
**Southeast Region Strategic Plan for the Subsistence
Fisheries Resource Monitoring Program**

Part 1

**A Framework of Prioritized Goals,
Management Problems and Information Needs for
Federal Subsistence Fishery Management**

**Developed by the
Southeast Region Planning Workgroup**

November 2006

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	ii
LIST OF FIGURES.....	ii
LIST OF APPENDICES.....	ii
PREFACE.....	1
INTRODUCTION.....	1
Background.....	1
Rationale for Strategic Planning.....	2
Application of Strategic Planning.....	2
<i>Project Evaluation Process</i>	3
<i>Policy and Funding Guidelines</i>	4
Southeast Region.....	6
<i>Geographic Scope</i>	6
STRATEGIC PLAN AND PROCESS OVERVIEW.....	11
METHODS.....	11
Participants.....	11
Planning Approach.....	12
Subsistence Fishery Units.....	12
Structuring and Establishing Priorities.....	12
Structural Adjust.....	13
RESULTS AND DISCUSSION.....	14
Mission.....	14
Goals.....	15
Management Questions.....	16
Subsistence Fishery Units.....	17
Subsistence Fishery Unit: Sockeye Salmon.....	19
<i>Assessment of Sockeye Salmon Systems for Funding Considerations</i>	19
<i>The Plan Framework</i>	20
<i>Priorities</i>	22
Subsistence Fishery Unit: Steelhead.....	27
<i>The Plan Framework</i>	26
<i>Priorities</i>	29
Subsistence Fishery Unit: Eulachon.....	33
ASSESSMENT OF 2007 PROPOSALS.....	33
CONCLUSIONS.....	34
LITERATURE CITED.....	36
APPENDIX A.....	37
APPENDIX B.....	39
APPENDIX C.....	42

LIST OF TABLES

Table	Page
1. Current guidelines for funding by region for the Fisheries Resource Monitoring Program.....	8
2. Outline of the strategic planning process, Southeast Region.....	13
3. Summary of issues and information needs addressed by 2007 proposals under consideration for funding by the Monitoring Program.....	35

LIST OF FIGURES

Figure	
1. Federal public lands within Southeast Region	7
2. Framework of goals, management questions and information needs, including adjusted weights of importance, Southeast sockeye salmon subsistence fishery unit, 2006	23
3. The priority of information needs for Goal 1: Obtain, develop and improve information to sustain fish populations necessary to provide for subsistence uses, Southeast sockeye salmon subsistence fishery unit, 2006.....	26
4. The priority of information needs for Goal 2: Assess and monitor subsistence fisheries to document and provide for subsistence uses, Southeast sockeye salmon subsistence fishery unit, 2006	27
5. Adjusted synthesis of all 14 information needs, Southeast sockeye salmon subsistence fishery unit, 2006.....	28
6. Framework of goals, management questions and information needs, including adjusted weights of importance, Southeast steelhead subsistence fishery unit, 2006	30
7. The priority of information needs for Goal 1: Obtain, develop and improve information to sustain fish populations necessary to provide for subsistence uses, Southeast steelhead subsistence fishery unit, 2006.....	32
8. The priority of information needs for Goal 2: Assess and monitor subsistence fisheries to document and provide for subsistence uses, Southeast steelhead subsistence fishery unit, 2006.....	33
9. Adjusted synthesis of all 11 information needs, Southeast steelhead subsistence fishery unit, 2006.....	34

LIST OF APPENDICES

Appendix	
A. Letter from Tom Boyd, Assistant Regional Director, Office of Subsistence Management, outlining strategy to determine priority information needs for the Fisheries Resource Monitoring Program, February 17, 2004	37
B. A glossary of terms and phrases from discussions in the development of a strategic plan to support the Fisheries Resource Monitoring Program in Southeast Alaska, 2006	39
C. Participants in the Southeast workshop.....	42

PREFACE

A strategic planning process was initiated for the Southeast Region in 2006 to ensure that the Fisheries Resource Monitoring Program (Monitoring Program) focuses on the highest priority information needs for management of Federal subsistence fisheries for the next 3-5 years. The strategic planning participants comprised a workgroup of regional professionals, including representatives of the Southeast Regional Advisory Council (Council). A Request for Proposals (RFP) for the 2007 Monitoring Program was initiated prior to this strategic planning exercise, and evaluation of 2007 proposals is concurrent with development of this strategic plan. Although still in draft form, the workgroup recommended that the strategic plan be considered during evaluation of 2007 proposals. It is anticipated that the 2008 RFP will be fully aligned with the strategic plan.

The strategic plan is developed through a sequential process, involving three separate steps:

1. the development and prioritization of a framework of goals, management questions and information needs by subsistence fishery unit,
2. Council and public review and comment of strategic priorities, and
3. incorporation of review comments and distribution.

In developing the framework, items considered included enabling legislation, Section 812 of the Alaska National Interest Land Conservation Act (ANILCA), and guidelines approved by the Federal Subsistence Board (Board), which acknowledge that other agencies take the lead in certain areas of study. The workgroup considered information needs relevant to management of subsistence fisheries under Federal jurisdiction on Federal public lands, and also those subsistence fisheries that constitute a broader Federal interest or *nexus (defined below)*. Consistent with Board policy for the Monitoring Program, information on artificial propagation and enhancement of salmon, contaminant evaluation and monitoring, or habitat protection, restoration and enhancement were not included in the strategic planning framework.

INTRODUCTION

BACKGROUND

On October 1, 1999, under the authority of Title VIII of ANILCA¹, the Federal government assumed management responsibility for subsistence fisheries on Federal public lands in Alaska (Buklis 2002). Expanded subsistence fisheries management has imposed substantive new informational needs for the Federal system (Krueger *et. al* 1999).

Section 812 of ANILCA¹ directs the Departments of Interior and Agriculture, cooperating with the State of Alaska and other Federal agencies, to research fish and wildlife subsistence uses on Federal public lands. The challenge posed by dual management of fisheries, coupled with the informational and communication demands of real-time fisheries management, prompted creation of the Monitoring Program within the Office of Subsistence Management (OSM). The Monitoring Program was envisioned as a collaborative inter-agency, inter-disciplinary approach to enhance existing fisheries research, and effectively communicate information needed for subsistence fisheries management on Federal public lands.

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands, for rural Alaskans, through a multidisciplinary, collaborative program.

RATIONALE FOR STRATEGIC PLANNING

Since its inception in 2000, over 200 monitoring and research projects statewide have been funded through the Monitoring Program to support Federal subsistence fisheries management. To date, strategic priorities for the Monitoring Program have been identified through the Councils as “issues and information needs.” These “issues and information needs” have been used to guide solicitation and evaluation of project proposals. While this process has provided a valuable public forum for a wide range of staff and public to provide recommendations regarding informational needs for the Monitoring Program, it has often been difficult to determine the highest priority information needs for the Federal subsistence management program.

To ensure strategic use of limited Monitoring Program funds, OSM initiated a strategic planning process in spring 2004 to identify and prioritize program goals, management questions, research objectives, and information needs by region over the next three to five years (Appendix A). To identify key information needed to better manage Federal subsistence fisheries, Fisheries Information Services (FIS) staff within OSM initiated regionally-based facilitated workshops. A strategic plan was first developed during 2004 for the Copper River and Prince William Sound areas of the Southcentral Region (USFWS 2005). Since then, a strategic plan has been completed for the Bristol Bay-Chignik area (USFWS 2006) and one is under development for the Kodiak-Aleutians area of the Southwest Region. Workshop participants were solicited from the respective Councils, organizations appropriate to each region including Federal agencies, the Alaska Department of Fish and Game (ADF&G), academia, and Alaska Native, rural, and other organizations. Council representation is critical to effectively transition from issues and information needs already developed through the Councils, as well as to provide valuable local perspective. For each region, draft strategic plans developed by the workgroups were publicly reviewed through the Council process prior to finalization.

The purpose of this report is to describe and present the strategic plan developed through the Southeast workshop process.

¹ www.r7.fws.gov/asm/anilca/title08.html

APPLICATION OF STRATEGIC PLANNING

This strategic plan will be used to:

1. guide future requests for proposals; and,
2. define the evaluation criteria for strategic priorities.

Evaluation of 2007 proposals for funding consideration under the Monitoring Program is concurrent with development of this strategic plan. The Council raised this dilemma prior to initiation of strategic planning for southeast, and questioned whether multi-year funding commitments should be considered under the 2007 Monitoring program. The workgroup recommended that this strategic planning document contain an assessment of whether 2007 proposals address priority information needs identified within this document.

Clarification of strategic priorities for the Monitoring Program should improve the quality and focus of proposals. Some clarity has already been provided to the mission of the Monitoring Program through policy approved by the Board (see below). For instance, identified information needs should not be in conflict with activities ineligible for funding. The 3-year limitation for funding commitments provides a realistic planning horizon.

Strategic plans should also improve focus for the evaluation process, for instance by addressing existing policy constraints. The current evaluation processes, including evaluation criteria (technical merit, administrative expertise, and capacity building described below), will remain in place. However, the funding guidelines by data type will likely diminish as the Monitoring Program evolves to address high priority information needs which can be addressed using either data type. That is, as the strategic planning process focuses on high priority issues and information needs; the need for explicit guidelines by data types may diminish over time.

A summary of the existing proposal evaluation process, policy guidance, and funding guidelines established for the Monitoring Program follows.

Project Evaluation Process

The Monitoring Program is implemented through a collaborative approach involving the five Federal agencies (Fish and Wildlife Service, Bureau of Land Management, National Park Service, Bureau of Indian Affairs, and USDA Forest Service), the ADF&G, Councils, Alaska Native organizations, and other organizations. An inter-agency Technical Review Committee (TRC) provides evaluation, technical oversight, and recommendations for funding of proposals. Public review and recommendations for funding are also provided through the Council process. An inter-agency Staff Committee reviews all recommendations, and attempts to reconcile any differences between TRC and public recommendations. The Board approves annual monitoring plans taking into consideration both the technical recommendation by the TRC and public review by the Councils.

The TRC reviews project proposals, forwards a subset of these proposals for development of detailed project investigation plans, and subsequently evaluates these

investigation plans to make recommendations for funding. The TRC is comprised of representatives from each of the five Federal agencies, three representatives from ADF&G, and is chaired by the Chief of FIS. Staff from FIS provides support for the TRC.

Evaluation and recommendations for funding are based upon four evaluation criteria:

1. Strategic Priorities

To be considered for funding under the Monitoring Program, there must be, at a minimum, a Federal *nexus*, or interest. Proposed studies must have a direct association to a subsistence fishery, and either the subsistence fishery or fish stocks in question must occur in waters within or adjacent to Federal public lands. Studies with a Federal nexus are then further evaluated against identified information needs and for strategic importance within the region by assessing:

- Conservation Mandate – Risk to the conservation of species and populations that support subsistence fisheries and risk to conservation unit purposes.
- Allocation Priority – Risk of failure to provide a priority to subsistence uses and risk that subsistence harvest needs will not be met.
- Data Gaps – Amount of information available to support subsistence management. A higher priority is given where a lack of information exists.
- Role of Resource – Importance of a species to a subsistence harvest (e.g. number of subsistence users affected, quantity of subsistence harvest), and qualitative significance (e.g. cultural value, unique seasonal role).
- Local Concern – Level of user concern over subsistence harvests (e.g. allocation, competing uses, changes in fish size)

2. Technical-Scientific Merit

Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. Studies must have clear objectives, appropriate sampling design, correct analytical procedures, and specified progress and final reports. As well, the costs must be commensurate for the proposed work.

3. Past Performance-Administrative Expertise

Investigators and their organizations must have demonstrated technical and administrative expertise to complete prior studies, or have co-investigators or appropriate partnerships with other organizations to meet all requirements of the study. Studies must be non-duplicative with previously funded or existing projects.

4. Partnership-Capacity Building

Studies must include appropriate partners and contribute to the capacities of rural organizations, local communities, and residents to participate in fisheries resource management. Investigators must have completed appropriate consultation about their study with local villages and communities in the area where the study is to be conducted. Investigators and their organizations should be able to demonstrate the ability to maintain effective local relationships and a commitment to capacity building.

Policy and Funding Guidelines

In addition to the above evaluation criteria used by the TRC, several other policies also affect consideration of projects:

- A majority of funding must be directed outside the federal government. During formation of the Monitoring Program, the Secretary of Interior made a commitment that a majority of the funding for subsistence fisheries research would be directed outside of the Federal government to the ADF&G and other organizations. This policy helps ensure a collaborative approach and meaningful partnerships among stakeholders which include state, Alaska Native, and rural organizations. Further, this policy promotes availability of funding for capacity building. The open and competitive process used in the project selection process helps ensure adherence to this policy and alleviates the appearance of bias in the allocation of funds.
- Activities not eligible for funding under the Monitoring Program include: a) habitat protection, restoration, and enhancement; b) hatchery propagation, restoration, enhancement, and supplementation; and c) contaminant assessment, evaluation, and monitoring. The rationale behind this policy guideline is to ensure that existing responsibilities and effort by government agencies are not duplicated under the Monitoring Program. Land management government agencies already have direct responsibility, as well as applied programs, to address these activities. Examples of activities not eligible for funding include: enforcement of habitat protection regulations; restoration or mitigation of altered habitat; stocking; enhancement of spawning or rearing habitats; or heavy metal contaminant sampling. The Monitoring Program can fund research to determine factors that affect subsistence fisheries or fishery resources. For example, the Monitoring Program can legitimately fund projects that assess the proportions or contributions of hatchery fish, or measures of freshwater rearing capacity; however, it would be inappropriate to fund projects to solely assess or make recommendations on stocking levels. Similarly, the Monitoring Program can legitimately fund projects that assess whether migratory barriers (e.g. falls, beaver dams) significantly affect spawning success or distribution; however, it would be inappropriate to fund projects to build fish passes or otherwise alter or enhance habitat.
- Proposals may be funded for up to three years duration. This policy allows for periodic review and evaluation of projects, and Monitoring Program priorities and commitments while providing a reasonable duration of funding for monitoring program projects. This policy does not preclude funding long-term data series projects; many projects are intended to be of substantially longer duration than three years. Examples include projects that seek to estimate escapement goals, perform required inseason management, annually estimate subsistence harvest, or address unresolved regulatory issues. Projects intended for long-term data collection must compete for funding at a minimum of every three years.

The Monitoring Program was first implemented in 2000, with an initial investment of \$5 million. Since 2001, an annual total of \$6.25 million is allocated for the Monitoring Program. Of this annual allocation, the Department of Interior, through the U.S. Fish and Wildlife Service, provides \$4.25 million and the Department of Agriculture, through the U.S. Forest Service, provides \$2 million. On an annual basis, this budget funds both continuations of existing studies (year-2 or 3 of multi-year projects), and initiation of new studies. Budget guidelines were established by geographic region and data type (Table 1). Proposals are solicited according to the following two data types.

1. Stock Status and Trends Studies.

These projects address abundance, composition, timing, behavior, or status of fish populations that sustain subsistence fisheries with nexus to Federal public lands. The budget guideline for this category is two-thirds of available funding.

2. Harvest Monitoring and Traditional Ecological Knowledge Studies.

These projects address assessment of subsistence fisheries with nexus to Federal public lands, including quantification of harvest and effort, and description and assessment of fishing and use patterns. The budget guideline for this category is one-third of available funding.

Table 1. Current guidelines for funding by region for the Fisheries Resource Monitoring Program.
In this example, these guidelines are applied to the \$6.25 million annual allocation for projects.

Region	Values in \$000's					
	Dept of the Interior		Dept of Agriculture		Total	
	%	\$	%	\$	%	\$
Arctic/Kotzebue/Norton Sound	17.0%	\$722			11.6%	\$722
Yukon River	29.0%	\$1,233			19.7%	\$1,233
Kuskokwim River	29.0%	\$1,233			19.7%	\$1,233
Bristol Bay/AkPeninsula/Kodiak	15.0%	\$638			10.2%	\$638
Southcentral Alaska	5.0%	\$212	32.5%	\$650	13.8%	\$862
Southeast Alaska	0.0%	\$0	62.5%	\$1,250	20.0%	\$1,250
Inter-regional	5.0%	\$212	5.0%	\$100	5.0%	\$312
TOTALS	100.0%	\$4,250	100.0%	\$2,000	100.0%	\$6,250

SOUTHEAST REGION

Geographic Scope

The Monitoring Program is administered by geographic regions, one of which is the Southeast Region. This region includes Southeast Alaska and Yakutat.

Federal public lands within Southeast Alaska and Yakutat are extensive (Figure 1). The major features that define the Federal *nexus* for these areas are the Tongass National Forest, the largest National Forest in the country; and the Wrangell-St. Elias National Park and Preserve. Glacier Bay National Park and Preserve, Klondike Goldrush National Park, and Sitka National Historic Park are explicitly excluded in ANILCA as Federal public lands for purposes of subsistence.

Figure 1. Federal public lands within Southeast Alaska (3 of 4).



STRATEGIC PLAN AND PROCESS OVERVIEW

The strategic plan consists of:

- a framework of prioritized goals, management problems and information needs for Federal subsistence fishery management within the region (including a Glossary of terms in Appendix B); and,
- an assessment of the relative importance of sockeye salmon stocks for funding consideration under the Monitoring Program.

As previously noted, there are three sequential steps to the strategic plan (Table 2). The first step occurred on April 25-27, 2006, when the workgroup met in Juneau to structure the problem and prioritize information needs. The results of this workshop constitute this interim report. In addition, the workgroup developed a framework to determine high priority sockeye salmon stocks for assessment and information gathering, and this work is contained in a second report (*OSM in draft*). The second phase will be Council and public review of the interim report. The third phase will be the incorporation of Council and public review comments and finalization of the strategic plan.

Table 2. Outline of the strategic planning process, Southeast Region.

Phase	Time frame	Activity
One	April 25-27, 2006	Workgroup meeting in Juneau to structure the problem by Fishery Unit and prioritize information needs
	June, 2006	Interim draft report distributed to workgroup for review and comment.
	August, 2006	Workgroup comments incorporated into interim report
Two	Fall, 2006	Interim report is distributed to the Council and stakeholder organizations in the region. FIS staff present interim report to the Council and solicit comments.
Three	Winter 2006	Workgroup addresses public review comments. Final report published and distributed.

METHODS

PARTICIPANTS

Workshop participants were solicited from professionals associated with management and/or research of subsistence fisheries in Southeast Alaska. The Council was asked to provide up to two participants for this planning effort to effectively transition from the Council's issues and information needs and to provide valuable local input. A total of 18 participants, with a cross section of perspectives from regional professionals of different disciplines, balanced with the logistic considerations concerning group size, attended and offered judgments (Appendix C-1). The meeting was co-chaired by staff from FIS. A professional facilitator and decision analyst, Dr. Margaret Merritt (Resource Decision Support), was hired to provide training in decision-making methodology, guide the discussion, and analyze results.

PLANNING APPROACH

A systems approach, the Analytic Hierarchy Process (AHP) was used to structure the problem, or issue to be resolved, and derive the interactions of its parts using expert judgment (Saaty 1999). Expert judgment is defined as “previous relevant experience, supported by rational thought and knowledge” (Saaty and Kearns 1985). The AHP has been used extensively for decades to address planning, conflict resolution, and prioritization in such areas as policy development, economics, engineering, medical and military science, and has more recently been applied to fisheries research and management (NEFC 1990; Merritt and Criddle 1993, Merritt 2000, 2001, Merritt and Skilbred 2002; USFWS 2005, 2006). The AHP is a tool for facilitating decision-making by structuring the problem into levels comprising a hierarchy. Breaking a complex problem into levels permits decision makers to focus on smaller sets of decisions, improving their ability to make accurate judgments. Structuring also allows decision makers to think through a problem in a systematic and thorough manner. The AHP encourages people to explicitly state their judgments of preference or importance. Decision support software, Expert Choice,² was used interactively to structure the problem, depict the influence of weights, and derive the priority of elements.

SUBSISTENCE FISHERY UNITS

Subsistence fishery units describe the major functional units for management and regulation of subsistence fisheries with *nexus* to Federal public lands. For each fishery unit, a strategic plan is developed.

STRUCTURING AND ESTABLISHING PRIORITIES

A top-down structuring approach was used in the planning process, whereby the mission forms the top of the hierarchy and goals form the second level of the hierarchy. The mission and goals of the Monitoring Program were developed by OSM staff in 2004 and are applicable statewide. However, the Southeast workgroup clarified the interpretation of the mission statement for application to Southeast Region. Workgroup participants reiterated management questions for each goal, and then identified information needed to address each management question. Information needs are specific issues, impediments, data gaps or uncertainties, and form the bottom level of the hierarchy.

Structuring of management questions and information needs was completed by fishery unit. Following completion of the planning frameworks for each subsistence fishery unit, the workgroup then turned their attention towards developing criteria for judging importance for information gathering among species and among the goals, management questions and information needs. There was discussion about what each criterion represented, which helped to refine understanding among the group. The workgroup developed the following criteria to consider when judging importance:

- the degree of Federal jurisdiction and interest;
- the feasibility of addressing the concern in the plan’s time horizon (3-5 years);

² Forman, E., T. Saaty, M. Selly, and R. Waldron. Expert Choice, Decision Support Software, McLean VA. 1983.

- magnitude of resource use;
- concerns regarding sustainability of a population, or populations within an area;
- other funding sources; and,
- the consequences of not knowing (degree of uncertainty).

Using the above criteria as guidelines, the group was asked to use their expert judgment in individually assigning ratings of importance. The relative importance of the goals were evaluated, then that of the management questions within each goal, then that of the information needs within each management question. Participants were given time to think and write their ratings of importance down on paper before sharing their judgments. A positive ratio scale with associated verbal and graphic equivalents was used to rate importance where numbers between those listed (e.g., 2, or 2.5, etc.) are used to interpolate meaning. The group preferred to use the graphic scale (horizontal bars) to depict a visual difference in importance.

Scale of Importance	Definition
9	Extreme importance
7	Very strong importance
5	Strong importance
3	Moderate importance
1	Slight importance

Elements judged to be of equal importance were given equal scores. When disparity in judging importance occurred, it meant there was disagreement, and discussion was encouraged. Debates advanced the understanding of important concepts and often resulted in a clearer definition of the goal, management question or information need. Dialogue and learning was encouraged, which fostered the formation of a group solution, rather than individual solutions.

Expert Choice was used interactively to depict the influence of weights and derive the priority of information needs. Priorities approximate the strength of importance for each information need adjusted to reflect the importance assigned to the objective addressed by that information need. Mathematically, relative ratings of importance are entered into a vector and normalized. The values from the vector are then multiplied by the weight in the next highest level, and the result is the weight of importance for information needs. The total score for each information need is then calculated by adding the weighted proportions over all management problems within a goal (see Saaty 1999).

STRUCTURAL ADJUST

Structural imbalance in the hierarchy can lead to dilution of the weight of many information needs under a single management question when compared to fewer information needs under another management question. An adjustment feature in Expert Choice can be used to restore priorities to their respective proportion of weight. While

approximate balance is desired, complex problems do not always lend themselves to balance – thus the advantage of the structural adjust feature.

In a conceptual example, consider that if an objective (A) has four information needs, and another objective (B) has two information needs, then there are six information needs in all and structural adjusting multiplies A's priority by 4/6 and B's by 2/6. Thus, the overall priorities for A's information needs are not diluted simply because there are many of them. Following is an example: Goal 1 was given 40% of the total weight of importance, while Goal 2 was given just a little less, 38%. The group intended that the information needs under Goal 1 have a just a little more importance than those information needs under Goal 2; however, Goal 1 has 11 information needs, while Goal 2 has fewer, only seven information needs – this creates an imbalance. The greater number of information needs under Goal 1 will dilute their intended weight of importance. The structural adjust feature in Expert Choice will counter the imbalance mathematically, to restore the intended importance to Goal 1's information needs. So, following adjustment for imbalance, Goal 1 has 50% of the weight, while Goal 2 receives 32% of the weight – this then restores the intended weight to the information needs in the lower levels of the hierarchy.

RESULTS AND DISCUSSION

MISSION

As noted, the mission of the Monitoring Program is to identify and provide information to sustain subsistence fisheries on Federal public lands for rural Alaskans, through a multidisciplinary, collaborative program. The workgroup struggled with this statement because a literal interpretation of "... on Federal public lands..." would not provide for consideration of most subsistence fisheries for sockeye salmon in Southeast Alaska, as most of these fisheries occur in marine waters outside of Federal jurisdiction. However because most of the sockeye salmon stocks in question spawn within the exterior boundaries of Federal public lands, there is a Federal *nexus*, and assessment of these fish and fisheries are therefore eligible for funding consideration under the Monitoring Program. The workgroup recommended that the mission statement be redrafted to make explicit the concept of *nexus*, although no specific language was offered.

The workgroup further struggled with the dilemma of investing Monitoring Program funds on management questions limited to *nexus*. In these cases, there is no assurance that the information provided will be utilized to address the management question as might be accomplished under the Federal subsistence program. Of particular concern to some of the workgroup was the wisdom of continued investment by the Monitoring Program to provide further assessments of select sockeye salmon escapements. In their opinion, there had been no resolution to concerns over excessive commercial fishing and potential impacts to subsistence fisheries in areas such as Chatham Straits, and little reason to further assess escapements under the Monitoring Program. While the planning workshop was not the forum to resolve this dilemma, the workgroup encouraged timely and full utilization of information provided by the Monitoring Program to resolve management questions for subsistence fisheries, irrespective of jurisdiction. It is likely

that this question will rise in importance if there remains a large gap between investments by the Monitoring Program and application of the study results.

GOALS

Staff from FIS recognize three basic goals to achieve the mission of the Monitoring Program: (1) assessment of fish populations; (2) assessment of subsistence fisheries; and, (3), promotion of public support and involvement in fisheries monitoring. After discussion, the workgroup accepted these goals and their definitions:

1. Obtain, develop, and improve information to sustain fish populations necessary to provide for subsistence uses.

Information needed to achieve this goal includes estimates of abundance, composition, timing, and distribution, as well as developing an understanding of critical factors that affect production.

2. Assess and monitor subsistence fisheries to document and provide for subsistence uses.

Information needed to achieve this goal includes baseline estimates and descriptions of subsistence use patterns including harvest, effort, methods, timing location, and demographics, as well as developing an understanding of critical factors that affect subsistence use patterns. Collecting information on customary trade to answer specific regulatory questions, assessment of competing fisheries, and improving management through accurate reporting of harvest and sharing of information are also included under this goal.

3. Promote public support and involvement for fisheries monitoring.

Achieving meaningful collaboration in information gathering and assessment requires education and involvement outside of government agencies. Outreach activities include development of training materials and forums, professional staff, and educational opportunities.

The first two goals form the basis for the Southeast strategic plan because these involve the collection and synthesis of information. The goals represent unique concepts, such that there is little overlap in management questions and information needs. While they are unique concepts, harvest and escapement are linked to their parent, the mission – and ultimately to providing sustainable use. The third goal, concerning public support and involvement, is an ongoing process and is addressed outside of regional strategic planning efforts.

The workgroup discussed methodological approaches, data types, funding guidelines and evaluation criteria (see previous sections on Project Evaluation Process, and Policy and Funding Guidelines) as they pertain to the goals. For example, the workgroup questioned how the past policy of allocating 2/3 funding to stock status and trends information, and 1/3 to harvest monitoring and traditional ecological knowledge (TEK) would be utilized with this strategic plan. After discussion, the workgroup concluded that TEK is a methodological approach that is potentially applicable to both goals, and that funding guidelines by data type may ultimately diminish as strategic planning focuses the

program on the highest priority issues and information needs. Therefore, participants were encouraged to focus on identifying and prioritizing information needed to address management questions of the Federal subsistence program, and not be concerned with methods or data type. FIS staff also explained that this strategic plan would not supplant other evaluation criteria to evaluate proposals. For instance, capacity building is a critical element of project design and is still maintained as a project evaluation criterion. Similarly, data collection and analytical methodology for all proposals must be of sufficient technical merit to be considered for funding.

MANAGEMENT QUESTIONS

For each goal, the workgroup developed a list of management questions or issues being addressed by the Federal subsistence program for which the Monitoring Program could provide information. The workgroup concluded that explicitly stating management questions within the planning hierarchy would ensure that the Monitoring Program maintained its focus on applied research. Structurally, management questions form an intermediary level in the framework, and are intended to group related information needs. Although these management questions were first developed specifically for steelhead, the workgroup concluded that most of these issues had relevance for the other subsistence fishery units. Clarification of each management question developed by the workgroup follows.

“What is the annual subsistence harvest and effort by stream/lake system/community?”

- At question are accurate annual estimates of subsistence harvest by location. Many subsistence fisheries for sockeye salmon and steelhead in Southeast Alaska have widely disparate harvest estimates from permits, community harvest surveys, and on-site harvest surveys. Because of this, there is considerable uncertainty regarding the magnitude of subsistence harvest relative to abundance. Areas of research to address this question include examining the reliability and validity of household and permit data, and possibly development of community-based systems to administer permit distribution and retrieval. Accurate and reliable harvest data provides the basis for identifying systems important for subsistence, estimating exploitation, and establishing harvest guidelines.

“What are subsistence needs by stream/lake system/community?”

- At question is understanding and articulating desired levels of subsistence harvest. It is important to recognize that subsistence harvests are not always commensurate with subsistence need, particularly in a highly regulated context. Subsistence needs can vary over time and factors affecting variability in harvests and needs should be researched. This question is best addressed subsequent to developing credible estimates of subsistence harvest (above). This information provides the basis for developing management goals for subsistence harvest, and has potential policy implications.

“What are subsistence patterns and uses?”

- At question is documenting and describing customary and traditional harvest and uses of fisheries resources. This is not only important for customary and traditional use determinations for the Federal subsistence program, but also for providing information for other regulatory issues (i.e. methods and means,

customary trade, etc). Areas of research include contemporary and historic subsistence harvest and use practices, customary trade and sharing networks, and documentation of methods and means.

“What is the harvest and effort of other fisheries that potentially affect subsistence harvest?”

- At question is whether non-subsistence fisheries significantly affect subsistence harvests. Potential impacts include release mortality from sport fisheries and stock-specific harvest in mixed-stock commercial fisheries.

“What is spawning stock abundance, over several life cycles, for systems that support subsistence fisheries?”

- At question are the annual abundance, age composition, and timing of adult returns. This information is the basis for categorizing run sizes, estimating exploitation, and developing escapement goals.

“What is the stock structure?”

- At question are biologically functional units for management, and stock composition in mixed-stock harvests. Areas of research include collection and analysis of genetic baselines. For steelhead and eulachon, this information provides the basis to determine whether individual systems, or groupings of systems, should be managed as separate spawning stocks.

“What are the critical attributes of life history that affect production?”

- At question for each species is developing an understanding of production, by which to scale harvest potential. For steelhead, areas of research include estimation of age, sex, and length (ASL) composition; and spawning frequency for fall and spring runs. For sockeye salmon, areas of research also include estimation of ASL composition; as well as assessing fry and smolt abundance, and lake productivity.

“What are impacts of (freshwater) habitat alterations on abundance (and production)?”

- At question is whether human perturbations such as logging, in-river barriers, or watershed development, or natural forces, affect fish abundance and subsistence harvests. Although not an explicit regulatory issue for the Federal subsistence program, this information provides the basis to determine whether future research or restoration should be considered by other agencies, such as the USDA Forest Service fisheries program. There are policy considerations that restrict valid areas of research for the Monitoring Program (see Policy and Funding Guidelines).

SUBSISTENCE FISHERY UNITS

The workgroup engaged in lengthy discussion on how to describe subsistence fishery units. At question for each species was whether to further describe fishery units by geography, systems of primary or secondary concern, and communities. Delineation beyond species was discarded as many management questions occur region-wide, not in just a particular community or area. Using geographic areas as a primary criterion proved uncomfortable for some, and infeasible, when variability within large areas was

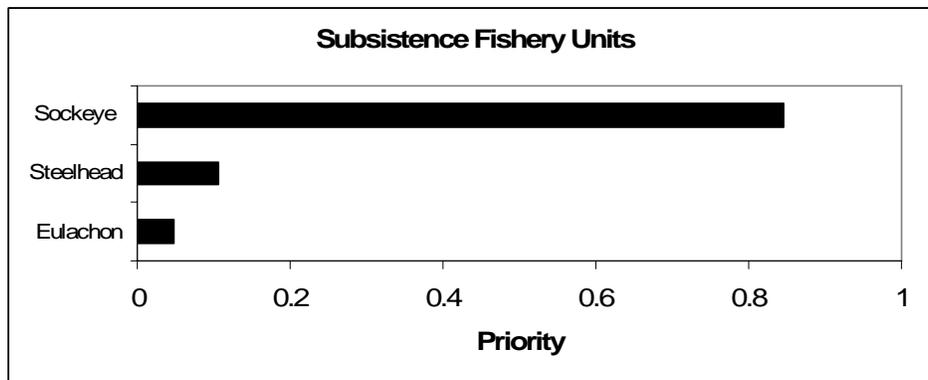
considered. Concerns for many systems often arise from improved road or trail access; however, the workgroup concluded that this could be used to prioritize location of study within a species-based strategic plan. The workgroup acknowledged that while subsistence issues can encompass multiple species within a stream/lake system, and occur across seasons; in reality management is largely species-driven.

Because sockeye salmon have been clearly identified by communities and the Council as of primary importance to subsistence, the workgroup recommended a sockeye salmon subsistence fishery unit. Steelhead was identified as a subsistence fishery unit because of their low abundance and concern for over-exploitation. Little is known about eulachon, and their abundance has unexpectedly and precipitously declined in key subsistence fisheries in Southeast Alaska during recent years. Subsistence fishery units identified in the Southeast region are:

- Sockeye salmon
- Steelhead
- Eulachon

Based on these criteria, the workgroup prioritized the three subsistence fishery units for information needs as follows:

- importance to subsistence users; and,
- degree to which the resource is subjected to management actions (e.g., conservation concerns).



Within the steelhead subsistence fishery unit, the workgroup identified two geographic areas, based on magnitude of harvest, and potential for overexploitation considering access: (1) Prince of Wales Island, and (2) the remainder of Southeast. Prince of Wales Island has an extensive road system that provides much more access and a substantial steelhead fishery in comparison to the remainder of Southeast.

As is illustrated, it was relatively easy for the workgroup to prioritize sockeye salmon as the highest need for information. While the workgroup stood behind its' assessment of relative priorities, they expressed concern that the strong importance of sockeye salmon would eclipse funding proposals for the other species. FIS staff interpretation of the workgroup's recommendation is that they provide broad guidance for allocation of funds.

The relative importance of information for steelhead and eulachon is far less than for sockeye salmon, and the allocation of funds over the 3-5 year planning horizon should roughly reflect this assessment. The relatively finite funding invested in steelhead and eulachon should focus solely on the very highest priority information needs for those fishery units.

Frameworks for identifying and prioritizing information needs were initiated for specific subsistence fishery units. The workgroup first focused their efforts on the steelhead subsistence fishery unit, and used this framework as a building block from which to build the sockeye salmon subsistence fishery unit. Only one information need comprised the eulachon subsistence fishery unit.

SUBSISTENCE FISHERY UNIT: SOCKEYE SALMON

Assessment of Sockeye Salmon Systems for Funding Consideration

The workgroup began development of the sockeye salmon strategic plan by reviewing a synthesis of sockeye salmon information that was largely collected through the Monitoring Program, and compiled by FIS and USDA FS staff in preparation for the 2007 RFP. The purpose of this analysis was to identify high priority sockeye salmon systems for assessment under the 2007 Monitoring Plan. Staff based their assessment on evaluation of six criteria:

Criteria for Assessing Priority of Sockeye Salmon Systems
Is there a history of assessment funded under the Monitoring Program?
What is the magnitude of subsistence harvest by Federally-qualified users?
Does the stock sustain significant exploitation from the subsistence fishery?
Is management or regulatory action required to manage the subsistence harvest?
Is any part of the subsistence fishery under Federal jurisdiction?

Based on these criteria, staff concluded that six sockeye salmon systems were of high priority for information under the Monitoring Program: Hatchery Creek, Klawock, Klag, Hetta, Falls, and Kanalku.

This analysis was offered as a starting point for the workgroup’s consideration of specific systems to target funding for assessment over the 3-5 year planning horizon. The workgroup felt that the six evaluation criteria were incomplete and did not fully capture all aspects of judging importance for assessment among sockeye salmon systems. Based on additional considerations from the six evaluation criteria, several other systems were nominated for further consideration as being of high priority, including Karta, Kook, Hoktaheen, Sitkoh, and Gut Bay lakes. Following review and discussion of the analysis,

the workgroup concluded that this approach should be further utilized for this strategic plan to specify high priority sockeye systems for assessment over the next 3-5 years; however this assessment should be updated and improved with the following:

- Add two additional criteria for judging priority of sockeye salmon systems to the list: (1) Concerns regarding conservation, and (2) importance to communities.
- Obtain input on importance to communities directly from subsistence users through a survey of communities.
- Update the assessment of subsistence harvest, escapement, and exploitation (based on 2002 data) with current data.
- Develop a more complete compilation of Federal and State management actions.

This revised assessment was updated, including review by the workgroup, and was presented to the Council for review and comment (Southeast Region Planning Workgroup 2006b).

The Plan Framework

A total of 23 elements comprise the planning framework (Figure 2): two goals, seven management questions, and 14 unique information needs. Because the framework is not evenly distributed among management questions, ratings were adjusted using the structural adjust feature in Expert Choice (described under Methods, on page 13) to restore priorities to their intended proportion of weight.

The workgroup used their collective experience to carefully consider elements of the plan in the context of what has already been accomplished, to ensure that the plan builds upon a foundation of current information.

Goal 1

Three management questions were identified under Goal 1 regarding spawning stock abundance (escapement), the influences of freshwater habitat on productivity, and relations of life history to productivity.

The workgroup quickly settled on estimating current escapement as a key information need. There was much discussion about the importance of characterizing the functional biological groups within a lake. The workgroup discussed using these data to set escapement goals, which led to re-visiting the issue of significant investments on the part of the Monitoring Program where the management question is limited to *nexus*. In this case, the workgroup acknowledged that while it is justifiable to expend OSM funds to estimate the abundance of sockeye salmon, it is the State's responsibility to establish escapement goals.

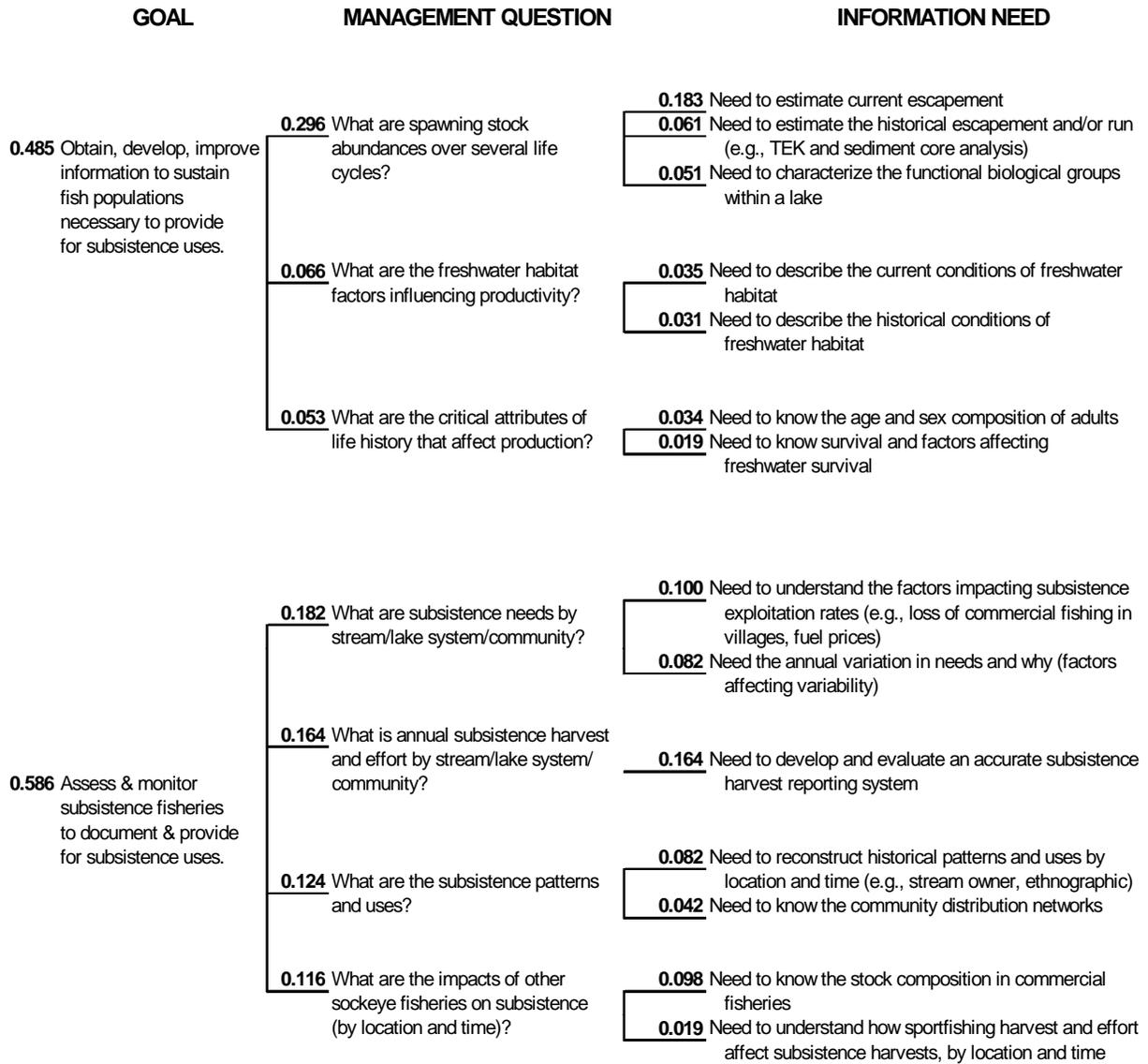


Figure 2. Framework of goals, management questions and information needs, including adjusted weights of importance, Southeast sockeye salmon subsistence fishery unit, 2006.

Specific freshwater habitat factors affecting productivity were noted by the workgroup: physical factors (e.g., flow, volume, turbidity) and chemical factors (e.g., dissolved oxygen, temperature, nutrients). The main point is to identify those factors that are limiting production. For example, there are signs of increasing eutrophication (e.g., growth of lily pads) at Redoubt Lake that may encroach on spawning beds. Historical habitat conditions can be documented using several methods, such as TEK and photogrammetry.

Goal 2.

Four management questions were identified under Goal 2 regarding subsistence harvest and effort, needs, patterns and uses, and impacts of other fisheries on subsistence fishing. Questions concern basic documentation of subsistence harvest and effort, evaluating subsistence needs, and attaining contextual information needed to understand historic and contemporary subsistence practices, as well factors influencing the dynamics of subsistence.

The workgroup focused much attention on the concept of quantifying subsistence needs. The concern was expressed that quantifying subsistence needs may precipitate the imposition of harvest limits. Workgroup members responsible for management valued this information for developing an understanding of expectations, and as a basis for developing management goals for subsistence harvest. The workgroup concluded that estimating subsistence harvests is foundational to determining subsistence needs; and that estimating these parameters is sequential. In addition, the workgroup concluded that part of understanding subsistence needs is understanding subsistence harvests patterns and customary and traditional practices. Harvests vary over time and understanding the sources of variations will help to understand subsistence needs over time.

There was general agreement that subsistence harvest data from permits is suspect, and that there is a need to develop and evaluate an accurate harvest reporting system. As part of this discussion the workgroup discussed the dilemma of assessing subsistence harvests and needs for Angoon, where escapement of sockeye salmon in systems historically supporting harvest appear to have greatly diminished, and at least some subsistence harvest is unreported.

The workgroup also identified the need to document contemporary and historic subsistence patterns and uses and to understand variability over time and space. This will assist with putting the current situation into perspective, as well as to understand important cultural practices such as customary trade. Documenting contemporary and historic information can occur through interviews, which can be used to collect qualitative data (e.g., subsistence needs, or historic views) as well as quantitative data (e.g., demographics, socioeconomic, harvest, gear type, location, etc.). The issue of whether specific harvest and use information is proprietary was also discussed by the workgroup, but the group did not reach resolution.

While harvest in other fisheries and their effects on subsistence harvests is of concern, it was acknowledged by the workgroup that funding sources outside of the Monitoring Program provide the basic estimates of harvest from these fisheries. Also, unreported harvest in these fisheries is an enforcement issue which is outside the purview of this strategic planning process. The workgroup focused on the impacts of these harvests on

subsistence use as a research issue. Of particular concern to the workgroup was the potential impact of increased commercial harvests in Chatham Straits. Commercial harvest in this area has increased dramatically in recent years due to very large returns of pink and chum salmon. Sockeye harvests have increased as a byproduct, and escapements for some of these sockeye stocks appear very low as a result. Subsistence fishing has been curtailed for some systems (Kanalku), either through voluntary or management actions. However, there is no program to provide stock-specific estimates of commercial harvest.

Priorities

The workgroup carefully considered the relative importance of the goals and were in general agreement that Goals 1 and 2 were of nearly equal importance, with Goal 2 having slightly greater favor (Figure 2). In making this determination, the workgroup considered the substantial investment made to date by the Monitoring Program to assess sockeye salmon escapements.

Synthesis of priorities for information needs was conducted at two levels: within each individual goal, and over the entire framework combining information needs from both goals. Synthesis of information needs at the goal level allows partitioning of information needs into specific areas of study: assessment of fish populations and monitoring of subsistence fisheries. Examining information needs by goal could be helpful to collaboration with other planning efforts, or if organizations wanted to allocate resources according to one of these areas of study.

For Goal 1, the top three information needs (Figure 3) are to:

- estimate current escapement,
- estimate the historical escapement and/or run (e.g., TEK and sediment core analysis), and
- characterize the functional biological groups within a lake.

For Goal 2, the top three information needs (Figure 4) are to:

- develop and evaluate an accurate subsistence harvest reporting system,
- understand the factors impacting subsistence harvest rates (loss of commercial fishing in villages, fuel prices), and
- know the stock composition in commercial fisheries harvests.

However, the synthesis of information needs over the entire framework is intended to clarify strategic priorities for the Monitoring Program. For the entire Southeast sockeye salmon subsistence fishery unit, two information needs stood out as of paramount importance (Figure 5):

- estimate current escapement, and
- develop and evaluate an accurate subsistence harvest reporting system.

The next tier of information needs was:

- need to understand the factors impacting subsistence exploitation rates (e.g., loss from commercial fishing),
- need to know the stock composition in commercial fisheries,
- need the annual variation in needs and why, and
- need to reconstruct historical patterns and uses by location and time.

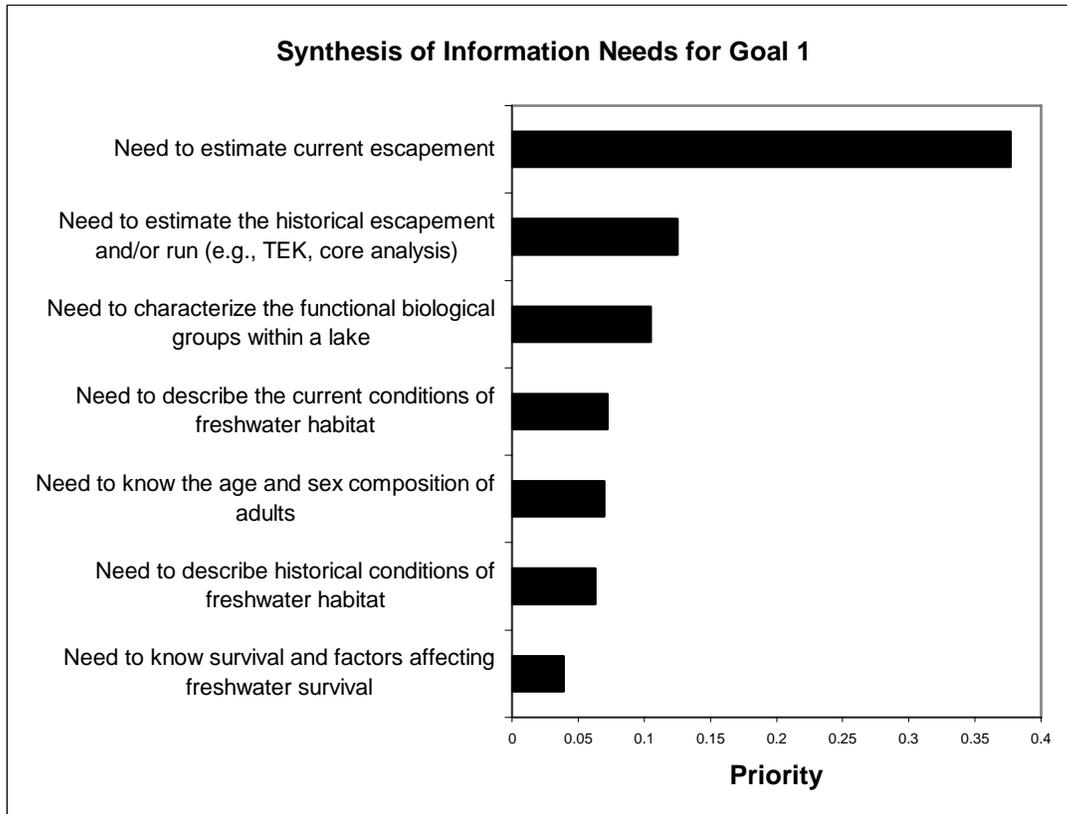


Figure 3. The priority of information needs for Goal 1: Obtain, develop, improve information to sustain fish populations necessary to provide for subsistence uses, Southeast sockeye salmon subsistence fishery unit, 2006.

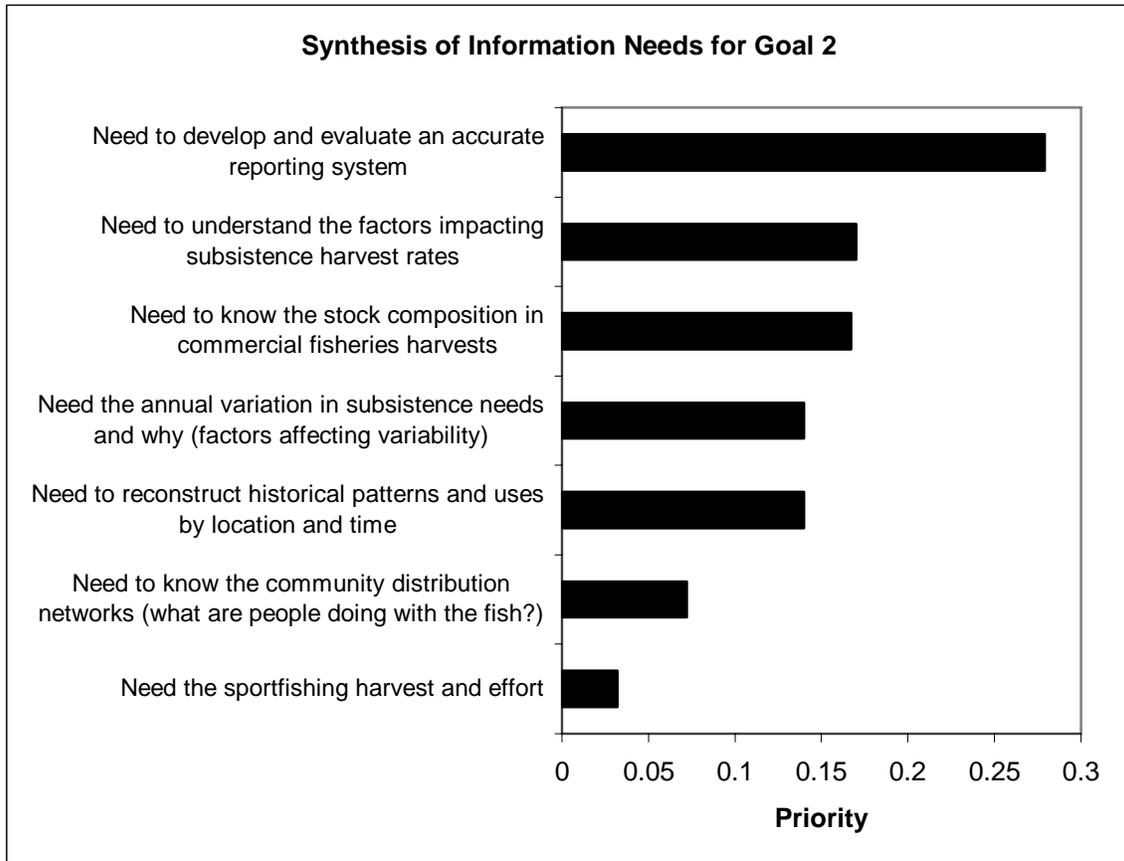


Figure 4. The priority of information needs for Goal 2: Assess and monitor subsistence fisheries to document and provide for subsistence uses, Southeast sockeye salmon subsistence fishery unit, 2006.

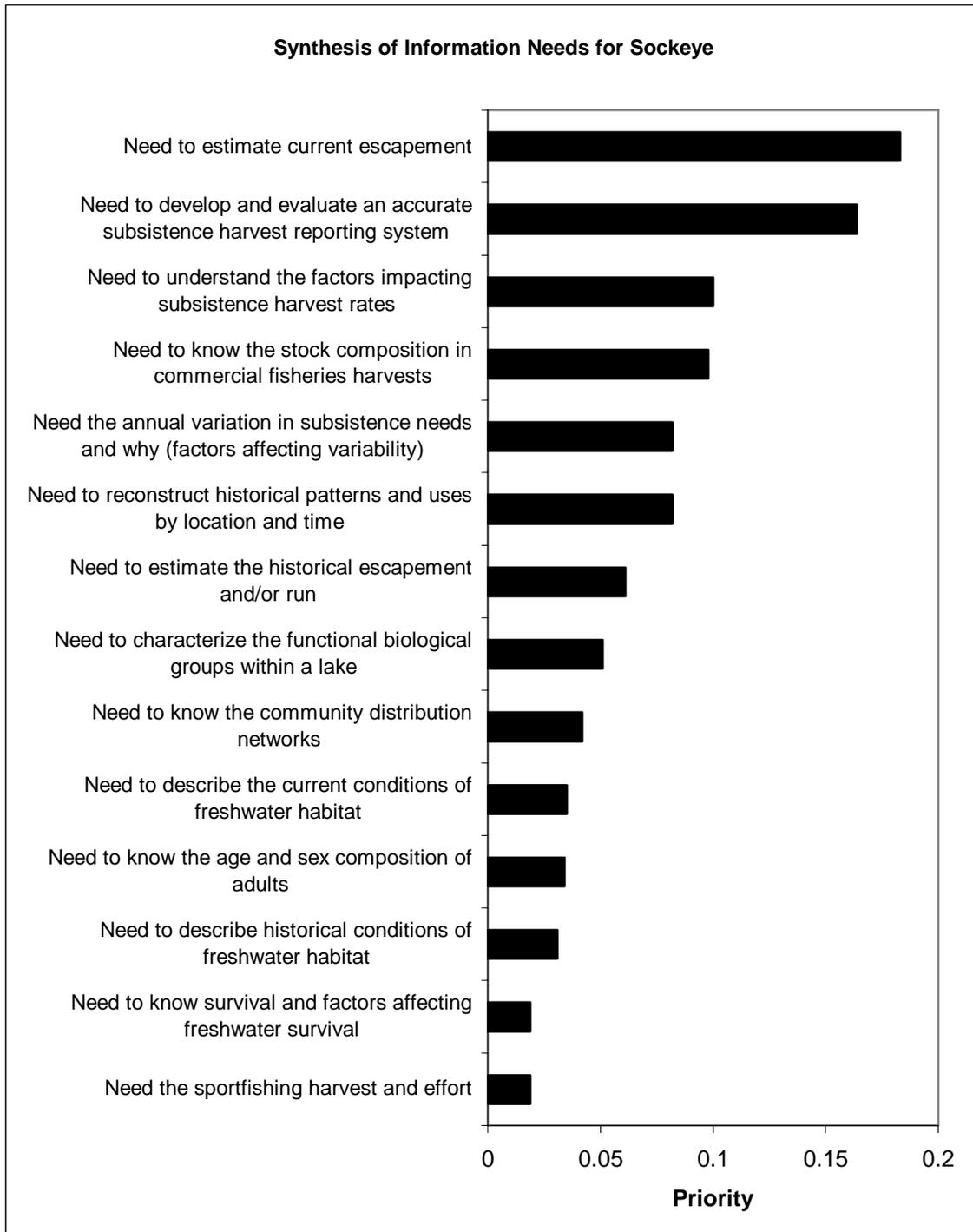


Figure 5. Adjusted synthesis of all 14 information needs, Southeast sockeye salmon subsistence fishery unit, 2006.

SUBSISTENCE FISHERY UNIT: STEELHEAD

The Plan Framework

A total of 20 elements comprise the planning framework: two goals, seven management questions, and 11 unique information needs (Figure 6). Because information needs are not evenly distributed, ratings were adjusted using the structural adjust feature in Expert Choice to restore priorities to their intended proportion of weight.

Goal 1

Steelhead populations that support subsistence fisheries in Southeast Alaska generally occur in relatively small coastal systems, and annual abundance is typically quite finite in comparison to salmon populations. As a result, there is an overarching concern for over-exploitation. There is little rigorous assessment of spawning abundance, and most steelhead systems in Southeast Alaska were categorized *a priori* as small (<150) or large (>150) populations. Subsistence fisheries for steelhead occur in freshwater, and most are under Federal jurisdiction. These subsistence fisheries are managed under differential regulations for small and large systems, as well as spring and fall spawning and road-accessible and remote systems. There was much discussion about small and large runs of steelhead in relation to sustainable exploitation rates, and whether small populations could realistically sustain any directed harvest. There is a suspicion that streams supporting small runs may be less productive (on a per-fish basis) than streams with larger runs. The composition of the run such as size of females, and their spawning frequency, are related to fecundity and productivity; thus, a few members of the workgroup asked, should the largest fish (most fecund) be protected from harvest?

Identifying distribution of steelhead by life stage was thought to be paramount to the mapping of critical habitat. Several concerns were raised about impacts from alterations to freshwater habitat, such as logging or road development, on survival of steelhead. At issue is water quality (turbidity), changes in stream temperature, fish passage at culverts, and associated impacts. Although not an explicit regulatory issue for the Federal subsistence program, this information provides the basis to determine whether future research or restoration should be considered by other agencies, such as the USDA Forest Service fisheries program. There are Monitoring Program policy considerations that restrict valid areas of research for the Monitoring Program (see Policy and Funding Guidelines).

The workgroup struggled with definitions of “stock structure” and “meta population structure” when discussing the need to determine if fall and spring runs of steelhead are genetically unique. Measurable differences in phenotypic or genotypic traits, however, do not necessarily change functional management units. One commonly employed management unit is a stream system. Currently, fall and spring runs of steelhead are managed as separate management units, with focus on spring runs. Answers to the Management Question, “What is the meta-population structure (e.g., what is a biologically functional unit?)” are intended to guide management.

Goal 2

Subsistence harvest of steelhead is “a huge unknown” and is the first step in assessing stock status. Uncertainty in stock status fuels a sense of urgency. Because of this, the

GOAL	MANAGEMENT QUESTION	INFORMATION NEED
0.505 Obtain, develop, improve information to sustain fish populations necessary to provide for subsistence uses.	0.384 What are spawning stock abundances over several life cycles?	0.210 Need to estimate escapement 0.076 Need to know if there are differences in productivity between different sizes of runs (small, large), e.g. what exploitation rate is sustainable, esp. on small, road-accessible systems.
	0.054 What are the life history characteristics?	0.054 Need to know the age, sex, length and spawning frequency for fall and spring runs (and relationships to productivity, including fecundity).
	0.043 What are the impacts of freshwater habitat alterations on abundance?	0.024 Need to determine the distribution by life stage (e.g., where is critical habitat?) 0.019 Need to monitor and ascertain the impacts of environmental perturbations on steelhead populations (natural such as predation and competition, and human induced impacts such as logging)
	0.024 What is the meta population structure? (e.g., what is a biologically functional unit?)	0.024 Need to determine the genetic baseline; e.g., are the fall and spring runs genetically unique?
0.495 Assess & monitor subsistence fisheries to document & provide for subsistence uses.	0.282 What are annual subsistence harvest and needs by stream/community?	0.197 Need to improve the accuracy and quality of subsistence harvest estimates of steelhead 0.085 Need to evaluate the subsistence need of steelhead, locations of harvest, and the role of accessibility (e.g., roads) in existing or potential harvest
	0.133 What are the impacts of other fisheries on subsistence harvest of steelhead?	0.092 Need to understand how sportfishing harvest and release mortality affect steelhead subsistence harvests, by location and time 0.041 Need to understand how harvest & composition in the commercial fishery affects subsistence harvest by location and time
	0.080 What are the subsistence patterns and uses?	0.080 Need to describe current and historic C&T use

Figure 6. Framework of goals, management questions and information needs, including adjusted weights of importance, Southeast steelhead subsistence fishery unit, 2006.

workgroup ranked improving the accuracy and quality of subsistence harvest estimates of steelhead as a high priority research need. The workgroup further acknowledged that the problems with permit harvest data transcend species and location and is a statewide problem. The workgroup concluded that this issue highlights the importance of building public support for an accurate reporting system through education. The workgroup also discussed the possibilities of training local residents in some villages to conduct interviews and developing community-based harvest assessments as possible options for improving accuracy.

Difficulties associated with determining subsistence needs for steelhead were also discussed by the group. For example, location of harvest can often vary in response to lack of fishing success. Choice of location is affected by ease of access and cost – with rising fuel costs, it may be more cost effective to switch to a less preferred species to fill the subsistence need than to travel to a further site for a more desired food.

There was interest in examining the impacts of other fisheries on subsistence harvest of steelhead. Sport fishing may directly compete for areas of harvest. Total commercial harvests are unknown as steelhead may no longer be sold and reporting on fish tickets is not mandatory. Further, the commercial harvest is comprised of mixed-stocks, and the contribution of select steelhead stocks of interest would be problematic to estimate.

Priorities

The workgroup carefully considered the relative importance of the goals and were in general agreement that Goals 1 and 2 were of nearly equal importance, with Goal 1 having slightly greater favor (Figure 6).

Similar to the sockeye salmon framework, synthesis of priorities for information needs was conducted within each individual goal, and over the entire framework combining information needs from the two goals.

For Goal 1, one information need was of paramount importance (Figure 7):

- need to estimate escapement.

The next tier of information needs is to:

- determine if there are differences in productivity between different sizes of runs (small, large); e.g., what harvest rate is sustainable, especially on small road-accessible systems, and
- determine the age, sex, length and spawning frequency for fall and spring runs (and relationships to productivity, including fecundity).

For Goal 2, the highest priority information need (Figure 8) is to:

- improve the accuracy and quality of subsistence harvest estimates of steelhead.

The next tier of information needs is to:

- understand how sportfishing harvest and release mortality affect steelhead subsistence harvests, by location and time, and
- evaluate the subsistence need for steelhead, locations of harvest, and the role of accessibility (e.g., roads) in existing or potential harvest.

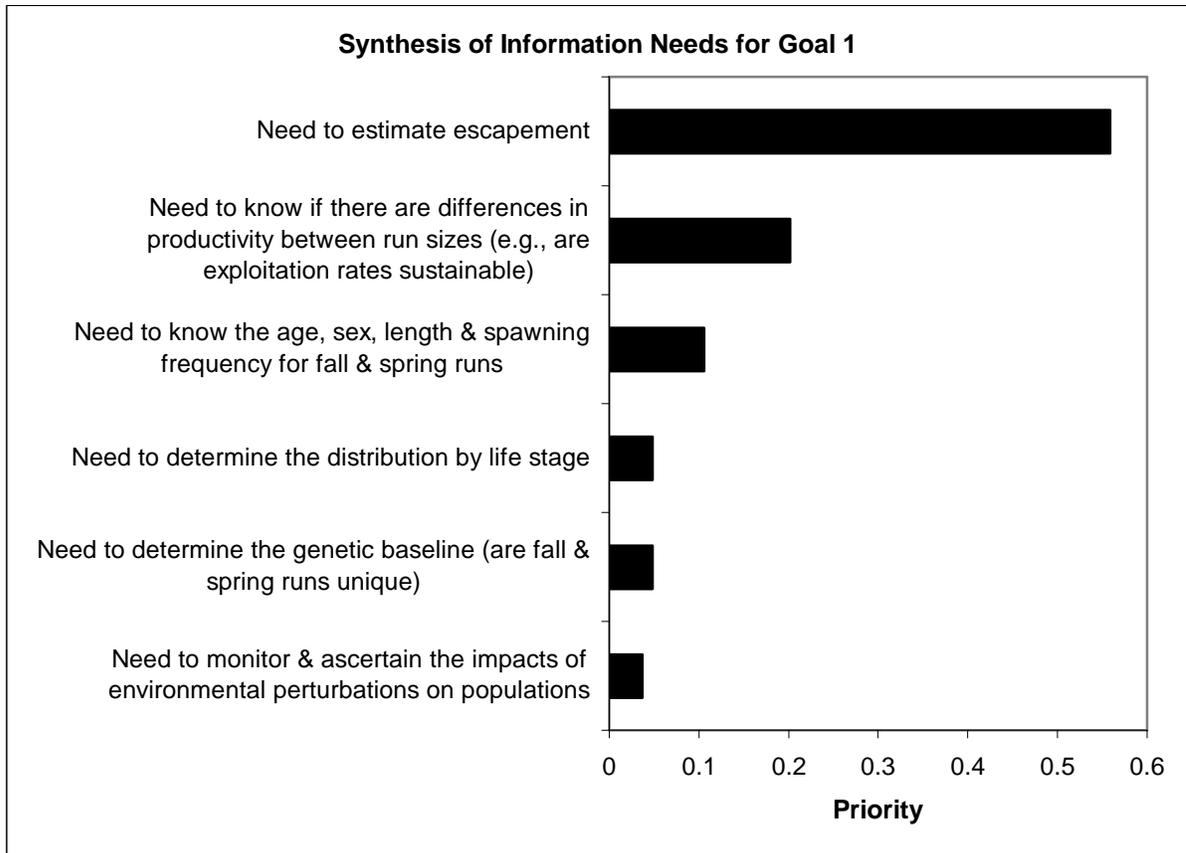


Figure 7. The priority of information needs for Goal 1: Obtain, develop and improve information to sustain steelhead populations necessary to provide for subsistence uses, Southeast steelhead subsistence fishery unit, 2006.

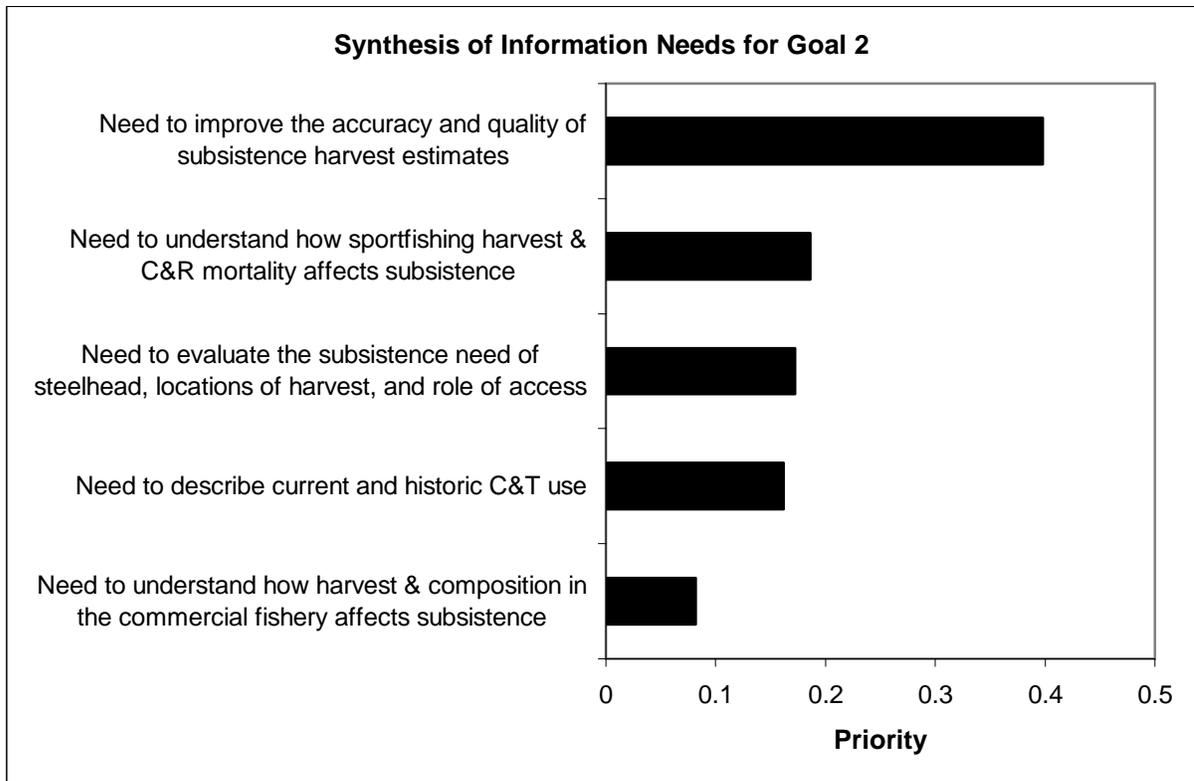


Figure 8. The priority of information needs for Goal 2: Assess and monitor subsistence fisheries to document and provide for subsistence uses, Southeast steelhead subsistence fishery unit, 2006.

Synthesis of information needs over the entire framework clarifies strategic priorities for the Monitoring Program. For the Southeast steelhead subsistence fishery unit, the same two information needs were dominant (Figure 9):

- need to estimate escapement
- need to improve the accuracy and quality of subsistence harvest estimates of steelhead

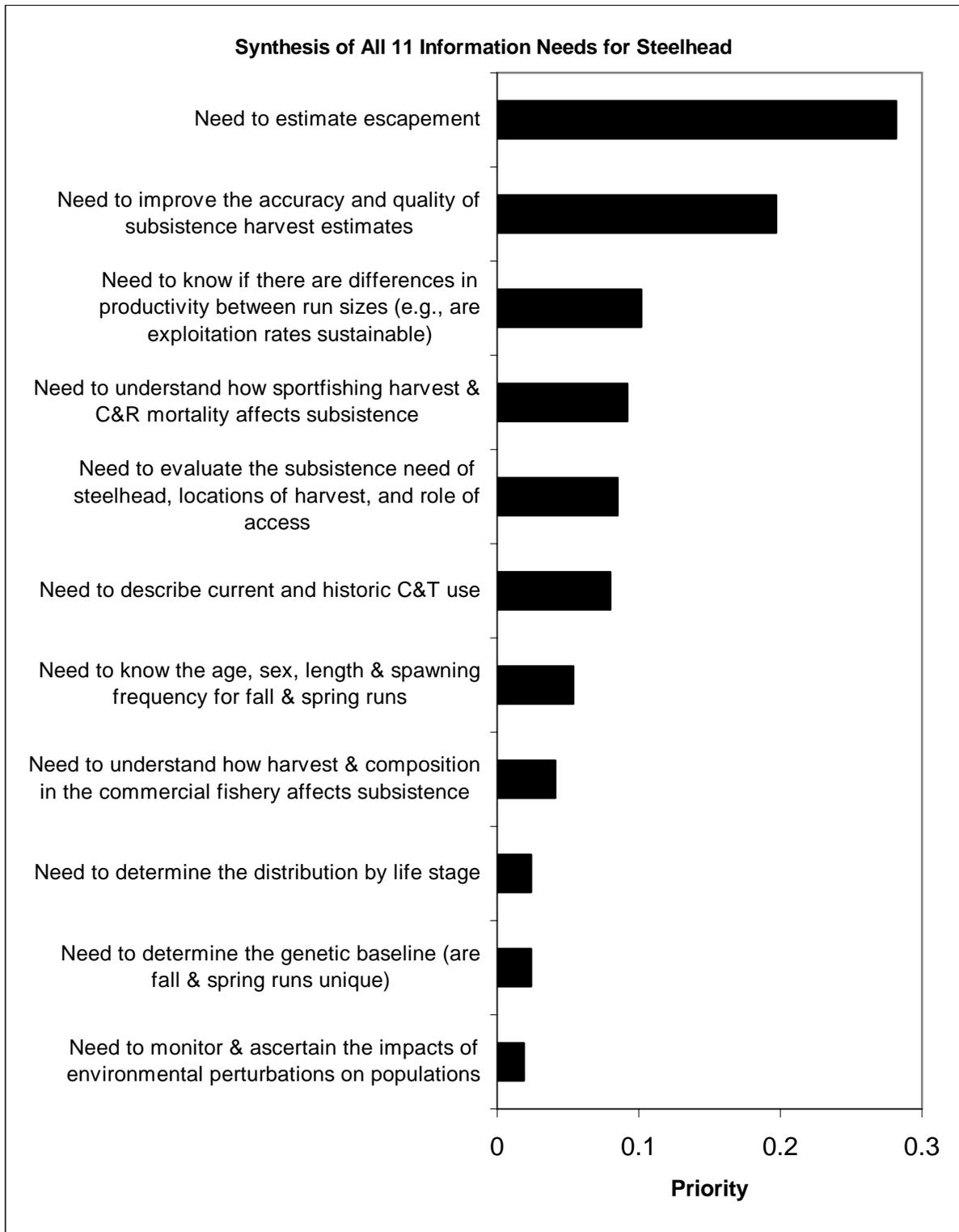


Figure 9. Adjusted synthesis of all 11 information needs, Southeast steelhead subsistence fishery unit, 2006.

Subsistence Fishery Unit: Eulachon

Although eulachon (also known as ‘hooligan’) provide an important subsistence resource throughout southeast, only the fishery in Behm Canal, particularly the Unuk River, is of importance to the Federal Subsistence Program because of jurisdiction (i.e., nexus). Because only a few fishermen are responsible for the entire harvest, the workgroup concluded that harvest assessment through the required permit was credible. Returns of eulachon have declined dramatically in recent years, and the subsistence fishery has been closed. However, methodology for quantitative abundance assessment is severely lacking. The workgroup recommended only one information need for this subsistence fishery unit:

- Need to understand past and present abundance of eulachon in the Unik River.

ASSESSMENT OF 2007 PROPOSALS

Completion of prioritized information needs for the major subsistence fishery units provides the means to assess whether 2007 proposals currently under consideration for funding align with recommendations of the workgroup (Table 3).

Table 3. Summary of issues and information needs addressed by 2007 proposals under consideration for funding by the Monitoring Program.

Number	Proposal	Information Need	Priority
07-601	Hatchery Creek Sockeye Salmon Population Assessment	Need to estimate current escapement	1
07-604	Klag Lake Subsistence Sockeye Salmon Stock Assessment	Need to estimate current escapement	1
07-606	Hetta Lake Subsistence Sockeye Salmon Stock Assessment	Need to estimate current escapement	1
07-607	Kanalku Lake Subsistence Sockeye Salmon Stock Assessment	Need to estimate current escapement	1
07-608	Klawock Lake Subsistence Sockeye Salmon Stock Assessment	Need to estimate current escapement	1
07-609	Falls Lake Subsistence Sockeye Salmon Stock Assessment	Need to estimate current escapement	1
07-610	Behm Canal Eulachon Genetics	None	
07-651	Customary and Traditional Sockeye Systems of the Hydaburg People	Need to reconstruct historical patterns and uses by location and time	6

Completion of the updated assessment of sockeye salmon systems (Southeast Region Planning Workgroup 2006b) provides the second part of the strategic plan, the means to further assess whether the 2007 stock assessment proposals for sockeye salmon currently under consideration for funding address the highest priority locations.

CONCLUSIONS

The workgroup was tasked with developing a framework of goals, management questions and information needs to direct funding towards the highest strategic priorities to support Federal subsistence fisheries management. One viewpoint expressed at the beginning of the workshop was the desire to see funding spread equitably across the Southeast Region. The concern was that if top priorities only address information needs for highly accessible and heavily used areas, then locations lightly frequented would receive little attention. However, this concern was allayed when workgroup priorities were synthesized because top information needs address management questions which are largely applicable region-wide.

Major achievements from the workshop include:

- the development of planning frameworks and prioritization of information needs for sockeye salmon and steelhead subsistence fishery units, and,
- prioritization of subsistence fishery units.

Additional results include:

- increased knowledge and awareness of research and management concerns,
- increased appreciation for and understanding of myriad subsistence-related issues,
- the development of a dialog between participants, and,
- learning about a systematic approach to planning and problem-solving.

Following the workshop, participants made positive comments about the opportunity for open discussion during planning and the interactive exchanges between participants. The planning process was helpful to “documenting complex ideas and opinions” and “led to group consensus”. The planning approach was found to be “innovative”, and rated overall as “generally interesting.” Participants were “generally satisfied” with the meeting experience and the outcome. Participants felt strongly that the time has come to “align the request for proposals with the strategic planning priorities”. “Developing a framework for the FIS request for proposals is long overdue and will provide useful clarity”.

Group input on issues of concern and support of the planning process is important to the long-term success of a strategic approach to sustainable fisheries. In the development of previous strategic plans for sustainable fisheries, stakeholders have provided key insights to issues comprising a problem and possible solutions (Merritt and Criddle 1993, Merritt 1995, Merritt and Skilbred 2002). Participants for the Southeast workshop were solicited from regional professionals and members of the Council. While not all who were invited were able to attend, there appeared to be sufficient diverse viewpoints to stimulate discussion and create a reasonable ranking of information needs. Public viewpoints were additionally solicited through Council review and comment.

Information needs developed by the workgroup encompass and improve upon the Council's list by structuring a greater number of diverse information needs by subsistence fishery unit, and stating specific priorities. Issues and information needs of the Council are:

- TEK
- Harvest Monitoring
- Salmon assessment, particularly sockeye and coho salmon
- Assessment of fish species (other than salmon) important to subsistence use; particularly Prince of Wales Island steelhead and Behm Canal eulachon.

The Council identified TEK as an information need, whereas the workgroup addressed TEK as methodology that could be applied to several information needs. Harvest monitoring is included in the sockeye salmon and steelhead plan frameworks; however, the workgroup did not consider further information on harvest monitoring for eulachon to be an information need over the 3-5 year planning horizon. The workgroup identified the sockeye salmon fishery unit as the highest priority for allocation of Monitoring Program funds; however, they did not consider coho salmon to warrant further investment over the planning horizon. The steelhead and eulachon subsistence fishery units were both specific to the areas identified by the Council.

The strategic plan for Southeast Region consists of two parts:

- A framework of prioritized goals, management problems, and information needs for Federal subsistence fishery management within the region; and
- An assessment of the relative importance of sockeye salmon stocks for funding consideration under the Monitoring Program.

In total, this strategic plan identifies information needed to manage for subsistence uses on Federal public lands in Southeast Alaska. This strategic plan should provide an explicit and rigorously developed forum for researchers, the TRC, the Council, and the Board to focus Monitoring Program funding towards the highest informational priorities in the Southeast Region.

LITERATURE CITED

- Buklis, L.S. 2002. Subsistence Fisheries Management on Federal Public Lands in Alaska. *Fisheries* Vol 27 No 7. 18 p.
- Krueger, C., Brelsford, T., Casipit, C., Harper, K., Hildebrand, I., Rost, P., Thompson, K., and L. Jones. 1999. Federal Subsistence Fisheries Management: Operational Strategy for Information Management. Report to the Federal Subsistence Staff Committee by the Sub-Committee for the Development of a Blueprint for Interagency Functions, Roles, and Responsibilities. Unpublished report. 122 p.
- Merritt, M. and K. Criddle. 1993. Evaluation of the Analytic Hierarchy Process for aiding management decisions in recreational fisheries: a case study of the Chinook salmon fishery in the Kenai River, Alaska. Proceedings of the International Symposium on Management Strategies for Exploited Fish Populations, Alaska Sea Grant Program, AK-93-02, pp 683-703.
- Merritt, M. 1995. Application of decision analysis in the evaluation of recreational fishery management problems. Ph.D. dissertation. University of Alaska Fairbanks.
- Merritt, M. 2000. Strategic plan for Chinook salmon research in the Copper River drainage. Alaska Department of Fish and Game, Fishery Special Publication No. 00-03, Anchorage.
- Merritt, M. 2001. Strategic plan for salmon research in the Kuskokwim River drainage. Alaska Department of Fish and Game, Fishery Special Publication No. 01-07, Anchorage.
- Merritt, M. and A. Skilbred. 2002. Planning for sustainable salmon in Southeast Alaska, and prioritization of projects for the Southeast sustainable salmon fund. Alaska Department of Fish and Game, Fishery Special Publication No. 02-01, Anchorage.
- Northeast Fisheries Center (NEFC) 1990. Guidance on the NEFC Research Program for 1991. National Marine Fisheries Service, Woods Hole Mass. 02543.
- Saaty, T. 1999. Third edition. Decision making for leaders: the analytic hierarchy process for decisions in a complex world. RWS Publications. Pittsburgh, Pennsylvania.
- Saaty, T. and K. Kearns. 1985. Analytical planning: the organization of systems. RWS Publications, Pittsburgh, Pennsylvania.
- Southeast Region Planning Workgroup. 2006b. Southeast Region strategic plan for the Subsistence Fisheries Resource Monitoring Program. Part 2: Assessment of strategic importance of sockeye salmon and workgroup recommendations for funding consideration. U.S. Fish and Wildlife Service, Office of Subsistence Management, Anchorage, Alaska.
- USFWS. 2005. Strategic plan for the subsistence fisheries resource monitoring program, southcentral region, 2004. Office of Subsistence Management, 3601 C St. Suite 1030, Anchorage, Alaska. 99503 www.r7.fws.gov/asm/strategic.cfm
- USFWS. 2006. Strategic plan for the subsistence fisheries resource monitoring program, Bristol Bay-Chignik region, 2005. Office of Subsistence Management, 3601 C St. Suite 1030, Anchorage, Alaska. 99503 www.r7.fws.gov/asm/strategic.cfm

Appendix A. Letter from Tom Boyd, Assistant Regional Director, Office of Subsistence Management, outlining strategy to determine priority information needs for the Subsistence Fisheries Resource Monitoring Program, February 17, 2004.



OFFICE OF SUBSISTENCE MANAGEMENT



**3601 C Street, Suite 1030
Anchorage, Alaska 99503-6199**

**STRATEGY TO DETERMINE PRIORITY INFORMATION NEEDS
for the
Fisheries Resource Monitoring Program**

Over the past five years, the Office of Subsistence Management has successfully developed and implemented the Fisheries Resource Monitoring Program in support of Federal subsistence fisheries management. Over 200 monitoring and research projects have been implemented on Federal lands across Alaska. A cornerstone of the Monitoring Program has been identification of Issues and Information Needs through the Regional Advisory Councils, which have been used to guide solicitation of proposals for the Monitoring Program. I would like to build upon the Issues and Information Needs process by implementing a broad-based strategic planning effort to ensure the Monitoring Program is focused on our highest priorities for management of Federal subsistence fisheries.

To ensure strategic use of our limited funds, the Office of Subsistence Management will facilitate a collaborative process to develop three products for the Monitoring Program:

- (1) goals, objectives, and information needs by region for Federal subsistence fishery management;
- (2) identification of gaps in knowledge for each information need; and
- (3) prioritization of information needs for solicitation of study proposals. The results of this effort will yield a more focused Call for Proposals for the Fisheries Resource Monitoring Program.

For each region, the Fisheries Information Services (FIS) Division in my office, will take the lead to convene a facilitated workshop of regional managers, scientists, council members, and stakeholders to identify key information needed to better manage Federal subsistence fisheries. The Fisheries Information Services Division will solicit workshop participation from appropriate Federal agencies, the Alaska Department of Fish and Game, academia, Alaska Native, and rural organizations to collectively develop and prioritize regional management and regulatory information needs. To effectively transition from Issues and Information Needs already developed through the Regional Advisory Councils, we will also ask the appropriate Regional Advisory Councils to provide up to two members for each regional workshop.

Results from these workshops will provide the basis for FIS staff to draft reports that address products discussed in the second paragraph of this letter. Where appropriate, efforts of existing regional planning groups will be utilized to help accomplish these tasks.

We will be employing a facilitated approach in these workshops using the Analytic Hierarchy Process as the methodology to frame discussion, formulate recommendations, and document results. This

methodology has been widely used for 35 years in planning and problem solving for many applications worldwide and most recently as part of similar planning efforts for fisheries assessment in the Yukon, Kuskokwim, Southeast Alaska, and marine areas of Alaska.

Planning efforts will be conducted in 7 regions to cover the entire state, and one to two workshops will be conducted in each region. For 2004, we will focus planning efforts on the Southcentral region and the Bristol Bay portion of the Southwest region. Draft reports for Bristol Bay and Southcentral will be presented to the appropriate Regional Advisory Councils for review and comment at the fall 2004 meetings. Final reports will then be prepared and will provide the basis for prioritizing information needs in the subsequent Call for Proposals, and for assessing strategic priority during evaluation of proposals.

Overall, it is our intent to complete planning efforts to determine prioritized information needs for the Bristol Bay and Southcentral regions this year. We will implement these same efforts for the Northern, Southeast, and Kodiak portion of the Southwest region in the fall of 2005. We intend to utilize results from the comprehensive and collaborative planning exercises already underway for Kuskokwim and Yukon salmon to develop information needs for these two regions. All regional plans will be presented to the appropriate Regional Advisory Councils as drafts, and we intend to complete all plans by November 2006.

Our strategic planning efforts will be a major undertaking over the next two years, but these efforts will provide a rigorous and comprehensive analysis of information needs to focus the Monitoring Program on our highest priorities for management of Federal subsistence fisheries. We look forward to your support and involvement in completing these plans.

Sincerely,

/s/ Thomas H. Boyd

Thomas H. Boyd
Assistant Regional Director

Appendix B. A glossary of terms and phrases relevant to the development of a strategic plan to support the Fisheries Resource Monitoring Program in Southeast, 2006.

ADF&G - Acronym for Alaska Department of Fish and Game, the state agency responsible subsistence management. Three divisions are associated with subsistence fisheries research and management: Subsistence (S); Commercial Fisheries (CF), including both the Gene Conservation (GCL) and Mark, Tag, and Age (MTAL) laboratories; and Sport Fish (SF), including Research and Technical Services (RTS).

AHP – Analytic Hierarchy Process

ANILCA - Acronym for Alaska National Interest Lands Conservation Act, the legal basis for Federal subsistence management in Alaska.

ASL - Age, sex, and length data commonly collected from fishes to help managers to assess the status of populations and stocks.

Anadromous - Refers to fishes that spawn in fresh waters and migrate to marine waters to rear. In Alaska, several species of Pacific salmon, char, smelt, whitefish, and lampreys are anadromous.

BIA - Acronym for Bureau of Indian Affairs, one of five federal agencies involved in Alaska subsistence management. BIA works with Alaska Tribe on various economic and social issues.

Capacity building - Increasing the ability of Tribes, rural organizations, and non-profit organizations to participate meaningfully in Federal subsistence fisheries management and research.

C&T – Customary and traditional

Conservation Units - Public lands, listed in ANILCA, over which the Federal government has subsistence fishery management authority.

Council - Southeast Regional Advisory Council. The Council is comprised of southeast Alaska residents, makes recommendations to the Federal Subsistence Board on subsistence regulations, and provides advice and comment on other subsistence matters including the Monitoring Program.

Customary trade - The cash trade of fish or fish parts between subsistence fishers and other individuals. This practice has a long history, but is poorly documented for many areas of the state. Customary Trade is allowed under Federal regulations for fishes harvested on Conservation Units, but is illegal under State regulations.

Enhancement - Human efforts, including activities such as lake fertilization, instream incubators, and predator control, to increase the production and numbers of fishes so that harvests can be increased. While Monitoring Program studies may evaluate effects of

enhancement on subsistence fisheries or provide information useful for enhancement, enhancement activities themselves cannot be funded through this program.

Escapement - annual estimated abundance of spawning fish.

Enhancement - artificial efforts to increase salmon abundance; including: stocking, fertilization, and structural improvements (fish passes, culverts, egg boxes), are explicitly excluded from funding consideration under the Monitoring Program. Projects that provide assessment of these activities, or provide recommendations to conduct enhancement, are eligible for funding under the Monitoring Program (e.g. limnology studies).

Expert judgment – a conclusion based upon previous relevant experience supported by rationale thought and knowledge.

Federal nexus - a study must have a direct association to a subsistence fishery, and either the fishery or stock in question must occur in waters within or adjacent to Federal lands. The weaker the nexus, the less likely is the funding approval. For example, high seas salmon studies would qualify for funding, however the nexus would be very weak since it would be difficult to show direct effects on Federal subsistence fishery management.

FIS – Fisheries Information Services, in the Office of Subsistence Management

Fishery interactions - potential (and usually unintended) consequences of prosecuting a fishery upon another (subsistence) fishery. Potential mechanisms by which a fishery comes into competition with a subsistence fishery include: overlapping time and area resulting in displacement of effort, redirected harvest, and socio-economics factors such as cultural differences.

Freshwater survival - freshwater production, measured as smolt abundance. This term was also discussed in the context of freshwater residency of adults (adult stream life).

FWS - Acronym for U.S. Fish and Wildlife Service, one of five federal agencies involved in Alaska subsistence management. FWS works with other agencies and stakeholders to conserve, protect, and enhance natural resources for the American people. The National Wildlife Refuges administered by FWS in Alaska are managed as federal Conservation Unit under ANILCA. Within FWS, the Office of Subsistence Management (OSM) coordinates all Alaska subsistence management activities. The Gene Conservation Laboratory (GCL) and Juneau Fish and Wildlife Field Office (JFWFO) are other parts of the FWS that could conduct Fisheries Resource Monitoring Program studies within Southeast.

Goals - long term achievements that contribute to accomplishing the mission.

Harvest rate - the exploitation of a run, stock or population usually expressed as the percent of the run, stock or population harvested.

Mission - a responsibility to fulfill.

Appendix B. continued (Page 2 of 2).

OSM – Office of Subsistence Management, in the U.S. Fish and Wildlife Service

NPS - Acronym for the National Park Service, one of five federal agencies involved in Alaska subsistence management. NPS administers public lands in Alaska to preserve natural and cultural resources and values for the American people. Most National Parks and Preserves in Alaska are managed as federal Conservation Unit under ANILCA.

Population - A group of similarly adapted, interbreeding fish of the same species. Fish populations are largely reproductively isolated and adapted to local conditions.

Stock - a locally interbreeding group of a fish species that is distinguished by a distinct combination of genetic, phenotypic, life history, and habitat characteristics, or an aggregation of two or more interbreeding groups which occur within the same geographic area and is managed as a unit (5AAC 39.222).

TEK – Traditional Ecological Knowledge

TRC – Technical Review Committee

USDA FS - Acronym for U.S. Department of Agriculture Forest Service, one of five federal agencies involved with Alaska subsistence management. USDA FS manages National Forests for multiple uses. Most National Forest lands in Alaska are managed as federal Conservation Unit under ANILCA. The Tongass is the largest National Forest in the country.

Appendix C-1. Participants in the Southeast workshop, Juneau, April 25-27, 2006.

Organization	Name	Phone	E-mail
USFWS, OSM	Doug McBride	786-3633	doug_mcbride@fws.gov
USFWS, OSM	Polly Wheeler	786-3380	polly_wheeler@fws.gov
USDA FS	Robert Larson	772-5930	robertlarson@fs.fed.us
USDA FS	Terry Suminski	747-4204	tsuminski@fs.fed.us
USDA FS	Ben Van Alen	790-7426	bvanalen@fs.fed.us
USDA FS	Dick Aho	772-3841	raho@fs.fed.us
USDA FS	Bob Schroeder	586-5895	rsschroeder@fs.fed.us
BIA	Glenn Chen	235-6607	No email
SERAC	Harvey Kitka	747-8930	hkitusa@netscape.net
SERAC	Patti Phillips	735-2240	pdjep@ptialaska.net
ADF&G, CFD	Hal Geiger	465-4257	hal_geiger@fishgame.state.ak.us
ADF&G, CFD	Bill Davidson	747-6688	bill_davidson@fishgame.state.ak.us
ADF&G, SFD	Charles Swanton	459-7255	charles_swanton@fishgame.state.ak.us
ADF&G, SD	Mathew Brock	465-2747	mathew_brock@fishgame.state.ak.us
STA	Robi Craig	747-6180	robi_craig@sitkatribes.org
OVKasaan	Cathy Needham	321-3668	cathy@kasaan.org
HCA	Anthony Christiansen	285-3666	lil_hagoo@yahoo.com
SE ITFWC	Nathan Soboleff	463-7124	nsoboleff@gci.net
Support Staff:			
Facilitator	Peggy Merritt	457-5911	pmerritt@ak.net
Recorder	Beth Spangler or Carmen Croas	786-3325 786-3634	beth_spangler@fws.gov carmen_croas@fws.gov
Note taker	Kathy Orzechowski	786-3661	Kathleen.Orzechowski@fws.gov

Appendix C-2. Affiliations and duties of Southeast workshop participants.

Doug McBride, USFWS/OSM/FIS:

FIS administers and provides technical oversight over the Monitoring Program. Doug is a fisheries biologist, and is responsible for these functions in the Southeast regions. Co-chair of the Southeast workshop.

Polly Wheeler, USFWS/OSM/FIS:

FIS administers and provides technical oversight over the Monitoring Program. Polly is an anthropologist, and is responsible for these functions statewide. Co-chair of the Southeast workshop.

Robert Larson, USDA Forest Service/Tongass National Forest/Petersburg-Wrangell Ranger District:

USDA FS monitors and manages multiple uses on the Tongass National Forest, including subsistence uses. Robert is a subsistence fisheries biologist, served as co-investigator on several Monitoring Program projects, and advises the Federal manager for Tongass National Forest Lands in the Petersburg-Wrangell Ranger District.

Terry Suminski, USDA Forest Service/Tongass National Forest/Sitka Ranger District:

USDA FS monitors and manages multiple uses on the Tongass National Forest, including subsistence uses. Terry is a subsistence fisheries biologist, served as co-investigator on several Monitoring Program projects, and advises the Federal manager for Tongass National Forest Lands in the Sitka and Hoonah Ranger Districts.

Ben VanAlen, USDA Forest Service/Tongass National Forest/Juneau Ranger District:

USDA FS monitors and manages multiple uses on the Tongass National Forest, including subsistence uses. Ben is a subsistence fisheries biologist, served as principal investigator on several Monitoring Program projects, and advises the Federal manager for Tongass National Forest Lands in the Juneau Ranger District.

Dick Aho, USDA Forest Service/Tongass National Forest:

USDA FS monitors and manages multiple uses on the Tongass National Forest, including subsistence uses. Dick is a fisheries biologist for the USDA FS Fisheries Program, and oversees fish enhancement projects on Tongass National Forest lands.

Bob Schroeder, USDA Forest Service/Tongass National Forest/Regional Office:

USDA FS monitors and manages multiple uses on the Tongass National Forest, including subsistence uses. Bob is an anthropologist, and served as the coordinator for the Southeast Regional Advisory Council.

Glenn Chen, Bureau of Indian Affairs/Alaska Regional Office, Subsistence Branch:

BIA administers and manages a wide range of functions and services for Alaska Natives, including subsistence uses. Glenn is an Alaska Region Fisheries Biologist, manager of the Subsistence Branch, a senior advisor on subsistence fisheries matter, served as a principal investigator on several Monitoring Program projects as well as the TRC for the Monitoring Program, and serves on the Subsistence Interagency Staff Committee.

Harvey Kitka, Southeast Regional Advisory Council:

The Southeast Council provides recommendations to the Federal Subsistence Board on regulatory proposals and subsistence issues, as well as advice and comment on Monitoring Program projects. Harvey belongs to Sitka Tribe of Alaska, is a subsistence user and serves on the Southeast Regional Advisory Council.

Patti Phillips, Southeast Regional Advisory Council:

The Southeast Council provides recommendations to the Federal Subsistence Board on regulatory proposals and subsistence issues, as well as advice and comment on Monitoring Program projects. Patti is a commercial fisher, subsistence user, mayor of Pelican, and serves on the Southeast Regional Advisory Council.

Hal Geiger, Alaska Department of Fish and Game/Division of Commercial Fisheries/Regional Office:

ADF&G CF monitors and manages commercial and marine personal use and subsistence fisheries statewide. ADF&G CF is a principle investigator for a large number of Monitoring Program projects throughout the Southeast region. Hal is a biometrician and the research supervisor for the Southeast region.

Bill Davidson, ADF&G/Division of Commercial Fisheries/Regional Office:

ADF&G CF monitors and manages commercial and marine personal use and subsistence fisheries statewide. ADF&G CF is a principle investigator for a large number of Monitoring Program projects throughout the Southeast region. Bill is a fisheries biologist and management supervisor for the Southeast region.

Charles Swanton, ADF&G/Division of Sport Fisheries/Regional Office:

ADF&G SF monitors and manages sport and freshwater personal use and subsistence fisheries statewide. ADF&G SF is a principle investigator for several Monitoring Program projects throughout the Southeast region. Charles is a fisheries biologist and management supervisor for the Southeast region.

Mathew Brock, ADF&G/Subsistence Division:

ADF&G SD monitors and assesses subsistence fisheries statewide. ADF&G SD is a principle investigator for a large number of Monitoring Program projects, throughout the Southeast region. Mathew is an anthropologist, and researches subsistence fisheries in Southeast.

Robi Craig, Sitka Tribe of Alaska:

STA is a Federally recognized tribe and provides a wide range of services for their tribal membership. STA is a principle investigator for several Monitoring Program projects in Southeast. Robi is an anthropologist, Director of STA Department of Customary and Traditional Resources, and served as principal investigator on several Monitoring Program projects.

Cathy Needham, Organized Village of Kasaan:

OVKasaan is a Federally recognized tribe and provides a wide range of services for their tribal membership. OVKasaan is a principle investigator for several Monitoring Program projects in Southeast. Cathy is a biologist, Director of OVKasaan Natural

Resources Department, and served as co-investigator on several Monitoring Program projects.

Anthony Christiansen, Hydaburg Cooperative Association:

HCA is a is a Federally recognized tribe and provides a wide range of services for their tribal membership. HCA is an investigator for several Monitoring Program projects in Southeast. Anthony is a biologist, Director of HCA Natural Resources Department, and served as co-investigator on several Monitoring Program projects.

Nathan Sobeloff, Southeast Intertribal Fish and Wildlife Commission:

The SE ITFWC consists of all the Southeast tribes and their respective councils. The SE ITFWC addresses problems relating to subsistence and commercial fishing throughout the region. Nathan is an anthropologist and staff position to the SE ITFWC.