

Exxon Valdez Oil Spill
Restoration Project Annual Report

Community-Based Harbor Seal Management
and Biological Sampling

Restoration Project 96244
Annual Report

This annual report has been prepared for peer review as part of the *Exxon Valdez* Oil Spill Trustee Council restoration program for the purpose of assessing project progress. Peer review comments have not been addressed in this annual report.

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Study History: The project was initiated as “Harbor Seal and Sea Otter Cooperative Subsistence Harvest Assistance” under Restoration Project 94244 in the Fiscal Year 1994 Work Plan, and continued as Restoration Project 95244 in the FY 1995 Work Plan. An annual report summarized activities for these first two study years. A separate report was prepared by the Alaska Sea Otter Commission as part of a contract supported by this project, entitled “Status and Trends of Harbor Seal and Sea Otter Populations in Prince William Sound and Lower Cook Inlet” (1995). The project continued in FY 1996 as Restoration Project 96244 with a new title, “Community-Based Harbor Seal Management and Biological Sampling.” The focus was narrowed to harbor seal restoration. The project is also continuing in FY 1997.

Abstract: The project’s goal was to support collaboration between subsistence hunters of harbors 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. The Alaska Native Harbor Seal Commission is a full partner in the project. A community-based biosampling effort began as a pilot project. Two workshops in which hunters and Youth Area Watch program participants were trained in biosampling techniques took place. A training manual and video were produced and distributed. In 1996, samples from 47 subsistence-taken seals were distributed to participating laboratories for genetics, population, and dietary studies, and additional samples were archived for future contaminants work. Two workshops, each with over 30 participants, took place in which subsistence users, scientists, and resource managers discussed study goals and findings, and developed recommendations for future collaborations. New information about traditional ecological knowledge was included in a revised version of the Whiskers! Database and demonstrated at the workshops. A map database of the location of subsistence takes of seals was developed.

Key Words: Cook Inlet, *Exxon Valdez* oil spill, harbor seals, *Phoca vitulina*, Prince William Sound, subsistence uses.

Project Data: (will be addressed in the final report)

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EXECUTIVE SUMMARY

Populations of harbor seal were injured as a result of the *Exxon Valdez* oil spill and, for unknown reasons, were in decline before the spill. The population has not recovered. Harbor seals are taken for subsistence uses by Alaska Native hunters of communities of the oil spill region. Under the terms of the federal Marine Mammal Protection Act, subsistence uses of harbor seals may be restricted only if the population is declared depleted. Although injured by the spill, the population has not been so classified. Consequently, any conservation actions on the part of Alaska Native hunters can only be undertaken voluntarily. The overall goals of this continuing project are to work cooperatively with subsistence hunters to involve them in marine mammal management, and to develop an ongoing exchange of information (including traditional ecological knowledge) and consensus building between hunters, scientists, and agencies regarding appropriate actions to take to assist in the recovery of harbor seals. The Division of Subsistence of the Alaska Department of Fish and Game was the lead agency for this project. The Alaska Native Harbor Seal Commission (ANHSC) was a full partner in the project. The University of Alaska Marine Advisory Program is also a collaborator.

In federal Fiscal Year 1996, the project had six objectives. These were: 1) Develop a community-based pilot program to collect biological samples and other information from harbor seals in Prince William Sound and lower Cook Inlet, which may serve as a model for a more inclusive program throughout the range of the species; 2) Collect biological samples and other information from harbor seals harvested by subsistence hunters in six communities: Tatitlek, Chenega Bay, Cordova, Seldovia, Port Graham, and Nanwalek; 3) Utilizing the services of the Alaska Native Harbor Seal Commission and its subcontractors, communicate information about results of harbor seal studies to hunters and scientists on a regular basis; 4) Expand the Harbor Seal Traditional Knowledge Database; 5) Collaboratively produce recommendations for subsistence users of harbor seals; and 6) Evaluate the program's effectiveness and develop a more long-term funding plan for ANHSC activities and the biological sampling program.

Regarding Objectives 1 and 2, the biological sampling program, a training manual and data collection form were developed and provided to all seal hunters and biosamplers who are participating in the pilot project. Two training workshops took place. The first was videotaped, and a training video was produced and distributed. Participants in the Youth Area Watch program were also trained as biosamplers.

In 1996, samples from 47 subsistence-taken harbor seals were preserved and distributed for analysis. Most were provided by hunters from Tatitlek. The quality of the samples is very high. Stomachs are being analyzed for prey identification, teeth for aging, whiskers for stable isotope analysis, brain and other tissue for stable isotope analysis, blubber for fatty analysis, skin for genetic analysis, reproductive tracts for reproductive analysis, and skulls for morphometric examination. Additionally, heart, liver, kidney, blubber, and skeletal muscle tissues are being archived for future contamination analysis.

The biosampling program is proving viable because it involves a partnership between hunters and scientists who have the common goal to answer questions regarding the health of harbor seal population. The involvement of the ANHSC and the Youth Area Watch program has been critical to this success. Several additional steps remain for the final years of the project. These include improved coordination of the sample database, tracking of sample distribution, completion of results, and reporting of findings to communities. Also, the concept of

stewardship needs to be instilled in the communities, especially among the youth, so that the sampling and other research efforts become long range goals.

Regarding Objective 4 (traditional knowledge), Division of Subsistence staff undertook research in Prince William Sound (Cordova, Valdez, Tatitlek, Chenega Bay) and lower Cook Inlet (Seldovia, Port Graham, Nanwalek) communities, interviewing hunters and mapping harbor seal harvest locations. The results of these interviews were incorporated into the Whiskers! database, which was demonstrated at the workshops. Seal take location data were entered into a GIS database, and preliminary maps produced. A task for the remaining years of the project is to develop protocols for accessing this information.

Regarding Objectives 3, 5, and 6 (communications and development of recommendations), the ANHSC organized two workshops, each attended by over 30 community representatives, scientists, and resource management agency staff. These provided excellent forums for the exchange of information. Among the recommendations developed were 1) continue the biosampling program; 2) continue work towards developing a co-management plan for harbor seals; 3) support harvest assessment programs; 4) develop long-term funding for the ANHSC; and 5) obtain seats for subsistence users on the Alaska Regional Scientific Review Group for harbor seals. Additionally, community meetings took place which featured the goals of the biosampling program and the objectives of the ANHSC.

The ANHSC has made substantial progress in securing other funding sources. For federal Fiscal Year 1997, a congressional appropriation was received through the National Marine Fisheries Service. Also, an ANILCA Title VIII grant was received through the Bureau of Indian Affairs.

The annual report concludes that several notable steps were taken in the third year of this five year project. These included establishing the pilot program for biological sampling, producing a training manual and video, holding two training workshops, enhancing communications between subsistence users and scientists through workshops and newsletters, and collecting and organizing new data on subsistence uses and traditional knowledge of harbor seals.

INTRODUCTION

The goal of this continuing project 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. Populations of harbor seals were injured as a result of the *Exxon Valdez* oil spill. 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 compounded this decline; an estimated 300 seals died (*Exxon Valdez* Oil Spill Trustee Council [EVOSTC] 1994a:III-9). According to the *Exxon Valdez* Oil Spill Restoration Plan (EVOSTC 1994b:44, 52; 1996:8), harbor seals have not recovered from these oil spill injuries.

Harbor seals are a primary subsistence resource in the Alaska Native communities of the oil spill region (Wolfe and Mishler 1993, 1994, 1995, 1996). 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. Subsistence is an injured natural resource service which has also yet to fully recover from the effects of the oil spill (EVOSTC 1996:20-21).

In order to address these injuries, the *Exxon Valdez* Oil Spill Trustee Council funded restoration projects in federal Fiscal Year 1994 (FY 94) (No. 94244) and FY 95 (95244) to cooperatively assess the relationships between the population trends of harbor seals (and sea otters) in Prince William Sound and lower Cook Inlet, the oil spill, and subsistence harvests (Alaska Sea Otter Commission 1995, Fall 1995). It was recognized that conservation measures would need to be arrived at through a cooperative process involving the hunters themselves. Further, such a process would have to be based upon a shared understanding of the available data and conservation goals. Under the terms of the federal Marine Mammal Protection Act, only Alaska Natives may hunt marine mammals, including harbor seals, for subsistence purposes. (No non-subsistence hunting is allowed.) The Act further specifies that subsistence uses may not be restricted unless a marine mammal population has become depleted. Although injured by the oil spill, the harbor seal population of the Gulf of Alaska has not been declared depleted. Therefore, any conservation efforts on the part of Alaska Native hunters must be undertaken voluntarily. Thus, the overall goal of the project became to work cooperatively with subsistence hunters to involve them in marine mammal management and to develop an ongoing exchange of information and consensus building. Decisions regarding such efforts can only be reached through organizations that are endorsed by the marine mammal hunting communities themselves. Perhaps the most notable result of the process initiated by this project, harbor seal hunters and users themselves formed a new Alaska Native Harbor Seal Commission (ANHSC), which has taken on the task of participating in harbor seal conservation, recovery, and co-management on behalf of Alaska Native subsistence users of harbor seals.

The goals and objectives in the project design for Restoration Project 96244, which now focus specifically on harbor seals, are based primarily on the recommendations of the two major workshops organized under 94244 and 95244. The ANHSC, representing the interests of the subsistence users of harbor seals, is a full partner in the project, filling a major gap that was identified at the workshops. In summary, the primary premise upon which this project is based is that restoration of harbor seal populations will be facilitated by developing the involvement of

subsistence users in research and management activities, and through facilitating the integration of traditional knowledge in scientific studies.

OBJECTIVES

Project objectives for the FY 96 continuation of this project included:

1. Develop a community-based pilot program to collect biological samples and other information from harbor seals in Prince William Sound and lower Cook Inlet, which may serve as a model for a more inclusive program throughout the range of the species.
 - a. Train local technicians and hunters in biological sample collection procedures
 - b. Design the program to 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.
 - d. Produce an instructional video in biological sampling procedures

2. Collect biological samples and other information from harbor seals harvested by subsistence hunters in six communities: Tatitlek, Chenega Bay, Cordova, Seldovia, Port Graham, and Nanwalek.
 - 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, female reproductive tracts, and stomachs
 - c. Store samples in a community freezer and periodically ship samples to Anchorage for further processing and distribution for analysis

3. Utilizing the services of the Alaska Native Harbor Seal Commission and its subcontractors, communicate information about results of harbor seal studies to hunters and scientists on a regular basis.
 - a. Conduct two workshops in conjunction with meetings of the Alaska Native Harbor Seal Commission, which include hunters from oil spill communities, harbor seal biologists, and agency representatives, to review recent findings about harbor seals and discuss important issues
 - b. Conduct one community meeting per year in each of the six pilot program communities for hunters and scientists to review and integrate scientific information and traditional knowledge
 - c. Produce two informational newsletters per year describing results of harbor seals studies, ongoing harbor seal research, and community involvement

4. Expand the Harbor Seal Traditional Knowledge Database
 - a. Incorporate information obtained from previous research efforts by the Division of Subsistence ADF&G as part of Restoration Projects 94244 and 95244, National Marine Fisheries Service-sponsored research, and Division of Subsistence baseline studies into the Whiskers! database
 - b. Collect new information from hunters about topics such as: winter distribution and abundance; changes in distribution and abundance; seasonal use of haulouts; and observations about factors that may be affecting abundance, such as human activities or killer whales
 - c. Incorporate information collected during other restoration projects, such as 96052 (Community Involvement and Traditional Knowledge) and 96214 (Harbor Seal Video), and make sure that data from this project are available to support these other restoration efforts
 - d. Demonstrate the use of the database during the Harbor Seal Commission workshops, and make the database available to potential users such as local communities, schools, subsistence hunters, and scientists
5. Collaboratively produce recommendations for subsistence users of harbor seals
 - a. These recommendations will be based on traditional knowledge, contemporary observations, and scientific findings
 - b. Recommendations will be developed at workshops and community meetings.
6. Evaluate the program's effectiveness and develop a more long-term funding plan for ANHSC activities and the biological sampling program

METHODS

Objectives 1 and 2: Biological Sampling Program

The following procedures were followed to achieve Objectives 1 and 2, the Biological Sampling Program. It should be noted that the Division of Subsistence received funding from the National Marine Fisheries Service to develop a similar sampling program in southeast Alaska, the Aleutian Islands, and the Bristol Bay region. These two programs were fully coordinated, with the same procedures being used in each.

A. Kate Wynne, a marine mammal biologist with University of Alaska Sea Grant Marine Advisory Program, was contracted through a reimbursable services agreement (RSA) with the ADF&G to develop the training and coordinate the sampling components of this project. She was assisted by Vicki Vanek, a veterinarian on the staff of the Division of Subsistence.

1. Training. Wynne and Vanek compiled protocols, synthesized these into usable formats, developed data forms, labels, sampling kits, and a database, and incorporated instructions for their use into a training program.

Instruction. Village-based technicians, ANHSC personnel, Youth Area Watch participants, and ADF&G staff attended a full-day regional sampling training session in either Cordova (for Cordova, Tatitlek, and Chenega Bay) or Homer (for Seldovia, Port Graham, and Nanwalek) in which Wynne provided a detailed explanation of project goals, and the significance and use of data to be collected; distributed sampling kits; explained and demonstrated sampling techniques and use of equipment; and distributed written and graphic instructional materials to take to villages. It was intended that hunters be informed of program objectives and specific sampling requirements through communication with village technicians and other project personnel and through written, graphic, and video instructional materials.

2. Training materials.

Manual and Data Form: Wynne and Vanek produced and distributed a training manual (Appendix A). The manual includes step-by-step diagrams and visual guides. The data form used by the hunters and samplers is included as Appendix B.

Examples: At the training session participants worked on an actual animal, filling in data forms and labels.

Video. A training video, based mostly upon the Cordova training session, was produced by ADF&G, and distributed. The video includes: project rationale and objectives; footage of current research and population declines; significance and use of data to be collected; and a demonstration of how to fill in data forms and labels and how to use sampling kit and supplies.

3. Sample collections

Technicians. The plan was to hire a village-based technician in each pilot program community, whose responsibilities were to take samples from seals taken by participating hunters, record data as requested, assure access to freezer and sampling supplies, notify Wynne or Monica Riedel (ANHSC chair) when supplies were low or the freezer nearly full, and load and ship coolers with samples to Anchorage.

Key hunters. The ideal was to find at least two hunters per village who were willing to provide subsistence taken seals from which the technicians could take samples, and record data as requested.

Sample size and distribution: It was assumed that an average of 20 sampled animals per community would be achieved, for a total of about 120 animals.

Tissues to be collected. The plan was for a minimal sample to be collected by technicians in each village with relative ease and subsequently sub-sampled in Anchorage to provide the suite of tissue samples required. Technicians and hunters were trained to record information about harvest location and animals' sex, evidence of tags or markers, and standard measures of length and girth. Technicians were trained to collect the whole head (with hide and blubber intact); stomach (after tying off both ends), fist-sized sample of liver, heart, and kidney; female

reproductive tract, and claws. Although collecting the reproductive tracts and claws is highly desirable, it was likely that they would be collected opportunistically only from those hunters willing to dedicate extra effort required to collect them. Specific sampling procedures are described in the detailed project description, and depicted in Appendix A and in the training video.

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.

Data management and reporting

Biological data collected from this program are managed and maintained in a data base using software that is easily translated or integrated with software used by other agencies and organizations. Wynne will collate the results of the sample analysis into a readily understandable report that will be provided to all the project participants.

Objective 4: Traditional Knowledge Database

Regarding Objective 4, the collection and organization of traditional knowledge, Division of Subsistence researchers continued to conduct interviews with seal hunters in Prince William Sound and lower Cook Inlet communities to collect and review information on harbor seals. The interviews focused on such topics as harvest locations, winter distribution and abundance, changes in distribution and abundance, seasonal use of haulouts, and observations of factors that may be affecting seal abundance. Opportunities to collect information also arose through Project 96214, Prince William Sound Harbor Seal Hunting Documentary.

The results of these interviews, plus those from the two previous restoration projects, ongoing National Marine Fisheries Service-sponsored research, and division baseline studies, are being included in an update of the database called Whiskers! (which uses the askSam program), first developed in FY95. In FY 96, Division personnel demonstrated the use of the database at both ANHSC workshops and made the database available in a read-only format to potential users. Craig Mishler, the coordinator of the division's harbor seal and sea lion harbor assessment program (funded by NMFS), provided technical assistance in the organization of the database.

For this restoration project, division researchers also interviewed harbor seal hunters concerning harvest locations, including animals that were shot and retrieved and those that were struck and lost. The collection of this information was added to an ongoing harvest assessment effort conducted by the division under contract to the National Marine Fisheries Service. Prior to beginning this aspect of the research, letters were sent to each village government seeking approval for the project. After receiving this approval, Ronald Stanek (with assistance from local research assistants) conducted interviews with hunters from Seldovia, Port Graham, and Nanwalek, while Jody Seitz (a former division employee), Bill Simeone, and Rita Miraglia interviewed Cordova, Tatitlek, Valdez (in 1996 only), and Chenega Bay hunters (local research assistants helped in Cordova and Tatitlek). Limited location data for certain years were also

collected from subsistence hunters from Anchorage, Kenai, Homer, Seward, and Tyonek. Harvest location data were entered into a GIS database developed by Charles Utermohle of the Division of Subsistence, ADF&G. Maps were prepared by ADF&G cartographer Carol Barnhill.

Objectives 3, 5, and 6: Communications, Recommendations, and Evaluation

Objectives 3, 5, and 6, communication of study findings, development of recommendations, project evaluation, and development of a long-term funding plan, were approached as a collaborative effort met through a contract between ADF&G and the Alaska Native Harbor Seal Commission. The ANHSC in turn subcontracted with the Rural Alaska Community Action Program (RurAL CAP) to assist with the following:

1. Organized two workshops that were held in conjunction with meetings of the ANHSC. One took place in Anchorage in March 1996. The second took place in Girdwood in September 1996, in conjunction with the Arctic Science Conference. Because the commission is limited to one representative from each region which uses harbor seals (southeast Alaska, the Chugach Region, Cook Inlet, Kodiak, and Aleutian/Pribilofs), participation in the workshop was expanded to include hunters from spill area communities. These workshops were modeled after those held under Projects 94244 and 95244, which involved review of information by scientists and subsistence hunters. A goal of the workshops was discussion of potential recommendations for subsistence hunters concerning how they can support efforts to restore harbor seal populations.
2. Community meetings were held in three of the six communities involved in the pilot biological sampling project, during which project personnel and subsistence hunters reviewed data and traditional knowledge, and discussed recommendations developed at the workshops. Coordination with the community facilitators hired under Project No. 96502 provided a means to communicate projects goals and findings to the other communities.
3. Two workshop summaries were written and distributed, which provide overviews of findings from harbor seal research and ANHSC activities. (These appear as appendices to this report: see below.)

RESULTS

Biosampling Program

Training Manual and Data Form

As noted above, Kate Wynne and Vicki Vanek produced a training manual, which appears in this annual report as Appendix A. The manual was provided to all seal hunters and biosamplers who are participating in the project. The standard data collection form appears as Appendix B.

Training Video

A training video entitled "Harbor Seal Biosampling" was produced. It is approximately 68 minutes in length. Most of the video was filmed during the training session in Cordova in November 1995. Approximately 25 copies of the video have been distributed to date. The video also aired on the Alaska Rural Communications Service on April 17 and April 21, 1996.

Training Workshops

The first training workshop took place in Cordova on November 28, 1995, and was conducted by Kate Wynne, video taped by Craig Mishler, and facilitated by Monica Riedel. One hunter from Chenega Bay, Cordova, and Tatitlek participated. Also trained were 12 young people from Prince William Sound communities who are part of the Youth Area Watch Project (96210). Involving the youth in the biosampling training proved to be a very successful strategy, and this approach has continued in subsequent training efforts in communities that are part of both programs. As the program has moved forward, Youth Area Watch participants have become primary samplers in Cordova and Tatitlek.

The second training workshop took place in Homer in December 1995. Again, Kate Wynne did the training and Monica Riedel facilitated the workshop. Four hunters from Seldovia, Port Graham, and Nanwalek participated.

Subsequent to these workshops, several additional hunters and youth were trained in Tatitlek. Hunters from Seldovia and Port Graham were also recruited to provide seals to the biosamplers in their communities.

Sample Collection, Distribution, and Analysis

Table 1 is a list of samples collected through calendar year 1996. Of the 47 seals sampled, 37 were taken by hunters from Tatitlek. These were harvested from a large area in the eastern and central sound. Hunters from Chenega Bay and Nanwalek reported a scarcity of seals during their hunts, resulting in a lower than expected number of samples collected. See the "Discussion" section, below, for the disposition of samples from these animals and an overview of analyses conducted on these samples to date.

Workshops and Hunter Recommendations

Two workshops took place, as planned. The first was hosted by RurAL CAP in Anchorage, and occurred on March 5, 1996. Approximately 37 people participated, including representatives from the four oil spill areas (Prince William Sound, Cook Inlet, Kodiak Island, Alaska Peninsula), marine mammal biologists, agency representatives, and RurAL CAP staff. A summary of this workshop, prepared by Monica Riedel (ANHSC) and Carl Hild (RurAL CAP) is attached as Appendix C.

The second workshop took place in Girdwood on September 18, 1996, in conjunction with the Alaska Science Conference meeting, which had community involvement and traditional knowledge as a primary theme. Approximately 30 people participated in this workshop. A summary, prepared by Monica Riedel, appears as Appendix D.

At the Girdwood workshop, participants developed the following recommendations:

1. Continue the biosampling program and facilitate communication with other areas of the state that are participating in the project. Ensure that biosampling programs are community-based.
2. Continue working towards drafting a co-management agreement with NMFS using ANILCA grant funds.
3. Support the harvest assessment program conducted by the ADF&G Division of Subsistence and funded by NMFS.
4. Develop funding for ANHSC functions through a congressional appropriation which would be channeled through NMFS.
5. Recommend subsistence users from southeast and south-central Alaska to sit on the Alaska Region Scientific Review Group, which provides advise to NMFS on marine mammal management.

Mapping and Traditional Knowledge

As noted above, Division of Subsistence staff interviewed seal hunters in Seldovia, Nanwalek, Port Graham, Cordova, Tatitlek, Chenega Bay, and Valdez regarding harvest locations and aspects of traditional ecological knowledge. The results of these interviews were incorporated into an updated version of the field note database called "Whiskers," a compilation of traditional ecological knowledge about Alaska marine mammals, first produced in FY 95. An overview of the findings of this research will appear in the final project report.

Table 2 summarizes sample achievements for the harvest location mapping component. Because this effort had been completed when this annual report was being prepared, data collected through FY 97 are summarized in this report. Location data were collected for 686 seals. These represent a total estimated take of 1,449 animals. (The reader should consult Wolfe and Mishler 1993, 1994, 1995, and 1996 for detailed information on sample sizes and sampling fractions for the harvest assessment interviews.)

Figure 2 and Figure 3 depict general locations of takes of harbor seals for the four years of the project for Prince William Sound and Lower Cook Inlet, respectively. Each region was divided into a set of subregions based upon the distribution of seal takes. Each subregion is shaded to show the relative size of the estimated take of seals that took place there in the four study years (1993, 1994, 1995, and 1996). Without additional community review and discussions, it would be inappropriate at this time to depict more detail on these maps. A task remaining for FY 97 and FY 98 is to develop collaboratively a set of protocols to guide access to this information which will protect respondent confidentially and sensitive hunting areas while also meeting the needs of researchers.

At the Restoration Workshop in Anchorage in January 1996, Riedel and Fall participated in a panel on traditional knowledge. Riedel gave an overview of this project and the formation of the ANHSC. Mishler also demonstrated the Whiskers! data base at the Restoration Workshop.

Community Meetings

On March 25, Riedel traveled to Seldovia to meet with the Cook Inlet commissioner for the ANHSC and the Seldovia Native Tribal Council. She gave a presentation on the project and showed the biosampling training video. Hunters at the meeting reported the weather had not been conducive to hunting. On March 26, Riedel continued on to Port Graham, meeting with the tribal chief and several council members. She later gave a presentation to the junior and senior high school students about the project. The next day, March 27, Riedel traveled to Nanwalek. Again, she met with the council and explained the project. She gave another presentation at the school, which was very well attended. Children in Nanwalek displayed a great deal of knowledge about the nutritional, spiritual, and cultural values of the harbor seal.

For the Prince William Sound area, informal meetings with hunters and subsistence users took place in Cordova. As noted earlier, one of the two biosampling training workshops also was held in Cordova. Meetings did not occur in Tatitlek and Chenega Bay. However, information about the project was conveyed through the community facilitators hired under Project 96502 (Community Involvement and Traditional Knowledge).

Development of Other Funding Sources

The ANHSC has made substantial progress in securing other sources of funding to support the continuation of the initiatives developed as part of the restoration project. For FFY 97, a congressional appropriation was received through NMFS. This appropriation will cover certain administrative and operational costs for the ANHSC, such as office space, accounting and auditing, and travel to attend meetings and appropriate conferences. Also, the ANHSC obtained an ANILCA Title VIII grant from the Bureau of Indian Affairs, processed through RurAL CAP. This grant assists the ANHSC to develop a co-management agreement with NMFS for the conservation and management of harbor seals.

DISCUSSION

Quantity of Biosamples

Samples from 47 harbor seals (27 males: 20 females) were collected by village technicians in four of six target villages in the project's first year. The bulk of these samples were from Tatitlek, where one hunter was responsible for sampling 20 of the 47 seals sampled during 1996 (Table 1). While encouraging the voluntary sampling of any seals harvested statewide, Wynne and Vanek emphasize to samplers the desire that sampling effort be spread over space and time. The statistical need for seasonal and regional sampling will be a focus of future project summaries, ANHSC meetings, and training sessions.

Quality of Samples and Data Collected

For many seal researchers, sample quality is dependent on the time elapsed between the seals' death, tissue collection, and freezing of collected samples. The vast majority of samples processed from the project's first year had been carefully and effectively collected, labeled, and

frozen within a few hours of their collection from freshly harvested animals. Maggie Castellini and Brian Fadely reported to Wynne (personal communication) that blubber samples received from these biosampled seals were of exceptional quality and were critical components of their research on harbor seal health, including EVOS Restoration Project 95117.

The majority of data forms submitted with seal samples contained complete harvest and measurement information and were meticulously recorded. Because the weight of some sampled seals was either not measured (lack of scales) or appear disproportionate with size, Wynne and Vanek will focus future training on accurate weighing techniques using reliable scales. The completeness and accuracy of data collected on these forms attest to the technical attentiveness of the samplers as well as the effectiveness of the training sessions and materials.

Sample Analysis, Tracking, and Reporting

Seal samples are sent frozen from remote communities to Kodiak or Anchorage for intermediate sorting, assignment of individual specimen (AF) numbers, and subsequent reshipment to various researchers. All but the DNA samples, stomach, and reproductive tracts are ultimately shipped to the UAF Museum where they are archived and/or made available to a variety of Fairbanks-based UAF and ADFG researchers. Table 3 lists the researchers that received tissues collected from the 47 harbor seals sampled in 1996 under Project 96244.

To date, analyses of subsamples from these seals have been initiated or completed by researchers studying blubber composition (Fadely et al.1996), fatty acid composition (K. Frost Restoration Project 96064), mitochondrial DNA (Westlake and O'Corry-Crowe 1996), and stable isotopes in whiskers (D. Schell and A. Hirons Restoration Project 96170). Teeth and female reproductive tracts collected from these seals have been archived but not yet analyzed by ADFG researchers. Organ tissues and other samples have been archived by the University of Alaska Fairbanks Museum for subsequent analyses.

Currently there is no mechanism for tracking the ultimate distribution and results of analyses on tissues collected from individual animals sampled in this program. Therefore, it is difficult to determine whether analyses are pending, in-progress, or complete at any given time and make timely reports to program participants. To remedy this situation, we plan to work with researchers to develop a "sample tracking form" and semi-annual reporting system to allow standardized reporting of sample distribution and analytical results. Ideally, any researcher utilizing tissues collected in this program and statewide will be required to report the status of their analyses on a semi-annual basis. Sample distribution and referenced results reported by researchers will be compiled into a semiannual newsletter to hunters and samplers participating in this program, reported to National Marine Fisheries Service to meet their federal reporting requirements, and submitted with EVOS Restoration Project reports.

CONCLUSIONS

Program Involvement and Integration

The harbor seal biosampling program is proving viable largely because it involves a powerful partnership between a diverse and dispersed group of people seeking answers to common questions about seal health. Involvement of the ANHSC in the biosampling effort has

proven critical in locating interested samplers and maintaining the momentum of sampling effort at the community level. The cooperative involvement of Youth Area Watch students in the program has allowed them to gain cultural and subsistence knowledge of seals from hunters while gaining a first-hand introduction to "Western science" methodologies and co-management efforts. The UAF Museum has provided a critical link in the sampling process as archive and final distributor of samples. UAF and ADFG have collaborated to design standardized means of collecting and recording data which enhance the program's utility statewide.

It is important, now that the program is functional and the volume of samples is rising, to improve 1) coordination of the sample database, 2) tracking of sample distribution, 3) compilation of analytical results from researchers using the samples, and 4) reporting of findings to the communities and resource users involved. It should be noted that in FY 96 and early FY 97, hunters were still getting used to the idea of integrating biosampling as part of their hunting activities. There needs to be improved communications on at least a bi-monthly basis to remind hunters to coordinate their activities with the biosamplers, including those associated with the Youth Area Watch. Posters, manuals, and brochures need to remain accessible.

Also, the concept of stewardship needs to be instilled in the communities, especially among the youth, so that the sampling and other research efforts become long rang goals. The concept of preserving traditions and values needs to be emphasized in the processing of the meat, pelts, and oil as well as in the biosampling efforts.

General Conclusions

In conclusion, during the third year of this continuing five-year project, notable steps were taken to accomplish the project goals. These included:

- A pilot program to train village residents to take biological samples from subsistence-taken harbor seals was launched. A training manual and training video were produced. Two training workshops took place, at which about 19 individuals were trained. In 1996, samples from 47 seals were distributed to scientists participating in the program.
- Communication between subsistence users and hunters of harbor seals was enhanced through two major workshops and written summaries.
- New data on subsistence harvests of harbor seals and traditional ecological knowledge of both seal were collected and organized.

ACKNOWLEDGMENTS

First of all, the important contributions of all of the participants in the biosampling program need to be gratefully acknowledged. Mel Henning of the Youth Area Watch Program was especially supportive. We also thank the many people who participated in the two Harbor Seal Commission workshops. The authors also acknowledge the contributions from the research of Division of Subsistence staff members Vicki Vanek, Craig Mishler, Rita Miraglia, Bill Simeone, and Ron Stanek, and former staff member Jody Seitz. Charles Utermohle of the Division's data management section developed the seal take location database. ADF&G cartographer Carol Barnhill produced the maps. Thanks also to the Rural Alaska Community Action Program (RurAL CAP) for providing the space to hold the first workshop.

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Table 1. Summary of Harbor Seal Biosamples Collected, Calendar Year 1996

Community	Location	Number of Seals Sampled
Chenega Bay	Horseshoe Bay, Latouche Island	2
	<u>Community Total</u>	<u>2</u>
Cordova	Nelson Bay	4
	<u>Community Total</u>	<u>4</u>
Nanwalek	Yukon Island	1
	Nanwalek Vicinity	1
	Elizabeth Island	2
	<u>Community Total</u>	<u>4</u>
Tatitlek	Rocky Bay	3
	Seal Island	3
	Two Moon Bay	1
	Green Island	10
	Markarka Point, Hawkins Island	11
	Simpson Bay	3
	Port Gravina & Olsen Bay	6
	<u>Community Total</u>	<u>37</u>
GRAND TOTAL		47

Table 2. Summary of Harbor Seal Take Location Data

Community	Study Years Interviewed				Number of Seals for which Take Location Data Collected	Estimated Number of Seals Taken (Harvest and Struck and Lost)
	1993	1994	1995	1996		
Anchorage				X	30	33
Chenega Bay	X	X	X	X	96	174
Cordova	X	X	X	X	180	514
Homer		X		X	9	24
Kenai				X	20	24
Nanwalek	X	X	X	X	102	117
Port Graham	X	X	X	X	85	95
Seldovia	X	X	X	X	21	28
Seward			X	X	18	22
Tatitlek	X	X		X	111	398
Tyonek				X	2	2
Valdez				X	12	18
Totals					686	1449

Table 3. Distribution of Subsistence Harbor Seal Samples Collected in the Chugach Region in 1996 under EVOS Restoration Project 96244.

<u>Tissue</u>	<u># Samples</u>	<u>Contact</u>	<u>Disposition, status, and analysis</u>
Stomachs	46	K. Wynne, UAF	Contents rinsed in Kodiak, sent to UBC on 1/21/97 for prey identification
Teeth	46	R. Small, ADF&G	Extracted at UAF Museum, stored at Anchorage ADF&G for aging (summer 1997)
Whiskers	46	D. Schell, UAF	Used in stable isotopes analyses
Brain and collagen ¹	46	A. Hirons, UAF	Used in stable isotopes analyses
Blubber	46 +/- 46	B. Fadely, et al., UAF K. Frost, ADF&G	Blubber composition studies completed and continuing (EVOS Proj. 95117) Sent to Dalhousie University for fatty analysis (EVOS Proj. 95064)
Skin/muscle	46	R. Westlake, NMFS	Sent to NMFS La Jolla for genetic analysis
Reproductive tracts	+/- 8	K. Pitcher, ADF&G	Stored for future reproductive analysis
Skulls	46	B. Kelly, UAF	UAF Museum staff is cleaning skulls for archive and morphometric examination
Archived tissue heart liver kidney blubber skeletal muscle	46	S. Lewis, UAF	Tissues subsampled and archived in -70C freezer at UAF Museum; available for future contaminant analyses.

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

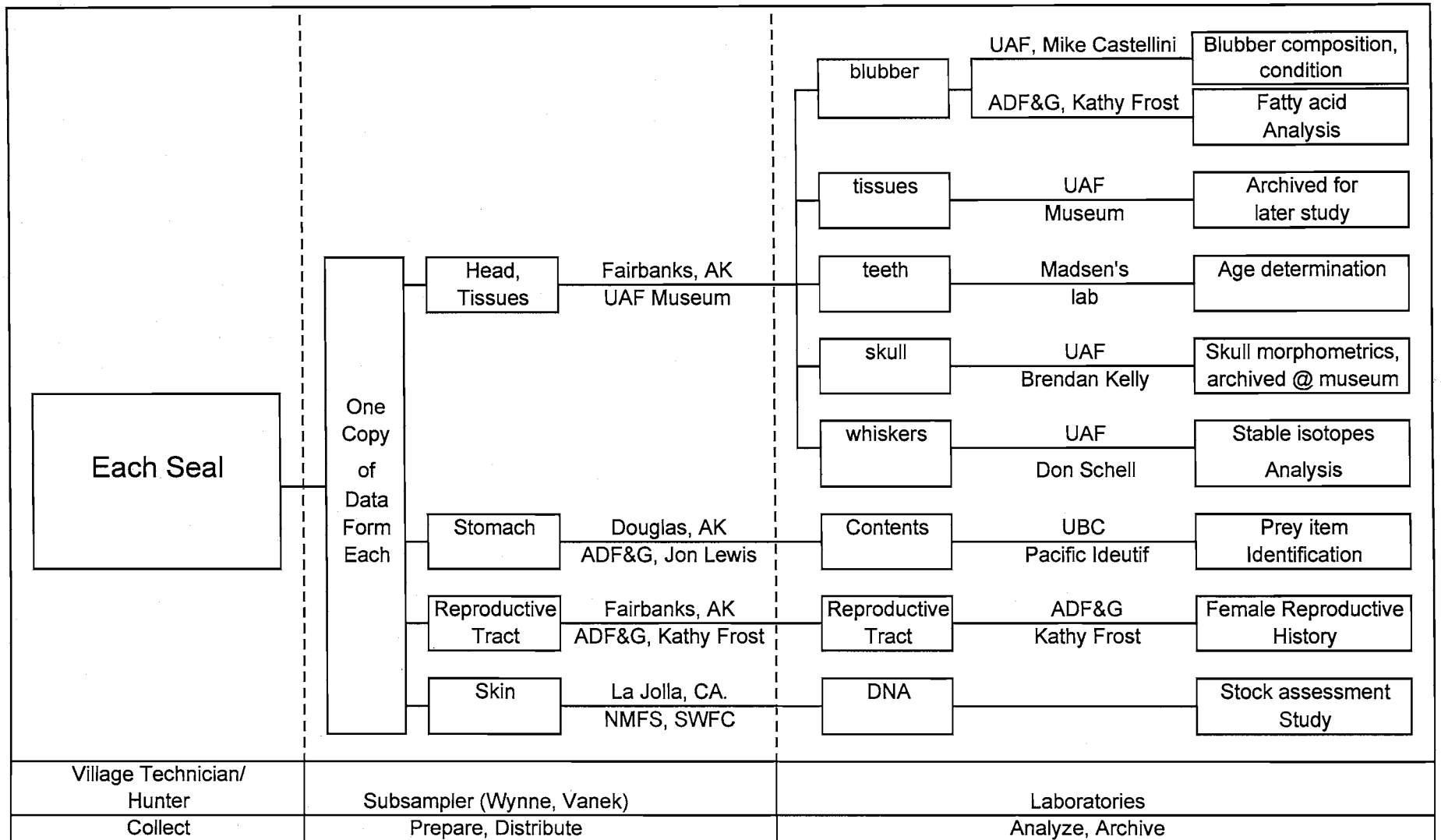


Figure 1. Sample Distribution and Chain of Responsibility

APPENDIX A



HARBOR SEAL SAMPLING MANUAL

Alaska Native Harbor Seal Commission
Alaska Department of Fish and Game
National Marine Fisheries Service
University of Alaska Sea Grant

by Vicki Vanek, DVM and Kate Wynne

IN THIS MANUAL

- Why Collect Samples ? What Are They Used For ?
- Before You Go Hunting
- When You Shoot A Seal
- DATAFORM Sample
- RECORD Harvest Information
- EXAMINE the Seal
- Any COMMENTS ?
- WEIGH the Seal
- MEASURE the Seal - on belly
- MEASURE the Seal - on back
- Measure the BLUBBER THICKNESS
- Take BLUBBER Samples
- Inside the Seal - What is Where ?
- Take Samples of LIVER, HEART, and KIDNEY
- Remove the STOMACH
- Collect the HEAD
- Take Samples of SKIN and MUSCLE
- Gather Samples Together
- How to Ship Samples

WHY COLLECT SEAL SAMPLES ?

Seals in parts of Alaska, like Southeast and maybe Bristol Bay, seem to be healthy and their numbers are stable or growing.

But in some parts of Alaska, especially the Chugach and Kodiak regions, there are far fewer harbor seals now than there were 20 years ago. We don't know what caused these declines or what will help them recover - are they diseased ? is there not enough food ? are they having fewer pups ? will the decline spread ? can we help them recover?

One way to understand what is causing the seal's problem is to compare seals from 'healthy' areas to seals from areas where they are declining.

Seal hunters from various communities in the Aleutians, Bristol Bay, Kodiak area, Chugach Prince William Sound, and the Southeast are working with researchers to answer questions about the health of Alaska's harbor seals. They will collect measurements and samples from subsistence harvested harbor seals so that researchers (from National Marine Fisheries, Alaska Fish & Game, and the University of Alaska) working together can study and compare the health of harbor seals around the state.

WHAT ARE SAMPLES USED FOR ?

Different parts of the seal are collected for different reasons.

SKIN - for genetic studies to study stock identity- to understand how closely related harbor seals are in different parts of the state.

BLUBBER - for fat analysis (helps to learn about seal's diet and how good their energy stores are)
for contaminant testing such as DIOXIN

TEETH - to learn exact age. Teeth are sectioned and there are rings inside that can tell the exact age

WHISKERS - for stable isotope studies (helps to learn the changes in the diet)

STOMACH - to learn about what they are eating...

SKULL - morphometric studies (helps to determine types of seals, size, etc)

LIVER, HEART, KIDNEY - helps to determine health of seal and certain contaminants

MEASUREMENTS & WEIGHT - to study growth and body condition

BEFORE YOU GO HUNTING :

1. Each village will have one set of spring scales to weigh seal.
Be sure you take the scales or weighing kit with you.

The weighing kit for your village can be found at:

2. Be sure to take with you:

dataforms
small bag labels
pens or pencils
magic marker
measuring tape
Ziplok bags and Whirlpaks
small ruler
pieces of string
weighing kit
a sharp knife



WHEN YOU SHOOT A SEAL :

1. The next pages will show how to take samples.
2. For every seal one dataform will be filled out with information.
THIS IS IMPORTANT. Samples with no information have no use.
3. Each sample will be put in separate clear plastic bags.
Large samples will be in big Ziploks.
Small pieces will be in small Ziploks or Whirlpaks
(the small plastic bags with twisty ties)

EACH BAG WITH A SAMPLE IN IT MUST BE LABELED

1. Fill out small paper label.
Put it inside Ziplok with sample.
2. Write DATE, VILLAGE, HUNTER'S INITIALS
and SEAL NUMBER on outside of bag
with Magic Marker

HARBOR SEAL

Date:

Village:

Hunter:

Seal # (shot today):

SMALL LABEL - you can tear
it off metal ring

FRONT OF DATAFORM :

SUBSISTENCE HARVEST DATA FORM		Office Use Only
<p>SAMPLING INFORMATION</p> <p>Village: <input type="text"/></p> <p>Date Sampled: <input type="text"/> month <input type="text"/> day <input type="text"/> year</p> <p>Species: <input type="text"/></p> <p>Sample # <input type="text"/> shot (today)</p> <p>Location of harvest: <input type="text"/></p> <p>Sampler's Name: <input type="text"/></p>		<p>Specimen ID: <input type="text"/></p> <p>AF Number: <input type="text"/></p> <p>Vill. # <input type="text"/></p> <p>Latitude: <input type="text"/>° <input type="text"/>'</p> <p>Longitude: <input type="text"/>° <input type="text"/>'</p> <p>Date: <input type="text"/></p>
<p>SEX</p> <p>Male (M) <input type="checkbox"/> Female (F) <input type="checkbox"/></p> <p>If it is a female, was she pregnant? <input type="checkbox"/> lactating? <input type="checkbox"/></p> <p>Was a fetus present? <input type="checkbox"/> collected? <input type="checkbox"/></p> <p>Y or N <input type="text"/></p>		<p>Was a tag or brand present? <input type="checkbox"/> Y or N</p> <p>If Yes, please describe it: <input type="text"/></p> <p>Coat Color: <input type="text"/></p> <p>pattern on back looked most like (circle one)</p> <p><input type="radio"/> A <input type="radio"/> B <input type="radio"/> C</p>
<p>BODY MEASUREMENTS</p> <p>Blubber thickness (in millimeters)</p> <p>mm <input type="text"/> mm <input type="text"/></p> <p>Seal was weighed <input type="checkbox"/> before, <input type="checkbox"/> after</p> <p>Weight: <input type="text"/> pounds</p> <p>* Measure these in centimeters</p> <p>Standard Length</p> <p>seal on belly (A) <input type="text"/> cm </p> <p>seal on back (B) <input type="text"/> cm </p> <p>Curvilinear Length</p> <p>seal on belly (C) <input type="text"/> cm </p> <p>seal on back (D) <input type="text"/> cm </p> <p>Girth</p> <p>Axillary (armpit) (E) <input type="text"/> cm </p> <p>At Hips (F) <input type="text"/> cm </p>		<p>What samples did you collect?</p> <p><input type="checkbox"/> whole head <input type="checkbox"/> kidney tissue</p> <p><input type="checkbox"/> stomach <input type="checkbox"/> heart tissue</p> <p><input type="checkbox"/> skin <input type="checkbox"/> liver tissue</p> <p><input type="checkbox"/> blubber (in teflon) <input type="checkbox"/> female repro tract</p> <p><input type="checkbox"/> blubber (whirlpak) <input type="checkbox"/> other <input type="text"/></p> <p>Approximately what time did you kill the seal? <input type="text"/> am <input type="text"/> pm</p> <p>What time were these samples collected? <input type="text"/> am <input type="text"/> pm</p> <p><input type="checkbox"/> frozen <input type="checkbox"/> am <input type="checkbox"/> pm</p>

BACK OF DATAFORM :

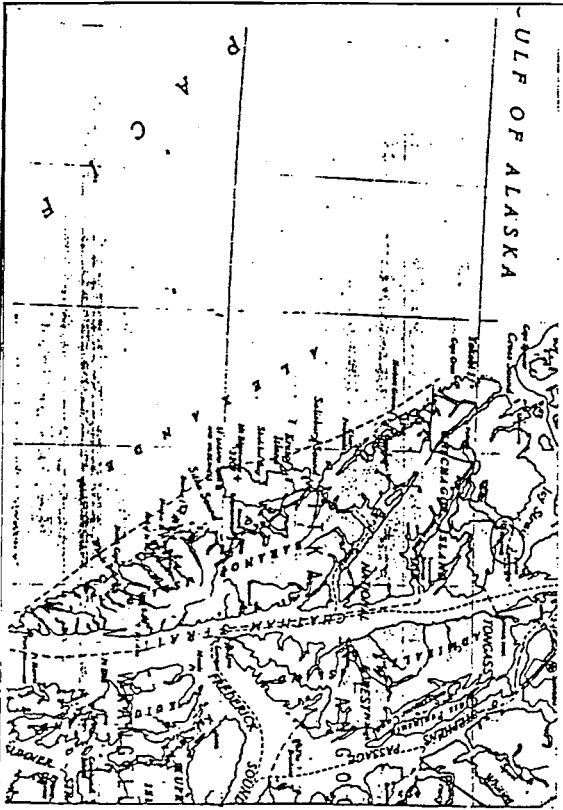
Comments: Please draw or describe anything unusual you noticed about this animal or did different than the manual described :

How far was this seal from the nearest:

pack ice glacier ice lake ice

Please make an X on the map approximately where you got this animal

(copies from US Geological Survey maps)



MAPS WILL DIFFER DEPENDING ON AREA. FOOD IS BEING USED. ETC.

DATAFORM - HARVEST INFORMATION

SPECIES IS "HARBOR SEAL"

1. Print your NAME and VILLAGE at the top of the dataform

2. Record the DATE the seal was shot at the top of the dataform
Use numbers for month
For example October 10, 1945 would be 10-10-45

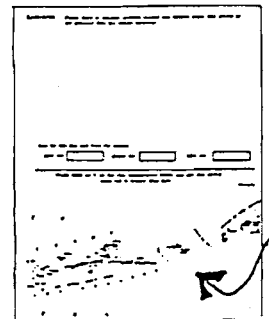
3. Sample #: The first seal shot this day is Sample #1, the second seal shot on the same day is Sample #2.

4. Record the approximate TIME it was shot at the bottom of the form

YOU CAN ESTIMATE TIME TO CLOSEST HOUR

- FRONT -

5. Location: Put name of the place (bay, passage, island, or cove) where you shot the seal. Mark it on the map on the backside of the dataform

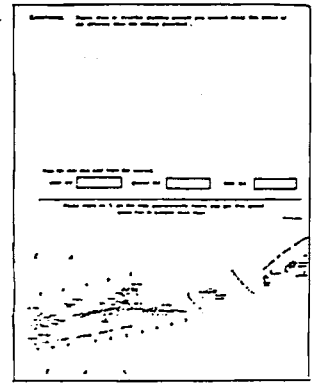


- BACK -

DATAFORM - COMMENTS

ON THE BACK OF THE DATA FORM is a space for comments.

Write anything you think is important about the seal
or that you did different or that happened that was different.



UNUSUAL or ABNORMAL LESIONS or LOOKS

Any sores on the seal's skin? What color, how big, and where on the seal...
Did any organs inside look different to you or not normal?....Spots on the liver?....
What color spots and how big are they?....did the whole liver look that way or only one
area? Did the liver feel different (more mushy than you normally find)?...

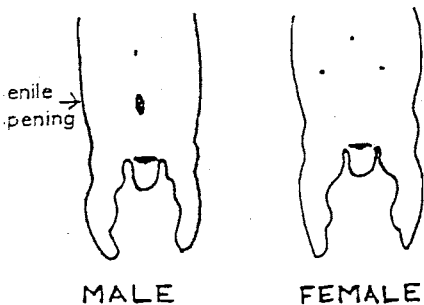
PARASITES

Were there worms in the trachea? This is the air tube going into the lungs. You can
cut it open to see if there are worms.
Did you see worms in the intestines?

WHEN WEIGHING THE SEAL

Did you use a net or tarp or rope?....How much did the net or tarp weigh by itself on
the scale (it may read zero if it is not very heavy)....
Is the weight you wrote on the front of the dataform ONLY the seal's weight OR the
weight of the seal and tarp TOGETHER?
Remember to mark on the front of the form if you bled the seal or not before weighing.

EXAMINE THE SEAL RECORD information on the DATA FORM



1. Determine the seal's sex.

Males have a penile opening on their belly.

Females have a vaginal opening right next to the anus

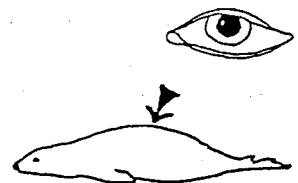


2. If it is a female:

check to see if it is lactating by squeezing the teats for milk

look for a fetus when you gut it

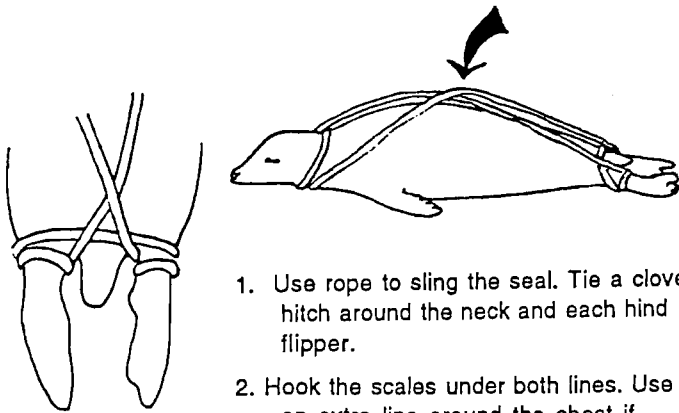
3. Look at the fur on the seal's BACK and circle the pattern that looks closest



4. Some seals have been tagged by researchers. Describe any tags or marks you see on the seal's BACK or HIND FLIPPERS.

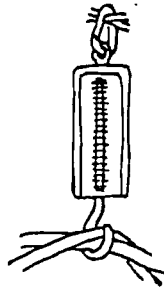
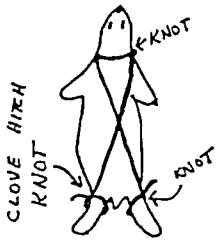


WEIGHING THE SEAL

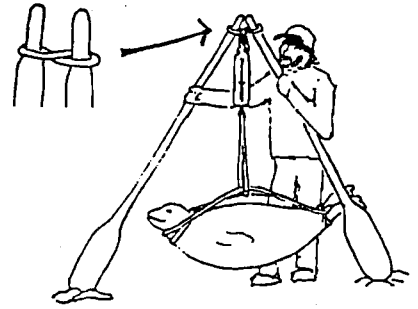


1. Use rope to sling the seal. Tie a clove hitch around the neck and each hind flipper.
2. Hook the scales under both lines. Use an extra line around the chest if necessary. If the seal slides, turn a loop into the ropes over the shoulder area.
3. Hang the scales from something secure like a tree limb, boom, or oars.
4. Hang the seal and read the weight to the nearest pound. Record weight on the dataform.

ANOTHER WAY TO TIE:



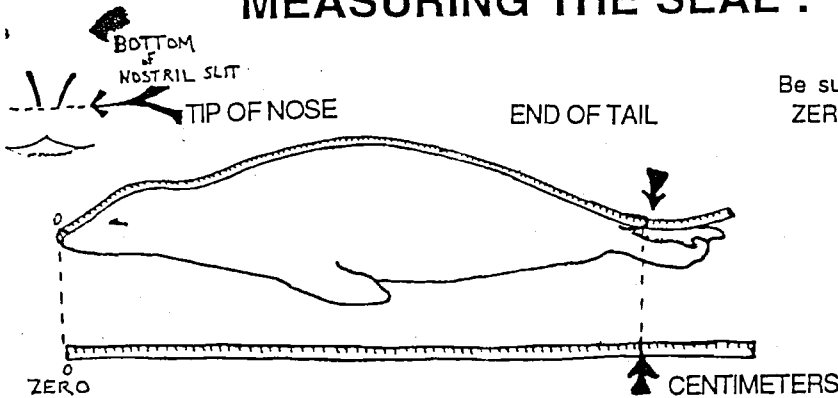
Here's how you can suspend a heavy seal using two oars:



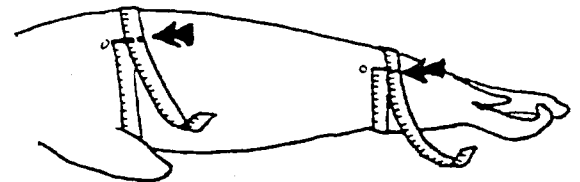
OTHER WAYS TO WEIGH:

- You can use a net or tarp to hang seal from the scale. BE SURE to weigh the net or tarp by itself. Write in COMMENTS section on back of form the weight of net or tarp and if the weight of seal you wrote down DOES or DOES NOT include the net or tarp weight.
- You can make a cut in skin under chin and hang seal by its jaw on the scale's hook.

MEASURING THE SEAL : SEAL ON BELLY



Be sure to start measuring from the ZERO end of the tape measure



1. Measure STANDARD LENGTH :
Hold the tape measure flat on the ground next to the seal even with the tip of its nose. Measure the length of the seal to the end of its TAIL.
2. Measure CURVILINEAR LENGTH :
Hold one end of the tape at the tip of the nose and lay tape along the seal's back to the tip of its TAIL.

3. Measure AXILLARY GIRTH :
Wrap the tape measure around the seal under its armpits.
4. Measure HIP GIRTH :
Find the hips on the seal. Wrap the tape around the seal about an inch in front of hips.

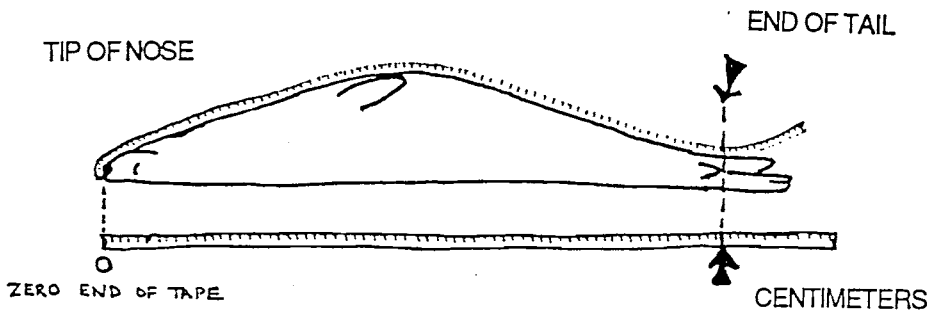
RECORD information

USE CENTIMETERS!!



Read all measurements in **CENTIMETERS** and record them on the dataform immediately. IT'S EASY TO FORGET!

MEASURING THE SEAL : SEAL ON BACK



Be sure to start measuring from the ZERO end of the tape measure

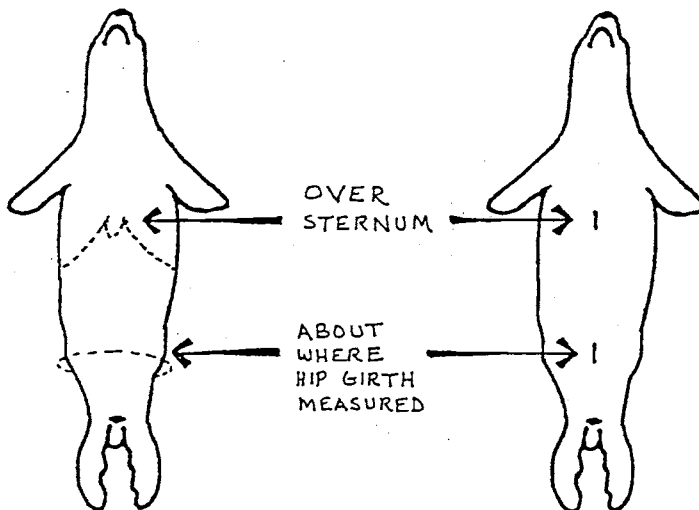
1. Measure STANDARD LENGTH :
Hold the tape measure flat on the ground next to the seal even with the tip of its nose. Measure the length of the seal to the end of its TAIL.
2. Measure CURVILINEAR LENGTH :
Hold one end of the tape at the tip of the nose and lay tape along the seal's belly to the tip of its TAIL.

RECORD information



Read all measurements in Centimeters and record them on the dataform immediately.

MEASURING BLUBBER THICKNESS



1

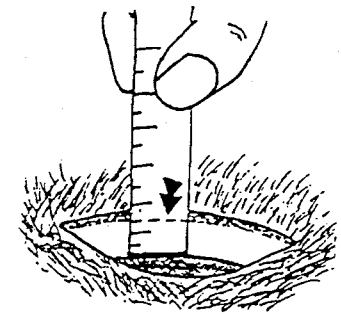
Feel for the sternum through the chest. It is the hard piece of cartilage that is the end of the breastbone on the midline. Over the sternum is where you will cut to measure fat.

Guess about where you measured the hip girth with measuring tape. Cut at this spot on the midline.

2

Make a clean cut about 2-3 inches long at these two places on the belly.

- Only cut through skin and fat; don't cut into the meat.



IMPORTANT

ONLY MEASURE BLUBBER!

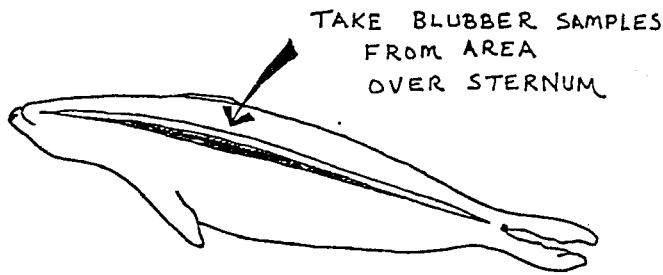
NO SKIN.
NO MEAT.

3

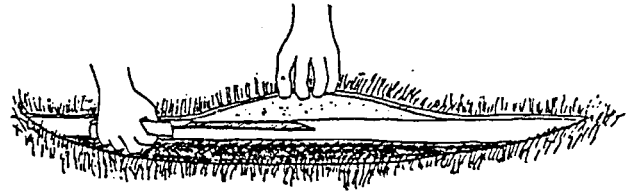
Stick the ruler down to rest on the meat.

- Read thickness of blubber (from meat to bottom of skin).
- Record thickness in MILLIMETERS.

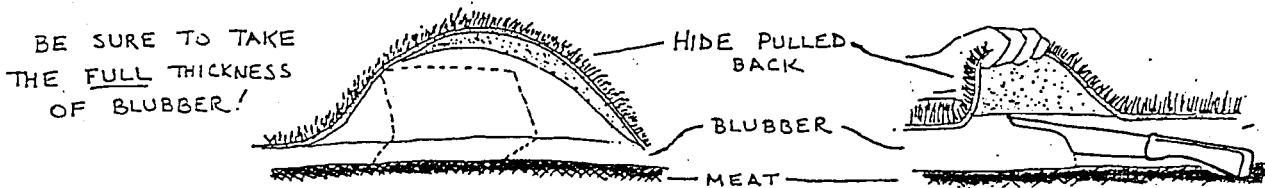
BLUBBER SAMPLE - SMALL PIECE



1. Extend cut along the length of the belly.



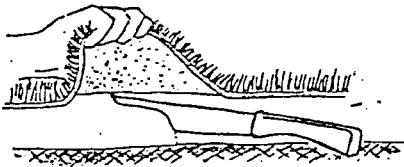
2. Skin the hide back from the blubber. Try to leave no blubber on the hide.



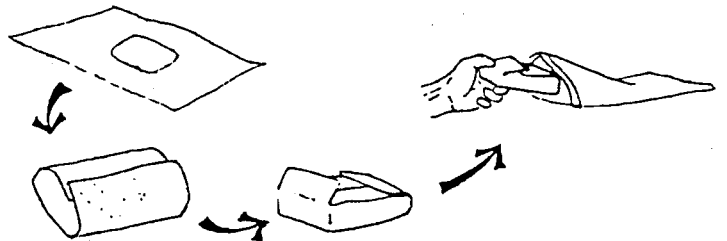
3. Cut down through blubber all the way to (but not into) the body meat. Slide your knife between the meat and blubber to remove a piece of blubber without any meat attached.

ABOUT THIS SIZE

CONTAMINANT SAMPLES: BLUBBER - LARGE PIECE

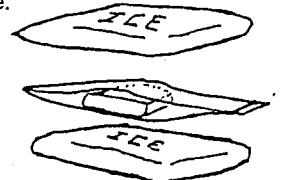


1. Extend cut along the length of the belly.
2. Skin the hide back from the blubber. Try to leave no blubber on the hide.
3. Cut down through blubber all the way to (but not into) the body meat. Slide your knife between the meat and blubber to remove a piece of blubber without any meat attached.
4. The sample should be this big and the full depth of the blubber. There should be no hide or meat attached.

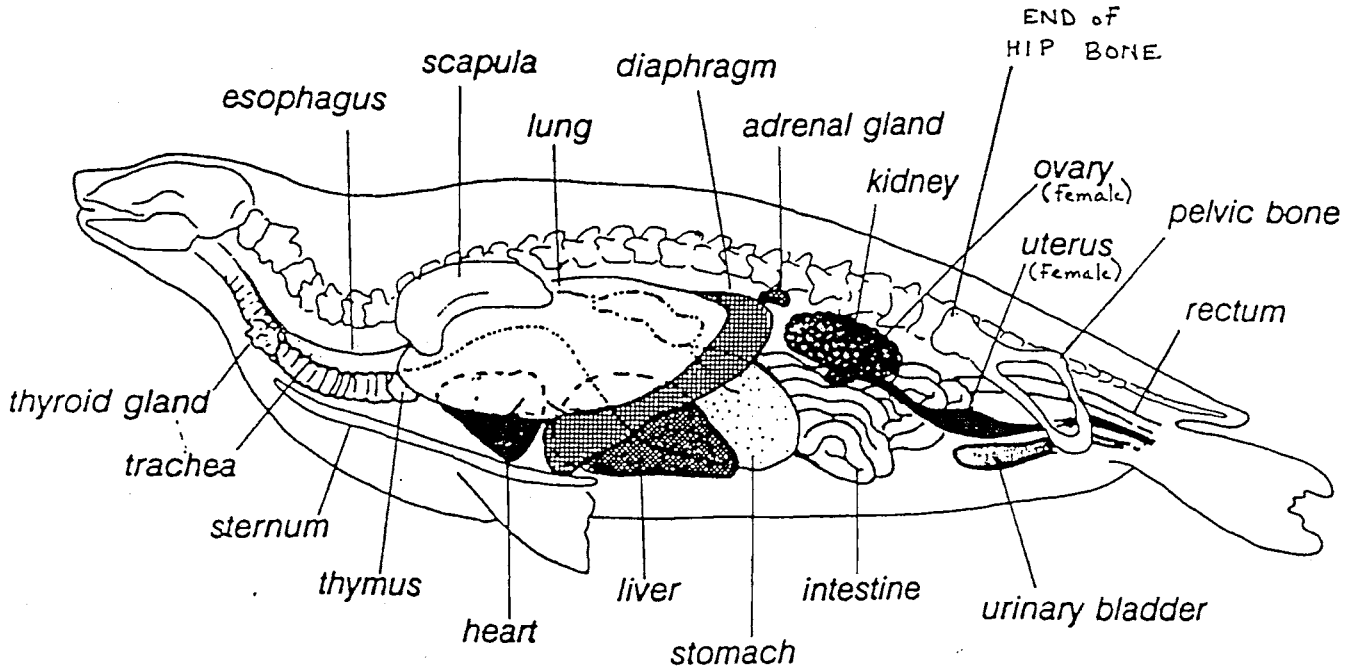


5. Put the chunk of blubber on a Teflon Sheet and wrap it up. Use a rubberband to keep it wrapped, if you want.
6. Put wrapped blubber in a Whirlpak bag with a completed label. Write BLUBBER on outside of bag.
7. Sandwich this bag between 2 GEL Ice packs to keep as cold as possible. Put in cooler or big Ziplok.

WE WANT THE FULL BLUBBER LAYER WITHOUT SKIN OR MEAT ON THIS SAMPLE.

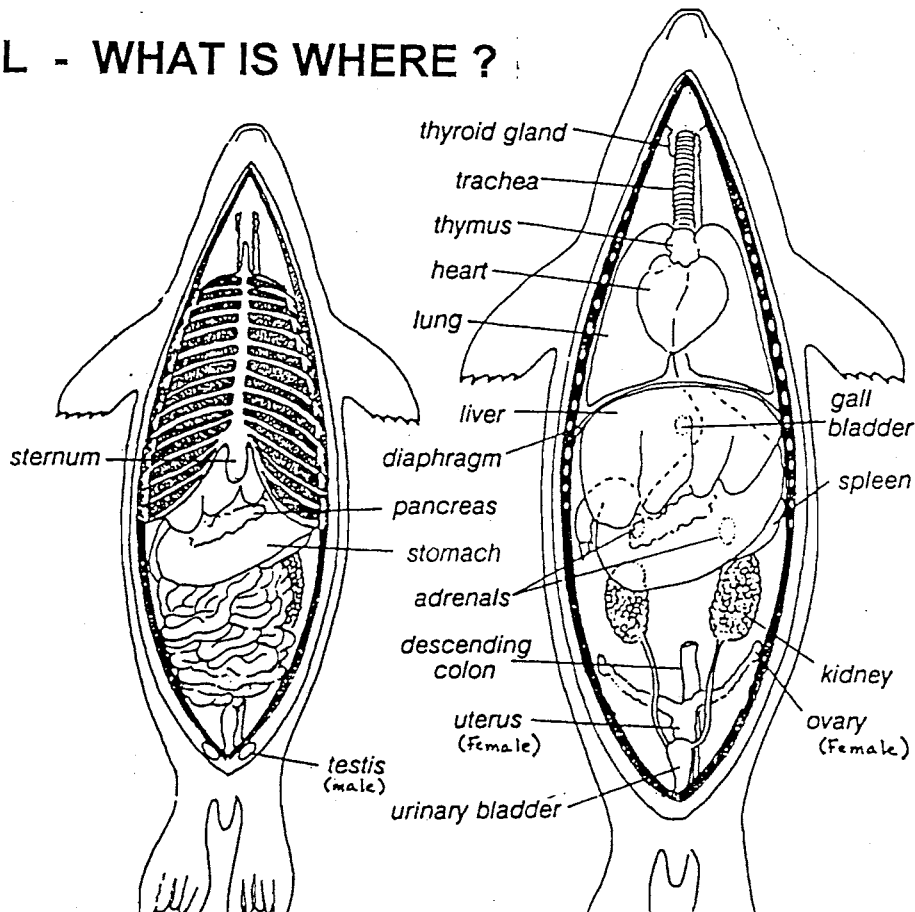


INSIDE THE SEAL - WHAT IS WHERE ?

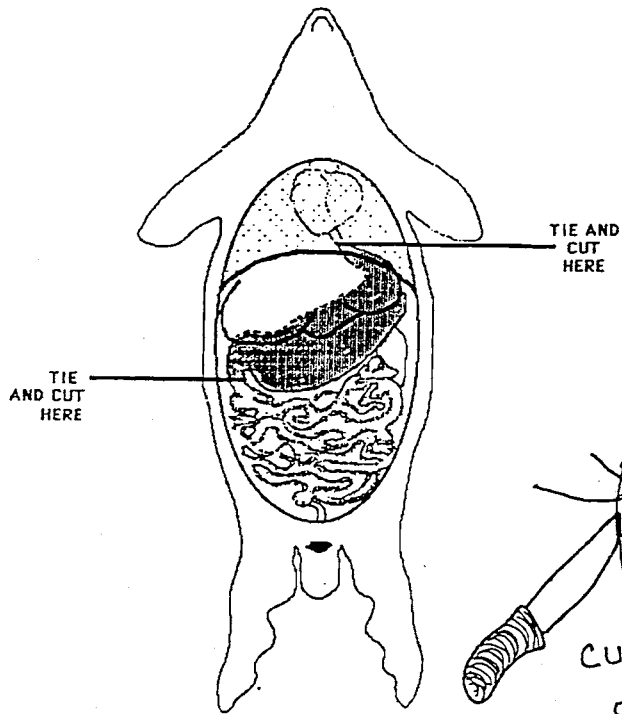


INSIDE THE SEAL - WHAT IS WHERE ?

The sternum is hard cartilage
 You can feel the end of it.
 Over the sternum is where you measure blubber thickness and the area you take blubber samples



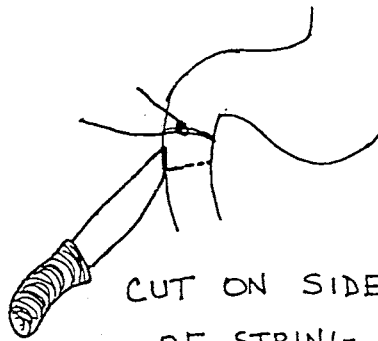
STOMACH



1. Move liver to find stomach.

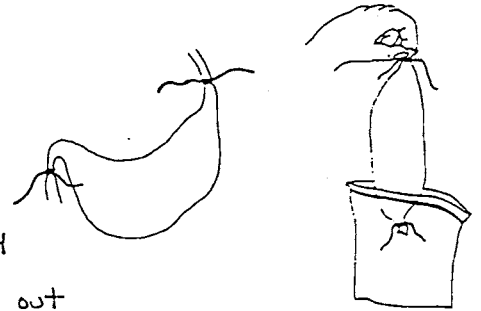
2. Use string to TIE above and below stomach before cutting.

3. Put stomach in large Ziplok with a completed label.



CUT ON SIDE
OF STRING
AWAY FROM STOMACH

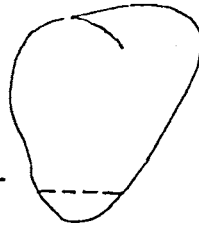
So food in stomach will not leak out



OPEN THE BODY CAVITY



LIVER



HEART



KIDNEY

Find the liver.

Cut off a thumb-sized chunk and put it in a Whirlpak with a completed label.

Write LIVER on outside of bag with marker.

1. Find the heart.

2. Cut off the bottom 1-2 inches and put it in a Whirlpak with a completed label.

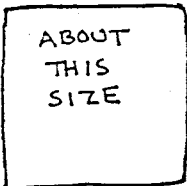
3. Write HEART on outside of bag with marker.

1. Remove intestines.

2. Find kidneys attached near spine and pull one away from the body wall

3. Cut off the bottom 1-2 inches and put it in a Whirlpak with a completed label.

4. Write KIDNEY on outside of bag with marker.

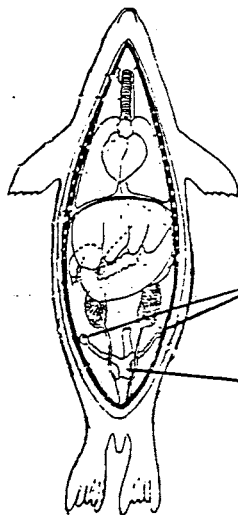


A small piece or cube about this size
for the liver, heart, and kidney.

Does not have to be from exact spots shown on pictures

BE SURE TO PUT SMALL LABEL IN BAG AND WRITE ON OUTSIDE
OF BAG WITH MAGIC MARKER WHAT PIECE IT IS.

IS IT A FEMALE ? COLLECT THE REPRODUCTIVE TRACT



OVARIES

UTERUS

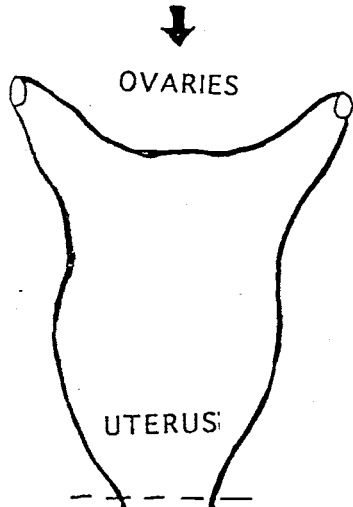
2. Carefully lift them up together.
Remove by cutting the base of the uterus
(as close to the anus as possible).

1. Locate the OVARIES and UTERUS near
the kidneys.

3. Put whole organ in a Ziplok with a
completed label. Write REPRO on outside
of bag.

IS THE FEMALE SEAL PREGNANT ?

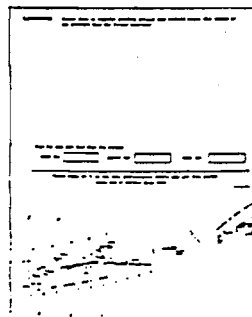
UTERUS OF A PREGNANT SEAL MAY
LOOK LIKE THIS



If there is a lump in the uterus, it is
probably a fetus. Mark Y here

If you collect the fetus, mark Y here

To collect the fetus: Don't open the
uterus or remove the fetus. Just put it
all together in one large Ziplok.



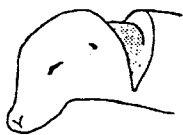
BACK OF DATAFORM

SAMPLING INFORMATION	
Village	Date Sampled
Species	month day year
Sample #	shot (today)
Sex	If it is a female,
Male (M) Female (F)	Was she pregnant? <input type="checkbox"/>
	lactating? <input type="checkbox"/>
	Was a fetus present? <input type="checkbox"/>
	collected? <input type="checkbox"/>
	Y or N
BODY MEASUREMENTS	
Blubber thickness (in millimeters)	<input type="text"/> mm
	<input type="text"/> mm

If you do not collect the fetus, mark N here

You can record the SEX and LENGTH of
the fetus in the Comment Section on back
of the Dataform.

THE HEAD



1. Bend neck and cut through meat behind skull

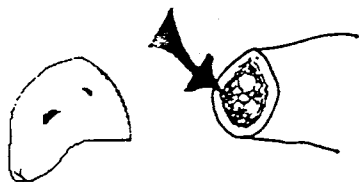


2. Cut carefully between skull and first neck bone to cut off head.



3. Put head in large Ziplok with a completed label.

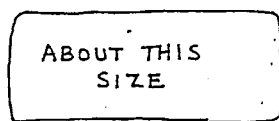
MUSCLE & SKIN SAMPLES



Cut thumb-sized piece of meat from neck and put it in a small bag with a completed label.

Write MUSCLE on outside of bag.

SKIN + MUSCLE



MUSCLE AND SKIN SAMPLES CAN BE TAKEN FROM ANYWHERE. DOES NOT HAVE TO BE FROM THESE EXACT SPOTS.



Cut thumb-sized piece of skin from the edge of skin on the head. Put in small ziplock with a label.

GATHERING SAMPLES

1. Put all small bags of samples into one larger Ziplok (from one seal)
DO NOT MIX SEALS!

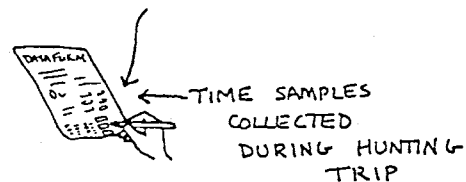
2. On DATAFORM check off samples you collected and approximate time they were collected

3. Put completed dataform into its own Ziplok bag.

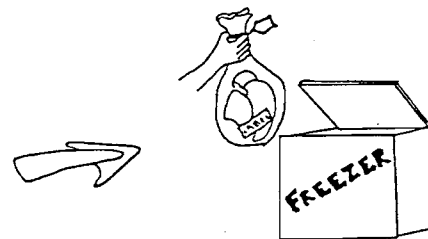
4. Put Ziplok with dataform, the head bag, stomach bag, and bag with small samples into one large garbage bag



TIME SEAL SHU.

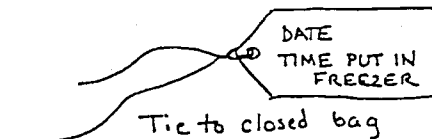


It is helpful to know about how long it was in hours between shooting the seal and collecting samples and Freezing. TIME CAN BE GUESSED AT AS GOOD AS YOU CAN.



5. FREEZE AS SOON AS POSSIBLE.

6. Write the time and date on the Bag Tag WHEN YOU PUT THE BAG IN THE FREEZER

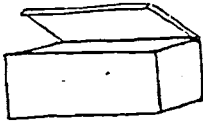


Tie to closed bag

SHIPPING THE SAMPLES

WHEN YOU HAVE ENOUGH SEALS IN THE FREEZER TO FILL A SHIPPING BOX:

1 FREEZE for at least 24 hours, one to two gel ice packs for each seal bag being shipped.



2 Put seal bags in shipping box with gel ice.

BE SURE THE SEAL SAMPLES ARE FROZEN SOLID!

You can open one of the big seal bags (as long as all the sample bags inside are all labeled) to spread around to fit better.

PACK AS TIGHT AS YOU CAN. If there is extra space - fill with crunched up newspaper.

3 TAPE UP BOX. Put FREEZE STICKERS and preaddressed airline shipping label on.

4 Take to the plane or the desk at the airport for your area.

IMPORTANT: SHIP ONLY when you know **WEATHER IS GOOD** and planes flying. **TRY TO PACK BOX AS CLOSE TO FLIGHT TIME AS POSSIBLE** so samples stay frozen longer.

5 CALL Alaska Fish & Game Subsistence to let them know when box is coming.

CONTACTS:

Kate Wynne - Marine Mammal Specialist

University of Alaska Sea Grant

900 Trident Way

Kodiak, AK 99615

907-486-1517

FAX: 907-486-1540

Vicki Vanek, DVM

Alaska Dept of Fish & Game - Subsistence Division

211 Mission P.O. Box 1163

Kodiak, AK 99615

907-486-1881 or 486-6715 FAX: 907-486-1869

IN BRISTOL BAY AND LAKE ILIAMNA AREAS:

If you have any questions or need more supplies:

Call Vicki Vanek (numbers above) or

Pippa Coiley and Molly Chythlook

Alaska Dept of Fish & Game - Subsistence Division

P.O. Box 1030

Dillingham, AK 99576

907-842-5925

FAX: 907-842-5514

Send samples and reimbursement forms to:

Craig Mishler

Alaska Dept of Fish & Game - Subsistence Division

333 Raspberry Road Anchorage, AK 99518

907-267-2357

FAX: 907-267-2450

IN SOUTHEAST ALASKA:

Matt Hookesh

Alaska Dept of Fish & Game - Subsistence Division

P.O. Box 211

Angoon, AK 99820-0211

907-788-3974

Mike Turek

Alaska Dept of Fish & Game - Subsistence Division

P.O. Box 240020

Douglas, AK 99824-0020

300-465-2629

IN THE CHUGACH REGION:

Monica Riedel

Alaska Native Harbor Seal Commission

Cordova, AK 99574

(907) 424-5882 FAX: (907) 424-5883

For tagging and population information:

Kathy Frost

Alaska Dept of Fish and Game

1300 College Rd.

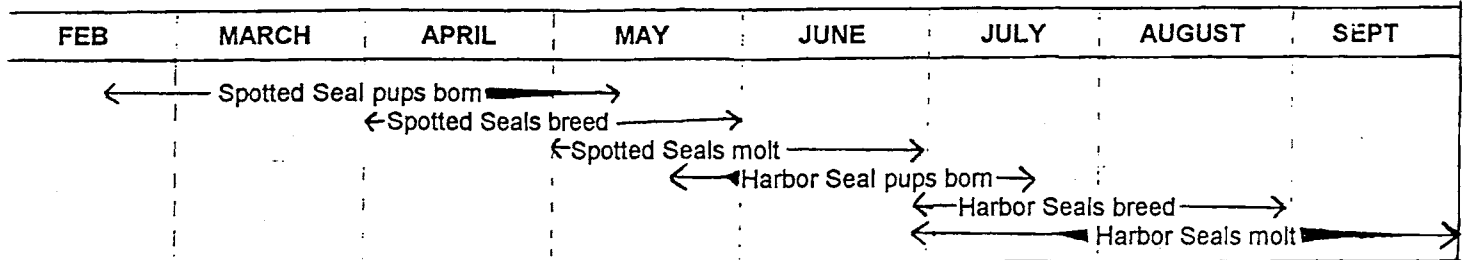
Fairbanks, AK 99701

(907) 459-7248 FAX: (907) 452-6410

HARBOR SEAL AND SPOTTED SEAL

Both Harbor Seal and Spotted Seal are found in Bristol Bay. These two seals look different when they are born. Harbor seals are born with a silver spotted coat like the adults. Spotted seals are born white and between 3 - 6 weeks old shed the white and grow a silver spotted coat like the adults. So after the seals are 3 - 6 weeks old and for the rest of their lives, they look very much the same. Harbor seals and Spotted seals are often confused with each other.

The way to tell them apart is by the different places they are found and the different times in the year that they have pups, breed, and molt. Harbor seals do everything about two months AFTER Spotted seals.



MOLTING is the yearly shedding of fur and outer layer of skin. It takes about two months. Individual seals can be different, but usually shedding begins around the body openings. Then spreads along the belly midline, over the neck, and over the hips. Then spreads to the rest of the body. During and right after the molt, the new skin looks pink and the fur is shiny and nice. Old skin is more yellow looking and the old fur may look duller.

IN MAY AND JUNE : CHECK THE SKIN OF THE SEALS !

If it is pink and new and the seal is molting, it is a **SPOTTED SEAL**.
In May to late June, **HARBOR SEALS** will still have all old skin and fur.

HARBOR SEAL

Adults issuriq
Juvenile useqnak
Baby pup qallacikiyak



Average size: 6 feet 250 lbs.

Pups: Born with spotted silver coat
White languno is shed before born inside mother -
it may be found in mother's afterbirth
Born mid-May to mid July in Bristol Bay - most in **JUNE**
Born **ON LAND** - rocky islets, etc. usually near the
intertidal zone (between high & low tide marks)
Weaned from mother 4-6 weeks
Can swim same day they are born

Adults breed: July - Aug in Bristol Bay
Annual molt: LATE JUNE - SEPTEMBER

Where found: Near the coasts and up rivers.
Haulout on sandbars, rocky shores, ice

Found year round in Bristol Bay

SPOTTED SEAL

Adults issuriq
Juvenile useqnak
Baby pup ul'utvak



Average size: 5 feet 210 lbs.

Pups: Born with white coat (languno)
Sheds white languno at 3-4 weeks old to spotted
silver coat
Born mid-February to early May - most in **APRIL**
Usually born **ON ICE FLOES**

Weaned from mother 3-4 weeks
Do not swim until after weaned (3-4 weeks old)

Adults breed: April - May
Annual molt: MAY - JUNE

Where found: From late fall to summer, use ice floes
at the ice pack edge. Haulout on ice floes.
Move north with the ice and leave Bristol Bay

Are not in Bristol Bay during the summer

ATKAN ALEUTIAN

WESTERN ALEUT HARBOR SEAL AND
SEA LION BODY PARTS
Courtesy of Moses Dirks, Atka

head -- kamgix̂
eye -- dax̂
nose -- angusix̂
mouth -- agilgix̂
jaw -- husix̂
tooth -- agalux̂
tongue -- umsux̂
whisker -- inglaakus
ear -- tutusix̂
neck -- uyuix̂
throat (trachea) -- tunuuluix̂
shoulder -- qanglix̂
chest -- simsix̂
breast -- maqdaix̂
front flipper -- chaix̂
tail flipper -- kitax̂
claw -- qagalgix̂
back/backstrap -- hachix̂

skin/hide -- igluqax̂
fat/blubber -- chaduḡnaix̂
short tail -- tihmaqux̂
male genitals -- qatxax̂
female genitals -- chilchix̂
anus -- idigasix̂
hair -- chngax̂
meat -- ulux̂
rib -- sakiigix̂
skeleton -- qagnaix̂
heart -- kunuugix̂
liver -- aagix̂
kidney -- daax̂tuix̂
lung -- humgix̂
intestines -- illiigis
stomach -- kimiaix̂
gall bladder -- chitxix̂
blood -- aamgix̂
lymphatic gland -- tuhmuix̂

HARBOR SEAL BODY PARTS

Courtesy of Philomena Knecht and Florence Pestrikoff, Kodiak
Koniag and Chugach ALUTIIQ

seal: isu'iq, qaigyaq
male: erilek
female: arnaqiitak
head: nasquq
eye: iingalak, iingaq
nose: qengaq
mouth: qaneq
tooth: gun, neruteq
tongue: uluq
whiskers: ungateq
ear: cuuteq
throat: igya'aq
shoulder: tuik
chest: gaateq
teat: amaq, muk
flipper: itgaq, it'aq
chest: gaateq

claws: stuu'ut
anus: eteq
tail: pamyuq
back: pequq
skin: amiq
fat/oil: uquq
meat: kemek
heart: unguan
rib: raataan
bones: nenret, skeleton: neneq
liver: aarit, tenguk
kidney: tartuq
lung: kemagnaq, cuplluq
intestines: qilut
stomach: suqaq, aqsaquq
blood: auk

SOUTHWEST YUP'IK

HARBOR SEAL BODY PARTS

Courtesy of Molly Chythlook

male - angucaluq
female - arnacaluq
skin - amiq
head - qamiquq
eye - iik
nose - qengaq
ears - ciutek
mouth - qaneq
throat - igyaraq
tooth - keggun
tongue - alungun
whiskers - ungak
chest /shoulder - keggan
teat - amaq
back - pequq
tail - pumyuq
front flipper - unan
back flipper - itraq
claws - cetumquq
blubber - uquq
meat - kemek
heart - unguvan
liver - tenguk
kidney - tartuk
lung - pugtaun
stomach - aqsaquq
intestine - qiluq

SOUTHEAST ALASKA HARBOR SEAL AND SEA LION BODY PARTS

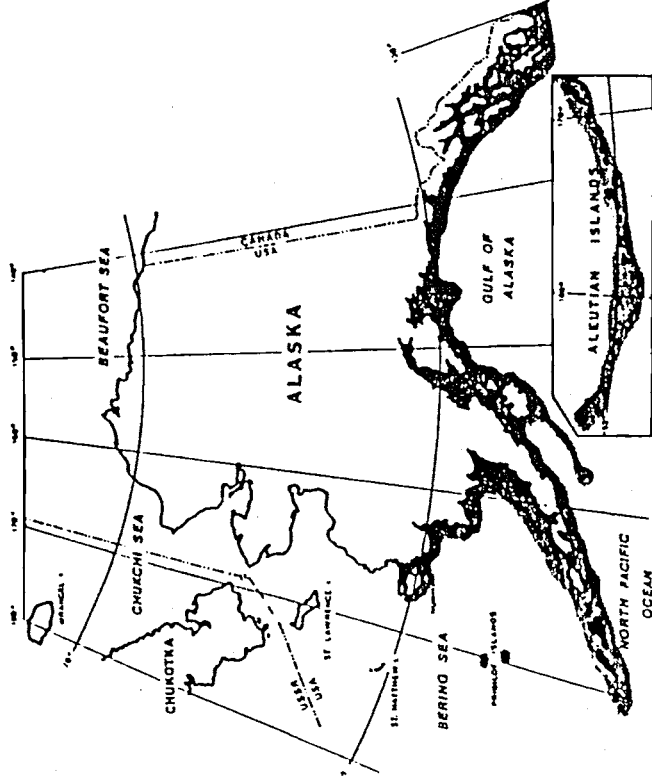
Courtesy of Matt Kookesh and Bob Duncan, Angoon

TLINGIT

seal - Tsaa
head - Shá
nose - Lú
mouth - X'é
jaw - X'ás'
tooth - Oox
tongue - L'óot'
whiskers - x'adaadzaayi
ear - Gúk
neck - Lidix'
throat - Leitóox
shoulder - Xikshá
chest - Wóow or wóowká
breast - l'aa
front flipper - jini

tail flipper - geení
back - dix'
skin - doogú
fat - taayi
oil - eexí
meat - dleey
heart - téix'
rib - s'óok
liver - tl'óogu
intestines - naasi
stomach - yoowú
bladder - teiyi
blood - shé
tail - léedi

GENERAL DISTRIBUTION OF HARBOR SEAL



(Source: Burns, Frost, and Lowry 1985)

CONTACTS:

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 907-788-3974

Mike Turek
 Alaska Dept of Fish & Game - Subsistence Division
 P.O. Box 240020
 Douglas, AK 99824-0020
 800-465-2629

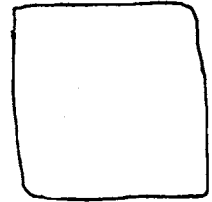
HARBOR SEAL SAMPLES TO TAKE:

- 1 HEAD whole head
- 2 SKIN one small piece
- 3 MUSCLE one small piece
- 4 BLUBBER one small piece
- 5 BLUBBER one large piece in Teflon

TAKE FULL THICKNESS OF FAT!

- 6 STOMACH whole stomach
- 7 LIVER one small piece
- 8 KIDNEY one small piece
- 9 HEART one small piece

The small pieces are about one inch size.



SEAL and SEA LION Harvest Data Form

Office Use Only

Sps Date # Vill. AF Number

Latitude ° ' Initials

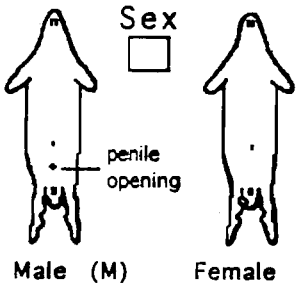
Longitude ° ' Date

SAMPLING INFORMATION

Village Date Sampled Sampler's Name

Species Sample # Location of harvest

month day year
shot (today)



If it is a female:

Was she pregnant?

lactating?

Was the fetus collected?

Y or N

sex of fetus

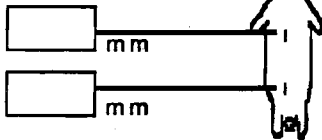
M or F

Was a tag or brand present?

If Yes, please describe it Y or N

BODY MEASUREMENTS

Blubber thickness
(in millimeters)

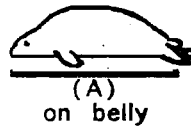


Weight : pounds

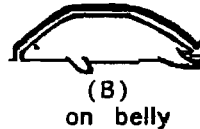
Seal was weighed before it was bled
 after

* Measure these in centimeters ! *

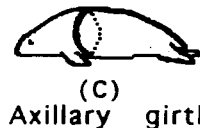
Standard Length: seal on belly (A) cm



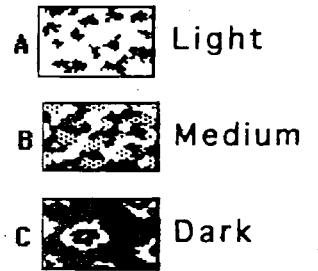
Curvilinear Length:
seal on belly (B) cm



Axillary Girth
around seal at armpit (C) cm



COAT COLOR
on back was
mostly :



(circle one)

SAMPLES

What samples did you collect ?

- whole head
- whiskers
- skin
- blubber (in teflon)
- blubber
- muscle
- kidney tissue
- heart tissue
- liver tissue
- female repro tract
- stomach
- other _____

Approximately what time did
you kill the seal ?

am
 pm

What time were these samples

collected am
 pm

frozen am
 pm

Comments: Please draw or describe anything unusual you noticed about this animal or did different than the manual described :

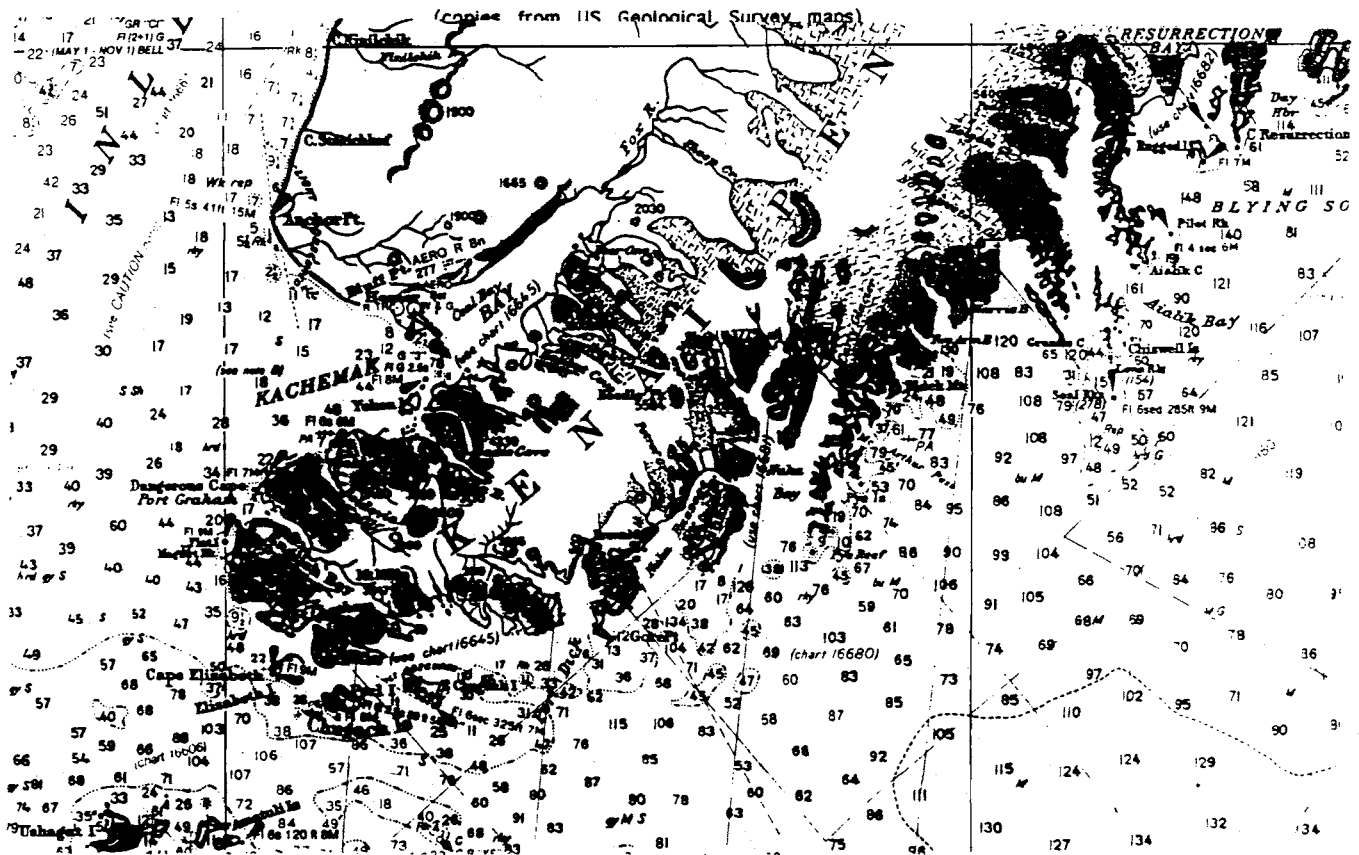
When you shot the seal, it was :

swimming

hauled out on land

hauled out on ice

Please make an X on the map approximately where you got this animal



APPENDIX C: Harbor Seal Workshop #3 Summary
RurAL CAP Library, Anchorage, Alaska
March 5, 1996

Prepared by Carl Hild (RurAL CAP) and Monica Riedel (ANHSC)

The meeting was called to order by Alaska Native Harbor Seal Commission Chair, Monica Riedel at 8:45 AM; The Invocation was provided by Riedel.

ANHSC Commissioners in Attendance:

Aleutian/Pribilof Islands Association	Flore Lekanof
Chugach Region	Monica Riedel, Chair
Cook Inlet Region	Alfred Quijance, Sec.
Kodiak Region (KANA)	Virginia Squartsoff, alt
Southeast Native Subsistence Commission/ Central Council of Tlingit/Haida	Harold Martin Vice-Chair

Community Representatives Present:

John Totemoff	Chenega Bay	907-573-5352
Gordon Norman	Port Graham	907-284-2216
Jim Totemoff	Eyak	907-424-3852
Hoyt Ogle	Seldovia Village Tribe	907-234-7898
Steve Totemoff	Tatitlek	907-325-2311
Virginia Aleck	Chignik Lake	907-845-2233
Mark Lamoreaux	Cook Inlet Marine Mammal Council	907-696-8645
Ruth Cassidy	Cook Inlet Marine Mammal Council	907-248-7727
Jessica Hopkins	Eyak Youth	907-424-7632
Iris O'Brien	Eyak Youth	907-424-4367
Don Kompkoff	Chenega Bay	907-573-5132
John Boone	Valdez Native Tribe	907-835-5332
Nick Tanape	Nanwalek	907-281-2205

Other participants present:

Michael Castellini	UAF	907-474-6825
Brian Fadely	UAF	907-474-5243
James Fall	ADF&G Subsistence Div.	907-267-2359
Georgia Finau	NMFS	907-586-7023
Kathy Frost	ADF&G Wildlife Conservation	907-459-7200
Brenden Kelly	UAF	907-474-7662
Matt Kookesh	ADF&G Subsistence Div.	907-788-3516
Jon Lewis	ADF&G Wildlife Conservation	907-465-4291
Tom Loughlin	NMFS-Seattle	206-526-4046

Ann Miller	Pacific Rim Research	707-895-2248
Craig Mishler	ADF&G Subsistence Div.	907-267-2357
Bob Schroeder	ADF&G Subsistence Div.	907-465-3617
Linda Shaw	NMFS-Juneau	907-586-7510
Ron Stanek	ADF&G Subsistence Div.	907-267-2362
Vicki Vanek	ADF&G Subsistence Div.	907-486-6715
Kate Wynne	UAF-Sea Grant Marine Adv.Prog	907-486-1517

RurAL CAP Staff present:

Carol Torsen, Subsistence Coordinator	907-279-2511
Carl Hild, Biologist/Planner	907-279-2511
Carl Jack, Subsistence Director	907-279-2511

Participants introduced themselves and the organizations they represented. Riedel then gave her opening statements.

**PRESENTATION BY CHAIRPERSON, MONICA RIEDEL ON MARCH 5, 1996
HARBOR SEAL WORKSHOP #3 HELD AT RurAL CAP IN ANCHORAGE, ALASKA**

First of all, I would like to thank everyone who made this gathering possible. Special thanks go to my elders and mentors who are involved in marine mammal management, the EVOS Trustee Council for funding, ADF&G for acting as lead agency for this project, Carol Torsen for making the travel arrangements, Carl Hild for continuous technical assistance(TA), Eric Smith for counsel, Alaska Sea Otter Commission for TA, Chugach Regional Resources Commission for TA, and most importantly those who have contributed and coordinated the potlatch lunch.

Exactly one year ago, The Alaska Native Harbor Seal Commission was just a budding concept. We became part of an evolving process. It has become clear to me through my elders and mentors that it is time to refocus on Alaska Native Cultures and the wisdom they hold. There needs to be more effort to have all Alaska Native Groups working for the betterment of Alaskan Natives. I would like to share a quote out of The Traditional Knowledge and Ways of Knowing Summary of September 1994.

“Alaska Natives may need to start their own institutions to establish the requirements for collection, utilization, and stewardship of ancient lessons. The true value of traditional knowledge is not just in its recording. It has a spiritual component which is critical to its application. In order to be complete, traditional knowledge must be lived to be known, used, and passed on to future generations.”

I would like to recognize our elder in the audience, John Totemoff from Chenega Bay and our Youth Representatives Jessica Hopkins and Iris O'Brien from the Native Village of Eyak in Cordova.

I would like to give a brief overview of the ANHSC's development. In March of 1995 at workshop #2 a large Native representation decided to start the Commission. We all signed a letter to National Marine Fisheries Service (NMFS) regarding the stock assessment process. We did not agree with the separation of the harbor seal population into three separate stocks. We would rather have seen them separated into three management units. We agreed with the Alaska Scientific review group that there was insufficient data to determine the genetic distinction of three different stocks.

In May of 1995 NMFS sponsored a meeting of Alaska Native representatives to formalize the ANHSC. By-laws were adopted and commissioners were elected. This took a lot of volunteer effort and technical assistance from other organizations. In July of 1995 NMFS published the Alaska Region Status Assessment Reports. Under the Strategic Status, they classified the Gulf of Alaska Harbor Seal as N/D with a footnote: "N/D indicated an estimate was not determined. NMFS will determine these values after considering relevant information through the co-management process with affected Alaska Native Organizations".

During the course of the spring and summer, the Chair submitted several proposals to involve hunters and users of harbor seals in research. In August of 1995, the EVOS Trustee Council awarded a contract to us to hold 2 workshops and develop a pilot program to collect tissue samples from subsistence taken harbor seals in six communities. This morning we will be hearing an update on the biosampling project and the latest in harbor seal research from the scientific community. Everyone is invited to stay for a traditional foods potlatch lunch from 12:30 - 2. At 2PM the Commissioners and Native Representatives will reconvene to address Harbor Seal Commission Issues.

Thank you

The **Agenda was adopted** by a motion from Lekanof with a second by Martin.

Commissioners and community representatives provided local observations, concerns, and ideas. Overall it appears that seals have been seen a bit more frequently except for Prince William Sound where they are not common.

- **Boone** of Valdez said that they were still hard to find but he has not found any abnormal ones as he had last year.
- **Ogle** from Seldovia has seen smaller, younger animals, but few overall.
- **Lamoreaux** of Cook Inlet cited that the numbers are returning to mouth of the Susitna River and following fish up the Knik Arm.
- **Aleck** of Chignik Lake, stated that they have declined, are small, with few adults that are not as fat. Last year she found a tapeworm in one.
- **Squartsoff** of Larsen Bay(KANA), reported very few were seen and there is concern about fishermen from outside shooting them in the summer.

- **Totemoff** of Cordova stated that to know the seals you must know the feed. Seals follow the fish.
- **Totemoff** of Tatitlek commented that there is less hunting as most people are working at paying jobs.
- **Lekanof** commented that 38 years ago there were many seals in Chignik.
- **Martin** reported that an Angoon-Whitewater Bay seal shot in the winter sank and had only one inch of blubber and one little octopus in the stomach.
- **Matt Kookesh** from Angoon stated that the biosampling program has worked to get payments out quickly to the hunters and there has been good local involvement with 60 sets of samples so far from four communities. He provided the group with an outline of the Southeast Bio-sampling program.

Brenden Kelly UAF Biologist: Status & Trends of Harbor Seals

Brenden Kelly provided an overview of the status of harbor seals over the past century. Annual takes have gone from a high of nearly 60,000 under the a bounty program to the current subsistence level of 2,700. There has been a regular declining trend in the past fifteen to twenty years, but it is unknown exactly what is happening at this time as there are some indications that it may be slowing or leveling. The total population is an estimate which has had varying levels of confidence. It appears to be down, reflecting the trend information, but it is not clear if it is low enough to cause concern in light of the increasing numbers in Southeast and the **question of the definition of the biological stock's range.**

It appears that the numbers of pups per female have remained the same. What seems to have changed is the lack of yearlings. This then reduces the absolute number of mothers in future years. The problem appears to be with the first year survival of pups.

The research site on Tugidak Is. has been an excellent source of information. It would be very good to have similar sites in other areas. **If any one knows of a haul-out with a cliff near by where researchers could set up camp and watch please let him know.**

Jim Fall: ADF&G Subsistence Division

Fall reported on the Harbor Seal/Sea Lion Harvest Monitoring Program. This program will likely continue into the spring of 1997 for a total of five years of data from 2,100 households. It will then likely be done by following some specific communities for trends. For sea lions, the numbers of take have been decreasing along with the percentage of struck and loss. Overall the take level has been very stable for harbor seals at nearly 2,700 animals per year. 57% of all Harbor Seals taken are in Southeast and 18% in the Gulf of Alaska.

Fall discussed the current **Abnormality Study** and that there is a 24 hr/day number to call if any hunter wishes to report a problem with a subsistence resource. He clarified that this study would include any plants and animals collected in or along Cook Inlet. **The number is 1-800-267-2552.**

Craig Mishler: ADF&G Subsistence Division:

Mishler reported on the Whiskers! Database and gave a demonstration on RurAL CAP'S library computer where a copy is permanently housed.

He discussed three video projects. The first completed was an overview of harbor seal research. This has been distributed and has a few copies left if any one is interested. The second is just about completed and deals with the biosampling training. This will be distributed to all communities involved in the biosampling programs to be used as a mini refresher course. The third video is being started and will deal with Harbor Seal Hunting and Processing and will involve the people of Tatitlek.

Discussion:

There was discussion at this point about the texture and quality of seal oil verses sea lion oil. Mike Castellini of the UAF responded by mentioning the research his group is currently working on to evaluate the various oils which make up blubber and how it changes with species, season, and status of the animal as well as its impact on flotation, energy expenditure, and overall health.

Kate Wynne of Sea Grant Adv. Program. and Vicki Vanek from ADF&G Subsistence Div.

Kate and Vicki presented a series of slides on healthy and unhealthy seal tissues. They discussed the various programs currently underway that deal with biosampling of harbor seals. There are a number of programs and some require quite different methods of handling the tissues to be sampled. It is important to get the samples labeled and into the appropriate containers so that they are analyzed properly. They answered many questions on the association between the health of the seal and its use as food. There were rules of thumb provided but specific answers could not be provided without more details. The intent of the presentation was to show the difference between healthy and unhealthy animals and that even if there appears to be some unusual tissues in the animal that they may be due to injury and the animal is still safe to eat. They also were encouraging all hunters to submit any strange looking tissues to their programs so that a better understanding of seal health can be generated.

Linda Shaw of National Marine Fisheries Service:

Linda introduced **Georgia Finau**, who is on assignment from BIA to NMFS to address co-management concerns. Linda discussed the Draft Conservation Plan. This has been in process for about five years now. NMFS is looking for ANHSC comments on this draft. It was discussed that Alaska Natives do not wish to comment on a draft that is largely completed, but do want to be involved from the beginning and at the table as ideas for such a plan are being developed. As this plan is not moving quickly and has no specific deadline, it is still early in the process of development of language and so the ANHSC was requested to specifically review it and make substantial comments. Linda mentioned that she had requested similar involvement at the Harbor Seal Workshop 1 and ANHSC meetings last March. It was suggested that perhaps a meeting should be scheduled to specifically work jointly on a draft.

Linda reviewed the programs that are currently underway and provided a handout showing the funding levels and time frames of work being conducted on harbor seals. **NMFS has clearly identified the Gulf of Alaska Harbor Seal stock as a priority animal for the development of a co-management agreement for the collection of data to be able to classify it as either strategic or non-strategic.**

Kathy Frost: ADF&G Wildlife Conservation Division

Kathy mentioned her part in supporting two students from Cordova to be at the meeting and that perhaps the students would be interested in being observers for this summer's surveys. Kathy presented her most recent newsletter in which she plans to continue to provide research updates to the communities. Second, she talked about some new mathematical ways to evaluate the counts that have been made on trends. She introduced Jon Lewis of ADF&G and Tom Loughlin of NMFS. She has been able to better determine that a general decrease has been seen in the Prince William Sound trend sites of about 5-6% per year. The '95 count is up slightly and the '96 count will help determine if it is "statistical noise" or a change in the downward trend. Third, she talked about the satellite tagging efforts that indicate that adult harbor seals are "home bodies" and juveniles will travel around quite a bit **adding to the question of "stock" definition.** There seems to be a real scarcity of seal pups specifically around Chenega. She asked that if any hunters find tags from the seals to please let her or Riedel know so that they can compare the samples to what they saw the first time with what they find the second time. Kathy talked about diet studies evaluating 70 fatty acid combinations and that there are some indications that seals can be identified into very discreet feeding populations. She then talked about the computer models regarding the mathematics and statistical data.

Jon Lewis of ADF&G Wildlife Conservation:

Jon reported on the numbers for Southeast and Kodiak. They have both been increasing. They have been flying surveys around Southeast and Kodiak. **They have been seeing an increase in seal numbers every year from '92 to '95 around Kodiak.** They are looking specifically at food habits by studying fat samples, and stomach content and scat analysis. They would like assistance in getting samples and will work with individuals and groups who are interested. They will let us know when and where they will be working this summer and make more of an effort to involve the hunters in the respective areas. They are very pleased with the way the samples are coming in from Southeast in the packaging and recording. They are also collecting scats for studies. They are looking specifically at food habits by studying fat samples, stomach content. He mentioned coming back to local areas and including historical local knowledge to make the studies more complete.

Mike Castellini UAF

Mike reviewed the research being conducted by the University of Alaska Fairbanks, Institute of Marine Science. He talked about how unique this meeting is and how great it is to have the ability to meet and talk about what is really important to the resource users. He gave a history about his 20 years of studying seals all over the world to basically learn how seals make

their living in the oceans. He takes the blood samples and try to figure out the chemistry to find out the health of the animals. He works with Kathy, Jon, the Seal Lion Commission, and the Harbor Seal Commission. They have a huge database, over 300-400 blood samples looking at protein levels, cholesterol levels, sugar levels, how healthy the red cells look. They are trying to get a normal range, and not so normal range. The disease and health range. From all the studies they have not found any indication of diseased animals. They all look pretty healthy which is good for using it as a nutritional resource. By providing the samples, they can look for patterns and how it varies from year to year. They are trying to find out about the blubber content. Everything they do is based on fat.

They need it to make rich milk for their pups, they need it for energy, they need it to keep them warm, and for buoyancy, It is really critical to them as to how they maintain that blubber. They are interested in the different quality of blubber. They can look at what is happening now and using the archived blubber try to figure out what was happening in the past. They would like to work with more fresh water seals.

They just started investigating metal analysis. Looking at cadmium, lead, and others. They found in 1992-93 that a metal event took place in Southeast where they found an increase in the element zinc that was taken up by seals in their fat. This is being investigated.

Mike mentioned the new Seward SeaLife Center and asked that the ANHSC discuss in a future role how they would like to see potential work done at the SeaLife Center of relative to food base issues and how they vary in regards to seals. He would like us to talk about these opportunities that may come up later on down the line.

The participants then took time for a traditional foods lunch.

At 2:00 PM the ANHSC held a meeting with the Community Representatives.

ALASKA NATIVE HARBOR SEAL COMMISSION
Meeting
RurAL CAP Library, Anchorage, Alaska
March 5, 1996

The meeting was called to order by Chairperson, Monica Riedel at 2:00 PM. Those in attendance were the Commission members, the community representatives from the morning HSRW3 meeting, RurAL CAP Staff, Brenden Kelly, Anne Hoover-Miller, and attorney Eric Smith.

ANHSC Commissioners in Attendance:

Aleutian/Pribilof Islands Association
Chugach Region
Cook Inlet Region
Kodiak Region (KANA)
Southeast Native Subsistence Commission (&CCTH)

Flore Lekanof
Monica Riedel, Chair
Alfred Quijance, Sec.
Virginia Squartsoff, alt
Harold Martin Vice-Chair

Community Representatives Present:

John Totemoff	Chenega Bay	907-573-5352
Gordon Norman	Port Graham	907-284-2216
Jim Totemoff	Eyak	907-424-3852
Hoyt Ogle	Seldovia Village Tribe	907-234-7898
Steve Totemoff	Tatitlek	907-325-2311
Virginia Aleck	Chignik Lake	907-845-2233
Mark Lamoreaux	Cook Inlet MMC	907-696-8645
Ruth Cassidy	Cook Inlet MMC	907-248-7727
Jessica Hopkins	Eyak Youth	907-424-7632
Iris O'Brien	Eyak Youth	907-424-4367
Don Kompkoff	Chenega Bay	907-573-5132
John Boone	Valdez Native Tribe	907-835-5332
Nick Tanape	Nanwalek	907-281-2205

MOTION: The agenda was moved for approval by Lekanof and seconded by Martin

MOTION: The minutes of the September 26, 1995 meeting were moved for and approved by Martin and seconded by Lekanof, the mention of a fine job by Rural CAP staff, Carl Hild.

Eric Smith then went into a historical, political, and legal review of co-management. He said that **Since no harbor seal stock is listed as depleted** the management of subsistence take is **totally under the jurisdiction of Alaska Natives**. There is concern about the Gulf of Alaska stock and so attention is being drawn to how the Native community is responding to the declining numbers. The government sees that by working cooperatively with Natives they will get a lot further than not working with the Natives. Alaska Natives have had a long tradition of local management of behavior of the hunters. The written documentation of these practices would provide some form of evidence that the governmental management agencies could identify as showing that they exist other than in a oral tradition.

Smith talked about the way the Alaska Eskimo Whaling Commission (AEWC) worked things out with the federal government. The bowhead is an endangered species. Their agreement is very strong. Basically, they showed the National Marine Fisheries Service (NMFS) that they could handle their people. The whaling captains set the rules, quotas, enforce their regulations; if the hunters break their rules they handle it. The federal government role is for back up. If they run across a person who won't deal with them, they refer that person to federal prosecution. This process has developed a good relationship between the AEWC and the NMFS. Through the AEWC's agreement, the NMFS is confident that the whaling captains can handle their people and this has shown a lot of mutual respect. What they did, is real ground-breaking and sets a very good precedent for other Native Groups. Through that agreement, NMFS has pretty much understood that the Natives should manage themselves, and they should serve as a back up capacity to make sure things work when the Natives themselves think that they need that governmental assistance.

Smith gave us ideas to follow in four areas: Research, Regulations, Allocation, and Enforcement. He also suggested to add a funding mechanism.

Lekanof summarized by saying that the Alaska Natives are working toward "Management by consensus of a coalition of tribes and tribal organizations." With the understanding that the management is of the behavior of the people who seek the common bounty of nature.

Boone suggested that language needs to be considered for individual hunters who may take the majority of the animals for any community. They are the best hunters and therefore they are "designated" hunters who provide and share with the entire community or at least a large extended family group. They should not be limited or considered poachers when they take more animals than they personally consume. Community examples of food sharing should be documented as part of Alaska Native management.

Eric Smith acknowledged that NMFS has its priority stocks and that the stock assessment process will begin again after August. Healthy stocks may be of interest and would provide a comparison of how similar Native practices exist throughout the state and that declines are only occurring in one area, therefore it is not subsistence that is the concern, but some other factors.

Hild said that he talked to Doug DeMaster at NMFS -Seattle and he said that the nondetermined stocks will be reviewed on an annual basis, so coming this August they will start that process.

Brenden Kelly: Numbers are coming up in Tugiduk, The bigger part of the population are not declining but the Prince William Sound Area are still on a decline.

Smith said that "if the ANHSC feels that the declining Gulf Stock is a priority as a whole, then we could put our co-management efforts in that direction."

Smith further went on to say, that it is real important for the Commission to watch those stock assessments carefully.

Patricia Cochran of the Alaska Native Science Commission was introduced by Carl Hild. She reported that the Elders Healing Conference was just held and she brought a message to us from them: "They do not wish to use the word **integrate** traditional knowledge in western science research, it is not what we believe in. Traditional knowledge should not be measured by or adapted to western standards. Western standards should be flexible enough to include traditional knowledge. They gave a visual and put it on the board and said that "the power of our circle can not fit within the square wall of a box," the box being an institution. The circle is bigger and that we should fit within the circle and not within the institution."

Brenden Kelly

Kelly provided a review of aerial survey concerns and the need for Alaska Native involvement in identifying survey routes and sites. Matt Kookesh and Monica had contacted him regarding possible places that the NMFS may have missed. He explained how the Service does the surveys

and they only do them in August or September. This he says may not take into account the spring/summer movements. Martin said that the maps should be shared with the local hunters that hunt seals because they know where they haul out. If everyone gets together, there will be more open communications. People involved with the biosampling, Sitka marine mammal commission could be contacted to participate in these surveys. Brenden suggested we get copies out to each region and have the commissioners look at the maps and give them a chance to have input if any on the places where they think should be surveyed. **If there are concerns about the timing and location of surveys please contact Monica and /or Kelly so that local involvement can occur for planning of future work. Particularly with the non-determined stocks potentially strategic stock. It is in our best interest that counts are not missed in specific sights.**

Questions were brought up regarding if the observers could see the pups?

There was discussion about the best times to count seals. Brenden said that research funds are everybody's and if we think there are better times to count seals then it may be worth looking at. Maybe more local people should go along on initial surveys.

It could be in a co-management agreement that knowledgeable people are involved in those surveys.

Riedel discussed submitting the ANA grant again and she asked for support from the community representatives.

Ann Hoover-Miller

Ann discussed her report on the incorporation of traditional knowledge in research. She is suggesting that surveys be conducted year round from boats to locally known sites to gain use frequency and trend information. She would like to work with ANHSC and hunters to identify routes that could be suggested to be developed into a proposal from. The ANHSC to the EVOS Trustee Council for a pilot year-round survey project. It was proposed that there be a component that would document local knowledge on the distribution of seals through some form of mapping exercise. In addition, the logging of community observations are anecdotal only until they are written down and documented in some form other than verbal reports, then they become the basis for theories on how animals behave. The ANHSC can do this type of work.

A concern was raised as to how to collect and present Native knowledge and understanding so that it cannot be used against those who depend on Harbor Seals. She be made it clear that **mapping efforts will only state where seals are, and not where people hunt**. Ann stated that the better the numbers the less likely they can be used specifically for or against anyone because they will be closer to the truth.

Ann was asked by Riedel to submit a pilot fall/winter/spring survey proposal to the EVOS trustee council. This will help develop regional biology reports. This will include distribution patterns, and include local knowledge. When seals use a particular place and when are they elsewhere. The proposal will include local hunters to try to locate two sites in Kodiak, Cook Inlet, and Prince William Sound. Community observations is another part of this proposal. These data will be put into newsletters by a local person working with Riedel. Martin supported the idea of the proposal and noted that we should look at all areas of funding.

Action Items

MOTION: It was moved by Lekanof and seconded by Squartsoff that: The Alaska Native Harbor Seal Commission make application to the Rural Alaska Resources Association for membership. Passed unanimously. Riedel should prepare the request letter soon as RARA will be meeting in Juneau on March 18.

MOTION: It was moved by Lekanof and seconded by Aleck with a round of friendly amendments that: The Chair of the Alaska Native Harbor Seal Commission Select a committee of three to review and make recommendations on the Draft Harbor Seal Conservation Plan. Passed unanimously.

Riedel then asked for volunteers and identified the committee as Lekanof, Martin, and Squartsoff.

MOTION: It was moved by Lekanof and seconded by Boone that: The ANHSC be represented on the science policy making body of the new Seward SeaLife Research Center. Passed Unanimously. Riedel should prepare a letter to Castellini requesting direct participation by an ANHSC representative and that the ANHSC be notified of all meetings of the Seward SeaLife Center policy committee.

MOTION: It was moved by Lekanof and seconded by Martin that : The ANHSC should participate in a meeting with the Cook Inlet Marine Mammal Council, other involved Alaska Native groups, and local tribal entities, which will be hosted and funded by RurAL CAP, to develop agreements regarding the marine mammals of the Gulf of Alaska and Cook Inlet for co-management. Passed unanimously.

Riedel will participate along with community representatives in discussing the establishment of Alaska Native organizations for co-management under the 1994 amendments to the Marine Mammal Protection Act Section 119 and with the power vested to them through tribal authorizing resolutions for the north Gulf of Alaska and Cook Inlet regions.

MOTION: It was moved by Lekanof and seconded by Martin that: The next ANHSC meeting time and place be at the call of the chair but prior to October 1st for funding purposes. Passed unanimously. Riedel will take charge of planning the next meeting.

MOTION: It was moved by Lekanof and seconded by everyone that we adjourn the meeting. Passed unanimously. Riedel closed the meeting at 5:20 PM.

It was an extremely productive day and the group gave itself a round of applause.

--- Respectfully submitted, acting recorder, Carl Hild and Monica Riedel, Chair, ANHSC.

**APPENDIX D: Summary Alaska Native Harbor Seal Commission Meeting
September 18, 1996
Girdwood, Alaska
In conjunction with "Communities and Science Conference"**

Prepared by Monica Riedel, Alaska Native Harbor Seal Commission

The purpose of this fourth workshop/meeting was to build upon the information and consensus points of the previous meetings and to further develop interaction among the newly formed Alaska Native Harbor Seal Commissioners (ANHSC), and the harbor seal biologists and agency representatives. One objective was to collaboratively review and share information about harbor seals and discuss actions that might be taken to aid in the recovery of these populations after the *Exxon Valdez* oil spill. A copy of the agenda and the list of invitee's and participants are attached.

The following is a brief overview of some of the discussion which took place. It was prepared by Monica Riedel (Chair, ANHSC).

1:00 PM The Invocation was provided by Chairperson Monica Riedel. She then thanked the group for attending and thanked the funding agencies of the *Exxon Valdez* Trustee Council and Alaska Dept. of Fish and Game, Subsistence Division.

The approval of the agenda with minor changes were made. The meeting began with introductions.

Community Reports.

Glen Ujoika of the Native Village of Eyak reported that there were not as many seals on the Copper River as there used to be.

Norman Vlasoff of Tatitlek reported that a few more seals were showing up in the Port Fidalgo Area. He also said that he counted roughly 300 between Cordova to Bear Cape on Hinchbrook Is.

Don Kompkoff of Chenega Bay reported that there were 31 to 40 at the end of Chenega, that there were more on the north end than on the south end. He saw 3 seals in Icy Bay and got 2 seals and sampled them. He stated that seals were inside glacial waters and that the seals moved away from where the tour boats were moving in. He saw 8 seals at the north end of Culross. Don also reported that elders took kids out to practice subsistence activities and did a local newsletter.

Lillian Elvsaas of Seldovia reported that there were hardly any seals harvested in the last 24 months in her area.

Mitch Simeonoff from Akhiok on Kodiak Is. reported that he was very glad that the Kodiak area was included in the biosampling program this year. He mentioned that there are seal hunters in Akhiok, Old Harbor and Ouzinkie. There are also hunters in Larsen Bay and Port Lions.

Harold Martin of Juneau reported that Southeast maintains a healthy stock of harbor seals and sea lions. However, he got reports from the Kake and Tenakee area that the mid winter seals were sinking. He said that in December he shot one and it sank but it was retrieved. It had only an inch of fat and nothing in its stomach.

Mel Henning came in and was introduced. He explained the involvement of the Youth through the Youth Area Watch which is also funded by the *EVOS* Trustee Council.

Nick Tanape from Nanwalek sent a written report which was presented by **Nancy Yeaton**. "At the end of June and July we took four seals and samples. One of the village hunters took only one seal and saw only 7 seals. Then Nick went out and saw only ten. The problem was trying to get samples from other hunters. He said that some of the other hunters went to China Poot, Yukon Island and Tutka Bay or the Kachemak Area. He said that the seal they shot sank. They didn't have enough fat in them to float, only the young pups were fat and healthy. He would like to propose that we gather only the heads since most information about their diet comes from the whiskers. The hunters bring back the head anyway. Most hunters want to clean their catches as soon as they are shot. They don't want to wait hours until they get back home. Some of the seals could be sampled whenever possible. He said that he thinks that part of the reason that the seals are declining in the area, is that there is a lot of traffic from charter boats in front of his village. And some mornings you could count 20 to 30 boats going down to Elizabeth Is. The noise makes them shy away and also having the Kachemak Bay fished out. The seals don't have as much food for themselves."

In Port Graham a boy shot his first seal and they had a big dinner and Nick was invited to show the youth how to cut up the seal and what to say. This was a highlight for Nick. He really enjoyed sharing his knowledge with the young man and the community.

Lillian said that what Nick reported also applied to her area because the hunters also come over to the Seldovia area and vice versa.

Iris O'Brien reported that she does the biosampling with Jim Totemoff when he comes in with seal. Her report is attached.

Mark Lamoreaux of the Cook Inlet Marine Mammal Council (CIMMC) said that they were keeping up with all the data being put out.

Patrick Olsen from Valdez reported for John Boone. He said that he saw a small rise in the population in the Port of Valdez. He attributes that to the hatchery activities. The number of seals for Columbia Glacier and Two Moon Bay looks pretty average.

Don K. said he noticed that one seal had a very small stomach and had hardly anything in it and one was just bloated. He also mentioned that he was just appointed to the South Central Federal Subsistence Regional Advisory Council.

Monica Riedel reported that she went out flying with **Dave Withrow** from the National Marine Fisheries Service (NMFS) on a seal survey and saw 900 seals on one sand bar on the Copper River. Dave has a very good method of counting them from the air. There were 3 other sandbars with approx. 300 each. She also got a preliminary report from Jack (Dave's partner) that there were approximately 1600 seals on Middleton Is (up from Kate Wynne's survey of 1200 four years ago). Monica also reported that Kodiak's survey showed an increase for the last 3 years, and Kathy Frost added that "right now from the surveys that the Kodiak area has been going up for the last 3 years"

Monica then gave some of the highlights of the meeting which will include a review of **Sec. 117 Stock Assessments** and **Sec 119 Co-management** of the **Marine Mammal Protection Act (MMPA)**. She gave an overview of the traditional values instilled in her by her grandparents. Monica then started walking the members through the MMPA sections and started the introductions of presenters.

Kate Wynne University of Alaska Sea Grant, reported on the following:

Sec 117 Stock Assessments

The 1994 Amendments to the MMPA implemented Sec. 117 which required that NMFS assess the status of every stock of marine mammals in the United States. They formed 3 scientific review groups(SRG): Atlantic, Pacific and the Alaska Region. Every year NMFS is required to present the status of the marine mammals: the report includes:

- where the stock lives,
- the population
- human mortality:
 - ⇒ commercial fishing interaction,
 - ⇒ native subsistence harvests

NMFS then sends this report to the Federal Register and there is a comment period. Right now they consider Alaska to have 3 stocks of harbor seals.

Kate went on to say that at their last scientific review group meeting, they suggested that they change the lines, that the Gulf include the Aleutian count, and to possibly change the stock definition to "management units".

Biological Sampling Programs

Kate updated the group on the number of samples that are in statewide. That number is 78. She talked about how this is a statewide effort funded by the *Exxon Valdez* Trustee Council for the Cook Inlet, Kodiak and Prince William Sound and NMFS for the other areas. She explained

where the samples are going and what each part will tell the biologists about the seals. She said that over the course of the summer is when most of their field work is done therefore most of the scientists are just getting the samples and will be studying them this winter. Also, they haven't found any diseased animals which may contribute to a high mortality and why they have declined. The hunters all over the state have been very enthusiastic and helpful in the program. Not only does it allow for them to participate directly in the research, but they contribute their environmental and geographic knowledge of their respective areas and in turn, they are kept informed through the ANHSC. The other part that is really working well is the involvement of the youth in the project. The kids from the Prince William Sound area are a prime example of good teamwork with the hunters and scientists.

Brendan Kelly , University of Alaska

Brendan then came in and gave his report of the SRG meeting. NMFS initially recommended dividing the harbor seals into 2 stocks but then they recommended 3 stocks.

This year the SRG talked about "management units" because there are no compelling data to separate the population into biologically separate stocks but there is good reason to manage different areas separately. The SRG recommended that SE be a separate management unit and the Gulf of Alaska and the Bering Sea be one management unit. If NMFS followed the SRG's recommendation, they would have to recalculate the Potential Biological Removal (PBR) to include the Aleutians with the Gulf of Alaska instead of the Bering Sea. NMFS, however, separated the Bering Sea into a 3rd stock.

This question will be a long term effort and in the mean time the ANHSC should work with NMFS on Co-management to agree on management units and biological stocks.

One thing that NMFS did last year, was not to declare a stock strategic even if the numbers removed were below the PBR level, if it was primarily being used as a subsistence resource.

On Co-management: the most effective co-management situation of marine mammals to date has been the involvement of the Eskimo Whaling Commission with the NMFS on the bowhead harvest and the single most important factor that has gotten them the most clout and has gotten them far in being an equal partner is that they have very consistently relied on very good scientific review on all of their reports and they are very scrupulous about that. The Scientific Review Groups are responsible to make sure that good science is done. Kathy Frost then added that "the community and hunters also got involved in the data gathering which makes the data that much stronger."

Brendan talked about division of the stocks and areas where there are declines in population and how they may need to be managed.

The bounty on seals were then talked about and how well the seals had repopulated those areas of heavy mortality due to bounty hunting back in the 60's.

He also emphasized that last year NMFS refrained from classifying the Gulf Stock as strategic and the invitation is there to develop a co-management situation.

Harold Martin asked “what good are we doing just monitoring the stocks? Seems like we should be doing something about finding out why they are declining” Monica then explained that that is the reason why the hunters became involved in the research through the biosampling project.

Jim Fall / Craig Mishler ADF&G Subsistence Division: Update on Harvest Assessment

Funded by NMFS. The goal of the project is to collect harvest and struck and loss information of harbor seals and sea lions. This is done through a community based approach. The project is coordinated with the Indigenous Peoples Council for Marine Mammals(IPCoMM) and RurAL CAP. Over 60 villages are involved. The final draft for 1995 is being distributed. The names of the people doing the research are printed in the report. Take equals the harvest (retrieved) plus struck and lost (not retrieved). Total take for '92 was 2,819, '93: 2,716 ' 94: 2,621 estimate for 95: 2,742 harbor seals. Majority of seals taken are by Tlingit and Haida hunters in Southeast. There are declines of takes especially in the North Pacific Rim; Lower Cook Inlet, Prince William Sound, and Seward. There was also a drop in harvesting in the Bristol Bay area. Kodiak remains the same. There is a high confidence level in the data. Total struck and lost is going down; the estimate was 8% in '95 when it was 12% in the previous years statewide. We are in the 5th year now, the '96 completion will be in Jan. Jim recommended that the ANHSC look into the subcontract to oversee this project.

Discussion of Research and Data Needs

There has been talk of renewing this project. NMFS funded this project in the amount of \$200,000. There has been talk of just some communities to continue in the project. Jim emphasized that whoever does this project, that they should follow the existing model.

Brendan recommended that the ANHSC support the continued funding of this project and keep it a permanent fixture in NMFS's management program. ANHSC should write a letter to NMFS regarding this project.

Lillian asked Jim about subsistence harvesting surveys. She stated that it is very important to keep that documented for the Community's future.

Craig Mishler ADF&G Subsistence Division

Craig gave a detailed overview of the whiskers database with an overhead of the computer capabilities and plenty of time for detail and questions. He passed out the latest version of whiskers and demonstrated the program for the audience.

We greatly appreciated all the effort by Craig that went into setting up the presentation for our meeting.

Preview of raw footage from Taylor Productions on the Harbor Seal Documentary.

Jim Fall set up the video and we saw detailed footage on the youth participation with the hunters performing the tasks of the biosampling project in Tatitlek.

The group then went into the business session of the meeting.

Riedel gave an overview of the umbrella agreement between NMFS and IPCoMM. She then gave an overview of the ANILCA grant to produce a draft co-management agreement between NMFS and ANHSC.

The ANHSC should follow up with a letter to NMFS regarding that a co-management agreement should not be based on a strategic classification on the Gulf Stock.

Development of Hunter Recommendations:

1. Continue the Biosampling Project and facilitate communications with the other areas of the state that are participating in this project. Also seek to maintain that the project remains community based and emphasize that the trainees live in the villages and that they have a background and understanding of the traditional values and respect of the subsistence lifestyle.
2. Under the discussion of Co-management the consensus was to work towards drafting an agreement with NMFS utilizing the ANILCA grant funds.
3. Support the continuation of the Harvest Assessment Project which is funded by NMFS.
4. Develop a budget for the FY97 Congressional Funding through NMFS.
5. Recommend a person from South Central and Southeast to sit on the Alaska Region Scientific Review Group

September 19, 1996

On Thursday the 19th the group attended a forum on **“Bridging Indigenous Knowledge systems and Western Science/Education.”** The organizers were Oscar Kawagley, Patricia Cochran, Ray Barnhardt, and Dorothy Larson, Alaska Federation of Natives.

This was a very interactive and motivating session. Patricia Cochran invited the ANHSC to join the Alaska Native Science Commission (ANSC) as an associate member and gave an overview of the organization's goals and objective. She emphasized that it has been a cooperative effort between the University of Alaska, AFN, and The National Science Foundation.

Oscar Kawagley gave his view of the world through the eyes of a Yupiaq. He talked about his grandfather's teaching and his village history and his path through the educational system. He emphasized how "Alaska Natives have an inalienable right to be Alaska Natives including Self Determination." He refers to Harold Napoleon's book and how Harold talks about reconstructing new native world views to fit the times. Oscar talked about how community mindfulness and family takes priority "that is where education begins."

We also heard from Rachel Craig, Inupiaq Native Elder, she emphasized how we have to teach our children traditional values over and over and over.

Patricia Cochran talked about how the ANSC facilitates the inclusion of local and traditional knowledge by involving villages in planning stages and promoting science in villages. One major concern of the villages is the cancer rate. She also suggests MOA's with funding agencies. If it means a mandate to funds, then we need to work on this. Identify funding as a major concern.

Ray Barnhardt talked about a 1974 paper called "Does one way of life have to die so that another can live?"

September 20, 1996

I was asked to be on a panel with Harold Napoleon, Martha Vlasoff, Kai Erickson, John Taglia and Dr Fifer. The Forum was entitled, **Technological Disasters and Polar Communities: Perspectives on an Emerging Social Problems**. The Organizer was Dr. Steve Picou, Chair, Department of Sociology and Anthropology, Univ. of So. Alabama.

This was a very graphic look at life after a disaster. Dr Picou talked about chronic stress related to oil spills. He described the word anomie, anomie: no meaning, lifelessness. He said that Natives perceived a greater threat, and his studies showed how females perceived a greater threat. Kai Erickson said that the hurt is sharper among villagers who depend on their environment for nourishment and cultural activities. Some of the recommendations were:

1. Local emergency planning commission
2. Healthy community commission in addition to response commissions
3. Extension course on litigation
4. Mental Health Departments needs support and additional help.
5. Recognize Indigenous Science

Overall, the Science Conference was very good and interactive. I hope that the participants got a lot out of it and enjoyed it as much as I have. Please contact me if you have any additions that you would like to add to this report. It was great seeing all of you there and I hope to see you all at the next Science Conference. We all have a lot to offer and learn.