

Alaska Sustainable Salmon Fund Statement of Work

I. Project Title: Instream Flow Protection: Southeast - Phase 14

II. Project Number: 44373

III. Principal Investigator

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IV. Project Period: 7/1/18 – 6/30/19

V. AKSSF Objective: 1A-1 **PCSRF Objective:** HP&R/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, submission, and adjudication of reservation of water applications. Salmon populations will benefit by the legal reservation of instream flows to meet their spawning, rearing, incubation, overwintering, and migration habitat requirements in rivers throughout SE AK.

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.

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, called 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. Locations

- Windfall Creek Gage: 58.509822, -134.735308
- Freshwater Creek Gage: 57.9340417, -135.24806944
- Eva Creek Gage: 57.405949, -135.080774
- Davies Creek Gage: 58.655367, -134.880091
- Eagle Creek Gage: 55.952626, -132.758879
- Control Creek Gage: 55.700063, -132.849673
- Bridget Cove Creek Gage: 58.618800, -134.934025
- Dangerous River Gage: 59.417067, -139.024333
- Italio River Gage: 59.302714, -139.055930
- Douglas ADF&G Office: 58.276093, -134.392716

4. Related Projects

44040, 45107, 45213, 45766, 45822, 45326 (800), 45979, 44552, 44563, 44567, 44915, 44171, 44920

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 (this includes converting previously filed multiple-reach reservation applications into single-reach applications per new DNR requirements)

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. 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. 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.

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 and on successfully collecting hydrologic data at each of the stream gages. 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 waterbodies (e.g., one waterbody might be Kadashan River, which has four 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 populations, including many utilized for subsistence. Salmon and steelhead depend on sufficient quantities of water to meet their spawning, rearing, incubation, overwintering, and migration habitat requirements. This project will provide long-term habitat protection by legally reserving instream flows needed to conserve salmon and steelhead populations.

X. Products, Milestones, and Timelines

July 1, 2018 – June 30, 2019:

- Prepare and file a minimum of six reservation of water applications

- Convert multiple reach applications into at least ten single reach applications
- Adjudicate multiple reservation applications for a minimum of three waterbodies
- 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
- November 30, 2019: Provide completed reservation of water applications and Certificates of Reservation to AKSSF

XI. Project Budget

ADF&G SF Budget	Total
100 Personnel	\$82,651
200 Travel	\$17,566
300 Contractual	\$87,258
400 Supplies	\$13,750
500 Equipment	\$0
Subtotal	\$201,225
Expenses subject to indirect	\$82,651
600 Indirect	\$19,010
Total	\$220,235

ADF&G SF Budget Narrative:

Line 100: Personnel (\$82,651)

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: 4.5 months @ \$10,736/month = \$48,312.
- Jason Hass, HB II (PCN 11-4342), will prepare reservation of water applications and operate and maintain stream gages: 3.5 months @ \$9,811/month = \$34,339.

Line 200: Travel (\$17,566)

Jarrod Sowa and Jason Hass will travel to Klawock six times to maintain stream gages on Control and Eagle creeks:

- Airfare: 6 tickets @ \$700/ticket x 2 people = \$8,400
- Lodging: 6 nights @ \$100/night x 2 people = \$1,200
- Per diem: 12 days @ \$45/day x 2 people = \$1,080
- Ground transportation: 6 trips @ \$250/trip = \$1,500
- Other incidentals (e.g., baggage, airport parking, gas): \$936

Jarrod Sowa and Jason Hass will travel to Hoonah four times (spring to fall) to maintain the stream gage on Freshwater Creek:

- Airfare: 4 tickets @ \$180/ticket x 2 people = \$1,440
- Lodging (fall trip): 1 night @ \$120/night x 2 people = \$240
- Per diem (fall trip): 2 days @ \$45/day x 2 people = \$180

- Ground transportation: 3 trips (spring/summer) @ \$110/trip and 1 trip (fall) @ \$220/trip = \$550
- Other incidentals (e.g., baggage, airport parking, gas): \$800

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

- Ground transportation: 4 trips @ \$50/trip = \$200

Jarrold Sowa will travel eight times each from Juneau to Davies Creek and Bridget Cove Creek to maintain their stream gages:

- Ground transportation: 8 trips @ \$50/trip = \$400

Jason Hass will travel to Eva Creek four times (spring to fall) to maintain its stream gage:

- Lodging: 4 nights @ \$140/night = \$560
- Other incidentals (e.g., baggage, airport parking, gas): \$80

Line 300 Contractual (\$87,258)

- Vehicle lease: 12 months @ \$55/month = \$660
- Statistical analysis software program (SAS) license: \$750
- Mapping software program (GIS) license for making ROW maps: \$550
- Stream gage data software program and database (WISKI) annual license: \$2,034
- Satellite phone service: 12 months @ \$60/month = \$720
- InReach Emergency Transmitter service: 12 months @ \$12/month = \$144
- Fixed wing air charter from Juneau to Eva Creek: 4 trips @ \$1,500/trip = \$6,000
- Fixed wing air charter from Juneau to Windfall Creek: 1 trip @ \$1,500/trip = \$1,500
- Fixed wing air charter from Juneau to Teardrop Creek: 4 trips @ \$600 = \$2,400
- Helicopter charter from Juneau to Eva and Freshwater creeks: 2 trips @ \$3,500 each = \$7,000
- Helicopter charter from Juneau to Teardrop Creek: 2 trips @ \$1,250 each = \$2,500
- Vehicle maintenance: \$1,000
- USGS contract to operate stream gages on Dangerous and Italio rivers: \$62,000

Line 400: Supplies (\$13,750)

- Discharge equipment (velocity current meter, wading rod): \$500
- Transducers: 4 transducers @ \$1,500/transducer = \$6,000
- Transducer desiccant: \$500
- Transducer cable: 4 cables @ \$500/cable = \$2,000
- Stream gage installation supplies (pipes, conduit, hardware, brackets): \$2,000
- Personnel protection (safety supplies, gloves, waders, rain coats): \$500
- Cases and dry bags for transport of scientific equipment: \$250
- Staff personal computer: \$2,000

Line 600: Indirect (\$19,010)

ADF&G's federally negotiated indirect rate changes each fiscal year but is estimated to be approximately 23% during the project period; indirect will be collected at the rate current at the time of the expense on direct salaries and wages including fringe benefits.

XII. Match Budget

ADF&G SF Match Budget	Total
100 Personnel	\$77,083
200 Travel	\$0
300 Contractual	\$0
400 Supplies	\$0
500 Equipment	\$0
Total	\$77,083

ADF&G SF Match Budget Narrative:

Line 100: Personnel (\$77,083)

Jarrod Sowa, HB III, will implement and administer the project; prepare, review, and adjudicate reservation of water applications; install and maintain stream gages; and prepare and review gaging operational plans and FDS reports: 4 months @ \$10,736/month = \$42,944.

Jason Hass, HB II, will prepare and review reservation of water applications; install and maintain stream gages; and prepare and review gaging operational plans and FDS reports: 3.48 months @ \$9,811/month = \$34,139.