

COMMUNITY-BASED HARBOR SEAL MANAGEMENT AND BIOLOGICAL SAMPLING

Project Number: 01245

Restoration Category: General Restoration

Proposer: Alaska Native Harbor Seal Commission

Lead Trustee Agency: Alaska Department of Fish and Game

Cooperating Agencies:

Alaska SeaLife Center: No

Duration: 3rd year; four-year project

Cost FY 96:

Cost FY 97:

Cost FY 98:

Cost FY 99: \$70,700

Cost FY 00: \$56,500

Cost FY 01: \$40,000

Cost FY 02: \$25,000

Geographic Area: Prince William Sound, Cook Inlet, Kodiak, Alaska Peninsula

Injured Resource/Service: Harbor seals; subsistence

ABSTRACT

This project continues, at a reduced level, work supported through previous harbor seal restoration projects (9244, 99245, and 00245). A biological sample collection program, implemented in FY96 and expanded in FY97, in Prince William Sound, lower Cook Inlet, Kodiak Island, and the Alaska Peninsula will continue. Village-based technicians are selected by the Alaska Native Harbor Seal Commission (ANHSC) and trained by the Alaska Department of Fish and Game to collect samples from subsistence harvested harbor seals. The samples are transported to Anchorage or Kodiak for further subsampling and distribution to participating scientists for analysis and the University of Alaska Museum for archival. The ANHSC will produce and distribute a newsletter with summaries of the biological sampling program.

INTRODUCTION

The goal of this project (which continues the work of #\244) is to support collaboration between subsistence hunters of harbor seals, scientists, and resource management agencies to assess the factors which are affecting the recovery of the harbor seal population of the oil spill area and to identify ways to reduce these impacts. In FY 94 (Project 94244) and FY 95 (95244), the Trustee Council provided funding for the Alaska Department of Fish and Game, Division of Subsistence, to compile available data, collect additional information, and to organize workshops and community meetings with scientists and subsistence users. Participants in the workshops concluded that the lack of a formal organization which represents subsistence users of harbor seals is a major impediment to communication between scientists and hunters and to the inclusion of subsistence hunters as full partners in harbor seal research and restoration. To fill this gap, Alaska Native participants in the harbor seal restoration workshop of March 2, 1995 voted to form an Alaska Native Harbor Seal Commission. In FY 96, Project 96244 assisted the ANHSC by providing it with funds to organize two workshops held in conjunction with commission meetings and to produce and distribute two newsletters and other communications. Additional workshops took place under Project 97244, Project 98244, and Project 99245.

A second consensus point reached at the workshops was that subsistence hunters are in an excellent position to assist in scientific studies through providing biological samples from subsistence-taken animals. A goal of Project 96244 was to test the practicality and effectiveness of a community-based harbor seal biological sampling program, designed and administered cooperatively between the Alaska Native Harbor Seal Commission, the Alaska Department of Fish and Game, and the University of Alaska. In FY 97, this program was expanded to collect samples from the Kodiak Island area and add Valdez to the sample communities in Prince William Sound. This program continued in FY 98, FY 99, and FY 00, with a planned expansion of the program to the Alaska Peninsula (two Perryville hunters were trained in October 1999) and to one more village on Kodiak (one Ouzinkie hunter was trained in February 2000).

As of mid April 2000, samples from 249 animals had been collected for researchers. Table 1 shows the number and sex of harbor seals biosampled in each fiscal year. Table 2 shows the number of tissue types distributed in each fiscal year. The total number of a specific tissue sample or part collected may not equal the total of animals biosampled. In certain circumstances, one or more types of samples may not be collected from the animal. Table 3 reports how the samples have been distributed. Table 4 shows the community origin of the samples from the oil spill region, as of September 1999. From October 1999 to mid April 2000, samples were collected in Chenega Bay, Cordova, Tatitlek, Valdez, Nanwalek, Port Graham, Akhiok, Old Harbor, Ouzinkie, and Perryville.

Finally, this project supports other restoration projects conducted in FY 00 and proposed for FY 01 and beyond, such as Harbor Seals: Monitoring and Field Research (\064), Harbor Seals: Health and Diet (\341), Harbor Seal Metabolism/Stable Isotopes (\371), Harbor Seal Diet: Lipid Metabolism and Health (\441), the Community Involvement and Traditional Knowledge Project (\052), and the Youth Area Watch (\210). The project also contributes to the Trustee Council's recovery objectives for subsistence by facilitating involvement of subsistence users in the restoration process.

The ANHSC and the National Marine Fisheries Service have signed a Co-Management Agreement for harbor seals. As established in the agreement's Action Plan, biosampling is a high priority research area.

		NUMBER of HARBOR SEALS BIOSAMPLED			
		Total	Male	Female	Unkown Sex
FY96	Oct 95 - Sept 96	27	18	8	1
FY97	Oct 96 - Sept 97	54	23	24	7
FY98	Oct 97 - Sept 98	40	18	21	1
FY99	Oct 98 - Sept 99	61	37	22	2
FY00*	Oct 99 - mid April 00*	67*			

*NOTE: The total for FY00 is estimated to reach between 80-90 by the end of Sept 00.

TISSUE TYPE	NUMBER COLLECTED IN			
	FY96	FY97	FY98	FY99
Head	27	53	20	60
Whiskers	27	53	40	57
Stomach	26	54	35	59
Blubber	26	45	34	50
Skin/Muscle	27	54	40	60
Heart/Liver/Kidney	27	46	36	52
Female Reproductive Tract	1	17	8	17

Table 3. Distribution of Subsistence Harbor Seal Samples Collected under EVOS Restoration Projects 244 and 245 (as of 9/30/99)

Tissue	# Samples	Contact	Disposition, status, and analysis
Stomachs	174	L. Jemison, ADF&G	Sent to UBC for prey identification
Teeth	160	R. Small, ADF&G	Extracted at UAF Museum; age & growth history to be determined by NMFS
Whiskers	177	D. Schell, UAF	Used in stable isotopes analyses (EVOS # 97170)
Brain and collagen ¹	157	A. Hirons, UAF	Used in stable isotopes analyses (EVOS # 97170)
Blubber	155	B. Fadely, et al., UAF & M. Castellini, UAF	Blubber composition studies completed and continuing (EVOS Proj. 95117)
		K. Frost, ADF&G	Sent to Dalhousie University for fatty acid analysis (EVOS Proj. 95064)
Skin/muscle	181	R. Westlake, NMFS	Sent to NMFS La Jolla for genetic analysis
Reproductive tracts	43	K. Pitcher, ADF&G & H. Harmon, UAF	Stored for future reproductive analysis
Skulls	160	G. Jarrell, UAF	UAF Museum staff is cleaning skulls for archive and morphometric examination
Archived tissue	161	A. Runck, UAF	Tissues subsampled and archived in -70C freezer at UAF Museum; available for future analyses.
heart			
liver			
kidney			
blubber			
skeletal muscle			

¹ Collagen from ligaments or tendons; also using muscle, blubber, skin, heart, liver, and kidney

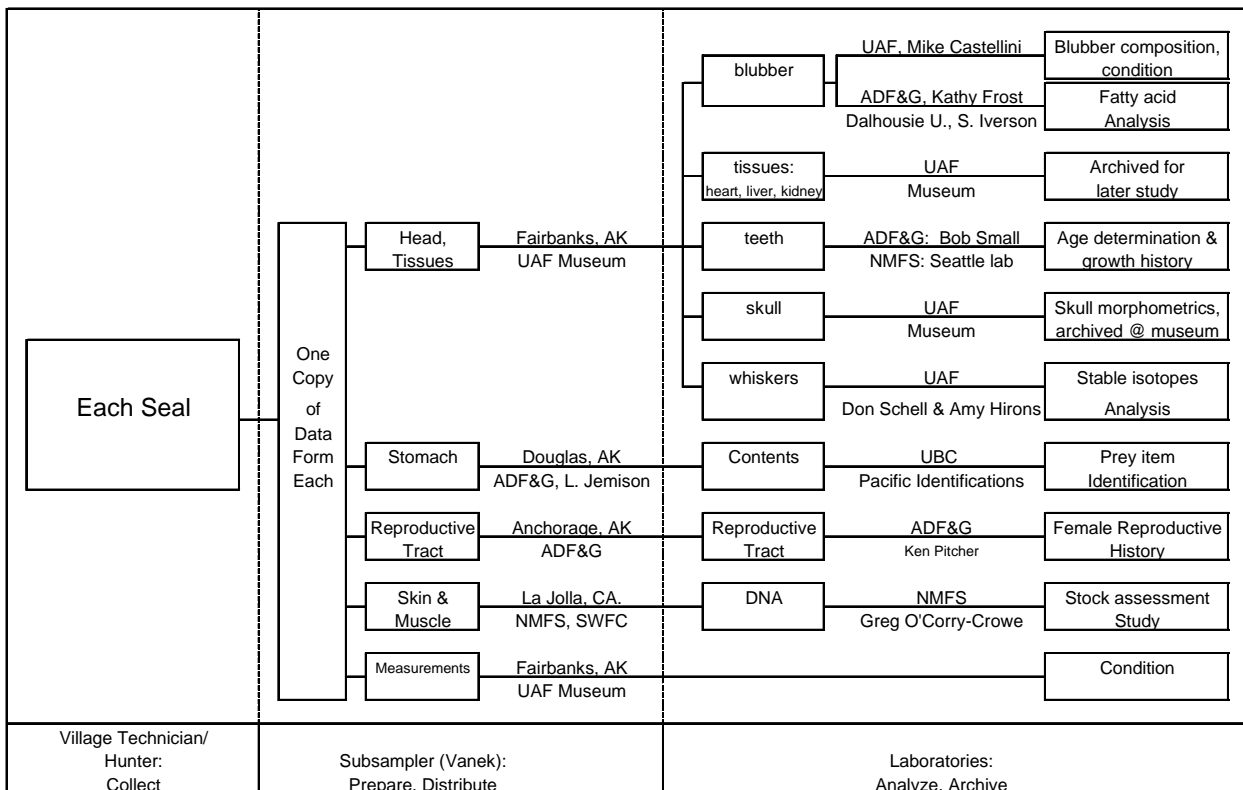


Figure 1. Sample Distribution and Chain of Responsibility

(As of 9/99)

Table 4. Summary of Harbor Seal Biosamples Collected (9/30/99)*

Community	Number of Seals Sampled	
	Full Set of Samples	Partial Set of Samples
Chenega Bay	4	3
Nuciiq	2	0
Cordova	30	4
Tatitlek	64	37
Valdez	15	0
Nanwalek	6	1
Port Graham	0	0
Seldovia	2	3
Afognak Island	1	1
Akhiok	5	0
Old Harbor	1	1
Port Lions	1	1
GRAND TOTAL	131	51

FULL SET= Head, whiskers, stomach, muscle, skin, blubber, liver, heart, kidney, female repro tract

PARTIAL SET = A portion of the above list.

*NOTE: From Oct 99 - mid April 00, 67 animals were sampled in Chenega Bay, Cordova, Tatitlek, Valdez, Nanwalek, Port Graham, Akhiok, Old Harbor, Ouzinkie, and Perryville

NEED FOR THE PROJECT

A. Statement of Problem

The harbor seal populations of Prince William Sound and the northern Gulf of Alaska were in decline before the oil spill for unknown reasons. The spill injured these populations, adding to the decline, and they are not recovering. Harbor seals are a primary subsistence resource in the Alaska Native communities of the oil spill region. Subsistence harvests of harbor seals have declined in many of communities since the spill because of the reduced population size and voluntary efforts on the part of hunters to limit their harvests to aid in recovery. In order to assess these efforts and to identify measures which subsistence users could take to further assist in harbor seal restoration, the Trustee Council funded projects in FY 94 and FY 95 to compile existing data, collect additional information, organize meetings of scientists and subsistence users, and develop recommendations for hunters. Two workshops took place. Among other things, participants at the workshops recognized that without a formal organization representing subsistence hunters of harbor seals, it was unlikely that a consensus on recommendations could be developed or that a dialogue between hunters and scientists could be maintained. Workshop participants stressed that strong involvement of hunters in research activities and management decisions was an essential ingredient in any plan for harbor seal recovery. Several other restoration projects are examining the potential causes of the harbor seal population decline and lack of recovery, including mortality caused by humans. The need exists to continue to follow through on the workshop recommendations to support these harbor seal restoration efforts.

B. Rationale/Link to Restoration

The recovery objective for harbor seals states that recovery will have occurred when harbor seal population trends are stable or increasing. Based on findings from two workshops which involved scientists and subsistence users of harbor seals (conducted under Projects 94244 and 95244), meeting this recovery objective is enhanced by continuing dialogue between scientists and subsistence users, involving subsistence hunters in research efforts, involving traditional knowledge in scientific studies, and collaborating in the development of recommendations for subsistence hunters about how they can assist in harbor seal recovery. This project implements the recommendations of the workshops by continuing a biological sampling program and helping to support the activities of the Alaska Native Harbor Seal Commission.

The FY 96, FY 97, FY 98, FY 99, and FY 00 Restoration Work Plans included research projects to monitor seal population trends and conduct research to discover why harbor seals are not recovering. These are likely to continue in FY 01. Assessing parameters that affect marine mammal abundance and health requires access to and examination of animals or tissues. Marine mammals are inherently difficult to study and the collection and examination of tissues is further complicated by legal limitations imposed by federal protective measures and permitting procedures. Sacrificing animals for research purposes is either undesirable or illegal, and beachcast carcasses are often too decomposed to be of value. A invaluable source of fresh specimens exists in Alaska, where coastal Alaska Natives still legally use marine mammals for subsistence or handicraft purposes. This project has developed a successful community-based bio-sampling program. This program has succeeded because:

1. Local people support the program and its goals, are involved in the sample collection, understand the significance of the data being collected, are willing to store and ship samples from villages to a central receiver, and are trained and willing to record data and collect samples as instructed.
2. Samples are easily collected, stored and shipped; they are subsequently sub-sampled by ADF&G staff; are analyzed in due time; and results are returned to villages.

Furthermore, over the last several years, the Trustee Council has attempted to involve spill-area communities more fully in the restoration process. The biosampling effort is a prime example of this involvement and collaboration.

C. Location

The biological sampling portion of the project includes the Prince William Sound communities of Cordova, Chenega Bay, Valdez, and Tatitlek; the lower Cook Inlet communities of Seldovia, Port Graham, and Nanwalek; the Kodiak Island communities of Akhiok, Old Harbor, Ouzinkie, and Port Lions (expansion to Ouzinkie in FY00); and the Alaska Peninsula communities of Chignik Lake and Perryville (planned expansion in FY 00) (Table 4).

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

Community and subsistence user involvement in the restoration process and in harbor seal recovery is a central purpose of this project. The primary continuing goal is to support the involvement of the Alaska Native Harbor Seal Commission in the biosampling program. As part of the continuing biological sampling effort, the ANHSC selects technicians (most of whom will be subsistence harbor seal hunters) in participating communities. New technicians will be trained by ADF&G staff to collect biological samples. Subsistence hunters will supply the samples and will be trained through hands-on instruction and the use of an instructional video (produced in FY 96), as needed. Also, participants in the Youth Area Watch Project in Prince William Sound and lower Cook Inlet(210) and the more recently formed Kodiak Island Youth Area Watch(052A) will be included in project activities, including community technician training sessions. The ANHSC will produce a newsletter with summaries of the biosampling efforts. (The October 1999 newsletter was distributed to over 1,000 individuals and organizations.) Although project funds are no longer available to help support a workshop, it is anticipated that the biosampling program and results will be reviewed at ANHSC meetings.

As of April 2000, five training sessions funded through this project in FY00 had taken place in Kodiak, Port Graham, Cordova, and Anchorage. About 20 new hunters and 46 students attended these sessions. Through other funding, training has also taken place in Dillingham and Manokotak in the Bristol Bay area and hunters from the Aleutians have been trained. A biosampling demonstration took place at the ANHSC meeting in Angoon in April 2000. Additional demonstrations are planned for Youth Spirit Camps in July 2000.

PROJECT DESIGN

A. Objectives

The primary premise upon which this project is based is that restoration of harbor seal populations is facilitated by involving subsistence users in research and management activities. Key to the success of this effort is support for the activities of the Alaska Native Harbor Seal Commission. Specific objectives include to:

1. Continue a community-based program to collect biological samples and other information from harbor seals in Prince William Sound and the northern Gulf of Alaska involving hunters from Cordova, Tatitlek, Chenega Bay, Valdez, Seldovia, Port Graham, Nanwalek, Akhiok, Old Harbor, Ouzinkie, Port Lions, Chignik Lake, and Perryville. Specific sub-objectives include:
 - a. Train local technicians and hunters in biological sample collection procedures
 - b. Maximize sampling for efficiency and coordination with other harbor seal projects
 - c. Evaluate the program's effectiveness and develop a more long-term funding plan.
2. Collect biological samples and other information from harbor seals harvested by subsistence hunters in 13 communities: Tatitlek, Chenega Bay, Valdez, Cordova, Seldovia, Port Graham, Nanwalek, Akhiok, Old Harbor, Ouzinkie, Port Lions, Chignik Lake, and Perryville. Provide these samples to researchers for analysis and archival.
 - a. Collect information about the number, sex, approximate age and place and date of harvest for harbor seals taken in each village

- b. Collect biological samples to be analyzed in cooperation with other harbor seal projects, including blubber, whiskers, skin, heads, muscle, kidney, liver, heart, female reproductive tracts, and stomachs (see Table 3 and Figure 1).
 - c. Store samples in a community freezer and periodically ship samples to Anchorage or Kodiak for further processing and distribution for analysis
 - d. Develop and maintain a procedure for tracking disposition of samples and results of analyses
 - e. Maintain a database of biosamples
3. In collaboration with the Alaska Native Harbor Seal Commission, communicate information about research and results of harbor seal studies to hunters and scientists on a regular basis.
- a. Produce an informational newsletter describing results of harbor seals studies, ongoing harbor seal research, and community involvement
 - b. Maintain a database of biosamples and research
 - c. Discuss biosampling program and results at periodic meetings of the ANHSC (these meeting are funded through other programs)
4. Collaboratively produce recommendations for subsistence users of harbor seals that derive from study findings and the discussions at community meetings and workshops
- a. These recommendations will be based on traditional knowledge, contemporary observations, and scientific findings
 - b. Recommendations will be developed at meetings of the ANHSC.
5. Evaluate the program's effectiveness and explore options for a long-term funding plan for the biological sampling program
6. Coordinate with the Youth Area Watch Programs in Prince William Sound and lower Cook Inlet (/210) and on Kodiak Island (/052A) to involve participants in that program in biological sampling and workshops and to support a yearlong curriculum based on information gathered through the biosampling program.

B. *Methods*

Objectives 1, 2, & 6: Biological Sampling Program

For Objectives 1, 2, and 6, the Biological Sampling Program, the following procedures will be used:

1. *Trainings*

As part of Project 96244 (and revised as part of 97244 and 98244), a marine mammal biologist, Kate Wynne of the University of Alaska, and Vicki Vanek, a veterinarian with the Division of Subsistence (ADF&G) compiled protocols, synthesized these into useable formats, developed data forms, labels, and sampling kits, and incorporated instructions for their use into a training program. In FY 99 under 99245, Vanek assumed full responsibility to apply these materials and revise them as appropriate.

Instruction. Sampling requires instruction or training of community-based sampling technicians, who ideally are also subsistence seal hunters. Any new village-based technicians will attend a full-day sampling training session in Kodiak or Anchorage. Vanek will provide a detailed explanation of project goals, and significance and use of data to be collected; distribute sampling kits; explain and demonstrate sampling techniques and use of equipment; and distribute written and graphic instructional materials to take to villages.

Other hunters will be informed of program objectives and specified sampling requirements through communication with village technicians and other project personnel and through written, graphic, and video instructional materials.

2. Training Materials

Manual: This was produced in FY 96 (Project 96244). It includes step-by-step diagrams and a visual guide. It is waterproof and is included in the sampling kit. Labor is involved in laying out, laminating, and binding each new manual for newly-trained local assistants.

Examples: If a seal is available, at the training session participants work on an actual animal, filling in data forms and labels. Otherwise, the training relies on slides, the training video, and artificial props.

Video. In FY 96 (Project 96244), a training video was produced by ADF&G, incorporating footage shot at the two training sessions. It has been distributed to the technicians trained at these sessions. The video includes project rationale and objectives; footage of current research and population declines; significance and use of data to be collected; demonstrations of how to fill in data forms and labels; demonstrations how to use sampling kit and supplies; demonstrations of where and how to remove tissues from animals; and demonstrations of how to sub-sample, bag, and label tissues.

Resource Notebook. In FY00, a resource notebook was developed to provide additional information for hunters, technicians, and students to use as reference material at home and during the trainings.

3. Sample collection

Technicians. There is a village-based technician in each participating community, whose responsibilities are to take samples from seals taken by themselves or participating hunters, record data as requested, assure access to freezer and sampling supplies, notify Vanek or Riedel when supplies are low or freezer is nearly full, and load and ship coolers with samples to Anchorage, Cordova, or Kodiak.

Key hunters. Ideally at least two hunters per village provide subsistence taken seals from which the technicians take samples, and record data as requested.

Sample size and distribution. It is difficult to predict the number of samples that may be collected in this program annually or by community, but we have assumed a total of 70 animals for estimating project costs. Other funding is secured for up to an additional 20.

Tissues to be collected. A minimal sample can be collected by technicians in each village with relative ease and subsequently sub-sampled in Anchorage or Kodiak to provide the suite of tissue

samples required. We have trained technicians and hunters to record information about harvest location and date, animals' sex, evidence of tags or markers, and standard measures of weight, length, girth, and blubber thickness. Technicians are trained to collect the whole head; vibrissae; stomach (after tying off both ends); female reproductive tract; and samples of liver, heart, kidney, blubber, muscle, and skin. Although collecting the reproductive tracts and claws is highly desirable, it is realistic to assume they will be collected opportunistically only from those hunters willing to dedicate extra effort required to collect them.

Researchers utilizing samples in their work were contacted late June 2000 and asked to submit information to the EVOS Trustee Council Office outlining the type and number of tissues they would like collected to be used in their work in FY01 or to be archived for possible future use. Table 5 is a summary of the information supplied.

Researcher	Agency	Tissue Type	Number	Notes
Derek Campbell	NMFS Southwest	skin &	75-100	
Greg O'Corry-Crowe	Fisheries Center	muscle		
Mike Castellini	U of Alaska-Fairbanks	blubber	nns*	
Don Schell	U of Alaska-Fairbanks	muscle	nns*	
Kathy Frost	ADF&G	blubber	nns*	
Sara Iverson	Dalhousie U			
Jennifer Burns	U of Alaska-Anchorage	specific skeletal muscles	18	specific age class
Joe Cook	U of Alaska Museum	heads	150	tissues used by
Gordan Jarrell		whiskers	from south	researchers
		heart	central &	world-wide
		liver	western	(see letter for list)
		kidney	Alaska	
Bob Small	ADF&G	stomachs	?as many	exact info delayed -
Lauri Jemison		teeth	as possible	numbers based
Kelley Hastings		repro tracts	" "	on recent past
		liver	?5 - 10	communication
		kidney	?5 - 10	
		blubber	?5 - 10	

*nns = no number specified In past, these researchers have utilized as many as collected

Sampling procedure.

Step 1. In the community: village technician receives sample from the hunter, or works with an animal they have taken themselves. The data form is filled out at the time samples are taken by technician-hunters in the field, or by non-hunting technicians in the community, or by youth from the Youth Area Watch projects. The dataform and samples from one animal are placed in one animal specimen bag for village-based storage. Technicians have a kit that includes supplies adequate for sampling of 8 animals. Among the items in each kit are 1) ziploc sampling bags for

collection of the head, stomach, and tissues, 2) large garbage bags in which to place the sample bags collected from each animal, and 3) data forms and specimen labels. The head, stomach, and tissues will each be individually bagged in their own ziploc bag. Each is identified on the outside with a marker and has a specimen label enclosed with the same information that uniquely identifies the animal in the field (this system uses the technician's name, village, harvest date and sequential number of animal sampled and is also recorded on the dataform). All the individual sample bags from one animal are placed in one large garbage bag along with its data form. The specimen bag and the data form are placed in a freezer without sub-sampling, the technician contacts Vicki Vanek or Monica Riedel when a full shipment has accumulated, and then sends the samples to Kodiak or Anchorage.

Step 2. Vicki Vanek receives samples in Anchorage and stores them at ADF&G or receives them in Kodiak and stores them at the Fisheries Technology Center. Periodic sub-sampling efforts occur as depicted in Figure. 1. At this time, each animal is assigned a unique number tied to the University of Alaska Museum Archive numbering system, in order that all researchers may easily identify other tissue samples from this animal with other researchers or those archived at the museum. Each tissue sample is identified with this assigned number on the outside of the sample bag, on the label inside, and on the dataform. Subsamples from each seal are repackaged into individual bags and labeled. They are kept frozen and shipped to the appropriate laboratory (see Fig. 1).

4. Data collection

Data are recorded on write-in-the-rain forms designed for standardization of data with other harvest-sampling programs. Presently, copies of the original forms have been supplied along with the subsample to researchers on paper only. A future goal is the development of an electronic version of this form, as recommended during the EVOS scientific review committee's review of project \244. All of the data recorded on the forms in the field is entered and kept in in a EXCEL database along with other tracking information. Sample label and freezer log forms have been developed to assure adequate sample tracking. In the field, technicians uniquely identify each animal. At the time of processing, each animal receives a unique number that is tied to the UAF Museum Archive numbering system. The number is assigned before any subsampling occurs so all parts are linked to the appropriate animal and can be easily tracked.

5. Sample analysis

Figure 1 provides a summary of the research programs involved in the tissue analysis. It is expected that participating scientists will acknowledge in any reports and publications the role of the ANHSC in facilitating the biological sampling program. In Project 99245, an agreement form was developed which participating researchers will sign to agree to return the results of their analysis for inclusion in databases and to acknowledge the assistance of the ANHSC.

6. Data management and reporting

Biological data collected from this program have been managed and maintained in a data base using Microsoft Excel software that is easily translated or integrated with software used by other agencies and organizations. This database has been centrally maintained by ADF&G and a summary of the samples collected and analyzed were included in the project's annual and final reports to the Trustee Council, with copies to pertinent agencies, such as NMFS. Additionally, ADF&G (Vanek) will collate the results of the sample analysis into a readily understandable newsletter, that will be provided to all the project participants.

In Project 99245 and continuing in Project 00245, steps are being taken to enhance this database, as recommended by the EVOS scientific review committee. These include:

- a. Enhance UAF Museum database for back-up tracking, to include information on the biosampled seals, such as the names of researchers who received samples and identification of the sample with this program (see below).
- b. Development of an electronic data form (see above). This will facilitate communication of information and incorporation of sample data into databases
- c. Development of a form that summarizes research investigators, contact numbers, projects, and publications for samples from a particular animal
- d. Development of a biannual biosample status report. Presently there is no automatic system in place for researchers to return the results of their analyses or to update other participants on their activities and progress. This will be an electronic form to be submitted every six months by each researcher who receives biosamples from this project.

UAF Museum Database update.

The following information was supplied by Gordan Jarrell, the Mammal Collection Manager of the University of Alaska Museum.

An effort to develop database structures at the University of Alaska Museum (UAM) that will relate projects that provide specimens, such as the Alaska Native Harbor Seal Commission's Biosampling Program, to projects that use specimens has been substantially upgraded prior to implementation. UAM has developed a shared data model with the Museum of Vertebrate Zoology at the University of California at Berkeley. Their model, now including the "projects layer," has been implemented in Oracle on a new Sun server at UAM. (Berkeley's website incorporating this new model is up and running at <http://elib.cs.berkeley.edu/mvz/>) We are in the process of moving Mammal Collection data into the new structure and we expect to complete the task this fall or early winter. This data model was central to a successful proposal to the National Science Foundation to form an "Arctic Archival Observatory" (AAO) at UAM. Funding from NSF includes support for a full-time programmer/analyst to bring all the Museum's scientific collections into the system over next three years. This recruitment was successful and will be filled beginning on 5 September.

The Museum's database upgrading began in October 1998. This evolved into changing to a new cutting edge data management system developed and coordinated with the University of California at Berkeley's museum database. Various unforeseen steps in the building of a new information structure and developing the various layers concept have delayed the actual startup. The museum is in the final stage of getting all screens and interfaces working. They are starting the data import from the current system. The Harbor seal projects are the first sets of data to be transferred over into this new system. This new system is expected to be running and allowing access from the Web by December 2000.

7. Youth Area Watch programs

Participants will attend biosampling trainings and be trained as technicians. Support will be given to the Youth Area Watch programs in developing a curriculum that incorporates biosample collection and study results. This will initially include developing a limited set of classroom

lessons that illustrate the application of length, weight, sex, location, timing, and stomach content data.

Summary: Proposed responsibilities of each cooperating group for Objectives 1 and 2:

Vicki Vanek of the Alaska Department of Fish and Game, Division of Subsistence will:

1. Compile protocols, develop data forms and sampling kits, and incorporate instructions for their use into a training program (this was completed in Project 96244; appropriate revisions will take place in Project 00245); make appropriate revisions to the instruction manual.
2. Communicate with researchers
3. Help answer biosamplers' questions
4. Train new community assistants when replacements are necessary;
5. Receive samples from village-based technicians, process samples, and ship samples to participating researchers for analysis
6. Maintain the in-house database of biological data and work with the UAF Museum in development of a database there
7. Collate the results of the sample analysis into a readily understandable newsletter.
8. Write a brief summary of the project for inclusion in the interim and final reports for the Trustee Council
9. Provide technical support for Youth Area Watch school curriculums
10. Develop and maintain electronic exchange of information with researchers, including providing data forms to researchers and researchers' subsample status and results (from biannual reports) for annual reports and reports prepared by the ANHSC.

The Alaska Native Harbor Seal Commission will:

1. Identify and subcontract with 13 community technicians
2. Purchase sampling kits and distribute kits and other supplies to village-based technicians
3. Facilitate production of manual and resource notebook
4. Set up air freight accounts for shipping samples and facilitate shipping from communities to Kodiak or Anchorage
5. Receive samples from Prince William Sound biosamplers, in Cordova and prepare for shipping to Anchorage for subsampling and distribution.
6. Communicate study findings through a newsletter and at its periodic meetings

Objectives 3, 4, and 5: Communications, Recommendations, and Evaluation

Communication of study findings, development of recommendations for hunters, project evaluation, and development of a long-term funding plan, are part of a collaborative effort met in part through a contract with the ANHSC, which will do the following:

1. Communicate with communities involved in the biological sampling project to review data and any recommendations developed by the ANHSC. These communications may be through phone discussions or take place during community visits connected with biosampling training or other ANHSC business

2. Write a newsletter which provides overviews of findings from harbor seal research and ANHSC activities.
3. Participate in the Trustee Council restoration workshop and contribute to Trustee Council's annual and final reports

The Division of Subsistence will provide technical assistance to the Commission as needed. The goals of these objectives are also addressed through the development and maintenance of databases, as discussed above.

Annual and final reports: the Division of Subsistence and the ANHSC will jointly prepare annual and final reports for the project.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

A. In prior study years, a contract was developed with the Alaska Native Harbor Seal Commission to undertake portions of the project. This contract will be amended to include the objectives for Project 01245. Tasks for the ANHSC under this contract will include:

1. Purchase sampling kits and distribute kits and other supplies to village-based technicians
2. Set up air freight accounts for shipping samples
3. Identify and subcontract with local community technicians
4. Prepare brief (letter format) quarterly reports on its activities as related to this project.
5. Attend the Trustee Council Restoration Workshop and contribute to Trustee Council's annual and final reports

Through subcontracts with the ANHSC, community technicians in 13 communities (Cordova, Tatitlek, Chenega Bay, Valdez, Seldovia, Port Graham, Nanwalek, Akhiok, Old Harbor, Ouzinkie, Port Lions, Chignik Lake and Perryville) will do the following:

1. Attend one day training session (if newly hired in FY 01)
2. Collect samples (stomach contents, female reproductive organs, liver, heart, kidney, claws, head)
3. Record data on harvest locations, sex, evidence of tags or markers, length, and girth
4. Label and freeze samples, notify Vicki Vanek or the ANHSC when freezers are full, and load and ship coolers with samples to Kodiak or Anchorage

Contract A: Budget

Personnel	Executive Director for 12.0 months @ 1/3 time	\$0
	Program Assistant for 6.5 months @ ¼ time	3,250
Travel	Executive Director travel	1,000
Operational costs:	phone & mailing	2,400
Insurance		1,200
Sampling and freezer supplies, shipping		800
Subcontract, village-based technicians		3,350
15% indirect program cost		1,800

Total \$13,800

Note: In kind contributions for the operations of the ANHSC include technical assistance from the Chugach Regional Resources Commission (Anchorage), the Alaska Sea Otter Commission (Fairbanks), and the Indigenous Peoples' Council on Marine Mammals (Anchorage).

Other funding from NMFS was secured for Monica Riedel's time in June 2000. Her availability may be slightly reduced at times due to new obligations. A part time program assistant to help with various biosampling tasks has been added. Monica Riedel's duties will remain the same.

Subcontract: Village-based Technicians

Training honorarium: \$100/day for two new technicians for one day each:	200
Compensation for taking biological samples of seals	3,150
Total	3,350

Note: it is anticipated that samples will be taken from a total of 70 seals and that it will take about 3 hours per seal to take samples, store samples, and ship samples. At a rate of \$15/hour, this gives: $\$15 \times 3 \text{ hours} \times 70 \text{ seals} = \$3,150$.

SCHEDULE

A. Measurable Project Tasks for FY 01

Start-up to October 15, 2000:	Update contract with the Alaska Native Harbor Seal Commission; hire technicians
October to December 2000:	Hold training sessions for biological sampling for new community technicians and students
October to September 2001:	Biological sample collection
November to September 2001:	Process samples
March/April 2001:	Produce and distribute newsletter (Alaska Native Harbor Seal Commission)
April 15, 2001	Annual report
September 2001:	Evaluate fifth year of program

B. Project Milestones and Endpoints (includes \244)

1. Development of sampling program: October/November 1995
2. Production and distribution of Instructional video: March 1996
3. Workshops to train local hunters and technicians in collection procedures: October/November 1995
4. Workshop in conjunction with meeting of Alaska Native Harbor Seal Commission: March 1996
5. Produce and distribute first proceedings report: April 1996
6. Maximize coordination with other programs: ongoing
7. Ship samples to appropriate laboratories for subsequent analysis: ongoing
8. Advise villages and scientists of analytical results when available: ongoing
9. Conduct interviews with hunters to collect traditional knowledge: ongoing
10. Second workshop in conjunction with Commission meeting: September 1996
11. Produce and distribute second proceedings report: September 1996
12. Train new village technicians and new Youth Area Watch participants: November 1996
13. Hold workshop in conjunction with ANHSC meeting: March 1997
14. Demonstrate updated Traditional Knowledge Database: March 1997
15. Produce and distribute proceeding for 1997 workshop: April 1997
16. Annual report: April 15, 1997
17. Complete map database and report: June 1997
18. Present Biosampling Demonstrations at Youth Spirit Camps June/July 1997
19. Evaluate the program's effectiveness and develop a more long-term funding plan: September 1997 and September 1998
20. Train new Youth Area Watch participants: October 1997
21. Hold workshop in conjunction with ANHSC meeting: March 1998
22. Produce and distribute proceedings for 1998 workshop: April 1998
23. Develop electronic forms for researcher exchange of information and system to transmit forms, assist UAF Museum to add tracking information to computer programs as a backup to main database: ongoing
24. Assist in Youth Area Watch curriculum development: May 1998
25. Present Biosampling Demonstrations at Youth Spirit Camps July 1998
26. Final report, \244: September 30, 1998

27. Train new community technicians and new Youth Area Watch participants: October/November 1998
28. Hold workshop in conjunction with ANHSC meeting: March 1999
29. Produce and distribute proceedings for 1999 ANHSC meeting: April 1999
30. ANHSC sign Co-Management Agreement with NMFS April 1999
31. Biosampling Demonstration at multi-community Cultural Week May 1999
32. Present community reports May 1999
33. Facilitate sampling collection between hunters and scientists in field June 1999
34. Initiate contract for expanded biosampling program with UAF July 1999
35. Implement expanded biosampling program with UAF Aug 1999
36. Plan and facilitate training workshops Sept 1999
37. Develop Harbor Seal Biosampling Resource Notebook Sept – Oct 1999
38. Facilitate development of Kodiak Youth Area Watch Aug – Dec 1999
39. Produce and distribute newsletter Oct 1999
40. Conduct expanded training workshop for hunters Oct 1999
41. Train Youth Area Watch participants - PWS Nov 1999
42. Train Youth Area Watch participants and hunters - Lower Cook Inlet Dec 1999
43. Conduct audit for FY 98 and FY99 Jan 2000
44. Present poster and biosampling data at EVOS workshop Jan 2000
45. Present poster and biosampling data at Marine Mammal Stranding workshop Feb 2000
46. Train Youth Area Watch and hunters - Kodiak Feb 2000
47. Hold workshop in conjunction with ANHSC meeting April 2000
48. Present community reports May 2000
49. Facilitate sample collection with hunters and scientists in field June 2000
50. Maximize coordination with other programs and Native Organizations: ongoing
51. Collection of biosamples: ongoing
52. Process and ship samples to labs and UA museum for subsequent analysis and archival: ongoing
53. Advise Tribes, communities, and scientists of research results: ongoing
54. Produce and distribute proceedings from April 2000 meeting July 2000
55. Present Biosampling Demonstration to Youth Spirit camp participants July 2000
56. Annual Report 7/30/00
57. Produce and distribute newsletter Sept 2000
58. Facilitate planning for training workshop and Youth Area Watch programs Sept 2000
59. Training workshops for technicians and students Oct – Dec 2000
60. Hold training workshop in conjunction with ANHSC meeting Oct 2000
61. Participate in EVOS GEM workshop Oct 2000
62. Conduct audit for FY00 Nov 2000
63. Collect, process, and ship samples for analysis and archival: ongoing
64. Advise Tribes, communities, and scientists of research results when available: ongoing
65. Continue development of Resource Notebook and high school curriculum: ongoing
66. Hold training workshops Jan - March 2001
67. Hold workshop in conjunction with ANHSC spring meeting April 2001
68. Produce and distribute newsletter March –April 2001
69. Present community reports May 2001
70. Present Biosampling Demonstration to Youth spirit camp participants June –Aug 2001
71. Annual Report 4/15/01
72. Annual Report 4/15/02

C. Completion Date

This project should continue as long as the Marine Mammal Ecosystem Research package is underway. It is anticipated that work on several marine mammal restoration projects will continue into FY 01, including, \341 (Harbor Seals: Health and Diet), \371 (Harbor Seal Metabolism/Stable isotopes), and \441 (Harbor Seal Diet: Lipid Metabolism and Health). Harbor seal research projects in the spill area with other funding are also utilizing samples collected in the Biosampling Project.

PUBLICATIONS AND REPORTS

Annual report	July 30, 2000
Annual report	April 15, 2001
Annual report	April 15, 2002
Final report	September 30, 2002

PROFESSIONAL CONFERENCES

No attendance planned for FY 01.

NORMAL AGENCY MANAGEMENT

The Division of Subsistence of the Alaska Department of Fish and Game has no statutory or regulatory responsibilities for marine mammal management. Without this project, marine mammal biologists who are working on harbor seal recovery will lose a key source of biological information on this species. Trustee Council support of the activities of the Alaska Native Harbor Seal Commission has improved management of the injured harbor seal resource by facilitating communications between scientists and subsistence users and providing traditional knowledge to factor in to harbor seal studies. The ANHSC has received a congressional appropriation through the National Marine Fisheries Service to support certain administrative and operational costs, such as office space and travel to certain meetings and conferences. It is seeking funding from NMFS in accordance with provisions of the Marine Mammal Protection Act to support its long-term activities.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

The project provides biological samples from subsistence-taken harbor seals to address potential health and nutritional problems that may be impeding harbor seal recovery, including restoration project numbers \341, \371, and \441. The project provides information to researchers working on harbor seal restoration projects and facilitates their work with Alaska Native hunters..

Participants in the Youth Area Watch projects (\210and \052A) participate in community technician training sessions and attend workshops.

Several programs exist using sample tissues collected from harbor seals in the spill area (see Tables 3 and 5 and Fig. 1). As noted above, every effort is made to coordinate with these programs to minimize the burden and confusion of hunters and communities, maximize logistical efficiency, collect comparable or standardized data whenever possible, and limit the likelihood of duplication of efforts. The National Marine Fisheries Service assists with coordinating the harbor seal sampling and testing programs.

Additional funding for the operations of the Alaska Native Harbor Seal Commission has been received from the National Marine Fisheries Service and the U.S. Congress, and additional funding is being sought from these entities as well as the National Science Foundation. Such funding supports more extensive activities for the Commission across the entire range of the harbor seal in Alaska. As of April 1997, a congressional appropriation to support basic commission functions (office, accounting, travel to conferences) was being administered through NMFS. The ANHSC received a Title VIII ANILCA grant to assist in the development of co-management plans.

EXPLANATION OF CHANGES IN CONTINUING PROJECTS

No additions to project objectives or methods of the detailed project description submitted and approved for Project 00245 are being proposed. Previously, the ANHSC organized a workshop in conjunction with one of its meetings and prepared a proceedings report. This task was eliminated in FY00 in light of reduced funding. We do not anticipate expanding the project into new communities. It is anticipated that review of project progress will still take place at ANHSC meetings. In FY 01, Vicki Vanek assumed responsibilities as co-principal investigator (along with Monica Riedel), replacing James Fall. In FY 01, other funding was secured for Monica Riedel's time and a part time assistant to the Biosampling Program has been added.

ENVIRONMENTAL COMPLIANCE

This project is, a continuation of Project 00245 which was classified as categorically excluded under NEPA guidelines. While this project will collect biological samples from subsistence-taken harbor seals, the sampling effort will not result in any additional takings of seals.

PROPOSED PRINCIPAL INVESTIGATORS

Vicki Vanek

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PERSONNEL

Monica Riedel, an Alaska Native resident of Cordova, is the executive director of the Alaska Native Harbor Seal Commission. Ms Riedel is responsible for the ANHSC activities under this project, including identifying and subcontracting with local village technicians, developing subcontracts, and developing the newsletter.

Vicki Vanek is a Wildlife Biologist with the Division of Subsistence in Kodiak. She holds a Doctor of Veterinary Medicine degree, and has worked on previous Division projects in collecting marine mammal samples and training hunters as well as on the biological sampling tasks of 96244, 97244, and 98244. Dr. Vanek is responsible for overall project performance for the Division. She will assist hunters and community technicians in biosampling, and will train newly hired technicians. Dr. Vanek will also process biosamples. She will also prepare a newsletter, which reports results of the biosampling efforts and will also coordinate preparation of annual and final reports. Four months of funding is being requested for her work on this project.

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

Budget Category:	Authorized FY 2000	Proposed FY 2001						
Personnel		\$18.4						
Travel		\$3.0						
Contractual		\$14.3						
Commodities		\$0.5						
Equipment		\$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	\$0.0	\$36.2				Estimated FY 2002		
General Administration		\$3.8						
Project Total	\$0.0	\$40.0				\$25.0		
Full-time Equivalentents (FTE)		0.3						
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments:								

FY01

Prepared: 7/1/00

Project Number: 01245
 Project Title: Community-Based Harbor Seal Management
 and Biological Sampling
 Agency: Alaska Department of Fish and Game

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	
Name	Position Description					
Vicki Vanek	Wildlife Biologist II	16A	4.0	4.6		
Subtotal			4.0	4.6	0.0	
Personnel Total						
Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Per Diem	
Description						
Kodiak - Anchorage Restoration Workshop, hunter/student trainings/sample processing		0.3	5	15	0.1	
Travel Total						

FY01

Prepared: 7/1/00

Project Number: 01245
 Project Title: Community-Based Harbor Seal Management
 and Biological Sampling
 Agency: Alaska Department of Fish and Game

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

Contractual Costs:	
Description	
4A Linkage Air freight for shipping samples from Anchorage or Kodiak to participating sites	
When a non-trustee organization is used, the form 4A is required.	Contractual Total
Commodities Costs:	
Description	
Supplies for shipping and subsampling	
	Commodities Total

FY01

Prepared: 7/1/00

Project Number: 01245
 Project Title: Community-Based Harbor Seal Management
 and Biological Sampling
 Agency: Alaska Department of Fish and Game

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

New Equipment Purchases:		Number of Units	Unit Price	
Description				
Those purchases associated with replacement equipment should be indicated by placement of an R.			New Equipment Total	
Existing Equipment Usage:		Number of Units		
Description				

FY01

Prepared: 7/1/00

Project Number: 01245
 Project Title: Community-based Harbor Seal Management and Biological Sampling
 Agency: Alaska Department of Fish and Game

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

Budget Category:	Authorized FY 2000	Proposed FY 2001						
Personnel		\$3.2						
Travel		\$1.0						
Contractual		\$7.0						
Commodities		\$0.8						
Equipment		\$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	\$0.0	\$12.0				Estimated FY 2002		
Indirect		\$1.8						
Project Total	\$0.0	\$13.8				\$15.0		
Full-time Equivalentents (FTE)		0.5						
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments: Indirect = 15% of program costs								

FY01

Prepared: 7/1/00

Project Number: 01245
 Project Title: Community-based Harbor Seal Management
 and Biological Sampling
 Name: Alaska Native Harbor Seal Commission

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

Personnel Costs:				Months Budgeted	Monthly Costs	Overtime		
Name	Position Description							
Monica Riedel	Executive Director			4.0	0.0			
	Note: works 1/3 time year-round on this project - other funding secured for salary							
Unkown	Program Assistant			1.6	2.0			
	Note: will be part-time (1/4) for 6.5 months at \$500/month							
Subtotal				5.6	2.0	0.0		
Personnel Total								
Travel Costs:			Ticket Price	Round Trips	Total Days	Daily Per Diem		
Description								
Exec. Director Cordova to Anchorage for restoration workshop and ANHSC workshop/biosampling workshop			0.2	2	6	0.1		
Travel Total								

FY01

Prepared: 7/1/00

Project Number: 01245
 Project Title: Community-based Harbor Seal Management and Biological Sampling
 Name: Alaska Native Harbor Seal Commission

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

Contractual Costs:	
Description	
Phone: 12 months @ \$150/month Postage: 12 months @ 50/month Insurance Subcontracts with community biosamplers Training honorarium: two @ \$100/each = \$200 Sample processing: 70 samples@\$45/seal=\$3150	
Contractual Total	
Commodities Costs:	
Description	
Purchase replacement materials for sampling kits (knives, gloves, plastic bags) (6 kits) Purchase new sampling kits (2 kits @ \$100/kit) Supplies for shipping samples	
Commodities Total	

FY01

Prepared: 7/1/00

Project Number: 01245
Project Title: Community-based Harbor Seal Management and Biological Sampling
Name: Alaska Native Harbor Seal Commission

2001 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2000 - September 30, 2001

New Equipment Purchases:		Number of Units	Unit Price	
Description				
Those purchases associated with replacement equipment should be indicated by placement of an R.			New Equipment Total	
Existing Equipment Usage:		Number of Units		
Description				

FY01

Prepared:7/1/00

Project Number: 01245
 Project Title: Community-based Harbor Seal Management and Biological Sampling
 Name: Alaska Native Harbor Seal Commision