

Alaska Sustainable Salmon Fund Statement of Work

I. Project Title: Kasaan Stream Habitat Mapping - Phase 2

II. Project Number: 44733

III. Principal Investigator

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IV. Project Period: 3/1/15 – 2/28/16

V. AKSSF Objective: 1A-2 **PCSRF Objective:** P&A

VI. Project Description

1. Synopsis

This project will map baseline salmon distribution and habitat conditions in three watersheds on Prince of Wales Island in Southeast Alaska. These productive salmon systems are important subsistence areas for the community of Kasaan. Activities include: documenting the full extent of anadromous water bodies in each watershed; mapping salmon habitat characteristics and spawning activity; and documenting baseline stream habitat information. Results include habitat protection through an updated *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* and its associated Atlas (AWC) and baseline habitat information that will be used for improved habitat conservation. *This project continues work begun in AKSSF project 44564.*

2. Introduction

Commercial logging and fishing were once the primary economic industries for Kasaan. In 1994, commercial salmon harvests netted local fishermen \$6.4 million. By 1997, earnings had fallen by half. The impact of these once flourishing industries is still being experienced. Pollution from mines and habitat degradation resulting from old logging activities are believed to be having adverse effects on fisheries stocks. All

Kasaan residents engage in a subsistence lifestyle, which has helped to offset the economic depression caused by the decline of its once booming industries. The harvest of subsistence foods are also culturally important to the Tlingit and Haida residents of Kasaan, whose ancestors have lived on Prince of Wales Island for thousands of years.

In order to provide protection for the watersheds important for subsistence, The Nature Conservancy (TNC) and the Organized Village of Kasaan (OVK) have partnered on the systematic mapping of salmon habitat in OVK's traditional use areas, beginning with the Karta River, Paul Young Creek, and Poorman Creek in 2014 through AKSSF project 44564, *Kasaan Habitat Mapping – Phase 1*. Ensuring all anadromous fish-producing streams important to or used by Kasaan are catalogued, and gaining a better understanding of the systems that feed these streams, will better enable the community to manage and protect important subsistence and cultural resources.

The three watersheds prioritized for mapping in 2015 are Kendrick Bay, Tolstoi (also known as Jacob's Creek), and Salt Chuck. Watershed selection was based on 1) the watershed's importance to subsistence; 2) the watershed's lack of current information in the AWC, including undocumented low-elevation stream sections, missing species, or missing life history stages; and 3) the watershed's likelihood for near-term resource development activities. Approximately 26 kilometers of habitat are likely to be protected by surveying and adding streams to the AWC.

To improve understanding of salmon distribution and habitat conditions in these watersheds, standard field survey methods developed by the Alaska Department of Fish and Game (ADF&G), Division of Sport Fish (SF), will be used. The majority of the field work and data collection will be completed by local hires, including the individuals who successfully completed surveys of watersheds in the previous project. Additional training will be conducted by Kai Environmental Consulting Services, LLC (Kai Environmental).

Project field work will involve several weeks of cumulative field research scheduled during the months of June – September, 2015. These dates were chosen to maximize the likelihood of detecting the presence of salmon. Surveys will focus on uncatalogued, low slope reaches and areas that may be subject to resource development or restoration in the near future. AWC survey data will be compiled in the appropriate format and submitted for nomination. Stream habitat survey data will be compiled in the appropriate format and submitted to the Southeast Alaska (SE AK) GIS Library for inclusion in the joint U.S. Forest Service (USFS)/ADF&G regional hydrographic dataset.

3. Locations

Site: Kendrick Bay
Latitude: 54.8999 N Longitude: 132.1142 W
Site: Tolstoi (Jacob's Creek)
Latitude: 55.6118 N Longitude: 132.4544 W
Site: Salt Chuck Watershed
Latitude: 55.6247 N Longitude: 132.5682 W

VII. Objectives

- Conduct AWC surveys in Kendrick Bay, Tolstoi (Jacob's Creek), and Salt Chuck watersheds
- Document riparian habitat condition characteristics in water bodies associated with Kendrick Bay, Tolstoi (Jacob's Creek), and Salt Chuck watersheds
- Submit AWC nominations

VIII. Methods

Prior to field work, Cathy Needham of Kai Environmental will train the field team on survey methods in Kasaan. The crew will consist of a field leader and two field technicians, all of whom will be OVK staff. After the training, the field crew will mobilize to the watersheds, beginning the stream habitat surveys at the mouth of each outlet creek of the respective systems and working systematically into the upper watershed. Except for Kendrick Bay, access to the lower portion of each watershed will be by car or skiff. The crew will charter a landing craft to transport their gear and skiff to Kendrick Bay, where they will set up a camp from which to conduct surveys. The crew will charter a float plane to take them to Kasaan for a few days off mid-way through the Kendrick Bay surveys, which are estimated to take 4 weeks. Field crews will camp for a large portion of the field work.

The field team will map the course of each stream within each watershed to provide the spatial data necessary for delineating watered channels and their connectivity with tributaries, side channels, and lakes/ponds. GPS waypoints will be collected every 15-30 m (depending on the complexity of the stream) as the crew follows the stream course. Digital photographs will be taken at these locations.

Additional data will be collected on features of interest encountered while mapping the stream course, such as culverts, fish passage barriers, riparian disturbances, erosion, restoration, etc. Waypoints will identify the spatial location, and field measurements and pictures will document the feature site.

Individual stream reaches will be characterized by classifying geomorphic channel type and stream class using the USFS protocols which form the basis of the ADF&G Stream Habitat Assessment protocols. Upper and lower waypoints for each stream reach will be collected, along with data used for geomorphic channel typing. These measurements will include the following:

- a) Average stream gradient collected at the bottom, mid-point, and top of reach
- b) Bank full width (m) collected at the mid-point of reach
- c) Channel incision depth (m) recorded at the mid-point of reach

- d) Stream bank composition (dominate substrate forming the stream banks)
- e) Dominate substrate class (i.e., organics, sand/silt, gravel, cobble, boulder, bedrock) forming stream channel
- f) Channel pattern (i.e., singular, multiple-braids)
- g) Channel type classification, where each individual reach is identified by its unique channel type
- h) Stream class, where each individual reach is classified on its aquatic habitat potential as identified in the working protocol for improving stream class designations

Fish observation points will be collected along each stream reach, including additional points above and below features thought to be the extent of fish habitat along each stream within each watershed system. Minnow trapping will be the primary data collection method used for collecting information to be used in nominations to the AWC. At selected sites (determined on the ground during stream habitat surveys), smolt and fry life stages of all fish within each stream will be quantified. Data for these fish observation points will be in accordance with the cited protocols for the stream habitat surveys.

Late in the season, adult foot count surveys will be completed for each system. Crews will walk the upper tributaries and tally the number of adult fish seen within the creek or dead carcasses along the banks. GPS points will be taken at the end of each upper creek survey when no evidence of adult fish remains in order to document where adult fish spawning areas are within the watershed.

At the end of the 2015 field season, all data collected will be synthesized into AWC nomination packages in accordance with the cited guidelines. Additional information may also be used in the nomination packets. Nomination packets for this study will be submitted by December 31, 2015, which is outside of the regular cycle of nominations but still considered acceptable. Success will be evaluated based on regulatory adoption in the AWC of submitted nomination packages for individual water bodies.

Upon completion of stream habitat surveys, data for all stream reaches containing anadromous fish and fish habitat data will be used to update the joint USFS/ADF&G SF hydrography layer available to the public through the SE AK GIS Library (<http://seakgis.alaska.edu/>). Success will be evaluated based on the amount of stream habitat incorporated into the joint USFS/ADF&G-SF hydrography layer.

IX. Benefits

Kendrick Bay, Tolstoi (Jacob's Creek), and Salt Chuck support important subsistence salmon fisheries for Prince of Wales's Tlingit and Haida people and the community of Kasaan. This project will provide legal protection for these watersheds through listing in Alaska's *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes*.

X. Products, Milestones, and Timelines

- March 1, 2015 – May 31, 2015: Obtain required permits and work on training and field logistics
- June 1, 2015 – July 31, 2015: Conduct training, stream habitat surveys, and minnow trapping
- August 1, 2015 – September 30, 2015: Perform foot surveys to count adult salmon
- October 1, 2015 – November 30, 2015: Compile data and prepare AWC nominations
- December 31, 2015: Submit AWC nominations
- February 1, 2016: Submit stream habitat survey information to the SE AK GIS Library

XI. Budget

Summary	Total
100 Personnel	\$18,400
200 Travel	\$0
300 Contractual	\$34,000
400 Supplies	\$6,500
500 Equipment	\$0
Subtotal	\$58,900
600 Indirect	\$14,260
Total	\$73,160

This project funds the following entities:

- TNC: \$19,474
- OVK: \$53,686

TNC Budget

TNC	Total
100 Personnel	\$0
200 Travel	\$0
300 Contractual	\$15,900
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$15,900
600 Indirect @ 22.48%	\$3,574
Total	\$19,474

TNC Budget Narrative:

Line 300: Contractual (\$15,900)

TNC will contract with Kai Environmental Consulting Services, LLC, for field survey work. Costs include a project leader (Cathy Needham), survey method training in Kasaan, data entry and data management training midway through the project, preparation and submission of AWC nominations, project related travel (Juneau-Kasaan), and supplies: \$15,900

Line 600: Indirect (\$3,574)

TNC's federally negotiated indirect rate through June 30, 2015, is 22.48% on total direct costs including subawards regardless of dollar amount, and excluding external transfers, land sales, and some equipment costs.

OVK Budget

OVK	Total
100 Personnel	\$18,400
200 Travel	\$0
300 Contractual	\$18,100
400 Supplies	\$6,500
500 Equipment	\$0
Subtotal	\$43,000
600 Indirect @ 24.85%	\$10,686
Total	\$53,686

OVK Budget Narrative:

Line 100: Personnel (\$18,400)

- A field crew leader will lead field survey work: 3 months @ \$4,000/month = \$12,000.
- Two field crew technicians will participate in field survey work: .91 months @ \$3,500/month x 2 = \$6,400.

Line 300: Contractual (\$18,100)

- The field crew leader and crew technicians will travel from Kasaan to Kendrick Bay by landing craft: 4 legs @ \$4,000/leg = \$16,000.
- The field crew leader and crew technicians will travel from remote work sites by float plane charter as required: 1.5 hours @ \$700/hour x 2 trips = \$2,100.

Line 400: Supplies (\$6,500)

- Field groceries: 60 days @ \$11.11/day x 3 people = \$2,000
- Crew gear (waders, packs): \$1,500
- Boat fuel: \$1,000
- Camp gear (sleeping bags, pad, stove, cooking items): \$1,000
- Field supplies: \$1,000

Line 600: Indirect (\$10,686)

OVK's federally negotiated indirect rate through December 31, 2014, is 24.85% on total direct costs less capital expenditures and pass through funds.

XII. Match Budget

Summary (35%)	Total
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100 Personnel	\$14,751
200 Travel	\$1,003
300 Contractual	\$4,860
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$20,614
600 Indirect	\$4,992
Total	\$25,606

Match will be provided by the following entities:

- TNC: \$6,754
- OVK: \$18,852

TNC Match Budget

TNC	Total
100 Personnel	\$3,651
200 Travel	\$1,003
300 Contractual	\$860
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$5,514
600 Indirect @ 22.48%	\$1,240
Total	\$6,754

TNC Match Budget Narrative:

Line 100: Personnel (\$3,651)

- Norman Cohen, Southeast Alaska Program Director, will be responsible for overall project management, contracting, and project reporting: .23 months @ \$8,411/month = \$1,935.
- Christine Woll, Spatial Ecologist, will be responsible for quality control on deliverables to be incorporated into the AWC and the Southeast Alaska GIS Library: .29 months @ \$5,916/month = \$1,716.

Line 200: Travel (\$1,003)

Norman Cohen and/or Christine Woll will travel from Juneau to Kasaan to visit remote work sites for project oversight and quality control:

- Airfare: 1 ticket @ \$453/ticket = \$453
- Lodging: 4 nights @ \$110.50/night = \$442
- Per diem: 3 days @ \$36/day = \$108

Line 300: Contractual (\$860)

TNC will contract with Kai Environmental Consulting Services, LLC, for field survey work; costs include a project leader (Cathy Needham), survey method training in Kasaan,

data entry and data management training mid-way through the project, preparation of AWC nominations, project related travel (Juneau-Kasaan), and supplies: \$860

Line 600: Indirect (\$1,240)

TNC's federally negotiated indirect rate through June 30, 2015, is 22.48% on total direct costs including subawards regardless of dollar amount, and excluding external transfers, land sales, and some equipment costs.

OVK Match Budget

OVK	Total
100 Personnel	\$11,100
200 Travel	\$0
300 Contractual	\$4,000
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$15,100
600 Indirect @ 24.85%	\$3,752
Total	\$18,852

Organized Village of Kasaan Match Budget Narrative:

Line 100: Personnel (\$11,100)

- Two field crew technicians will participate in field survey work: 1.09 months @ \$3,500/month x 2 = \$7,600.
- One Administrative Assistant will assist with data entry/data compilation: 1 month @ \$3,500/month = \$3,500.

Line 300: Contractual (\$4,000)

The field crew leader and field crew technicians will travel from Kasaan to remote work sites and within Kendrick Bay (skiff rental with operator): 4 weeks @ \$1,000/week = \$4,000.

Line 600: Indirect (\$3,752)

OVK's federally negotiated indirect rate through December 31, 2014, is 24.85% on total direct costs, less capital expenditures and pass through funds.