

## **Alaska Sustainable Salmon Fund Statement of Work**

**I. Project Title:** Instream Flow Protection: Southeast – Phase 13

**II. Project Number:** 44920

**III. Principal Investigator**

Jarrold Sowa, Habitat Biologist III  
Statewide Aquatic Resources Coordination Unit (SARCU)  
Alaska Department of Fish and Game  
Division of Sport Fish/RTS  
PO Box 110024  
Douglas, AK 99811-0024  
907-465-8493  
[jarrod.sowa@alaska.gov](mailto:jarrod.sowa@alaska.gov)

**IV. Project Period:** 7/1/17 – 6/30/18

**V. AKSSF Objective:** 1A-1                      **PCSRF Objective:** P&A

**VI. Project Description**

1. Synopsis

This project will quantify and protect instream flows for important salmon- and steelhead-producing water bodies in Southeast Alaska (SE AK) through preparation and submission of reservation of water applications. Salmon populations will benefit by the retention of sufficient quantities of water to meet their spawning, rearing, incubation, overwintering, and migration habitat requirements.

2. Introduction

The rivers of SE AK support some of North America’s most productive salmon and steelhead sport, commercial, and subsistence fisheries. Salmon and steelhead migration, spawning, rearing, and ultimately production in these water bodies depend on sufficient seasonal quantities of water. The purpose of this project is to quantify and reserve instream flows needed to attain long-term protection and conservation of salmon and steelhead habitat in rivers throughout SE AK.

Numerous state and federal mechanisms can be used to reserve and protect instream flows. The primary mechanism that will be used in this project is the Alaska Water Use Act (AS 46.15). 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 provides the opportunity for the private sector and government agencies to legally secure reservations of water under Alaska law (AS 46.15.145) and regulation (11 AAC 93.141-147) to maintain instream flow rates in rivers or water levels in lakes in perpetuity for a variety of purposes, including the protection of fish and wildlife habitat, migration, and propagation.

The main activities of this project include obtaining and analyzing the biological and hydrologic data needed to quantify the instream flow requirements of salmon and steelhead and preparing reservation of water applications for important salmon- and steelhead-producing rivers in SE AK for filing and adjudication with the Alaska Department of Natural Resources (DNR). A blank reservation of water application can be found at [http://dnr.alaska.gov/mlw/forms/water/rsvr\\_app.pdf](http://dnr.alaska.gov/mlw/forms/water/rsvr_app.pdf).

Alaska water law is based on the doctrine of “prior appropriation”, giving the first appropriator of water from a given water source a priority of right over subsequent appropriators on a “first-in-time, first-in-right” basis. With an established water right (in this case, a Certificate of Reservation), the permittee has a legal standing to assert that right against conflicting uses of water from others who do not have water rights or who are junior in priority. The priority date for reservation of water applications is based on the date they are accepted for filing by DNR.

A Certificate of Reservation remains in effect in perpetuity unless DNR determines the purpose for which it was filed has changed or new information demonstrates that a lower amount of water would provide the same level of protection, at which time DNR can amend the reservation.

3. Location

Windfall Creek Gage:	Latitude: 58.509822	Longitude: -134.735308
Peterson Creek Gage:	Latitude: 58.489783	Longitude: -134.774753
Eva Creek Gage:	Latitude: 57.405596	Longitude: -135.085378
New POW Gage:	unknown at this time	
Douglas ADF&G Office:	Latitude: 58.276093	Longitude: -134.392716

4. Related Projects

45040, 45107, 45213, 45766, 45822, 45326 (800), 45979, 44552, 44563, 44567, 44915, 44171

## VII. Objectives

- Obtain the biological, hydrologic, and other information needed to quantify instream flow requirements of salmon and steelhead in priority water bodies
- Prepare, file, and adjudicate reservation of water applications to protect salmon and steelhead habitat in priority water bodies

## VIII. Methods

DNR Reservation of Water application forms will be prepared to comply with state law (AS 46.15.145) and regulations (11 AAC 93.141-147) and following protocols established by SARCU. Some reservation applications accepted by DNR under previous AKSSF projects were filed with requested flows for multiple stream reaches in one application. DNR now requires that each reach be filed under a separate application. This project will also convert multiple reservation reach applications into single reservation reach applications.

Hydrologic data needed to characterize the natural intra- and inter-annual variability in stream flows and quantify instream requirements 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, stream gages will be installed and operated by project staff in accordance with standard sampling protocols developed by USGS and SARCU and through consultation with USGS staff and other hydrologists as applicable. Fish distribution and periodicity data (seasonal use of habitat for migration, spawning, incubation, and rearing) by species and life stage will be compiled and summarized from the *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* and its associated Atlas, input from biologists from ADF&G and other agencies, and the scientific literature. Requested flows will be based primarily on flow duration analyses. This approach provides a basis to mimic natural seasonal flows that fish are adapted to and depend upon.

Adjudications are the administrative determinations of the validity and amount of the water right, including the settlement of conflicting claims among competing appropriators. If DNR is successful in its determination of the amount of water to be granted, DNR will issue a Certificate of Reservation, the legal document that establishes the water right. The priority list of reservation applications for adjudication is updated annually based on discussions with DNR.

This project will be evaluated based on the number of reservation of water applications prepared, filed, and adjudicated. During this project, it is anticipated that 1) a minimum of six reservation applications will be prepared and filed with DNR; 2) multiple reach applications will be converted into at least 10 single reach applications and filed with DNR; and 3) multiple applications for a minimum of three water bodies (e.g., one water body might be Old Tom Creek, which has three separate reservation applications) will be adjudicated and Certificate of Reservations received.

## **IX. Benefits**

The rivers of SE AK support some of North America's most viable and productive salmon and steelhead fisheries. Salmon and steelhead depend on sufficient quantities of water to meet their spawning, rearing, incubation, overwintering, and migration habitat requirements. This project will benefit salmon and steelhead populations (including those used for important subsistence fisheries) throughout SE AK by legally reserving water needed to sustain their production.

## **X. Products, Milestones, and Timelines**

- July 1, 2017 – June 30, 2018: Prepare and file reservation of water applications; convert multiple reach applications into single reach applications; adjudicate multiple reservation applications
- July 1, 2017 – June 30, 2018: Visit stream gage sites approximately every two months to take discharge measurements, survey transducer and staff gage elevations, download transducer data, and work up gage records
- June 30, 2018: Provide completed reservation of water applications and Certificates of Reservation to AKSSF

## XI. Budget

<b>ADF&amp;G SF Budget</b>	<b>Total</b>
100 Personnel	\$142,880
200 Travel	\$17,460
300 Contractual	\$16,860
400 Supplies	\$8,250
500 Equipment	\$14,954
Subtotal	\$200,404
Expenses subject to indirect	\$142,880
600 Indirect	\$30,005
<b>Total</b>	<b>\$230,409</b>

### ADF&G SF Budget Narrative:

#### Line 100: Personnel (\$142,880)

The State of Alaska salary calculator was used to estimate personnel costs.

- Jarrod Sowa, Habitat Biologist (HB) III (PCN 11-4344), will prepare and adjudicate reservation of water applications and operate and maintain stream gages: 7.5 months @ \$10,226/month = \$76,695.
- Jason Hass, HB II (PCN 11-4342), will prepare reservation of water applications and operate and maintain stream gages: 7 months @ \$9,455/month = \$66,185.

#### Line 200: Travel (\$17,460)

Jarrod Sowa and Jason Hass will travel to Klawock three times to maintain stream gages on the Thorne River:

- Airfare: 3 tickets @ \$720/ticket x 2 people = \$4,320
- Hotel: 3 nights @ \$120/night x 2 people = \$720
- Per diem: 6 days @ 60/day x 2 people = \$720
- Ground transportation: 3 trips @ \$200/trip = \$600
- Other incidentals (e.g., baggage, airport parking, gas): \$1,200

Jarrod Sowa and Jason Hass will travel to Klawock three times to maintain new stream gages on Prince of Wales Island:

- Airfare: 3 tickets @ \$720/ticket x 2 people = \$4,320
- Hotel: 3 nights @ \$120/night x 2 people = \$720
- Per diem: 6 days @ 60/day x 2 people = \$720
- Ground transportation: 3 trips @ \$200/trip = \$600
- Other incidentals (e.g., baggage, airport parking, gas): \$1,200

Jarrod Sowa will travel ten times from Juneau to Peterson Creek to maintain its stream gage:

- Ground transportation: 10 trips @ \$50/trip = \$500

Jason Hass and Jarrod Sowa will travel to Eva Creek twice to maintain its stream gage:

- Lodging: 2 trips @ \$120/trip = \$240
- Other incidentals (e.g., baggage, airport parking, gas): \$100

Jarrold Sowa will travel ten times from Juneau to Windfall Creek to maintain its stream gage:

- Ground transportation: 10 trips @ \$50/trip = \$500

Jarrold Sowa and Jason Hass will travel to Hoonah to scope out a new stream gage in Freshwater Bay:

- Airfare: 2 tickets @ \$300/ticket = \$600
- Lodging: 1 night @ \$100/night = \$100
- Ground transportation: 1 trip @ \$200/trip = \$200
- Other incidentals (e.g., baggage, airport parking, gas): \$100

Line 300 Contractual (\$16,860)

- Vehicle lease: 12 months @ \$50/month = \$600
- Statistical analysis software program (SAS) license: \$700
- Mapping software program (GIS) license for making ROW maps: \$500
- Streamgage data software program and database (WISKI) annual license: \$1,200
- Satellite phone service: 12 months @ \$55/month = \$660
- Fixed wing air charter from Juneau to Eva Creek: 4 trips @ \$1,600/trip = \$6,400
- Helicopter charter from Juneau to Eva Creek: 2 trips @ \$2,400 each = \$4,800
- Vehicle maintenance: \$1,000
- Repair and calibration of discharge equipment: \$500
- Transducer repair and calibration: \$500

Line 400: Supplies (\$8,250)

- Discharge equipment (velocity current meter, wading rod): \$500
- Transducers: \$2,500
- Transducer desiccant: \$250
- Stream gage installation supplies (pipes, conduit, hardware, brackets): \$1,000
- Personnel protection (safety supplies, gloves, waders, rain coats): \$1,000
- Cases and dry bags for transport of scientific equipment: \$500
- Staff personal computers: \$2,500

Line 500: Equipment (\$14,954)

Teledyne Oceanscience Q-boat 1250 (remotely operated boat for taking discharge measurements with an acoustic Doppler current profiler): \$14,954

Line 600: Indirect (\$30,005)

ADF&G's federally negotiated indirect rate through June 30, 2017, is 22.85% on total direct salaries and wages, including fringe benefits; however, indirect will be recovered at a reduced rate of 21% for this project: \$30,005.

**XII. Match Budget**

<b>ADF&amp;G SF Match Budget</b>	<b>Total</b>
100 Personnel	\$80,644
200 Travel	\$0
300 Contractual	\$0
400 Supplies	\$0
500 Equipment	\$0
Total	\$80,644

ADF&G SF Match Budget Narrative:

Line 100: Personnel (\$80,644)

Jarrold Sowa, Habitat Biologist III, will implement and administer the project; prepare, review, and adjudicate reservation of water applications; operate stream gages; and write and review gaging operational plans and fishery data series (FDS) reports: 2.5 months @ \$10,226/month = \$25,565.

Jason Hass, Habitat Biologist II, will prepare, review, and adjudicate reservation of water applications; operate stream gages; and write and review gaging operational plans and FDS reports: 2.4 months @ \$9,455/month = \$22,692.

Joe Klein, Environmental Engineer II, will review, file, and adjudicate reservation of water applications; review gaging operational plans and FDS reports; and supervise Jarrold Sowa: 2.211 months @ \$14,648 = \$32,387.