

Statement of Work Southeast Sustainable Salmon Fund

I. Project Title

Instream Flow Needs (Water Reservation Needs): Southeast – Phase 1

II. Project Number: 45040; PCSRF Objective: P&A

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IV. Project Period: 4/1/01 – 6/30/03

V. Project Description

1. **Introduction** – Sufficient amounts of water are required within lotic (flowing) and lentic (lakes) waterbodies supporting salmon fisheries to sustain productivity, habitat characteristics, and waterway access to these fishery resources. Protection of these water flow rates and volumes within rivers and lakes are generally referred to as reservations of water under AS 46.15.035, .037 and .145 of the Alaska Water Use Act. Other uses of reservations of water include protection of wildlife production/habitat, water quality/sanitary purposes, navigation, and recreation/aesthetics. By definition, the term instream flow is typically used to describe the rate or volume of flow needed within lotic waters. However, when Alaska adopted its “instream flow law” as amendments to the Alaska Water Use Act in 1980, it included protection for both rivers and lakes. Therefore, the term instream flow is used to represent reservations of water in both lentic and lotic waters. Industrial, agricultural, and urban developments, and various other land uses and uses of water, all affect water volume and characteristics such as water depth and surface area covered. In flowing waters, changes in water volume also affect water velocities. Predominant uses of water in Southeast Alaska include municipal water supplies, hydropower generation, water export, fish processing and forestry.

In 1984, the Department developed a prioritization system and waterway risk analysis to quantify and reserve water in rivers and lakes for fish and wildlife. The prioritization list was refined in 1986. Other state and federal agencies participated in both processes. Funding restrictions, combined with hydrologic and biologic data limitations, narrowed and reduced the opportunities to fully protect all the initial selections. These prioritization lists have not been formally updated since 1986.

- More than 5000 salmon producing waterbodies in Southeast Alaska are candidates for quantification and protection of sufficient water flow or volume to sustain fish productivity. Of these waterbodies, approximately 400 are lakes. This project will update reservation of water priorities to protect salmon producing waterbodies in Southeast Alaska. Existing information will be retrieved, synthesized and analyzed to identify salmon producing watersheds, seasonal composition and location of salmon stocks at risk by life phase, define development trends, characterize and inventory availability of existing hydrologic data, and work with other projects and stakeholders to prioritize protection prescriptions. These priorities will be used to begin what is envisioned as a multi year second phase to implement application of these prescriptions to quantify, acquire, and protect reservations of water, given availability of supplemental funding.
2. **Project Summary** – The goal of this initial Instream Flow Needs project is to acquire and analyze information to prioritize waterbodies and identify approaches that should be used to quantify and reserve sufficient amounts of water under state and federal laws to sustain salmon production in lakes, rivers, streams and estuaries in Southeast Alaska. *Related AKSSF projects: 45107, 45213, 45766, 45822, 45326 (800), 45979, 44552, 44563, 44567, 44915.*

VI. Objectives

1. Project objectives

- i. Compile information from existing fishery and land use database, mapping, resource inventories, and literature sources needed to identify and characterize watersheds and waterbodies requiring attention.
- ii. Scope ADF&G area and regional staff to identify specific stocks and waterbodies meriting special attention and inclusion in a prioritization decision process.
- iii. Rate waterbodies based on characterization and staff priorities based on criteria of economic, community, and ecologic value, land management status, current condition and risk of future degradation.
- iv. Rank and identify highest priority waterbodies as candidates for instream flow protection.
- v. Summarize results for submittal with interim reports.
- vi. Train staff in field methods in preparation for field validation phase.

2. Justification

- i. Information is needed to evaluate value and risk based on quantifiable criteria. Developing and maintaining a database of regional instream flow needs is a fundamental component of a comprehensive aquatic resource management information system.
- ii. Professional judgement, local knowledge and experience, and management jurisdictional authority must be given particular consideration in qualifying candidate waterbodies.
- iii. Agency resources must be applied efficiently and effectively. Rating allows for ranking and prioritization for action.
- iv. Waterbodies requiring the most immediate protection will be considered.
- v. Availability of existing hydrologic and biologic data will be considered.

- vi. Tracking of needs assessment results, priority waterbody lists, and actions are the components of required reporting most pertinent to effectiveness evaluation.
- vii. Staff may need to ground truth data used for prioritization.
- viii. Ungaged sites may require establishment of initial continuous or intermittent gaging to support future reservation analyses, monitor existing reservations and support other SSSF projects.

3. Project Impacts/Outcomes/Evaluation of Project Objectives

- i. Managers can use the database for investigations, analyses, and as reference for regulatory actions. The database should be a comprehensive listing of the identified waterbodies in Southeast Alaska supporting anadromous fish communities.
- ii. Records of responses from staff will be archived and appended to reports.
- iii. The rating system will be described and reported.
- iv. Rankings will be maintained electronically and reported.
- v. Program reports will include all pertinent methodology, data summaries and analyses and data tabulations.
- vi. Staff will be certified to conduct field flow measurements following quality control/assurance protocols that comply with standards established by the U.S. Geological Survey.

4. Methodology/Modeling

The rating, ranking and prioritization of waterbodies for instream flow needs will be based on matrices of geographic, geomorphic, and biological scale factors. Matrix factors will include appropriate climatologic, ecologic, landscape, hydrologic, land use, management, and fish stock characteristics, among others, as criteria for definition of value, sensitivity and condition. Information will be collected from existing relevant sources, such as agency databases and map inventories, and through survey of department and outside agency staff and targeted public groups and individuals. The survey is intended to be web-based in order to facilitate access, data entry, and processing. Information collected through surveys will be integrated with information from other sources into the matrices. Indices of value, sensitivity and condition will be defined which may be used to tabulate risk for all waterbodies considered in the analysis.

Concurrence with managers, Sustainable Salmon partners, and Stakeholder and Science Panel members will be sought by providing opportunities to review draft evaluation criteria and matrix definition and review of summary rankings of waterbodies.

VII. Results/Deliverable products

The main product of the project will be a list of waterbodies prioritized for action to protect or restore reservations of water for salmon. This information will also be invaluable for prioritization of other instream water uses. The list will be used as a basis for future fishery, habitat, and land use management and to reserve sufficient amounts of water in rivers and lakes throughout Southeast Alaska. A report will accompany the list describing the methods and results and recommending measures required to quantify and verify site-specific instream flow needs.

VIII. Benefits to Salmon/Salmon Fisheries/Salmon Fishers

Salmon production is dependent on sufficient quantities of water of high quality. The project will benefit salmon resources and users by establishing the basis for implementing methodic approaches to insure that sufficient water in waterbodies or portions of waterbodies that sustain valuable salmon most in need of protection or recovery are given necessary protection provided under state and or federal laws. Staff will be prepared to implement field verification of instream flow needs.

IX. Milestones/Project Timelines

The funded portion of the project will begin July 1, 2001 and is anticipated to extend through June 30, 2003. Administrative processes will be initiated in July 2001 to hire staff. Senior staff will participate in overall administrative functions until staff are hired to execute this project. Refinement and implementation of data collection to develop the resource inventory and information system will begin after staff are hired. Staff training and project refinement and overall project implementation will begin after staff are hired. Data collection and synthesis is anticipated to continue through early summer 2002. Matrix evaluation, rating and ranking of waterbodies will continue through the winter of 2002. Analysis and reporting will occur in spring 2003. Staff training will occur through the full term of the project. Implementation of protection strategies based on the results of this effort will begin in Spring/Summer 2003. Inter-project coordination is envisioned during the entire project as staff will provide support and training to other projects as required.

X. Stakeholders

The project was reviewed by the Stakeholder Advisory Panel and received approval as a component to the Salmon Habitat and Waterways Project.

XI. Partners

Custodial agencies maintaining information systems containing resource data needed for the project will be asked to assist in facilitating access to databases, run queries or otherwise provide pertinent data.

XII. Budget

	FY02	FY03	Total
Line 100	\$73	\$73	\$ 146
Line 200	\$ 3.5	\$ 3.5	\$ 7.0
Line 300	\$ 2.0	\$ 2.0	\$ 4.0
Line 400	\$ 1.5.0	\$ 1.5.0	\$ 3.0
Line 500	\$	\$	\$
Total Lines 200-500	\$ 7	\$ 7	\$ 14
Total All Lines	\$80	\$ 80.0	\$ 160.0
3% Admin.	\$ 82.4	\$ 82.4	\$ 164.8