

Alaska Sustainable Salmon Fund Statement of Work

I. Project Title: Kasaan Stream Habitat Mapping - Phase 3

II. Project Number: 44818

III. Principal Investigator

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IV. Project Period: 3/1/16 – 2/28/17

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.

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.

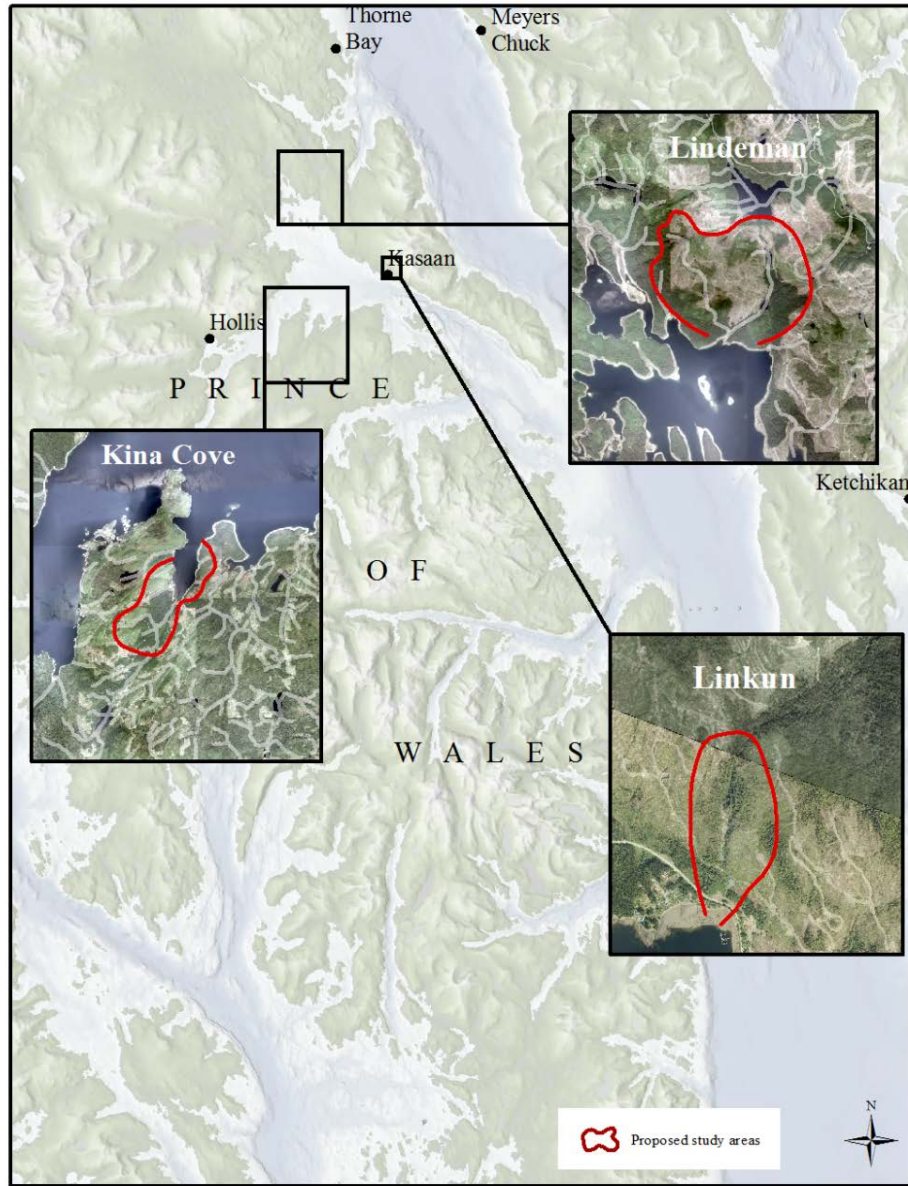
In order to provide protection for the watersheds important for subsistence, The Nature Conservancy (the Conservancy) and the Organized Village of Kasaan (OVK) have partnered on the systematic mapping of salmon habitat in OVK's traditional use areas, beginning with the Karta River, Paul Young Creek, and Poorman Creek in 2014 (AKSSF project 44564, *Kasaan Stream Habitat Mapping – Phase 1*) and Kendrick Bay, Tolstoi, and Salt Chuck in 2015 (AKSSF project 44733, *Kasaan Stream Habitat Mapping – Phase 2*). 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 2016 are Linkum Creek, Kena Cove, and Lindeman Creek (Figure 1). 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 12 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 over the last two years. Additional refresher trainings will be conducted by Kai Environmental Consulting Services, LLC (Kai Environmental).

The 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 an organized geodatabase and new mapped streams will be submitted to the Southeast Alaska (SE AK) GIS Library for inclusion in the joint U.S. Forest Service (USFS)/ADF&G regional hydrographic dataset.

Figure 1. Kina Cove, Linkum Creek, and Lindeman Creek



3. Locations

Site: Linkum Creek

Latitude: 55.539 N

Longitude: 132.401 W

Site: Kena Cove

Latitude: 55.490 N

Longitude: 132.522 W

Site: Lindeman Creek

Latitude: 55.606 N

Longitude: 132.510 W

4. Related Projects

44564, 44733

VII. Objectives

- Conduct AWC surveys in Linkum Creek, Kena Cove, and Lindeman Creek watersheds
- Document riparian habitat condition characteristics in water bodies associated with Linkum Creek, Kena Cove, and Lindeman Creek watersheds
- Submit AWC nominations

VIII. Methods

Prior to field work, Cathy Needham of Kai Environmental Consulting Services will perform a short refresher training with 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 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. Access to the lower portion of each watershed will be by car or skiff. Field crews will camp for a large portion of the field work.

The field team will use the ADF&G Stream Habitat Assessment protocols on all field surveys. The course of each stream within each watershed will be mapped, providing 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. 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 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.

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 2016 field season, all data collected will be synthesized into AWC nomination packages. Nomination packets for this study will be submitted by December 31, 2016, 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

Linkum Creek, Kena Cove, and Lindeman Creek 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 approximately 12 kilometers of habitat in 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, 2016 – May 31, 2016: Obtain required permits and work on training and field logistics
- June 1, 2016 – July 31, 2016: Conduct refresher training, stream habitat surveys, and minnow trapping
- August 1, 2016 – September 30, 2016: Perform foot surveys to count adult salmon
- October 1, 2016 – November 30, 2016: Conduct refresher training on data compilation and AWC preparation; compile data and prepare AWC nominations
- December 31, 2016: Submit AWC nominations
- February 1, 2017: Submit stream habitat survey information to the SE AK GIS Library

XI. Budget

Summary Budget	Total
100 Personnel	\$25,000

200 Travel	\$0
300 Contractual	\$10,420
400 Supplies	\$4,350
500 Equipment	\$0
Subtotal	\$39,770
600 Indirect	\$8,976
Total	\$48,746

This project funds the following entities:

- The Conservancy: \$12,692
- OVK: \$36,054

The Conservancy Budget

The Conservancy Budget	Total
100 Personnel	\$0
200 Travel	\$0
300 Contractual	\$10,420
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$10,420
600 Indirect @ 21.80%	\$2,272
Total	\$12,692

The Conservancy Budget Narrative:

Line 300: Contractual (\$10,420)

The Conservancy will contract with Kai Environmental Consulting Services, LLC. Costs include a project leader (Cathy Needham); survey method training in Kasaan; quality control and refresher training for data entry, data management, and AWC nominations; project related travel (Juneau-Kasaan); and supplies: \$10,420.

Line 600: Indirect (\$2,272)

The Conservancy's federally negotiated indirect rate through June 30, 2016, is 21.80% on total direct costs including subawards regardless of dollar amount, and excluding external transfers, land sales, and some equipment costs.

OVK Budget

OVK Budget	Total
100 Personnel	\$25,000
200 Travel	\$0
300 Contractual	\$0
400 Supplies	\$4,350
500 Equipment	\$0
Subtotal	\$29,350
600 Indirect @ 22.84%	\$6,704

Total	\$36,054
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OVK Budget Narrative:

Line 100: Personnel (\$25,000)

- A field crew leader will assist with planning field work logistics and lead field survey work: 1 month @ \$4,000/month = \$4,000.
- Two field crew technicians will participate in field survey work: 2 months @ \$3,500/month x 2 = \$14,000.
- One administrative assistant will provide data entry/data compilation: 2 months @ \$3,500/month = \$7,000.

Line 400: Supplies (\$4,350)

- Field groceries: 60 days @ \$11.11/day x 3 people = \$2,000
- Crew gear (waders, packs): \$750
- Boat fuel: 150 gallons @ \$6/gallon = \$900
- Camp gear (sleeping bags, pad, stove, cooking supplies): \$500
- Adobe Acrobat Pro (to be used exclusively for creating, editing, and compiling PDFs for AWC submission packages): \$200

Line 600: Indirect (\$6,704)

The OVK's federally negotiated indirect rate through December 31, 2015, is 22.84% on total direct costs, less capital expenditures and pass through funds.

XII. Match Budget

Summary Budget (35%)	Total
100 Personnel	\$9,144
200 Travel	\$2,500
300 Contractual	\$1,976
400 Supplies	\$300
500 Equipment	\$0
Subtotal	\$13,920
600 Indirect	\$3,142
Total	\$17,062

Match will be provided by the following entities:

- The Conservancy: \$4,409
- OVK: \$12,653

The Conservancy Match Budget

The Conservancy Match	Total
100 Personnel	\$1,144
200 Travel	\$500
300 Contractual	\$1,976

400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$3,620
600 Indirect @ 21.80%	\$789
Total	\$4,409

The Conservancy Match Budget Narrative:

Line 100: Personnel (\$1,144)

Christine Woll, Spatial Ecologist, will be responsible for quality control on deliverables to be submitted to the AWC and the Southeast Alaska GIS Library: ~.19 months @ \$5,916/month = \$1,144.

Line 200: Travel (\$500)

Christine Woll will travel from Juneau to Kasaan to visit remote work sites for project oversight and quality control: 1 ticket @ \$500/ticket = \$500.

Line 300: Contractual (\$1,976)

The Conservancy will contract with Kai Environmental Consulting Services, LLC. Costs include a project leader (Cathy Needham); survey method training in Kasaan; quality control and refresher training for data entry, data management, and AWC nominations; project related travel (Juneau-Kasaan); and supplies \$1,976.

Line 600: Indirect (\$789)

The Conservancy's federally negotiated indirect rate through June 30, 2016, is 21.80% on total direct costs including subawards regardless of dollar amount, and excluding external transfers, land sales, and some equipment costs.

OVK Match Budget

OVK Match	Total
100 Personnel	\$8,000
200 Travel	\$2,000
300 Contractual	\$0
400 Supplies	\$300
500 Equipment	\$0
Subtotal	\$10,300
600 Indirect @ 22.84%	\$2,353
Total	\$12,653

OVK Match Budget Narrative:

Line 100: Personnel (\$8,000)

A field crew leader will assist with planning field work logistics and lead field survey work: 2 months @ \$4,000/month = \$8,000.

Line 200: Travel (\$2,000)

The field crew leader and field crew technicians will travel from Kasaan to remote work sites (skiff rental with operator): 10 days x \$200/day = \$2,000.

Line 400: Supplies (\$300)

Boat fuel: 50 gallons @ \$6/gallon = \$300

Line 600: Indirect (\$2,353)

OVK's federally negotiated indirect rate through December 31, 2015, is 22.84% on total direct costs, less capital expenditures and pass through funds.