

Alaska Sustainable Salmon Fund Statement of Work

I. Project Title: Southeast Prince of Wales Stream Habitat Mapping - Phase 3

II. Project Number: 44734

III. Principal Investigator

Norman Cohen, Southeast Alaska Program Manager
The Nature Conservancy
416 Harris Street, Suite 301
Juneau, Alaska 99801
907-789-1791
ncohen@tnc.org

Co-Principal Investigator

Anthony Christianson, Environmental Director
Hydaburg Cooperative Association
PO Box 349
Hydaburg, AK 99922
907-258-3660
lil_hagoo@yahoo.com

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 Hydaburg.

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. *This project continues work begun in AKSSF projects 44554 and 44565.*

2. Introduction

Subsistence foods constitute a major part of the food supply for rural Alaska, providing about 295 pounds of food per rural resident each year. The community of Hydaburg relies heavily on subsistence food sources, of which salmon is a large part. Community surveys indicate that 100% of Hydaburg families rely on salmon resources for subsistence, 82% of which is specifically sockeye salmon. Salmon in

these areas are also utilized by Haida people who no longer live in Hydaburg but continue to participate in cultural and subsistence traditions.

Intensive cannery exploitation of Hydaburg's sockeye runs occurred during the late 1800s and early 1900s, nearly decimating the stocks. Hatchery efforts to supplement runs in the early 20th century were largely ineffective and the runs remained depressed for many decades. Commercial timber harvest in the area has also been thought to contribute to declines in freshwater habitat and salmon productivity.

In order to provide protection for the watersheds important for subsistence, The Nature Conservancy (TNC) and the Hydaburg Cooperative Association (HCA) have partnered on the systematic mapping of salmon habitat. The Hetta and Eek watersheds, considered the primary sockeye producers for Hydaburg, were surveyed in 2012 through AKSSF project 45980, *Hetta and Eek Lake Habitat Mapping*. Mapping of the Hydaburg River, Kasook Inlet, Nutkwa Inlet, Keete Inlet, and Natzuhini were completed in 2014, and mapping at Dunbar Inlet, Coffee Chuck, Klekass Nephew, and Manhattan Lake will be completed in the spring of 2015 (AKSSF projects 44554 and 44565, *Southeast Prince of Wales Stream Habitat Mapping – Phases 1 and 2*). Ensuring all anadromous fish-producing streams important to or used by Hydaburg are catalogued, and gaining a better understanding of the systems that feed these streams, will better enable the community to manage and protect its subsistence fisheries.

The three watersheds selected for mapping in 2015 are Soda Creek, Shelikof Watershed, and Hunter Bay. 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. 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, including the individuals who successfully completed surveys of watersheds in similar projects. Additional training will be conducted by Kai Environmental Consulting Services, LLC (Kai Environmental).

Project field work will involve approximately two months 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 and the accessibility of the survey areas. Surveys will be focused 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 (SE AK) GIS Library for inclusion in the joint U.S. Forest Service (USFS)/ADF&G regional hydrographic dataset.

3. Location

Site: Hunter Bay

Latitude: 54.8514 N Longitude: 132.2307 W

Site: Shelikof watershed

Latitude: 55.27857 N Longitude: 132.97857 W

Site: Soda Creek

Latitude: 55.2819 N Longitude: 132.9202 W

VII. Objectives

- Conduct AWC surveys in the Hunter Bay, Shelikof, and Soda Creek watersheds
- Document riparian habitat condition characteristics in water bodies associated with the Hunter Bay, Shelikof, and Soda Creek watersheds
- Submit field survey information packets for AWC nominations

VIII. Methods

Prior to field work, Cathy Needham of Kai Environmental will train the field team on survey methods in Hydaburg. The crew will consist of a field leader and two field technicians, all of whom will be HCA 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 Hunter Bay, access to the lower portion of each watershed will be by car or skiff. The crew will charter a float plane into Hunter Bay where they will set up a camp from which to conduct surveys. 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, which will 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 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. 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

The Soda Creek, Shelikof, and Hunter Bay watersheds support important subsistence salmon fisheries for the Haida people and the community of Hydaburg. 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	\$21,100
200 Travel	\$0
300 Contractual	\$14,950
400 Supplies	\$6,000
500 Equipment	\$0
Subtotal	\$42,050
600 Indirect	\$2,383
Total	\$44,433

This project funds the following entities:

- TNC: \$10,423
- HCA: \$34,010

TNC Budget

TNC	Total
100 Personnel	\$0
200 Travel	\$0
300 Contractual	\$8,510
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$8,510
600 Indirect @ 22.48%	\$1,913
Total	\$10,423

TNC Budget Narrative:

Line 300: Contractual (\$8,510)

TNC will contract with Kai Environmental Consulting Services, LLC, for field survey work. Costs include survey method training, project administration and planning, data quality control, a project leader (Cathy Needham), training supplies, project related travel (Juneau-Hydaburg), and subcontracted services (e.g., training space/food): \$8,510

Line 600: Indirect (\$1,913)

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.

HCA Budget

HCA	Total
100 Personnel	\$21,100
200 Travel	\$0
300 Contractual	\$6,440
400 Supplies	\$6,000
500 Equipment	\$0
Subtotal	\$33,540
600 Indirect @ 1.40%	\$470
Total	\$34,010

HCA Budget Narrative:

Line 100: Personnel (\$21,100)

- The field crew leader will participate in field survey work: 3 months @ \$4,000/month = \$12,000
- Two field crew technicians (TBD) will participate in field survey work: 1.3 months @ \$3,500/month x 2 = \$9,100

Line 300: Contractual (\$6,440)

The field crew leader and field crew technicians will travel from Hydaburg to remote work sites by float plane charter as required: 9.2 hours @ \$700/hour = \$6,440

Line 400: Supplies (\$6,000)

- Field groceries: 60 days @ \$11.11/day x 3 people = \$2,000
- GPS: \$750
- Crew gear (waders, packs): \$1,500
- Car fuel: \$500
- Camp gear (sleeping bags, pad, stove, cooking): \$1,000
- Fish traps: \$250

Line 600: Indirect (\$470)

HCA's federally negotiated indirect rate through December 31, 2014, is 1.4% on total direct costs, less capital expenditures and pass through funds.

XII. Match Budget

Match Summary (35%)	Total
100 Personnel	13,924
200 Travel	\$821
300 Contractual	\$0
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$14,745
600 Indirect	\$807
Total	\$15,552

Match will be provided by the following entities:

- TNC: \$3,485
- HCA: \$12,067

TNC Match Budget

TNC	Total
100 Personnel	\$2,024
200 Travel	\$821
300 Contractual	\$0
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$2,845
600 Indirect @ 22.48%	\$640
Total	\$3,485

TNC Match Budget Narrative:

Line 100: Personnel (\$2,024)

- Norman Cohen, Southeast Alaska Program Director, will be responsible for overall project management, contracting, and project reporting: 0.10 months @ \$8,411/month = \$841.
- Christine Woll, Spatial Ecologist, will be responsible for quality control on deliverables to be incorporated into the AWC and the SE AK GIS Library: .20 months @ \$5,916/month = \$1,183

Line 200: Travel (\$821)

Christine Woll will travel from Juneau to Hyدابurg to visit remote work sites for project oversight and quality control:

- Airfare: \$483
- Lodging: 2 nights @ \$115/night = \$230
- Per diem: 3 days @ \$36/day = \$108

Line 600: Indirect (\$640)

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.

HCA Match Budget

HCA	Total
100 Personnel	\$11,900
200 Travel	\$0
300 Contractual	\$0
400 Supplies	\$0
500 Equipment	\$0
Subtotal	\$11,900
600 Indirect @ 1.40%	\$167
Total	\$12,067

HCA Match Budget Narrative:

Line 100: Personnel (\$11,900)

- Two Field Crew Technicians (TBD) will participate in field survey work: .7 months @ \$3,500/month x 2 = \$4,900.
- One Administrative Assistant will provide data entry/data compilation: 2 months @ \$3,500/month = \$7,000.

Line 600: Indirect (\$167)

HCA’s federally negotiated indirect rate through December 31, 2014, is 1.4% on total direct costs, less capital expenditures and pass through funds.