

Southeast Sustainable Salmon Fund Statement of Work

I. Project Title: Instream Flow Protection: Southeast – Phase 4

II. Project Number 45766; PCSRF Objective: P&A

III. Principal Investigators:

Shawn Johnson, Fishery Biologist, PI
Statewide Aquatic Resources Coordination Unit (SARCU)
ADF&G, Division of Sport Fish/RTS
PO Box 240020
Douglas, Alaska 99824-0020
Phone: (907) 465-4302; Email: shawn.johnson@alaska.gov

Joe Klein, Supervisor, SARCU, Co-PI
ADF&G, Division of Sport Fish/RTS
333 Raspberry Rd.
Anchorage, Alaska 99518-1599
Phone: (907) 267-2148; Email: joe.klein@alaska.gov

III. Project Period: 7/1/07 – 6/30/08

IV. Project Description

1. Introduction

The rivers and lakes of Southeast Alaska support and provide access to some of North America's most viable and productive salmon fisheries. Salmon production in these waterbodies is dependent on sufficient quantities of high quality water. Alaskans are faced with the challenge of maintaining salmon production while satisfying the growing demands for water for municipal, industrial, agricultural, mineral, oil and gas, aquaculture, fish processing, artificial snowmaking, water export, and other purposes. These water uses have the potential to alter the free-flowing condition of Alaska's waterways. These alterations can degrade habitat quality and reduce salmon production, resulting in lost economic, social, and other resource values.

The purpose of this project is to quantify and protect instream flows to sustain salmon productivity in rivers and lakes of Southeast Alaska. There are numerous state and federal mechanisms that can be used to protect instream flows. The primary mechanism that will be used in this project is the Alaska Water Use Act (AS 46). The Alaska legislature amended this Act in 1980 in recognition of the economic, social, and other benefits of retaining water in rivers and lakes. This amendment (AS 46.15), or the "instream flow law," provides the opportunity for the private sector and government agencies to legally acquire water rights (called instream flow reservations) under Alaska law (AS 46.15.035, .037 and .145) and regulation (11 AAC 93.970) to maintain instream flow rates in rivers or water levels in lakes for a variety of purposes, including the protection of fish and wildlife habitat, migration, and propagation.

2. Project Summary

The main goal of this project is to quantify and protect instream flow requirements for priority salmon-producing water bodies in Southeast Alaska, and hence continue the efforts of *SSSF project 45213* for one more year. Priority waterbodies were identified during the *SSSF Instream Flow Needs project (45040)* and will be updated by this project. Preparing instream flow reservation applications will be the primary tool used to protect instream flows needed to sustain production. *Related AKSSF projects: 45040, 45107, 45213, 45822, 45326 (800), 45979, 44552, 44563, 44567, 44915.*

3. SSSF Goal
Southeast: 1A-2

V. Objectives

1. Project Objectives

- a) Update and maintain the regional prioritization of instream flow needs for salmon-producing waterbodies in Southeast Alaska developed during SSSF project 45040. For priority waterbodies;
- b) Retrieve, analyze, and summarize existing biological data needed to document the composition, distribution, and life-phase periodicity (e.g. seasonal use of habitat for migration, spawning, incubation, and rearing) of salmon;
- c) Retrieve, analyze, and summarize existing hydrologic data needed to quantify the long-term intra- and inter-annual variability in stream flows (or lake levels/volumes);
- d) Augment existing hydrologic and biologic data with site-specific field investigations when needed (e.g., stream gaging equipment may be installed and maintained to develop hydrologic records in ungaged waterbodies);
- e) Retrieve, analyze, and summarize any other instream flow information required by state or federal laws and scientific standards and guidelines for quantifying and protecting instream flows to sustain salmon production;
- f) Use the biologic, hydrologic, and other information to quantify instream flow requirements and prepare instream flow reservation applications to sustain salmon production; and
- g) Assist in the adjudication of instream flow reservation applications in accordance with the June 2002 (amended in December 2002) Memorandum of Understanding (MOU) between and ADF&G and the Alaska Department of Natural Resources (DNR).

2. Justification

- a) The 1999 Agreement of the Pacific Salmon Treaty highlighted the need for habitat protection to achieve the long-term principles and objectives of the Treaty. This included the recognition that maintaining adequate water quality and quantity was vital for achieving spawning success, safe passage of adult and juvenile salmon and, therefore, optimum production of important naturally spawning stocks. Accordingly, the Parties agreed to use their best efforts, consistent with applicable law, to maintain adequate water quality and quantity;
- b) Quantifying and protecting instream flows for priority salmon-producing water bodies will help ensure sustainable salmon production in Southeast Alaska;
- c) Biologic, hydrologic, and other information needed to quantify and protect instream flows for salmon production must adhere to state and federal laws and scientific standards and guidelines. Staff have become well trained and have

gained valuable experience in these regards during *SSSF projects 45040, 45107, and 45213*; and

- d) Adjudication of instream flow reservation applications will provide legal protection of instream flows needed to sustain salmon production.
3. Project Impacts
- a) This project will continue and expand upon the ongoing *SSSF project 45213*;
 - b) Instream flow reservation applications for priority waterbodies will be completed following applicable laws and protocols and will be ready to submit to the Alaska Department of Natural Resources for adjudication (applications will be submitted at the discretion of the ADF&G Commissioner). We have successfully reserved water for salmon production using this approach;
 - c) The biologic, hydrologic, and other information collected, analyzed, and summarized during this project will be available to pursue other state and federal mechanisms to protect instream flows and available for use by department staff for dealing with water development and management issues;
 - d) Assisting with adjudications will help clear up the backlog of applications submitted by ADF&G more than 10 years ago and help keep up with the applications currently being submitted by ADF&G; and
 - e) Whenever possible, information collected and analyzed during this project will be recorded and reported in formats compatible with data protocols and metadata structure established for other *SSSF projects*.
4. Methods/Modeling
- a) The process for prioritizing waterbodies in Southeast Alaska for instream flow protection was developed during *SSSF project 45040*. Project 45040 ranked all watersheds (6th level hydrologic units, watersheds draining to tidewater) in Southeast Alaska based on a broad-scale assessment of the resource values of (e.g., miles of anadromous stream reaches, sport fish effort, subsistence/personal use harvest) and risks to (e.g., road density, percent area timber harvested, percent area urbanized), salmon producing water bodies within each watershed. Comments were solicited from ADF&G staff and other resource agencies, using this broad-scale watershed assessment, along with their knowledge of resource values and risks, to identify the salmon-producing water bodies in their area most in need of instream flow reservations.

Staff priorities were used to begin *SSSF projects 45107 and 45213*. During these projects, instream flow reservation applications were prepared for important salmon-producing water bodies identified during the prioritization process. Final selection of water bodies for these projects were based on the importance of a waterbody to salmon production, the likelihood for competing out-of-stream uses, whether existing hydrologic and biologic data for a waterbody are adequate for performing an instream flow analysis, the availability of resources to collect additional site-specific data if needed, and whether other state and federal statutory mechanisms would provide better or more cost effective protection than an instream flow reservation water right acquired under Alaskan law.

The regional prioritization of instream flow needs for waterbodies in Southeast Alaska will be updated for FY08 through consultation with staff from ADF&G and other resource agencies.

- b) Fish distribution and periodicity data (e.g. seasonal use of habitat for migration, spawning, incubation, and rearing) by species and life stage will be compiled and summarized from scientific literature, the *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* and its associated Atlas, and interviews with biologists from ADF&G and other agencies.
- c) Streamflow data required for hydrologic characterization and quantifying instream flow needs will be obtained from the USGS Water Resources of Alaska website for historic streamflow data when available. When hydrologic data are limited or not available for high priority water bodies, data will be collected by staff in accordance with standard sampling protocols developed by the USGS for as many waterbodies as time and resources will allow. Streamflow records may also be synthesized using various hydrologic models.
- d) The primary method that will be used to quantify seasonal instream flow needs is a modification of the Tennant Method. DNR and Alaska courts have accepted this approach as a valid instream flow analytical procedure. The method uses hydrologic data to model natural flow variability and its relationship to quality of habitat. It is considered one of the simplest and most cost-effective methods for quantifying instream flow needs for fish.
- e) Instream flow reservation applications will be prepared to comply with state law (AS 46.15.145) and regulations (11 AAC 93.141-146) and following protocols established by the ADF&G's Statewide Aquatic Resources Coordination Unit.

VI. Results/Deliverable Products

The main product of this project will be completed instream flow reservation applications for nominated salmon-producing waterbodies in Southeast Alaska. These will be submitted to the Alaska Department of Natural Resources for adjudication at the discretion of the Commissioner of ADF&G. Semiannual and final reports will be submitted as part of the standing requirements for reporting under the SSSF.

VII. Benefits to Salmon/Salmon Fisheries/Salmon Fishers/Communities

The rivers and lakes of Southeast Alaska support and provide access to some of North America's most viable and productive salmon fisheries. Salmon production in these waterbodies is dependent on sufficient quantities of high quality water. This project will benefit salmon resources and users by using state and federal laws to protect sufficient quantities of water needed to sustain salmon production in priority waterbodies.

VIII. Project Milestones and Timelines

The duration of the project is from July 1, 2007 to June 30, 2008. This project will continue and build upon *SSSF projects 45040, 45107, and 45213*. Instream flow reservation applications (the primary milestone) will be prepared and completed throughout the duration of the project.

IX. Partners

Cooperating agencies and tribal and watershed groups maintaining information systems containing resource data needed for the project will be asked to assist in facilitating access to databases, or otherwise provide pertinent data required to validate site specific information, and to assist with field logistics and data collection.

X. Budget

	<u>FY08</u>
Salaries	\$198,583
Travel	\$7,660
Contracts	\$12,920
Supplies	\$10,837
Equipment	\$0
Indirect (if not ADF&G)	
<u>Total</u>	\$230,000

Indirect costs is an additional \$6,900 (at 3%) and is not included in budget above.

Budget Narrative:

Salaries w/benefits:

PCN	Title	Name	R	S	MM	OT	SB
11-4344	FB II	Sowa	16B	11	@\$6533		71,866
11-4343	FB I	Burright	14A	11	@\$5595		61,544
11-4342	FB I	Hass	14C	11	@\$5925		65,173

198,583

Travel:

	Dest	Cost rt	No.	Total	Per Diem		Purpose	Total
					Days	& Lodging		
FB II, Sowa	Jnu - skgwy	200	2	400	2	300	Maint Streamgage	700
	Jnu - Yakutat	180	1	180	2	300	Maint Streamgage	480
	Jnu - Anc	300	1	300	2	300	Training/Project Revw	600
FB I, Hass	Jnu - Yakutat	180	1	180	3	450	Maint Streamgage	630
	Jnu - skgwy	180	2	360	2	300	Maint Streamgage	660
	Jnu - Anc	300	1	300	2	300	Training/Project Revw	600
FB I, Burright	Jnu - Yakutat	180	1	180	2	300	Maint Streamgage	480
	Jnu - skgwy	180	2	360	2	300	Maint Streamgage	660
	Jnu - Anc	300	1	300	2	300	Training/Project Revw	600
FBIII, Johnson	Jnu - Anc	300	2	600	4	600	Project Revw/Coord	1200
	Jnu - area offices	200	3	600	3	450	Project Revw/Coord	1050

7,660

Contracts:

Item	Cost	
Air Charter	8400	6 trips to remote gages
WISKI Hydrologic Software	1800	Annual software fee
SAS	800	Annual software fee
ArcGis	1500	Annual software fee
USFS Cabin Rentals	420	12 nts @ 35/nt

12,920

Supplies:

Item	Cost	
Discharge Equipment	2000	Current meter,rod,headset
Transducers and cable	2500	In-Situ type transducer/recorders
Misc. gaging supplies	823	pipes, conduit, hardware, etc
Personnel protection	1000	safety supplies, gloves, waders
Food for field	864	6 3-day trips, 3 people, \$16day/person
Desicant tubes	600	Desicant tubes for transducers
Data Retrieval System	1200	for downloading transducer data
Hydrologic Supplies	1400	calibration soln, replacement parts
Cases, dry bags	450	for transport of scientific equip

10,837

TOTAL 230,000