

Alaska Sustainable Salmon Fund Statement of Work

I. Project Title: Kasaan Stream Habitat Mapping – Phase 1

II. Project Number: 44564

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IV. Project Period: 3/1/14 - 2/1/15

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 water quality and flow. 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. *See related AKSSF project 44733.*

2. Introduction

This project will allow the community of Kasaan to improve the overall management of its lands and protect the resources that are important to it. Two of the systems to be surveyed contain mining claims and one of these systems has been designated for timber harvest in addition to containing a mining claim. The community of Kasaan is concerned about the impact of these activities on the long-term health of the subsistence fishery and lifestyle, and wishes to document fish presence and habitat quality in order to help protect resources and/or inform restoration actions.

Prior to this project, The Nature Conservancy (TNC) worked with the Organized Village of Kasaan (OVK) in order to prioritize watersheds for salmon habitat mapping. Watersheds were prioritized based on: (1) their importance to subsistence, (2) their lack of current information in the AWC (including undocumented low-elevation stream sections, missing species, or missing life history stages); and (3) their likelihood for near-term logging and/or mining activities.

Most Kasaan residents participate in subsistence or recreational activities for food, harvesting deer, salmon, halibut, shrimp, and crab. Community harvest estimates in 1996 found that every Kasaan resident harvested an average of 277 pounds of fish annually, 93 pounds of which was salmon. Sockeye salmon is the primary subsistence fish resource for Kasaan residents.

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. 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 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.

The watersheds prioritized by OVK and TNC include Karta River, Paul Young Creek, and Poorman Creek. The Karta River system is the major historical salmon resource in the Kasaan Bay watershed, especially for sockeye salmon. It is also a steelhead trout subsistence area. Although this watershed is within a designated wilderness area, and thus protected from logging, it has been prioritized due to its high value for subsistence and its lack of documentation in the AWC (only 9.5% cataloged, several species and life history stages conspicuously absent). This system also serves as an opportunity to collect baseline data on pristine habitat. The section of the watershed to be mapped by this project is only 24.5% mapped.

Paul Young Creek is mostly U.S. Forest Service land and is designated for timber production. There are also mining claims in the watershed. It is one of the primary fish-bearing waters in the Karta Bay Watershed Roadless Area. Numerous fish species use this system and traditionally it was an important subsistence source for coho. Fish camps were shared between the Paul Young and Karta systems. Only 26.7% of the area to be mapped on this creek has been catalogued in the AWC.

Mining occurred at Poorman in the middle of the last century and this system is right in the middle of the Poorman magnetite mining claim. Thus far the community has been successful at keeping development of this magnetite claim at bay. The creek is also within Sealaska lands and the surrounding timber has been logged. This creek is believed to be an important coho rearing stream and a pink spawning stream. While this system was partially assessed and entered into the AWC, the mainstem was not

completely mapped and assessed. To date, 50% of the area to be mapped on this creek has been catalogued in the AWC.

To improve understanding of salmon distribution and habitat conditions in these watersheds, standard field survey methods developed by Alaska Department of Fish and Game, Sport Fish Division (ADF&G SF) will be used. Applying this approach will result in an updated and refined AWC dataset for the watersheds. This will ensure fish passage as well as adequate riparian buffers on salmon spawning and rearing habitat are maintained and will provide important information on habitat characteristics such as stream channel type, pools, and presence of large woody debris that can be documented as baseline conditions for future conservation. The majority of the field work and data collection will be completed by local hires and training will be conducted by Kai Environmental Consulting Services, LLC (Kai Environmental), which led two similar mapping projects in Hydaburg in 2012 and 2013.

Project field work will involve approximately two months of cumulative field research scheduled for the months of June – September, 2014. These dates were chosen to maximize the likelihood of detecting the presence of salmon and the accessibility of the survey areas. Surveys will focus on uncataloged low slope reaches, and areas of concern. 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 GIS Library for inclusion in the joint U.S. Forest Service-ADF&G regional hydrographic dataset.

3. Locations

Site: Karta Watershed

Latitude: 55.567500 N

Longitude: 132.598333 W

Site: Paul Young Creek

Latitude: 55.594722 N

Longitude: 132.584167 W

Site: Poorman Creek

Latitude: 55.553889 N

Longitude: 132.436111 W

VII. Objectives

1. Project Objectives

- Conduct AWC surveys in water bodies associated with Karta Watershed, Paul Young Creek, and Poorman Creek
- Document riparian habitat condition characteristics in water bodies associated with Karta Watershed, Paul Young Creek, and Poorman Creek
- Submit field survey information packets for AWC nominations
- Submit riparian habitat information to the Southeast Alaska GIS Library

2. Methods

The methods for the stream surveys may be broken down into the following four components:

- Mapping the stream course
- Mapping habitat features encountered along the stream
- Collecting information describing stream reaches and side channels

- Collecting other data including fish observations, discharge, and temperature regimes

Prior to field work, Cathy Needham of Kai Environmental will train a field team of three people on survey methods in Kasaan. A crew leader, employed by Kai Environmental, will assist the Kasaan team. The field technicians will be local hires. After the training, the field crew will mobilize to the watersheds within the community, beginning stream habitat surveys at the mouth of each outlet creek of their respective systems and working systematically into the upper watershed. Access to the lower portion of each watershed will be by skiff. The field crew will camp for a large portion of the field work.

The field team will map the course of each stream within each watershed, 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 complexity of stream) as the crew follows the stream course. Digital photographs will also be taken at these locations. For each stream that reaches the lake system and each outlet creek, stream discharge will be measured. Hobo temperature data loggers will be installed at the mouth of each watershed and large tributary. Data loggers will remain instream from the beginning of stream habitat surveys until the crew retrieves them in the fall during foot surveys. Temperature and discharge regimes collected will be used as baseline information for the watershed and included in subsequent reports as additional data.

Additional data will be collected on features of interest encountered while mapping the stream course, such as culverts, fish passage barriers, riparian disturbance, 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 U.S. Forest Service 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 also 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 the nominations for the AWC. At selected sites (determined on the ground during stream habitat surveys), baited minnow traps will be used to quantify smolt and fry life stages of all fish within each stream. 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. The crew will walk the upper tributaries and tally the number of adult fish seen within the creek and/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.

Additional information may also be used in the nomination packets for the AWC. At the end of the 2014 field season, all data collected will be synthesized into AWC nomination packages in accordance with the cited guidelines. Nomination packets for this study will be submitted as water body surveys are completed, with the final packets being submitted by December 31, 2014, 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 U.S. Forest Service-ADF&G SF hydrography layer available to the public through the Southeast Alaska GIS Library (<http://seakgis.alaska.edu>). Success will be evaluated based on the amount of stream habitat incorporated into the joint U.S. Forest Service-ADF&G SF hydrography layer.

VIII. Benefits

Karta River, Paul Young Creek, and Poorman Creek support important subsistence salmon fisheries for the people of Kasaan. This project will provide legal conservation measures and protection for these watersheds and will develop an effective baseline inventory of important salmon habitat.

IX. Products, Milestones, and Timelines

- March 1 – May 31, 2014: Obtain required permits and work on training and field logistics
- June 1 – July 31, 2014: Conduct training, stream habitat surveys, and minnow trapping
- August 1 – September 30, 2014: Perform foot surveys to count adult salmon
- October 1 – November 30, 2014: Compile data and prepare AWC nominations
- December 31, 2014: Submit AWC nominations

- February 1, 2015: Submit stream habitat survey information to the Southeast Alaska GIS Library

X. Budget

Summary	Total
100 Personnel	\$26,000
200 Travel	\$0
300 Contractual	\$45,399
400 Supplies	\$12,345
500 Equipment	\$0
Subtotal	\$83,744
600 Indirect	\$19,002
Total	\$102,746

This project funds the following entities:

- TNC: \$49,560
- OVK: \$53,186

TNC Budget

TNC	Total
100 Personnel	\$0
200 Travel	\$0
300 Contractual	\$42,000
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$42,000
600 Indirect @ 18%	\$7,560
Total	\$49,560

TNC Budget Narrative:

Line 300: Contractual (\$42,000)

TNC will contract with Kai Environmental Consulting Services, LLC (Kai Environmental) for field survey work; costs include survey method training in Kasaan, data compilation, personnel (Cathy Needham and two field technicians), project related travel (Juneau-Kasaan), and supplies: \$42,000.

Line 600: Indirect (\$7,560)

TNC’s federally negotiated indirect rate through June 30, 2014, is 14.99% and excludes, among other costs, external transfers and the value of land sold or donated to government agencies and other conservation organizations. TNC’s expected federally negotiated indirect rate through June 30, 2015, is 18%.

OVK Budget

OVK	Total
100 Personnel	\$26,000
200 Travel	\$0
300 Contractual	\$3,399
400 Supplies	\$12,345
500 Equipment	\$0
Subtotal	\$41,744
600 Indirect @ 27.41%	\$11,442
Total	\$53,186

OVK Budget Narrative:

Line 100: Personnel (\$26,000)

- One Field Crew Leader will participate in field survey work and serve as liaison between TNC, OVK, and Kai Environmental: 3 months @ 4,000/month = \$12,000.
- Two Field Crew Technicians (TBD) will participate in field survey work: 2 months @ \$3,500/month x 2 people = \$14,000.

Line 300: Contractual (\$3,399)

- The Field Crew Leader and Field Crew Technicians will travel from Kasaan to remote work sites (skiff rental with operator): \$1,395.
- Satellite phone seasonal plan: \$1,760
- Datalogger software, base station, and shipping: \$244

Line 400: Supplies (\$12,345)

- Field groceries: 60 days @ \$16.67/day x 3 people = \$3,000
- Stadia rod: \$200
- GPS Spot and service: \$220
- Water temp dataloggers: 6 dataloggers @ \$125/datalogger = \$750
- Crew gear (waders, packs): \$2,100
- Boat fuel: \$1,500
- Camp gear (sleeping bags, pad, stove, cooking items): \$1,000
- Radios: 3 radios @ \$375/radio = \$1,125
- Waterproof cameras: 2 cameras @ \$300/camera = \$600
- Range finder: 2 range finders @ \$550/finder = \$1,100
- Other field supplies: \$750

Line 600: Indirect (\$11,442)

OVK's federally negotiated indirect rate through December 31, 2014, is 27.41% excluding capital expenditures.

XI. Match Budget

Summary (33%)	Total
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100 Personnel	\$3,755
200 Travel	\$1,000
300 Contractual	\$23,342
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$28,097
600 Indirect	\$5,810
Total	\$33,907

The following entities expect to provide match in the following amounts:

- TNC: \$23,714
- OVK: \$10,193

TNC Match Budget

TNC	Total
100 Personnel	\$3,755
200 Travel	\$1,000
300 Contractual	\$15,342
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$20,097
600 Indirect @ 18%	\$3,617
Total	\$23,714

TNC Match Budget Narrative:

Line 100: Personnel (\$3,755)

- Norman Cohen, Southeast Alaska Program Director, will be responsible for overall project management, contracting, and project reporting: 0.23 months @ \$8,411/month = \$1,965.
- Colin Shanley, Spatial Ecologist, will be responsible for quality control on deliverables to be incorporated into the AWC and the Southeast Alaska GIS Library: 0.30 months @ \$5,916/month = \$1,790.

Line 200: Travel (\$1,000)

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

- Airfare: 1 ticket @ \$450/ticket = \$450
- Lodging: 4 nights @ \$110.50/night = \$442
- Per diem: 3 days @ \$36/day = \$108

Line 300: Contractual (\$15,342)

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

primary field crew leader, two field technicians, project related travel (Juneau-Kasaan), and supplies: \$15,342.

Line 600: Indirect (\$3,617)

TNC's federally negotiated indirect rate through June 30, 2014, is 14.99% and excludes, among other costs, external transfers and the value of land sold or donated to government agencies and other conservation organizations. TNC's expected federally negotiated indirect rate through June 30, 2015, is 18%.

OVK Match Budget

OVK	Total
100 Personnel	\$0
200 Travel	\$0
300 Contractual	\$8,000
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$8,000
600 Indirect @ 27.41%	\$2,193
Total	\$10,193

OVK Match Budget Narrative:

Line 200: Contractual (\$8,000)

- Travel from Kasaan to remote work sites by skiff (rental with operator): \$6,000
- A staging area and lodging for the Kai Environmental Field Crew Leader: \$2,000

Line 600: Indirect (\$2,193)

OVK's federally negotiated indirect rate through December 31, 2014, is 27.41% excluding capital expenditures.