

Alaska Sustainable Salmon Fund Statement of Work

Revision #1: Extend End Date, Revise Budget, Update SOW (line item change)

I. Project Title: Instream Flow Protection: Southeast – Phase 5

II. Project Number: 45822 **PCSRF Objective:** P&A

III. Principal Investigator:

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

Joe Klein, Supervisor, Co-PI
Statewide Aquatic Resources Coordination Unit
ADF&G, Sport Fish Division
333 Raspberry Road
Anchorage, AK 99518-1599
Phone: (907) 267-2148
Email: joe.klein@alaska.gov

IV. Project Period: 7/1/08 – 12/31/09

V. Project Description

1. Introduction

The rivers and lakes of Southeast Alaska (SE AK) 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 needed to sustain salmon productivity in rivers and lakes of SE AK. 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 goal of this project is to quantify and protect instream flow requirements for priority salmon-producing water bodies in SE AK. Priority waterbodies were identified during the *AKSSF 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. *See related AKSSF projects 45040, 45107, 45213, 45766, 45326 (800), 45979, 44552, 44563, 44567, 44915.*

3. AKSSF Objective

Southeast: 1A-2

VI. Objectives

1. Project Objectives

1. Update and maintain the regional prioritization of instream flow needs for salmon-producing waterbodies in SE AK developed during *AKSSF Project 45040* for priority waterbodies;
2. 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;
3. 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);
4. 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) or obtain contractual services to augment these data (*Revision #1*);
5. 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;
6. Use the biologic, hydrologic, and other information to quantify instream flow requirements and prepare instream flow reservation applications to sustain salmon production; and
7. Assist in the adjudication of instream flow reservation applications in accordance with the June 2002 (amended in December 2002) Memorandum of Understanding (MOU) between Alaska Department of Fish and Game (ADF&G) and the Alaska Department of Natural Resources (DNR).

2. Justification

1. Quantifying and protecting instream flows for priority salmon-producing water bodies will help ensure sustainable salmon production in SE AK.

2. 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 has become well-trained and has gained valuable experience in this regard during *AKSSF Projects 45040, 45107, 45213, and 45766*.
3. Adjudication of instream flow reservation applications will provide legal protection of instream flows needed to sustain salmon production.
3. Project Outcomes
 1. This project will continue and expand upon the *AKSSF Project 45766*.
 2. Instream flow reservation applications for priority waterbodies will be completed following applicable laws and protocols and will be ready to submit to the ADNR for adjudication. (Applications will be submitted at the discretion of the ADF&G Commissioner.) PIs have successfully reserved water for salmon production using this approach.
 3. 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.
 4. 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.
 5. 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 AKSSF projects.
4. Methods/Modeling
 1. The process for prioritizing waterbodies in SE AK for instream flow protection was developed during *AKSSF Project 45040*. *AKSSF Project 45040* ranked all watersheds (6th level hydrologic units, watersheds draining to tidewater) in SE AK 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 waterbodies 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 waterbodies in their area most in need of instream flow reservations.

Staff priorities were used to begin *AKSSF Projects 45107, 45213, and 45766*. During these projects, instream flow reservation applications were prepared for important salmon-producing waterbodies identified during the prioritization process. To date, reservation applications for 73 sites within 22 watersheds (6th level hydrologic units) have been completed and submitted to ADNR for adjudication. Applications for 14 sites within six watersheds were completed but not yet submitted to DNR. Applications for sites within approximately 20 watersheds are in progress. It is important to note that Alaska water laws are based on the doctrine of “prior appropriation,” allowing earlier appropriators of

water a priority of right over subsequent appropriators on a “first-in-time, first-in-right” basis. Priority for reservation applications is based on the date that they are submitted to and accepted by DNR. (It is not based on when the applications are actually adjudicated.)

Final selection of waterbodies for these projects was 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 SE AK will be updated for FY09 through consultation with staff from ADF&G and other resource agencies.

2. 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.
3. Streamflow data required for hydrologic characterization and quantifying instream flow needs will be obtained from the United States Geological Survey (USGS) Water Resources of Alaska website for historic streamflow data when available. When hydrologic data are limited or not available for high priority waterbodies, 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.
4. 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.
5. 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.

VII. Results/Deliverable Products

The main product of this project will be completed instream flow reservation applications for nominated salmon-producing waterbodies in SE AK. The applications will be submitted to the DNR for adjudication at the discretion of the Commissioner of ADF&G.

PI will submit semiannual, PCSRF performance metrics, and project completion reports according to AKSSF schedule, as well as copies of any other report/product/ deliverable produced with this funding.

VIII. Benefits to Salmon/Salmon Fisheries/Salmon Fishermen/Communities

The rivers and lakes of SE AK 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.

IX. Project Milestones and Timelines

The duration of the project is from July 1, 2008 to December 31, 2009. This project will continue and build upon *AKSSF Projects 45040, 45107, 45213, and 45766*. Instream flow reservation applications (the primary milestone) will be prepared and completed throughout the duration of the project.

All invoices will be submitted for payment in approvable form within 30 days of project end date.

X. Partners: Cooperating agencies and tribal and watershed groups

XI. Budget

Original Budget Summary Table	FY09	Total
100 Personnel	\$197,252	\$197,252
200 Travel	\$20,880	\$20,880
300 Contractual	\$16,020	\$16,020
400 Supplies	\$5,848	\$5,848
500 Equipment	\$0	\$0
Total Direct Costs	\$240,000	\$240,000
ADF&G 3%		\$7,200
Total Costs		\$247,200

Revision #1 Budget Summary Table	FY09	FY10	Total
100 Personnel	\$184,652		\$184,652
200 Travel	\$20,880		\$20,880
300 Contractual	\$16,020	\$12,600	\$28,620
400 Supplies	\$5,848		\$5,848
500 Equipment	\$0		\$0
Total Direct Costs	\$227,400	\$12,600	\$240,000
ADF&G 3%	\$6,822	\$378	\$7,200
Total Costs	\$234,222	\$12,978	\$247,200

Budget adjustments between line items are allowed for amounts equal to or less than 10% of the total award without prior AKSSF approval; any amount above 10% requires

prior AKSSF approval. All costs in lines 100-500 must represent actual cash expenditures.

Revision #1 Budget Narrative/Justification:

Revision #1 became necessary when a FB I position funded with this project became vacant. This position was responsible for managing cooperative stream gaging projects with Takshanuk Watershed Council (TWC) in Haines, AK. TWC is responsible for collecting discharge measurements and operating continuous stream gages on Sawmill and Holgate creeks in Haines. The FB I was responsible for managing the stream gage data (e.g., computing and checking discharge measurements, computing and applying recorder corrections, rating curves, shift curves, and computing mean daily flow statistics, etc.) collected by TWC.

It is uncertain if and/or when this vacant position will be filled. **Revision #1** enables the establishment of a contract with Water Walkers Streamflow Monitoring to manage the stream gage data collected by TWC at Sawmill and Holgate creeks. Services provided by Water Walkers Streamflow Monitoring will cost \$12,600 and will extend into FY10. **Revision #1** moves \$12,600 from line 100 (personnel) FY09 to line 300 (contractual) FY10.

Water Walkers Streamflow Monitoring contact information:

Bruce B. Bigelow
9045 E. Zebulon Circle
Parker, CO 80134
Office: (720) 842-1712; Cell: (720) 280-2967
Email: walking_water@msn.com

Revision 1 Budget Narrative - Instream Flow Quantification and Protection- Yr.3
23-Sep-08

Salaries:								Total
PCN	Title	Name	R S	Months	Sal and Bene/Month	OT	Sal+Bene	
11-4344	FB III	Sowa	18 A	11	6653	0	73,183	
11-4343	FB I	Burright	14B/C	11	5517	0	48,087	
11-4342	FB I	Hass	14D/E	11	5762	0	63,382	
								\$184,652

Employee Tasks:

Sowa Prepare reservation of water applications. Operate and maintain stream gages.
 Burright Prepare reservation of water applications. Operate and maintain stream gages.
 Hass Prepare reservation of water applications. Operate and maintain stream gages.

Travel:

Name	Days	# Trips FY09	Purpose	Dest	Total Lodging	Airfare/trip	Total Airfare	Per diem/trip	Total Per diem	Total Ground Transportation	Total
FB II, Sowa	1	3	Maint Streamgage	Jnu - skgwy	0	235	705	0	0	0	705
	2	3	Maint Streamgage	Jnu - Yakutat	0	375	1125	120	360	0	1485
	1	6	Maint Streamgage	Jnu-Haines	0	235	1410	0	0	0	1410
	2	1	Training/Project Revw	Jnu - Anc	100	375	375	120	120	100	695
	5	1	Conference	Jnu-SanAntonio	500	600	600	300	300	300	1700
FB I, Hass	1	3	Maint Streamgage	Jnu - skgwy	0	235	705	0	0	0	705
	2	6	Maint Streamgage	Jnu - Yakutat	0	375	2250	120	720	1200	4170
	1	3	Maint Streamgage	Jnu-Haines	0	235	705	0	0	0	705
	2	1	Training/Project Revw	Jnu - Anc	100	375	375	120	120	100	695
	5	1	Conference	Jnu-SanAntonio	500	600	600	300	300	0	1400
FB I, Burright	1	6	Maint Streamgage	Jnu - skgwy	0	235	1410	0	0	0	1410
	2	3	Maint Streamgage	Jnu - Yakutat	0	375	1125	120	360	0	1485
	1	3	Maint Streamgage	Jnu-Haines	0	235	705	0	0	0	705
	2	1	Training/Project Revw	Jnu - Anc	100	375	375	120	120	100	695
	5	1	Conference	Jnu-SanAntonio	500	600	600	300	300	0	1400
FB III, Johnson	2	1	Project Revw/Coord	Jnu - Anc	100	375	375	120	120	100	695
	2	1	Project Revw/Coord	Jnu - area offices	100	500	500	120	120	100	820
	\$20,880.00										

Contracts:	Item	Cost	
	Air Charter	6 trips to remote gauges	13000
	WISKI Hydrologic Software		1000
	SAS		500
	ArcGIS		600
	USFS Cabin Rentals		420
	Minivan Lease		500
	Water Walkers	re: stream gage data collected by TWC @Sawmill & Holgate Creeks	12600
			\$28,620

Supplies:	Item	Cost	
	Discharge Equipment	500	Current meter,rod,headset
	Transducers cable	1000	In-Situ type cable for transducer
	Stream gaging supplies	1200	pipes, conduit, hardware
	Personnel protection	1000	safety supplies, gloves, waders
	Food for field	288	Two 3-day trips, 3 people, \$16/day/person
	Data Retrieval System	750	for downloading transducer data
	Cases, dry bags	610	for transport of scientific equip
	Equipment repair	500	Repair and calibration of discharge equipment
			\$5,848

TOTAL \$240,000

All requests for reimbursement shall be adequately documented with both documentation of expense and proof of payment. Examples of expense documentation include copies of invoices, pay stubs, receipts, etc. Documentation of proof of payment includes copies of check, check numbers, credit cards receipts, etc.

All invoices must be submitted for payment in approvable form within 30 days of project end date. Invoices submitted after that deadline will not be reimbursed. Invoices for expenses incurred after the project end date will not be reimbursed.