BLM-USFS	Assessment of Fire Impacts and Mitigation Measures	Many samples throughout upper basin	Federal, private	X			X				X	X		
BLM-USFS	Maintenance and management of roads and their impacts, and estimated road mileage for certain areas	Many samples throughout upper basin	Federal, private									X		
USFS-SNRA	Evaluation of range management, recreational activities, and roads, etc.	SNRA	Federal, private	X			X				X	X		
SNRA	Bull trout life history, impacts of various land management activities, and known bull trout distribution.	SNRA	Federal, private	X			X	X						
SCNF, BLM-Challis, SNRA	American Indians, human uses, hydrology, fisheries, riparian vegetation, etc.	all	Federal, private	X	X	X	X				X	X		
BLM-USFS	Human uses, Water Resources, uplands, riparian, fish habitat, wildlife, recommendations.	Herd Creek only in EFSR	Federal, private	X	X	X	X				X	X		
IDEQ	Watershed characterization, water quality concerns and status, etc.	Upper Salmon HUC	Federal, private	X	X	X	X			X				

SNRA	Biophysical description of basin, species narrative-life history, population and environmental status, trends in population and habitat and current risks, population opportunities	Partial coverage - SNRA only	Federal, private	X	X	X	X	X		X					
BLM/USFS		Pahsimeroi HUC	Federal, private	X			X								
BLM/USFS		Pahsimeroi HUC	Federal, private	X			X								
IDEQ	Characterization of watershed, water quality concerns and status	Pahsimeroi HUC	Federal, private	X	X	X	X								
BLM-USFS	Status of bull trout and watershed, description of ongoing activities, characteristics, bull trout distribution, etc.	Mainstem & tribs from NF to Pahs	Federal, private	X	X	X	X	X		X					
BLM Salmon Field Office	6th field HUC analysis of issues, uses, watershed and population conditions, and trends.	Hawley Creek & tribs	Federal, private	X	X	X	X	X	X	X	X	X	X	X	X
Trapani, USBWP	Baseline modified R1/R4 habitat inventory to monitor changes in watershed conditions in response to Model Watershed habitat improvement projects.	Lemhi, Pahsimeroi, EFSR	Federal, private		X		X			X					
BLM Salmon Field Office	6th field HUC analysis of issues, uses, watershed and population conditions, and trends.	Little Eight Mile & tribs	Federal, private	X	X	X	X	X	X	X	X	X	X	X	X
BLM Salmon Field Office	6th field HUC analysis of issues, uses, watershed and population conditions, and trends.	Hayden Creek	Federal, private	X	X	X	X	X	X	X	X	X	X	X	X

IDEQ	Physical and biological characteristics, ownership, GIS maps, subbasin descriptions, water quality concerns and status, pollutant source inventory, pollutant data gaps, control efforts, recommendations	Lemhi Watershed	Federal, private	X	X	X	X			X	X			
BLM	Basin characteristics, i.e. vegetation, ownership, allotments, etc.	12 mi. N of Salmon (Kriley Gulch to Hat Cr.)	Federal, private	X			X					X		
BLM-USFS	Descriptions, characteristics, steelhead distribution, analysis of effects of projects, life history narrative, ongoing activities, and some pop. info.	NF- Pahsimeroi	Federal, private	X			X	X		X				
SNF	Characteristics, roads, weeds, etc. Bull trout info, habitat.	Panther Cr. watershed only	Federal, private	X	X	X	X	X			X	X		
SNF	Proposed activities, sediment and temp. info, etc.	North Fork to Big Squaw Cr.	Federal, private	X		X	X			X				
SNF	General description, characteristics, ongoing activities, effects, M&E, soils, grazing, harvest, etc.	Panther Cr. watershed only	Federal, private	X	X	X	X			X		X		
BLM - USFS	General description, characteristics, ongoing activities, effects, M&E, soils, grazing, harvest, etc.	North Fork to Pahsimeroi	Federal, private	X	X	X	X			X		X		
USFS/BLM/IDFG	Screen inventories on portions of public and private ground	Select areas	Federal, private		X									
BLM-USFS	Characterization of watershed, aquatic riparian, weeds, wildlife prioritization	Lemhi Watershed	Federal, private	X	X						X	X		

IDEQ	Watershed characterization, water quality concerns and status, etc.	all	Federal, private	X	X	X	X			X					
BLM	Descriptions, characteristics, steelhead distribution, analysis of effects of projects, life history narrative, ongoing activities, and some pop. info.	Lemhi Watershed	Federal, private	X			X	X		X					
BLM	Descriptions, characteristics, bull trout distribution, analysis of effects of projects, life history narrative, ongoing activities, and some pop. info.	Lemhi Watershed	Federal, private	X			X	X		X					
BPA	Problem statement, literature search, water right issues, fish habitat assessment, benefits analysis, recommendations	Lemhi Watershed	Federal, private	X	X	X	X								
Lemhi Irrigation District	General description of the hydrologic nature of the Lemhi River basin - includes monitoring well info and general summary of conditions	Lemhi Watershed	Federal, private	X						X					
Salmon National Forest (SNF)	General description, characteristics, ongoing activities, effects, M&E, soils, grazing, harvest, etc.	Camas Cr. watershed only	Federal, private	X			X			X		X			
IDEQ	Physical and biological characteristics, ownership, GIS maps, subbasin descriptions, water quality concerns and status, pollutant source inventory, pollutant data gaps, control efforts, recommendations	Mid Salmon Chamberlain	Federal, private	X	X	X	X			X					

USFS	Watershed characterization, issues and key questions, current conditions, ets, recommendations, data gaps	Yankee Fork Watershed	Federal, private	X	X	X	X				X	X		
IDFG/IDEQ	Dist, Abundance, Habitat conditions and Trends, Characteristics and limiting factors, priority watersheds and habitat, recommendations	MF entirely	Federal, private	X	X	X	X	X						
Southwest Basin native Technical Group	Dist, Abundance, Habitat conditions and Trends, Characteristics and limiting factors, priority watersheds and habitat, recommendations	partial coverage	Federal, private	X	X	X	X	X						
Challis NF	Descriptions, characteristics, chinook distribution, analysis of effects of projects, life history narrative, ongoing activities, and some pop. info.	Upper Middle Fork	Federal, private	X	X	X	X	X						
Challis NF	Description of Watershed, little pop info, summary of known habitat info R1/R4 data, ratings, temperature info	Most of Middle Fork	Federal, private	X	X	X	X	X		X				
Challis NF	Descriptions, characteristics, chinook distribution, analysis of effects of projects, life history narrative, ongoing activities, and some pop. info.	Thompson only	Federal, private	X	X	X	X	X		X				
Challis NF	Descriptions, characteristics, chinook distribution, analysis of effects of projects, life history narrative, ongoing activities, and some pop. info.	Challis Creek only	Federal, private	X	X	X	X	X		X				

Challis NF	Descriptions, characteristics, chinook distribution, analysis of effects of projects, life history narrative, ongoing activities, and some pop. info.	Morgan Creek only	Federal, private	X	X	X	X	X		X				
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Appendix F

Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin

(SHIPUSS)

Prepared for the

Upper Salmon Basin Watershed Project

and

**Custer and Lemhi Soil and Water Conservation
Districts**

by the

**Upper Salmon Basin Watershed Project
Technical Team**

June 5, 2003

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LIST OF ACRONYMS AND AGENCY RESPONSIBILITIES

BLM	Bureau of Land Management. The BLM sustains the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. The BLM manages a large portion of the land in the Upper Salmon River Basin.
BPA	Bonneville Power Administration. The Bonneville Power Administration operates 31 federally owned dams, one nuclear plant and a large wind energy program to hundreds of utility customers. Among other responsibilities, the BPA funds projects to improve conditions for fish and wildlife in the Columbia River Basin.
CSWCD	Custer Soil and Water Conservation District. Among other responsibilities, the CSWCD has partnered with the Upper Salmon Basin Watershed Project to assist local landowners put conservation on the ground. From riparian fencing and streambank restoration to improve fish habitat to the installation of fish friendly structures and sprinkler irrigation systems to improve fish passage, the Custer SWCD has contracted with over 40 landowners since 1992. The CSWCD is the project manager and administers the funds for USBWP projects within its geographic area.
ESA	Endangered Species Act
HCP	Habitat Conservation Plan
IDFG	Idaho Department of Fish and Game. The Department of Fish and Game establishes regulations and other needed controls on fishing, hunting, trapping and management of nongame wildlife that are in line with the state's wildlife policy. The IDFG also operates an Anadromous Fish Screen Shop in Salmon, Idaho that installs and maintains screens on irrigation ditches to protect anadromous fish.
IDWR	Idaho Department of Water Resources. Ensures Idaho's water and energy natural resources are properly managed and conserved to sustain the quality of life for Idahoans today and in the future. The IDWR issues water rights, which allocate a quantity of water to irrigators.
LSWCD	Lemhi Soil and Water Conservation District. Develops local natural resource conservation programs with established goals and objectives. In addition to its primary tasks, the LSWCD has partnered with the USBWP to accomplish numerous conservation projects, and administers the funds for USBWP projects within its geographic area.
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration. NOAA Fisheries is dedicated to protecting and preserving our nation's living marine resources through scientific research, fisheries management, enforcement, and habitat conservation. In the Upper Salmon River Basin, NOAA Fisheries is responsible for the protection of anadromous chinook salmon, sockeye salmon, and steelhead.
NRCS	Natural Resources Conservation Service. The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment. In the Upper Salmon River Basin, the NRCS assists landowners by providing technical assistance in the design of on-farm improvements such as sprinkler systems.
OSC	Idaho Office of Species Conservation. The OSC coordinates ESA programs with state agencies; solicits, provides, and delegates funding for ESA programs; creates de-listing advisory teams; serves as State's "one voice" on ESA policy; provides a mechanism for Idaho citizens to voice ESA concerns; and facilitates collaboration between State, Federal, and private stakeholders.
SALMON RIVER COALITION	The Salmon River Coalition was organized for the defense of private property rights and to raise funds for legal defense against environmental suits. The Salmon River Coalition also works with private property owners, federal, and state agencies to develop plans to bring private property owners into compliance with local, state, and federal environmental laws.
SHIPUSS	Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin
USBWP	Upper Salmon Basin Watershed Project. The USBWP strives to protect, enhance, and restore anadromous and resident fish habitat and achieve and maintain a balance between resource protection and resource use on a holistic watershed basis.
USFWS	U.S. Fish and Wildlife Service. The USFWS' mission is to work with others to conserve, protect, and enhance fish, wildlife, and plants, and their habitats for continuing benefit of the American people. In the Upper Salmon River Basin, the USFWS is responsible for the protection of bull trout, which are included in SHIPUSS, and several wildlife species which are not included.
USRB	Upper Salmon River Basin

INTRODUCTION AND PURPOSE

Background

The Upper Salmon River Basin (USRB) in central Idaho contains unique resources of importance to the nation, including public lands, fish, wildlife and plants, scenic and cultural resources. Threatened and endangered species listed under the Endangered Species Act (ESA) are of particular importance to the American people, and conservation needs of ESA-listed fish species are receiving increasing attention.

Native anadromous and resident fish species, including those listed under the ESA, may be affected by irrigation water diversion, livestock grazing, and associated activities. Water users and landowners in the USRB are interested in ensuring their land and water management actions may continue in a manner that reconciles their land and water management actions with and is consistent with the purposes of the ESA for protection and recovery of indicated fish species.

Purpose

This Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin (SHIPUSS) is intended to address fish conservation needs on or adjacent to irrigated agricultural and livestock ranching lands. These needs may include, but are not limited to, assessment of flow adequacy for fish migration and life histories, screening of ditches, assessment of entrainment risk, consolidation or improvement of diversions, habitat improvement, evaluation of irrigation efficiency, and evaluation of barriers. SHIPUSS is a prioritized list of streams within watersheds to guide fish screening and habitat improvement efforts on privately owned lands throughout the USRB. SHIPUSS was developed by the Upper Salmon Basin Watershed Project (USBWP) Technical Team (Tech Team), which is comprised of numerous professional technical experts and fisheries biologists from regional state, federal, and tribal agencies, and other biologists familiar with fisheries populations in the USRB (Appendix A). SHIPUSS was developed to assist the Tech Team and USBWP Advisory Board in prioritizing the funding of conservation efforts across the USRB, and is intended to be used by these groups in conjunction with existing project-level prioritization methods.

A prioritization process such as SHIPUSS is necessary because the current demand for conservation funding assistance to landowners is much greater than the available resources. An overwhelming number of USRB water users have approached the local agencies (primarily the Idaho Department of Fish and Game (IDFG) Screen Shop, Natural Resources Conservation Service (NRCS), USBWP, and the Lemhi and Custer Soil and Water Conservation Districts) requesting assistance in screening of irrigation ditches or implementation of fisheries conservation or restoration measures on their land. The ability of these organizations to help the landowners has been limited by the lack of available personnel, the lack of a central representative for the irrigators, the inability to guarantee that conserved or purchased water will remain in the channel to benefit fish, and most importantly, the lack of sufficient funding to meet the demand for on-the-ground habitat improvement and mitigation projects. Recently, fiscal support for conservation efforts in the USRB has become particularly limited, but the USBWP

and other entities are seeking to diversify their funding sources and resume pending conservation efforts.

Goal

The main goal of SHIPUSS is to create a prioritized list of streams within watersheds to guide screening and habitat improvement projects on privately owned lands in the USBRB. This will be used by the USBWP and other local interested parties in conjunction with project level prioritization to accomplish screening and habitat objectives.

A secondary goal is to aid restoration planning effort of entities other than the USBWP. SHIPUSS is the first attempt to prioritize restoration efforts throughout the Upper Salmon River drainage and should prove useful for a variety of habitat restoration efforts.

The final goal of SHIPUSS is to serve as a habitat restoration prioritization template into which a variety of data types can be incorporated. Only by being continually updated will SHIPUSS be useful for a variety of entities and for a long period of time.

Integration with other recovery efforts

Upper Salmon Basin Watershed Project

The Idaho Model Watershed Plan (1995)

(<http://www.efw.bpa.gov/Environment/EW/EWP/DOCS/REPORTS/OTHER/Z2772.pdf>) is the USBWP's guiding document intended to identify actions that are needed for salmon habitat and to establish a procedure to implement habitat improvement measures. It identified five factors that are limiting salmon production within the USBRB. These are: 1) inadequate water flows; 2) high water temperatures; 3) lack of streamside vegetation; 4) high sediment levels; and 5) physical barriers (including lack of screens on ditches). Once these limiting factors were identified, associated objectives for improvement were identified. The objectives identified in the Plan were to: 1) Increase instream flows during critical fish migration periods; 2) Reduce the number of physical barriers hindering fish migrations; 3) Develop new rearing and resting pools; 4) Establish riparian vegetation along critical areas to provide cover and reduce temperatures; and 5) Reduce the sediment levels within spawning gravels.

From its creation in 1992 to 2001, the USBWP worked on projects to address its objectives only in the Lemhi, Pahsimeroi, and East Fork Salmon River drainages, but in 2001, their geographic area was expanded to include the entire Upper Salmon River Subbasin above the Middle Fork Salmon River. At the same time, more interest in conservation was expressed by area landowners, and more restrictions were placed on funding. A method to prioritize projects and streams was therefore necessary. The IDFG Screen Shop (Screen Shop) began to develop a prioritization method to guide their screening efforts in tributary streams during the winter of 2001-2002. This method used existing stream survey data from snorkel surveys and redd counts to determine fish densities in the tributaries, and develop priorities for screening. The methodology and results of this prioritization scheme are included in Appendix B. However, since most streams in the USBRB needed more restoration work than just the installation of screens, it was soon realized that a more comprehensive approach was needed. The Screen

Shop's prioritization scheme was used as the foundation of a method that was to become SHIPUSS.

Habitat Conservation Plans

SHIPUSS is a timely tool that integrates with conservation efforts in the USRB. Two formal agreements are currently being implemented under the ESA. The first is an agreement specific to the Lemhi River. The Idaho Office of Species Conservation (OSC), Idaho Department of Water Resources (IDWR), IDFG, USBWP, Lemhi Irrigation District, Water Districts 74, 74Q, 74W, and 74Z, National Oceanic and Atmospheric Administration (NOAA) Fisheries, NOAA, and the US Fish and Wildlife Service (USFWS) are currently working under a short-term agreement effective through the year 2003. In this agreement, the non-federal parties agreed to maintain minimum flows in Hayden Creek and the Lemhi River by renting water to the Lemhi Water Rental Bank. The federal parties agreed to provide the funds to rent the necessary flows. In addition, the non-federal parties will pursue opportunities to enhance flows in the lower river by connecting tributaries and transferring points of diversion, enhancing habitat, and seeking funding for additional restoration projects. In return, the USFWS and NOAA Fisheries agreed to exercise "enforcement discretion" in the event of unexpected take of listed species as a result of activities covered by the agreement. All parties are currently involved with the drafting of a long-term habitat conservation plan (HCP) under section 10(a)(1)(B) of the ESA which will provide area ranchers with incidental take coverage for irrigation-related activities. In return, the ranchers will agree to provide enhanced instream flows, identify and implement projects to restore connectivity, and other habitat improvement measures. The Lemhi HCP will incorporate an as yet to be determined project prioritization scheme that will probably be influenced by SHIPUSS and may actually be a version of SHIPUSS modified specifically to meet the needs of the Lemhi Irrigators.

The second agreement will either be an HCP or an agreement with the State of Idaho under section 6 of the ESA for the entire USRB, except the Lemhi. A short-term Conservation Memorandum of Understanding (MOU) has been drafted and is expected to be finalized by April 2003. The term of this short-term agreement is 2 years, and creates a partnership between the Salmon River Coalition (a citizen's group representing landowners and water users), USBWP, Idaho Soil Conservation Commission, the Lemhi and Custer Soil and Water Conservation Districts, IDWR, IDFG, OSC, NOAA Fisheries, and USFWS. Terms of this agreement will be similar to those expressed in the short-term Lemhi Agreement.

During the short-term Upper Salmon agreement, the partners will be developing a long-term conservation plan under either section 10 or section 6 of the ESA. This conservation plan will be similar to the Lemhi HCP. SHIPUSS has been incorporated into the draft short term MOU and will likely play a role in the long-term conservation plan. The ability of SHIPUSS to incorporate different types of data as they become available will increase chance of success of any habitat conservation plans in which it is used.

U.S. Fish and Wildlife Service Bull Trout Recovery Plan

The USFWS released a draft recovery plan for bull trout in October 2002, and expects to finalize the plan in late 2003. The Salmon River Recovery Unit includes the entire Salmon River drainage, approximately half of which is above the confluence with the Middle Fork Salmon River. Therefore, much of this Recovery Unit falls within the geographic area considered by SHIPUSS. In the Salmon River Recovery Unit, many strong local populations of bull trout exist; however, the single most limiting factor identified for bull trout is the lack of connected tributary habitat. This prevents bull trout from expressing the fluvial component of the population. One of the implicit objectives of SHIPUSS is to connect tributaries to mainstem habitat wherever possible, so the intent of both documents is complementary.

The USFWS has solicited the professional opinion of the biologists working in the Upper Salmon area, and is also aware of the development of SHIPUSS. Since SHIPUSS uses a multi-species approach to prioritization, the priorities identified in SHIPUSS are not necessarily the same as the areas that would be identified as priorities for bull trout. However, the USFWS will use the factors evaluated in SHIPUSS to prioritize stream reconnections for bull trout. To that end, the USFWS intends to identify high priority tasks in the Recovery Plan for reconnecting Priority I and Priority II streams identified by SHIPUSS.

Subbasin Planning

In 1980, the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) directed the agencies responsible for managing hydropower projects on the Columbia River system to "protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat, affected by such projects . . . in a manner that provides equitable treatment for such fish and wildlife" (Northwest Power Act 16 U.S.C. §839b(h)(11)(A)(i)). The Northwest Power Act also created the Northwest Power Planning Council (Council), made up of representatives from Idaho, Washington, Oregon, and Montana. As part of the Fish and Wildlife program, every year the Council reviews proposals for projects and research to implement the program. Proposals meeting the highest standards are then recommended to Bonneville Power Administration (BPA) for funding. The Council's 2000 Columbia Basin Fish and Wildlife Program marked the start of a new review and selection process, which requires the development of local subbasin plans to guide project funding. The intent of these plans is to provide a blueprint to recovery efforts in each subbasin.

A total of 62 subbasins were identified; the area covered by SHIPUSS is included in the upper half of the Salmon River subbasin. In December 2002, the Shoshone-Bannock Tribe was identified as the lead entity for the portion of the plan covering the upper Salmon River, while the Nez Perce Tribe will be the lead entity for that portion of the plan covering the Salmon River below the Middle Fork. The Shoshone-Bannock Tribe will subcontract with USBWP for outreach activities. IDFG will be the lead for assessments in both areas.

The subbasin plan will identify goals for fish, wildlife, and habitat; define objectives that measure progress toward those goals; establish strategies to meet those objectives; and incorporate much of the existing information into a single document. The three main parts of the plan are the inventory, assessment, and management plan. The inventory includes information

on fish and wildlife protection, restoration, and artificial production and management plans within the subbasin. The assessment consists of a technical analysis to determine the biological potential of each subbasin and restoration opportunities. It describes existing and historic resources, conditions, and characteristics. Finally, the management plan includes a vision for the subbasin, biological objectives, and strategies. It should be based on a 10-15 year planning horizon.

These subbasin plans are intended to be locally developed by fish and wildlife managers, tribes, government agencies, and citizens. The subbasin plans are also expected to involve a broad range of constituents and connect to other efforts.

Although it is recognized that SHIPUSS does not have the level of detail required by the Council, it was developed by and has the broad acceptance of the fish and wildlife managers, tribes, most government agencies, and citizens of the Upper Salmon River area. It incorporates as much scientific data as is currently available, and will be amended as more surveys are completed. Since it is intended to be used by the USBWP, it will be used in conjunction with their established project prioritization process, which uses identified limiting factors for each stream reach. Finally, the USBWP is currently developing a comprehensive Monitoring Plan that will facilitate objective monitoring of key projects.

SHIPUSS will contribute to the development of the subbasin assessment and plan, and will be revised and supplemented during the subbasin planning process. SHIPUSS may also be a useful tool to guide non-BPA funded restoration activities, which will likely account for a larger portion of the projects in the area in the future.

Limitations

Although SHIPUSS will be a very useful tool, it has several limitations that must be acknowledged. First, it is based on available survey information, most of which was collected in the last several decades after most of the major population declines had occurred. This may result in it being skewed towards areas that currently have higher densities of fish and could underestimate potential of areas that historically had high densities. However, it also makes sense to commit resources to "protect the best, then restore the rest." If this philosophy is adhered to, then SHIPUSS automatically identifies the best areas to target resources.

Second, because SHIPUSS is based on currently available survey information, and many streams have not been adequately surveyed, some streams with strong fish populations may not be identified as priority areas. Nor have surveys been conducted in all reaches of all streams. For example, many streams originate on Forest Service managed land, pass through BLM managed land, then join with a mainstem on private land. Except on the Lemhi, East Fork, and Pahsimeroi, very few surveys of any kind are conducted on streams or reaches passing through private land.

Third, data from stream flow studies and stream gauges were not included. A number of instream flow studies have been conducted in the Upper Salmon River drainage but few have been conducted in small streams, so data from stream flow studies were not included. Likewise,

instream flow data are available from a number of sources but continuous records on most of the tributary streams are lacking so instream flow data were not included. Due to lack of data the current version of SHIPUSS does not address adequacy of instream flows for the target species. SHIPUSS does, however, acknowledge the importance of improving stream flows in tributaries and mainstem reaches. Instream flow studies are currently being conducted in the Upper Salmon River drainage and the resulting data can be incorporated into SHIPUSS as they become available.

Fourth, scoring of the non-fisheries categories are mostly subjective. For example flow velocity, and depth data are not available for most of the stream reaches so, except where streams are completely dry, the connectivity scores are mostly subjective since the adequacy of flows for fish passage was not considered. Habitat quality is another similar criterion, where the biologists who do surveys and other work in the drainage must consider not only the general stream characteristics (substrate, gradient, morphology, etc.) and limiting factors (temperature, sediment, barriers, flows, etc.) but also consider the potential of restoration activities to affect the limiting factors. For example, fencing a stream that is heavily impacted by sediment will have much less of an effect if that stream is spring-fed than if it is fed by run-off, since a spring-fed stream will not receive the flushing flows needed to clear the gravels of accumulated sediments.

Fifth, specific methods are not explained in detail. The urgent need for a useful prioritization process and the dynamic nature of SHIPUSS development has made a detailed description of methods impractical for the current version. The authors of SHIPUSS are involved in most restoration planning efforts in the Upper Salmon River drainage, so as SHIPUSS adapts and evolves to incorporate new data and meet changing circumstances, description of methods can be revised and updated as needed. Refer to Appendix E for a list of persons to contact for additional information on SHIPUSS.

Finally, scores in SHIPUSS cannot be compared across watersheds because each watershed has unique biologic, geologic, ecologic, social, and other characteristics. Because of this, it is impossible to effectively compare one watershed to another without some knowledge of the area. For example, Morgan Creek (Salmon River – Pahsimeroi to East Fork), Sheep Creek (North Fork), and Pole Creek (Salmon River - Valley Creek to Headwaters) each scored 25 points. These streams are all in different vegetation and climate zones and have different limiting factors and expected responses, so cannot be compared based solely on the scores.

GEOGRAPHIC AREA

The area covered by SHIPUSS includes all mainstem and tributary habitats of the Salmon River, from the mouth of the Middle Fork Salmon River upstream to the headwaters of the Salmon River near Galena Summit. The area is divided into 11 distinct drainage areas; five large river subbasins, and six mainstem river reaches of the Salmon River with associated tributaries. The 11 distinct drainage areas of the USRB were selected to ensure that known local populations of anadromous and resident fish would be addressed and provided adequate consideration for mitigation efforts. The five large river subbasins include: 1) North Fork Salmon River; 2) Lemhi River; 3) Pahsimeroi River; 4) East Fork Salmon River; and 5) Yankee Fork. The six mainstem Salmon River reaches include: 1) Middle Fork Salmon River to North Fork Salmon

River; 2) North Fork Salmon River to Pahsimeroi River; 3) Pahsimeroi River to East Fork Salmon River; 4) East Fork Salmon River to Yankee Fork of Salmon River; 5) Yankee Fork of Salmon River to Valley Creek, including Valley Creek; and 6) Valley Creek to Headwaters of Salmon River. These drainage areas will be referred to as watersheds throughout this document, although many actually include several watersheds.

FISH SPECIES INVOLVED

Five fish species were considered in the development of SHIPUSS; three species are listed as threatened under the ESA, and two are not. They include:

- Snake River spring/summer chinook salmon (threatened)
- Snake River steelhead (threatened)
- Bull trout (threatened)
- Westslope cutthroat trout
- Resident rainbow/redband trout

Snake River sockeye salmon, which are at a critically low population level, and are listed as endangered under the ESA, were not specifically considered during the development of SHIPUSS for two reasons. First, SHIPUSS is intended to prioritize fish conservation efforts for USBWP, the Soil and Water Conservation Districts, and other entities working with private landowners and all sockeye salmon spawning and rearing habitat exists in areas not affected by actions on private lands. Second, although reduced flows in the main Salmon River undoubtedly affect both juvenile and adult survival during migration, adequacy of instream flow was not addressed by this version of SHIPUSS. Projects resulting in flow improvements in the Salmon River would benefit sockeye salmon as well as the target species, however since adequacy of flow is not a category that was considered, inclusion of sockeye salmon would have no effect on overall scores. Another reason sockeye were not specifically considered is that the data used as a foundation for SHIPUSS were collected in tributary streams where sockeye do not occur, or in the mainstem Salmon River using methods that do not effectively sample migrating sockeye salmon.

Two other species that were not considered during the development of SHIPUSS but should be mentioned are the white sturgeon and the Pacific lamprey. Very little is known about the Salmon River populations of these species, other than that sturgeon historically ranged as far upstream as the town of Challis and river outfitters have reported catching or sighting them near Clayton in the 1990's. The Idaho Department of Fish and Game will be conducting a lamprey study in the Salmon River system in 2003.

METHODS AND DESCRIPTION OF CATEGORIES

To begin the ranking process, the USBWP Tech Team first started with the list of streams identified as priority streams by the Screen Shop's density method. The Tech Team then identified which additional criteria would be considered. Criteria were broken into four general categories: Stream Connectivity and Size; Habitat; Fisheries; and Non-Biological Factors.

All criteria were scored either High, Medium, or Low, and were phrased in such way that High was most desirable in all cases. High scores were given two points, Medium scores were given

one point, and Low scores were not given any points. That way, the highest overall score would result in the highest priority stream. Since it is possible for streams or reaches to receive a "Not Applicable" rating in five criteria, the final score was then divided by the total possible score for that stream to derive an Adjusted Percent Total.

After each stream was scored, streams were broken into Priorities based on their Adjusted Percent Total. Priority I streams are those receiving 70% of the possible points and Priority II streams are those receiving at least 50% of possible points. Priority III streams or reaches are those receiving less than 50% of possible points.

Priority I streams are those that have the potential to realize immediate, tangible benefits to fish if recovery efforts are directed toward them. Priority II streams are those that will also have tangible benefits, but to lesser extent, or benefits may be delayed for quite some time. There may be other factors limiting the potential of these tributaries, such as chemical contamination from mines, unwilling landowners, or extremely complicated issues. Priority III streams are low priority streams because they have very limited production potential, or will require extreme effort to return them to production. Priority I streams are listed in Tables 1, 2, 3 and 4, while Priority II streams are identified in Tables 5, 6, 7 and 8. Of the streams and reaches identified as priorities by the Screen Shop's method, only Geertson Creek (Lemhi drainage) was reduced to Priority III status for reasons described above.

Appendix C lists streams that will be surveyed during 2003 for inclusion in SHIPUSS. Currently, little or no fish survey information exists for these streams, or the information was not readily available at the time of development, but they have the potential to provide suitable habitat for the five species considered during the development of SHIPUSS. Numerous other streams that will not be considered for SHIPUSS exist in the USRB, and the perennial streams are listed in Appendix D. These streams are currently not being considered for prioritization because they either are insignificant fish producers, or they have no problems that are targeted by the SHIPUSS prioritization. If future information suggests that any of these streams should be included, they will be reviewed at that time.

RANKING CATEGORIES

1) Stream Connectivity and Size

Criteria under this category consider current and potential connectivity of a tributary (or mainstem reach) to the mainstem. Habitat connectivity between stream reaches can be impaired for a variety of reasons, however, this section only concerns connectivity impairment due to irrigation diversions. Other types of barriers are addressed in the Habitat section. Except in cases where streams are completely dry or barriers are absolute, the degree of connectivity is very difficult to quantify. Many streams reaches in the Upper Salmon River drainage are completely dry for part or all of the year and are obviously disconnected from other habitats. Many others, however, are connected to other habitats by surface flows that are degraded by irrigation diversions or other habitat perturbations. For the purpose of SHIPUSS, connectivity was defined simply as the presence of water. No attempt was made to determine the adequacy of flows for upstream or downstream movement of fish. As flow velocity and depth information becomes available, it will be integrated into SHIPUSS. Tributaries or mainstem reaches that are

apparently connected to other habitats year round received a High rating. A Medium rating is for tributaries or reaches that are connected at least nine months, while a Low rating is for tributaries connected less than nine months.

The size of the stream is only considered relative to other streams within the same watershed, not across watersheds. This criteria was considered mostly from a flow contribution standpoint, rather than a fish habitat view. Therefore, a stream that currently or potentially contributes 5 cfs may receive a High rating in one watershed, but a comparable stream might only warrant a Medium score in the next.

In the future, the Tech Team plans to include GIS information showing the number of miles of available habitat in each stream, which will allow a more accurate comparison of watersheds.

2) Habitat

This category considers current and potential habitat quality. High quality habitat has no major limiting factors and supports all expected life stages of historical species, but may have one parameter, such as temperature, outside of desired criteria. Medium quality habitat may have minor problems, but is probably not severely limiting. It probably has two or more parameters (e.g. sediment and temperature) outside of recommended criteria. Problems can be remedied through restoration activities. Low quality habitat is either a) degraded to the point where it is severely limiting, or b) only supports one life stage, such as migration.

Also under this category is a criterion that considers whether other barriers besides diversions exist in the stream. These may be natural such as waterfalls that restrict access to large parts of the watershed, or man-made, such as culverts that need replacement. If a stream scores Medium or Low in this criterion, indicating the presence of barriers, further explanation may be necessary.

3) Fisheries

This category lists the current and potential life history expression of anadromous fish (chinook salmon and steelhead), bull trout, and resident trout (rainbow and cutthroat). The list of streams included here was derived from the Screen Shop's prioritization (Appendix B) and was weighted towards ESA listed fishes. The purpose of this category is to identify current and potential life history expression of anadromous and resident fish. Current conditions are based on existing snorkel survey and redd count information, and potential condition is based on current information and professional judgment. Areas with a High rating support all life stages (spawning, rearing, and migration) and are areas fish consistently return to. A High rating in both the current and potential columns does not necessarily suggest that the stream is at capacity, but rather that all life histories are currently being expressed. Frequently, additional habitat restoration is necessary for the local population to realize its full potential. An area with a Medium rating may support all life stages, but success is not expected to be very high. An area with a Low rating is probably only used as a migration corridor, if at all.

4) Non-Biological Factors

A large portion of fisheries restoration and recovery activities in the USBRB must be conducted cooperatively with private landowners. This final category contains six criteria that address different components of landowner interaction. The expected cost-benefit ratio of "fixing" a stream is very difficult to determine, and has many variables. It must consider the value of the stream to the resource, how degraded it is, how many landowners are involved, how many types of projects will be involved, the geology of the system, and numerous other variables. However, there are several key tributaries and reaches that are crucial to salmonid recovery and population integrity, and this category attempts to attach a value to these streams. The Tech Team recognizes that their strengths lie in the realm of science, not economics, but believes that it is qualified to make a rough "seat of the pants" cost-benefit analysis based on the expected biological benefit returned to the system. This category is not intended to attach real dollars to a stream, but more to get a "feel" for whether the effort required to realize benefits is "worth it." For example, some systems would benefit greatly from a simple project such as a fence, while other systems may receive extensive restoration efforts and only realize minimal benefits. Frequently, large amounts of time, effort, and money are directed at projects that will have little, if any, real benefit for the fish, and it is difficult not to look at such projects without thinking "If we could only put that money over _____." By including this rough estimate of cost-benefit here, we hope to reduce or avoid the wasting of limited amounts of money on non-productive projects, or at least document the Tech Team's opinion. A High rating would be given to an area where high benefits at relatively low costs could be expected. An area with a high benefit, high cost, or moderate benefits at medium to high costs would receive a Medium rating, and an area with low benefits would receive a Low rating, regardless of cost.

Landowner interest and willingness was determined based both on who has contacted the USBWP or IDFG Screen Shop regarding potential projects, and also on knowledge of the people living in the area. Obviously, this category is the most flexible, since it involves an assessment of the personal opinions of literally hundreds of landowners. We anticipate that over time, landowners that may not currently be interested in participating in conservation efforts will change their minds and wish to be included. This will become especially true as the Upper Salmon HCP becomes effective and landowners are offered the incentive of incidental take coverage under the ESA if they participate in conservation activities. Therefore, this category only reflects the current state of landowner willingness, but will be revised in the future. This section also addresses stream flows and diversions, and therefore may receive a Not Applicable (NA) rating on the table.

Two criteria in this category address the potential to increase flows in this stream through either leases/acquisitions or through irrigation/management improvements. A High potential indicates that there are many willing landowners along the tributary, and that there is a high potential to return water to the stream. A Medium potential indicates that water returns may be limited or only seasonal, or that there are only few or no currently known interested landowners. Low potential indicates low potential to return water to the stream. It may be difficult to interest landowners in a program. Not Applicable indicates that flows are not a limiting factor in that stream or reach.

Another criterion in this category addresses the simplicity of resolving diversion issues. A High score here means that solving the problems in this drainage will be relatively simple with straightforward fixes. There may be few landowners involved or very simple systems. A Medium score means that solutions will be more difficult, with complex systems and many landowners involved. A Low score indicates that it will be very difficult to coordinate and design solutions to diversion issues in that system. Not Applicable means that diversions are not an issue in this stream or reach. Two related criteria consider the potential to consolidate diversions in that stream and the simplicity of resolving screening issues. These refer in part to the feasibility of consolidations and screening where a High relates to a relatively easy "fix" to improving fish migration.

CONCLUSION

SHIPUSS will prove to be a valuable component of big picture salmonid recovery in the USBR. It will also be an important resource to the USBWP for implementation of the Model Watershed Plan and the Lemhi and Custer Soil and Water Conservation Districts as they work with area landowners to accomplish screening, conservation, and restoration projects in the USBR.

Actual selection of prioritized streams may depend on external factors such as constraints on funding, landowner willingness, external pressures such as lawsuits or timing, availability of matching funds, project readiness in light of environmental compliance (NEPA, ESA consultation, permits, etc.), or numerous other factors. Because of this variety of external factors that can affect the ultimate priority of a project, the Tech Team recommends that SHIPUSS be used by the USBWP or other people familiar with the USBR. These people will not only be best equipped to deal with the external factors identified above, but they will be best able to identify realistic goals, coordinate with the landowners, design projects, and determine when the stream or reach is "restored."

SHIPUSS will also be a valuable resource for other planning activities in the USBR, such as the bull trout recovery plan, the Upper Salmon habitat conservation plan, the Lemhi HCP, and subbasin planning. Although, due to lack of available data, the current version of SHIPUSS is largely based on subjective criteria it can and will be amended on a regular basis as more data becomes available. This feature will allow it to be a "living" document that can evolve to meet the needs of a variety of users.

One of the most valuable features of SHIPUSS, beyond its ability to be modified as more data comes available, is the format. By using the spreadsheet design, the user can easily look at a stream and identify areas that need attention. For example, IDFG Screen Shop can look at the criteria "Simplicity of resolving screening issues" and see that screens are not an issue in Sheep Creek (North Fork), but they are in Hughes Creek (North Fork). The user can also look at the criteria "Stream connectivity to mainstem (current)" and tell whether connectivity is an issue in that tributary. While the spreadsheet cannot give a complete picture of each tributary, it can tell the user that a stream is of high, medium, or low priority for conservation efforts.

Table 1. Priority I tributary streams based solely on habitat and biological factors, using the SHIPUSS system. Priority I streams are those receiving at least 70% of possible points. Streams can only be compared within the same watershed, since unique biologic, geologic, ecologic, social, and other characteristics interact to preclude comparisons across watersheds. See narrative for a complete description of categories. 2 = High; 1 = Medium; 0 = Low.

	Stream Connectivity* and Size			Habitat			Fisheries						Total Score	Percent Total
	Stream connect to mainstem (current)	Stream Connectivity to mainstem (potential)	Size of tributary stream	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Anadromous Fish Life History Expression (current)	Anadromous Fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)		
Salmon (Middle Fork (MF)-North Fork (NF))														
Indian	2	2	1	2	2	2	1	2	2	2	1	2	21	88
Squaw	1	2	1	2	2	2	1	2	2	2	1	1	19	79
Upper Panther (above Blackbird, including mainstem and tributaries)	2	2	2	1	2	1	0	2	1	2	2	2	19	79
Owl	2	2	2	1	2	2	2	2	0	1	1	1	18	75
Salmon (NF-Pahsimero (Pal))														
Carmen	1	2	2	1	2	2	1	2	2	2	1	2	20	83
Hat	2	2	2	1	2	1	1	2	2	2	1	1	19	79
Iron	1	2	2	1	2	1	1	2	2	2	1	1	19	79
4th of July	1	2	1	1	2	2	1	2	2	2	0	1	17	71
Salmon (Pal-East Fork (EF))														
Challis	1	2	2	1	2	1	1	2	1	2	2	2	19	79
Morgan	1	2	2	1	2	1	1	2	1	2	2	2	19	79
Garden Creek	1	2	1	1	2	1	1	2	1	2	1	2	17	71

Stream Connectivity* and Size	Habitat			Fisheries							Total Score	Percent Total				
	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Anadromous Fish Life History Expression (current)	Anadromous Fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)							
Salmon (EF-Yankee Fork (YF))																
Squaw	1	2	1	1	2	1	1	1	2	2	2	2	2	18	75	
Thompson	1	2	1	1	2	2	1	1	1	2	1	2	1	2	17	71
Salmon/Yankee Fork-Valley Creek, including Valley Creek																
Basin	2	2	2	2	2	2	1	2	2	2	2	1	2	2	22	92
Valley- above Stanley Lake	2	2	2	2	2	2	2	2	2	1	2	1	2	2	22	92
Iron Creek (Valley Creek drainage)	1	2	1	1	2	2	1	2	1	2	1	2	1	2	18	75
Goat Creek (Valley Drainage)	1	2	1	1	2	2	1	1	1	2	1	2	1	2	17	71
Salmon (Valley Creek Headwaters)																
Main Salmon River above Pole Creek	1	2	2	1	2	2	2	2	2	0	1	1	1	2	18	75
4th of July	1	2	1	1	2	2	1	1	1	1	2	2	2	2	18	75
Pole Creek	1	2	2	1	2	2	0	2	0	0	2	1	2	2	17	71
Beaver Creek	1	2	1	1	2	2	0	2	0	1	2	1	2	2	17	71
North Fork																
Sheep	2	2	2	2	2	2	2	2	2	2	2	1	2	2	23	96
Hughes	2	2	2	1	2	1	2	2	2	1	2	2	2	2	21	88
Lehigh																
Hayden	2	2	2	2	2	2	2	2	2	2	2	1	2	1	22	92
Kenney	2	2	1	2	2	2	0	1	1	2	1	2	1	1	17	71

	Stream Connectivity* and Size			Habitat			Fisheries							Total Score	Percent Total	
	Stream connectivity to mainstem (current)	Stream Connectivity to mainstem (potential)	Size of tributary stream	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Anadromous Fish Life History Expression (current)	Anadromous Fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)				
Pahsimeroi																
Big	1	2	2	1	2	1	0	2	1	2	2	2	2	2	18	75
Upper Pahsimeroi (Hooper Lane to headwaters, including tributaries)	1	2	2	1	2	1	0	2	1	2	1	2	2	1	17	71
East Fork																
Herd Creek	2	2	2	2	2	2	2	2	2	2	2	2	2	1	23	96
Upper EF - above West Pass	2	2	2	1	2	2	1	2	2	1	1	2	1	1	19	79

* - Connectivity is defined as the presence of water and does not currently consider the adequacy of flows or depth for fish passage.

** - All of the tributaries on this table are identified or included as priority streams in the USFWS draft recovery plan for bull trout.

Table 3. Priority I mainstem reaches based solely on habitat and biological factors, using the SHIPUSS system. Priority I reaches are those receiving at least 70% of possible points. Streams can only be compared within the same watershed, since unique biologic, geologic, ecologic, social, and other characteristics interact to preclude comparisons across watersheds. See narrative for a complete description of categories. 2 = High; 1 = Medium; 0 = Low.

	Stream Connectivity*		Habitat			Fisheries							Total Score	Percent Total
	Perennial flows (current)	Perennial flows (potential)	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Anadromous fish Life History Expression (current)	Anadromous fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)			
Mainstem Salmon														
East Fork to Headwaters	2	2	1	2	2	2	2	1	2	1	2	2	27	79
Lemhi														
Lemhi - Hayden Creek to Leadore**	2	2	1	2	2	2	2	1	1	1	2	2	27	79
Lemhi - Agency Creek to Hayden Cr.	2	2	1	2	2	1	2	1	1	1	2	2	26	76
Pahsimeroi														
Pahsimeroi - Mouth to Hooper Lane**	1	2	1	2	1	1	2	1	2	1	2	2	25	74
East Fork														
East Fork - Herd Creek to Germainia	2	2	1	2	2	2	2	2	2	2	2	2	29	85
Other														
North Fork*	2	2	1	2	2	1	2	1	2	1	2	1	18	82
Yankee Fork-and tributaries**	2	2	0	2	1	1	2	1	2	1	2	1	17	71

* - Connectivity is defined as the presence of water and does not currently consider the adequacy of flows or depth for fish passage.

** = All or a portion of these reaches or tributaries have been identified as priority areas in the USFWS' draft recovery plan for bull trout.

Table 5. Priority II tributary streams based on habitat and biological factors, using the SHIPUSS system. Priority II streams are those receiving between 50% and 69% of possible points. Streams can only be compared within the same watershed, since unique biologic, geologic, ecologic, social, and other characteristics interact to preclude comparisons across watersheds. See narrative for a complete description of categories. 2 = High; 1 = Medium; 0 = Low

	Stream Connectivity* and Size			Habitat			Fisheries							Total Score	Percent Total		
	Stream connectivity to mainstem (current)	Stream Connectivity to mainstem (potential)	Size of tributary stream	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Anadromous fish Life History Expression (current)	Anadromous fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)					
Salmon (Valley Creek Watershed)	1	2	1	1	2	2	0	1	1	0	1	2	2	2	2	15	63
Champion Creek																	
Lemhi	1	2	1	1	2	2	0	1	1	1	2	1	2	1	2	16	67
Pattee																	
Hawley	0	2	1	1	2	1	0	1	1	1	2	1	2	1	2	14	58
Big Timber	0	1	2	1	2	2	0	2	1	2	1	2	0	1	1	14	58
Wimpey	1	2	1	1	2	1	0	2	0	1	1	2	1	2	14	58	
Bohannon	1	1	1	1	1	2	0	1	1	1	1	1	1	1	1	12	50
Paisley																	
Patterson	1	2	1	1	2	1	0	2	1	2	1	2	1	1	1	15	63
Little Morgan	0	2	1	1	2	1	0	1	1	2	2	2	2	2	2	15	63
Falls	0	2	1	1	2	1	0	1	2	2	0	1	2	2	1	13	54
East Fork																	
West Pass	1	2	1	1	2	2	0	1	2	2	1	2	2	1	1	16	67
Big Boulder	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	14	58

* - Connectivity is defined as the presence of water and does not currently consider the adequacy of flows or depth for fish passage.

** - All of the tributaries on this table are identified as priority streams in the USFWS draft recovery plan for bull trout except Wimpey Creek (Lemhi drainage).

	Stream Connectivity* and Size			Habitat			Fisheries								Non-Biological Factors						Total Score	Possible Score	Adjusted Percent Total	
	Stream connectivity to mainstem (current)	Stream Connectivity to mainstem (potential)	Size of tributary stream	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Andromous fish Life History Expression (current)	Andromous fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)	Expected cost/benefit	Potential to increase flows via leases or acquisitions	Potential to increase flows through irrigation or mgt improvements	Simplicity of resolving diversion issues	Potential for diversion consolidation	Simplicity of resolving screening issues						
Salmon Valley Creek (Headwaters)	1	2	1	1	2	2	0	1	0	1	2	2	1	2	1	2	1	2	1	2	1	23	36	64
Champion Creek	0	2	1	1	2	1	0	1	1	2	1	2	1	2	2	1	1	2	1	1	2	23	36	64
Lemhi	0	1	2	1	2	2	0	2	1	2	0	1	1	1	1	0	1	1	1	1	1	19	36	53
Hawley	1	1	1	1	1	2	0	1	1	1	1	1	0	2	2	1	2	1	2	0	0	19	36	53
Big Timber	1	2	1	1	2	1	0	2	0	1	1	2	1	1	1	1	1	1	0	1	0	19	36	53
Bohannon	1	2	1	1	2	1	0	2	0	1	1	2	1	1	1	1	1	1	0	1	0	19	36	53
Wimpey	1	2	1	1	2	1	0	2	0	1	1	2	1	1	1	1	1	1	0	1	0	19	36	53
Patterson	1	2	1	1	2	1	0	2	1	2	1	1	1	2	2	0	2	2	2	2	2	24	36	67
Little Morgan	0	2	1	1	2	1	0	1	1	2	2	2	1	2	1	1	2	2	2	2	2	24	36	67
Falls	0	2	1	1	2	1	0	1	2	2	0	1	1	2	2	1	2	2	2	2	2	23	36	64
West Pass	1	2	1	1	2	2	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	22	36	61
Big Boulder	1	2	1	1	2	1	1	1	1	1	1	1	0	1	1	2	0	2	2	0	2	20	36	56

* - Connectivity is defined as the presence of water and does not currently consider the adequacy of flows or depth for fish passage.
** - All of the tributaries on this table are identified or included as priority streams in the USFWS draft recovery plan for bull trout except Wimpey Creek (Lemhi drainage).

Table 7. Priority II mainstem reaches based on habitat and biological factors only, using the SHIPUSS system. Priority II reaches are those receiving between 50% and 69% of possible points. The adjusted percent total adjusts for the possibility that a stream may receive a Not Applicable (NA) rating in the Landowner Interaction category. Streams can only be compared within the same watershed, since unique biologic, geologic, ecologic, social, and other characteristics interact to preclude comparisons across watersheds. See narrative for a complete description of categories. 2 = High; 1 = Medium; 0 = Low.

	Stream Connectivity*		Habitat			Fishes							Total Score	Percent Total	
	Perennial flows (current)	Perennial flows (potential)	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Andromous fish Life History Expression (current)	Andromous fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)				
Mainstem Salmon															
Pahsimeroi to East Fork (12 Mile)	2	2	1	2	1	1	1	1	1	1	1	1	2	15	68
Pahsimeroi - East Fork (exc. 12 Mile)	2	2	1	2	2	1	1	1	1	1	1	1	1	15	68
North Fork to Pahsimeroi	2	2	1	1	2	1	1	1	1	1	1	1	1	14	64
Lemhi															
Lemhi- mouth to Agency Creek	1	2	1	1	1	1	1	1	1	1	1	1	1	12	55
East Fork															
East Fork - Mouth to Herd Creek*	2	2	1	2	2	1	1	1	1	1	1	1	1	15	68
Other															
Panther Creek (below Blackbird Creek)	2	2	1	2	2	1	2	0	0	1	1	1	1	14	64

* - Connectivity is defined as the presence of water and does not currently consider the adequacy of flows or depth for fish passage.

** = All or a portion of these reaches or tributaries have been identified as priority areas in the USFWS' draft recovery plan for bull trout.

*** = No Priority II reaches were identified at this time in the Pahsimeroi watershed

Table 8. Priority II mainstem reaches based on biological and non-biological factors, using the SHIPUSS system. Priority II reaches are those receiving between 50% and 69% of possible points. The adjusted percent total adjusts for the possibility that a stream may receive a Not Applicable (NA) rating in the Landowner Interaction category. Streams can only be compared within the same watershed, since unique biologic, geologic, ecologic, social, and other characteristics interact to preclude comparisons across watersheds. See narrative for a complete description of categories. 2 = High; 1 = Medium; 0 = Low.

	Stream Connectivity*		Habitat			Fisheries						Non-Biological Factors						Possible Score	Adjusted Percent Total	
	Perennial flows (current)	Perennial flows (potential)	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Andromous fish Life History Expression (current)	Andromous fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)	Expected cost/benefit	Potential to increase flows via leases or acquisitions	Potential to increase flows through irrigation or mgt improvements	Simplicity of resolving diversion issues	Potential for diversion consolidation	Simplicity of resolving screening issues			Total Score
Mainstem Salmon																				
Pahsimeroi to East Fork (12 Mile)	2	2	1	2	1	1	1	1	1	1	2	1	1	2	1	1	1	22	34	65
Pahsimeroi - East Fork (exc. 12 Mile)	2	2	1	2	2	1	1	1	1	1	0	NA	1	1	1	1	1	19	32	59
North Fork to Pahsimeroi	2	2	1	1	2	1	1	1	1	1	0	NA	1	1	1	1	1	18	32	56
Other																				
Lemhi- mouth to Agency Creek	1	2	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	20	34	59
East Fork																				
East Fork - Mouth to Herd Creek*	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	22	34	65
Other																				
North Fork*	2	2	1	2	2	1	2	1	2	1	2	1	0	1	1	1	NA	22	32	69
Panther Creek (below Blackbird Creek)	2	2	1	2	2	1	2	0	0	1	1	1	NA	NA	NA	NA	NA	15	24	63

* - Connectivity is defined as the presence of water and does not currently consider the adequacy of flows or depth for fish passage.

** = All or a portion of these reaches or tributaries have been identified as priority areas in the USFWS' draft recovery plan for bull trout.

*** = No Priority II reaches were identified at this time in the Pahsimeroi watershed

Table 9. Priority III tributary based on biological and non-biological factors, using the SHIPUSS system. Priority III reaches are those receiving less than 50% of possible points. The adjusted percent total adjusts for the possibility that a stream may receive a Not Applicable (NA) rating in the Landowner Interaction category. Streams can only be compared within the same watershed, since unique biologic, geologic, ecologic, social, and other characteristics interact to preclude comparisons across watersheds. See narrative for a complete description of categories. 2 = High; 1 = Medium; 0 = Low.

	Stream Connectivity* and Size			Habitat			Fisheries								Non-Biological Factors							Adjusted Percent Total	
	Stream connectivity to mainstem (current)	Stream connectivity to mainstem (potential)	Size of tributary stream	Habitat Quality (existing)	Habitat Quality (potential)	Lack of other barriers besides diversions	Anadromous fish Life History Expression (current)	Anadromous fish Life History Expression (potential)	Bull Trout Life History Expression (current)	Bull Trout Life History Expression (potential)	Resident Life History Expression (current)	Resident Life History Expression (potential)	Expected cost:benefit	Potential to increase flows via leases or acquisitions	Potential to increase flows through irrigation or mgt improvements	Simplicity of resolving diversion issues	Potential for diversion consolidation	Simplicity of resolving screening issues	Total Score	Possible Score	Adjusted Percent Total		
Low!	0	0	1	1	2	2	0	0	2	2	0	1	0	1	0	0	0	1	13	36	36		
Geertson Creek	0	0	1	1	2	2	0	0	2	2	0	1	0	1	0	0	0	1	13	36	36		

APPENDIX A. Upper Salmon Basin Watershed Project (USBWP) Technical Team members and other technical experts involved with the development of SHIPUSS and the earlier Screen Shop prioritization.

NAME (capacity)	TITLE	AFFILIATION
Kermit Bacon (technical)	Senior Technician	Shoshone-Bannock Tribes, Fort Hall Indian Reservation
Arnie Brimmer (technical)	Regional Anadromous Fishery Biologist	IDFG/USBWP TT
Janna Brimmer (editorial, review, technical)	Fish and Wildlife Biologist	USFWS/ USBWP TT
Tom Curet (technical)	Regional Fishery Manager	IDFG/ USBWP TT
Scott Feldhausen (technical)	Fisheries Biologist	BLM, Salmon FO
Kate Forster (technical)	Fisheries Biologist	BLM, Challis FO/ USBWP TT
Bart Gamett (technical)	Fisheries Biologist	USFS, SCNF, Lost River and Challis RD
Dan Garcia (technical)	Fisheries Biologist	USFS, SCNF, North Fork RD
Laura Hanlon (review)	Fisheries Biologist	NOAA Fisheries/ USBWP TT
Patti Jones (review)	Hydrologist	BLM, Challis FO/ USBWP TT
Ted Koch (review)	Fish and Wildlife Biologist	USFWS
Keith Kutchins (technical)	Anadromous Fish Biologist	Shoshone-Bannock Tribes, Fort Hall Indian Reservation
Mike Larkin (technical)	Staff Fisheries Biologist	IDFG/ USBWP TT
Tom Montoya (technical)	Fisheries Biologist	USFS, SCNF, Yankee Fork RD
Jim Morrow (review)	Fisheries Biologist	NOAA Fisheries
Mark Moulton (technical)	Hydrologist	USFS, SNRA, Stanley RD
Patrick Murphy (technical)	Regional Fishery Biologist	IDFG Screen Shop/ USBWP TT
NOAA Fisheries (review)	Fisheries Biologist	Idaho Habitat Branch Office Staff
Chris Reighn (review)	Fish and Wildlife Biologist	USFWS
Bruce Roberts (technical)	Fisheries Biologist	USFS, SCNF, Cobalt RD
Carl Rudeen (technical)	Project Planner	USBWP
Bruce Smith (review)	Supervisory Fisheries Biologist	USFS, SCNF
Doug Taki (technical)	Program Manager (Sockeye)	Shoshone Bannock Tribes, Fort Hall Indian Reservation
Jude Trapani (technical, review)	Fisheries Biologist	BLM, Salmon FO/ USBWP TT

ABBREVIATIONS USED:

BLM = Bureau of Land Management

FO = Field Office

IDFG = Idaho Department of Fish and Game

NOAA = National Oceanic and Atmospheric Administration

RD = Ranger District

SCNF = Salmon Challis National Forest

SNRA = Sawtooth National Recreation Area

USBWP TT = Upper Salmon Basin Watershed Project Tech Team

USFS = U.S. Forest Service

USFWS = U.S. Fish and Wildlife Service

APPENDIX B. Initial ranking system developed by IDFG screen shop winter 2001-2002. This will be amended to include comments provided by NOAA Fisheries 6/2002

PURPOSE

The purpose of the prioritization and ranking of Upper Salmon River Basin (USRB) subbasins/mainstem river reaches (subbasins/rr) was to biologically determine critical areas within the USRB for recovery measures to enhance habitat and remove potential threats to anadromous and resident fish populations.

STUDY AREA

The area included in the analysis was all mainstem and tributary habitats flowing into the mainstem Salmon River from the mouth of the Middle Fork Salmon River upstream to the headwaters of the Salmon River near Galena Summit. The study area was divided into 11 distinct drainage areas; five large river subbasins, and six mainstem river reaches of the Salmon River with associated tributaries. The 11 distinct drainage areas of the USRB were selected to ensure that known local populations of anadromous and resident fish would be addressed and provided adequate consideration for mitigation efforts.

The five large river subbasins include:

1. North Fork Salmon River
2. Lemhi River
3. Pahsimeroi River
4. East Fork Salmon River
5. Yankee Fork of Salmon River

The six mainstem Salmon River reaches include:

1. Middle Fork Salmon River to North Fork Salmon River
2. North Fork Salmon River to Lemhi River
3. Lemhi River to Pahsimeroi River
4. Pahsimeroi River to East Fork Salmon River
5. East Fork Salmon River to Yankee Fork of Salmon River
6. Yankee Fork of Salmon River to Headwaters of Salmon River

METHODS

The method of selecting prioritized tributaries for reducing threats for federally listed and non-listed native salmonids involved 1) a compilation of professional biological recommendations; 2) prioritized ranking of subbasins/rr based on known anadromous and resident fish population densities and chinook redd counts; and 3) the identification of specific tributaries within the prioritized subbasin/rr for immediate inventory and assessment for mitigation efforts. Although separate in analysis, there is considerable overlap and continuity with many conclusions presented for protection of bull trout in the unreleased draft of the Upper Salmon River Bull Trout Problem Assessment (1999)

prepared by the Upper Salmon River Interagency Technical Advisory Team. Although bull trout are the primary focus of concern, any increase of tributary connectivity and water savings, coupled with protection by screening improvements will ultimately protect and enhance rearing, spawning, and thermal refuge habitat for anadromous and resident fish species within the subbasins.

A. Opinion of Professional Biologists

At the initiation of the prioritization process, a survey was conducted with regional state, federal and tribal fish biologists to identify and prioritize critical bull trout populations in need of protection or enhancement through habitat mitigation projects (screening, diversion elimination, tributary reconnections) in the USRB. The biologists were directed to determine by their professional judgment, two tributaries or river reaches within their districts or regions that had the most significant populations of bull trout (Table A1). The regional fish biologists contributing to the number of recommended tributaries or reaches located within each of river subbasins of the USRB are listed in Appendix A.

B. Ranking of Subbasins/Mainstem River Reaches

The ranking of subbasins was generated using the compiled IDFG database that documents salmonid species occurrence and abundance from fisheries surveys (> 3,500 unique surveys) conducted by IDFG and other agencies within the USRB. Subbasin/rr were summarized and ranked based on overall densities of chinook salmon (GPM Table A2), steelhead/rainbow/redband (GPM Table A3), bull trout (Table A4), westslope cutthroat trout (Table A5), rainbow/redband/steelhead (Table A6) and the mean number of chinook salmon redds (Table A7) surveyed within each subbasin/rr. Densities (100 m²) for each subbasin/rr were generated by the summation of all transects within tributaries or reaches having area measurements and total numbers of fish species observed. Only transects having the target fish species present were used for the density comparisons. This was necessary due to the high variability of sampling effort and seasonal species distributions. The eleven subbasin/rr were then individually ranked from 1 to 11 based upon the mean densities for each individual species for each subbasin/rr, with the highest densities receiving the highest priority ranking.

Additionally, the ranking of subbasin/rr for chinook salmon was based upon the mean number of redds counted over multiple years in each subbasin/rr from existing data bases from both historic pre-1970 counts and recent counts.

C. Prioritization Scoring of Subbasins/Mainstem River Reaches

The prioritization scoring for the subbasins/rr was generated using the overall rankings of the mean densities of chinook salmon, rainbow/redband/steelhead, bull trout, and westslope cutthroat, and the mean redd counts of chinook salmon. Scoring was weighted for all species, with rankings of ESA-listed species, chinook salmon, steelhead/rainbow (GPM), bull trout densities, and chinook salmon redd counts, receiving a higher weight (50% greater) than westslope cutthroat trout and rainbow/redband/steelhead densities. Chinook salmon, steelhead trout, bull trout, and chinook salmon received 1 point for each rank number of subbasins/rr (essentially 1 point for the highest density, 2 points for the second highest density, etc), while westslope cutthroat trout and rainbow/redband/steelhead received 1.5 points for each ranking (1.5 points for the highest densities, 3.0 for the second highest density). The prioritized score for each individual subbasin/rr was the cumulative total of points for all species, with the lowest overall score showing the highest priority score. The cumulative scores are listed in Table 1 below:

Table 1. Prioritized rankings of subbasin/rr in the USBR based on anadromous and resident fish densities and redd counts.

USRB Subbasins	Chinook	O. Mykiss	Chinook	Bull Trout	Cutthroat	O. Mykiss	Overall	Overall
	GPM	GPM	Redds	R7 data	R7 data	R7 data	Score	Rank
Pahsimeroi River	1	1	5	5	4.5	13.5	30	1
Main Salmon (Pahsimeroi - EFk)	9	2	8	7	3	4.5	33.5	2
NFk Salmon River	4	3	6	3	10.5	7.5	34	3
Main Salmon (NFk - Lemhi)	10	10	11	1	1.5	1.5	35	4
Lemhi River	6	9	2	6	7.5	6	36.5	5
Main Salmon (MFk - NFk)	7	4	9	4	12	3	39	6
Yankee Fork River	5	8	7	10	6	9	45	7
Main Salmon (EFk - Yankee Fk)	8	5	4	8	9	12	46	8
EFk Salmon River	3	6	3	9	13.5	15	49.5	9
Main Salmon (Yankee Fk - Headwaters)	2	7	1	11	15	16.5	52.5	10
Main Salmon (Lemhi - Pahsimeroi)	10	10	10	2	16.5	10.5	59	11

D. Final Selection of Priority Watersheds

Listed below is the final prioritized selection of USBR watersheds based on biological ranking and regional biologist concerns and input:

Table 2. Prioritized watersheds for mitigation efforts in the USRB.

Priority Watersheds	Priority Subbasins
1. Mid-Upper Pahsimeroi River - Burnt Cr. - includes Big Springs, Goldberg, Donkey, Mahogany Crs.	Pahsimeroi River
2. On-going - Falls Cr.	Pahsimeroi River
3. Patterson Cr.	Pahsimeroi River
4. Big Cr.	Pahsimeroi River
1. Challis Cr.	Main Salmon (Pahsimeroi – EFk)
2. Morgan Cr.	Main Salmon (Pahsimeroi – EFk)
1. Sheep Cr.	NFk Salmon River
2. Hughes Cr.	NFk Salmon River
1. Carmen Cr.	Main Salmon (NFk – Lemhi)
2. Fourth of July Cr.	Main Salmon (NFk – Lemhi)
3. Default - Tower Cr.	Main Salmon (NFk – Lemhi)
1. Hayden Cr.	Lemhi River
2. Kenney Cr.	Lemhi River
3. Big Timber Cr.	Lemhi River
4. Default - Geertson Cr.	Lemhi River
5. On-going - Bohannon Cr.	Lemhi River
6. On-going - Wimpey Cr.	Lemhi River
1. Indian Cr.	Main (MFk – NFk)
2. Squaw Cr.	Main (MFk – NFk)
2. Upper Panther Cr.	Main (MFk – NFk)
4. Default - Owl Cr.	Main (MFk – NFk)
1. All Tributaries deferred	Yankee Fork
1. Squaw Cr.	Main Salmon (EFk – Yankee Fk)
2. Thompson Cr.	Main Salmon (EFk – Yankee Fk)
1. Upper East Fork Salmon River	EFk Salmon
2. Herd Cr.	EFk Salmon
1. Basin Cr.	Main Salmon (Yankee Fk – Headwaters)
2. Valley Cr.	Main Salmon (Yankee Fk – Headwaters)
3. Default - Fourth of July Cr.	Main Salmon (Yankee Fk – Headwaters)
1. Hat Cr.	Main Salmon (Lemhi - Pahsimeroi)
2. Iron Cr.	Main Salmon (Lemhi - Pahsimeroi)

Table 3. List of tributaries identified by regional fish biologists as critical bull trout populations within USRB subbasins.

USRB Subbasins	# Tributaries or Reaches	
EFk Salmon River	2	Upper East Fork and Herd Creek
Lemhi River	3	Hayden Cr., Kenney, Big Timber
Main Salmon (EFk - Yankee Fk)	2	Squaw and Thompson Creek
Main Salmon (Lemhi - Pahsimeroi)	2	Hat and Iron creeks
Main Salmon (MFk - NFk)	3	Indian and Squaw creeks, Upper Panther (Owl Creek)
Main Salmon (NFk - Lemhi)	2	Carmen and Fourth of July creeks (Tower Cr.)
Main Salmon (Pahsimeroi - EFk)	2	Challis Creek and Morgan Creek
Main Salmon (Yankee Fk - Headwaters)	2	Basin Creek and Valley Creek (Fourth of July)
NFk Salmon River	2	Sheep Creek and Hughes Creek
Pahsimeroi River	5	Upper Pahsimeroi tributaries.
Yankee Fork River	0	Defer

Table 4. Mean densities (100m^2)¹ of chinook salmon from General Parr Monitoring (GPM) database within 11 subbasins of the USRB.

USRB Subbasins	Mean Chinook Salmon Densities	Rank
Pahsimeroi River	19.48	1
Main Salmon (Yankee Fk - Headwaters)	6	2
EFk Salmon River	4.31	3
NFk Salmon River	4.29	4
Yankee Fork River	2.35	5
Lemhi River	1.8	6
Main Salmon (MFk - NFk)	1.05	7
Main Salmon (EFk - Yankee Fk)	0.71	8
Main Salmon (Pahsimeroi - EFk)	0.25	9
Main Salmon (NFk - Lemhi)	NA	10
Main Salmon (Lemhi - Pahsimeroi)	NA	10

¹ The standard of measure for fisheries density surveys is one hundred meters squared (100 m^2). The approximate equivalent in English units is 1076 square feet. Mean densities were derived by averaging all years of available data.

Table 5. Mean densities (100m²) of steelhead/rainbow trout from GPM database within 11 subbasins of the USRB.

USRB Subbasins	Mean Steelhead/RBT Densities	Rank
Pahsimeroi River	9.81	1
Main Salmon (Pahsimeroi - EFk)	8.76	2
NFk Salmon River	4.4	3
Main Salmon (MFk - NFk)	3.55	4
Main Salmon (EFk - Yankee Fk)	2.82	5
EFk Salmon River	1.07	6
Main Salmon (Yankee Fk - Headwaters)	0.51	7
Yankee Fork River	0.42	8
Lemhi River	0.03	9
Main Salmon (NFk - Lemhi)	NA	10
Main Salmon (Lemhi - Pahsimeroi)	NA	10

Table 6. Mean densities (100m²) of bull trout within 11 subbasins of the USRB.

USRB Subbasins	Mean Bull Trout Densities	Rank
Main Salmon (NFk - Lemhi)	7.55	1
Main Salmon (Lemhi - Pahsimeroi)	4.47	2
NFk Salmon River	3.44	3
Main Salmon (MFk - NFk)	2.97	4
Pahsimeroi River	2.36	5
Lemhi River	2.20	6
Main Salmon (Pahsimeroi - EFk)	1.72	7
Main Salmon (EFk - Yankee Fk)	1.19	8
EFk Salmon River	0.85	9
Yankee Fork River	0.40	10
Main Salmon (Yankee Fk - Headwaters)	0.24	11

Table 7. Mean densities (100m²) of westslope cutthroat trout within 11 subbasins of the USRB.

USRB Subbasins	Mean Cutthroat Densities	Rank
Main Salmon (NFk - Lemhi)	9.56	1
Main Salmon (Pahsimeroi - EFk)	8.15	2
Pahsimeroi River	7.22	3
Yankee Fork River	6.57	4
Lemhi River	6.38	5
Main Salmon (EFk - Yankee Fk)	6.17	6
NFk Salmon River	5.88	7
Main Salmon (MFk - NFk)	4.89	8
EFk Salmon River	4.72	9
Main Salmon (Yankee Fk - Headwaters)	4.51	10
Main Salmon (Lemhi - Pahsimeroi)	3.53	11

Table 8. Mean densities (100m²) of rainbow/redband/steelhead trout within 11 subbasins of the USRB.

USRB Subbasins	Mean RBT/Steelhead Densities	Rank
Main Salmon (NFk - Lemhi)	7.63	1
Main Salmon (MFk - NFk)	7.32	2
Main Salmon (Pahsimeroi - EFk)	6.87	3
Lemhi River	4.98	4
NFk Salmon River	4.98	5
Yankee Fork River	4.00	6
Main Salmon (Lemhi - Pahsimeroi)	3.14	7
Main Salmon (EFk - Yankee Fk)	3.07	8
Pahsimeroi River	2.79	9
EFk Salmon River	2.01	10
Main Salmon (Yankee Fk - Headwaters)	1.76	11

Table 9. Mean number of chinook salmon redds from historical (pre-1970) to recent (1982–1986) counts in the USRB.

USRB Subbasins	Mean Redd Counts (Pre-1970)	Mean Recent Counts (1982-86)	Rank
Main Salmon (Yankee Fk - Headwaters)	738	133	1
Lemhi River	781	105	2
EFk Salmon River	641	96	3
Main Salmon (Efk - Yankee Fk)	187	48	4
Pahsimeroi River	117	15	5
NFk Salmon River	92	7	6
Yankee Fork River	104	5	7
Main Salmon (Pahsimeroi - EFk)	162	3	8
Main Salmon (MFk - NFk)	20	0	9
Main Salmon (Lemhi - Pahsimeroi)	11	NA	10
Main Salmon (NFk - Lemhi)	NA	NA	11

Table 10. Chinook salmon densities (100m²) from GPM data within USRB subbasins.

USRB Subbasins Primary Drainage	Stream Name	Total # Chinook	Density 100 m²	Area m²	Rank
Efk Salmon River	Salmon R, EFk	2933	4.31	68015.65	8
Totals		2933	4.31	68015.65	
Lemhi River	Lemhi R.	1790	2.72	65786.85	12
Lemhi River	Hayden Cr.	375	1.44	26121.08	16
Lemhi River	Big Springs Cr.	183	0.78	23457.31	23
Lemhi River	Bear Valley Cr.	19	0.12	16249.99	28
Totals		2367	1.80	131615.23	
Main Salmon (Efk - Yankee Fk)	Thompson Cr.	81	0.78	10395.78	24
Main Salmon (Efk - Yankee Fk)	Warm Springs Cr.	38	0.60	6384.53	25
Totals		119	0.71	16780.31	
Main Salmon (MFk - NFK)	Panther Cr.	726	1.08	67264.46	20
Main Salmon (MFk - NFK)	Moyer Cr.	143	1.07	13383.54	21
Main Salmon (MFk - NFK)	Pine Cr.	7	0.24	2925.59	27
Totals		876	1.05	83573.58	
Main Salmon (Pahsimeroi - EFk)	Morgan Cr.	26	0.25	10267.02	26
Totals		26	0.25	10267.02	
Main Salmon (YF to Headwaters)	Frenchman Cr.	4406	49.81	8845.30	1
Main Salmon (YF to Headwaters)	Williams Cr.	140	19.45	719.73	3
Main Salmon (YF to Headwaters)	Gold Cr.	124	10.86	1141.68	4
Main Salmon (YF to Headwaters)	Valley Cr.	9846	10.72	91804.43	5
Main Salmon (YF to Headwaters)	Salmon R.	38584	6.18	623935.50	6
Main Salmon (YF to Headwaters)	Smiley Cr.	1132	4.93	22950.35	7
Main Salmon (YF to Headwaters)	Pettit Lake Cr.	288	3.73	7710.90	10
Main Salmon (YF to Headwaters)	Alturas Lake Cr.	3725	2.87	129711.52	11
Main Salmon (YF to Headwaters)	Pole Cr.	881	2.04	43170.83	14
Main Salmon (YF to Headwaters)	Fourth of July Cr.	100	1.67	5982.62	15
Main Salmon (YF to Headwaters)	Yellowbelly Cr.	63	1.39	4539.95	17
Main Salmon (YF to Headwaters)	Redfish Lake Cr.	582	1.20	48691.92	18
Main Salmon (YF to Headwaters)	Champion Cr.	22	1.09	2010.87	19
Main Salmon (YF to Headwaters)	Huckleberry Cr.	67	0.87	7667.10	22
Totals		59960	6.00	998882.69	
NFk Salmon River	Salmon R, NFk	2100	4.29	48943.79	9
Totals		2100	4.29	48943.79	

Table 10. Continued.

USRB Subbasins Primary Drainage	Stream Name	Total # Chinook	Density 100 m²	Area m²	Rank
Pahsimeroi River	Pahsimeroi R.	3233	19.48	16594.52	2
Totals		3233	19.48	16594.52	
Yankee Fork Salmon River	Yankee Fk, Wfk	98	2.35	4175.47	13
Totals		98	2.35	4175.47	

Table 11. Steelhead trout densities (100m²) from GPM data within USRB subbasins.

USRB Subbasins Primary Drainage	Stream Name	Total # Steelhead	Density 100 m²	Area m²	Rank
EFk Salmon River	Salmon R, EFk	728	1.07	68015.65	12
Totals		728	1.07	68015.65	
Lemhi River	Big Springs Cr.	2546	10.85	23457.31	1
Lemhi River	Hayden Cr.	281	1.08	26121.08	11
Lemhi River	Lemhi R.	401	1.01	39711.65	14
Lemhi River	Bear Valley Cr.	85	0.52	16249.99	19
Totals		3313	0.03	105540.03	
Main Salmon (EFk - Yankee Fk)	Thompson Cr.	293	2.82	10395.78	7
Totals		293	2.82	10395.78	
Main Salmon (MFk - NFk)	Moyer Cr.	1176	8.79	13383.54	3
Main Salmon (MFk - NFk)	Pine Cr.	215	7.35	2925.59	5
Main Salmon (MFk - NFk)	Panther Cr.	1575	2.34	67264.46	8
Totals		2966	3.55	83573.58	
Main Salmon (Pahsimeroi - EFk)	Morgan Cr.	899	8.76	10267.02	4
Totals		899	8.76	10267.02	
Main Salmon (YF to Headwaters)	Warm Springs Cr.	119	1.86	6384.53	9
Main Salmon (YF to Headwaters)	Frenchman Cr.	111	1.25	8845.30	10
Main Salmon (YF to Headwaters)	Redfish Lake Cr.	495	1.02	48691.92	13
Main Salmon (YF to Headwaters)	Fourth of July Cr.	45	0.75	5982.62	15
Main Salmon (YF to Headwaters)	Valley Cr.	573	0.62	91804.43	16
Main Salmon (YF to Headwaters)	Champion Cr.	12	0.60	2010.87	17
Main Salmon (YF to Headwaters)	Fishhook Cr.	5	0.59	850.00	18
Main Salmon (YF to Headwaters)	Salmon R.	3209	0.51	623935.50	20
Main Salmon (YF to Headwaters)	Pettit Lake Cr.	37	0.48	7710.90	21
Main Salmon (YF to Headwaters)	Smiley Cr.	109	0.47	22950.35	22
Main Salmon (YF to Headwaters)	Pole Cr.	188	0.44	43170.83	23
Main Salmon (YF to Headwaters)	Yellowbelly Cr.	13	0.29	4539.95	25
Main Salmon (YF to Headwaters)	Alturas Lake Cr.	217	0.17	129711.52	26
Main Salmon (YF to Headwaters)	Huckleberry Cr.	11	0.14	7667.10	27
Main Salmon (YF to Headwaters)	Williams Cr.	1	0.14	719.73	28
Main Salmon (YF to Headwaters)	Gold Cr.	1	0.09	1141.68	29
Totals		5146	0.51	1006117.22	
NFk Salmon River	Salmon R, NFk	2152	4.40	48943.79	6
Totals		2152	4.40	48943.79	

Table 11. Continued.

USRB Subbasins Primary Drainage	Stream Name	Total # Steelhead	Density 100 m²	Area m²	Rank
Pahsimeroi River	Pahsimeroi R.	1628	9.81	16594.52	2
Totals		1628	9.81	16594.52	
Yankee Fork Salmon River	Yankee Fk.	6	0.42	1443.29	24
Totals		6	0.42	1443.29	

Table 12. Bull trout densities (100m²) for tributaries within USRB subbasins.

USRB Subbasins Primary Drainage	Stream Name	Secondary Drainage	Total # BT	Density 100m ²	Area	Rank
EFk Salmon River	West Pass		10	3.33	300.00	18
EFk Salmon River	Bowery		1	0.85	117.00	45
EFk Salmon River	Little Boulder		6	0.67	900.00	50
EFk Salmon River	Herd		4	0.51	778.20	57
EFk Salmon River	Germania		1	0.20	502.00	63
Totals			22	0.85	2597.20	
Lemhi River	Geertson		25	7.44	335.89	6
Lemhi River	Lemhi		8	4.44	180.00	11
Lemhi River	Bohamon		17	4.05	419.64	15
Lemhi River	Hayden		41	3.59	1142.05	16
Lemhi River	Kenney		2	2.31	86.40	27
Lemhi River	Big Timber		6	0.89	671.08	43
Lemhi River	Stroud		15	0.80	1869.90	47
Lemhi River	Eighteenmile		1	0.70	141.90	49
Lemhi River	Hawley		1	0.23	430.95	61
Totals			116	2.20	5277.81	
Main Salmon (EFk - Yankee Fk)	Squaw		14	1.31	1065.63	36
Main Salmon (EFk - Yankee Fk)	Kinnikinic		2	1.04	193.06	41
Main Salmon (EFk - Yankee Fk)	Slate		1	0.58	172.80	55
Totals			17	1.19	1431.49	
Main Salmon (Lemhi - Pahsimeroi)	Hat		53	7.11	745.00	7
Main Salmon (Lemhi - Pahsimeroi)	Iron		69	4.11	1680.00	14
Main Salmon (Lemhi - Pahsimeroi)	McKim		2	0.91	220.00	42
Main Salmon (Lemhi - Pahsimeroi)	Lake		1	0.67	150.00	51
Totals			125	4.47	2795.00	
Main Salmon (MFk - Nfk)	Camp	Moose	7	7.78	90.00	4
Main Salmon (MFk - Nfk)	Indian		44	4.37	1007.70	12
Main Salmon (MFk - Nfk)	Squaw		47	3.13	1500.90	20
Main Salmon (MFk - Nfk)	Panther		56	2.88	1943.85	21
Main Salmon (MFk - Nfk)	Pine		18	2.37	760.30	26
Main Salmon (MFk - Nfk)	Boulder		21	2.06	1020.00	29
Main Salmon (MFk - Nfk)	Moose	Main Salmon	2	1.73	115.92	34
Main Salmon (MFk - Nfk)	Spring	Main Salmon	1	0.59	170.00	52
Totals			196	2.97	6608.67	
Main Salmon (Nfk - Lemhi)	Fourth of July		20	16.67	120.00	1
Main Salmon (Nfk - Lemhi)	Carmen		89	6.72	1324.40	8
Totals			109	7.55	1444.40	
Main Salmon (Pahsimeroi - EFk)	Challis		31	2.24	1384.54	28
Main Salmon (Pahsimeroi - EFk)	Morgan Creek		18	1.61	1118.44	35
Main Salmon (Pahsimeroi - EFk)	Garden		6	0.86	700.00	44
Totals			55	1.72	3202.98	
Main Salmon (YF to Headwaters)	Basin		11	0.79	1400.00	48
Main Salmon (YF to Headwaters)	Valley		8	0.12	6629.44	64
Totals			19	0.24	8029.44	

Table 12. continued.

USRB Subbasins Primary Drainage	Stream Name	Secondary Drainage	Total # BT	Density 100m2	Area	Rank
NFk Salmon River	Twin	Main Salmon NF	163	4.92	3309.92	9
NFk Salmon River	Sheep	Main Salmon NF	41	2.40	1711.32	25
NFk Salmon River	Hughes	Main Salmon NF	6	1.76	340.48	33
NFk Salmon River	Vine	Main Salmon NF	1	0.59	170.00	53
NFk Salmon River	Salmon WFK NFK	Main Salmon NF	2	0.52	388.00	56
NFk Salmon River	Pierce	Main Salmon NF	1	0.34	294.00	59
Totals			214	3.44	6213.72	
Pahsimeroi River	Falls	Pahsimeroi	106	7.934	1336.07	3
Pahsimeroi River	Burnt	Pahsimeroi	10	4.167	240	13
Pahsimeroi River	Patterson	Pahsimeroi	47	3.481	1350	17
Pahsimeroi River	Tater	Pahsimeroi	1	3.333	30	19
Pahsimeroi River	Goldburg	Pahsimeroi	15	2.682	559.34	22
Pahsimeroi River	Mahogany	Pahsimeroi	25	2.551	980	23
Pahsimeroi River	Morse	Pahsimeroi	5	2.500	200	24
Pahsimeroi River	Inyo	Pahsimeroi	3	2.000	150	30
Pahsimeroi River	Ditch	Pahsimeroi	17	1.889	900	31
Pahsimeroi River	Pahsimeroi	Pahsimeroi	72	1.219	5660.75	37
Pahsimeroi River	Big	Pahsimeroi	29	1.176	2466.716	38
Pahsimeroi River	Big Gulch	Pahsimeroi	1	0.587	170.28	54
Totals			331	2.36	14043.16	
Yankee Fork River	Elevenmile	Main YF	9	9.00	100.00	2
Yankee Fork River	McKay	Main YF	14	7.78	180.00	5
Yankee Fork River	Tennmile	Main YF	9	4.50	200.00	10
Yankee Fork River	Eightmile	Main YF	9	1.80	500.00	32
Yankee Fork River	Ninemile	Main YF	2	1.11	180.00	39
Yankee Fork River	Jordan	Main YF	11	1.10	995.50	40
Yankee Fork River	Twelvemile	Main YF	1	0.83	120.00	46
Yankee Fork River	Fivemile	Main YF	1	0.25	400.00	60
Yankee Fork River	Yankee Fork	Main YF	49	0.20	24582.20	62
Totals			105	0.39	27257.70	58

Table 13. Westslope cutthroat trout densities (100m²) for tributaries within USRB subbasins.

USRB Subbasins Primary Drainage	Stream Name	Secondary Drainage	Total # CT	Density 100m ²	Area	Rank
EFk Salmon River	Bowery		45	11.62	387.30	4
EFk Salmon River	Little Boulder		33	8.14	405.52	19
EFk Salmon River	Road		34	2.95	1151.88	63
EFk Salmon River	Sheep		3	3.37	89.00	68
EFk Salmon River	Pine	Pine Cr.	2	2.45	81.60	70
EFk Salmon River	Lake	Herd Cr.	4	2.22	180.00	72
EFk Salmon River	Big Boulder		4	1.13	355.00	77
Totals			125	4.72	2650.30	
Lemhi River	Pattee		73	12.95	563.80	3
Lemhi River	White	Agency Cr	61	10.59	576.00	6
Lemhi River	Pratt		26	9.44	275.50	11
Lemhi River	Withington		61	9.37	651.00	12
Lemhi River	Little Eightmile		13	8.87	146.52	15
Lemhi River	Wimpey EFk	Wimpy Cr.	11	7.48	147.00	25
Lemhi River	Little Eightmile		58	6.68	868.00	30
Lemhi River	Sandy WFK	Sandy Cr.	8	6.67	120.00	31
Lemhi River	Kirtley EFk	Kirtley	3	5.68	52.80	37
Lemhi River	Hayden		35	5.60	625.32	39
Lemhi River	Hawley		163	5.55	2938.50	40
Lemhi River	McDevitt		27	5.05	534.90	42
Lemhi River	Stroud		4	5.00	80.00	43
Lemhi River	Kenney		9	4.50	200.00	52
Lemhi River	Canyon		85	3.97	2140.26	61
Lemhi River	Geertson		3	2.50	120.00	69
Totals			640	6.37	10039.60	
Main Salmon (EFk - Yankee Fk)	Peach		77	13.91	553.57	2
Main Salmon (EFk - Yankee Fk)	Thompson		72	10.28	700.12	9
Main Salmon (EFk - Yankee Fk)	Bruno	Main Salmon	2	7.81	25.60	22
Main Salmon (EFk - Yankee Fk)	Squaw		295	5.93	4974.07	34
Main Salmon (EFk - Yankee Fk)	Burnt		8	4.99	160.20	44
Main Salmon (EFk - Yankee Fk)	Kinnikinick		156	4.68	3334.04	48
Main Salmon (EFk - Yankee Fk)	Prospect	Warm Spring	4	2.00	200.00	73
Totals			614	6.17	9947.60	
Main Salmon (Lemhi - Pahsimeroi)	Allison		19	3.73	509.00	62
Main Salmon (Lemhi - Pahsimeroi)	McKim		2	2.32	86.16	71
Totals			21	3.53	595.16	
Main Salmon (MFk - NFk)	Panther		96	8.40	1143.44	17
Main Salmon (MFk - NFk)	East Boulder		57	8.14	700.00	18
Main Salmon (MFk - NFk)	Indian		39	7.72	505.00	24
Main Salmon (MFk - NFk)	Squaw		26	4.56	570.00	50
Main Salmon (MFk - NFk)	Sage		74	4.50	1646.00	53
Main Salmon (MFk - NFk)	Spring		66	4.41	1495.10	54
Main Salmon (MFk - NFk)	Colson		75	3.32	2258.80	64
Main Salmon (MFk - NFk)	Lake	Main Salmon	5	3.13	159.85	66
Main Salmon (MFk - NFk)	Pine		41	3.11	1319.66	67
Totals			479	4.89	9797.85	

Table 13. continued.

USRB Subbasins Primary Drainage	Stream Name	Secondary Drainage	Total # CT	Density 100m2	Area	Rank
Main Salmon (Pahsimeroi - EFk)	Bayhorse		122	10.51	1160.75	7
Main Salmon (Pahsimeroi - EFk)	Challis		157	9.11	1722.47	13
Main Salmon (Pahsimeroi - EFk)	Morgan		207	7.83	2644.96	21
Main Salmon (Pahsimeroi - EFk)	Garden		61	5.42	1125.50	41
Main Salmon (Pahsimeroi - EFk)	Birch	Main Salmon	5	4.08	122.50	58
Totals			552	8.15	6776.18	
Main Salmon (Yankee Fk - Headwaters)	Salmon		10	25.44	39.31	1
Main Salmon (Yankee Fk - Headwaters)	Lower Harden	Main Salmon	14	7.78	180.00	23
Main Salmon (Yankee Fk - Headwaters)	Cliff	Beaver	7	6.25	112.00	32
Main Salmon (Yankee Fk - Headwaters)	Valley		44	5.79	759.71	36
Main Salmon (Yankee Fk - Headwaters)	Basin		167	4.30	3881.52	56
Main Salmon (Yankee Fk - Headwaters)	Williams	Main Salmon	13	4.25	306.20	57
Main Salmon (Yankee Fk - Headwaters)	Prospect	Warm Springs	4	2.00	200.00	74
Main Salmon (Yankee Fk - Headwaters)	Fisher		5	1.67	300.00	75
Main Salmon (Yankee Fk - Headwaters)	Boundary		2	1.62	123.75	76
Totals			266	4.51	5902.49	
NFk Salmon River	Salmon NFK		92	10.45	880.83	8
NFk Salmon River	Salmon WFK		32	8.00	400.00	20
NFk Salmon River	Twin		2	7.27	27.50	27
NFk Salmon River	Dahlonega		492	6.96	7064.87	28
NFk Salmon River	Vine	Main Salmon	127	6.86	1850.95	29
NFk Salmon River	Deep		13	6.06	214.50	33
NFk Salmon River	Hull		16	5.93	270.00	35
NFk Salmon River	Stein Gulch	Sheep Cr	7	5.64	124.15	38
NFk Salmon River	Pierce		98	4.84	2023.20	46
NFk Salmon River	Hughes		148	4.79	3092.02	47
NFk Salmon River	Moose		71	4.55	1559.75	51
NFk Salmon River	Hammerean	Main Salmon	57	3.18	1791.00	65
NFk Salmon River	Sheep		4	1.00	400.00	78
Totals			1159	5.88	19698.77	
Pahsimeroi River	Little Morgan		47	11.46	410.00	5
Pahsimeroi River	Morse		228	7.45	3061.44	26
Pahsimeroi River	Big		34	4.34	783.60	55
Pahsimeroi River	Goldburg		2	4.00	50.00	59
Totals			311	7.22	4305.03	
Yankee Fork River	Yankee Fork		21	9.08	231.28	14
Yankee Fork River	Cabin	WFK Yankee	19	8.64	220.00	16
Yankee Fork River	McKay		5	4.94	101.12	45
Yankee Fork River	Fourth of July		15	4.65	322.25	49
Yankee Fork River	Rankin		4	4.00	100.00	60
Totals			64	6.57	974.65	
Main Salmon (NFk - Lemhi)	Wagonhammer		276	9.56	2885.90	10

Table 14. Rainbow trout densities (100m²) for tributaries within USRB subbasins.

USRB Subbasins Primary Drainage	Stream Name	Secondary Drainage	Total # RBT	Density 100m2	Area	Rank
EFk Salmon River	Horse Basin	Road Cr.	5	12.50	40.00	7
EFk Salmon River	Bowery		9	7.69	117.00	22
EFk Salmon River	Salmon EFk		46	5.27	873.01	28
EFk Salmon River	Wickiup		3	3.00	100.00	49
EFk Salmon River	Sheep		1	2.41	41.44	53
EFk Salmon River	Herd		35	2.37	1478.20	55
EFk Salmon River	Big Lake		13	1.90	685.00	59
EFk Salmon River	West Pass		4	1.33	300.00	65
EFk Salmon River	Little Boulder		14	0.78	1800.00	71
EFk Salmon River	Germania		5	0.39	1274.60	77
Totals			135	2.01	6709.25	
Lemhi River	Pratt		24	26.67	90.00	1
Lemhi River	Canyon		720	10.84	6641.51	10
Lemhi River	Wimpey		62	10.69	580.14	11
Lemhi River	Flume	Agency Cr	11	8.28	132.83	19
Lemhi River	Yearian		51	5.63	905.57	27
Lemhi River	Big Timber		96	4.95	1939.15	29
Lemhi River	Basin	Hayden Cr.	17	4.93	345.00	30
Lemhi River	Bohannon		38	3.98	954.82	37
Lemhi River	Eighteenmile		46	3.81	1206.44	38
Lemhi River	Kenney		18	3.81	472.80	39
Lemhi River	Haynes		28	3.37	829.80	42
Lemhi River	Eightmile		14	3.11	450.00	46
Lemhi River	Lee		4	2.96	135.16	51
Lemhi River	Hawley		66	2.41	2743.29	54
Lemhi River	Lemhi		168	1.75	9605.99	62
Lemhi River	Texas		1	0.27	369.00	79
Totals			1364	4.98	27401.50	
Main Salmon (EFk - Yankee Fk)	Slate		178	12.62	1410.40	6
Main Salmon (EFk - Yankee Fk)	Thompson		18	1.58	1138.77	63
Main Salmon (EFk - Yankee Fk)	Burnt		2	1.33	150.00	66
Main Salmon (EFk - Yankee Fk)	Holman		1	1.11	90.00	67
Main Salmon (EFk - Yankee Fk)	Squaw		24	0.71	3394.60	72
Main Salmon (EFk - Yankee Fk)	Kinnikinic		2	0.59	340.00	76
Main Salmon (EFk - Yankee Fk)	Warm Springs		3	0.33	900.00	78
Totals			228	3.07	7423.77	
Main Salmon (Lemhi - Pahsimeroi)	Rattlesnake		24	26.67	90.00	2
Main Salmon (Lemhi - Pahsimeroi)	Lake		7	4.67	150.00	31
Main Salmon (Lemhi - Pahsimeroi)	Iron		29	4.33	670.00	34
Main Salmon (Lemhi - Pahsimeroi)	Eighteenmile		16	2.76	579.66	52
Main Salmon (Lemhi - Pahsimeroi)	Hat		54	2.20	2458.82	57
Main Salmon (Lemhi - Pahsimeroi)	Twelvemile		2	0.80	250.00	70
Totals			132	3.14	4198.48	
Main Salmon (MFk - NFk)	Moose		459	18.53	2476.71	3
Main Salmon (MFk - NFk)	East Boulder		74	11.37	650.68	8
Main Salmon (MFk - NFk)	Boulder		63	11.20	562.54	9
Main Salmon (MFk - NFk)	Colson		94	9.96	943.54	13
Main Salmon (MFk - NFk)	Indian		105	9.80	1071.21	14
Main Salmon (MFk - NFk)	Dump		71	8.15	870.85	20
Main Salmon (MFk - NFk)	Spring		340	7.74	4394.80	21
Main Salmon (MFk - NFk)	Pine		117	7.14	1639.78	23
Main Salmon (MFk - NFk)	Squaw		166	6.79	2443.36	25
Main Salmon (MFk - NFk)	Owl		98	4.05	2417.82	35
Main Salmon (MFk - NFk)	Panther		105	1.86	5637.14	60
Totals			1692	7.32	23108.42	

Table 14. continued.

USRB Subbasins Primary Drainage	Stream Name	Secondary Drainage	Total # RBT	Density 100m2	Area	Rank
Main Salmon (NFk - Lemhi)	Carmen		100	10.02	998.30	12
Main Salmon (NFk - Lemhi)	Tower		32	9.03	354.47	18
Main Salmon (NFk - Lemhi)	Wagonhammer		3	0.97	310.00	68
Main Salmon (NFk - Lemhi)	Fourth of July		1	0.83	120.00	69
Totals			136	7.63	1782.77	
Main Salmon (Pahsimeroi - EFk)	Morgan		737	12.88	5721.81	5
Main Salmon (Pahsimeroi - EFk)	Bayhorse		11	3.67	300.00	40
Main Salmon (Pahsimeroi - EFk)	Hannah Slough		70	3.49	2006.20	41
Main Salmon (Pahsimeroi - EFk)	Birch	Main Salmon	1	3.33	30.00	43
Main Salmon (Pahsimeroi - EFk)	Hot Springs		38	3.23	1178.00	44
Main Salmon (Pahsimeroi - EFk)	Challis		77	2.31	3330.48	56
Main Salmon (Pahsimeroi - EFk)	Bayhorse		25	1.79	1400.00	61
Totals			959	6.87	13966.49	
Main Salmon (Yankee Fk - Headwaters)	Boundary		8	16.00	50.00	4
Main Salmon (Yankee Fk - Headwaters)	Little Casino		14	7.00	200.00	24
Main Salmon (Yankee Fk - Headwaters)	Big Casino		8	3.20	250.00	45
Main Salmon (Yankee Fk - Headwaters)	Basin		86	3.11	2767.70	47
Main Salmon (Yankee Fk - Headwaters)	Smiley		6	3.00	200.00	50
Main Salmon (Yankee Fk - Headwaters)	Valley		115	0.69	16574.35	73
Main Salmon (Yankee Fk - Headwaters)	Williams		161	0.06	2482.45	81
Totals			398	1.77	22524.50	
NFk Salmon River	Moose		38	9.36	405.79	15
NFk Salmon River	Pierce		45	9.33	482.16	16
NFk Salmon River	Hughes		224	5.72	3913.09	26
NFk Salmon River	Dahlonge		90	4.61	1951.15	32
NFk Salmon River	Hull		10	3.08	324.16	48
NFk Salmon River	Sheep		15	2.09	718.64	58
NFk Salmon River	Salmon NFK		13	1.38	944.12	64
Totals			435	4.98	8739.11	
Pahsimeroi River	Burnt		74	9.09	814.00	17
Pahsimeroi River	Lawson		51	4.59	1110.00	33
Pahsimeroi River	Pahsimeroi EFk		2	0.67	300.00	74
Pahsimeroi River	Donkey		16	0.66	2430.00	75
Pahsimeroi River	Goldburg		1	0.20	500.00	80
Totals			144	2.79	5154.00	
Yankee Fork River	Ramey		8	4.00	200.00	36

APPENDIX C. Streams for which no or insufficient data exists to warrant their current inclusion in SHIPUSS. Federal and state land management agencies in the Upper Salmon River Basin will attempt to survey as many of these streams as possible during 2003 for prioritization in SHIPUSS.

Salmon River (Middle Fork to North Fork)

Colson Creek	Lake Creek	Pine Creek	Boulder Creek
Spring Creek	East Boulder Cr.	Sage Creek	Moose Creek
Dump Creek			

Salmon River (North Fork to Pahsimeroi)

Tower Creek	Williams Cr.	Twelvemile Creek	McKim Creek
Cow Creek			

Salmon River (Pahsimeroi to East Fork)

Ellis Creek	Garden Creek	Warm Springs Cr.	Bayhorse Cr.
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Salmon River (East Fork to Yankee Fork)

Kinnikinik Creek	Holman Creek	Slate Creek	Burnt Creek
Gardner Creek	Peach Creek	Warm Springs	

Salmon River (Yankee Fork to Headwaters)

Rough Creek	Big Casino Creek	Little Casino Cr.	Redfish Lake Cr
Boundary Creek	Gold Creek	Williams Creek	Fisher Creek
Hell Roaring Creek	Alturas Lake Creek		

North Fork

Hull Creek	Dahlonga Creek	Twin Creek	Pierce Creek
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Lemhi River

Pratt Creek	Haynes Creek	Agency Creek	McDevitt Cr.
Mill Creek	Big Eightmile Creek	Little Eightmile Cr.	Canyon Creek

Pahsimeroi River

Lawson Creek	Trail Creek	Sulphur Creek	
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East Fork Salmon River

Road Creek	Pine Creek	Little Boulder Cr.	Sheep Creek
Germania Creek	Bowery Creek		

APPENDIX D. Perennial streams not included in this prioritization, and not scheduled for additional surveys. These streams may either be too small to support significant numbers of fish, or may have no problems that would be addressed by restoration activities targeted by SHIPUSS. These streams may be included in the SHIPUSS prioritization in the future if data shows their inclusion is warranted. *Still includes intermittent streams- am working to restrict list to perennial (4/16/03)*

Salmon River (Middle Fork to North Fork)

Long Tom Creek	Shell Creek	Ebenezer Creek	Skull Cr.
Cove Creek	Line Creek	Dutch Oven Creek	
Big Sheepeater Cr.	Little Sheepeater Cr.	Little Spring Creek	Transfer Gul.
Hale Gulch	Little Sage Creek	Fan Gulch	Buster Gulch
Deadwater Gulch	Camel Gulch	Rose Gulch	Donnelly Gul.

Salmon River (North Fork to Pahsimeroi)

Wagonhammer Cr.	Wallace Creek	Fernster Creek	Jesse Creek
Turner Creek	Pollard Canyon	Perreau Creek	Elf Creek
Sevenmile Cr.	Hotsprings Creek	Henry Creek	Lake Creek
Birch Creek	Camp Creek	Briney Creek	Second Creek
Rattlesnake Cr	Lost Creek	Deer Creek	Warm Spring
Cabin Creek	Poison Creek	Ringle Creek	Ezra Creek
Allison Creek			

Salmon River (Pahsimeroi to East Fork)

Birch Creek	Rattlesnake Creek	Lyon Creek	Sink Creek
Birch Creek			

Salmon River (East Fork to Yankee Fork)

Spud Creek	Potoman Creek	French Creek	Spring Creek
Mill Creek	Beaver Creek	Cold Creek	Treon Creek
Elk Creek			

Salmon River (Yankee Fork to Headwaters)

Blind Creek	Four Aces Cr.	Nip and Tuck Cr.	Cleveland Cr.
Huckleberry Cr	Mays Creek	Warm Creek	Lost Creek
Taylor Creek			

North Fork

Big Silver Lead Creek	Little Silver Lead Cr.	Dry Creek	Trail Creek
Copper Creek	Roske Creek	Bills Canyon	Little Hull Cr.
Carl Canyon	Dry Gulch	Lick Creek	Votler Creek
Friedorf Creek	Johnson Gulch	Hammerean Creek	Quartz Creek
Deep Creek	Elk Creek	Trapper Gulch	Vine Creek
State Creek	Moose Creek	West Fork North Fork	

Lemhi River

Kirtley Creek
Big Dry Gulch
DC Gulch
Mollies Gulch

Mulkey Creek
Yearian Creek
Peterson Creek
Eighteenmile Creek

Withington Creek
Struggle Gulch
Walter Creek
Texas Creek

Sandy Creek
Reese Creek
Lee Creek

East Fork Salmon River

Spar Canyon
Big Lake Creek
Deer Creek

McDonald Creek
Bluett Creek

Fox Creek
Baker Creek

Marco Creek
Wickiup Cr.

APPENDIX E. Persons to contact for additional information on SHIPUSS.

For general information on the history, development, or process, contact:

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For specific information on Fisheries survey methods or data, contact:

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