

Alaska Sustainable Salmon Fund Statement of Work

I. Project Title: Instream Flow Protection: Southeast – Phase 18

II. Project Number: 54019

III. Principal Investigator

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Division of Sport Fish/RTS
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IV. Project Period: 7/1/22 - 6/30/23

V. AKSSF Objective: Instream flow **PCSRF Objective:** P&A/HP&R

VI. Project Description

1. Synopsis

This project will quantify and protect instream flows for important salmon- and steelhead-producing rivers in Southeast Alaska (SE AK). Planned activities include preparing, filing, and adjudicating reservation of water applications. Salmon and steelhead fisheries, including important subsistence fisheries, will be benefited by legally reserving instream flows needed to attain long-term protection and conservation of salmon and steelhead populations and their habitats.

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 waterbodies 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. 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 the Department of Natural Resources (DNR). 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. 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.

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 DNR. A blank reservation of water application can be found at http://dnr.alaska.gov/mlw/forms/water/rsrv_app.pdf.

This project will continue and expand upon AKSSF projects 45040, 45107, 45213, 45766, 45822, 45326 (800), 45979, 44552, 44563, 44567, 44915, 44171, 44920, 44373, 51013, 52014, and 53016 (*Instream Flow Protection: Southeast – Phases 1-17*). Through these projects, 140 reservation of water applications encompassing 75 waterbodies and 155 stream reaches in SE AK have been completed and successfully filed with DNR (accepted as complete and given a priority date). Adjudications have been completed and 65 Certificates of Reservation issued for 25 waterbodies. To support ROW applications, hydrologic data has also been successfully collected at 20 stream gages and 47 discharge measurement stations.

3. Locations

- Wrangell stream gages: Locations to be determined
- Davies Creek Stream Gage: 58.655367, -134.880091
- Luck Creek Stream Gage: 55.921770, -132.764917
- Control Creek Stream Gage: 55.699885, -132.849218
- Freshwater Creek Stream Gage: 57.934189, -135.248037
- Dangerous River Stream Gage: 59.4175, -139.0175
- Italio River Stream Gage: 59.3020278, -139.0456944
- Douglas ADF&G Office: 58.276093, -134.392716

4. Related AKSSF Projects

45040, 45107, 45213, 45766, 45822, 45326 (800), 45979, 44552, 44563, 44567, 44915, 44171, 44920, 44373, 51013, 52014, 53016

VII. Objectives

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

VIII. Methods

DNR ROW 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 the IFP. 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.

Hydrologic data needed to characterize the natural intra- and inter-annual variability in streamflows 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 the USGS and the IFP, and through consultation with USGS staff and other hydrologists as applicable. Stream gages will be operated at a minimum of six stations: Freshwater Creek, Control Creek, Luck Creek, Davies Creek, Italo River, Dangerous River, and possibly on the Wrangell road system. In conjunction with these stream gages, discharge measurements will be taken at ten other stations; Pavlof River, Kennel Creek, tributaries to Freshwater Creek, tributary to Luck Creek, Eagle Creek, Ratz Creek, Logjam Creek, Cowee Creek upstream of Davies Creek, and the Eagle River. 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.

This project will be evaluated based on the number of ROW applications prepared, filed, and adjudicated and on successfully collecting hydrologic data at each of the stream gage and discharge stations. During this project, it is anticipated that 1) a minimum of two reservation applications will be prepared and filed with DNR; and 2) two waterbodies 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 provide long-term habitat protection by legally reserving instream flows needed to conserve salmon and steelhead habitat.

X. Products, Milestones, and Timelines

July 1, 2022 - June 30, 2023:

- Contract the USGS to continue the operation of stream gages on the Dangerous River and Italo River
- Prepare and file a minimum of two reservation of water applications
- Adjudicate ROW applications
- Visit stream gage sites approximately every two months to take discharge measurements, survey transducer and water surface elevations, download transducer data, and compute mean daily streamflow from the stream gage records
- Provide completed reservation of water applications and Certificates of Reservation to AKSSF

XI. Project Budget

ADF&G SF Budget	Total
100 Personnel	\$118,448
200 Travel	\$24,764
300 Contractual	\$65,270
400 Supplies	\$2,491
500 Equipment	\$0
Subtotal	\$210,973
Expenses subject to indirect	\$118,448
600 Indirect	\$29,612
Total	\$240,585

ADF&G SF Budget Narrative:

Line 100: Personnel (\$118,448)

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: 5.5 months @ \$12,468/month = \$68,574.
- Jason Hass, HB II (PCN 11-4342), will prepare reservation of water applications and operate and maintain stream gages: 4.5 months @ \$11,083/month = \$49,874.

Line 200: Travel (\$24,764)

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 @ \$60/night x 2 people = \$720
- Per diem: 12 days @ \$45/day x 2 people = \$1,080
- Ground transportation: 6 trips @ \$200/trip = \$1,200

- Other incidentals (e.g., baggage, airport parking, gas): 6 trips @ \$266/trip = \$1,596

Jarrold Sowa and Jason Hass will travel twice to Hoonah to maintain the Freshwater Creek stream gage:

- Airfare: 2 tickets @ \$250/ticket x 2 people = \$1,000
- Ground transportation: 2 trips @ \$120/trip = \$240
- Other incidentals (e.g., baggage, airport parking, gas): 2 trips @ \$174/trip = \$348

Jarrold Sowa and Jason Hass will travel eight times from Juneau to Davies Creek to maintain the stream gage:

- Ground transportation: 8 trips @ \$25/trip = \$200

Jarrold Sowa and Jason Hass will travel eight times from Juneau to Eagle River to take discharge measurements:

- Ground transportation: 8 trips @ \$25/trip = \$200

Jarrold Sowa and Jason Hass will travel to Wrangell six times to scope, install and maintain gages:

- Airfare: 6 tickets @ \$375/ticket x 2 people = \$4,500
- Lodging: 6 nights @ \$150/night x 2 people = \$1,800
- Ground Transportation: 6 trips @ \$200/trip = \$1,200
- Per diem: 12 days @ \$45/day x 2 people = \$1,080
- Other incidentals (e.g., baggage, airport parking, gas): 6 trips @ \$100/trip x 2 people = \$1,200

Line 300 Contractual (\$65,270)

- Statistical analysis software program license: \$750
- Mapping software program (GIS) license (for making ROW maps): \$600
- Stream gage data software program and database (WISKI) annual license: \$1,200
- Satellite phone service: 12 months @ \$60/month = \$720
- Contract with USGS to gage the Dangerous and Italio rivers: \$62,000

Line 400: Supplies (\$2,491)

- Transducer, cable, and desiccant for measuring water levels at stream gages: \$1,991
- Stream gage installation supplies (pipes, conduit, hardware, brackets): \$500

Line 600: Indirect (\$29,612)

ADF&G's federally negotiated indirect rate changes each fiscal year but is estimated to be approximately 25% 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
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100 Personnel	\$84,205
200 Travel	\$0
300 Contractual	\$0
400 Supplies	\$0
500 Equipment	\$0
Total	\$84,205

Match SF Match Budget Narrative:

Line 100: Personnel (\$84,205)

- Jarrod Sowa, HBIII, 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 reports: 4 months @ \$12,165/month = \$48,660.
- Jason Hass, HBII, will prepare and review reservation of water applications; install and maintain stream gages; and prepare and review gaging operational plans and reports: 3.3 months @ \$10,831/month = \$35,545.