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Fisheries Resource Monitoring Program

Implementation of Statewide Subsistence Fisheries Harvest Assessment Strategy

Final Report No. FIS01-107

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## Final Report Summary Page

**Title:** Implementation of Statewide Subsistence Fisheries Harvest Assessment Strategy

**Study Number:** FIS 01-107

**Investigators/Affiliations:** James A. Fall/Alaska Department of Fish and Game, Division of Subsistence; Kay Wallis/Alaska Inter-Tribal Council

**Geographic Area:** Statewide

**Information Type:** Harvest Assessment

**Issues Addressed:** This project addressed three issues: first, the need to work with fishery managers and subsistence users to implement the recommendations of Subsistence Fisheries Harvest Assessment Working Group for a unified subsistence fisheries harvest assessment program; second, realization of training opportunities and capacity building in harvest assessment methods and application of harvest assessment data; and third, maintenance and enhancement of access to information about Alaska subsistence fisheries through production of annual reports and updating and upgrading of the Alaska Subsistence Fisheries Database and web site.

**Study Cost:** \$308,310

**Study Duration:** March 1, 2001 – December 1, 2003

**Abstract:** The project was the second phase of an effort to develop a unified subsistence fisheries harvest assessment program in Alaska. In 11 area workshops, representatives of tribes, state advisory committees, federal regional advisory councils, and state and federal agencies reviewed programs for collecting subsistence harvest data. They were guided by the principles and recommendations developed by a statewide Subsistence Fisheries Harvest Working Group in Project FIS00-017. Workshop participants identified action items for potential modifications to existing programs, proposals for regulatory changes, and potential studies involving harvest assessment and traditional knowledge. They also endorsed the collection of subsistence harvest data and the Working Group's recommendations. A theme common to all the workshops was developing partnerships between agencies and tribes within these programs. The project supported updates to the Alaska Subsistence Fisheries Database and the production of Alaska Subsistence Fisheries Annual Reports for 2001 and 2002. Recommendations included in the final report include continued implementation of a unified program with additional community and subarea workshops, continued updates and enhancements to the database, and continued publication of annual reports. The final report also recommends a workshop for policy development in support of a unified program and the formation of a standing committee to monitor progress in the implementation of the Working Group's recommendations.

**Key Words:** harvest assessment methods, subsistence harvest data, subsistence fisheries, traditional ecological knowledge

**Project Data:** *Description* - Data for this study consist of estimates of subsistence harvests of fish. *Format* – Community- and location-level participation and harvest estimates as well as associated reference tables are part of a relation database maintained in MS Access and MS SQL Server. *Custodian* – Data are maintained by the Alaska Department of Fish and Game, Division of Subsistence, 333 Raspberry Road, Anchorage, Alaska 99518. *Availability* – The MS Access database is available upon request on a CD, and can be downloaded from the Division’s web site. Annual reports in PDF format are also available in the same manner.

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## INTRODUCTION

This project was the second, implementation phase in the process of developing a unified subsistence fisheries harvest assessment program in Alaska.<sup>1</sup> During the first phase, in FFY00 and FFY01 under FIS Project 00-017, the Subsistence Fisheries Harvest Assessment Working Group (Working Group) was organized by the Alaska Department of Fish and Game's Division of Subsistence (ADF&G) and the Alaska Inter-Tribal Council (AI-TC). The Working Group consisted of 11 state, federal, and tribal representatives. Among other things, the Working Group developed recommendations for a unified subsistence fisheries harvest assessment program (ADF&G and AI-TC 2000a). It also reviewed the procedures and general findings for 11 subsistence salmon harvest assessment programs, based upon summaries developed by ADF&G, and prepared a final report (ADF&G and AI-TC 2000b).

The goal of the second phase of the project, also administered jointly by ADF&G and AI-TC under FIS Project 01-107, was to systematically review and, to the extent possible over a three-year period, begin implementation of these recommendations and observations about existing programs at the level of particular fisheries management areas throughout the state. The Working Group adopted a set of "guiding principles" for effective subsistence fisheries harvest assessment programs that helped structure discussions during this implementation phase (Table 1). Among other things, guiding principles highlighted during the workshops included close coordination of programs, effective communication of program findings, identification of opportunities for developing partnerships within existing and new harvest assessment programs, and the collection and application of "traditional ecological knowledge" (TEK) and other contextual information in these programs.

In its review of existing programs, the Working Group found that few written operational plans existed for current programs, even though the procedures that the programs use are generally systematic, straightforward, and effective. An important goal for this implementation phase was therefore to prepare operational plans for the rest of the subsistence fisheries harvest assessment programs, based upon the summaries already prepared for phase one. The plan was then to collaboratively review the existing programs and evaluate them using the Working Group's recommendations. Over the three years of the project, this review and evaluation took place incrementally through a series of 11 area workshops.

Another key recommendation of the Working Group was that harvest assessment programs should attempt to incorporate training of local residents into harvest assessment procedures and to support capacity building within tribal and other natural resource programs where they exist. Identification of opportunities in these areas was a goal of the area workshops in this implementation phase. Providing demonstrations of subsistence harvest databases and facilitating discussions of applications of the data were other training needs addressed through the workshops.

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<sup>1</sup> A "unified" statewide subsistence fisheries harvest assessment program is one that consists of management area programs with common elements, as opposed to a "uniform" program that would be identical for all fisheries. The Working Group concluded that there was no one methodology or tool appropriate for all Alaska subsistence fisheries (ADF&G and AI-TC 2000a3).

The Working Group also recommended that the results of subsistence fisheries harvest assessment programs be readily available to the public. In FFY00 and FFY01, during the first phase of this project, the first two Alaska Subsistence Fisheries Annual Reports, covering data for 1999 and 2000, were produced (ADF&G 2001, ADF&G 2002). Through this project, Annual Reports for 2001 and 2002 were published (ADF&G 2003a, 2003b), and data for 2001 and 2002 were added to the database. Enhancements to the Alaska subsistence fisheries website also took place, although, as discussed below, most work on these enhancements must await a third phase of this process.

## **OBJECTIVES**

The project had five objectives:

1. Systematic, cooperative development of operational plans for current subsistence fisheries harvest assessment programs
2. Workshops in fisheries management areas to review the Working Group's recommendations, harvest assessment methods in the area, and use of harvest assessment data
3. Annual reports of Alaska subsistence fisheries for 2001 and 2002
4. Updates to the Alaska Subsistence Fisheries Database with 2001 and 2002 data, and further enhancements of Alaska subsistence fisheries web site
5. A final report

## **METHODS**

### ***Operational Plans and Program Descriptions***

As presented in an investigation plan, development and evaluation of operational plans by fisheries management area was to occur incrementally and systematically over three federal fiscal years (FFY01, FFY02, and FFY03), with about four areas addressed each fiscal year. It was anticipated that Division of Subsistence staff would write or update the operational plan for existing subsistence fisheries harvest assessment programs for each area. Project resources proved insufficient for Division of Subsistence staff to prepare operational plans for programs for which other ADF&G divisions have primary responsibility (for salmon, these include Southeast Alaska, Prince William Sound, Kodiak, Alaska Peninsula, Aleutian Islands, and the Yukon Area). Operational plans were therefore only written for some Division of Subsistence programs. Where operational plans did not exist, the program overviews prepared by David Caylor of ADF&G as background for the Working Group in Phase One provided a good substitute for operational plans during presentations and discussion at the workshops. The operational plans developed as part of this project will be circulated for review within ADF&G, appropriate federal agencies, appropriate tribal governments and regional organizations, state fish and game advisory committees, and federal regional advisory councils (RACs).

### ***Area Workshops***

Following organization or updating of information about subsistence fisheries harvest assessment programs in operational plans or program overviews, the next step in this implementation phase

was for ADF&G and AI-TC staff to organize two-day workshops in each fisheries management area (about 4 per year). The workshops had several purposes, including to: 1) discuss the Working Group's recommendations; 2) review the current subsistence fisheries harvest assessment programs in the area; 3) identify potential changes to these programs and any need for new programs; and 4) provide training in the use of subsistence fisheries databases (see below). Workshop agendas included discussion of both salmon and other subsistence fisheries. Based on workshop results, a new or revised operational plan could be produced for each program. Identification of potential for collaborative programs and the sources of funding support were also part of the workshop agenda. It was anticipated that preparation of project proposals for consideration by the Federal Office of Subsistence Management (OSM), Fisheries Information Services Division (FIS), would be an outcome of the area workshops, as well as identification of other potential funding sources for projects. Other topics explored during the workshops included evaluating current subsistence fisheries harvest estimates and identifying potential roles for traditional ecological knowledge (TEK) in harvest assessment programs.

Because current harvest assessment programs, as well as the areas in which they take place, vary in size and complexity, it was anticipated that workshops would differ in their specific organization and procedures. However, the general outline for the workshops offered in the investigation plan proved to work well, with small modifications based on experience and local input and needs. Meetings took place in central locations to save on travel funds, because some key agency and regional organization personnel live in these locations.

The study plan anticipated supporting travel and per diem for about 10 individuals for each workshop (excluding agency staff). AI-TC organized tribal representation, and ADF&G was responsible for inviting advisory committee and RAC members. We also anticipated that for most workshops, some key participants would not need to travel, in that they live where the meeting was being held.

Local participation was intended to be a combination of village/tribal representatives, local ADF&G advisory committees, federal RAC members, and regional non-profit organizations' natural resource programs. For workshop planning, Kay Wallis, the coordinator hired by AI-TC, had a dual role. Ms Wallis worked with Alaska Native leadership in each area to coordinate tribal participation in the workshops. She also was available to meet with tribes and other Alaska Native organizations in the regions to help explain the background of the harvest assessment strategy project and the findings of the Working Group, and to assist tribes and Native organizations conceptualize projects. In some regions, such as Southeast, Kuskokwim, and Yukon, it was necessary for the regional non-profit, working with AI-TC, to select participants to represent sub-areas. In other areas, such as Kodiak, Alaska Peninsula, and Cook Inlet, it was possible to invite representatives of all communities.

### ***Annual Reports on Alaska Subsistence Fisheries***

ADF&G staff wrote annual reports for 2001 and 2002 Alaska subsistence fisheries, modeled after the annual reports prepared for 1999 and 2000. In addition to updating information for each management area, the annual reports provide a statewide overview of harvests and issues. Information from the Community Profile Database (CPDB) (Scott et al. 2001) from baseline

studies of harvests of nonsalmon fish and marine invertebrate stocks for which ongoing harvest assessment programs are not being conducted are included as appropriate.

### ***Alaska Subsistence Fisheries Database***

This statewide database was updated and enhanced during the first phase of the project. In this second phase, harvest data were added for 2000, 2001, and 2002, and other improvements were made, as discussed in the “results” section, below. It is anticipated that as the database is distributed and used, recommendations for additions and improvements will be received, as they were during the area workshops.

### ***Alaska Subsistence Fisheries Web Site***

As presented in the study plan, a goal of this project was to develop enhancements to the existing Alaska Subsistence Fisheries website (which is presently part of the Division of Subsistence web site) based in part on suggestions received from agency staff and other users. Potential enhancements envisioned in the study plan included more descriptive information about particular fisheries, photographs, maps, TEK, graphics, and contributions from subsistence fishers themselves, such as stories and photos. As noted below, however, project fiscal resources were focused on the workshops, database, and annual reports. Therefore, progress towards meeting this objective was modest. Proposed Phase Three of this project (see Recommendations section, below), will focus more directly on this objective.

## **RESULTS**

### ***Operational Plans***

Three divisions within ADF&G are responsible for operating subsistence fisheries harvest assessment programs: Subsistence, Commercial Fisheries, and Sport Fish. Before this project began, operational plans existed for the Upper Copper River subsistence/personal use fisheries (Sport Fish) and the Yukon River subsistence/personal use salmon fisheries (Commercial Fisheries). For this project, Division of Subsistence staff prepared operational plans for Northwest (Susan Georgette), Kuskokwim (Mike Coffing), Bristol Bay (James Fall), and Chignik (Lisa Scarbrough). Due to time constraints, operational plans for the Cook Inlet subsistence fisheries programs handled by the Division of Subsistence (Tyonek, Seldovia, Port Graham) have not been drafted. In addition, Mike Turek began drafting an operational plan for the Southeast Region (although run by the Division of Commercial Fisheries). The Commercial Fisheries Division will be responsible for writing plans for the remaining areas (Aleutians [Unalaska], Alaska Peninsula, Kodiak, and Prince William Sound). Without supplemental funding and direction from ADF&G senior staff, this is unlikely to happen.

The topic of operational plans was discussed at the workshops and their importance was stressed. The Upper Copper River Operational Plan was distributed to all workshop participants as an example of an operational plan.

The program descriptions prepared by Dave Caylor for the Working Group in Phase One proved to be acceptable substitutes for operational plans at the workshops. These descriptions are part of the Alaska Subsistence Fisheries Database.

### *Area Workshops*

Kay Wallis, the AI-TC coordinator for the project, provided the following description of her procedure for organizing tribal participation at the area workshops.

Tribal representation at each subsistence fisheries harvest assessment workshop was initiated with a phone call to the area's Native nonprofit organization, inviting representatives of the organization to participate in the workshop. This call was followed by discussions with the organization's resource director about the workshop's objectives and schedule. Documents outlining the two-day workshop's goals and objectives were then provided to the nonprofit organization, along with a copy of a draft agenda. Once the nonprofit organization decided to participate in the workshop, they were asked to choose which communities to invite. Once these communities were identified, the Alaska Inter-Tribal Council (AI-TC) workshop coordinator made contact with each community's tribal council. Invitations to the workshop were then extended to the tribal councils, and discussion followed concerning the workshop's goals. Community tribal councils then nominated potential workshop participants and provided their names to the AI-TC coordinator. The AI-TC coordinator then made attempts to contact every potential participant in order to review the goals of the workshop and to answer any questions workshop participants had. Once travel and per diem arrangements were made, participants were again contacted to discuss any last minute issues or arrangements. An average of six tribal representatives were invited to each of the workshops. This selection process was followed for all eleven workshops. For all 11 workshops in total, invitations were extended to 66 tribal councils.

Table 2 lists the workshops by area and date. In total, 11 workshops took place, generally in accordance with the study plan. Based on the recommendation of area ADF&G staff, separate workshops were held for the Kotzebue and Norton Sound/Port Clarence areas; these were held in Kotzebue and Nome respectively, due to the different harvest assessment programs and issues involved. The proposed separate workshops for the Bristol Bay and Chignik areas were combined into a single meeting, primarily as a way to save time and money.

In general, each workshop followed a similar agenda and format. Appendix A is sample of a "typical" agenda (from the Yukon Area workshop). The workshops were a combination of presentations and discussions, although questions and comments were encouraged throughout. Jim Fall facilitated all the workshops. Flipchart note takers were: Brian Davis (Division of Subsistence) for Kodiak, the Alaska Peninsula, and the Aleutian Islands; Bill Romberg (Division of Sport Fish) for Cook Inlet/Prince William Sound; Janet Hall Schempf (Habitat Division) for Southeast; and Dave Caylor (Division of Subsistence) for the remaining six workshops (and portions of several others).

A key goal for every workshop was a set of “action items.” While participants were encouraged to focus on harvest assessment and TEK topics for action items, any subsistence fisheries-related topic (such as harvest regulations and habitat issues) was listed and discussed. Action items came up throughout the meetings and were listed on a flipchart as they arose. On the last day of each workshop, a key agenda item was to review action items recorded up to that point, list new ones, and discuss what the next step or steps should be for each. We also tried to identify a person or organization who would take the next step. The list of action items was a primary component of each workshop summary; each summary also contained an attachment listing the action item, associated discussion, and “final” consensus on the steps to take next.

A priority for this final report was to assess the status of the action items most directly related to fisheries harvest assessments and TEK projects. Tables 3 through 13 list the action items for each workshop and the current “disposition/status” of each item, to the extent these could be determined. These tables are discussed in the workshop sections, below. It should be noted however, that follow up on most of the action items was not an objective of this project; most follow-up was the responsibility of workshop participants.

The workshops were not tape recorded, but ADF&G project staff took detailed notes on flipcharts that were available for inspection throughout the meeting. Participants were encouraged to review the notes as the meeting progressed, although in fact very few changes to the notes were offered during the workshops themselves (likely due to staff clarifying points while note taking). Following the workshop, the flipchart notes were typed in full and organized by agenda item and became attachments to the meeting summary. They were also the basis for the meeting summary, along with notes kept by other project staff (primarily J. Fall, D. Caylor, and K. Wallis).

Typically within two weeks of the workshop, the meeting summary and attachments were distributed to all workshop participants for review and comment. Following a one-month review period, the summaries were finalized and distributed in PDF format. Very few recommended changes were received. A CD with the summaries and attachments (too lengthy to include as appendices to this report) is available upon request.

A brief synopsis of each workshop is included below. These do not attempt to reiterate all the discussion and points from the workshops; the reader should consult the individual workshop reports for that detail. Rather, the following summaries attempt to identify key themes from each workshop, to serve as a basis for the discussion, conclusions, and recommendation sections, which follow.

### **Kodiak Area: Kodiak, May 10&11, 2001**

The first harvest assessment workshop took place in Kodiak, at the Kodiak Fisheries Research Center, on May 10 and 11, 2001. There was also a publicly-advertised, supplemental evening session, co-sponsored by the Kodiak Fish and Game Advisory Committee (AC), held the evening of May 10 at Fishermen’s Hall (the usual meeting place of the Advisory Committee). Kodiak was selected as the site of the first workshop because of the relatively small number of communities (six villages in addition to Kodiak city and the road-connected area), and the long

history of successful collaborative research between the Division, the communities, and the Kodiak Area Native Association (KANA). This was an opportunity to try out the workshop organization and get feedback on the handouts and procedures in a familiar setting. Kodiak proved to be a good choice for the first workshop. There was excellent discussion and feedback that established an optimistic outlook and positive atmosphere that lasted through the rest of the workshops.

Workshop attendance was very good, especially considering the island's well-deserved reputation for poor weather (Table 2). All six villages were represented (Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions) as was the Shoonaq' Tribe of Kodiak, KANA, the local AC, and the Kodiak Aleutians RAC. Staff from three ADF&G divisions (Subsistence, Commercial Fisheries, and Sport Fish), the Division of Fish and Wildlife Protection, the Kodiak National Wildlife Refuge, NOAA (we were meeting in their building), and AI-TC participated. A total of 24 people attended all or parts of the workshop.

An important issue that came up early and resulted in key action items was the overall quality of the permit data for the six smaller communities of the Kodiak Area (see Table 3 and below). As in most of the subsequent workshops, participants identified subsistence fishing regulations that may inhibit and discourage collection of accurate and complete harvest data, such as permit limits, closed areas, and gear limitations. With these in mind, a set of potential regulatory proposals for the Board of Fisheries was identified. However, because the deadline for proposal submission for the Kodiak Area BOF had passed, consideration of these proposals must await the next Kodiak BOF meeting in January 2005.

Participants at this meeting established a theme that was repeated in every subsequent workshop: the need to expand local (tribal) involvement in harvest assessment programs to improve data quality. This is consistent with one of the guiding principles of an effective subsistence harvest assessment program developed by the statewide Working Group that "Partnerships strengthen harvest assessment programs" (ADF&G and AI-TC 2000a:8; Table 1) and several specific recommendations of the Working Group that urge formal roles for tribes in harvest assessment programs (e.g. Number B.4, B.7; see ADF&G and AI-TC 2000a). However, lack of natural resource programs in the six Kodiak Island Borough villages highlighted the funding issues that must be solved in order to support more local involvement.

Among other important points raised by local participants was a frustration with dual management and diverging state and federal subsistence regulations because of the confusion they cause, especially related to uncertainty about the boundaries of state and federally managed waters.

As in all the workshops, there was strong support for collection of TEK about local fisheries and fish stocks. Proposal FIS04-041 was developed by ADF&G and KANA to address the need for this information in the Kodiak Management Area. It was recommended for funding by the TRC and approved for funding by the FSB in December 2003.

As a follow up to a key action item, there was an almost immediate benefit from this workshop. The Division of Subsistence set up cooperative agreements with the tribal governments to help

structure collaborative subsistence permit issuance and data gathering. In June 2001, two ADF&G employees (Dave Caylor, Division of Subsistence; and Joanne Shaker, Division of Commercial Fisheries), traveled to the six communities to train permit vendors selected by the communities. Permit vendors were also hired in 2002 and 2003. Project FIS 04-041 will begin in 2004. This project is intended to follow up on recommendations regarding TEK and will collect harvest data on nonsalmon species. (A similar project had been proposed for FFY 2002 [No. FIS 02-033] but funding was insufficient to support it.)

### **Cook Inlet/Prince William Sound (ex. upper Copper River): Anchorage, Sept. 11&12, 2001**

This workshop began in Anchorage on one of the most tragic days in American history, September 11, 2001. A few invitees were unable to attend due to travel restrictions imposed following the attacks on the World Trade Center and the Pentagon, including the representative from Tyonek, but most had arrived in Anchorage the day before. After a moment of silence, those in attendance at the workshop decided to press on with business, and a productive two days followed.

The meeting took place at West Coast International Inn and lasted two days (September 11 and 12), as planned. Communities represented included Skwentna, Port Graham, Nanwalek, Seward, Valdez, Chenega Bay, Tatitlek, and Cordova/Eyak. Also participating were representatives of three ADF&G Divisions (Subsistence, Commercial Fisheries, and Sport Fish), AI-TC, the Chugach Regional Resources Commission (CRRC), the Southcentral RAC, the US Fish and Wildlife Service (USFWS) Office of Subsistence Management (OSM), and two advisory committees. In total, 23 people attended at least part of the workshop.

This workshop covered what is likely the most diverse set of subsistence fisheries in terms of participating communities and regulations. This is reflected in the many issues that came up and the long list of action items (Table 4). Follow-up on action items to date has been mixed.

A key point raised at this workshop, and repeated in many others, was that the benefits of reporting subsistence harvest information are not always evident to subsistence fishers. There needs to be more follow up discussions such as this workshop, and findings from programs need to be reported back to communities and fishers (something this is not regularly done in these two management areas). There was consensus that accurate subsistence harvest data need to be collected, although probably not annually for all fish species. There was also agreement that subsistence harvest data should be included along with sport and commercial fisheries data in the management process.

Assessments of the accuracy of permit data by local community representatives were mixed for the Cook Inlet/Prince William Sound areas. Community participants generally supported the findings of face-to-face household surveys rather than permit data when the estimates from the two programs diverged. Rod and reel is used in most communities as a source of salmon and other fish for home use but is not a legal gear for subsistence fishing in either management area under state regulations. This leads to underestimates of the amount of fish harvested and used based on the permit system. Also, village representatives reported that they do not want

subsistence harvest data used to restrict subsistence activities. Finally, they said that harvest data must remain anonymous.

Several regulatory proposals having to do with open areas and fishing periods for the subsistence salmon fisheries that take place near Tatitlek and Chenega Bay were identified. The Tatitlek Village Council submitted these proposals for BOF discussion at the February 2003 meeting in Cordova. The proposals did not pass, however, partly because no community representatives attended the BOF meeting. Also, the BOF was concerned with liberalizing subsistence openings in accessible Prince William Sound when all Alaskans are eligible to participate.

Considerable discussion took place at this workshop about how to involve communities in subsistence harvest assessment programs. In the Cook Inlet Area, the communities of Nanwalek and Port Graham already administer the harvest calendar program under contracts with ADF&G Division of Subsistence. Interest in similar programs in Tatitlek and Chenega Bay was expressed at the workshop, and subsequently became an action item. The Division arranged a cooperative agreement with Tatitlek to issue subsistence permits and conduct post-season interviews for 2002, but the program had only limited success. There was little improvement in harvest reporting with the permits and no interest in conducting the post season interviews on the part of the person hired in the village. No further interest was expressed by Chenega Bay after the workshop to administer a permit and interview program there. This experience demonstrates that without a strong commitment by local leadership and without hiring the right people, good intentions are not enough for a successful harvest assessment program.

### **Southeast Alaska Workshop: Juneau, December 18&19, 2001**

This workshop was unusual in that it covered an entire management region. Workshop organization and planning were facilitated by a pre-workshop meeting of staff of the Divisions of Subsistence and Commercial Fisheries in Douglas on October 25, 2001. Following this planning meeting, the original workshop dates were changed to accommodate maximum participation by Division of Commercial Fisheries staff. All Division of Commercial Fisheries area management biologists (from Haines, Sitka, Juneau, Petersburg, and Ketchikan) attended the workshop – a tremendous step in establishing communication between subsistence fisheries and fisheries management personnel.

The workshop was held at Centennial Hall in Juneau on December 18 and 19, 2001. In attendance were representatives of six communities (Angoon, Sitka, Kake, Juneau, Saxman, and Hoonah), plus the Central Council of Tlingit and Haida Indians (CCTHI), Sealaska Corporation, the Alaska Native Brotherhood, and AI-TC. Weather prevented invited representatives from four communities from participating (Yakutat, Klukwan, Wrangell, and Klawock). Agency representation included four ADF&G Divisions (Subsistence, Sport Fish, Commercial Fisheries, and Habitat), USFWS (Office of Subsistence Management [OSM]), and the US Forest Service, plus the University of Alaska-Southeast. In total, at least 34 people attended at least portions of the workshop.

In the Southeast region, subsistence regulations create the greatest challenges for harvest assessment programs because of small salmon systems and consequent relatively low seasonal

and, in some cases, daily harvest limits on permits that are needed for resource conservation. Workshop participants asserted, and household surveys confirm (ADF&G 2001:135), that this likely leads to under-reporting on the permits. Often, people need to travel relatively long distances to harvest subsistence fish, and have obligations to share with other families. Therefore, they harvest what they need but only record the limit on the permit. Solutions to this problem were discussed. Among them were improvements to the state's proxy system (which now only allows proxy fishing for the elderly, disabled, or blind) and community permits. Another problem that requires Board of Fisheries action is the general lack of subsistence fishing opportunities for species other than sockeye salmon under state regulations. Several action items (Table 5) addressed these regulatory concerns.

The common theme of most workshops, that tribes want more involvement in subsistence harvest assessment programs through government-to-government relationships, was strongly expressed in at the Southeast Region workshop in Juneau. There is support for harvest assessment, but the benefits of collecting the data are not always evident to fishers, who worry that the primary reason for the programs is enforcement of regulations that are not consistent with traditional fisheries.

A further challenge to an effective harvest assessment program in Southeast Alaska is increasing divergence of state and federal subsistence fishing regulations. For example, because of differences in coho fishing rules, there is now a new permit system for federal subsistence fisheries. Community representatives voiced opposition to a dual permit system. They also voiced support for consistency in state and federal subsistence regulations, as well as for the federal coho salmon subsistence fishery.

A special agenda item at this workshop was a presentation on traditional and local knowledge by Dan Monteith of the University of Alaska Southeast. He prefers the term "local ecological knowledge" to TEK, because in his view the term "traditional" can be misleading in the context of harvest assessment because local knowledge does not necessarily need to be traditional to be useful. He also brought up issues of compensation to culture bearers for traditional knowledge and protection of culturally sensitive information.

### **Alaska Peninsula Area: Sand Point, May 29 to 31, 2002**

This workshop, focusing on the Alaska Peninsula Management Area, included an evening session on May 29, 2002, to accommodate people with jobs who could not participate in the full workshop, plus a full day on May 30, and a half-day on May 31. The workshop ended around noon so that attendees could return home that day. The meeting took place in the City Council Chambers in Sand Point.

Logistics were complex for this workshop because air charters were necessary to transport village representatives to Sand Point. Poor weather prevented representatives from Port Heiden and False Pass from attending. Three communities (Nelson Lagoon, Sand Point, and King Cove) and five tribes were represented, as were ADF&G (Division of Subsistence and Division of Commercial Fisheries), AI-TC, the Aleutian/Pribilof Islands Association, the Aleutians East Borough, and the Aleut Marine Mammal Commission. Two attendees were advisory committee

members. No federal RAC members were available, although the council chair, who lives in King Cove, was invited but had a scheduling problem. This was the only workshop in which no representative of any federal agency participated. An USFWS FIS staff member planned to attend but she encountered problems with her plane reservations.

Perhaps more than at any other workshop, the important interrelationships between commercial and subsistence fishing in rural Alaska were stressed by local residents at the Alaska Peninsula Area workshop. Removing fish from commercial catches for home use is an important source of subsistence resources. (This has been well documented in several Division of Subsistence technical papers.) Commercial fishers take advantage of closed commercial periods to harvest resources for subsistence use in areas that they otherwise might not be able to travel to. Severe restrictions on commercial fishing therefore have implications for subsistence uses. Also, the removal of fish from commercial harvests for home use is poorly documented. This is especially a problem if only permit data are used to determine the amounts necessary for subsistence use. Action Item Number 14 in Table 6 identifies the need for better documentation of fish removed from commercial fisheries for subsistence use.

Community participants also stated that the subsistence permit limit of 250 salmon creates a problem for achieving accurate estimates of subsistence harvests in the Alaska Peninsula Area. They stated that households share salmon and key harvesters provide for other families, so that harvests of over 250 fish regularly occur. However, because the permit states a limit of 250, that is the harvest number reported on the permit. ADF&G representatives noted that an additional permit will be issued if more fish are needed. Nevertheless, community representatives suggested several other solutions, such as revised subsistence fishing proxy regulations, removal of the seasonal limits, and/or community harvest permits. All of these would require regulatory action by the Alaska Board of Fisheries and the Federal Subsistence Board. (See list of action items in Table 6, and discussion below.) This workshop developed one of the longest lists of potential regulatory changes as action items, and it is noteworthy that local participants clearly saw these changes as contributing to better subsistence fisheries harvest data.

Community and tribal representatives from the Alaska Peninsula Area expressed a great deal of interest in developing partnerships between ADF&G and tribal governments to administer subsistence fisheries harvest assessment programs. During the meeting, Mike Brubaker of A/PIA prepared a “draft concept paper” on a “State-Tribal Subsistence Fish Harvest Assessment Partnership.” It suggested the development of a “pilot program” to design and implement such a partnership. Some discussion of the draft (which was incomplete) occurred at the workshop, and an action item was identified. No formal follow up on these ideas has occurred to date, except in the context of Project FIS 02-032 (see below). All workshop participants recognized that funding such partnership projects is a formidable problem.

Follow up on several of the action items identified at the workshop benefited from an FIS-funded study (No. FIS 02-032), “Subsistence Fisheries Harvest Assessment and Traditional Ecological Knowledge, Lower Alaska Peninsula and Aleutian Islands.” This project, with ADF&G, A/PIA, and Idaho State University as partners, is collecting fisheries harvest data and TEK in communities of the Alaska Peninsula and Aleutian Islands management areas. Brian

Davis made a presentation about the project's goals and objectives at the workshop's evening session, and the project received the endorsement of the participants.

A number of proposed regulatory changes for the Alaska Peninsula Area subsistence salmon fishery also appear on the action item list in Table 6. Although the local advisory committees and communities did not submit specific proposals to the Alaska Board of Fisheries by the April 2003 deadline, ADF&G Division of Commercial Fisheries did prepare a comprehensive proposal addressing these regulations, that converts most of the present "permit conditions" into regulations (although the proposal does not incorporate the changes suggested at this workshop). The proposal (No. 199) will be discussed at the Alaska Peninsula Area meeting of the Alaska Board of Fisheries in Anchorage in February 2004. Through written comments, oral testimony, and/or participation in the committee process at the board meeting, the advisory committees and others have the opportunity to recommend any or all of these regulatory changes through amendments to Proposal 199.

### **Aleutian Islands Area: Dutch Harbor, June 26 to 28, 2002**

The workshop addressing the Aleutian Islands Management Area took place at the Grand Aleutian Hotel in Dutch Harbor, on June 26 to 28, 2002. As in Sand Point, an evening session was held on June 26 to accommodate people who could not attend during the day, but it was not well attended. In total, 17 people attended part or all of the workshop. All communities/tribes of the area were represented (Akutan, Qawalangin Tribe of Unalaska, Nikolski, and Atka), except Adak (which has no separate tribe and is a newly resettled civilian community following closure of the navy base there). Also in attendance were representatives of ADF&G (Divisions of Subsistence and Commercial Fisheries), AI-TC, USFWS (FIS), and A/PIA. The Unalaska/Dutch Harbor Advisory Committee was also represented.

Tribal participants from Unalaska pointed out that the Unalaska/Dutch Harbor population has grown substantially and a large majority is from outside the Aleutian Islands area. The regulations governing subsistence fishing that reflect the activities of this majority may not be consistent with harvest and use traditions established centuries ago by the Alaska Native inhabitants. This is a reason why tribes need to be more involved in harvest assessment and resource management, they said. The importance of confidentiality of harvest information provided by individuals was also of particular concern at this workshop.

Similar subsistence regulatory issues arose in the Aleutian Islands workshop as at Sand Point, and were identified as action items (Table 7). These included adding rod and reel as a subsistence gear under state regulations (already allowed under federal subsistence regulations) and issuing permits to tribes to administer their subsistence fisheries (following the model for village fish wheels in the Upper Copper River District). ADF&G staff stressed the need to submit proposals to the Alaska Board of Fisheries by the April 2003 deadline. No proposals were submitted (but see discussion of BOF Proposal 199, under the Alaska Peninsula Area, above).

Habitat issues were of particular concern for meeting attendees, despite not being a focus of the workshop. There are issues regarding habitat degradation by commercial trawl fisheries, as well

as by-catch wasted in these fisheries. Also, there are local depletions of halibut and crab stocks near Unalaska/Dutch Harbor. Local participants expressed an interest in establishing a “LAMP,” a “local area management plan,” to address these local depletion issues and other concerns. No one at the workshop was knowledgeable about the LAMP process, however. Following up on an action item (No. 7 in Table 7), Jim Fall investigated the regulations and procedures regarding establishing LAMPs and provided this information to the Qawalangin Tribe. To date, no further follow-up has occurred.

Other action items identified at this workshop, similar to those discussed in the Alaska Peninsula Workshop in Sand Point, will benefit from the FIS-funded study (No. FIS 02-032), “Subsistence Fisheries Harvest Assessment and Traditional Ecological Knowledge, Lower Alaska Peninsula and Aleutian Islands” that was getting underway at the time of the workshop and was a featured item for discussion on the agenda. These include the collection of fisheries TEK and conducting post-season household interviews in partnership with tribes to supplement permit returns. There are three communities in this management area (Atka, Akutan, and Nikolski) where no annual harvest assessment programs for subsistence salmon occur. A goal of Project 02-032 is to provide estimates for these fisheries using harvest calendars and post season surveys.

### **Kuskokwim Area: Bethel, November 7&8, 2002**

The workshop for the Kuskokwim Management Area took place at the office of the Yukon Delta National Wildlife Refuge in Bethel on November 7 and 8, 2002. This was the only workshop that experienced a significant scheduling problem at the last minute. The original plan was to have an evening session to start the workshop, as in Dutch Harbor and Sand Point, but a cancelled flight delayed arrival of ADF&G project staff from Anchorage, so the workshop began the next morning. Despite the late start, all agenda items were adequately addressed.

Organizing this workshop was a challenge because of the large number of communities in the Kuskokwim management area. Also, several competing meetings drew people away. In total, 21 people attended all or part of the workshop. Five local communities were represented, as was the Association of Village Council Presidents (AVCP). Also participating were staff from ADF&G (Divisions of Subsistence, Commercial Fisheries, Sport Fish, and Boards Support), the USFWS Refuge office, and AI-TC. Several participants preferred to offer comments and suggestions in their native Yup’ik language. Mary Pete and Trim Nick of ADF&G and Jacob Isaac of the USFWS facilitated translation.

There is a long history of successful partnerships in the Kuskokwim Management Area in subsistence harvest assessment programs, and several ongoing FIS-funded projects have further enhanced cooperation. A key issue for local residents is coordination of harvest studies, such as those involving salmon and waterfowl, to minimize respondent burden and conserve scarce fiscal resources. The possibility of working with schools to develop interns and school-to-work programs was brought up. Mike Coffing (ADF&G) noted that the salmon harvest assessment programs in this area benefit from experienced staff and changes to procedures should proceed with caution. These points underscore the need for operational plans that provide guidance when changes in personnel occur.

Workshop participants expressed support for the post-season subsistence salmon harvest assessment program administered by ADF&G Division of Subsistence. There was consensus that this information is needed for fishery management, especially in light of recent poor salmon returns to the Kuskokwim River and the adoption of weekly closures to subsistence salmon fishing. In the assessment of local participants in the workshop, there is widespread local support for this program, although it was noted that not all local communities participate in subsistence fisheries harvest assessments. Local participants also stressed that the traditions and unwritten laws of the Yup'ik people guard against over harvest and encourage conservation. Because of these traditions, they said, a permit system is unnecessary in the Kuskokwim Management Area. It was also recommended that the harvest assessment program for subsistence herring be resumed.

Environmental changes affecting fish populations were discussed at length. These include warming trends (melting of permafrost), drying up of lakes, scarcities of certain fish (blackfish and whitefish for example), expanding ranges of other fish (such as more salmon around Nelson Island), and the proliferation of beavers. There was a consensus among workshop participants that documentation through formal studies of these trends as observed by local residents should take place.

Participants in this workshop discussed their desire for incorporating TEK into resource management, including in-season management. ADF&G Commercial Fisheries area biologist Tim Ward brought up the topic of local indicators of salmon run timing. He recommended that a formal TEK study be conducted that documents a catalog of traditional indicators that could be incorporated into in-season management plans. This idea was endorsed by the workshop participants as an action item (Table 8). ADF&G submitted a project proposal to FIS (No. 04-357) that proposed utilizing the Calista Elders Council as the forum for investigating this topic. However, the proposal was not recommended for funding by the Technical Review Committee (TRC).

Due to the relatively small number of villages represented at this workshop and the large number of villages in this area, a series of community meetings or subarea workshops was suggested as an action item as a follow up to this meeting (Table 8). No further action on this item has taken place. It should be noted that FIS Project 01-019 supported a series of subregional meetings on subsistence fisheries topics organized by AVCP and KNA. However, there is likely still a need to arrange additional follow-up meetings as recommended in this workshop to discuss harvest assessment and TEK topics.

### **Kotzebue Area: Kotzebue, November 19&20, 2002**

The subsistence fisheries harvest assessment workshop for the Kotzebue Management Area took place on November 19 and 20, 2002, at the conference room of the Selawik National Wildlife Refuge in Kotzebue. This is another area with a large number of villages, so AI-TC worked with Maniilaq Association to achieve subarea coverage. Representatives from five communities attended. Among these were members of two Fish and Game advisory committees and the Northwest Arctic RAC. Also in attendance were staff from ADF&G (Divisions of Subsistence and Commercial Fisheries), AI-TC, Maniilaq Association, the Selawik National Wildlife Refuge

(USFWS), the National Park Service, and USFWS (OSM). In total, 18 people attended all or part of the meeting.

This is an area with one of the strongest histories of partnerships between state, federal, and tribal organizations in subsistence harvest assessments. Much of discussion at the workshop centered on the desirability of what was deemed a “master plan” for integrating subsistence harvest assessment programs. Such a plan would identify the need for updating harvest data for particular resources according to a schedule. There would also be periodic “baseline” surveys that document harvests of all resources; such comprehensive data sets are missing for seven communities in the Kotzebue Area, which is viewed as a serious gap by workshop participants. The harvest assessment program in the “master plan” would be built upon partnerships between ADF&G, federal agencies, and tribes. Further discussion of the development of the “master plan” was identified as an action item (Table 9), with the next step being a series of village meetings to obtain more input. A project proposal (No. FIS04-157) was submitted jointly by ADF&G Division of Subsistence and Maniilaq to fund this process. The TRC recommended funding the project; final approval by the FSB occurred in December 2003.

This was also one of few management area workshops where the need for annual subsistence salmon harvest assessments was questioned. Participants noted that commercial fisheries in the Kotzebue Area are small, sport fisheries are undeveloped, and there are few management or allocation issues. While subsistence salmon harvest data for all communities are needed (not all communities are included in the current annual round of surveys), annual surveys may be unnecessary. ADF&G provided an example of why good, comprehensive harvest data are needed: the Board of Fisheries determination of the amount of fish necessary for subsistence uses. In the Kotzebue Area, because of data gaps, this finding, which is used in making allocation decisions and is required by state law, is based in part on extrapolating harvest estimates for communities with data to those with no information.<sup>2</sup> An additional issue for this area is obtaining a reliable harvest estimate for the large regional center of Kotzebue.

Despite good support for harvest assessment studies in the Kotzebue Area, tribal representatives cautioned that such support is not universal, nor should it be taken for granted. They reported that an understanding of why subsistence harvest information is needed is lacking among at least some harvesters in all the villages. Some people remain suspicious about potential misuse of the data to unnecessarily restrict their traditional fish and wildlife uses.

As in most other workshops, participants shared their observations of environmental changes. For example, coho salmon are increasing their range in Northwest Alaska. The importance of documenting and communicating these local observations was stressed. Further TEK studies were endorsed and one (FIS 04-158) was proposed to FIS, but was not recommended for funding by the TRC.

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<sup>2</sup> This means that the known harvest rates for species per capita from communities where studies have been done were applied to communities for which no data were available in order to estimate an area-wide total harvest.

## **Yukon Area: Fairbanks, December 3&4, 2002**

The Yukon River drainage is the largest and most complex subsistence fisheries management area in Alaska in terms of the number of villages, geographic size, cultural diversity, number of fisheries organizations, and, historically, subsistence salmon harvests. This area currently faces difficult salmon fisheries management and allocation issues due to a series of poor returns of important stocks. Organizing an area wide workshop on a limited budget with good area representation was a challenge. This was accomplished by AI-TC through working with the Tanana Chiefs Conference (TCC), the regional Alaska Native non-profit organization. Also, the Division of Subsistence contracted with former division employee Dave Andersen to assist with workshop planning, including organizing advisory committee involvement.

The workshop took place at Pike's Waterfront Lodge in Fairbanks, on December 3 and 4, 2002. In total, 29 people participated. There were nine community representatives, who also represented four advisory committees and the Eastern Interior RAC. Agencies and organizations that were represented included ADF&G (Divisions of Subsistence, Commercial Fisheries, and Sport Fish), Tanana Chiefs Conference (TCC), AI-TC, the Council of Athabascan Tribal Governments (CATG), the Yukon River Drainage Fisheries Association (YRDFFA), and the US FWS (OSM).

The Yukon Area has a long established and successful subsistence salmon harvest assessment program, currently run by the Division of Commercial Fisheries. The program utilizes several methods (including permits, calendars, and household interviews) in collecting household data and covers the entire, large Yukon River drainage of Alaska. Complex management, poor salmon returns in recent years, closures to commercial salmon fisheries, and first-ever restrictions on subsistence salmon fisheries in the Yukon River highlight the importance of the data produced by this program. These issues also highlight, as recommended by the Working Group, the need for periodic review of the program's methods and findings and seeking suggestions for any needed adjustments to the program (Table 1; Recommendations I-1 to I-5 [ADF&G and AI-TC 200a:21]) . Much of the workshop focused on this agenda item.

Several tribal participants expressed interest in the development of partnerships in the Yukon Area subsistence harvest assessment program. Currently, ADF&G technicians conduct household interviews post season. The representative from Emmonak handed out a short communication from the tribal government recommending cooperative agreements between ADF&G and tribes to collect harvest data in-season. This communication suggested that the current program underestimates subsistence harvests due to distrust by local harvesters of interviewers working for ADF&G. Additional discussion revealed that some of the disagreement over the estimates might have to do with misunderstanding how ADF&G computes community estimates using a stratified design. The CATG representative reported that his organization had conducted its own surveys in the past (the results of which have not been available to the public or agencies). He stated that while the results compared well to those of the ADF&G program, they tended to be higher. Involving local communities directly in data collection might improve results, he suggested. ADF&G staff agreed to follow up specifically with Emmonak to determine the nature and extent of the issues there. An action item (Table 10) was to develop state/tribal MOUs to work together on harvest assessment surveys, although it

was recognized that more discussion on this topic was needed. Another action item was to have “follow-up meetings,” but no follow up has occurred to date.

Perhaps more so that in any other workshop, the Yukon Area meeting specifically raised the question of whether it is always necessary to develop partnerships with tribes (or other organizations) within an agency harvest assessment program if the program is fairly successful at estimating subsistence harvests. As pointed out by ADF&G, such arrangements might add to the cost of programs, especially in an area like the Yukon with dozens of tribes and communities. Adequate training of interviewers is necessary, and there is a strong advantage in using experienced staff. But work on harvest assessment projects cannot support a person with an adequate income, and frequent turnover of local assistants may be a common occurrence. Another consideration is the strong interest tribes have in becoming more involved, and the suggestion that, at least in some communities, data could be improved through partnerships. Everyone at the Yukon workshop agreed that there is a need to avoid competing projects that duplicate the collection of subsistence harvest data in the same communities.

Some discussion of the advisability of in-season harvest data collection for the Yukon River also took place. Participants expressed interest in such a program to assess whether communities are meeting subsistence harvest goals in season, rather than waiting for a post-season assessment. Workshop participants pointed that the monetary cost of in-season harvest assessment is high. They also pointed out response burden for fishers being interviewed multiple times over the summer season. The statewide Working Group had recommended that in-season harvest assessments take place only under a very limited set of circumstances, primarily due to the issues of response burden and cost (Recommendation No. F.6; ADF&G and AI-TC 2000a:18). Ray Hander (USFWS) provided a summary of a pilot program to conduct in-season qualitative assessments of subsistence harvests that occurred in 2002.

In addition to the Kuskokwim Area, the Yukon Area is a primary focus of FIS-funded research. The workshop organizers requested that Polly Wheeler of FIS make a special presentation on the FIS program. This presentation was very helpful in assisting workshop participants in understanding the requirements of the program, what has been funded so far, and possible funding constraints.

Another special feature of this workshop was a presentation by Dave Andersen (formerly of ADF&G Division of Subsistence) and Craig Fleener (CATG) on an FIS-funded study of TEK regarding beaver/whitefish interrelationships (FIS 00-006; Andersen and Fleener 2001). Among the key points of this presentation was that successful TEK projects take time, especially for analyzing the findings. Such research is not simply a matter of conducting interviews. Another key to success is partnerships with tribes and regional organizations who, among other things, can identify knowledgeable people and facilitate contacts with them.

### **Bristol Bay and Chignik Areas: Dillingham, April 2&3, 2003**

This workshop took place in the Board Room of the Bristol Bay Native Association (BBNA), the regional Alaska Native non-profit organization, in Dillingham on April 2 and 3, 2003. As noted above, for cost savings, two management areas (Bristol Bay and Chignik) were combined for this

workshop. Communities from both areas are represented by BBNA. Poor weather prevented all but one of the Chignik Area communities' representatives from attending in person. Ten people participated through teleconference from Chignik Lagoon and Chignik Lake. Additionally, 22 people attended the workshop in Dillingham, for a total of 32 participants. Ten communities (three Chignik Area and 7 Bristol Bay Area) were represented. Poor weather prevented representatives from the Iliamna Lake area from traveling to Dillingham for the workshop. Attendees represented the Bristol Bay RAC and four local advisory committees. Agencies and organizations with representatives included ADF&G (Divisions of Subsistence, Commercial Fisheries, Sport Fish, and Boards Support), AI-TC, BBNA, and the USFWS (King Salmon Field office and Togiak NWR).

Both the Bristol Bay and Chignik areas have effective subsistence salmon harvest assessment programs. There was strong consensus among workshop participants that these programs should continue. In contrast to most other workshops, there were few suggestions for changes to these programs. Concerns were raised about information potentially being used against people, fishing location data being used to reveal productive fishing locations, and harvest limits imposed on the permits for Bristol Bay despite none in state regulation. Better and more consistent documentation of nonsalmon subsistence harvests is needed for both areas, however, especially with the growth of recreational fisheries.

Management agencies' reporting of annual subsistence salmon harvest assessment study results back to communities and permit holders is something that was lacking in the Bristol Bay and Chignik Area programs, according to workshop participants. Action items included preparing post-season summaries that can be provided to permittees and communities (Table 11). This was accomplished for Bristol Bay in 2003.

In these two management areas, there is a long and continuing tradition of cooperative projects between ADF&G and BBNA. Ralph Andersen of BBNA provided an overview of BBNA's current fisheries projects funded primarily by FIS. Capacity building is a key goal of BBNA's programs. BBNA has established a set of policy and ethical guidelines for research in local communities, that emphasize informed consent, confidentiality, local hire, and providing study results back to the communities. Workshop participants agreed that these guidelines are a good model for other regions.

A special agenda item for this workshop was discussion of the effects of the development and management of the new cooperative commercial fishery in the Chignik Management Area, beginning in 2002. As reported by local area residents, changes in commercial fisheries management resulting from the cooperative fishery include more competition with subsistence fishers during early openings, reduced escapements resulting in lowered abundance of salmon for subsistence harvest in Chignik Lake, and more reliance on fish removed from the commercial fishery for home use (which is not well documented). ADF&G staff reminded workshop participants that a special meeting of the Board of Fisheries would take place in Anchorage in November 2003 to address issues related to the Chignik Cooperative Fishery. At the request of workshop participants, ADF&G staff obtained clarification that proposals related to subsistence fisheries affected by the cooperative commercial fishery would be accepted by the Board up to the August 18 deadline. However, that no such proposals were submitted to the Board. At the

November BOF meeting, ADF&G staff and local community members described the subsistence fishery issues that have arisen since the advent of the cooperative fishery. Although the BOF took no regulatory actions at the November meeting related to these subsistence issues, another opportunity to address these concerns will occur at the regularly-scheduled Chignik Area meeting of the BOF in January 2005.

A number of TEK studies have occurred in these management areas, and workshop participants expressed continued support for this work. ADF&G staff provided a short demonstration of the "From Neqa to Tepa" TEK database, prepared under FIS Project No. 00-012. Attendees noted the importance of good taxonomic studies of local categories of fish, without which harvest assessment and TEK projects might produce incomplete or inaccurate data. The importance of interpreting TEK within a cultural context was also discussed; workshop participants warned that elders might be reluctant to provide TEK if it is misunderstood or taken out of context.

### **Norton Sound and Port Clarence Areas: Nome, April 9&10, 2003**

This workshop was held at the Aurora Inn in Nome on April 9 and 10, 2003. Twenty-four people participated in all or part of the meeting. As for the other workshops, AI-TC coordinated closely with the regional Alaska Native non-profit organization (in this case, Kawerak, Inc.) to arrange tribal involvement and achieve subarea coverage. Ten local communities were represented, as was the Seward Peninsula RAC and one local advisory committee. Agencies and organizations with attendees included ADF&G (Divisions of Subsistence and Commercial Fisheries), AI-TC, Kawerak, USFWS (OSM), and the National Park Service (Western Arctic National Parklands).

During the presentation on existing harvest assessment programs, workshop participants endorsed the recommendation of the Working Group that contextual information be collected to interpret harvest numbers. In the Norton Sound Area, displacement of subsistence fisheries is occurring, caused by growing sport fisheries and increased closures in the Nome Subdistrict (which has the only Tier II fishery in the state). The effect of interception of salmon by commercial fisheries in other areas also needs to be accounted for in interpretations of subsistence harvest data. A number of Board of Fisheries regulatory proposal ideas were discussed and became action items (Table 12). There was good follow up by Kawerak and these proposals were submitted by the deadline.

Workshop attendees emphasized the importance of reporting harvest assessment program results back to the communities and harvesters. ADF&G already sends out an annual summary of these results (one of the few programs that does), but face-to-face meetings are preferred by some. The cost associated with a series of annual data review meetings in such a large area as Norton Sound is an issue, as is adding another item to the already busy agendas of tribal council meetings. Additionally, workshop participants stated that people in their region want to see subsistence harvest data used and applied to support traditional activities in order to continue advocating for subsistence harvest monitoring programs.

As in the Kotzebue Area, a number of harvest assessment programs in the Norton Sound Area focus on species other than salmon, such as waterfowl and big game, which might benefit from

coordination. Also needed are more comprehensive baseline studies of subsistence harvests; very few have been conducted in this area, and they are expensive. Conducting more baseline studies became an action item (Table 12), with identifying potential funding sources an essential early step. The idea of a “master plan,” similar to that discussed in Kotzebue, came up. It was recognized that intensively managed species such as salmon may need annual harvest assessments, but others, such as caribou, do not. Another suggestion was to develop long-term agreements between tribes, agencies, and Kawerak in support of on going projects such as the annual salmon harvest surveys. This would help prevent delays in getting project approvals each year.

A major issue for Norton Sound Area communities and organizations is the paucity of federally managed waters, which means that obtaining FIS funding support in this area is problematic. Nevertheless, examples of several successful FIS-funded projects were discussed. For example, Sandra Tahbone of Kawerak described the results of a recently completed study by Kawerak and ADF&G on subsistence fishing patterns by Nome residents (Project No. FIS01-224; Division of Subsistence Technical Paper No. 274 [Magdanz et al. 2003]).

TEK studies received strong endorsement by local workshop participants from Norton Sound communities. Several noted that local communities are losing their elders and their Alaska Native languages. Also, as in several other workshops, local subsistence fishers reported observations of diseased or abnormal fish, and asked about procedures for receiving agency evaluations of the safety of eating such fish. Although subsistence foods safety is not a part of this harvest assessment project, as an action item, Kawerak and ADF&G staff were to investigate protocols for having samples of diseased and abnormal fish from subsistence harvests tested by ADF&G.

### **Upper Copper River District: Gulkana, April 29&30, 2003**

As noted in the introductory section, a separate workshop for the Upper Copper River District of the Prince William Sound Management Area was planned because of its distinctive fisheries and issues. The district consists of two subdistricts: Chitina and Glennallen. The former is dominated by a dip net fishery; 99 percent of the participants of which come from outside the Copper River Basin (ADF&G 2003a:137). The Alaska Board of Fisheries has classified this fishery as both subsistence and personal use in the past. In February 2003, the Board of Fisheries again classified the fishery as personal use. The Chitina Subdistrict personal use fishery was not discussed at the workshop. It should be noted that federal regulations allow subsistence fishing in the Chitina Subdistrict, although few permits have been issued to date.

The Upper Copper River District workshop took place on April 29 and 30, 2003, at the Gulkana Village Hall in Gulkana. In total, at least 27 people attended all or part of the workshop. Six villages were represented, as was the Southcentral RAC and one local fish and game advisory committee. Agencies and organizations with representation included ADF&G (Divisions of Subsistence and Sport Fish), Eyak Preservation Council, AI-TC, Copper River Native Association, Ahtna Inc., USFWS (OSM), and the National Park Service (Wrangell-St. Elias National Park).

The subsistence harvest assessment program in the Glennallen Subdistrict, run by the Division of Sport Fish, has a long history. It is one of the few programs in the state with a written operational plan, one that has been used as a model for others. Workshop participants expressed support for this annual program, although some said they would like to see more tribal involvement through cooperative agreements. They said that they thought that the subsistence harvest estimates are good, although there might be some underreporting. A potential issue for effective harvest assessment is the development of a separate subsistence permit program by the NPS. (This dual permit program may not be consistent with Working Group Recommendation No. B.3., but may nevertheless be necessary when state and federal regulations diverge.) Workshop participants stressed that coordination of the state and new federal program is essential, and findings need to be reported in one database.

As with several other areas (e.g. Kotzebue, Bristol Bay, Kuskokwim), there is a good record of cooperative harvest assessment and TEK projects in the Copper River basin area. These include comprehensive household surveys conducted by ADF&G, CRNA, and NPS; surveys of freshwater fish harvests (FIS Project 01-110), and TEK studies of salmon (FIS 00-040) and other fish (FIS01-110). Workshop participants expressed support for two study proposals submitted to FIS by ADF&G and tribal partners for funding in FFY 04: FIS 04-553 and FIS 04-554. Only the former was recommended for funding by the TRC, however.

Action items from this workshop are listed in Table 13. Because of the large number of projects currently underway or wrapping up in this area, follow up on new project ideas by ADF&G staff has not occurred to date.

### *Annual Reports*

#### **Organization and Content**

Two Alaska Subsistence Fisheries Annual Reports were produced as part of this project (following up on two prepared for the first phase), one for 2001 (ADF&G 2003a) and one for 2002 (ADF&G 2003b). These reports focus primarily on subsistence salmon harvests, mostly due to the lack of annual harvest assessment programs for other subsistence fisheries (nonsalmon finfish and marine invertebrates). The 2001 annual report was distributed in September 2003 and the 2002 annual report became available in December 2003. The initial printing was 150 copies of each. About 75 copies were distributed in accordance with the procedures for Division of Subsistence technical papers. Additionally, 25 copies were provided to OSM for distribution. Copies were also provided to ADF&G regional and area offices in the divisions of Subsistence, Commercial Fisheries, and Sport Fish. The reports, in PDF format, were also posted on the ADF&G website and can be downloaded and printed from there. The annual reports are also on the CD, along with the workshop summaries produced for this project.

The organization of the annual reports for 2001 and 2002 was the same as for the first two volumes of the series (1999 and 2000). After a brief introductory chapter that describes methods and limitations, a second chapter provides a statewide overview of subsistence salmon harvests in the study year. This is followed by 11 chapters pertaining to particular management areas or, in the case of southeast Alaska, a management region. Each chapter includes a description of the

harvest assessment methods, estimated harvests and levels of participation (usually by community of residence) for the study year, and historic harvest tables. Some chapters have more specific harvest location data, and a few have overviews of other subsistence fisheries. The 2001 annual report contains an expanded chapter for the Southeast Region featuring detail for most region communities. This community-specific information for Southeast was not readily available in any other report.

Table 14, from the 2001 annual report, reports estimated subsistence salmon harvests by species and management area; Table 15 provides the same information for 2002.

### **Some Issues Concerning the Statewide Annual Report**

As presented in the study plan, the purpose of the annual report is to compile data from ongoing subsistence fisheries harvest assessment programs run by the Alaska Department of Fish and Game and federal agencies. The annual report (e.g. ADF&G 2001:1-2) acknowledges several limitations, as follows:

- Annual harvest assessment programs do not take place for all subsistence fisheries. Programs are in place for most salmon fisheries, but few other finfish fisheries or shellfish fisheries have annual harvest monitoring programs.
- Annual harvest data are mostly, but not entirely, limited to fisheries classified as subsistence by regulation, which for salmon generally means fish taken with nets, seines, or fish wheels. In some parts of the state, substantial numbers of fish for home use are taken with rod and reel (in most areas considered sport gear by regulation) or retained from commercial harvests. With the exceptions noted in the individual chapters on each area, these harvests are not included in the subsistence harvest estimates in this report because they are not covered in annual harvest assessments. Therefore, the harvest data in this report are a conservative estimate of the number of salmon being taken for subsistence use in Alaska. Underestimates of subsistence salmon harvests are particularly an issue in the Southeast Region.
- Between management areas, and sometimes between districts within management areas, there is inconsistency in how subsistence harvest data are collected, analyzed, and reported.
- In some areas, there are no routine mechanisms for evaluating the quality of the subsistence harvest data. For example, in some areas it is not known if all subsistence fishers are obtaining permits and providing harvest reports. This can result in significant underestimation of harvests.
- There are also few programs for contextualizing subsistence harvest data each year to provide information to interpret changes in harvests. In some cases, however, AMRs do contain discussions of data limitations and harvest trends.

Several other issues have been raised, primarily by ADF&G staff. To some, the annual report is inconsistent in its handling of personal use fisheries. Most are included in the summaries (Southeast, Yukon, Copper River), but the Cook Inlet Area personal use fisheries are not. The Cook Inlet fisheries are not included because of their short histories and their very different characteristics from most other nonrecreational, noncommercial fisheries (although they do

resemble the Chitina Subdistrict dip net fishery in many ways). Also, unlike the other personal use fisheries, those in Cook Inlet occur within a nonsubsistence area. It is our intent to include data from these fisheries in future annual reports. How to handle the data within statewide summaries is a matter for further discussion however. For example, should personal use totals appear in tables that report statewide “subsistence” harvests? Or should there be separate table for subsistence and personal use fisheries?

Not all staff are comfortable with developing harvest estimates by expanding reported harvests to account for nonreturned permits because, in their view, most individuals who have not returned permits did not fish. Nonresponses are handled inconsistently across management areas as well as within the annual report and the database.

The annual report and the database contain harvest estimates at the community level as well as for each fishery. Within fisheries, the procedure is to develop harvest estimates for each community, based on returned permits and number of permits for that community, and then add these to produce a fishery total. In some programs, however (such as the Upper Copper River District), harvest estimates are only produced for the entire fishery, a simple expansion without accounting for community differences. This results in a slightly different harvest estimate in the annual report than appears in the annual management reports (AMRs). While the differences are small, they do raise issues about data analysis procedures that should be addressed in the future.

As noted in the “recommendations” section, below, production of annual reports for 2003 and 2004, as well as updating the database, are objectives for proposed project FIS04-751, which was recommended for funding by the TRC and was approved by the FSB in December 2003. The issues raised above will be addressed as part of this new project.

### *Database Development*

#### **Alaska Subsistence Fisheries Database**<sup>3</sup>

The Alaska Subsistence Fisheries Database (Caylor and Walker 2003) serves as the central repository for annual harvest summaries from subsistence fisheries throughout Alaska. Originally developed in 1988 by the Division of Subsistence as the Historic Subsistence Salmon Harvest Database (HSSHDB), the current Alaska Subsistence Fisheries Database (ASFDB) includes overviews of Alaska’s subsistence fisheries harvest assessment programs, maps of the fishery areas, and a revised menu system that allows easier access to harvest summaries, along with more detailed explanations of what the summaries represent. In addition, the ASFDB minimizes to the extent possible variability in harvest data detail and presentation.

During the first phase of the project (FIS 00-017), the ASFDB was updated and enhanced from the former HSSHDB. Further updates have been made during this second phase. Subsistence salmon harvest data from 21 fisheries statewide were acquired, analyzed, and input into the ASFDB for the 2000, 2001, and 2002 fishing seasons. Harvest location detail was added for the Southeast/Yakutat Region, the Alaska Peninsula, and for the Kodiak Management Area. Several

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<sup>3</sup> This section was written by Dave Caylor.

custom database queries were also developed to produce statewide summaries of subsistence salmon harvests for inclusion in the annual statewide subsistence fisheries reports.

At each of the eleven regional harvest assessment workshops, the ASFDB was demonstrated and then-current versions were made available. These demonstrations often served as a springboard for discussions on the importance of local participation in the harvest assessment programs, and on the importance of accurate reporting of harvests, especially if workshop participants believed actual harvests to be higher than those summarized in the ASFDB. The database demonstrations also elicited a number of suggestions for ASFDB changes and enhancements, most of which will be incorporated into future database versions. Suggestions included presenting more detailed harvest information (e.g. locations of harvests) for some fisheries, presenting harvest summaries for smaller geographic areas or management units, and a change in the way the ASFDB is distributed (i.e. support for internet access to the database).

With the continued availability of funding through Project FIS 04-751 (see above), a number of improvements will be made to the ASFDB during subsequent phases of this project:

1. Continued acquisition, analysis, and inclusion of annual subsistence salmon harvest data. This will include data from federally permitted subsistence fisheries, as well as from state subsistence fisheries.
2. Migration of the ASFDB to the Alaska Department of Fish and Game web server as an interactive web-based database.
3. Distribution on request of local or regional extracts of the database as Microsoft Access databases. These extracts can be more convenient for local communities not having fast, reliable internet access.
4. Acquisition, analysis, and inclusion of non-salmon subsistence fish and marine invertebrate harvest data as available.
5. Identification and inclusion of “historic” harvest data for certain fisheries, where available. Oftentimes, such harvest records exist on paper but have not yet been entered into computer files or analyzed.
6. Continued ASFDB web site development and enhancements.

Throughout this project, the ASFDB has grown in popularity and improved from the feedback and suggestions provided by workshop participants and others. With continued development, maintenance, and enhancements, this important database will continue to serve as Alaska’s central repository of annual subsistence fish harvest summaries to state and federal fisheries managers, as well as to tribal organizations, subsistence harvesters, and all other interested parties.

## **Web Site**

The Division of Subsistence Internet site now has a page dedicated to the Alaska Subsistence Fisheries Database project. On this web site, a narrative description of the project, its background and history, is provided, as well as recognition of the funding provided by the USFWS. The site makes available for download copies of the project’s 1999, 2000, 2001, and 2002 annual reports in PDF format, as well as a self-extracting copy (to minimize download time) of the database and

supporting application in MS Access 2000 format. Database technical documentation is also provided in PDF format.

## DISCUSSION

Conducting a series of area workshops as the next step in developing a “unified” subsistence fisheries harvest assessment strategy in Alaska worked well. It was the first opportunity for most participants to learn about the work and recommendations of the Statewide Working Group. For many, it was also the first opportunity to discuss the subsistence fisheries harvest assessment program in their areas with state and federal agency staff. Without exception, the discussions at the workshops were cordial and collegial; there was also frank discussion of issues, problems, and where there is room for improvement. Overall, workshops ended with a spirit of cooperation.

During the three years of the project, staff are aware of only one case of negative feedback following a workshop. In this case, a government agency representative expressed concern that the workshop was encouraging tribes and other entities “to go their own way” and develop parallel and competing harvest assessment projects with federal money to collect data “for their own use.” In response, project staff noted that, to the contrary, a key goal of the workshops was to implement the recommendations of the Working Group, including Number B.1 that “the management agencies responsible for the fishery must be involved in all harvest assessment programs [for that fishery]” and B.3, “when developing a harvest assessment program, become informed about other harvest assessment programs taking place in the communities or area, and attempt to coordinate with them.” At this same workshop, a tribal representative suggested that perhaps tribes might seek sources of funding for harvest assessment programs that do not require them to release the findings, so as to be able to selectively use the results to their own advantage. This position clearly contradicts the Working Group’s recommendations under section “J” (“Reporting of results”), which stress public dissemination of harvest data, consistent with state and federal laws addressing confidentiality. It is also not consistent with the Working Group’s principle that “new programs need to build upon successful existing programs and coordination of programs should be a primary goal” (Table 1). No one else at this or any other workshop expressed the opinion that accurate harvest data not be widely shared. The goal expressed by tribal representatives at all the workshops was to be involved with agencies in harvest assessment programs, not to replace the programs or compete with them.

While neither of these comments was prevailing or even common, they point to larger issues and may indeed represent concerns that were left unexpressed by other workshop attendees. Regarding the first comment, the concern about tribes “going their own way,” this reflects an understandable reluctance, perhaps held but unstated by many agency staff, to modify reasonably successful programs. Contributing to this discomfort is the potential increased cost of partnerships and a feared loss of data quality in order to achieve more local involvement in cooperative projects. ADF&G staff at several workshops (Bristol Bay, Kuskokwim, Yukon, for example) stressed the importance of having experienced staff involved in harvest monitoring projects and urged that the complexities of collecting complete and accurate data not be underestimated. Additionally, partnerships include a certain amount of loss of direct control by the state or federal agencies and staff who are ultimately responsible for management of the

fisheries. This is potentially risky and somewhat unsettling when the data are needed for key resource management decisions and to protect subsistence uses as required by state and federal law.

Regarding the second comment, that it is perhaps in tribes' best interest to secure independent funding sources and control the flow of harvest data, this is likely symptomatic of a lingering distrust of and frustration with the subsistence management systems and the potential misuse of data that were mentioned at most workshops. In most workshops, this observation was intended to be cautionary, not disapproving: there is support for collecting and using subsistence harvest data as evidenced by the high rates of participation in these programs, but this support should not be taken for granted. Two of the key principles identified by the Working Group are pertinent here (Table 1): "programs need to foster communication and trust;" and "ultimately, program success depends upon acceptance by the participants in the fishery."

Further, a corollary to this cautionary note ties back to yet another of the Working Group's principles, namely that "partnerships strengthen harvest assessment programs." In addition to support for the systematic collection of reliable subsistence harvest data, the other major theme voiced by workshop participants from local communities, tribes, and regional organizations is that they want to be involved in these programs. The reasons are two-fold, again reflecting Working Group discussions: to support "buy in" by subsistence fishers, and to improve data quality. As noted in the individual workshop summaries, assessments of the quality of the subsistence harvest estimates vary by area. Some programs produce harvest estimates that are incomplete and misrepresentative of local communities' traditional uses and needs, while other programs provide relatively complete and reliable results. A risk associated with failing to seriously consider partnerships (which can take various forms – see Recommendations B.4 and B.7 in ADF&G and AITC 2000a:10-11), is the potential loss of support for and participation in even the best of programs. This is the counterbalance to the risk of giving up some direct control and sharing some responsibility.

Funding is clearly an issue for all agencies and organizations that attempt to run effective subsistence harvest assessment programs. An economy of scale might be achieved if, in areas where household surveys are the primary data-gathering tool, coordination of programs could take place. However, differing schedules, agencies, resources, and funding sources make such coordination difficult. Tribes or regional organizations that develop natural resource programs might be best able to coordinate multiple harvest assessment efforts. The idea of a cooperatively developed and implemented "master plan" as discussed primarily in Kotzebue is worthy of serious consideration. "Master plans" have the best chance to move forward in areas with a history of collaborative harvest assessment projects.

While the area workshops organized by this project were a good next step, it would be of course unrealistic to have expected full implementation of Working Group recommendations through a single set of such meetings. The many lists of "action items" provide examples of some of the steps that need to happen next at the level of individual communities and areas. So far, the record regarding follow up to these action items is mixed. Some of the best follow up has occurred when a proposal to FIS or another funding entity was feasible, and when an organization submitted regulatory proposals to the Alaska Board of Fisheries.

In order to resolve some of the issues noted above, a balance must be struck between the need for critical review and serious openness to change and the need for experience and maintaining the quality of programs while recognizing funding constraints. To achieve this balance, senior agency staff, those who make policy for their organizations, need to become involved. To date, there has been little review and discussion of the findings and recommendations of the Working Group by agency policy makers, no clear endorsement by them of the principles developed by the Working Group, and no directive to implement these principles. An essential next step in the process of developing a “unified” harvest assessment program might be a meeting of ADF&G division directors and deputy commissioners and their federal agency counterparts, where they can be briefed on the first two phases of this project. Following that briefing should be a policy paper on how current programs can implement these recommendations. Further, a standing committee within ADF&G could be established to monitor progress in writing operational plans for department harvest assessment programs, implementing a periodic review of methods and findings, and evaluating potential modifications of programs in consideration of the Working Group recommendations.

Another observation from the workshops is that the relationship between subsistence fishing regulations such as gear restrictions, harvest limits, and proxy fishing rules and harvest data collection is not always evident to fishery managers and those who conduct harvest assessment programs. Workshop participants cited numerous instances of where inappropriate and unnecessary regulations discouraged or prevented harvest reporting. This is evidenced by regulatory proposals that were suggested as action items. Increasing fisheries managers’ awareness of the connections between these regulations and collecting accurate harvest numbers needs to occur.

As the state and federal subsistence fisheries regulations continue to diverge, there will be more incentive for federal agencies to implement their own permit systems. This has happened in at least three areas to date: Southeast Alaska, Upper Copper River, and Bristol Bay. If this trend continues, it will create additional challenges for the development of a unified system and a centralized database for agency, tribal, and public use. No support for dual permit systems was expressed at the workshops, and they should be kept to a minimum.

Discussion of technical issues having to do with topics such as survey questions, sampling methods, and data analysis, was not extensive at the workshops. The exception was the Yukon Area workshop. This was most likely because of its relatively complex research design, involving harvest calendars and a stratified design for post-season household interviews. Nevertheless, these technical issues remain for many programs (an example is how to handle nonresponses, as discussed above), and could perhaps be addressed by the standing committee suggested earlier.

Clearly, there is strong support for the Alaska Subsistence Fisheries Database and the new series of annual reports on Alaska’s subsistence fisheries. Whether these continue to be updated and improved depends largely upon the availability of funding.

Finally, a featured topic at all the workshops was the collection and application of traditional ecological knowledge (TEK) in subsistence harvest assessment programs. This was consistent with one of the Working Group's principles that "Collection and application of traditional ecological knowledge and other contextual information are integral components of successful harvest assessment programs." Attendees voiced support for the use of TEK at all the workshops, but it was often difficult to generate much discussion of this topic, especially relating to specific projects. Some of the best discussions occurred where there had been a recently completed TEK study that was featured at the workshop (e.g. Copper River, Yukon Area). Attendees could see the kinds of information collected and then discuss potential uses. Focused discussion of specific TEK projects and findings needs to occur in order to increase understanding of the values of collecting this information.

## CONCLUSIONS

The first guiding principle recommended by the Working Group is "collection of accurate harvest data is an essential component of any effective resources management program." Every workshop strongly endorsed this principle, with virtually no opposition to collection of subsistence harvest data expressed anywhere. Indeed, the workshops for the most part confirmed all the findings, principles, and recommendations of the Working Group. This report contains no recommendation to modify any of them.

There are at least three especially important cautionary notes to consider in the future development of subsistence fisheries harvest assessment programs. One is that while workshop participants from tribes and other rural communities are in favor of subsistence fisheries harvest assessment, they report that support for such programs within their communities is not universal. Suspicions of misuse of data, respondent burden, the potential of being prosecuted for exceeding harvest limits, or puzzlement over why the information is needed are some still common reasons why not all fishers participate in these programs, or for why their participation might be tenuous. Second, as discussed in the previous section, there is some reluctance on the part of the current administrators of subsistence harvest assessment programs to make significant changes if their programs are producing reasonably useful results. Part of this reluctance is driven by a concern over increased costs, and part is worry about loss of some direct control or concerns about data quality. Third, failure to respond to the interest in establishing partnerships for data collection or otherwise more directly involve tribes, regional organizations, or other entities in subsistence harvest assessment programs runs the risk of undermining their support for these programs. The consequence could be reduced participation in programs or the development of competing harvest assessment efforts.

Addressing these three issues, as well as others that arose at the workshops, will require action at several levels. One, as noted in the recommendations below, is the continuation of discussion and evaluation of programs at the community and subarea level. Another, as discussed above and recommended below, is expanding the review of the recommendations and programs to include senior staff, who can develop a written policy advocating a more unified subsistence fisheries harvest assessment program within ADF&G. This might also require the formation of a standing committee within ADF&G to monitor progress towards this goal and to encourage more discussion of technical matters within the department and with personnel within federal agencies

and other organizations that conduct subsistence fisheries harvest assessment programs. The lack of any centralization of these programs above the ADF&G regional level has some advantages in allowing programs to be sensitive to local conditions (one of the Working Group's principles) and responsive to needed changes. However, it is a problem when trying to implement innovations or trying to encourage review of programs that seem to "work OK" when area staff already have more than enough to do.

As difficult, perhaps, will be the institutionalization of "master plans" for harvest assessments that combine subsistence fisheries with programs for land mammals, marine mammals, and birds. These by necessity increase the number of agencies involved, and add issues related to reporting requirements and regulatory board schedules. Nevertheless, judging from discussions at several of the workshops, this idea has merit, and may be one of the few solutions to the problems of decreasing funding and increasing information demands.

Clearly, more outreach and feedback need to be built into most harvest assessment programs. Few programs regularly report findings outside of the context of regulation review (e.g. advisory committee, RAC, BOF, and FSB meetings), or management reports with limited circulation. The best way to address this need is through completion of operational plans for all the subsistence fisheries harvest assessment programs.

How to integrate TEK into resource management remains elusive. As evidenced by the workshops, there is still much support for the collection and application of TEK within communities and among many management biologists. But this support is likely to wane without a demonstration of how these studies contribute to resource management. That TEK studies clearly document a worldview, and a way of life, and thus contribute to better cross-cultural understanding and communication, is probably not enough. The next step might be the formation of a working group, similar to that organized for harvest assessment programs under FIS00-017, to critically review TEK studies funded by FIS and other entities to date and to develop recommendations about how to apply TEK within the state and federal fisheries management programs.

## **RECOMMENDATIONS**

This final section lists several recommendations that are based upon observations from the workshops and experience with preparing the annual report and database, as summarized above. The first four recommendations are objectives of project FIS 04-751, which will be the third phase in the development of a "unified" subsistence fisheries harvest assessment program in Alaska. The multi-agency Technical Review Committee (TRC) recommended that this project be funded for three years and the Federal Subsistence Board approved the project in December 2003. It will begin in March 2004. Some of the other recommendations are addressed by recently approved FIS projects or could be addressed by future proposals. A final set of recommendations will require action by senior agency staff (policy makers) and will also require identification of a funding source.

1. Clearly, the initiatives begun under Project FIS 00-017 and built upon in Project FIS 01-107 need to continue. A key recommendation of the Working Group (No. J-7) was that the Alaska

Subsistence Fisheries Database, maintained by the Division of Subsistence, remain the primary repository of subsistence fisheries harvest data. The database must be updated annually. Additionally, it needs to be expanded to include the results of subsistence harvest assessment programs for nonsalmon fish and marine invertebrates. Further, the database needs to become accessible through the Internet. Note that this recommendation is also consistent with the ninth “guiding principle” developed by the working group that “program results need to be available in a timely manner, understandable to the public, and readily accessible through both written reports and a centralized database.”

2. The internet site that houses the database should also include contextual information about subsistence fisheries so that harvest data can be better understood and, more broadly, a better understanding of subsistence fisheries can be developed among the public and among resource agency staff who have little or no training in social sciences or little to no experience in rural Alaska. (See Working Group Recommendations E.1.) This can include essays, photos, and maps on a variety of topics including the history of fisheries, oral traditions, the social organization of subsistence harvesting, sharing patterns, gear, preservation methods, values supported by subsistence fishing, and traditional knowledge.

3. Production of the Annual Report on Alaska Subsistence Fisheries should continue.

4. Preparation of the remaining operational plans needs to be encouraged by senior department staff (see number 7 and 8, below).

5. The implementation phase for the recommendations developed by the Working Group formed under Project FIS00-017 requires more time. Several project proposals submitted to FIS would support additional workshops at a subarea or community level as the next step in developing effective harvest assessment programs along the lines recommended by the statewide working group. Funding support from other sources should also be sought.

6. Continue FIS funding of TEK studies and seek other funding sources as well. Encourage critical review of the results of these studies, perhaps in a workshop or series of workshops involving principal investigators, representatives of tribes and other user groups, and senior agency staff and/or experts outside of the OSM/ADF&G program for review and policy development. As part of this review, consider formation of a working group to develop recommendations concerning how to apply TEK study findings within the state and federal fisheries management programs. This new working group could also explore ways to integrate TEK and stock status and trends projects, as recommended in the final report for Project FIS00-017 (ADF&G and AITC 2000b). Additionally, principal investigators in TEK studies need to make recommendations concerning how their findings can be applied in fisheries management.

7. Continued coordination of subsistence fisheries harvest assessment programs needs to be addressed, along with further consideration of the Working Group’s recommendations within particular programs or at a statewide level. Perhaps a standing committee of mid-level resource managers and data management personnel needs to be set up within ADF&G to continue this critical review of department programs. Personnel from federal agencies and other organizations

who are involved in subsistence harvest assessment programs could assist with a technical review of all Alaska programs.

8. As noted in the conclusions section, there are no plans at present for discussion of the recommendations and projects, and the observations from the workshops, among senior agency staff (those who are responsible for making agency policy) at a statewide level. A workshop involving senior staff (e.g. ADF&G division directors and deputy commissioners) could provide direction through producing a policy paper to address the issues of coordination also noted under 7, above. What is needed at this stage is a clear endorsement by agency leadership of the process begun by the statewide Working Group and a commitment to developing a unified harvest assessment program consistent with the principles developed by this group.

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AI-TC was a fine partner in organizing, conducting, and summarizing the workshops. We thank Roland Shanks and Jerry Pardilla for their overall guidance of the project for AI-TC. Kay Wallis, as a contractor for AI-TC, made essential contributions to this project. Not only did she help organize attendance at 11 area workshops covering almost all of the state, she participated in every workshop as well. Her strong convictions and her enthusiastic encouragement were key to a successful project.

Many regional Alaska Native organizations helped with planning the workshops, and their staffs made important contributions during the discussions. These included the Kodiak Area Native Association, the Chugach Regional Resources Commission, the Aleutian-Pribilof Islands Association, the Association of Village Council Presidents, Maniilaq Association, Kawerak Inc., Tanana Chiefs Conference, the Council of Athabascan Tribal Governments, the Bristol Bay Native Association, and the Copper River Native Association.

Finally we thank the many members of the public, representing tribes, regional organizations, advisory committees, regional councils, or just themselves, who took the time to participate in the workshops. Without their interest and their willingness to share their knowledge and their ideas, this project could not have happened.

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Table 1. Guiding Principles Developed by the Statewide Working Group for a Unified Subsistence Fisheries Harvest Assessment Program in Alaska

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Collection of accurate harvest data is an essential component of any effective resource management program.

Both baseline and time series data are needed, with frequency of updates dependent upon management and user needs.

Partnerships strengthen harvest assessment programs.

New programs need to build upon successful existing programs and coordination of programs should be a primary goal.

Programs must be developed to fit local circumstances and needs.

Costs, including the potential for long term funding sources, must be considered when designing and modifying programs.

Programs need to foster communication and trust.

Ultimately, program success depends upon acceptance by the participants in the fishery.

Program results need to be available in a timely manner, understandable to the public, and readily accessible through both written reports and a centralized database.

Collection and application of traditional ecological knowledge and other contextual information are integral components of successful harvest assessment programs.

Confidentiality of information will be protected consistent with state and federal law.

Harvest assessment programs need to be subject to systematic and periodic evaluation.

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Source: ADF&G and AI-TC 2000a: 1

Table 2. Overview of Area Workshops

Management Area	Dates	Location	Attendees <sup>a</sup>						
			Total <sup>b</sup>	ADF&G	Federal	RACs	AC	Tribal <sup>c</sup>	Other
Kodiak	May 10 & 11, 2001	Kodiak	24	6	2	2	1	13	2
Cook Inlet & Prince William Sound (ex. Upper Copper River)	September 11 & 12, 2001	Anchorage	23	7	1	1	2	12	2
Southeast Alaska Peninsula	December 18 & 19, 2001	Juneau	34	15	5	2	0	12	2
Aleutian Islands	May 29 to 31, 2002	Sand Point	21	6	0	0	3	11	1
Kuskokwim	June 26 to 28, 2002	Dutch Harbor	17	4	1	0	1	8	3
Kotzebue	November 7 & 8, 2002	Bethel	21	10	2	1	2	8	0
Yukon	November 19 & 20, 2002	Kotzebue	18	6	5	2	3	6	0
Bristol Bay & Chignik	December 3 & 4, 2002	Fairbanks	29	11	3	1	4	13	2
Norton Sound & Port Clarence	April 2 & 3, 2003	Dillingham	33 <sup>d</sup>	9	2	2	5	16	5
Upper Copper River	April 9 & 10, 2003	Nome	24	6	2	1	1	14	0
	April 29 & 30, 2003	Gulkana	27	4	4	1	1	15	4

<sup>a</sup> Categories are not exclusive; that is, a RAC member might also belong to an AC. RAC = federal subsistence regional advisory council; AC = fish and game advisory committee; ADF&G = Alaska Department of Fish and Game

<sup>b</sup> Total attendees for any part of the meeting. The total for all 11 workshops is at least 271 individuals. Other people may have attended part of a workshop but not signed the attendance sheet.

<sup>c</sup> Includes official representatives of tribes, regional Native organizations, and AI-TC

<sup>d</sup> Includes 10 individuals linked by teleconference (Chignik Lagoon and Chignik Lake).

Table 3. Kodiak Area Workshop Action Items

Item:	Disposition/status
1 All participants: contact tribal council officials (and others) regarding potential procedures for issuing subsistence permits this year and more generally about the workshop overall	See item 3.
2 Prepare meeting summary for review: Dave Caylor and Jim Fall, with assistance from Kay Wallis, were to prepare this meeting summary, circulate it for review by all workshop participants, and then finalize the report based on comments received.	This item took place as planned. [Subsequent workshops did not list preparation of a summary as an action item because this was part of the basic study plan for the project.]
3 Develop plan for issuing subsistence permits in villages this spring, including cooperative agreements between the tribal councils and ADF&G: the initial follow-up for this item needed to be worked on by the Divisions of Subsistence and Commercial Fisheries.	Coop agreements were developed in May and June 2001. Dave Caylor (Subsistence) and Joanne Shaker (Comm Fish) traveled to the six communities and trained permit vendors, recommended by the tribal councils, in May 2001. Vendors were hired in 2002 and 2003 as well.
4 Explore procedures to place the set of subsistence regulatory proposals before the Board of Fisheries at its January 2002 meeting. Pat Holmes (Kodiak AC) and ADF&G were to contact Boards Support staff within ADF&G to clarify procedures to get these items on the BOF agenda.	BOF staff recommended that proposals be submitted as part of the regular regulatory cycle. The next Kodiak Area BOF meeting takes place in January 2005.
5 Prepare the investigation plan on the proposed harvest assessment/traditional ecological knowledge project for OSM review: Jim Fall will be working with Reggie Ward (KANA) to prepare and submit the investigation plan, which must be submitted by June 30.	The IP was submitted (FIS02-033) but not approved for funding by the FSB in FFY 2002, mostly due to funding issues. A revised IP was submitted by ADF&G and KANA in for FFY04 funding (Project FIS04-457) which was included in the draft study plan prepared by FIS. Final FSB approval occurred in December 2003.
6 More long-term (perhaps within the next six months), there is interest in another workshop/meeting that involves tribal council presidents, enforcement agencies, USFWS, and ADF&G to coordinate enforcement and harvest assessment issues. ADF&G, AI-TC, and KANA will need to work together to develop an agenda and potential date for this workshop.	No follow up meetings have taken place.

Table 4. Cook Inlet Area and Prince William Sound Area Workshop Action Items<sup>a</sup>

Action Item	Disposition/Status
1 Write an operational plan for the Copper River Flats subsistence fishery.	No action to date; program is responsibility of Division of Commercial Fisheries
2 Require the reporting of commercial homepack in the Prince William Sound Area.	Will require Board of Fisheries action in the future
3 Change subsistence openings in the Copper River District to include times outside of commercial openings.	Needs to be proposed to BOF for next PWS meeting; 2005/06 meeting cycle
4 Continue subsistence hooligan fishery harvest assessment in the Copper River District.	
5 Write an operational plan for the PWS Eastern District (Tatitlek) subsistence fishery.	No action to date
6 Develop a Memorandum of Agreement with ADF&G by which Tatitlek participates in the harvest assessment program.	Agreement developed for 2002 with mixed results. See discussion in text.
7 Propose to BOF that rod & reel be legal subsistence method in the Eastern and Southwestern Districts.	No proposal has been submitted to date.
8 Submit a proposal to the BOF to change subsistence openings in the Eastern and Southwestern Districts to eliminate overlap with commercial openings, preferably openings 7 days a week.	A proposal was submitted to the BOF but was not passed during the February 2003 meeting
9 Explore opportunities for federal funds to support local harvest assessment work.	CRRC submitted proposal 04-552 to FIS but it was not recommended for funding.
10 Write an operational plan for the Southwestern District subsistence fishery harvest monitoring program	No action to date
11 Develop a Memorandum of Agreement with ADF&G by which Chenega Bay participates in the harvest assessment program.	No action to date
12 Write operational plan for Port Graham/Koyuktolik Fishery; address issue of distinguishing between Port Graham and Koyuktolik Sub-District harvests; add location data for Dolly Varden harvests	Will be prepared as part of FIS 04-751.
13 Send end of season report to communities and harvesters.	No action to date
14 Consider more frequent data collection for in-season management; seek additional funding to support this.	Funding was requested from Division of Commercial Fisheries. Not forthcoming.
15 Organize workshop between ADF&G and Nanwalek and Port Graham village councils to consider regulatory proposals and operational plans, such as changing subsistence opening re days of the week and time periods	The Lower Cook Inlet BOF meeting takes place in February, 2005. The proposal deadline is will likely be mid 2004.
16 Write an operational plan for the Seldovia fishery	Part of FIS 04-751.
17 Possible regulatory change for Seldovia Fishery: change timing of second opening to match late coho run.	See 15
18 Investigate Fish Creek (Seldovia)status and seek remedy: salmon blocked by city from migrating upstream.	Commercial Fisheries task
19 Write operational plan for the Upper Yentna Fishery.	No action to date.
20 Repeal phone-in reporting requirement for Upper Yentna	See 15
21 Continue spring meetings between ADF&G and fishers, Upper Yentna fishery	Responsibility of Division of Sport Fish.
22 Identify additional subsistence fish harvest data sources such as a baseline survey for post season interviews	No action to date
23 Re-establish local permit vendor in Skwentna	Responsibility of Division of Sport Fish.
24 Take steps to provide a subsistence or personal use fishery at Seward and Valdez. Multi-year process: propose change to nonsubsistence area boundaries to Joint Board, and proposal to Board of Fisheries	No action to date. The Joint Board has not scheduled any reconsideration of nonsubsistence areas. See also 15

<sup>a</sup> Does not include upper Copper River, which was covered in a separate workshop.

Table 5. Southeast Region Workshop Action Items

	Action Item	Disposition/Status
1	Hold pre-season inter-organizational fisheries meeting for the Sitka Area including ADF&G, federal agencies, and tribes	Mike Turek and Andy McGregor will coordinate/plan this meeting. Meetings held in Sitka in 2002 and 2003.
2	Write Southeast Alaska/Yakutat Region operational plan; provide to tribes for review and comment	Plan was for Division of Subsistence (Mike Turek) to write the plan and Comm Fish to "review and collaborate" Draft plan begun.
3	Longevity of paper permits—problems with paper deteriorating in wet weather.	No Action to date.
4	Develop proposals to the Board of Fisheries for regulatory changes	"Tribes to initiate proposals; ADF&G staff to help with forms and the process"
5	Discuss and resolve issues concerning subsistence fishing permits: annual permit limits versus daily limits (economy of scale issue)	Redoubt Lake Management Plan, passed by the BoF January 2003 includes annual limits for sockeye.
6	Submit proposal: rod and reel as allowable subsistence harvest method in Southeast	Redoubt Lake Management Plan, passed by the BoF January 2003 includes rod and reel.
7	Halibut size limits: develop uniform rules for subsistence, sport, and commercial fisheries	No Action to date.
8	Establish process for community subsistence harvest permits, to allow lawful continuation of traditional community fishing practices	No Action to date.
9	Establish permit harvest limits in regulation, to give direction from BOF to ADF&G	No Action to date.
10	Improve state proxy fishing and hunting regulations to make them more user friendly	No Action to date.
11	Establish state subsistence coho fishery in Southeast	Subsistence coho fishery regulations were passed by the BoF January 2003 meeting.

Table 6. Alaska Peninsula Area Workshop Action Items

Action Item	Disposition/Status
1 Regulatory Proposal: Rod and reel as subsistence gear in Alaska Peninsula Area (and Aleutian Islands Area?). To be submitted by local fish and game advisory committees by April 2003 deadline for Board of Fisheries consideration during the Alaska Peninsula BOF meeting in the 2003/04 meeting cycle.	The ACs did not submit any subsistence proposals. However, ADF&G did submit a proposal (No. 199) to convert the present permit conditions into regulation. The BOF will deliberate on the proposal in February 2004. This will be an opportunity to address the regulatory issues brought up at the workshop.
2 Regulatory Proposal: Change state subsistence fishing proxy regulation to be more like the federal designated hunter regulation.	See 1.
3 Regulatory Proposal: Develop regulatory provision for a tribal subsistence permit, similar to the tribal fish wheel regulation in place for the Copper River	See 1.
4 Regulatory Proposal: Remove gear limits from subsistence regulations	See 1.
5 Regulatory Proposal: Remove catch limit of 250 salmon per permit	See 1.
6 Permit Conditions: Mortensen's Lagoon access with commercial boats: Arnie Shaul will fax permits to those who want to fish here using commercial boats.	See 1.
7 Permit Conditions: Allow another permit to be issued to account for "proxy" subsistence fishing: permit for additional 250 fish will be issued if person is fishing for someone else.	See 1.
8 Set up vendors in False Pass (need to check with community), Port Heiden (need to check with community), and Nelson Lagoon	Being addressed through project FIS02-032.
9 Conduct post-season interviews (Project FIS 02-032) to: Record harvests by all gear types; Document case studies of sharing; Document removal of fish from commercial catches for home use.	Being addressed through project FIS02-032.
10 Proposal to FIS to fund a pilot program based on Mike Brubaker's draft concept paper on State-Tribal Fisheries Harvest Assessment Partnership. Proposals will likely be due in early 2003.	No action to date.
11 Proposal to FIS to fund a non-salmon fish harvest assessment project, using harvest calendars and postseason interviews	Will be addressed in proposed project FIS04-456; recommended for funding by TRC. Specific proposed project on nonsalmon fish, FIS04-455, was not recommended for funding.
12 Design and distribute posters with information about subsistence harvest assessment programs and results	Being addressed through project FIS02-032.
13 Produce a separate subsistence harvest report from AMR; an option is a short summary mailed to permit holders	No action to date.
14 Examine existing fish ticket data regarding removals for home use from commercial fisheries	No action to date.
15 Distribute subsistence fisheries database to tribes	Done (Dave Caylor, ADF&G)

Table 7. Aleutians Area Workshop Action Items

Action Item	Disposition/Status
1 Qawalangin Tribe will submit community fishers proposal to Board of Fisheries by April 2003 proposal deadline	Subsistence Divison provided Copper River example and proposal form to the tribe; no proposal was submitted
2 Qawalangin tribe to arrange with ADF&G to issue subsistence salmon harvest permits	No action to date
3 Investigate (and possibly propose to change) the requirement that household members be present when fishing for crab.	George Pletnikoff (Qawalangin Tribe) was to raise the issue and try to clarify the requirement with Forrest Bowers, ADF&G Area Management Biologist.
4 Also address the king crab limit with Bowers.	See 3. Both of these are Board of Fisheries regulations, but need to get Bowers's perspective before attempting to change them.
5 Develop partnerships with tribes for data collection in Atka, Akutan, and Nikolski	Being addressed under Project FIS 02-032.
6 Pursue co-management opportunities through research. Project money is available through USFWS. Laura Jurgenson and Steve Fried (USFWS) will initiate and coordinate with the tribe to develop proposals	No action to date
7 Investigate LAMP process and initiate. Jim Fall agreed to provide the tribe with information on the process. Qawalangin Tribe was then to discuss how to develop a LAMP proposal, possibly involving the advisory committee and Small Boat Owners Association	Jim Fall (ADF&G) investigated, and provided the tribe with information. No other follow-up to date.
8 Aleutian communities to hold regional fisheries meeting, possibly organized by A/PIA	No action to date
9 Adopt the use of harvest calendars for salmon and marine mammals	Harvest calendars were distributed for 2002 and 2003 as part of Project 02-032 and the marine mammal project (ADF&G and ANHSC).
10 Submit a proposal to the Board of Fisheries for rod and reel as legal gear type for subsistence fishing.	No proposal was submitted by April 2003 deadline

Table 8. Kuskowkim Area Workshop Action Items

Action Item	Disposition/Status
1 Coordinate ADF&G's salmon harvest assessment project with USFWS's subsistence waterfowl project.	No action to date
2 Update harvest data for subsistence herring	No action to date
3 Develop intern/school-to-work program to integrate with salmon harvest assessment project; this may result in certification of community residents as survey technicians.	No action to date
4 Develop a project proposal for investigating TEK about salmon run timing	Proposal (Project NO. FIS04-357) was submitted but was not recommended for funding by FIS.
5 Collect salmon TEK in Nelson Island communities	No action to date
6 Use idle firefighting crews to remove beaver dams blocking streams	Responding to this action item has been a low priority due to its tenuous connection to this project.
7 A TEK study investigating whitefish/beaver interactions, environmental changes	No action to date
8 Further development of Alaska Subsistence Fisheries Database	Will take place under Project FIS 04-751, approved by the FSB in December 2003.
9 Sub area or community workshops as follow-ups to the regional workshop.	No action to date
10 Use TEK as a component of ADF&G fishery management.	See 4.

Table 9. Kotzebue Area Workshop Action Items

Action Item	Disposition/Status
1 Discuss subsistence harvest assessment at Maniilaq annual meeting.	Enoch Shiedt of Maniilaq Association made a brief presentation on this.
2 Hold village meetings/workshops on harvest assessments.	Project proposal submitted (04-157) and recommended for funding by the Technical Review Committee; final FSB approval occurred in December 2003.
3 Conduct baseline surveys for region's communities (eight needed).	A baseline survey in Buckland is planned early in 2004.
4 Write an operational plan for subsistence fisheries monitoring in the Kotzebue Area.	No action to date.
5 Develop a "master plan" – an integrated plan for harvest assessment of major species.	This will be explored in above FIS proposal #04-157.
7 Propose TEK studies and/or taxonomy study.	Salmon TEK study (FIS 04-158) proposed for selected communities, but not recommended for funding by the TRC.
8 Do further development of the Alaska Subsistence Fisheries Database.	Will happen under Project FIS04-751; final FSB approval of this project proposal occurred in December 2003

Table 10 . Yukon Area Workshop Action Items

Action Item	Disposition/Status
1 Design and conduct an ethnographic study of subsistence fishing patterns.	No action to date
2 Develop a State/Tribal MOUs to work together on fish harvest assessment surveys.	No action to date
3 Extract traditional/local knowledge from the Division of Commercial Fisheries database comments field.	No action to date
4 Design a study to investigate whitefish topics at Minto.	No action to date
5 Conduct in-season assessments of salmon runs/harvests.	Discussions are taking place
6 Investigate confidentiality issues in the Alaska Subsistence Fisheries Database regarding respondent numbers.	No action to date
7 For the Upper Tanana area, conduct harvest assessment of non-salmon fish and TEK project	Proposal submitted to FIS and supported.
8 Conduct a study of beaver/blackfish relations in the Lower Yukon River	No action to date
9 Conduct a study to evaluate the relationship between harvest levels and the amount necessary for subsistence uses	Proposal submitted to FIS but not technically sound, and not proposed for funding by the TRC.
10 Conduct follow-up meetings	No action to date
11 Assemble research ethics and protocols	No action to date

Table 11. Bristol Bay and Chignik Areas Workshop Action Items

Action Item	Disposition/Status
1 Check the call for proposals for the mid-November BOF meeting regarding the Chignik Coop Fisheries to see if subsistence is included. Request that subsistence be included if it is not.	It was confirmed that subsistence proposals could be submitted by the August deadline; none were submitted, however.
2 Prepare a letter to the Bay Times about the importance of getting subsistence fishing permits and recording harvests.	This was not done for 2003 due to time constraints, but will be done for 2004.
3 Work with schools to educate kids and parents about the harvest assessment program.	No follow-up to date
4 Prepare annual newsletter with results of subsistence fisheries harvest assessment program.	A summary was prepared and distributed with 2003 subsistence salmon permits.
5 Include subsistence salmon harvest summary results in BBNA and BBNC annual reports and newsletters.	No follow-up to date
6 Use internet to post and distribute newsletter.	No follow-up to date
7 Pilot program in schools using harvest calendars.	No follow-up to date
8 Improve reporting and compilation of personal use fish removed from commercial harvests.	No follow-up to date
9 Non-salmon subsistence fish—need to develop strategy/plan for systematic data collection.	No follow-up to date
10 Add harvest timing data to ASFDB.	Will consider as part of Project 04-751
11 Add location of harvest data to ASFDB.	Will consider as part of Project 04-751
12 Potential revisions to the Bristol Bay permit form.	Will consider prior to 2004 season, following December 2003 Bristol Bay BOF meeting.
13 TEK fish studies at Naknek and Nushagak.	No follow-up to date. Note that these waters are mostly outside federal subsistence management jurisdiction.
14 Use early season radio announcements to encourage subsistence fishers to obtain permits and late season radio announcements to encourage permit holders to return their permits.	Radio announcements took place in fall 2003 and will be regular features of the program in the future.
15 Require log books for sport fishing lodges and drop off boaters (floaters).	No follow-up to date.
16 Repeal state subsistence permit requirement for trout and char.	Proposal (No. 29) submitted by BBNA to Alaska BOF, for consideration in December 2003, where it was adopted.

Table 12. Norton Sound Area Workshop Action Items

	Action Item	Disposition/Status
1	BOF proposal: require subsistence permit for Niukluk and Fish Rivers if village not surveyed – Kawerak.	Proposal submitted, and will be considered by BOF in Jan. 2004.
2	BOF proposal: require sport fish permits for Norton Sound area – Kawerak.	Proposal submitted, and will be considered by BOF in Jan. 2004.
3	BOF proposal: subsistence gear restriction in Grantley Harbor – Kawerak.	Proposal submitted, and will be considered by BOF in Jan. 2004.
4	BOF proposal: require sport fishing closure, including catch and release, when subsistence fishing is closed – Kawerak.	Proposal submitted, and will be considered by BOF in Jan. 2004.
5	In-season management of Tier II fishery: consider Tier II subsistence fishery in Sinuk River as part of the fishery – Kawerak & ADF&G.	No action to date.
6	Continued discussion of BOF proposals by ADF&G, tribal councils, Kawerak, advisory committees, RAC, OSM, etc.	BOF proposals discussed at September meeting of Northern Norton Sound Advisory Committee.
7	Work with communities to add harvest location to post-season surveys – ADF&G, Kawerak, tribes.	Harvest location added to post-season surveys in 2003.
8	Develop community-specific sheets to add to survey to address communities’ issues – ADF&G, Kawerak, tribes.	Additional sheet added to 2003 post-season survey to address issues of concern to Kawerak.
9	Distribute database CDs – ADF&G.	Dave Caylor (ADF&G) provided CDs .
10	Baseline surveys: Kawerak, Norton Sound Health Corporation (NSHC), and ADF&G will discuss where to conduct surveys, when, and identify funding sources.	No action to date.
11	Norton Sound – Port Clarence operational plan: Susan Georgette will write, perhaps this summer, and Kawerak will help regarding its role.	Initial draft completed in summer 2003.
12	Educational projects – get ideas and requests to Kawerak.	No action to date.
13	Fish abnormalities: ADF&G will get protocols to Kawerak for handling samples. Kawerak will handle logistics. Need to get results back.	No action due to misunderstanding regarding who was responsible for followup.
14	Study of traditional beaver management – section 809 agreement. ADF&G will submit proposal to USFWS.	No action to date.

Table 13. Upper Copper River District Workshop Action Items

Action Item	Disposition/Status
1 Add community of residence blank to state permit forms.	Follow-up by Tom Taube, Sport Fish Division, ADF&G
2 Add pre-1988 historical harvest data to the Alaska Subsistence Fisheries Database (ASFDB).	Can be part of new projects FIS04-553 and FIS04-751.
3 Tribal resolutions in support of TEK projects submitted to FIS for FFY04.	We are unsure if these were submitted to FIS.
4 State / federal coordination of permit data for inclusion in the Alaska Subsistence Fisheries Database (ASFDB).	This is supposed to take place through preparation of the 2003 AMR and future statewide annual reports. Too soon to say how coordination is working.
5 Tribes are encouraged to invite Tom Taube (ADF&G) and Eric Veach (NPS) to spring meetings to discuss fishery management.	No action to date; first opportunity is 2004.
6 NPS, ADF&G, and the tribes will work together to develop an FIS proposal for a cooperative multi-year fish harvest assessment project.	No action to date. Can be submitted in response to call for proposals from FIS for FFY05 or later.
7 The ADF&G Division of Subsistence, Wrangell – St. Elias National Park, Denali National Park, and tribal representatives will form a working group to investigate designing an ethnographic study of Ahtna fishing practices.	No action to date. Completing existing projects is the priority at present.
8 Include the development of an inventory of Ahtna language tapes with the intention of extracting fisheries-related information in Bill Simeone's TEK proposal to FIS (04-553).	A complete inventory of these tapes is beyond the scope of the proposed project, but the tapes will be reviewed (to the extent practical) for content related to the project.
9 Mentasta Village Council to review the Slana River whitefish recreational spearing issue with Lisa Wolf and decide if they want to pursue a project.	Follow-up by Tom Taube, Sport Fish Division, ADF&G
10 Tom Taube (ADF&G) and Eric Veach (NPS) will provide copies of their annual RAC reports to the tribal councils.	Follow-up by Tom Taube, Sport Fish Division, ADF&G

**Table 14. Alaska Subsistence Salmon Harvests, 2001**

Fishery <sup>1</sup>	Households / Permits		Estimated Salmon Harvest					
	Total <sup>2</sup>	Included	Chinook	Sockeye	Coho	Chum	Pink	Total
Adak District	17	15	14	489	18	0	16	537
Alaska Peninsula Management Area	185	155	570	12,259	3,940	1,963	1,181	19,912
Batzulnetas Fishery	1	1	1	61	0	0	0	62
Bristol Bay Management Area	1,226	1,137	14,412	92,041	8,406	4,158	839	119,856
Chignik Management Area	135	122	171	8,633	1,859	213	2,787	13,663
Chitina Subdistrict	9,458	8,356	3,171	137,047	2,687	0	0	142,905
Copper River Flats	468	439	881	3,275	75	2	0	4,232
Glennallen Subdistrict	1,239	1,176	3,480	81,960	1,142	20	0	86,601
Kodiak Management Area	2,153	2,153	273	33,833	5,920	427	1,158	41,611
Kuskokwim Management Area	4,483	2,297	77,570	51,965	31,686	51,117	0	212,338
Northwest Alaska	2,192	1,259	5,671	4,473	16,617	71,138	31,480	129,378
Port Graham & Koyuktolik Subdistricts	49	49	133	1,085	1,295	228	1,454	4,195
Prince William Sound (General)	5	5	0	0	0	0	0	0
PWS Eastern District (Tatitlek)	14	9	0	114	230	12	60	416
PWS Southwestern District (Chenega Bay)	16	9	2	119	92	146	95	454
Seldovia Fishery	19	16	149	142	0	0	0	290
Southeast / Yakutat Region	3,605	3,116	1,457	55,157	3,266	3,968	4,230	68,080
Tyonek Fishery	84	58	976	172	49	6	4	1,207
Unalaska District	204	165	6	4,202	724	77	784	5,793
Upper Yentna Fishery	16	15	0	545	50	4	10	608
Yukon Management Area	3,072	1,355	56,103	0	23,236	108,557	403	188,298
<b>Totals</b>	<b>28,641</b>	<b>21,907</b>	<b>165,039</b>	<b>487,570</b>	<b>101,291</b>	<b>242,035</b>	<b>44,501</b>	<b>1,040,436</b>

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.2.

<sup>1</sup> Estimates for the Yukon and Southeast fisheries include both subsistence and personal use harvests.

<sup>2</sup> Because the numbers of permits issued for the Kodiak and Port Graham/Koyuktolik fisheries are unknown, the numbers of permits returned are used in place of these values.

**Table 15. Alaska Subsistence Salmon Harvests, 2002**

Fishery	Households / Permits		Chinook	Sockeye	Coho	Chum	Pink	Total
	Total <sup>1</sup>	Included						
Adak District	3	3	0	150	0	0	0	150
Alaska Peninsula Management Area	157	133	345	9,384	3,188	1,603	532	15,052
Batzulnetas Fishery	1	1	0	208	0	0	0	208
Bristol Bay Management Area	1,093	994	12,936	81,088	6,565	6,658	2,341	109,587
Chignik Management Area	120	86	74	10,092	1,401	23	390	11,980
Chitina Subdistrict: State	6,804	5,736	2,093	90,655	2,034	0	0	94,782
Chitina Subdistrict: Federal	122	90	48	835	0	0	0	883
Copper River Flats	355	331	589	3,289	30	2	0	3,910
Glennallen Subdistrict	1,308	1,162	4,446	63,028	686	1	0	68,161
Kodiak Management Area	2,271	2,271	593	32,977	6,057	350	1,665	41,642
Kuskokwim Management Area	4,339	2,798	70,219	27,733	34,413	73,234	0	205,599
Northwest Alaska	1,327	1,204	5,624	4,504	17,838	37,396	67,756	133,119
Port Graham & Koyuktolik Subdistricts	79	79	346	10,620	1,057	488	1,831	14,342
Prince William Sound (General)	11	9	0	38	0	9	11	57
PWS Eastern District (Tatitlek)	19	8	6	437	278	66	71	858
PWS Southwestern District (Chenega Bay)	10	5	10	142	123	60	83	418
Seldovia Fishery	20	20	124	234	13	11	31	413
Southeast / Yakutat Region	3,326	2,732	1,857	56,379	3,176	2,183	3,210	66,804
Tyonek Fishery	101	71	1,080	209	115	4	9	1,417
Unalaska District	231	180	3	5,678	707	65	385	6,837
Upper Yentna Fishery	25	22	0	454	133	31	14	632
Yukon Management Area	2,775	1,254	44,384	0	16,551	107,739	8,425	177,100
<b>Totals</b>	<b>24,497</b>	<b>19,189</b>	<b>144,777</b>	<b>398,134</b>	<b>94,365</b>	<b>229,922</b>	<b>86,754</b>	<b>953,952</b>

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.3.  
 Estimates for the Yukon and Southeast fisheries include both subsistence and personal use harvests.

<sup>1</sup>Because the numbers of permits issued for the Kodiak and Port Graham/Koyuktolik fisheries are unknown, the numbers of permits returned are used in place of these values.

## **Appendix A: Sample Workshop Agenda**

### **Meeting Agenda: Yukon Area Subsistence Fisheries Harvest Assessment & Traditional Ecological Knowledge Workshop**

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Pike's Waterfront Lodge, Fairbanks, Alaska  
Tuesday and Wednesday – December 3 and 4, 2002

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*Organized by: Division of Subsistence, Alaska Department of Fish and Game, and the Alaska Inter-Tribal Council [Project FIS 01-107]*

***Day 1: Tuesday, December 3, 9:00 a.m. to 5:00 p.m.***

9:00 a.m. – Introductions

- Introduction of workshop participants
- Workshop objectives / purposes

9:30 a.m. – Overview of Subsistence Fisheries Harvest Assessment Project

- Process
- Recommendations

10:45 Break

11:00 a.m. – Description of Current Fisheries Harvest Assessment Programs

- Statewide salmon programs
- Yukon Area programs
- Operational plans
- Discussion

**12:00 to 1:30 p.m. Lunch**

1:30 p.m. Continue Discussion of Yukon Area Programs

2:30 p.m. –Need for Collecting Subsistence Harvest Data in Interior Alaska

A general discussion about why subsistence harvest data are needed for Yukon Area fisheries, how the data are used, and perceptions of harvest data programs in local communities.

3:15 p.m. Break

3:30 p.m. – Subsistence Fisheries Databases: Demonstration / Training

5:00 p.m. Break for the Day

**Day 2: Wednesday, December 4, 8:30 a.m. to 4 p.m.**

8:30 a.m. – Application of Working Group Recommendations & Principles to Yukon Area Harvest Assessment Programs

- Evaluation of current programs
- Develop recommendations for amending / enhancing current programs
- Identify needs for new programs
- Identify potential for coordinating harvest survey programs
- Existing and potential partnerships
- Training opportunities
- Funding opportunities (FIS and other)

10 a.m. – Break

10:15 a.m. – Application of Working Group Recommendations & Principles (continued)

**11:30 to 1 p.m. Lunch**

1 p.m. – Potential for Incorporating Traditional Ecological Knowledge (TEK)

- Collection of TEK and other contextual and ethnographic information
- Current/recent TEK projects
- Application of TEK to current / new programs

2:30 p.m. Break

2:45 p.m. – Other Topics

- Parking lot items (that, items that came up during discussion that needed more thought, or were not directly related to agenda items)

3:15 p.m. – Wrap-Up

- Where do we go from here?
- Assignments

4 p.m. – Adjourn the Workshop

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