

Submitting and Writing an Investigation Plan, Executive Summary, and Project Budget

Submission Guidelines

If a project is selected for further consideration in the Fisheries Resource Monitoring Program review process, the investigator must prepare and submit an investigation plan, project budget, and executive summary. These are three separate documents. The principal investigator has the lead for the project and is responsible for submission of information for all co-investigators involved in the project. The Office of Subsistence Management staff and the Technical Review Committee will review and evaluate the investigation plan and project budget and develop a funding recommendation for the Federal Subsistence Board and the ARD Subsistence Management.

Executive summaries and associated Technical Review Committee funding recommendations will be assembled into a draft 2010 Fisheries Resources Monitoring Plan. The draft plan will be distributed for public review and comment through the Regional Advisory Councils beginning in September 2009. The Federal Subsistence Board will review the draft plan and will accept comments at its January 2010 meeting. At that time, the Federal Subsistence Board will make a recommendation on the suite of projects that will comprise the final 2010 Fisheries Resource Monitoring Plan.

Submit the investigation plan, executive summary and project budget no later than May 11, 2009, 5:00 p.m., to fisheries_resource_monitoring@fws.gov. If you need technical assistance or have any questions regarding writing and submitting these documents, please contact Kathy Orzechowski at (907) 786-3645 or 1-800-478-1456.

Guidelines for preparing an investigation plan, executive summary and project budget that meet the requirements of the Fisheries Resources Monitoring Program are on the pages that follow the list of Office of Subsistence Management staff leads.

Definition of the project Period of Performance is 1) the Start Date is the beginning of the project, which is on or after April 1, 2010 and 2) the End Date is the date for submission of the project's Final Report (expected date after review and approval of the draft by the Office of Subsistence Management staff lead).

The reporting requirements are built into the Deliverables/Products and Schedule sections found on pages 4 and 5. If your project varies from these reporting requirements, (i.e. Performance Reports, Annual Reports and a Final Report) please incorporate that into the schedule.

New guidance in 2010:

Costs for the Alaska Department of Fish and Game should be budgeted on the State's fiscal year, July 1 through June 30. Approved funding for Year 1 will still begin April 1, 2010 through June 30, 2011 for the first year.

Costs for the Federal agencies should be budgeted on the Federal fiscal year, October 1 through September 30. Approved funding for Year 1 will still begin April 1, 2010 through September 30, 2011 for the first year.

If applicable, other organizations may submit their budget on the organization's fiscal year. If the time-frame of the fiscal year is not provided, funding will be applied to the project year (April 1 to March 31).

Provide a copy of each agency/organization's Indirect Cost Negotiation Agreement for the current approved indirect rate.

Investigation Plan Guidelines

The investigation plan must be clear and concise and be no more than fifteen pages in length (not including references and appendices). Each investigation plan is evaluated and ranked according to strategic priorities, technical-scientific merit, investigator ability and resources, and partnership-capacity building (see *Criteria Used for Evaluating Proposals and Investigation Plans*). Prepare the investigation plan in Microsoft Word and use Times New Roman 12 pt font.

Project Number: Number assigned in Proposal Review.

Title: Project Title (Location, Species, Method; Ex: Kuskokwim River Chinook Salmon Stock Identification.)

Investigator(s): For the Principal Investigator, include name, agency or organization, address, phone number, email (if available), FAX number, and DUNS Number.

For each co-investigator identify the name, agency or organization, and the DUNS Number.

| | | | | |
|--------------|----------------|----------------|----------------|----------------|
| Cost: | 2010 \$ | 2011 \$ | 2012 \$ | 2013 \$ |
|--------------|----------------|----------------|----------------|----------------|

Project Period of Performance: Start: (beginning month, year) End: (submission of approved Final Report- month, year) The Start date represents the date the funding instruments will be completed, signed and work is to begin.

Geographic Region: List the region where the project will be conducted (see *Regional Map*). If the project spans more than one region, list it as "Interregional."

Federal Conservation System Unit: List the National Forest, National Park, National Preserve, National Wildlife Refuge, or Wild and Scenic River that the study addresses.

Information Type: State whether the project is a stock status and trends (SST) or a harvest monitoring/traditional ecological knowledge (HMTEK) study.

Issue Addressed: Describe in detail the reason(s) for gathering this information and its connection to and implications for Federal subsistence fisheries management. The investigator must ensure that the species addressed in the study is a resource that is managed through the Federal Subsistence Management Program (see *2009-2011 Federal Subsistence Fisheries Regulations*, <http://alaska.fws.gov/asm/law.cfm>, *new regulations posted around April 1st*). Identify how, where, and when the subsistence fishery takes place within a Federal Conservation System Unit. In addition, describe how this project will address priority information needs identified in the Request for Proposals. To earn a high ranking for Strategic Priority, investigators should clearly describe how the information collected will apply to management and regulation of Federal subsistence fisheries.

Quantification of Subsistence Use: Provide a description of the extent and depth of subsistence use of the particular resource proposed for study. This use may be expressed as the actual number or pounds harvested, and/or the number of households or villages using the resource, as well as the extent of use over time. Possible sources for this type of information include the Alaska Department of Fish and Game's (ADFG) Community Profile Database; the Technical Paper Series of the ADFG Division of Subsistence; Annual Management Reports of the ADFG Division of Commercial Fisheries; and annual and final reports posted to our web site.

Background: Describe the ecological, cultural, and fishery context for the project. This information should provide the basis for defining key questions or hypotheses addressed by the study. The investigator should provide a concise review of pertinent information and past literature on the subject. This review should include information from published literature, agency and organization reports, as well as unpublished information, personal contacts, etc. All sources of published information must be cited in the text (author and year within parentheses) and listed in the References section (see below). All sources of unpublished information are cited in the text only (name, affiliation, and personal communication).

Objectives: List project objectives in the sequence they will be completed. Project objectives need to be discrete, clear, measurable and achievable. Clear objectives are essential to evaluate the importance, relevance, and cost-effectiveness of the proposed work (see *Guidelines for Establishing Project Objectives for Biological Fisheries Investigations* or *Guidelines for Establishing Project Objectives for Social Science Investigations*). If there are multiple investigators, clearly describe which objectives each investigator is responsible for. Once a project receives Federal Subsistence Board approval for funding, the objectives are used to develop the funding documents and become the measure of success for a project.

Methods: Describe how each study objective will be accomplished. Clearly link a specific set of procedures (i.e., methods) to the accomplishment of each objective. This section should contain enough detail to allow reviewers to understand how the study will be conducted, including how data will be collected and analyzed. A description of the proposed study site, including a map, must be included in this section. To maintain the highest ethical standards and scientific integrity, research on fishes should conform to the *American Fisheries Society's Guidelines for use of Fish in Field Research*; any exception must be described in the investigation plan.

To improve clarity, the Methods section should be divided into subsections that represent different components of the study:

1. **Study Design:** For each objective, describe experimental and sampling designs and provide rationale for selecting them. Address sample sizes, sample dates, sampling effort, and methods of sampling. Cite references containing more detail. For example, the *Traditional Ecological Handbook* (Miraglia, 1998; available from Alaska Department of Fish and Game, Division of Subsistence) is a source of widely accepted guidelines for designing and conducting traditional ecological knowledge (TEK) studies. For additional information on study design see *References for Study Design, Methods, and Analysis of Fish Populations* and *Traditional Ecological Knowledge (TEK) References*.
2. **Data Collection and Reduction:** Describe the data collected from each sample, and the protocols for collecting them. Describe the path the data will take after they leave the field. Include descriptions of data editing, the media used to record data, and the software used to store data.
3. **Data Analysis:** Describe the analytical procedures to be used. Cite references as appropriate. There should be a description of the analysis that will provide estimates of each parameter identified in the objectives.

Investigator Ability and Resources: For each investigator, clearly identify his/her roles and responsibilities, and provide descriptions of each investigator's:

1. **Ability, including**
 - a. Education and training
 - b. Related work experience
 - c. Publications, reports, and presentations (no more than five total)
 - d. Past or ongoing work on FRMP studies

2. **Resources, including**
 - a. Office and laboratory facilities
 - b. Technical and logistic support
 - c. Personnel and budget administration

Additional evidence of ability and resources, such as reprints and letters of support, may be included as an appendix.

Consultations: Provide a summary of ongoing consultations with rural communities, Alaska Native organizations, agencies and other organizations. Attaching letters of support for a project can strengthen an investigation plan. The purpose of consultation is to ensure that local communities and organizations are aware of, and support, the proposed project. To the greatest practical extent, consultations are also intended to identify opportunities for local communities and organizations to participate in projects. All projects must observe appropriate research ethics. For projects involving interviews with local residents, this includes: informed consent; respect for local tradition and language; protection of privacy, dignity, and confidentiality; acknowledgement of local contributions; and return of results to participating communities (see *Principles for the Conduct of Research in the Arctic*).

Partnerships and Capacity Building: Describe the ways in which this study will develop partnerships and build the capability and expertise of rural and Alaska Native organizations to more meaningfully participate in management of Federal subsistence fisheries. Describe specific plans to hire and train local residents and the type of skills that will be taught. Summarize how the project will promote interaction among rural residents, agencies and other organizations in information gathering, data analysis, reporting, and information sharing (see *Capacity Building*).

Budget: Provide an overview of proposed costs for each organization participating in the investigation in the tabular format shown below. Include both direct and indirect costs. U.S. Fish and Wildlife Service (USFWS) programs must not assess indirect costs. Provide a copy of each agency/organization's Indirect Cost Negotiation Agreement for the current approved indirect rate. Matching funds are non-OSM funds the agency or organization will expend to conduct the study, plus any funds provided by alternative funding sources. Equipment included as matching funds should be itemized in year 1 of the project. Describe the source and purpose of all proposed matching funds.

If this project will include Partners for Fisheries Monitoring Program costs, include that cost in the "Partners Program" column. For example, if a Partners fishery biologist funded at \$120,000 per year will spend six months of a year to implement a project, identify \$60,000 in the Partners Program column.

| Year | Federal Agency | State Agency | Alaska Native Organization | Other Organization | Partners Program | Total Request | Matching Funds |
|-------|----------------|--------------|----------------------------|--------------------|------------------|---------------|----------------|
| 2010 | | | | | | | |
| 2011 | | | | | | | |
| 2012 | | | | | | | |
| 2013 | | | | | | | |
| Total | | | | | | | |

Deliverables/Products: Describe the products, including the required reports, to be developed during the course of the project. Reporting requirements can be found on the web page at: <http://alaska.fws.gov/asm/fisindex.cfm>. Project ends with submission of the reviewed and approved Final Report.

Schedule: Estimate the beginning and completion dates for critical segments of the study, including all deliverables, and provide this information in tabular form.

Example: for 4 years of funding:

| Task | Jan – Feb | Mar – Apr | May – Jun | Jul – Aug | Sep – Oct | Nov - Dec |
|------------------------------|-----------|---------------|----------------------------------|----------------------------------|----------------------------------|-------------------------------|
| Start up | | April 1, 2010 | | | | |
| Sampling | | | May – Jun 2010, 2011, 2012, 2013 | Jul – Aug 2010, 2011, 2012, 2013 | | |
| Data Entry | | | | Jul – Aug 2010, 2011, 2012, 2013 | | |
| Analysis | | | | | Sep – Oct 2010, 2011, 2012, 2013 | |
| Annual Report Submitted | | | May 1, 2011, 2012, 2013 | | | |
| Performance Report Submitted | | | | | | Dec 1, 2010, 2011, 2012, 2013 |
| Draft Final Report Submitted | | March 1, 2014 | | | | |
| Final Report Submitted | | | May 1, 2014 | | | |

References: Provide complete citations for published literature referenced in the above sections.

Examples:

Beacham, T. D. 1982. Fecundity of Coho Salmon (*Onchorhynchus kisutch*) and Chum Salmon (*O. keta*) in the northeast Pacific Ocean. Canadian Journal of Zoology 60: 1463-1469.

Coffing, M. C. 1991. Kwethluk Subsistence: Contemporary Land Use Patterns, Wild Resource Harvest and Use, and the Subsistence Economy of a Lower Kuskokwim River Area Community, Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 157, Juneau, Alaska.

Edwards, M.R. and D.R. Hildreth. 2005. Estimation of sockeye salmon escapement into McLees Lake, Unalaska Island, Alaska, 2005. U. S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report (Study No. 04-403). U. S. Fish and Wildlife

Service, King Salmon Fish and Wildlife Field Office, Alaska Fisheries Data Series Report Number 2005-16, King Salmon, Alaska.

Executive Summary Guidelines

The executive summary must be provided as a separate document from the investigation plan and consist of a concise summary of the proposed study. The executive summary will be included in the 2010 Draft Fisheries Resource Monitoring Plan for public review through the Regional Advisory Councils and the Federal Subsistence Board. The Office of Subsistence Management reserves the right to edit the executive summary for clarity and brevity. **Executive summaries must not exceed one and one-half pages. Two-page executive summaries will be returned to the principal investigator for revision.** Prepare the executive summary in Microsoft Word and use Times New Roman 11 pt font.

- Project Number:** Number assigned in Proposal Review.
Title: Project Title
- Geographic Region:** State the Fisheries Resource Monitoring Program geographic area of study.
- Data Type:** Stock Status and Trends or Harvest Monitoring/Traditional Ecological Knowledge
- Principal Investigator:** Include name, and agency or organization.
- Co-Investigator(s):** Include name(s) and agency or organization.

In a table format, provide the cost each year.

| | | | | |
|----------------------|----------|----------|----------|----------|
| Project Cost: | 2010: \$ | 2011: \$ | 2012: \$ | 2013: \$ |
|----------------------|----------|----------|----------|----------|

- Issue:** Briefly discuss the issue(s) that the study will address.
- Objectives:** Numerically list the objectives in the sequence they will be completed.
- Methods:** Briefly describe the methods that will be used to conduct the study.
- Partnerships/Capacity Building:** Describe the ways in which this study will develop partnerships and build the capacity of rural and Alaska Native organizations to participate in management of Federal subsistence fisheries.

Project Budget Guidelines

The project budget is evaluated for consistency and cost effectiveness. Detailed descriptions must be provided to justify the projected costs. The budget should be prepared in the Microsoft Excel *Budget Detail Workbook*, closely following the instructions.

Annual appropriations should be budgeted as follows:

- For Federal agencies, the budget year will be the Federal fiscal year:
 - Year 1 – Start of project or -April 1- September 30 the next year (or end of project if only one year)
 - Year 2 – October 1 – September 30 (or end of project if two year duration)
 - Year 3 – October 1 – September 30 (or end of project if three year duration)
 - Year 4 – October 1 – End of Project

- For State agencies, the budget year will be the State’s fiscal year:
 - Year 1 — Start of project or – April 1 - June 30 the next year (or end of project if only one year)
 - Year 2 — July 1 – June 30 (or end of project if two year duration)
 - Year 3 — July 1 – June 30 (or end of project if three year duration)
 - Year 4 — July 1 – End of Project

- For other recipients (or denote appropriate fiscal year):
 - Year 1 — Start of project or – April 1 – March 31 (or end of project if only one year)
 - Year 2 — April 1 – March 31 (or end of project if two year duration)
 - Year 3 — April 1 – March 31 (or end of project if three year duration)
 - Year 4 — April 1 – End of Project

If more than one investigator will be working on the project, provide a separate budget for the principal investigator and each co-investigator as provided for in the *Budget Detail Workbook*.

If this project will include Partner’s costs under the Partners for Fisheries Monitoring Program, include that budget separately on a “Co-Inv” tab in the *Budget Detail Workbook*.

Direct costs, indirect costs, and matching funds are defined as follows:

- Direct costs can be specifically identified with conducting the proposed project. Direct costs need to be itemized and generally include personnel, travel, contractual, materials and supplies, and equipment. Personnel costs should include the sum of salary and benefit costs. Personnel costs should be divided into permanent fulltime positions, temporary/seasonal positions, and local hires. Each position should be listed independently. Costs for personnel must be broken down into months budgeted and the monthly cost.
 - Local hire is defined as personnel costs for hiring rural residents as personnel or sub-contracting with rural or Alaska Native organizations to provide personnel. Local hire costs are presented in the budget as a subset of personnel costs and should not be entered in either permanent or temporary personnel costs.

- Indirect costs cannot be specifically identified with conducting the proposed project, but would be incurred by the investigating agency as a result of administering the project. Indirect costs generally include space rental, utilities, postage, data processing, training, safety management, affirmative action programs, administrative support, and supervisory oversight. Since indirect costs cannot be itemized, they are

computed as a percentage of the total direct costs. The percent, or indirect rate, should be stated as well as the actual request for indirect costs.

- USFWS programs must not assess indirect costs. State agencies and Alaska Native organizations should use their provisional rate. Provide a copy of each agency/organization's Indirect Cost Negotiation Agreement for the current approved indirect rate. We suggest closely coordinating with your organization's finance officer. Finance Officers should coordinate with Office of Subsistence Management when they receive new approved indirect rates. Failure to notify the Service of indirect cost rate increases could result in the Service not being able to accommodate requests for additional monies in future years funding. The composition of items included in the indirect costs need to be described in the comment section after the Budget Summary Table.
- Matching funds are non-OSM funds the agency or organization will expend for salaries and equipment to conduct the study, plus any funds provided by alternative funding sources. Equipment costs should be itemized in year one of the project. Matching funds are entered in the budget table separately. The source and purpose of all matching funds should be described in the Comments section.

Investigation Plan Patterns and Trends in Subsistence Fish Harvests, Northwest Alaska

Project Number: FIS 07-151

Title: Patterns and Trends in Subsistence Fish Harvests, Northwest Alaska

Investigator:

James Magdanz
Division of Subsistence
Alaska Department of Fish and Game
Box 689
Kotzebue, AK 99752-0278
Phone: 907-442-1713

james_magdanz@fishgame.state.ak.us

Co-Investigator:

Hazel Apok
Tribal Affairs
Maniilaq Association
Box 256, Kotzebue, Alaska 99752
Phone: 907-442-7673
Fax: 907-442-7726

hapok@maniilaq.org

| | | | |
|--------------|-------------|-------------|-------------|
| Cost: | 2007 | 2008 | 2009 |
| | \$134,616 | \$127,168 | \$78,579 |

Project Period of Performance: April 1, 2007 – March 31, 2010

Geographic Area: Northwest Alaska

Federal Conservation System Units: Selawik National Wildlife Refuge, Kobuk Valley National Park, Cape Krusenstern National Monument, Noatak National Preserve.

Information Type: Harvest Monitoring / Traditional Ecological Knowledge.

Issue Addressed: This project will explore subsistence fishery harvest patterns and trends in six Northwest Alaska communities: Ambler, Kiana, Kobuk, Noatak, Noorvik, and Shungnak (Figure 1). In every one of the six study communities, estimated salmon harvests have declined since 1994. In some communities, declines in salmon harvests have been mitigated by increases in other fish harvests. But in other communities, this has not occurred. In each of the six communities, this project will explore community harvest trends and community patterns of use for chum salmon (*Oncorhynchus keta*), for Dolly Varden (*Salvelinus malma*, “trout”), for whitefish (*Coregonus* sp., *Prosopium cylindraceum*), and for inconnu (*Stenodus leucichthys*, “sheefish”). The main focus of the study will be to identify variables that could improve the reliability of predictive harvest models so managers can better understand the factors associated with changing fish harvests. A specific focus will be on characterizing changes related to social, economic, and environmental factors – which cannot be influenced – from changes related to managerial factors – which can be influenced. Priority information needs for northern Alaska in 2007 included evaluations of “patterns and trends in subsistence fish harvests in Norton and Kotzebue Sounds.”

Quantification of Subsistence Use: During the past ten years, the six communities proposed for this study have harvested about 95,000 salmon, sheefish, whitefish, and Dolly Varden annually (Figure 2), with an estimated average edible weight in excess of 300,000 pounds annually. A significant portion of those harvests occurred within the boundaries of the Selawik National Wildlife Refuge, the Kobuk Valley National Park, the Noatak National Preserve, and Cape Krusenstern National Monument (Figure 1). The exact proportion harvested within conservation unit boundaries was not known. Comprehensive subsistence harvest data indicate that fish comprise about 38 percent of the total subsistence harvest in Northwest Alaska communities, by edible weight (Figure 3).

Background: Since 1994, the Alaska Department of Fish and Game, Maniilaq Association, and the National Park Service have documented subsistence salmon harvests in the Kotzebue Sound Area through a series of systematic household surveys, the “Northwest salmon harvest survey project.” The project also collected harvest reports for sheefish, Dolly Varden, and (beginning in 1997) whitefish. Survey samples typically were large. In 2004, for

example, surveys were completed for 440 of the 472 households (93 percent) in the study communities (Georgette and Koster 2005:2). Sampling methods and survey instruments changed little over the duration of the project. Researchers maintained consistent household lists for each community from the project's inception and updated them each year. By 2004, the project had accumulated approximately 4,500 records of individual household's harvests in the six study communities. In a previous project, annual household-level data sets were transferred from R-Base and Microsoft Access into a multi-year, household-level data set stored in SPSS, a statistical package for the social sciences. Until 2005, this extensive data collection had been used for one purpose, that is, to estimate the total annual harvests of salmon by residents of the survey communities. In 2005, the AYK Sustainable Salmon Initiative funded an analysis of patterns and trends in salmon harvests for ten Seward Peninsula communities (Magdanz et al. 2005), but not for the six communities in this proposal. Except for succinct annual summaries of community harvests by species, no similar analyses have been conducted for these six communities. This study would extend and refine the analyses used in the ten Seward Peninsula communities, and apply them to six Northwest Alaska communities.

Although it would seem to be an obvious line of inquiry, time-series analyses of subsistence harvests are rare. One impediment has been the lack of adequate time-series datasets, in which sampling strategies, data collection methods, and harvest variables have been consistent over time. Salmon are one of the few subsistence resources in Alaska with harvest data that meet these criteria. Only recently have the time spans represented in the salmon databases become long enough to warrant analysis. The Northwest Alaska salmon database may be unique in two ways: (1) household harvest records include not only salmon but three other major fish species; and (2) consistent annual household identification codes allow time-series analyses at the household level. Consequently, analyses can explore relationships among the subsistence harvests of four major species at the household level over time.

Time-series analyses seem particularly appropriate now, given the accumulating environmental and economic changes in Alaska. Salmon runs in western Alaska fluctuated substantially in the 1990s, for reasons not fully understood. During the same time, the international market for wild salmon collapsed, creating hardship along western Alaska's coast and resulting in several federal disaster declarations. Gasoline and oil prices reached record highs in 2006, exceeding \$5.00 a gallon in some Northwest Alaska communities, not only limiting people's ability to travel in the country, but also increasing the costs of imported food, equipment, and supplies. Increasing prices for zinc, gold, and other metals have encouraged mineral exploration and extraction activities in Northwest Alaska, providing new sources of employment but potentially altering fish and wildlife habitat. As a result of climate change, Northwest Alaska's rivers have been freezing later and breaking up earlier, affecting the movements of both animals and people, and disrupting seasonal patterns of subsistence harvesting and processing. These environmental and economic changes are forcing rural families to reconsider how to spend their limited resources and time: when to go to fish camp and how long to stay; whether to purchase new fuel-efficient, four-cycle outboard motors or continue to use less expensive, two-cycle motors; whether to take a job mining, or rebuild a camp washed away in the spring flood. Environmental and economic changes also increase the challenges for fishery managers, as it become more difficult to predict salmon returns, commercial markets, and fishing effort.

Subsistence harvests have been changing along with the environment and the economy, but associations between harvest levels and other variables are not clear. From 1994 through 2004, estimated salmon harvests decreased in every one of the six study communities. The moving four-year average of the communities' total salmon harvest declined from 42,987 salmon in 1997 to 25,327 salmon in 2004 (Figure 4). The four-year average is used because the salmon harvest was 98% chum, commonly age-four fish. In some communities, declines in harvests of salmon have been mitigated by increases in harvests of other fish, but in other communities this has not occurred. An example of the differences among communities proposed for this study can be seen by comparing Noatak (Figure 5, top), where the total harvest of the four major fish species have declined substantially, with Shungnak (Figure 5, bottom), where total fish harvests have remained stable even while salmon harvests have declined. This project's research questions follow from these kinds of observations, specifically:

- How have subsistence fish harvests changed in the six study communities from 1994 to 2005?
- What factors might account for these changes?
- What factors might account for the differences observed among the six study communities?

At the risk of stating the obvious, changes in community harvests are the result of changes in harvests by individuals and families. Understanding changes at the community level requires an exploration of changes in harvests at the household level, which this project proposes to do. At the household level, several scholars have observed patterns in the subsistence harvests of wild foods. The basic observations are: (1) some households harvested much more wild food than other households, and (2) the distribution of harvests among household was similar for many different communities even though they used very different species of wild foods. From these basic observations have come a series of research questions that seek to explain the variation in harvests from household to household. Wolfe categorized households into five social types based primarily on the age of household heads, and found that harvests were associated with household social type (Magdanz et al. 2002:60-64). Chabot also categorized households into social types, based on the gender and employment status of the head of household, and also found associations between harvests and those factors (Chabot 2003:24).

In 2005, researchers examined several hypotheses about factors related to salmon harvests, using nearly 8,000 annual household salmon harvest records documenting a decade of salmon harvests by households in ten Norton Sound communities (Magdanz et al. 2005). As expected, in all communities a majority of the salmon were harvested by a minority of the households (the 30-70 hypothesis). Through many different levels of abundance, through a decade of varied weather, with harvests ranging from 67,000 to 140,000 salmon, each year about 23% of the households harvested 70 % of the salmon, by weight. In some communities, harvest concentrations were very similar from year to year. In other communities, harvest concentrations varied considerably. Although this was not true for every community, households with older heads usually harvested significantly more salmon than households with younger heads, and households headed by couples usually harvested more salmon than households headed by single persons. Households that consistently harvested salmon also were among the high harvesting households in their communities. Neither commercial fishing retention nor family events seemed to affect harvest levels.

Given these patterns, it was reasonable to assume that in each community, there existed a stable core of high-harvesting households that took the majority of the salmon year after year. Wolfe was the first to describe the phenomenon for Alaska, and dubbed the high-harvesting households “super-households” (Wolfe 1987). It was reasonable to assume, as Wolfe implied, that these were the same households year after year, mostly mature and elder couples. But were they? In the analysis of Norton Sound salmon harvest data, researchers found that some households did contribute consistently to the community harvest (Magdanz et al. 2005:61-66). Yet in every community, there were many unpredictable households, households that usually contributed much and then in one year contributed little, or vice versa. When they *did* fish, some intermittent fishing households were among the highest harvesting households in their communities (Magdanz et al. 2005:52-53). The frequency of intermittent fishing households varied widely from community to community. None of this was apparent without time-series harvest data at the household level. Some of the research questions suggested by the Norton Sound analysis include:

- Why do some households, and not others, cycle in and out of the fishery?
- Why do some intermittent fishing households harvest so much when they do fish?
- Why are intermittent fishing households much more common in some communities than in others?

Exploring those questions involves first assembling a household-level subsistence harvest database for the six Northwest Alaska communities. The Norton Sound study aggregated the annual data sets for all the Northwest salmon survey project communities – including the six in this study – and that will facilitate this project. Before data analysis can begin, additional data review, correction, recoding, and transformations tasks will be necessary. These were completed for the ten Norton Sound communities but not for the six study communities. Again, researchers’ experience with the Norton Sound dataset should facilitate data analysis in this project.

In the Norton Sound study, researchers based their analyses primarily upon the harvest database and attributes of each household collected from other databases or provided – in most cases – by key respondents. In two communities in this study – tentatively Noatak and Shungnak – researchers would return to a 50% random sample of *fishing* households with a decade of harvest reports for that household in hand. In structured interviews, researchers would ask respondents to discuss and explain the patterns of their own households’ harvests of several different fish species over time.

In Noatak and Shungnak, researchers also plan to involve high school students and teachers. As a project for their science class, students will work with researchers to review harvest data sets for their own communities, then conduct the interviews with some of the households in their own extended families, and write summary reports discussing the factors affecting the harvests in their extended families. Letters of support from staff in the Noatak and Shungnak high schools are included with this proposal. The students' observations would either be summarized or be included in the final project report.

Objectives:

To address the research question:

- “How did subsistence fish harvests change in the six study communities from 1994 to 2005?”
1. Compare community and household harvest databases; identify and correct data errors.
 2. Analyze community database to identify harvest trends for four fish species in six communities.

To address the research questions:

- “What factors might account for these changes?”
 - “What factors might account for the differences observed among the six study communities?”
 - “Why do some households, and not others, cycle in and out of the fishery?”
 - “Why do some intermittent fishing households harvest so much when they do fish?”
 - “Why are intermittent fishing households much more common in some communities?”
3. In two communities, work with high school students to review community harvest patterns, and with respondents in selected household to review household harvest patterns.
 4. In six communities, collect household attributes (age of household head, changes in health status, deaths, marriages, etc.) from key respondents and through household interviews.
 5. Summarize data from interviews and add household interview data to the harvest database.
 6. Analyze the household-level database to identify associations between harvests and social, economic, and demographic variables.

Methods: Although this project will collect new information, it will rely primarily on two closely related fish harvest databases developed during previous projects. One is a community-level database, in which each record contains the fish harvests for one community in one year. The other is a household-level database, in which each record contains the fish harvests for one household in one year. The two databases have the same source – the results of the annual Northwest Alaska salmon harvest surveys.

Annual salmon harvest assessment surveys were conducted in Northwest Alaska from 1994 through 2004. The two-page survey included a core question set that remained essentially unchanged from 1994 through 2003 (Appendix 1). The core questions collected the following data from each household:

- Name of household head.
- Number of people in household.
- Whether household *usually* fished for salmon for subsistence.
- Whether household fished for salmon for subsistence *this year*.
- Number of salmon harvested for subsistence.
- Number of salmon harvested with rods and reels.
- Types of gear used to harvest salmon for subsistence.
- Number of salmon harvested for dog food.
- Number of salmon retained from commercial harvests.

In addition to this core question set, other questions were included on the survey in some years. Several questions on cooperation among households were included in 1994, then dropped. A question exploring

salmon harvests as a proportion of total harvests was removed in 1997. From 1998 through 2004, the entire survey was essentially unchanged. Project supervisors (in particular, Georgette) sought to keep the survey simple and consistent so as to provide the highest degree of accuracy and comparability.

Survey procedures were the same each year. In October and November, after the salmon fishing season had ended, an ADF&G fisheries technician visited each village, and contacted one or more local researchers hired by Kawerak (Appendix 2). In each study community, the survey team reviewed a “tracking sheet” that listed all the occupied households. They deleted households that had moved away from the community or had consolidated with existing households, and added households that had moved into the community or had split from existing households. Once the tracking sheet had been updated, researchers attempted to administer a survey to each occupied household.

Researchers attempted a census in each community each year. In six of the survey years, overall sampling rates exceeded 80% of occupied households; in the other years sampling rates ranged from 42% to 53%. Over the duration of the project, the total sample was 73% of occupied households in the six communities. Overall sampling rates were the highest in Noatak (78%) and Shungnak (81%), which is one reason these communities were selected for additional work. The results of the survey were published in a series of annual project reports (Georgette 1996a 1996b; Georgette and Utermohle 1997, 1998, 1999, 2000, 2001; Georgette et al. 2003a, 2003b, 2004; Magdanz and Utermohle 1994) and summarized in annual management reports (Banducci et al. 2003; Brennan et al. 1999; Bue et al. 1996a 1996b, 1997; Kohler et al. 2004).

Study Design: The general study design calls for a coordinated analysis of the two related datasets, one of which will be enhanced with additional data on household attributes and from household interviews. In an unusual feature of the study design, researchers will invite respondents in a random sample of 50% of the *fishing* households in two study communities to participate in the analysis by reviewing their own households’ ten-year harvest history and providing commentary and explanation for the harvest patterns observed. Figure 6 illustrates the project objectives, and shows the flow of the data through project, from the data sources (shaded gray) to the final databases (shown in black) ready for analysis.

Data Collection and Reduction: In the first phase of the project, researchers will compare and verify the two databases (Objective 1). The annual data from the Northwest subsistence salmon harvest projects were stored in two different formats, R-Base and Microsoft Access. In a previous project, researchers reviewed the annual files for consistency in variable names and contents from year to year, renamed variables as necessary in the annual files, added a variable to identify the survey year, and then combined all the annual files into a single database. To verify the household level database, researchers will calculate the sums of the annual reported harvests for each species in each community, and compare the results with the previously published annual summaries in the community-level database. If discrepancies are found, researchers will locate and correct the discrepancies (Objective 1). This was done for the Norton Sound study communities in 2005, but has not been done for the Northwest communities. Once the datasets have been cleaned and verified, researchers will use Microsoft Excel to calculate and chart trends in the harvests of each species from the community-level database (Objective 2). ADF&G staff will be responsible for Objective 1 and Objective 2.

In the second phase of the project, researchers will visit each study community to verify household identifiers and gather additional data about household characteristics to supplement each household’s harvest data. In preparation for each community trip, researchers will print two summary tables showing all the household IDs and household names used in each study community in each year. One table will be sorted by household ID and the other table will be sorted by last name. Researchers also will print summary tables showing the age of every person who received an Alaska Permanent Fund Dividend in the year 2000. With these three tables in hand, researchers will review the household ID table line by line with one or more key respondents in each study community. They will verify that the same numerical household codes were used for the same household in each year. If a household was surveyed under different codes in different years (as would happen when a household left a community for more than one year and then returned), the case will be flagged for correction.

In two communities, tentatively Noatak and Shungnak, researchers also will prepare harvest histories for every household, and interview selected fishing households using a standardized interview protocol (Objective 3). The protocol will verify the household identification codes used by the annual surveys, collect household attributes (age

of head, household type), summarize family events during the past decade (marriages, deaths, etc.), and (most important) explore the reasons for changes or interruptions in the household's fish harvests from 1974 to 2004. In the remaining four communities, researchers will verify household identification codes and collect household attributes (Objective 4). At the end of this phase, researchers will have one verification form for each household, as well as additional interview from the fishing households samples in two communities. Data from these forms will be entered in Microsoft Access databases, one for each study community. ADF&G staff will be responsible for completing Objective 3. Maniilaq staff will be responsible for completing Objective 4.

In the third phase of the project, researchers will use SPSS to merge the aggregated harvest database from phase 1 with the household characteristics data from phase 2 (Objective 5). Household identifiers will be corrected as necessary. Duplicate records, if any, will be merged. The final expanded household-level database will be stored in SPSS. ADF&G staff will be responsible for Objective 5.

Data Analysis: To begin the analysis, researchers will use the SPSS aggregate, compute, recode, categorize, and transform procedures to categorize households based on their harvesting histories. For example, some households fished continuously during the 10-year period, while others fished intermittently. Some households' harvests varied little from year to year, other households' harvests varied widely. For each community in each year, researchers will rank households in descending order of reported harvest. Researchers will use SPSS to test for correlations between reported harvests and household attributes.

Researchers also will prepare a narrative summary of the household interviews in Shungnak and Noatak, discussing the explanations households offered for their own harvesting patterns. One particular interest will be the affect of family events – marriage, death, divorce – on harvest levels. In the Norton Sound study, unexpectedly, harvests appeared to increase following a negative family event such as a death (Magdanz et al. 2005). Although it is not possible to predict households' explanations, researchers expect respondents will discuss changes in processing methods, changes in employment levels, increases in fuel and equipment costs, and changing environmental conditions as factors in their households' harvest levels. The most frequent explanations will be summarized in the final report. ADF&G staff will be the primary authors of the final report, with consultation and review from Maniilaq staff and from the study communities.

Investigator Ability and Resources:

The ADF&G Division of Subsistence has administered and analyzed subsistence harvest surveys from nearly every community in rural Alaska, including most of the communities in the Northwest Alaska. The division maintains the Community Subsistence Information System, the most comprehensive source of subsistence harvest estimates. The Division has participated in the regulatory processes of the Alaska Board of Fisheries, and provided information to the federal rule making processes of the Federal Subsistence Board. ADF&G's administrative staff manages scores of federal projects for a variety of federal agencies.

The Maniilaq Association is a 501(c)(3) tribal consortium that serves 11 federally recognized tribes in Northwest Alaska. They include the Native Villages of Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak, Noorvik, Point Hope, Selawik, and Shungnak. The Maniilaq Association is organized into three branches: health services, tribal government services, and social services. This proposal will be administered by Tribal Government Services.

James Magdanz has more than 20 years' experience in conducting subsistence research in northwest Alaska. He has written numerous technical papers on subsistence, most recently on patterns and trends in salmon harvests in Norton Sound (Magdanz et al. 2005), on wild food production networks in Wales and Deering (Magdanz et al. 2002), and on subsistence salmon fishing by residents of Nome (Magdanz et al. 2003). He directed the first year of work in the northwest salmon survey project in 1994, and has presented the results of the survey project to the Alaska Board of Fisheries since its inception.

Hazel Apok is the Director of Tribal Government Services for Maniilaq Association. She has 30 years of administrative experience, having served as a city mayor, a tribal council president, regional non-profit board member, and borough planning commissioner. She has been a liaison between villages and regional centers, and has represented regions in statewide forums. Hazel currently serves on the national Tribal Association on Solid Waste & Emergency Response Board. She is familiar with issues affecting Native people, has spoken publicly on

environmental issues, and is concerned about environmental justice issues. Hazel was born in Noatak, and adopted by a Kiana family still practicing a nomadic lifestyle. Her adoptive parents instilled in her respect for the land, water, flora and fauna. Hazel's family had to move to the nearest settlement so that she could attend school. She witnessed the transformation of towns, as they acquired electricity, oil-fired heating, and central water and sewer systems. Today, she blends work in the cash economy with subsistence, assisting others in harvesting wild game, fish, berries and plants.

Consultations: Researchers have contacted school staff in both Noatak and Shungnak. Both schools expressed an interest in participating in the project. Researchers participated in Maniilaq's Tri-Annual Tribal Gathering in Kotzebue on April 2, 2006 attended by more than 100 tribal council members from all eleven Northwest Alaska communities, and participated in the subsistence working group. Prior to conducting patterns and trends research in each study community, Maniilaq Association will send a written letter to the local tribal government requesting permission to conduct the research.

Partnerships and Capacity Building: The project will work through the local IRA governments in each community, and contract with local research assistants in each study community to gather the data necessary to meet objectives 3 and 4. When possible the project will employ the same local residents who gathered the fisheries data during the original salmon harvest survey projects. The project also will work with high school students and teachers in two communities in a workshop format to review the data, and then assist the students in conducting interviews. Students will be encouraged to write summaries of their analysis and interviews, which may be incorporated in the final report.

The ADF&G Division of Subsistence and Maniilaq Association have cooperated on a number of research projects in Northwest Alaska dating back to the 1980s, most recently FIS 02-040 and FIS 04-157. Both agencies have had changes of personnel in the past year. This project envisions an expanded role for Maniilaq in data collection, and will be an opportunity to expand their cooperative relationship.

Estimated Costs:

| Year | Federal Agency | State Agency | Alaska Native Organization | Other Organization | Total Request | Agency Match |
|-------|----------------|--------------|----------------------------|--------------------|---------------|--------------|
| 2007 | | \$ 93,323 | \$ 41,293 | | \$134,616 | |
| 2008 | | \$110,694 | \$ 16,474 | | \$127,168 | |
| 2009 | | \$ 54,093 | \$ 24,486 | | \$ 78,579 | |
| Total | | \$258,110 | \$ 82,253 | | \$340,363 | |

Deliverables/Products: A technical paper describing the methods and results of the project will be published as part of the ADF&G Division of Subsistence technical paper series, and distributed by Maniilaq Association to the study communities. The two fisheries databases, cleansed of confidential identifying information, will be available to other qualified researchers upon request.

Schedule: The project would begin with data reviews in April 2007. Field work is planned for the winter of 2007-2008, the base year. Analysis and write up would occur in Option Year 2, with final report review in Option Year 3.

PROJECT SCHEDULE - PATTERNS AND TRENDS

Base Year (April 07 - Mar 08)

| | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
|---|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Compare and Correct Databases (Objective 1) | | | | | | | | | | | | |
| Analyze Community Database (Objective 2) | | | | | | | | | | | | |
| Develop Interview Protocol | | | | | | | | | | | | |
| Data Review Workshop for HS Students | | | | | | | | | | | | |
| Conduct Interviews in 2 Communities (Objective 3) | | | | | | | | | | | | |
| Prepare Performance Report | | | | | | | | | | | | |
| SUBMIT Performance Report | | | | | | | | | 12-1 | | | |
| Conduct Surveys in 4 communities (Objective 4) | | | | | | | | | | | | |
| Data Entry for 6 Communities | | | | | | | | | | | | |

Option Year 1 (Apr 08 - Mar 09)

| | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
|--|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Merge Harvest & Characteristics Data (Objective 5) | | | | | | | | | | | | |
| Prepare Annual Report | | | | | | | | | | | | |
| SUBMIT Annual Report | | 5-1 | | | | | | | | | | |
| Analyze Expanded Database (Objective 6) | | | | | | | | | | | | |
| Write Draft Report | | | | | | | | | | | | |
| Prepare Performance Report | | | | | | | | | | | | |
| SUBMIT Performance Report | | | | | | | | | 12-1 | | | |

Option Year 2 (Apr 09 - Mar 10)

| | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
|---|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|------|
| Prepare Annual Report | | | | | | | | | | | | |
| SUBMIT Annual Report | | 5-1 | | | | | | | | | | |
| Draft Final Program Manager Review | | | | | | | | | | | | |
| Author Response | | | | | | | | | | | | |
| Draft Final HQ Review | | | | | | | | | | | | |
| Author Response | | | | | | | | | | | | |
| Publication Specialist Consultation | | | | | | | | | | | | |
| Draft Final to FIS | | | | | | | | | | | | |
| Prepare Performance Report | | | | | | | | | | | | |
| SUBMIT Performance Report | | | | | | | | | 12-1 | | | |
| FIS Review | | | | | | | | | | | | |
| Author/Publication Specialist Revisions | | | | | | | | | | | | |
| Final Preparations & Printing | | | | | | | | | | | | |
| Final Report to FIS | | | | | | | | | | | | 3-31 |

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[figure deleted]

Figure 1. Study communities and federal conservation units, Northwest Alaska.

[figure deleted]

Figure 2. Estimated number of fish harvested for subsistence, Northwest Alaska, 1994-2004.

[figure deleted]

Figure 3. Estimated composition of subsistence harvests in Northwest Alaska communities.

[figure deleted]

Figure 4. Estimated total annual salmon harvests and four-year, moving-average harvests.

[figure deleted]

Figure 5. Subsistence fish harvests and harvest trends, Noatak and Shungnak, 1994-2004

EXAMPLE

EXECUTIVE SUMMARY

Project Number: **07-452**

Project Title: **The Kvichak Watershed Subsistence Salmon Fishery: An Ethnographic Study**

Geographic Area: Southwest (Bristol Bay Area)

Principal Investigators: (1) James Fall, Division of Subsistence, Alaska Department of Fish and Game (ADF&G), (2) Davin Holen, Division of Subsistence, ADF&G, (2) Robbin La Vine; Natural Resource Department, Bristol Bay Native Association (BBNA)

Co-Investigators: (1) Theodore Krieg; Division of Subsistence, ADF&G; (2) Michelle Ravenmoon, Lake Clark National Park and Preserve (LACL); (3) Karen Gaul, LACL

Project Cost: 2007:\$143,867 2008:\$110,152 2009:\$41,544

Issue: This ethnographic study will investigate how families in four communities of the Kvichak District of the Bristol Bay Management Area (Iliamna, Newhalen, Nondalton, and Port Alsworth) develop subsistence fishing strategies in response to changing sociocultural, economic, and environmental circumstances. Such ethnographic information about community patterns of subsistence use and adaptation is lacking, but is essential for the effective management of fisheries to provide for subsistence uses. Subsistence sockeye salmon harvests in the Kvichak District have declined since the early 1990s. Poor sockeye salmon returns are likely one factor responsible for declining harvests, but socioeconomic and sociocultural factors may be partly responsible as well. Further, the current household permit system may inadequately document participation, harvest levels, and harvest timing for at least some very active multi-household extended families, creating difficulties for tracking harvest trends. The three research questions are (1) how do families make decisions about subsistence fishing in light of ever-changing sociocultural, economic, and environmental circumstances; (2) what factors shape annual variations in subsistence harvests of Kvichak sockeye salmon, and (3) which of these factors shape long-term trends in the fishery. This project addresses two information needs for Bristol Bay salmon identified in the Bristol Bay-Chignik strategic plan: “(7) verify subsistence permit data,” and “(9) evaluate trends in subsistence harvest data; factors to consider include, but are not limited to, demographic, economic, regulatory, and cultural issues.” It also addresses an information need for Bristol Bay non-salmon: “(4) estimate historic harvest levels and identify trends in data; factors to consider include, but are not limited to, demographic, economic, regulatory, and cultural issues.” The study will use a combination of research methods organized in stages to build upon findings as the study progresses. The results will be directly useful for fisheries managers for interpreting changing subsistence harvest levels and participation rates for salmon and for nonsalmon fish and in providing more precise harvest data. Portions of this management area are within the Lake Clark National Park and Preserve; the proposed study communities of are Resident Zone Communities of the park.

Objectives:

1. Prepare an ethnographic description of the subsistence sockeye salmon fisheries of the communities of Nondalton, Newhalen, Iliamna, and Port Alsworth in 2007 regarding: the social organization of harvesting, processing, and distributing the catch; the location of harvests, including use of fish camps; gear types; and processing methods.
2. Estimate the subsistence sockeye salmon harvests, including harvests by location, date, and social group for Nondalton, Iliamna, Newhalen, and Port Alsworth in 2007.

3. Document the social context of subsistence fishing for salmon and other fish for four case study families over the course of one year as examples of community use patterns (2007/2008).
4. Describe the decision-making process of the four case study families in annual subsistence harvests of salmon and other fish, including adjustments made in response to resource abundance, the species selection process, and the selection of family members for harvesting.
5. Identify the social, cultural, economic and environmental factors that shaped subsistence salmon harvesting activities in Nondalton, Iliamna, Newhalen, and Port Alsworth in 2007.
6. Describe changing subsistence fishing strategies and patterns in the subsistence salmon fishery that have developed in the study communities over the last 20 to 25 years.

Methods: (1) A literature review will identify trends in the Kvichak sockeye run and the subsistence fishery and help frame questions for key respondents and topics for the ethnographic fieldwork. (2) Ethnographic Fieldwork during subsistence sockeye salmon fishing in the summer and fall of 2007 will address Objectives 2, 3, 5, and 6. The goal will be to describe the decision-making processes involved in subsistence fishing and organization of subsistence salmon harvesting. (3) Family Case Studies address Objectives 3, 4, 5, and 6. Documentation of subsistence activities and harvests of four families will take place over the course of a year (2007/2008) using logbooks, journals, photographs, and interviews. (4) Key Respondent Interviews and Oral Histories will contribute to meeting Objectives 1 and 2. About 20 interviews will record the history of fish camps, describe organizational principles of the subsistence fishery, and assess trends in the salmon run and subsistence fishing methods and harvests as informed by traditional knowledge. Some of these interviews make take the form of oral histories, tracing individuals' lifetime roles in subsistence salmon fishing. 5) Systematic Household Harvest Surveys with about 20 to 30 households will supplement 2007 harvest data from permits and help evaluate harvest data in light of observations about the social organization of fishing from the ethnographic fieldwork, family case studies, and key respondent interviews. This addresses Objective 2.

Products: A final report will summarize the study findings. Harvest data will be incorporated into ADF&G's Alaska Subsistence Fisheries Database and reported in ADF&G's annual management report (AMR) for the Bristol Bay Area.

Investigators Ability and Resources: James Fall is a cultural anthropologist and regional program manager with ADF&G. Davin Holen and Ted Krieg are anthropologists with ADF&G. Both have extensive experience conducting fieldwork in the study communities. Robbin La Vine is BBNA's Subsistence Fisheries Social Scientist through the OSM's Partners program, and has worked on TEK projects and issues for the last four years. Michelle Ravenmoon is a life-long Dena'ina resident of the region. She is the LACL Subsistence Coordinator. Karen Gaul is the Park/Preserve's cultural anthropologist and has prepared an ethnographic overview and assessment for the Park/Preserve.

Partnership and Capacity Building: The project will be a collaboration between ADF&G, NPS, and BBNA. NPS and BBNA local resident interns and other local resident research assistants will be trained to assist with literature review, ethnographic fieldwork, key respondent interviews, and harvest surveys. Case study families will be trained in data gathering methods and compensated for their involvement.

SUMMARY SHEET:

Project Budget

2007 - 2009 Budget Summary Table

FIS 07-452: The Kvichak Watershed Subsistence Salmon Fishery: An Ethnographic Study

| Budget Category: | Proposed 2007 | Proposed 2008 | Proposed 2009 | Matching 2007 | Matching 2008 | Matching 2009 |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Personnel | \$82,403 | \$74,150 | \$30,281 | \$0 | \$0 | \$0 |
| Travel | \$26,731 | \$6,106 | \$4,500 | \$0 | \$0 | \$0 |
| Contractual | \$12,850 | \$14,050 | \$1,750 | \$0 | \$0 | \$0 |
| Material/Supplies | \$3,650 | \$500 | \$250 | \$0 | \$0 | \$0 |
| Equipment | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Other Items/Resources | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Direct Costs (a) | \$125,634 | \$94,806 | \$36,781 | \$0 | \$0 | \$0 |
| Total Indirect Costs (b) | \$18,233 | \$15,346 | \$4,763 | | | |
| Project Total (a+b) | \$143,867 | \$110,152 | \$41,544 | | | |

PLEASE READ BEFORE YOU BEGIN:

The summary information provided on this sheet is part of each investigator's budget. One sheet is provided for the Principal Investigator, and several sheets are provided for Co-Investigators. Please, do not remove any unused Co-investigator sheets. If they are not needed, leave blank.

Mouse click or "Tab" through each item where your information will be entered. You will only be entering information in green areas. Totals are calculated and filled into the section for each investigator's budget, as well as this Project Summary.

[Please fill in the Project Number and Title.](#)

[Enter any overall project "Comments".](#) If this is a continuation of a project funded under the FRMP, annotate in the "Comments" section the previous amount funded and the years covered. Organization specific comments are entered on their respective sheet.

[Click on the Principal Investigator sheet to begin.](#)

Comments: (At the end of a sentence, press the "ALT" and "Enter" keys to start a new sentence. Continuous sentences will wrap.)

The ADF&G indirect rate is projected to increase to 15.67% and that increased rate has been used in this budget plan.

2007 - 2009 Budget Summary Table

FIS 07-452: The Kvichak Watershed Subsistence Salmon Fishery: An Ethnographic Study

Alaska Department of Fish and Game, Division of Subsistence

SUMMARY SECTION

| Budget Category: | Proposed 2007 | Proposed 2008 | Proposed 2009 | Matching 2007 | Matching 2008 | Matching 2009 |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Personnel | \$82,403 | \$71,150 | \$30,281 | \$0 | \$0 | \$0 |
| Personnel | \$82,403 | \$71,150 | \$30,281 | \$0 | \$0 | \$0 |
| Seasonal/Temporary | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Local Hire | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Contractual | \$15,251 | \$2,621 | \$3,000 | \$0 | \$0 | \$0 |
| Material/Supplies | \$3,250 | \$1,250 | \$1,750 | \$0 | \$0 | \$0 |
| Equipment | \$1,450 | \$500 | \$250 | \$0 | \$0 | \$0 |
| Other Items/Resources | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Direct Costs (a) | \$102,354 | \$75,521 | \$35,281 | \$0 | \$0 | \$0 |
| Total Indirect Costs (b) | \$13,818 | \$10,195 | \$4,763 | | | |
| Project Total (a+b) | \$116,172 | \$85,716 | \$40,044 | | | |

INSTRUCTIONS

Mouse click or "Tab" through each cell until the information is to be entered. Do not

Double-click on the "Principal Investigator" field to enter the Principal Investigator's name.
Ex.: ADFG-CFD

Please enter "Principal Investigator" information.

"Proposed" data cannot be entered until the detail section is based upon information provided.

"Matching" dollars should be entered in the detail section.

Do not include Local Hire costs or Seasonal/Temporary in the detail section. Use the summary section to summarize the local hire costs.

Enter any organization specific "Other" indirect costs.

Detailed descriptions must be provided in the detail section.

Proceed to "Personnel Costs."

Comments: (At the end of a sentence, press the "ALT" and "Enter" keys to start a new sentence. Continuous sentences will wrap.)



DETAIL SECTION

Provide detailed descriptions of each item below.

| Personnel Costs: | | Months | Monthly | Proposed | Months | Monthly | Proposed | |
|----------------------------|------------------------------------|----------|---------------|-----------------|----------|---------------|-----------------|-----|
| Name | Position Description | Budgeted | Cost Budgeted | 2007 | Budgeted | Cost Budgeted | 2008 | Bud |
| Permanent: | | | | | | | | |
| Davin Holen. | Subsistence Resource Specialist II | 4.7 | 6139.0 | \$28,853.3 | 2.8 | 6139.0 | \$17,189.2 | |
| Ted Krieg. | Subsistence Resource Specialist II | 4.8 | 8303.0 | \$39,854.4 | 2.7 | 8303.0 | \$22,418.1 | |
| | Special Projects Coordinator | 0.2 | 7000.0 | \$1,400.0 | 1.1 | 7000.0 | \$7,700.0 | |
| | Publications Specialist | 0.2 | 6000.0 | \$1,200.0 | 1.2 | 6000.0 | \$7,200.0 | |
| James Fall. | Regional Program Manager | 1.0 | 11095.0 | \$11,095.0 | 1.5 | 11095.0 | \$16,642.5 | |
| | Subtotal | | | \$82,403 | | | \$71,150 | |
| Seasonal/Temporary: | | | | | | | | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | Subtotal | | | \$0 | | | \$0 | |
| Local Hire | | | | | | | | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | Subtotal | | | \$0 | | | \$0 | |
| | Total | | | \$82,403 | | | \$71,150 | |

| Travel Costs: | Proposed | Proposed | Proposed |
|--|----------|----------|----------|
| Description (to include # trips and location) | 2007 | 2008 | 2009 |
| Anchorage to Iliamna; 5 RT @ 350 each | \$1,400 | \$350 | |
| Dillingham to Iliamna; 5 RT @ 350 each | \$1,400 | \$350 | |
| 2 RT Anchorage/Dillingham @\$400 | \$400 | \$400 | |

| | | | |
|--|-----------------|----------------|----------------|
| Lodging & Per diem; 116 days @ \$117/day | \$12,051 | \$1,521 | |
| Conference travel (Holen and Krieg) | | | \$3,000 |
| Travel Total: | \$15,251 | \$2,621 | \$3,000 |

| Contractual Costs: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|---|----------------|----------------|----------------|
| Description | | | |
| Skiff rental & gas; 30 days @ \$50/day | \$1,500 | | |
| Key respondents; 20 @ \$50/each | \$1,000 | | |
| Phones | \$250 | \$250 | |
| Photo and map production; print and mail report | | \$500 | \$1,500 |
| Misc. | \$500 | \$500 | \$250 |
| Contractual Total: | \$3,250 | \$1,250 | \$1,750 |

| Materials/Supplies: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|---------------------------------------|----------------|---------------|---------------|
| Description | | | |
| Digital camera | \$500 | | |
| Misc. | \$500 | \$500 | \$250 |
| Computer accessories (laptop docking) | \$200 | | |
| GPS | \$250 | | |
| Materials/Supplies Total: | \$1,450 | \$500 | \$250 |

| Equipment Purchases: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|-----------------------------|---------------|---------------|---------------|
| Description | | | |
| | | | |
| | | | |
| | | | |
| Equipment Total: | \$0 | \$0 | \$0 |

| Other Items/Resources: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|-------------------------------|---------------|---------------|---------------|
| Description | | | |
| | | | |

| | | | |
|-------------------------------------|------------|------------|------------|
| | | | |
| | | | |
| | | | |
| Other Items/Resources Total: | \$0 | \$0 | \$0 |

| | Proposed 2007 | % indirect Cost | Proposed 2008 | % indirect Cost | Proposed 2009 | % indirect Cost |
|-----------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Total Direct Costs (a) | \$102,354 | | \$75,521 | | \$35,281 | |
| Indirect Costs: (b) | \$13,818 | 13.5 | \$10,195 | 13.5 | \$4,763 | 13.5 |
| Total Costs: (a + b) | \$116,172 | | \$85,716 | | \$40,044 | |

CO-INVESTIGATOR SHEET:

2007 - 2009 Budget Summary Table

FIS 07-452: The Kvichak Watershed Subsistence Salmon Fishery: An Ethnographic Study

Bristol Bay Native Association

SUMMARY SECTION

| Budget Category: | Proposed 2007 | Proposed 2008 | Proposed 2009 | Matching 2007 | Matching 2008 | Matching 2009 |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Personnel | \$0 | \$3,000 | \$0 | \$0 | \$0 | \$0 |
| Personnel/Temporary | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Seasonal | \$0 | \$3,000 | \$0 | \$0 | \$0 | \$0 |
| Travel | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Hire | \$4,800 | \$2,400 | \$0 | \$0 | \$0 | \$0 |
| Contractual | \$9,600 | \$12,800 | \$0 | \$0 | \$0 | \$0 |
| Material/Supplies | \$1,200 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Equipment | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Other Items/Resources | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Direct Costs (a) | \$15,600 | \$18,200 | \$0 | \$0 | \$0 | \$0 |
| Total Indirect Costs (b) | \$4,415 | \$5,151 | \$0 | | | |

INSTRUCTIONS

Mouse click or "Tab" through each cell. Information is to be entered. Do not

Double-click on the "Principal Investigator" field to enter the Principal Investigator's name. Ex.: ADFG-CFD

Please enter "Principal Investigator" information.

"Proposed" data cannot be entered in based upon information provided.

"Matching" dollars should be entered.

Do not include Local Hire costs or Temporary in the detail section. Do not summarize the local hire costs.

| | | | | | | |
|---------------------|----------|----------|-----|--|--|--|
| Project Total (a+b) | \$20,015 | \$23,351 | \$0 | | | |
|---------------------|----------|----------|-----|--|--|--|

Enter any organization specific "C" of indirect costs.

Detailed descriptions must be provided.

Proceed to "Personnel Costs."

| DETAIL SECTION | | Provide detailed descriptions of each item below. | | | | | | | |
|---|----------------------|---|---------------|------------|----------|---------------|----------------|----------|---------------|
| Personnel Costs: | | Months | Monthly | Proposed | Months | Monthly | Proposed | Months | Monthly |
| Name | Position Description | Budgeted | Cost Budgeted | 2007 | Budgeted | Cost Budgeted | 2008 | Budgeted | Cost Budgeted |
| Permanent: | | | | | | | | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | Subtotal | | | \$0 | | | \$0 | | |
| Seasonal/Temporary: | | | | | | | | | |
| Summer Intern I | | 0.0 | | \$0.0 | | | \$0.0 | | |
| Summer Intern I | | 0.0 | | \$0.0 | | | \$0.0 | | |
| Local hire for transcribing interviews; \$15/hr for 200 hours | | 0.0 | | \$0.0 | 1.0 | 3000.0 | \$3,000.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | Subtotal | | | \$0 | | | \$3,000 | | |
| Local Hire | | | | | | | | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | | | | \$0.0 | | | \$0.0 | | |
| | Subtotal | | | \$0 | | | \$0 | | |
| | Total | | | \$0 | | | \$3,000 | | |

| Travel Costs: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|---|---------------|---------------|---------------|
| Description (to include # trips and location) | | | |
| 6 RT to study communities from Dillingham (includes lodging and per diem) | \$4,800 | \$2,400 | |
| Conference travel | | | |

| | | | |
|----------------------|----------------|----------------|------------|
| | | | |
| Travel Total: | \$4,800 | \$2,400 | \$0 |

| Contractual Costs: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|--|----------------|-----------------|---------------|
| Description | | | |
| Compensation for case study families @ \$400/month | \$9,600 | \$3,200 | |
| Compensation for case study families @ \$600/month | | \$9,600 | |
| | | | |
| | | | |
| Contractual Total: | \$9,600 | \$12,800 | \$0 |

| Materials/Supplies: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|--|----------------|---------------|---------------|
| Description | | | |
| 4 Sony Cyber-shot cameras with Sportspack case | \$1,200 | | |
| | | | |
| | | | |
| | | | |
| Materials/Supplies Total: | \$1,200 | \$0 | \$0 |

| Equipment Purchases: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|-----------------------------|---------------|---------------|---------------|
| Description | | | |
| | | | |
| | | | |
| | | | |
| Equipment Total: | \$0 | \$0 | \$0 |

| Other Items/Resources: | Proposed 2007 | Proposed 2008 | Proposed 2009 |
|-------------------------------|---------------|---------------|---------------|
| Description | | | |
| | | | |
| | | | |

| | | | |
|-------------------------------------|------------|------------|------------|
| | | | |
| Other Items/Resources Total: | \$0 | \$0 | \$0 |

| | Proposed 2007 | % indirect Cost | Proposed 2008 | % indirect Cost | Proposed 2009 | % indirect Cost |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|
| Total Direct Costs (a) | \$15,600 | | \$18,200 | | \$0 | |
| Indirect Costs: (b) | \$4,415 | 28.3 | \$5,151 | 28.3 | \$0 | 28.3 |
| Total Costs: (a + b) | \$20,015 | | \$23,351 | | \$0 | |

CO-INVESTIGATOR SHEET:

2007 - 2009 Budget Summary Table

FIS 07-452: The Kvichak Watershed Subsistence Salmon Fishery: An Ethnographic Study

National Park Service: Lake Clark National Park and Preserve

SUMMARY SECTION

| Budget Category: | Proposed 2007 | Proposed 2008 | Proposed 2009 | Matching 2007 | Matching 2008 | Matching 2009 |
|--------------------------|----------------|----------------|----------------|---------------|---------------|---------------|
| Personnel | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Personnel | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Seasonal/Temporary | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Local Hire | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Travel | \$6,680 | \$1,085 | \$1,500 | \$0 | \$0 | \$0 |
| Contractual | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Material/Supplies | \$1,000 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Equipment | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Other Items/Resources | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Direct Costs (a) | \$7,680 | \$1,085 | \$1,500 | \$0 | \$0 | \$0 |
| Total Indirect Costs (b) | \$0 | \$0 | \$0 | | | |
| Project Total (a+b) | \$7,680 | \$1,085 | \$1,500 | | | |

INSTRUCTIONS

Mouse click or "Tab" through each cell. Information is to be entered. Do not

Double-click on the "Principal Investigator" field to enter the Principal Investigator's name. Ex.: ADFG-CFD

Please enter "Principal Investigator" information.

"Proposed" data cannot be entered in based upon information provided.

"Matching" dollars should be entered.

Do not include Local Hire costs or Seasonal/Temporary in the detail section. Use the "Local Hire" field to summarize the local hire costs.

Enter any organization specific "Other" information of indirect costs.

Detailed descriptions must be provided for all

DETAIL SECTION

Provide detailed descriptions of each item below.

| Personnel Costs: | | Months | Monthly | Proposed | Months | Monthly | Proposed | |
|----------------------------|----------------------|----------|---------------|------------|----------|---------------|------------|-----|
| Name | Position Description | Budgeted | Cost Budgeted | 2007 | Budgeted | Cost Budgeted | 2008 | Bud |
| Permanent: | | | | | | | | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | Subtotal | | | \$0 | | | \$0 | |
| Seasonal/Temporary: | | | | | | | | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | Subtotal | | | \$0 | | | \$0 | |
| Local Hire | | | | | | | | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | | | | \$0.0 | | | \$0.0 | |
| | Subtotal | | | \$0 | | | \$0 | |
| | Total | | | \$0 | | | \$0 | |

| Travel Costs: | Proposed | Proposed | Proposed |
|--|----------------|----------------|----------------|
| Description (to include # trips and location) | 2007 | 2008 | 2009 |
| 4 RT Anchorage to Nondalton | \$1,200 | \$400 | |
| Lodging: 45 days @ \$75/day | \$3,000 | \$375 | |
| Per diem: 45 days @ \$62/day | \$2,480 | \$310 | |
| conference travel | | | \$1,500 |
| Travel Total: | \$6,680 | \$1,085 | \$1,500 |

| Contractual Costs: | Proposed | Proposed | Proposed |
|---------------------------|------------|------------|------------|
| Description | 2007 | 2008 | 2009 |
| | | | |
| | | | |
| | | | |
| | | | |
| Contractual Total: | \$0 | \$0 | \$0 |

| Materials/Supplies: | Proposed | Proposed | Proposed |
|----------------------------------|----------------|------------|------------|
| Description | 2007 | 2008 | 2009 |
| Misc supplies | \$1,000 | | |
| | | | |
| | | | |
| | | | |
| Materials/Supplies Total: | \$1,000 | \$0 | \$0 |

| Equipment Purchases: | Proposed | Proposed | Proposed |
|-----------------------------|------------|------------|------------|
| Description | 2007 | 2008 | 2009 |
| | | | |
| | | | |
| | | | |
| | | | |
| Equipment Total: | \$0 | \$0 | \$0 |

| Other Items/Resources: | Proposed | Proposed | Proposed |
|-------------------------------------|------------|------------|------------|
| Description | 2007 | 2008 | 2009 |
| | | | |
| | | | |
| | | | |
| | | | |
| Other Items/Resources Total: | \$0 | \$0 | \$0 |

| | Proposed 2007 | % indirect Cost | Proposed 2008 | % indirect Cost | Proposed 2009 | % indirect Cost |
|-----------------------------|------------------|--------------------|------------------|--------------------|------------------|--------------------|
| Total Direct Costs (a) | \$7,680 | | \$1,085 | | \$1,500 | |
| Indirect Costs: (b) | \$0 | 0.0 | \$0 | 0.0 | \$0 | 0.0 |
| Total Costs: (a + b) | \$7,680 | | \$1,085 | | \$1,500 | |

EXAMPLE