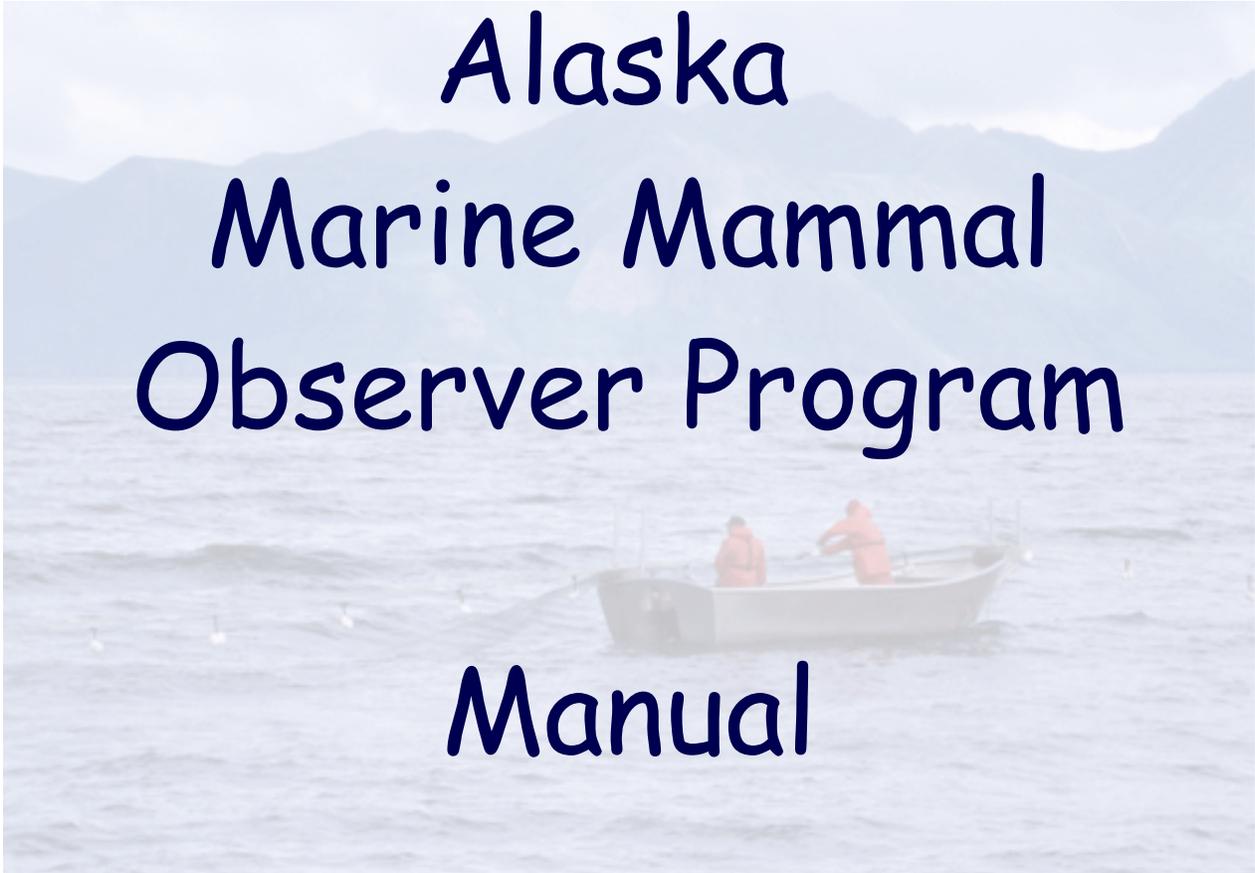
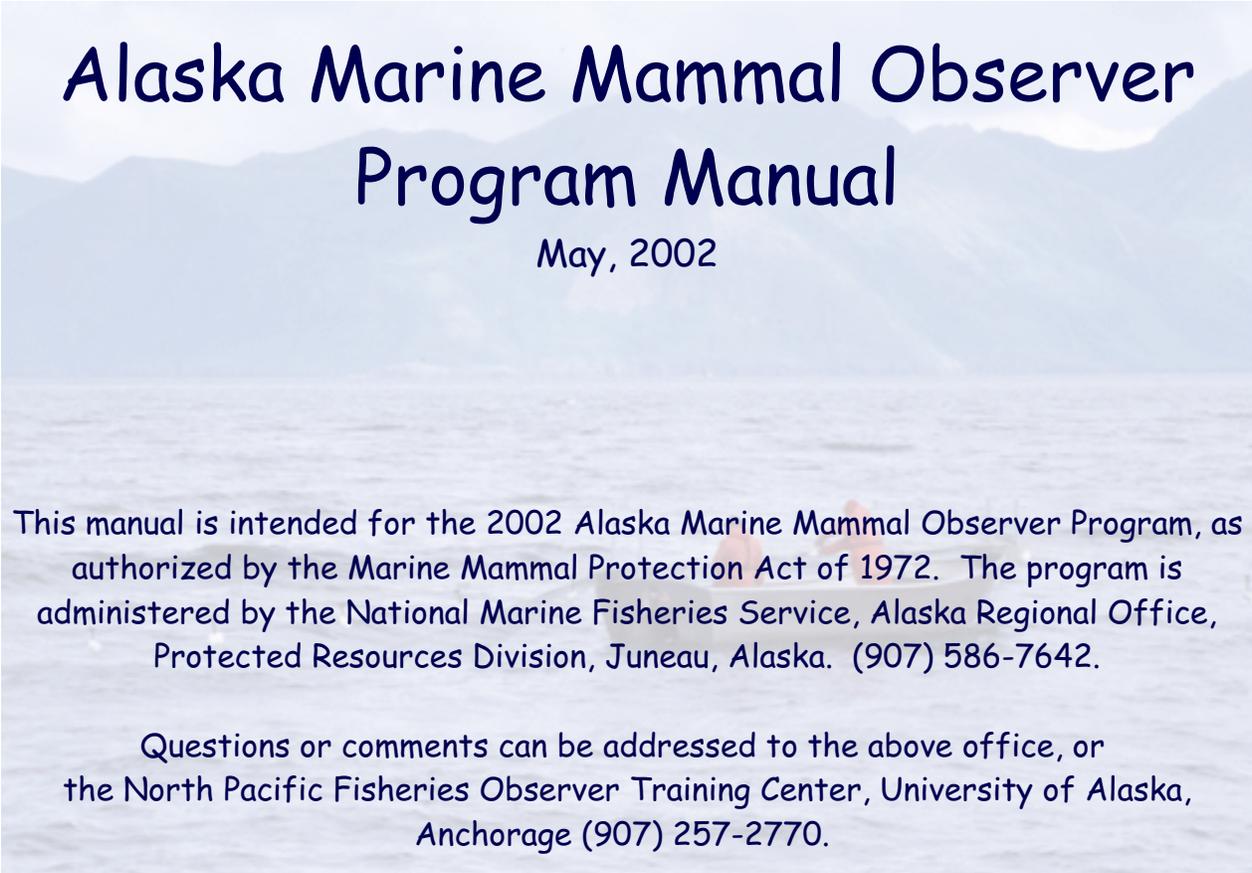


The
Alaska
Marine Mammal
Observer Program
Manual

A photograph of a small boat on the water with two people in orange gear, with mountains in the background. The text is overlaid on the image.

May, 2002



Alaska Marine Mammal Observer Program Manual

May, 2002

This manual is intended for the 2002 Alaska Marine Mammal Observer Program, as authorized by the Marine Mammal Protection Act of 1972. The program is administered by the National Marine Fisheries Service, Alaska Regional Office, Protected Resources Division, Juneau, Alaska. (907) 586-7642.

Questions or comments can be addressed to the above office, or the North Pacific Fisheries Observer Training Center, University of Alaska, Anchorage (907) 257-2770.

The Alaska Marine Mammal Observer Program Manual

2002

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The Alaska Marine Mammal Observer Program

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Section One

The Alaska Marine Mammal Observer Program

THE MARINE MAMMAL PROTECTION ACT

Introduction

The Marine Mammal Protection Act (MMPA) was enacted in 1972 in response to growing public concern that many marine mammal populations were declining at an alarming rate. The MMPA recognizes marine mammals as integral to an ocean ecosystem, and the Act's primary goal is to restore all marine mammal stocks to optimum population levels. To assess the status of marine mammal stocks and determine if they are at or increasing to optimum population levels, scientists need to determine the current population size and distribution of the stock and develop accurate estimates of productivity and mortality. The National Marine Fisheries Service (NMFS) is mandated by the MMPA to collect and report this information in marine mammal stock assessment reports. These reports are published annually for strategic stocks and stocks for which there is significant new information, and at least every three years for all other stocks.

The MMPA has the stated purpose of prohibiting the "taking" (killing, injuring, or importation) of marine mammals. An exemption was added to the MMPA in 1994 (under Section 1383 and 1387) for the taking of marine mammals incidentally caught in the course of commercial fishing operations. NMFS is required by the Act to publish an annual "List of Fisheries" which categorizes commercial fisheries according to their relative impact on marine mammal stocks. The categorization of a fishery can have a significant impact on participants in the fishery. The purpose of observer programs under the MMPA is to provide the data required to accurately categorize fisheries and provide other information on the fishery's interactions with marine mammals.

Section 117

Under Section 117 of the MMPA, NMFS must provide estimates of stock abundance and human caused mortalities of all marine mammal stocks in the U.S.. The agency published the first report of stock assessments in 1995. This was the first attempt to compile current marine mammal status information and make it available as a summary document. These annual regional reports contain stock assessments for each marine mammal stock that occurs in the area. The report also provides the sources of human caused mortalities and serious injuries (also known as "takes") to marine mammals and the level of those takes. The reports must also determine each stock's Potential Biological Removal (PBR) level, which is defined as the level of removal that the stock can withstand while still obtaining their Optimum Sustainable Population (OSP). Because the OSP of many stocks is not known, an approach has been developed that allows the agency to manage marine mammals based on information that can be estimated for these stock, such as their productivity levels, recovery factors, and estimated removal levels. The PBR is calculated using the estimated annual productivity of the stock multiplied by a recovery factor, which reflects the status of that stock. Using the best available data these reports must assess status of each marine mammal

stock. A stock is considered strategic if it is listed under the Endangered Species Act or if fisheries' takes (mortalities) are greater than the PBR.

Section 118

Section 118 of the MMPA addresses the interaction of fisheries with marine mammals, categorizes fisheries based on the level of "takes" (serious injury or mortality) of marine mammals, and places requirements on those fisheries. The MMPA provides fishermen with a certification that exempts them, while fishing, from MMPA prohibitions taking marine mammals. All fishermen, regardless of the fishery they participate in, must report incidental "takes", mortalities and serious injuries of marine mammals to NMFS. Fisheries that are reported to have "frequent takes" of marine mammals are placed in Category I; those in Category II have "occasional" takes, and Category III fisheries have "rare" or no known takes of marine mammals (Appendix Table 1). These categories are related to the biological level of stocks involved in the interactions. Fishermen have different requirements under the MMPA depending on how their fishery is categorized. Fishermen operating in Category I and II fisheries must register with NMFS. Observers may be placed on Category I and II fisheries on a mandatory basis if funding resources allow. They also can be placed in Category III fisheries on a voluntary basis.

The primary goal of the MMPA is to reduce marine mammal takes in all fisheries. The MMPA directs NMFS to develop Take Reduction Teams to reduce marine mammal takes in Category I and Category II fisheries. There are specific deadlines for the fisheries to reduce takes of marine mammals. Takes must be reduced to below PBR within six months and to an insignificant rate approaching zero within five years. These teams are made of fishermen, scientists, agency staff, and other interested parties. They rely heavily on observer data (if it is available) to develop plans and to assess progress in reducing takes.

Pertinent Amendments to the MMPA Since 1988

There have been several important amendments to the MMPA. Between 1988 and 1994 (the year the MMPA was amended) the categorization of fisheries was based on different definitions of "take" levels. The definitions "frequent", "occasional", and "remote likelihood" of take were based on a constant number of takes (such as two marine mammals per fishing day for that fishery). This number did not reflect the impact that such takes were having on the affected individual marine mammal populations. Additionally, fishermen in Category I and II fisheries were required to record in a logbook, submitted annually to NMFS, all fishing effort and each marine mammal interaction, including both incidental and intentional deterrence actions to marine mammals through fishing activities.

With the 1994 Amendments to the MMPA, several substantial changes were made in regulating commercial fishing interactions with marine mammals. The criterion for categorizing fisheries was changed to reflect the relative impact of the commercial fisheries on the affected marine mammal populations. Only mortalities and serious injuries (injuries likely to lead to death), and not deterrence measures, are now used in assessing a given fishery's level of take for categorization purposes. The new scheme is based on a two-tier, stock specific approach that first addresses the total impact of all fisheries on each marine mammal stock, and then addresses the impact of

individual fisheries on each stock. This approach is based on the rate of serious injuries and mortalities due to commercial fishing relative to a stock's potential biological removal rate (PBR).

The PBR is the number of animals that can be removed from a population, excluding natural mortality, and still allow it to recover to or remain at a healthy level. The PBR is calculated as the product of the minimum population estimate [N(min)], one-half the maximum theoretical net productivity rate [0.5R(max)], and a recovery factor [F(R)]:

$$\text{PBR} = \text{N}(\text{min}) \times 0.5\text{R}(\text{max}) \times \text{F}(\text{R})$$

In the past, MMPA logbooks submitted by fishermen have been the primary source of data used for classification of fisheries in Alaska and are no longer being used. Observer programs are the best means of obtaining accurate and objective data for determining rates of marine mammal takes in fisheries. There are no Category I fisheries in Alaska. Of the current thirteen Category II fisheries in Alaska, only four salmon fisheries have been observed, and those at very low coverage levels. This, combined with the fact that commercial fisheries logbook data is considered a minimum representation of incidental take, has resulted in a poor understanding of the levels of mortality and serious injury to marine mammals in the fisheries of Alaska.

With the 1994 MMPA Amendments, logbook requirements were eliminated and replaced with the requirement that fishermen submit individual reports of incidental mortality or injury events to NMFS within 48 hours of the event or return to port. There is a lower reporting rate for these reports compared to reports from the logbook program. Consequently, since 1995, NMFS has received no new data (other than occasional stranding or fishers' reports) on which to base a fishery's classification and subsequent management decisions. While NMFS has a statutory obligation to categorize fisheries, NMFS also has a responsibility to the participants of those fisheries to base fishery classification on sound information. Due to a lack of information, several fisheries are currently designated as Category II fisheries based on analogy to fisheries of similar gear in other areas of Alaska.

As mentioned in the introduction, the 1994 amendments require NMFS to determine commercial fishery impacts on marine mammal stocks and provide this information in the Marine Mammal Stock Assessment Reports. These reports are published annually for strategic stocks or when significant new information is available for other stocks, and at least every three years for all other stocks. These reports are a brief summary of what is currently known about the marine mammal stocks in each NMFS region with regard to a range of topics. These topics include geographic range (including seasonal or temporal range variation), population estimates and trends, productivity, estimates of human-caused mortality and serious injury by source, calculation of the stock's PBR, description of commercial fisheries that interact with the stock (including number of vessels active in fishery, estimated annual level and rate of serious injury and mortality in each fishery), seasonal or area differences in mortality or serious injury, determination of whether this level is insignificant and approaching a zero mortality rate goal, determination whether the stock is strategic or has a level of human-caused mortality and serious injury that is not likely to cause the stock to be reduced below its optimum sustainable population. The Marine Mammal Stock Assessments Reports can be found on the NMFS Alaska Region website (www.fakr.noaa.gov).

MMPA OBSERVER PROGRAMS

The objectives of the MMPA observer programs are in statute:

- Obtain statistically reliable estimates of incidental mortality and serious injury
- Determine reliability of fishermen's reports of mortalities and serious injuries
- Identify changes in fishing methods or technology that may increase or decrease incidental mortalities and serious injuries.

Data provided by MMPA observer programs can support a primary goal of the Act--to decrease incidents of mortality in these fisheries to insignificant levels approaching zero. The priorities used to determine in which fisheries to implement observer programs are:

- 1) Fisheries that take strategic marine mammal stocks.
- 2) Fisheries that take species listed as endangered or threatened under the ESA.
- 3) Fisheries that have a take from a stock in which the level of take is uncertain.



The resources are not available to allow the agency to monitor all the fisheries the required by the MMPA. This presents the challenges of having to select which of the fisheries to observe effectively and how long to observe them given the limited resources available.

Distribution and Prioritization of MMPA Observer Programs

In Alaska, there are 13 Category II fisheries, 11 of which are salmon gillnet fisheries (2002 List of Fisheries). The other two are SE Alaska Salmon Purse seine, and finfish pair trawl (there is little or no reported pair trawling). Of the Category II fisheries of Alaska, those that have been observed are the Prince William Sound drift and set net gillnet fisheries (1990-1991), the Alaska Peninsula drift gillnet fishery (1990), and the Cook Inlet drift and set gill net fisheries (1999-2000). Several groundfish fisheries have been observed through the NMFS groundfish observer program, and all groundfish fisheries are currently Category III. Six salmon net fisheries have been observed (Table 1 & 2).

NMFS has determined that there is a critical need to implement a marine mammal observer program in Alaska for Category II fisheries to obtain the necessary data needed to classify fisheries and otherwise manage marine mammal interactions. Funded by MMPA implementation funds, the costs incurred in placing observers are not passed on to the fishing industry.

Table 1. Alaska Category II Fisheries Interactions with Marine Mammals

Fishery (area and gear type)	Observer Program	Species Recorded as Incidentally Taken* (1988 to present)	Data Type
Southeast AK drift Gillnet	never observed	Steller sea lion, harbor seal, harbor porpoise, Dall's porpoise, Pacific white-sided dolphin, humpback whale	logbook and self reports
Southeast AK Purse Seine	never observed	humpback whale	self report
Yakutat set gillnet	never observed	harbor seal, gray whale (stranded)	logbook and stranding
Prince William Sound drift gillnet	1990-1991	Steller sea lion (obs), northern fur seal, harbor seal (obs), Pacific white-sided dolphin, sea otter	observer and logbook
Cook Inlet drift gillnet	1999-2000	Steller sea lion, harbor seal, harbor porpoise, Dall's porpoise	observer and logbook
Cook Inlet set gillnet	1999-2000	harbor seal, harbor porpoise, Dall's porpoise	observer and logbook
Kodiak Set gillnet	never observed	harbor seal, harbor porpoise, sea otter	logbook
Alaska Peninsula /Aleutians drift gillnet	1990	northern fur seal, harbor porpoise, Dall's porpoise (obs)	observer and logbook
Alaska Peninsula /Aleutians set gillnet	never observed	Steller sea lion, harbor porpoise	logbook
Bristol Bay drift gillnet	never observed	Steller sea lion, northern fur seal, harbor seal, spotted seal, Pacific white-sided dolphin, beluga whale, gray whale	logbook
Bristol Bay set gillnet	never observed	northern fur seal, harbor seal, spotted seal, beluga whale, gray whale	logbook
AK Pair Trawl	never observed	none	none

*Only species with positive records of being taken incidentally in a fishery since 1988 (the first year of the MMPA Exemption Program. Many mis-identified and unidentified mammals have been reported by logbook and stranding data.

ALASKA MMPA OBSERVER PROGRAM

NMFS has initiated a strategy to achieve a basic understanding of the rate of mortality and serious injury occurring to marine mammals in Alaska Category II fisheries. Observers will be deployed in various Category II fisheries in Alaska over the next several years. NMFS will estimate a minimum number of fishing days required to be observed in each of the Category II fisheries listed in Table 1. This estimate will be calculated and may be revised based on changes in fishing effort, marine mammal population assessment, and future agency concerns and data needs. Ideally, the observation period for each fishery will be spread evenly over a two to three year period. At the end of each period a new geographic area with its complement of fisheries will be brought into the observation program.

Table 3. Description of Alaska Category III Fisheries

Fishery (area and gear type)	Target species	# of permits issued/fished 1997	Soak time	Landings per day	Sets per day	Season duration	Fishery trends (1990-1997)
Southeast AK drift gillnet	salmon	4820 issued 423 fished	20 min - 3 hrs; day / night	1	6 - 20	June 18 to early Oct	# vessels stable but may vary with price of salmon; catch - high
Southeast AK purse seine	salmon	416 issued 351 fished	20 min-45 min; mostly day- light fishing, except at peak	1	6 - 20	end of June to early Sept	# vessel stable but may vary some with price of salmon; catch - high
Yakutat set gillnet	salmon	170 issued 141 fished	continuous soak during opener; day / night	1	pick every 2 -4hrs/ day or continuous at peak	June 4 to mid - Oct	# sites fished stable; catch - variable
Prince William Sound drift gillnet	salmon	540 issued 520 fished	15 min - 3 hrs; day / night	1 or 2	10 - 14	mid - May to end of Sept	# vessels stable; catch - stable
Cook Inlet drift gillnet	salmon	581 issued 572 fished	15 min - 3 hrs or continu- ous; day only	1	6 - 18	June 25 to end of Aug	# vessels stable; catch - variable
Cook Inlet (C) set gillnet	salmon	745 issued 603 fished	continuous soak during opener; upper CI -day / night lower CI -day only except during extensions	1	Upper CI -picked on slack tide Lower CI picked every 2 - 6 hrs	June 2 to mid - Sept	# sites fished stable; catch - up for sockeye and kings, down for pinks
Kodiak set gillnet	salmon	188 issued 174 fished	continuous during opener	1 or 2	2 or more/day	June 9 - Sept	# sites fished stable; catch - variable
AK Peninsula/Aleutians drift gillnet	salmon	164 issued 157 fished	2 -5 hrs; day / night	1	3 - 8	mid - June to mid - Sept	# vessels stable; catch up
AK Peninsula/Aleutians set gillnet	salmon	121 issued 111 fished	continuous during opener; day / night	1	every 2 hrs	June 18 to mid Aug	# sites fished stable; catch - up since 90; down in 96
Bristol Bay drift gillnet	salmon	1899 issued 1875 fished	continuous soak of part of net while other parts picked day/night	2	continuous	June 17 to end of Aug or mid - Sept	# vessels stable; catch - variable
Bristol Bay set gillnet	salmon	1,019 issued 921 fished	continuous during opener, net dry during low tide; day / night	1	2 or continuous	June 17 to end of Aug or mid - Sept	# sites fished stable; catch - variable
AK pair trawl	misc fin- fish	1 issued # fished n/a					new fishery

Multiple year coverage is advantageous for a variety of reasons: It allows for the observation of each fishery over a longer time frame to account for between-year variability in fishing effort and marine mammal distribution; it allows for the refinement of sampling design if significant takes are observed during the first or second year; it allows for the refinement of deployment logistics to ensure representative distribution of observer effort throughout the season, spatial or temporal stratification of observer coverage if hot spots are identified; and it provides time for the contractor to prepare for the hiring, training, and housing of observers. The multi-year plan will also provide a more consistent presence in each fishery, which may be critical if take levels warrant the future initiation of take reduction teams.

MARINE MAMMALS OF CONCERN AND MMPA OBSERVER PROGRAMS IN ALASKA

The Northern Gulf of Alaska has several marine mammal stocks of concern regarding their population status. These include the Cook Inlet stock of beluga whale, Gulf of Alaska harbor seal, and the endangered Western U.S. stock of Steller sea lion). Within this region, commercial salmon drift and set gillnet fisheries have been found to interact with these and other marine mammal stocks, including sea otter and harbor porpoise. Additionally, Alaska natives harvest beluga, harbor seal, Steller sea lion, and sea otter for subsistence purposes. Thus, it is not only a high priority to acquire reliable abundance estimates for these stocks, but also estimates of human-caused mortality.

The Alaska Regional Office of NMFS (Region), upon recommendation of the Alaska Scientific Review Group (SRG), conducted the Alaska marine mammal fisheries observer program in the Cook Inlet set and drift gillnet during the summers of 1999 and 2000. While funding and logistical constraints limited the observer coverage level of the total fishing effort, the observer program monitored the set and drift net fisheries in all three main districts. There were several interactions reported with marine mammals or birds.

The decline in the western U.S. stock of Steller sea lion caused the listing status of the stock from “threatened” to “endangered” under the Endangered Species Act (ESA) and “depleted” under the MMPA in 1997. Although many theories have been suggested, the cause of the decline it is not clear. Estimates of human caused mortality are difficult because there is insufficient monitoring and no reliable data on takes. Based on available data, (29 reported takes in commercial fisheries and 353 reported takes by native harvest) the estimated annual level total human caused mortality and serious injury is known to exceed the PBR (208) for this stock (Angliss, et al., 2001). The Prince William Sound salmon drift gillnet observer program estimated that 14.5 Steller sea lions were killed annually as a result of net entanglements in 1990 and 1991 (Wynne et al. 1992). There were no takes or injuries observed in the Cook Inlet observer program in 1999 and 2000. Takes in other salmon net fisheries in Alaska are unknown.

Although the Gulf of Alaska harbor seals are not currently listed as a strategic stock, recent strategic analysis that provides evidence of the existence of distinct stocks within the Gulf and reports of decreasing counts for harbor seals in Prince William Sound, Kodiak, and other areas of the Gulf, have raised concerns over the population status and trend of harbor seals in the Gulf of Alaska. The minimum annual estimate of mortality of harbor seals in Alaska commercial fisheries is estimated at 36 animals, the subsistence take is estimated at 791, putting the estimate of human caused mortality at 827. In 2001, the PBR was 868 (Angliss, et al. 2001). The estimated annual observed mortality for Prince William Sound drift gillnet fishery was 24 harbor seals. Although harbor seals interactions with the net fisheries in Cook Inlet were observed, no mortalities or injuries were reported by observers in 1999.

Several other marine mammals are also known to interact with commercial fisheries in this region. Harbor porpoise in the Gulf of Alaska have been reported to be taken by commercial fishing nets (five self reports and 20 extrapolated annual takes calculated from the observer program in the Prince William Sound). The minimum mortality take in all Gulf of Alaska commercial fisheries is estimated at 25 animals a year (PBR for the Gulf stock is 166). This estimate does not include observer data from any other Category II fisheries. Killer whales, minke whales, gray whales, humpback whales, northern fur seals, sea otters, Dall’s porpoise and, other marine mammals are known to interact with commercial fisheries and are present in Kodiak waters.

The Cook Inlet observer program was the first stage in a series of observer programs which will be implemented throughout Category II fisheries in Alaska. These programs will provide NMFS the data necessary to assess a threshold level of incidental injury and mortality to marine mammals occurring during the course of commercial fishing operations by these fisheries, and other important information on marine mammal and fisheries interactions. NMFS is responsible for the sampling design and analysis of the data.

OBSERVER PROGRAM RESPONSIBILITIES

The agency-contractor relationship in Alaska MMPA observer programs is considerably different from that found in NMFS groundfish or ADF&G shellfish observer programs. In this MMPA observer program, there is a direct contractual relationship between the contractor and NMFS. The contractor is paid by and directly responsible to NMFS. The industry does not pay for observer coverage but is required to carry an observer when asked. This is not a voluntary

observer program. NMFS provides the contractor directly with support and direction and the contractor supports the observers and provides the data and information they provide to NMFS.

The contractor and NMFS work cooperatively to educate fishery participants of the nature of the observer program. In order to assure the best analysis of the program; NMFS, the contractor, and the observers need to maintain open and frequent communications concerning the distribution and deployment of the observers and confer on sampling protocol, data quality issues, and other aspects of the program.

National Marine Fisheries Service

NMFS is responsible for the sample design, determining the distribution and level of observer coverage, providing observer training and certification, and for the final reports and analysis of the data. The observer training is provided by the Observer Training Center through a cooperative agreement. The National Marine Mammal Laboratory (Seattle) and the Protected Resources Division of the Alaska Regional Office (Juneau) are the two NMFS entities directly responsible for the Alaska MMPA Observer Program.

Table 3. Summary of primary duties in relation to AMMOP.

Participant	Duties
NMFS	Determines coverage need and sampling design Completes the data analysis and final reports Provides outreach to fisheries Provides financial, support, direction, and oversight
Contractor	Provides NMFS with data Provides outreach to fisheries Provides financial and logistical support to observers
ADF&G	Provides state fishing effort data to NMFS
Fishery participants	Report Marine Mammal takes to NMFS Cooperate with NMFS and observers
Observers	Provide data to contractor, information of fishery, and feedback to NMFS
US Fish & Wildlife Service	Collect marine bird sighting data
Skiff handlers	Handle and maintain Boats Deploy observers to sites Responsible for safety of observers
Research vessel crew	Support observers Deploy observers to sites Maintain boat & skiff operations Responsible for safety of observers
U.S. Coast Guard	Provides safety examinations of commercial fishing vessels
NMFS Enforcement Division	Provides response to possible violations and determines penalties Provides safety examinations of commercial fishing vessels
NPFOTC	Provides training

The Contractor

The contractor is responsible for obtaining the required coverage levels of the fisheries; determining, reporting, and (to the extent possible) avoiding possible bias in the placement of observers; and providing NMFS with reliable quality data. The contractor is responsible for working with the fleet to achieve the coverage and project goals and exchanging information with fishermen during in-season meetings. In addition, the contractor is responsible for managing the hiring, logistics, deployment, data entry, and debriefing of observers. The observers are responsible for the accurate collection of quality data and biological samples by abiding by the guidelines and protocol provided by the observer manual, during training, and in the field.

The Alaska Department of Fish and Game

ADF&G is the state agency responsible for the management of the fisheries in state waters. ADF&G biologists and managers provide fishing effort and distribution data in season to the contractor and NMFS to facilitate observer distribution and estimate observer coverage. ADF&G provides NMFS with refined estimates of fishing effort and distribution at the end of the season to be used in the final analysis.

The Commercial Fishery Permit Holders

The fishing industry is required to report any marine mammal mortalities and serious injuries caused through their fishing activities to NMFS. There is a special form for reporting such incidents—The Marine Mammal Authorization Program Mortality/Injury Reporting Form. Fishermen are required to carry an observer by law when asked by NMFS or the contractor, and cooperate with the observer in their data collection activities.

Observers

Observers collect the data and are the field representatives of the agency and program. Collection of accurate, unbiased, and representative data is the goal. Safety is the first priority in accomplishing that goal.

Vessel Operators

Contracted boats such as gillnetters, purse seiners, and skiffs may be hired to provide logistical support to observers. In most cases they will be contracted employees of the Observer Contractor. They will be guided by lead observers and the home office of the contractor in the logistical needs of the program. In the interest of safety, the operators of the boats have the ultimate say when and how their boats are used. Plans may change due to decisions made because of safety concerns.

Other Agencies and Organizations

United States Fish and Wildlife Service (FWS) or other agencies may place field staff in the fisheries to obtain specific data. They will have different duties than the fishery observers and have received specific training for those duties. For example, FWS staff will collect marine bird sight-

ing data in the Kodiak setnet fishery in 2002. They bring with them a specialized, and sometimes local, knowledge to help with scientific data collection

Other agency and university research is supported by this program. The data and biological samples collected by observers can be requested for use in scientific studies.

THE OBSERVER'S ROLE

Observer's involvement is critical to the successful development and improvement of the Marine Mammal Protection Act programs in Alaska. This is particularly true during the initial years of this program. This is why NMFS specifically required the hiring of experienced observers in the program. NMFS recognizes the value of experience and expects observers to set an important precedent in providing high quality data and useful information to further develop the MMPA.

Observers' input on various aspects of the program (such as suggestions on improving data forms and sampling protocol) can strengthen the quality of data and program design. The successful initiation and development of an observer program is dependent on the cooperation and constructive support of all participants. NMFS will encourage and rely on suggestions from observers and the contractor, as well as input from the fishing industry, ADF&G, and other participants in the program to further develop and improve all aspects of the program.

The importance of each observer's contribution to the program and their presentation of the program to the fishing community cannot be over-emphasized. Most of the fishermen have never had to cooperate with any kind of observer program and may not be fully aware of the implications of the MMPA on their fishery or the impact their fishery may have on marine mammals. The ability of the observer to understand and present the program in a professional and clear manner to the fishing community is critical to the success of this and future programs.

In order to build professional relationship of trust and respect between the observers and the fishing community, it is essential that the observers behavior is above reproach. Observers must abide by the standards of conduct and understand why these standards are so important to the success of the program. Observers in the groundfish and crab observer programs often operate independently with little interaction with each other or program staff during their deployment. In this observer program, observers will be working as a team. Observers will work together to coordinate their efforts in arranging their deployments and carrying out their duties. It is important that the observers work as a team and develop a cooperative and supportive environment in order to meet the challenges of the program.

Observer Duties

Observer duties include the collection and recording of accurate and precise data in the field. These data shall include information on fishing gear deployment and operations, marine mammal and bird presence, interaction with and entanglements in the fishing gear, deterrents used against marine mammals, fish catch information, species identification of birds, mammals, and fish, environmental conditions and other elements covered in The Alaska Marine Mammal Observer Program Observer Manual and during observer training. Observers will conduct marine mammal

and marine bird watches as directed by NMFS. In addition, observers will collect biological specimens and/or tissue of marine mammals, birds, and some fish. Observers will work cooperatively and professionally with fishermen, provide information to the industry regarding the program as directed, conduct in-season data review and editing, data entry on computers, and attend in-season and final debriefings as directed by NMFS. Observers will be working from small commercial fishing boats, research vessels, skiffs, and on shore at set net sites. Observers must be prepared to operate small skiffs and all terrain vehicles (ATV), hike long distances, and be willing to travel in small aircraft to remote areas.

Lead Observers

NMFS requires the contractor to provide lead observers to act as field coordinators and primary debriefers of observers. The lead observer will be the primary field contact person to cooperate with NMFS in addressing sampling, data, and deployment issues and to provide in-season reports. The lead observers will be responsible for the oversight and tracking of debriefing, final data review, data editing and data entry. In addition, lead observers may need to organize regular open meetings with the fishing industry to provide updates and consider the suggestions and concerns of fishing community. At the discretion of the contractor, many of these duties (debriefing, data entry, meeting attendance) may be shared among observers. Whenever possible, lead observers should participate as field observers in the collection of data.

Debriefing and Data Editing

One of the most critical elements in data quality control is the in-season debriefing of an observer who has collected field data. At this time, the observer will submit collected data to a debriefer, who will review the data and conduct an interview. Discrepancies or errors in collecting or recording data can be noted, methods can be discussed and documented before the data is transmitted. The in-season debriefing of the observer ensures that the data are complete and as accurate as possible before data entry. Some data will be entered into computers by observers and checked for errors in the in-season debriefing.

A final debriefing will be required for each observer at the end of the fishing season. These debriefings will take place in Anchorage or at another designated area. Because the in-season debriefings will have served to correct most problems with collecting and recording of the data, the final debriefing will consist of a review of any outstanding data problems, a review of the observer's performance throughout the fishing season, writing of any necessary affidavits or reports, turning in any biological samples, gear, and equipment to NMFS. The observer can expect the final debriefing to last one to two days. The Contractor is ultimately responsible for making any changes or corrections requested by NMFS prior to final acceptance of the data and reports from each observer for the season.

Data Entry

The contractor is not responsible for all data entry into a NMFS database, but observers will perform data entry of some information pertaining to their work. The bulk of the collected data will be scanned as a backup and the original paper forms will be sent to NMFS for data entry. The con-

tractor will maintain a data tracking system for the observer data as they are collected and corrected. The contractor will complete quality-assurance processes of observer-collected data, and make any necessary corrections before sending data to NMFS.

NMFS has provided the computers and equipment necessary to support the data needs in each port office where observers are regularly debriefed. NMFS will develop and maintain the data entry and database system.

Standards of Conduct

The observer must avoid any behavior which could adversely affect the confidence of the public in the integrity of the Observer Program or of the Government. Observers are thus expected to conduct themselves in a manner which will reflect favorably upon the Observer Program by maintaining high standards of honesty, integrity, impartiality, and conduct in all situations.

Observers:

- ii Must diligently perform their assigned duties;

- ii Must accurately record their sampling data, write complete reports, and report honestly any observed or suspected violations of fisheries, natural resource conservation, or environmental laws or regulations;

- ii Must protect the confidentiality of all collected data and observations made on board vessels. Observers shall not use any data collected under this contract for purposes other than the performance of this contract nor shall observers release, reproduce, distribute, or publish any of the data without prior approval from NMFS;

- ii Must refrain from engaging in any illegal actions or any other activities that would reflect negatively on their image as professional scientists, on other observers, or on the Observer Program as a whole. This would include, but is not limited to:
 - 1. Engaging in excessive drinking of alcoholic beverages;
 - 2. Engaging in the use or distribution of illegal drugs;
 - 3. Becoming physically or emotionally involved with vessel personnel;
 - 4. Engaging in criminal, dishonest, disrespectful, immoral, or disgraceful conduct which may be perceived as prejudicial to the Government.

If a vessel or set net site maintains a stricter policy for its employees, then the observer must comply with said policy;

- ii Are prohibited from conducting personal research or from retaining specimens of any kind for any reason not specified in the Marine Mammal Observer Manual.

Behavior which is contrary to these standards or to the intent of these standards would be considered to be grounds for disqualifying the offending observer. **Falsification of observer data is grounds for dismissal and possibly criminal prosecution.** An observer may be discharged without warning for just cause. Just cause includes, but is not limited to: dishonesty, incompetence, insubordination, negligence with equipment, un-excused absenteeism, un-excused tardiness, disobedience of orders, unsatisfactory performance of duties, lose of data, violation of vessel or set net site owner's rules imposed on the contractor, and failure to live up to the above standards of conduct.

Conflict of Interest

Observers must maintain objectivity and the appearance of objectivity. Observers must not have direct financial interest, other than the provision of observer services, in Alaskan salmon fisheries. Observers must not have financial nor political interest in an organization that might be aided by the performance or nonperformance of their duties.

Observers:

- a. May not have direct financial interest, other than the provision of observer services, in an Alaskan salmon commercial fishery, including, but not limited to, vessels or shore-side facilities involved in the catching or processing of the products of the fishery, related interests in selling supplies or services to these vessels or shore-side facilities, or related interests in purchasing raw or processed products from these vessels or shore-side facilities;
- b. May not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the observers' official duties;
- c. May not serve as an observer on any vessel or at any shore-side facility owned or operated by a person who previously employed the observer; and
- d. May not solicit or accept employment as a crew member or an employee of a vessel or shore-side facility in an Alaskan salmon commercial fishery while under contract with an observer Contractor.

REGULATORY COMPLIANCE

Trip Refusals

The Alaska Marine Mammal Observer Program is providing observer coverage of Category I and II fisheries in Alaska under the authority of the Marine Mammal Protection Act of 1972.

If asked, a fisherman must take an observer. A refusal occurs when an observer informs a fisherman that they have been selected for observer coverage and the fisherman refuses to cooperate with the observer. The observer must clearly communicate that the permit or vessel has been selected for coverage and confirm that the skipper is denying the observer. The observer notes all dialogue that occurred between the parties, including dates and times, weather conditions, fishing conditions, trip logistics, and safety issues. The notes must be complete and factual and may be used to write an affidavit if warranted. Trip refusals are documented in observer logbooks and immediately reported to the contracted Program Manager and the NMFS Program Coordinator. The reasons for refusing an observer will be clearly reported and evaluated on a case by case basis. A refusal based on principle (a fixed or predetermined policy or mode of action) or lack of insurance are not legitimate reasons to not comply with observer requirements.

Vessel or permit owners and operators selected for observer coverage are responsible for complying with regulations set forth by the Marine Mammal Protection Act (50 CFR § 229.7) and the Magnuson-Stevens Act (50 CFR § 600.746).

The observer requirements for participants in Category I and II fisheries are [50 CFR § 229.7(c)]:

1. If requested by NMFS or by a designated contractor providing observer services to NMFS, a vessel owner/operator must take aboard an observer to accompany the vessel on fishing trips.
2. After being notified by NMFS, or by a designated contractor providing observer services to NMFS, that the vessel is required to carry an observer, the vessel owner/operator must comply with the notification by providing information requested within the specified time on scheduled or anticipated fishing trips.
3. NMFS, or a designated contractor providing observer services to NMFS, may waive the observer requirement based on a finding that the facilities for housing the observer or for carrying out observer functions are so inadequate or unsafe that the health or safety of the observer or the safe operation of the vessel would be jeopardized.
4. The vessel owner/operator and crew must cooperate with the observer in the performance of the observer's duties including:
 - i. Providing, at no cost to the observer, the United States government, or the designated observer provider, food, toilet, bathing, sleeping accommodations, and other amenities that are equivalent to those provided to the crew, unless other arrangements are approved in advance by the Regional Administrator;

- ii. Allowing for the embarking and debarking of the observer as specified by NMFS personnel or designated contractors. The operator of a vessel must ensure that transfers of observers at sea are accomplished in a safe manner, via small boat or raft, during daylight hours if feasible, as weather and sea conditions allow, and with the agreement of the observer involved;
- iii. Allowing the observer access to all areas of the vessel necessary to conduct observer duties;
- iv. Allowing the observer access to communications equipment and navigation equipment, when available on the vessel, as necessary to perform observer duties;
- v. Providing true vessel locations by latitude and longitude, accurate to the minute, or by loran coordinates, upon request by the observer;
- vi. Sampling, retaining, and storing of marine mammal specimens, other protected species specimens, or target or non-target catch specimens, upon request by NMFS personnel, designated contractors, or the observer, if adequate facilities are available and if feasible;
- vii. Notifying the observer in a timely fashion of when all commercial fishing operations are to begin and end;
- viii. Not impairing or in any way interfering with the research or observations being carried out; and
- ix. Complying with other guidelines or regulations that NMFS may develop to ensure the effective deployment and use of observers.

It is unlawful to fail to take an assigned observer on a fishing trip [50 CFR § 229.7(c)(1)]. It is unlawful for any person to assault, harm, harass (including sexual harassment), oppose, impede, intimidate, impair, or in any way influence or interfere with an observer, or to attempt the same. This includes any action which has the purpose or effect of interfering with the observer's responsibilities, or which creates an intimidating, hostile, or offensive environment [50 CFR § 229.3(b)].

The general prohibitions listed under the Magnuson-Stevens Act (50 CFR § 600.746) are applicable to any fishing vessel required to carry an observer under any U.S. law and include, but are not limited to:

- Fail to submit to a USCG safety examination when required by NMFS pursuant to Sec. 600.746.
- Fish without an observer when the vessel is required to carry an observer.
- Assault, oppose, impede, intimidate, or interfere with a NMFS-approved observer aboard a vessel.
- Prohibit or bar by command, impediment, threat, coercion, or refusal of reasonable assistance, an observer from conducting his or her duties aboard a vessel.

Violations of the MMPA may result in sanctions on Authorization Certificates, civil penalties of up to \$12,000 and criminal penalties. A complete list of MMPA prohibitions can be found at 50 CFR § 229.3.

Marine Mammal Authorization Certificate

All participants in Category I and II fisheries must obtain a Marine Mammal Authorization Certificate in order to lawfully participate in the fishery since the fishery. The Marine Mammal Authorization Certificate allows for lawful incidental (accidental during the course of fishing) serious injury and mortality of marine mammals. If a person is operating in one of these fisheries and has not received a certificate, they may contact Judy Roberts, National Marine Fisheries Service, Alaska Regional Office, Protected Resources, P.O. Box 21668, Juneau, Alaska 99802, at (907) 586-7236.

Injury and Mortality Reporting Requirements

Operators in all commercial fisheries must report all incidental injuries and mortalities of marine mammals that have occurred as a result of their fishing operations on a NMFS Marine Mammal Injury/Mortality Report Form regardless of whether there was an observer aboard the vessel. The report must be sent by mail or fax within 48 hours of the end of the fishing trip in which the injury or mortality occurred [50 CFR § 229.6(a)]. Failure to report all injuries and mortalities within 48 hours may result in suspension, revocation, or denial of a marine mammal authorization certificate [50 CFR § 229.10(e)]. For copies of the Injury/Mortality Report Form, contact Judy Roberts, National Marine Fisheries Service, Alaska Regional Office, Protected Resources, P.O. Box 21668, Juneau, Alaska 99802, at (907) 586-7236.

Safety Requirements

On May 18, 1998, NMFS published regulations under the Magnuson-Stevens Fishery Conservation and Management Act that address the health and safety of observers stationed aboard commercial fishing vessels. Under these regulations, observers may not depart on a fishing trip aboard a vessel which does not comply with United States Coast Guard (USCG) safety requirements or that does not display a current Commercial Fishing Vessel Safety Examination decal [50 CFR § 600.746(c)(1)].

All vessels required to carry an observer must meet USCG safety requirements and display a current safety decal (issued within the previous two years). Vessels that do not meet these requirements are deemed unsafe for purposes of carrying an observer and must correct noted deficiencies prior to departing port [50 CFR § 600.746(d)(2)].

The vessel owner operator must allow an observer, NMFS, or NMFS-appointed-contractor to visually inspect any safety or accommodation requirement if requested [50 CFR § 600.746(c)(2)]. Observers are required to complete a pre-trip safety check of the emergency equipment and are encourage to review emergency instructions with the operator prior to the vessel departing port. Fishermen can schedule a free dockside examination to obtain a current safety decal by contacting the nearest US Coast Guard Marine Safety Office Dockside Examiner.

Procedures For Observers During a Coast Guard Boarding

The Coast Guard makes periodic boardings of fishing vessels to inspect them for fisheries and safety violations. A NMFS Enforcement agent may also make boardings. If the Coast Guard or NMFS boards your vessel, introduce yourself. After that, remain in the background and let the boarding party know where you can be found. The Coast Guard or NMFS agent has certain objectives to accomplish in every boarding. If your assistance is needed, they will ask for it.

If the boarding party has questions or requests your assistance, be cooperative. Most Coast Guard officers are not biologists and you may be of assistance in identifying species of fish and invertebrates in bins, processing areas or freezer holds.

Make sure your logbook and paperwork are in order in case the boarding party wishes to inspect them. Avoid giving anyone your original forms or your logbook to keep if possible. Make copies as needed. If your vessel has no copy machine ask if copies can be made on board the Coast Guard vessel. If this is not a possibility, at least make handwritten copies.

If you have information on suspected or actual violations, or other problems use your judgement to decide if a potential violation would best be reported to the boarding party or saved for debriefing. If a vessel is issued a ticket immediately based on your report, you may be in an awkward position after the Coast Guard leaves. The Coast Guard is aware that observers may or may not choose to advise them of witnessed violations dependent on the situation.

If you have no information for the boarding party but someone in the boarding party wishes to question you, find a private location for your conversation. On occasion, an uninformed boarding party member may ask you questions in front of vessel personnel. Should this happen, defer the questions until you can speak in private. If that doesn't work, ask if they will accept a written statement from you. If you are questioned in private, answer all questions completely and honestly. Your testimony is one part of the whole investigation.

Your role in a Coast Guard boarding is as a source of objective information for the boarding party. The boarding party will conduct their own inspections and investigation, and they may or may not require your assistance. You should cooperate fully, and not hamper the investigation.

Observer Guidelines for Preparing an Affidavit

An affidavit is a written declaration made under oath before an official, as a notary public. If violations are to be pursued, the observer must be prepared to write an affidavit and provide evidence or testimony as needed. An affidavit should be a detailed, non-inflammatory, concise, and factual description of the events that led up to and including the violation(s).

The first paragraph should be an introduction of yourself; your name, who you work for, what position you hold, how much experience you have, your education, and any other pertinent background information that would support your credibility.

Example: I, (First/Last name), was employed by (Contractor) to serve as a marine mammal observer for the National Marine Fisheries Service (NMFS). I have served as a NMFS fisheries observer on (number of) deployments, and on this trip served aboard the (vessel name) fishing in the (fishery name) with permit (permit number) from (embark to disembark date), where I witnessed several incidents of (state suspected violation). I received a (highest schooling degree) from the (school name) in (year of graduation). I have successfully completed certifications in C.P.R., vessel safety, and NMFS fisheries observer courses.

Referring to your logbook and forms, detail the event addressing the following questions:

Who committed the violation? What was the violation?

When did it occur? Where did it occur?

Why did it occur? How did it occur?

- Define crucial information (names, dates, times, locations)
- Outline the issues with the debriefer.
- Detail events in chronological order as they occur.
- Do not summarize or minimize events.
- Identify each time an event occurred.
- Maintain objectivity, do not use personal opinions.
- Use complete sentences in a narrative, not outline form.
- Write in the first person, active tense.
- Should be written on plain paper and may be handwritten or typed.

You should close the affidavit with the following and sign and date:

I certify that, to the best of my knowledge, the above statement is true.

Signature _____ Date _____

Confirm that the information in the heading of the report are correct, including:

- Observer's name
- Violation(s) type
- Trip identification number
- Vessel/permit name or number
- Vessel/permit operator
- Number and date of violation(s)

LAWS AND REGULATIONS

Excerpts of the
MARINE MAMMAL PROTECTION ACT
USC Title 16 - Conservation
Chapter 31- Marine Mammal Protection
Subchapter II - CONSERVATION AND PROTECTION OF MARINE MAMMALS
Section 1387(d)

(d) Monitoring of incidental takes

(1) The Secretary shall establish a program to monitor incidental mortality and serious injury of marine mammals during the course of commercial fishing operations. The purposes of the monitoring program shall be to -

- (A) obtain statistically reliable estimates of incidental mortality and serious injury;
- (B) determine the reliability of reports of incidental mortality and serious injury under subsection (e) of this section; and
- (C) identify changes in fishing methods or technology that may increase or decrease incidental mortality and serious injury.

(2) Pursuant to paragraph (1), the Secretary may place observers on board vessels as necessary, subject to the provisions of this section. Observers may, among other tasks -

- (A) record incidental mortality and injury, or by catch of other nontarget species;
- (B) record numbers of marine mammals sighted; and
- (C) perform other scientific investigations.

(3) In determining the distribution of observers among commercial fisheries and vessels within a fishery, the Secretary shall be guided by the following standards:

- (A) The requirement to obtain statistically reliable information.
- (B) The requirement that assignment of observers is fair and equitable among fisheries and among vessels in a fishery.
- (C) The requirement that no individual person or vessel, or group of persons or vessels, be subject to excessive or overly burdensome observer coverage.
- (D) To the extent practicable, the need to minimize costs and avoid duplication.

(4) To the extent practicable, the Secretary shall allocate observers among commercial fisheries in accordance with the following priority:

- (A) The highest priority for allocation shall be for commercial fisheries that have incidental mortality or serious injury of marine mammals from stocks listed as endangered spe-

cies or threatened species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.).

(B) The second highest priority for allocation shall be for commercial fisheries that have incidental mortality and serious injury of marine mammals from strategic stocks.

(C) The third highest priority for allocation shall be for commercial fisheries that have incidental mortality or serious injury of marine mammals from stocks for which the level of incidental mortality and serious injury is uncertain.

(5) The Secretary may establish an alternative observer program to provide statistically reliable information on the species and number of marine mammals incidentally taken in the course of commercial fishing operations. The alternative observer program may include direct observation of fishing activities from vessels, airplanes, or points on shore.

(6) The Secretary is not required to place an observer on a vessel in a fishery if the Secretary finds that -

(A) in a situation in which harvesting vessels are delivering fish to a processing vessel and the catch is not taken on board the harvesting vessel, statistically reliable information can be obtained from an observer on board the processing vessel to which the fish are delivered;

(B) the facilities on a vessel for quartering of an observer, or for carrying out observer functions, are so inadequate or unsafe that the health or safety of the observer or the safe operation of the vessel would be jeopardized; or

(C) for reasons beyond the control of the Secretary, an observer is not available.

(7) The Secretary may, with the consent of the vessel owner, station an observer on board a vessel engaged in a fishery not listed under subsection (c)(1)(A)(i) or (ii) of this section.

(8) Any proprietary information collected under this subsection shall be confidential and shall not be disclosed except -

(A) to Federal employees whose duties require access to such information;

(B) to State or tribal employees pursuant to an agreement with the Secretary that prevents public disclosure of the identity or business of any person;

(C) when required by court order; or

(D) in the case of scientific information involving fisheries, to employees of Regional Fishery Management Councils who are responsible for fishery management plan development and monitoring.

(9) The Secretary shall prescribe such procedures as may be necessary to preserve such confidentiality, except that the Secretary shall release or make public upon request any such information in aggregate, summary, or other form which does not directly or indirectly disclose the identity or business of any person.

TITLE 50--WILDLIFE AND FISHERIES

DEPARTMENT OF COMMERCE PART 229--

AUTHORIZATION FOR COMMERCIAL FISHERIES UNDER THE MARINE MAMMAL
PROTECTION ACT OF 1972

Subpart A--General Provisions

Sec. 229.7 Monitoring of incidental mortalities and serious injuries.

(a) Purpose. The Assistant Administrator will establish a program to monitor incidental mortality and serious injury of marine mammals during the course of commercial fishing operations in order to:

- (1) Obtain statistically reliable estimates of incidental mortality and serious injury;
- (2) Determine the reliability of reports of incidental mortality and injury under Sec. 229.6; and
- (3) Identify changes in fishing methods or technology that may increase or decrease incidental mortality and serious injury.

(b) Observer program. Pursuant to paragraph (a) of this section, the Assistant Administrator may observe Category I and II vessels as necessary. Observers may, among other tasks:

- (1) Record incidental mortality and injury, and bycatch of other nontarget species;
- (2) Record numbers of marine mammals sighted; and
- (3) Perform other scientific investigations, which may include, but are not limited to, sampling and photographing incidental mortalities and serious injuries.

(c) Observer requirements for participants in Category I and II fisheries.

- (1) If requested by NMFS or by a designated contractor providing observer services to NMFS, a vessel owner/operator must take aboard an observer to accompany the vessel on fishing trips.
- (2) After being notified by NMFS, or by a designated contractor providing observer services to NMFS, that the vessel is required to carry an observer, the vessel owner/operator must comply with the notification by providing information requested within the specified time on scheduled or anticipated fishing trips.
- (3) NMFS, or a designated contractor providing observer services to NMFS, may waive the observer requirement based on a finding that the facilities for housing the observer or for carrying out observer functions are so inadequate or unsafe that the health or safety of the observer or the safe operation of the vessel would be jeopardized.

(4) The vessel owner/operator and crew must cooperate with the observer in the performance of the observer's duties including:

- i. Providing, at no cost to the observer, the United States government, or the designated observer provider, food, toilet, bathing, sleeping accommodations, and other amenities that are equivalent to those provided to the crew, unless other arrangements are approved in advance by the Regional Administrator;
- ii. Allowing for the embarking and debarking of the observer as specified by NMFS personnel or designated contractors. The operator of a vessel must ensure that transfers of observers at sea are accomplished in a safe manner, via small boat or raft, during daylight hours if feasible, as weather and sea conditions allow, and with the agreement of the observer involved;
- iii. Allowing the observer access to all areas of the vessel necessary to conduct observer duties;
- iv. Allowing the observer access to communications equipment and navigation equipment, when available on the vessel, as necessary to perform observer duties;
- v. Providing true vessel locations by latitude and longitude, accurate to the minute, or by loran coordinates, upon request by the observer;
- vi. Sampling, retaining, and storing of marine mammal specimens, other protected species specimens, or target or non-target catch specimens, upon request by NMFS personnel, designated contractors, or the observer, if adequate facilities are available and if feasible;
- vii. Notifying the observer in a timely fashion of when all commercial fishing operations are to begin and end;
- viii. Not impairing or in any way interfering with the research or observations being carried out; and
- ix. Complying with other guidelines or regulations that NMFS may develop to ensure the effective deployment and use of observers.

(5) Marine mammals or other specimens identified in paragraph (c)(4)(vi) of this section, which are readily accessible to crew members, must be brought on board the vessel and retained for the purposes of scientific research if feasible and requested by NMFS personnel, designated contractors, or the observer. Specimens so collected and retained must, upon request by NMFS personnel, designated contractors, or the observer, be retained in cold storage on board the vessel, if feasible, until removed at the request of NMFS personnel, designated contractors, or the observer, retrieved by authorized personnel of NMFS, or released by the observer for return to the ocean. These biological specimens may be transported on board the vessel during the fishing trip and back to port under this authorization.

(d) Observer requirements for participants in Category III fisheries.

(1) The Assistant Administrator may place observers on Category III vessels if the Assistant Administrator:

(i) Believes that the incidental mortality and serious injury of marine mammals from such fishery may be contributing to the immediate and significant adverse impact on a species or stock listed as a threatened species or endangered species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.); and

(ii) Has complied with Sec. 229.9(a)(3)(i) and (ii); or

(iii) Has the consent of the vessel owner.

(2) If an observer is placed on a Category III vessel, the vessel owner and/or operator must comply with the requirements of Sec. 229.7(c).

(e) Alternative observer program. The Assistant Administrator may establish an alternative observer program to provide statistically reliable information on the species and number of marine mammals incidentally taken in the course of commercial fishing operations. The alternative observer program may include direct observation of fishing activities from vessels, airplanes, or points on shore. [60 FR 45100, Aug. 30, 1995, as amended at 64 FR 9087, Feb. 24, 1999]

OBSERVER HEALTH AND SAFETY REGULATIONS

TITLE 50--WILDLIFE AND FISHERIES DEPARTMENT OF COMMERCE

PART 600--MAGNUSON-STEVENSON ACT PROVISIONS

Subpart H--General Provisions for Domestic Fisheries

Sec. 600.746 Observers.

(a) Applicability. This section applies to any fishing vessel required to carry an observer as part of a mandatory observer program or carrying an observer as part of a voluntary observer program under the Magnuson-Stevens Act, MMPA (16 U.S.C. 1361 et seq.), the ATCA (16 U.S.C. 971 et seq.), the South Pacific Tuna Act of 1988 (16 U.S.C. 973 et seq.), or any other U.S. law.

(b) Observer requirement. An observer is not required to board, or stay aboard, a vessel that is unsafe or inadequate as described in paragraph (c) of this section.

(c) Inadequate or unsafe vessels.

(1) A vessel is inadequate or unsafe for purposes of carrying an observer and allowing operation of normal observer functions if it does not comply with the applicable regulations regarding observer accommodations (see 50 CFR parts 229, 285, 300, 600, 622, 648, 660, 678, and 679) or if it has not passed a USCG safety examination or inspection. A vessel that has passed a USCG safety examination or inspection must display one of the following:

- (i) A current Commercial Fishing Vessel Safety Examination decal, issued within the last 2 years, that certifies compliance with regulations found in 33 CFR, chapter I and 46 CFR, chapter I;
- (ii) A certificate of compliance issued pursuant to 46 CFR 28.710; or
- (iii) A valid certificate of inspection pursuant to 46 U.S.C. 3311.

(2) Upon request by an observer, a NMFS employee, or a designated observer provider, a vessel owner/operator must provide correct information concerning any item relating to any safety or accommodation requirement prescribed by law or regulation. A vessel owner or operator must also allow an observer, a NMFS employee, or a designated observer provider to visually examine any such item.

(3) Pre-trip safety check. Prior to each observed trip, the observer is encouraged to briefly walk through the vessel's major spaces to ensure that no obviously hazardous conditions exist. In addition, the observer is encouraged to spot check the following major items for compliance with applicable USCG regulations:

- (i) Personal flotation devices/immersion suits;
- (ii) Ring buoys;
- (iii) Distress signals;
- (iv) Fire extinguishing equipment;
- (v) Emergency position indicating radio beacon (EPIRB), when required; and
- (vi) Survival craft, when required.

(d) Corrective measures. If a vessel is inadequate or unsafe for purposes of carrying an observer and allowing operation of normal observer functions, NMFS may require the vessel owner or operator either to:

(1) Submit to and pass a USCG safety examination or inspection; or

(2) Correct the deficiency that is rendering the vessel inadequate or unsafe (e.g., if the vessel is missing one personal flotation device, the owner or operator could be required to obtain an additional one), before the vessel is boarded by the observer.

(e) Timing. The requirements of this section apply both at the time of the observer's boarding, at all times the observer is aboard, and at the time the observer is disembarking from the vessel.

(f) Effect of inadequate or unsafe status. A vessel that would otherwise be required to carry an observer, but is inadequate or unsafe for purposes of carrying an observer and for allowing operation of normal observer functions, is prohibited from fishing without observer coverage. [63 FR 27217, May 18, 1998]

Section Two

Kodiak Island

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Section Two

Kodiak Island

AMMOP in the Kodiak Set Gillnet Fishery

In 2001, NMFS conducted a feasibility study to determine a suitable and cost-effective method to monitor the Kodiak salmon gillnet fishery. The setnet fishery on Kodiak is challenging to observe due to the remoteness and wide range of the fishing locations, the small size of the fishing vessels, the complexity of short time/area closures, the severe weather and bear danger. Due to these factors, intricate knowledge of the geography and fishery characteristics is needed prior to the implementation of an effective observer program.

This feasibility study took place from mid-June through July 2001. Using a chartered vessel, four observers toured the setnet sites and gathered information on where and how the fishing occurs, and logistics of housing and transporting observers in cost-effective ways. Alternative observation platforms were tested in order to determine which methods provide the most accurate data-- independent skiffs, fishermen's skiffs, research vessels, or shore. The study also field tested observer manuals, logs, data entry software, reporting sheets, communication technology, and sampling equipment. Data on the relative abundance and distribution of marine mammals and sea birds was also collected. NMFS conducted voluntary interviews with fishermen and will provide information about the Alaska Marine Mammal Observer Program. In addition, three 1-day aerial surveys documented the location of fishing activity and noted the presence of marine mammals.

The Commercial Salmon Fishery in Kodiak

Kodiak salmon have sustained commercial harvests off the island for over 150 years. The Kodiak commercial salmon fish harvest is one of the oldest in Alaska. According to ADFG estimates the commercial salmon fishery involves some 4000-5000 people, including 1,600-2000 fishermen and crew. Roughly 75% (Purse seine) to 80% (set gillnet) of permit holders are Alaska residents. The economic value of the commercial salmon fishery based solely on average price paid to permit holders has averaged about 37 million dollars annually since 1990. Of the five Pacific salmon harvested, sockeye salmon are currently the most economically important followed by pink, chum, coho, and chinook salmon. The most abundantly harvested are pink (90% of which are taken by the purse seine fleet). In 2000, roughly 10 million pink salmon were taken, three million sockeye, a little over a million chum, and 333 thousand coho. The Chinook harvest was only 12,300 fish.

The area is fished for salmon by commercial set gillnets, purse seines, beach seines, subsistence users, and sports fishermen. There is no drift gillnet fishing in Kodiak waters. Other commercial fisheries in the area include net fisheries for herring; longline, pot fishing, and trawl fishing for

groundfish, and dredging for scallops. There is a growing sports fishing industry during summer to fish for salmon and halibut.

The set gillnet fishery is a Category II fishery while the Kodiak purse seine fishery is classified as a Category III fishery. The set gillnet salmon fishery is the only salmon net fishery to be observed under the MMPA observer program in this area, at this time. Groundfish vessels over 60 feet carry fishery observers for at least 30 % of their fishing days, as authorized under the Magnuson-Stevens Act. At the end of this section is a brief description of the five species of salmon that occur around Kodiak. You will be given more detailed information on salmon during the fisheries and species identification section of the training.

The Kodiak Management Area (KMA) extends from Cape Douglas to Kilokak Rocks bordering Imuya Bay and includes Shelikof Strait and the waters of Kodiak, Afognak, and Shuyak islands. The KMA is divided into seven districts and 52 sections that include over 440 known salmon streams. [see Area Map in the Appendix]. The Alaska Department of Fish and Game (ADFG) is the state agency responsible for the management of Kodiak's salmon fisheries. The main management area office is found in the city of Kodiak. The island's salmon fisheries are limited entry fisheries. An average of approximately 190 gillnets permits, 310 purse seine permits, and 17 beach seine permits fished each year. Last year fewer fishermen fished. Of the 608 eligible permit holders only 399 participated. By gear type; 2 beach seines, 173 set gillnets and 224 purse seines. Approximately 14.4 million salmon were harvested, well below the past ten year average of 21.3 million. Purse seiners average a take of about 85 %, gillnet fisheries take 15 % and beach seine take less than 1% of the total salmon harvest.

These fisheries occur within state waters primarily from June to the end of September. By the Alaska Department of Fish and Game's Commercial Fishing Regulations for Kodiak (pick one of these up in class for more information about the fishery) salmon may be taken only from June 5 through October 31. The fishery is managed by emergency order however and salmon may only be fished commercially during those periods established by ADFG inseason. During some periods of the season fishing may be continuous with openers lasting days or even many weeks at a time. Notice of fishing openers is posted weekly at ADFG and announced on regular radio channels a few days or a few hours before each opener. Fishing periods are often extended by Emergency Order during the last 24 hours of the opener. Historic opener schedules can provide a somewhat useful guide in determining fishing effort. It is important to keep in mind that fishing effort can be dynamic and unpredictable, and dramatic changes in effort can occur due to changes in management policy, salmon run strength, price, and strikes within the industry.

Prior to the beginning of the 2002 fishing season, NMFS will work with the contractor to establish the required observer coverage level and observer effort distribution. NMFS may change the level of coverage up or down, and change the observer effort distribution.

The emphasis of the 2001 study was how to define effort and coverage and to describe the spatial and temporal variations of the salmon gillnet fishing operations on Kodiak. Interviews of ADF&G staff, fishermen, and others helped to determine the number of permits, fathoms of net fished, number of retrievals, hours soaked and how those variable change through out the season and area. During transit between and inside bays, observers collected sighting data on birds and

mammals. At setnet sites, they interviewed fishermen and conducted observations of net retrievals from the vessel, skiffs, and shore.

Aerial surveys were conducted to map fishing effort throughout the area and over the fishing season. The aerial surveys were conducted from a float plane with a local experienced pilot at the beginning of the salmon season, mid-season, and the end of the season to reflect the change in fishing distribution and effort and marine mammal populations.

The Fishing Gear and Operations

Set gillnets are stationary surface-hanging polyfilament nets that are staked, anchored, or otherwise fixed in place. The nets are kept afloat by corks along the top and a lead line running along the bottom of the net. The size of the mesh and length of the net are limited by regulation. Set gillnets (also known as setnets) are usually set perpendicular to the shore in the path of salmon moving toward rivers along the ocean shoreline. Set gillnets in Kodiak must be attached to shore. Setnetters are allowed to fish no more than two nets and an aggregate of 150 fathoms (900 feet). Many fishermen fish two 75-fathom nets or some other combination. Nets must be fished 900 feet apart. Gillnets may not be more than 125 meshes in depth. Set gillnets must be fished substantially a straight line. However 25 fathoms of net may be fished as a "hook". The hook may be used in any configuration. The nets are allowed to have a thick meshed 50 to 20- fathom lead extending from the beach. Small skiffs are used to collect fish picked from the net and to reach offshore sites.

Nets can be picked in sections allowing the gillnets to effectively fish the entire period. Nets may be picked continuously or according to the tides, catch, and stamina of the crew. The crew may take shifts tending the nets with usually one to three crew per shift. Some set gillnet sites are located in remote areas far from roads or accommodations, and are often reachable only by boat, aircraft, or all-terrain vehicles (ATVs). Most fish are delivered to shore-based processors by tenders or skiffs. Fishermen often live near the setnet site for the season, many in a small cabins or wall tents.

Fishing Effort and Distribution

ADFG divides Kodiak into commercial salmon management areas. Management areas are divided into ADFG districts, subdistricts or Sections and statistical areas (refer to your ADFG district map in Appendix). Purse seine fishing occurs throughout most of the islands waters however gillnet fishing is restricted to the Alitak Bay and the Northwest Districts' central section. Setnet fishing in Kodiak occurs from June to September in these two fishing districts. The Alitak Bay District includes setnets in Olga and Moser Bays, on the southwest end of the island. The Northwest District includes setnet sites from the western mouth of Uyak Bay to Narrow Strait which lies south of the village of Ouzinkie on Spruce Island and just northwest of the city of Kodiak.. Historically roughly a little over half of the gillnet effort occurs in the Alitak Bay District. Set gillnet sites may be in remote areas and may require observers to set up camps-- living in primitive conditions and taking precautions against bears.

Alitak Bay District

Setnet sites in the Alitak Bay District occur in protected waters. There are strong currents and tidal influences in some parts of the bays however. Storms can bring in rough seas and rain and fog even in these sheltered bays during the summer. The setnet sites in this district are clustered closely together. Virtually all of the bay's shores are fished. Most permit holders fish two nets. Fishermen here often work together in cooperative groups, much like Cook Inlet permit holders do. Recently Moser Bay has average more permits (65 average 1982-1999) than Olga Bay (46 average 1982-1999). Purse seiners may not fish in the bays but do harvest in outside waters of the Alitak District with an average of 124 permitted vessels landing 43 % of the sockeye harvest. Cannery tenders often pick up catch from fishermen twice a day. The primary plant and port, Wards Cove, is located outside the village of Akhiok in Lazy Bay. There is a landing strip in Akhiok with regular air service to the city of Kodiak. Float planes also serve the bay area, at Cannery Cove in Olga Bay. Barges service the village of Akhiok from Seattle and other ports. It may be possible to arrange for housing in the village. Skiff runs from Akhiok to the furthest ends of Olga Bay can take three to four hours depending on the boat and weather. Harbor seals and porpoise are both reported to be taken by setnet fishermen in these districts.

Northwest District

The Northwest District includes several large bays, many inlets, and exposed outer coast line along Shelikof and Kupreanof Straits. Gillnet fishing is restricted to the Central Section of the District. The bay fishing in the Northwest District is more protected than the outside exposed fishing along the Straights. The inside waters of Uyak and Uganik Bay are more exposed to strong westerly winds and storms than the Alitak District bays are. Nonetheless the bay fishing in the Northwest District is far more protected and preferred than the outside sites in the District are. Larsen Bay in Uyak Bay is a village of about 100 residents. There is a landing strip, stores, phone and internet access, several lodges, a port, and a cannery. Unfortunately, the Larsen Bay Cannery will not open in 2002, and it is unclear at this time what services in Larsen Bay will remain operating without the cannery. Many setnet sites cluster in these protected waters close to the services. In the past, tenders have picked up fish twice a day from sites, and some fishermen delivered their fish by skiff; but with the cannery closure, that will change. Most fishermen in the bays will operate small skiffs (18'-25') to pick fish. Normally fish are picked twice a day, although more picking is done if there is a strong run. In the bays fishermen usually fish two 75-fathom nets. Uganik Bay is more "remote" and has fewer services available. There used to be two canneries, but one shut down. There are no canneries in Viekoda Bay. The Port Lions cannery in Kizhuyak Bay is also shut down. Nonetheless, there are setnet sites along all these areas. Tenders will be taking fish to processors in the town of Kodiak, and should have

Setnet sites on the outside areas tend to be more dispersed. Some sites are not fished. Outside sites often cannot be fished due to poor weather conditions such as 25 knot winds and ten foot seas, which is not unusual for Kodiak during the summer (sometimes for weeks). Several fishermen drowned in 1999 on the outside when their skiff was swamped by a wave. Setnetters have also reported that sea lion interactions (predation of the catch in the net) can be so severe that fishermen are often forced to abandon outside setnet sites. Fishermen on the outside often fish one 150 fathom net rather than two 75 fathom nets. Tenders service outside sites, usually picking up fish twice a day. Fishermen can reach these sites by vessel or float plane. Seiners fish alongside setnet-

ters in the Northwest District. There are some gear conflicts but most fishermen report that relationship between the two groups is fairly civil. Setnet fishermen are curious why their fishery and not the seine fishery is being observed. Steller sea lion as well as small and large cetacean interactions are reported from the Northwest Districts.

The 2001 Kodiak Area Harvest

The 2001 Kodiak Area salmon fishery began June 9 and the last landing was Sept. 29.

Effort was down from previous years with 354 of 608 permits participating. Of those, 172 were setnet permits and 182 were purse seiners. The ex-vessel value of the catch was \$18.9 million (the ten year average is \$33.8 million).

The Salmon Runs

*Sockeye Salmon (Red) (*Oncorhynchus nerka*)*

There are 39 known sockeye salmon runs in the Kodiak Management Area. The largest occur in the four lake systems: Karluk, Ayaklik, Upper Station, and Frazer (Dog Salmon River). These systems provide approximately 80% of the current sockeye production in Kodiak waters. Directed fisheries on these systems is intense with commercial fishing taking place from early June to mid September. The Karluk and Upper Station systems have a distinct early (May 25 through July 15) and late runs (July 16 through September 20). The Frazer is an early returning stock with most sockeye entering the rivers by July 20. The Ayaklik run starts in early June but has a protracted run timing which continues until mid August. There are twelve other sockeye systems (including the Uganik) that account for five percent of the sockeye production. Sockeye escapement goals have been met or exceeded annually since 1984 in Kodiak. Commercial sockeye have averaged about 4 million fish landed per year since 1988. In 2001, 2.66 million sockeye were landed. Historically, this has been the "money fish" of the island's salmon species; but prices for sockeye have fallen over the last few years, and continue to fall as world markets have become supplied with farm-raised salmon. In 2001, the total ex-vessel value of the Kodiak Area salmon catch was 56% of the 10 year average, a reflection of the market conditions. Purse seiners take most of the Kodiak Management Area sockeye and the number of vessels participating decreased to a historic low of 182 in 2001. Within the districts where set gillnets fish, they take the majority of the sockeye. In the Alitak district gillnets average over 56 % of the sockeye harvest (45% in Moser bay and 12 % in Olga bay). In the Northwest district, gillnets average 62 % of the sockeye catch.

Coho Salmon (Silver) (Onchorhynchus kisutch)

Coho catches in Kodiak have been relatively small (although increasing in recent years) The escapement goal of (90,500 to 150,00) fish has been met since 1983. Over the last 10 years commercial harvest have averaged 312,700 coho salmon. The gillnet fishery took 47,517 coho in 2000 (16 % of the total harvest). The coho run occurs later in the summer, starting around July 17th and running into late September and early October. In the Northwest District, set gillnets average a catch of 44,369 coho. In the Alitak District, gillnets harvest a little under half the coho catch (16,562 in 1996) for that district.

Pink Salmon (Humpy) (Onchorhynchus gorbuscha)

Pink salmon are the most abundant salmon in Kodiak often comprising 80% of the total annual harvest. Primarily due to the cyclic production from Ayakulik and Karluk Rivers, pink salmon runs are usually larger during the even number years. From 1989 through 1997, odd year production has surpassed even year production. With the new record even year harvest in 1998, even year production may be returning to being the dominant harvest cycle. The pink run starts in early July and runs through early September. Fishermen are paid less for pinks than sockeye and some gillnetters don't fish for them. More than 90% of all pinks landed in Kodiak are caught by purse seines. Almost nine million pinks were landed by the seine fleet (as compared to a little over 1 million for the gillnet fleet) in 2000.

Chum Salmon (Dog) (Onchorhynchus keta)

Chum salmon generally use the same spawning systems as pinks . They enter into the bays and estuaries shortly after pinks in mid July. Management decisions on where and when to catch pinks often effect chum salmon harvest. Recently chum returns have been good in Kodiak waters. Over a million chum were harvested in 2001, about 10% of those caught by the fishery.

Chinook Salmon (King) (Oncorhynchus tshawytscha)

Kodiak has two naturally occurring chinook salmon populations in the Ayakulik and Karluk rivers. There are no directed commercial fisheries targeting these stocks. Any commercial harvest occurs incidental to fisheries targeting sockeye and pinks. The average commercial catch has been about 22,000 chinook salmon. In 2001, 23,800 chinook were harvested commercially in Kodiak, about 10% were landed by gillnetters. Chinook escapements have been well above established goals and the ten year average. There is a steady sport fishery for chinook.

Commercial Fishing Regulations - Salmon Fishing In the Kodiak Area

[Note: A map of the ADFG Fishing areas is in the Appendix]

5 AAC 18.310. FISHING SEASONS

(a) Salmon may be taken only from June 5 through October 31.

5 AAC 18.330. GEAR

(a) In the Afognak District salmon may be taken only by purse seines and beach seines.

(b) In the Northwest Kodiak District salmon may be taken only by purse seines and beach seines, except that in the Central Section, salmon may also be taken by set gillnets.

(c) In the Southwest Kodiak District salmon may be taken only by purse seines and beach seines.

(d) In the Alitak District salmon may be taken only by purse seines and beach seines, except that

(1) in the Moser-Olga Bay Section salmon may be taken only by set gillnets;

(2) in the Dog Salmon Flats Section salmon may be taken only by set gillnets;

(3) in the Outer Upper Station Section salmon may be taken only by set gillnets;

(4) in the Inner Upper Station Section salmon may be taken only by set gillnets;

(5) in the Outer Akalura Section salmon may be taken only by set gillnets;

(6) in the Inner Akalura Section salmon may be taken only by set gillnets;

(7) after September 4, salmon may be taken by purse seines and beach seines in the entire Alitak District.

(e) In the East Kodiak District salmon may be taken only by purse seines and beach seines.

(f) In the Northeast Kodiak District salmon may be taken only by purse seines and beach seines.

(g) In the Mainland District salmon may be taken only by purse seines and beach seines.

5 AAC 18.335. MINIMUM DISTANCE BETWEEN UNITS OF GEAR

No part of a set gillnet may be set or operated within 900 feet of any part of another set gillnet, or be attached to the beach within 900 feet of another net, except that in the Dog Salmon Flats, Outer Upper Station, Inner Upper Station, Outer Akalura, and Inner Akalura Sections there is no minimum distance between units of set gillnet gear. 5 AAC 18.331. GILLNET SPECIFICATIONS AND OPERATIONS

(a) Except as provided in (e) of this section, a CFEC permit holder may operate no more than 150 fathoms of set gillnet in the aggregate, nor more than two set gillnets.

(b) Seine webbing may be used on the shoreward end of a set gillnet and the length of the seine webbing used may extend no more than 50 fathoms seaward of the beach at the lowest tide of the current day, except that,

(1) in the Moser-Olga Bay, Inner Dog Salmon, Inner Akalura, Outer Akalura, Outer Upper Station, and Inner Upper Station Sections of the Alitak District, seine webbing may be used only from the high tide mark seaward, and no portion of the seine web may be in water deeper than five feet at the lowest tide of the current day;

(2) in that portion of the Moser-Olga Bay Section of the Alitak District south of a line from Bun Point to the opposite shore at 56° 57.95' N. lat., 154° 08.70' W. long., seine webbing may be used only from the high tide mark seaward, and must meet one of the following requirements:

(A) no portion of the seine web may be in water deeper than five feet at the lowest tide of the current day; or

(B) the length of seine webbing used may be no more than 20 fathoms per set.

(c) Set gillnets must be operated in substantially a straight line, except that no more than 24 fathoms of a set gillnet may be used as a hook. A hook may be used in any configuration.

(d) Except as provided in (i) of this section, the shoreward end of a set gillnet must be attached to a point of land that is exposed at the lowest tide of the day or to a rock that is within five feet of the surface at the lowest tide of the day. For the purpose of this section, "a rock" is any naturally located or created geological formation that shows no evidence of having been located or created through man-made means. A set gillnet may not be attached to the beach inside closed waters.

(e) Two salmon set gillnet CFEC permit holders may form a joint venture and combine their gear under the following conditions:

(1) a permit must be obtained from a local representative of the department before a joint venture may start operations;

(2) only one permit per year will be issued for each joint venture;

(3) the permit must be signed by both CFEC permit holders and each must have a copy of the permit readily available for inspection;

(4) the permit may be canceled by the department upon the request of one of the joint venture operators;

(5) the gear and site markers required by 5 AAC 39.280 must bear the five-digit CFEC permit serial number of both permit holders;

(6) no single set gillnet may be more than 150 fathoms in length;

(7) no joint venture may operate more than three set gillnets; and

(8) both parties of the joint venture are legally responsible for the operation of all gear of the joint venture.

(f) No set gillnet gear, including running lines, shore leads, anchors, and buoys, may be placed in the water, nor may signs required by 5 AAC 18 or 5 AAC 39 be placed on the beach before emergency order openings of the closed waters areas of Upper Olga Bay described in 5 AAC 18.350(a)(1)(B)(i).

(g) No gillnet may be more than 125 meshes in depth.

(h) In the Alitak Bay District, the shoreward end of a set gillnet must not begin further seaward, or in water deeper, than the limit specified for seine webbing in (b) of this section.

(i) Effective January 1, 1995, in the Moser-Olga Bay Section of the Alitak District, the shoreward end attachment point of a set gillnet must be attached to a point of land or rock that is no more than 2.1 feet below the surface of the water at mean lower low water at Alitak Bay. The shoreward end attachment point of a set gillnet in the Moser-Olga Bay Section that is not above the surface of the water at all times

(1) must be certified, by a registered land surveyor, to be no more than 2.1 feet below the surface of the water at mean lower low water at Alitak Bay;

(2) must be marked with a permanent survey monument by a registered land surveyor;

(3) may not be below the survey monument; and

(4) may not be more than two horizontal feet from the survey monument; a set gillnet may not be attached to the beach inside closed waters; for the purpose of this subsection, a "registered land surveyor" is a land surveyor registered by the state under AS 08.48 and 12 AAC 36.

Species of Kodiak Island

The information given to you during training will include handouts and field guides to facilitate the identification of marine wildlife you might encounter during your work. While you should make every attempt to identify fish, marine mammals, and birds to the species level; the priority is to make sure that your identification is accurate. Don't guess or assume species. For example, you may be able to establish with certainty that you have seen a loon but cannot be absolutely sure which species of loon it is. Record it as "loon, unidentified" and make a detailed description of it on the appropriate forms or in your logbook.

In this section, you will find information on marine mammals, marine birds, and fish that occur around Kodiak. Other sources of information include the NMML Alaska Stock Assessment Reports and Alaska Department of Fish and Game Wildlife Note Book series.

Marine Mammal and Bird Identification Guidelines

You will receive marine mammal and bird identification training and field guides to help you in the field. Although there are a limited number of marine mammal and birds species that might be encountered in Kodiak, identification can be difficult. Here are some hints to help you with your identification adapted from *Marine Mammals of Alaska* by Kate Wynne.

- There may be little time to observe or examine the marine mammals or birds (even when dead). It is important to regularly review your field guides before going into the field to remember what characteristics to look for.
- Be patient and persistent. Continue scanning an area. It may be several minutes before a marine mammal or bird resurfaces.
- Don't lose observation time thumbing through field guides. Keep your eye on the mammal and make mental notes or quick sketches of key traits for later comparison with guides. After the animal is out of sight, immediately write down any clues if you cannot identify the marine mammal or bird to species with certainty.
- Don't jump to conclusions. Some marine mammal and bird behavior is misleading. Pinnipeds and sea otters often break the water surface (called porpoising) while swimming fast, while some cetaceans rest motionless at the surface. Continue to observe to verify the species identification. The same is true for marine birds.
- Never base identification on behavior alone. Have at least two physical characteristics to make a positive identification.

Marine Mammals

The two most common pinniped species in Kodiak waters are harbor seals and Steller sea lions. Northern fur seals, Pacific walrus, elephant seals, and bearded seals have been sighted in waters around Kodiak.

A number of cetaceans are present around Kodiak. Harbor porpoise, Dall's porpoise, killer whales and minke whales are sighted regularly. Larger whales such as humpback whales, grey whales, fin whales and even right whales have been sighted and some species of beaked whales may occasionally be sighted in the area. Sea otters are also relatively common.

Marine Birds

Over 100 species of marine birds occur regularly in the area, including 39 species of seabirds, 35 species of loons, grebes, and waterfowl, and 28 species of shore birds. Common sea birds in the area include storm petrels, glaucous winged gulls, black legged kittiwakes, common murre, auklets, murrelets, and horned and tufted puffins.

Marine Fish

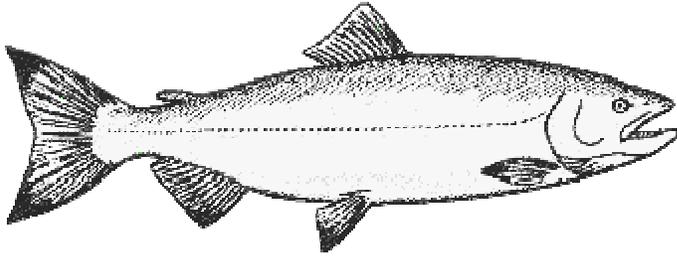
Gillnets fish relatively "cleanly". That is, they seldom catch species other than the targeted species of salmon. It is important for extrapolation purposes that you get accurate numbers of total landed catch of salmon for each set observed. Identification of catch or bycatch species of fish taken during gillnet operations must not interfere with observations of the net. If you cannot immediately identify a fish or invertebrate, wait until after the net has been retrieved to attempt your identification. Other species of fish that occur as bycatch may include jelly fish, skates, dogfish, sculpin, pollock, flatfish, crabs, and other invertebrates in areas where the net hangs close to the bottom. Little data has been collected on the bycatch of the Kodiak setnet fishery. A few species you may encounter are sculpins, Pacific cod, pollock, and several species of flatfish such as rock sole, butter sole, starry flounder, and Pacific halibut. Shallow water species not common to other observer programs may be encountered, so take photographs, retain specimens, and consult your fish identification guide.

Salmon Natural History

There are six species of salmon in Alaska. All but steelhead are important in the commercial fisheries. The following information describes the major five species of Pacific salmon (source: ADFG website)

Sockeye salmon (*Oncorhynchus nerka*)

Text from: ADFG Commercial Fisheries Management and Development Staff



The sockeye salmon (*Oncorhynchus nerka*), often referred to as "red" or "blueback" salmon, occurs in the North Pacific and Arctic oceans and associated freshwater systems. This species ranges south as far as the Klamath River in California and northern Hokkaido in Japan, to as far north as far as Bathurst Inlet in the Canadian

Arctic and the Anadyr River in Siberia. Aboriginal people considered sockeye salmon to be an important food source and either ate them fresh or dried them for winter use. Today sockeye salmon support one of the most important commercial fisheries on the Pacific coast of North America, are increasingly sought after in recreational fisheries, and remain an important mainstay of many subsistence users.

General description: Sockeye salmon can be distinguished from chinook, coho, and pink salmon by the lack of large, black spots and from chum salmon by the number and shape of gill rakers on the first gill arch. Sockeye salmon have 28 to 40 long, slender, rough or serrated closely set rakers on the first arch. Chum salmon have 19 to 26 short, stout, smooth rakers.

Immature and prespawning sockeye salmon are elongate, fusiform, and somewhat laterally compressed. They are metallic green blue on the back and top of the head, iridescent silver on the sides, and white or silvery on the belly. Some fine black speckling may occur on the back, but large spots are absent. Juveniles, while in fresh water, have the same general coloration as immature sockeye salmon in the ocean, but are less iridescent. Juveniles also have dark, oval parr marks on their sides. These parr marks are short-less than the diameter of the eye-and rarely extend below the lateral line.

Breeding males develop a humped back and elongated, hooked jaws filled with sharp caniniform teeth. Both sexes turn brilliant to dark red on the back and sides, pale to olive-green on the head and upper jaw, and white on the lower jaw.

Life history: Sockeye salmon are anadromous: they live in the sea and enter freshwater systems to spawn. After hatching, juvenile sockeye salmon may spend up to four years in fresh water before migrating to sea as silvery smolt weighing only a few ounces. They grow quickly in the sea, usually reaching a size of 4 to 8 pounds after one to four years. Mature sockeye salmon travel thou-

sands of miles from ocean feeding areas to spawn in the same freshwater system where they were born. Little is known about the navigation mechanisms or cues they use on the high seas, although some evidence suggests that they may be able to use cues from the earth's magnetic field. Once near their natal freshwater system, sockeye salmon use olfactory cues to guide them home. Like all Pacific salmon, sockeye salmon die within a few weeks after spawning. Maturing sockeye salmon return to freshwater systems from the ocean during the summer months, and most populations show little variation in their arrival time on the spawning grounds from year to year. Freshwater systems with lakes produce the greatest number of sockeye salmon. Spawning usually occurs in rivers, streams, and upwelling areas along lake beaches. The female selects the spawning site, digs a nest (redd) with her tail, and deposits eggs in the downstream portion of the redd as one or more males swim beside her and fertilize the eggs as they are extruded. After each spawning act, the female covers the eggs by dislodging gravel at the upstream end of the redd with her tail. A female usually deposits about five batches of eggs in a redd. Depending upon her size, a female produces from 2,000 to 4,500 eggs. Eggs hatch during the winter, and the young sac-fry, or alevins, remain in the gravel, living off the material stored in their yolk sacs, until early spring. At this time they emerge from the gravel as fry and move into rearing areas. In systems with lakes, juveniles usually spend one to three years in fresh water before migrating to the ocean in the spring as smolts. However, in systems without lakes, many juveniles migrate to the ocean soon after emerging from the gravel. Sockeye salmon return to their natal stream to spawn after spending one to four years in the ocean. Mature sockeye salmon that have spent only one year in the ocean are called jacks and are, almost without exception, males. Once in the ocean, sockeye salmon grow quickly. While returning adults usually weigh between 4 and 8 pounds, weights in excess of 15 pounds have been reported.

In some areas, populations of sockeye salmon remain in fresh water all their lives. This landlocked form of sockeye salmon, called "kokanee," reaches a much smaller maximum size than the anadromous form and rarely grows to be over 14 inches long. Food habits: While in fresh water, juvenile sockeye salmon feed mainly upon zooplankton (such as ostracods, cladocerans, and copepods), benthic amphipods, and insects. In the ocean, sockeye salmon continue to feed upon zooplankton (such as copepods, euphausiids, ostracods, and crustacean larvae), but also prey upon larval and small adult fishes (such as sand lance), and occasionally squid.

Fisheries: The largest harvest of sockeye salmon in the world occurs in the Bristol Bay area of southwestern Alaska where 10 million to more than 30 million sockeye salmon may be caught each year during a short, intensive fishery lasting only a few weeks. Relatively large harvests of 1 million to 6 million sockeye salmon are also taken in Cook Inlet, Prince William Sound, and Chignik Lagoon. All commercial Pacific salmon fisheries in Alaska are under a limited entry system which restricts the number of vessels allowed to participate. Most sockeye salmon are harvested with gillnets either drifted from a vessel or set with one end on the shore, some are captured with purse seines, and a relatively small number are caught with troll gear in the southeastern portion of the state.

Sockeye salmon are the preferred species for canning due to the rich orange-red color of their flesh. Today, however, more than half of the sockeye salmon catch is sold frozen rather than canned. Canned sockeye salmon is marketed primarily in the United Kingdom and the United

States while most frozen sockeye salmon is purchased by Japan. Sockeye salmon roe is also valuable. It is salted and marketed in Japan.

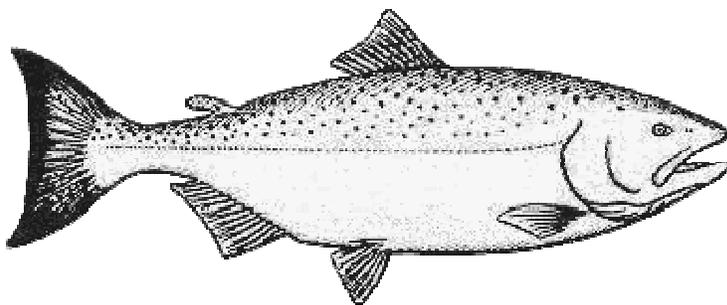
There is also a growing sport fishery for sockeye salmon throughout the state. Probably the best known sport fishery with the greatest participation occurs during the return of sockeye salmon to the Russian River on the Kenai Peninsula. Other popular areas include the Kasilof River on the Kenai Peninsula as well as the various river systems within Bristol Bay.

Subsistence users harvest sockeye salmon in many areas of the state. The greatest subsistence harvest of sockeye salmon probably occurs in the Bristol Bay area where participants use set gillnets. In other areas of the state, sockeye salmon may be taken for subsistence use in fishwheels. Most of the subsistence harvest consists of prespawning sockeye salmon, but a relatively small number of postspawning sockeye salmon are also taken. Personal use fisheries have also been established to make use of any sockeye salmon surplus to spawning needs, subsistence uses, and commercial and sport harvests. Personal use fisheries have occurred in Bristol Bay, where participants use set gillnets, as well as in Cook Inlet and Prince William Sound, where participants also use dip nets. While most sockeye salmon production in Alaska results from the spawning of wild populations, some runs have been developed or enhanced through human effort. Although artificial propagation of sockeye salmon has proven difficult, notable success has been achieved at state-maintained hatcheries located on the upper Copper River in Prince William Sound and the Kasilof River on the Kenai Peninsula. A fish ladder installed on the Fraser River on Kodiak Island has also served to enhance sockeye salmon returns.

Chinook Salmon (*Oncorhynchus tshawytscha*)

Text: Kevin Delaney, ADFG

The chinook salmon (*Oncorhynchus tshawytscha*) is Alaska's state fish and is one of the most important sport and commercial fish native to the Pacific coast of North America. It is the largest of all Pacific salmon, with weights of individual fish commonly exceeding 30 pounds. A 126-



pound chinook salmon taken in a fish trap near Petersburg, Alaska in 1949 is the largest on record. The largest sport-caught chinook salmon was a 97-pound fish taken in the Kenai River in 1986. The chinook salmon has numerous local names. In Washington and Oregon, chinook salmon are called chinook, while in British Columbia they are

called spring salmon. Other names are quinnat, tyee, tule, blackmouth, and king.

Range: In North America, chinook salmon range from the Monterey Bay area of California to the Chukchi Sea area of Alaska. On the Asian coast, chinook salmon occur from the Anadyr River area of Siberia southward to Hokkaido, Japan.

In Alaska, it is abundant from the southeastern panhandle to the Yukon River. Major populations return to the Yukon, Kuskokwim, Nushagak, Susitna, Kenai, Copper, Alsek, Taku, and Stikine rivers. Important runs also occur in many smaller streams.

General description: Adults are distinguished by the black irregular spotting on the back and dorsal fins and on both lobes of the caudal or tail fin. Chinook salmon also have a black pigment along the gum line which gives them the name "blackmouth" in some areas.

In the ocean, the chinook salmon is a robust, deep-bodied fish with a bluish-green coloration on the back which fades to a silvery color on the sides and white on the belly. Colors of spawning chinook salmon in fresh water range from red to copper to almost black, depending on location and degree of maturation. Males are more deeply colored than the females and also are distinguished by their "ridgeback" condition and by their hooked nose or upper jaw. Juveniles in fresh water are recognized by well-developed parr marks which are bisected by the lateral line.

Life history: Like all species of Pacific salmon, chinook salmon are anadromous. They hatch in fresh water, spend part of their life in the ocean, and then spawn in fresh water. All chinooks die after spawning. Chinook salmon may become sexually mature from their second through seventh year, and as a result, fish in any spawning run may vary greatly in size. For example, a mature 3-year-old will probably weigh less than 4 pounds, while a mature 7-year-old may exceed 50 pounds. Females tend to be older than males at maturity. In many spawning runs, males outnumber females in all but the 6- and 7-year age groups. Small chinooks that mature after spending only one winter in the ocean are commonly referred to as "jacks" and are usually males. Alaska streams normally receive a single run of chinook salmon in the period from May through July.

Chinook salmon often make extensive freshwater spawning migrations to reach their home streams on some of the larger river systems. Yukon River spawners bound for the extreme headwaters in Yukon Territory, Canada, will travel more than 2,000 river miles during a 60-day period. Chinook salmon do not feed during the freshwater spawning migration, so their condition deteriorates gradually during the spawning run as they use stored body materials for energy and for the development of reproductive products.

Each female deposits from 3,000 to 14,000 eggs in several gravel nests, or redds, which she excavates in relatively deep, moving water. In Alaska, the eggs usually hatch in late winter or early spring, depending on time of spawning and water temperature. The newly hatched fish, called alevins, live in the gravel for several weeks until they gradually absorb the food in the attached yolk sac. These juveniles, called fry, wiggle up through the gravel by early spring. In Alaska, most juvenile chinook salmon remain in fresh water until the following spring when they migrate to the ocean in their second year of life. These seaward migrants are called smolts. Juvenile chinooks in fresh water feed on plankton, then later eat insects. In the ocean, they eat a variety of organisms including herring, pilchard, sandlance, squid, and crustaceans. Salmon grow rapidly in the ocean and often double their weight during a single summer season.

Commercial fishery and subsistence: North Pacific chinook salmon catches during the late 1970s and early 1980s averaged more than 4 million fish per year. The United States harvested the majority of the catch followed by Canada, Japan, and the USSR. Alaska's annual harvest during this period averaged about 731,000 fish per year, or about 32 percent of the North American catch. The majority of the Alaska catch is made in Southeast, Bristol Bay, and the Arctic-Yukon-Kuskokwim areas. Fish taken commercially average about 18 pounds. The majority of the catch is made with troll gear and gillnets. There is an excellent market for chinook salmon because of their large size and excellent table qualities. Recent catches in Alaska have brought fishers nearly \$19 million per year. Catches by subsistence fishers in Southwest and Southcentral areas from 1976 through 1986 have averaged approximately 90,000 chinook salmon. Approximately 90 percent of the subsistence harvest is taken in the Yukon and Kuskokwim rivers.

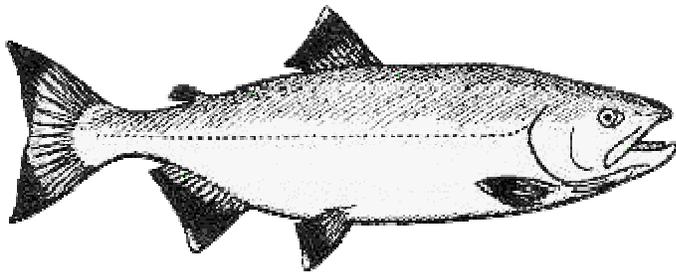
Sport fishery: The chinook salmon is perhaps the most highly prized sport fish in Alaska and is extensively fished by anglers in the Southeast and Cook Inlet areas. Trolling with rigged herring is the favored method of angling in salt water, while lures and salmon eggs are used by freshwater anglers. The sport fishing harvest of chinook salmon is over 76,000 annually, with Cook Inlet and adjacent watersheds contributing over half of the catch.

Management: Unlike other salmon species, chinook salmon rear in inshore marine waters and are, therefore, available to commercial and sport fishers all year. Catches of chinook salmon in Southeast Alaska are regulated by quotas set under the Pacific Salmon Treaty.

Chum Salmon (*Oncorhynchus keta*)

Text: Lawrence S. Buklis, ADFG

Chum salmon (*Oncorhynchus keta*) have the widest distribution of any of the Pacific salmon.



They range south to the Sacramento River in California and the island of Kyushu in the Sea of Japan. In the north they range east in the Arctic Ocean to the Mackenzie River in Canada and west to the Lena River in Siberia. Chum salmon are the most abundant commercially harvested salmon species in arctic, northwestern, and Interior Alaska, but are of relatively less importance in other

areas of the state. There they are known locally as "dog salmon" and are a traditional source of dried fish for winter use. General description: Ocean fresh chum salmon are metallic greenish-blue on the dorsal surface (top) with fine black speckles. They are difficult to distinguish from sockeye and coho salmon without examining their gills or caudal fin scale patterns. Chum have fewer but larger gillrakers than other salmon. After nearing fresh water, however, the chum salmon changes color-particularly noticeable are vertical bars of green and purple, which give them the common name, calico salmon. The males develop the typical hooked snout of Pacific salmon and very large teeth which partially account for their other name of dog salmon. The

females have a dark horizontal band along the lateral line; their green and purple vertical bars are not so obvious.

Life history: Chum salmon often spawn in small side channels and other areas of large rivers where upwelling springs provide excellent conditions for egg survival. They also spawn in many of the same places as do pink salmon, i.e., small streams and intertidal zones. Some chum in the Yukon River travel over 2,000 miles to spawn in the Yukon Territory. These have the brightest color and possess the highest oil content of any chum salmon when they begin their upstream journey. Chum salmon spawning is typical of Pacific salmon with the eggs deposited in redds located primarily in upwelling spring areas of streams. Female chum may lay as many as 4,000 eggs, but fecundity typically ranges between 2,400 and 3,100 eggs.

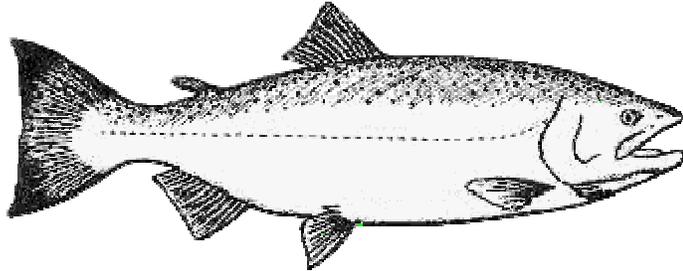
Chum do not have a period of freshwater residence after emergence of the fry as do chinook, coho, and sockeye salmon. Chums are similar to pink salmon in this respect, except that chum fry do not move out into the ocean in the spring as quickly as pink fry. Chum fry feed on small insects in the stream and estuary before forming into schools in salt water where their diet usually consists of zooplankton. By fall they move out into the Bering Sea and Gulf of Alaska where they spend one or more of the winters of their 3- to 6-year lives. In southeastern Alaska most chum salmon mature at 4 years of age, although there is considerable variation in age at maturity between streams. There is also a higher percentage of chums in the northern areas of the state. Chum vary in size from 4 to over 30 pounds, but usually range from 7 to 18 pounds, with females usually smaller than males.

Noncommercial fishery: In arctic, northwestern and Interior Alaska, chum salmon remain an important year-round source of fresh and dried fish for subsistence and personal use purposes. Sport fishers generally capture chum salmon incidental to fishing for other Pacific salmon in either fresh or salt water. Statewide sport harvest usually totals fewer than 25,000 chums. After entering fresh water, chums are most often prepared as a smoked product. Commercial fishery: In the last few years an average of 11 million chum salmon, worth over \$32 million, have been caught in Alaska. Most chum are caught by purse seines and drift gillnets, but fishwheels and set gillnets harvest a portion of the catch. In many areas they have been harvested incidental to the catch of pink salmon. The development of markets for fresh and frozen chum in Japan and northern Europe has increased their demand, especially in the last decade. The Alaska Department of Fish and Game has built several hatcheries primarily for chum salmon products.

Coho Salmon (*Oncorhynchus kisutch*)

Text: Steve Elliott, ADFG

Coho Salmon (*Oncorhynchus kisutch*) also called silver salmon, are found in coastal waters of Alaska from Southeast to Point Hope on the Chukchi Sea and in the Yukon River to the Alaska-Yukon border. Coho are extremely adaptable and occur in nearly all accessible bodies of fresh water—from large transboundary watersheds to small tributaries. General description:



Adults usually weigh 8 to 12

pounds and are 24 to 30 inches long, but individuals weighing 31 pounds have been landed.

Adults in salt water or newly arrived in fresh water are bright silver with small black spots on the back and on the upper lobe of the caudal fin. They can be distinguished from chinook salmon (*Oncorhynchus tshawytscha*) by the lack of black spots on the lower lobe of the tail and gray gums; chinook have small black spots on both caudal lobes and they have black gums. Spawning adults of both sexes have dark backs and heads with maroon to reddish sides. The males develop a prominent hooked snout with large teeth called a kype. Juvenile coho salmon have 8 to 12 parr marks evenly distributed above and below the lateral line with the parr marks narrower than the interspaces. The adipose fin is uniformly pigmented. The anal fin has a long leading edge usually tipped with white, and all fins are frequently tinted with orange. Life history: Coho salmon enter spawning streams from July to November, usually during periods of high runoff. Run timing has evolved to reflect the requirements of specific stocks. In some streams with barrier falls, adults arrive in July when the water is low and the falls are passable. In large rivers, adults must arrive early, as they need several weeks or months to reach headwater spawning grounds. Run timing is also regulated by the water temperature at spawning grounds: where temperatures are low and eggs develop slowly, spawners have evolved early run timing to compensate; conversely, where temperatures are warm, adults are late spawners. Adults hold in pools until they ripen, then move onto spawning grounds; spawning generally occurs at night. The female digs a nest, called a redd, and deposits 2,400 to 4,500 eggs. As the eggs are deposited, they are fertilized with sperm by the male. The eggs develop during the winter, hatch in early spring, and the embryos remain in the gravel utilizing the egg yolk until they emerge in May or June. The emergent fry occupy shallow stream margins, and, as they grow, establish territories which they defend from other salmonids. They live in ponds, lakes, and pools in streams and rivers, usually among submerged woody debris—quiet areas free of current—from which they dart out to seize drifting insects. During the fall, juvenile coho may travel miles before locating off-channel habitat where they pass the winter free of floods. Some fish leave fresh water in the spring and rear in brackish estuarine ponds and then migrate back into fresh water in the fall. They spend one to three winters in streams and may spend up to five winters in lakes before migrating to the sea as smolt. Time at sea varies. Some males (called jacks) mature and return after only 6 months at sea at a length of about 12 inches, while most fish stay 18 months before returning as full size adults. Little is known of the ocean

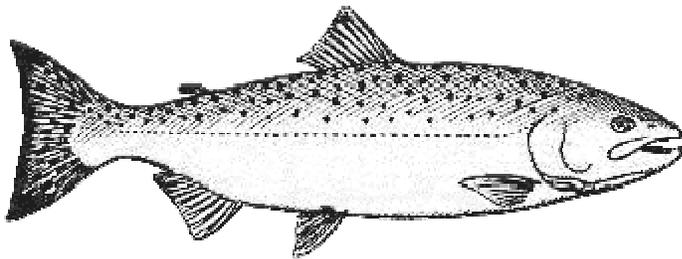
migrations of coho salmon. High seas tagging shows that maturing Southeast Alaska coho move northward throughout the spring and appear to concentrate in the central Gulf of Alaska in June. They later disperse towards shore and migrate along the shoreline until they reach their stream of origin.

Commercial fishing: The commercial catch of coho salmon has increased significantly from low catches in the 1960s, reaching 6.25 million fish in 1986. About half of the catch was taken in Southeast Alaska, primarily by the troll fishery. **Sport fishing:** The coho salmon is a premier sport fish and is taken in fresh and salt water from July to September. In 1986, anglers throughout Alaska took 201,000 coho salmon. In salt water they are taken by trolling or mooching (drifting) with herring or with flies or lures along shore. In fresh water they hit salmon eggs, flies, spoons, or spinners. Coho are spectacular fighters and the most acrobatic of the Pacific salmon, and on light tackle provide a thrilling and memorable fishing experience.

Pink Salmon (*Oncorhynchus gorbuscha*)

Text: Alan Kingsbury, ADFG

The pink salmon (*Oncorhynchus gorbuscha*) is also known as the "humpback" or "humpy" because of its very pronounced, laterally flattened hump which develops on the backs of adult males before spawning. It is called the "bread and butter" fish in many Alaskan coastal fishing communities because of its importance to commercial fisheries and thus to local economies. Pink salmon also contribute substantially to the catch of sport anglers and subsistence users in Alaska. It is native to Pacific and arctic coastal waters from northern California to the Mackenzie River, Canada, and to the west from the Lena River in Siberia to Korea. **General description:** The



pink salmon is the smallest of the Pacific salmon found in North America with an average weight of about 3.5 to 4 pounds and average length of 20-25 inches. An adult fish returning to coastal waters is bright steely blue on top and silvery on the sides with many large black spots on the back and entire tail fin. Its scales are very small and the flesh is pink. As the fish approaches the spawning streams the bright appearance of the male is replaced by brown to black above with a white belly; females become olive green with dusky bars or patches above and a light-colored belly. By the time the male enters the spawning stream, it has developed the characteristic hump and hooked jaws. Juvenile pink salmon are entirely silvery, without the dark vertical bars, or parr marks, of the young of other salmon species.

Life history: Adult pink salmon enter Alaska spawning streams between late June and mid-October. Different races or runs with differing spawning times frequently occur in adjacent streams or even within the same stream. Most pink salmon spawn within a few miles of the coast and spawn-

ing within the intertidal zone or the mouth of streams is very common. Shallow riffles where flowing water breaks over coarse gravel or cobble-size rock and the downstream ends of pools are favored spawning areas. The female pink salmon carries 1,500 to 2,000 eggs depending on her size. She digs a nest, or redd, with her tail and releases the eggs into the nest. They are immediately fertilized by one or more males and then covered by further digging action of the female. The process is commonly repeated several times until all the female's eggs have been released. After spawning, both males and females soon die, usually within two weeks. Sometime during early to mid-winter, eggs hatch. The alevins, or young fry, feed on the attached yolk sac material continuing to grow and develop. In late winter or spring, the fry swim up out of the gravel and migrate downstream into salt water. The emergence and outmigration of fry is heaviest during hours of darkness and usually lasts for several weeks before all the fry have emerged.

Following entry into salt water, the juvenile pink salmon move along the beaches in dense schools near the surface, feeding on plankton, larval fishes, and occasional insects. Predation is heavy on the very small, newly emerged fry, but growth is rapid. By fall, at an age of about 1 year, the juvenile pink salmon are 4 to 6 inches long and are moving into the ocean feeding grounds in the Gulf of Alaska and Aleutian Islands areas. High seas tag-and-recapture experiments have revealed that pink salmon originating from specific coastal areas have characteristic distributions at sea which are overlapping, nonrandom, and nearly identical from year to year. The ranges of Alaska pink salmon at sea and pink salmon from Asia, British Columbia, and Washington overlap each other.

Pink salmon mature in two years which means that odd-year and even-year populations are essentially unrelated. Frequently in a particular stream the other odd-year or even-year cycle will predominate, although in some streams both odd- and even-year pink salmon are about equally abundant. Occasionally cycle dominance will shift, and the previously weak cycle will become most abundant. Commercial fishing: In the early years, fixed and floating fish traps were employed extensively to catch pink salmon; such traps were prohibited following statehood in 1959. Now most pink salmon are taken with purse seines and drift or set gillnets. Lesser numbers are taken with troll gear or beach seines. The average annual Alaska harvest since 1959 is 45.1 million pink salmon. The ten-year average harvest (1983-1992) is 77.4 million pink salmon. In 1991 the Alaska harvest represented about 96 percent of the total North American harvest.

Pink salmon fisheries are important in all coastal regions of Alaska south of Kotzebue Sound. Commercial canning and salting of pink salmon began in the late 1800s and expanded steadily until about 1920. Runs declined markedly during the 1940s and 1950s; however, intensive effort is being made to rebuild and enhance those runs through hatcheries, fish ladders, and improved fisheries management.

Notice to Permit Holders

The following letter information was sent to all set gillnet permit holders prior to the 2002 season:

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

April 30, 2002

Via Certified Mail

NOTICE FOR PERMIT OWNERS/OPERATORS OF KODIAK SALMON SET GILLNET FISHERY

This notice is for individuals listed as the permit owner or operator on the Marine Mammal Authorization Certificate for the Kodiak salmon set gillnet fishery and contains essential information for the 2002 fishing season.

This letter is official notification of your obligation to comply with the regulations that require vessels to carry observers on any or all fishing trips as directed by the National Marine Fisheries Service (NMFS) or the designated contractor [50 CFR § 229.7(c)]. For these requirements, the permit operator is presumed to be acting as the agent of the owner. The permit owner is responsible for all activities conducted under the Marine Mammal Authorization Certificate, including, but not limited to, the activities of an agent or employee resulting in violations of the certificate and applicable regulations.

Data Contractors Incorporated (DCI) is the designated contractor who will be responsible for placing observers at set net sites.

The permit owner, directly or through an agent or employee, is responsible for complying with regulations that provide for exceptions for the serious injury and mortality of marine mammals incidental to commercial fishing operations from the Marine Mammal Protection Act's (MMPA) general moratorium and with the following conditions that NMFS developed to ensure the effective deployment and safety of observers.

1. Safety Requirements

On May 18, 1998, NMFS published regulations under the Magnuson-Stevens Fishery Conservation and Management Act that address the health and safety of observers stationed aboard commercial fishing vessels. **Under these regulations, observers may not depart on a fishing trip aboard a vessel**

which does not comply with United States Coast Guard (USCG) safety requirements or that does not display a current Commercial Fishing Vessel Safety Examination decal [50 CFR § 600.746(c) (1)].

All vessels required to carry an observer must meet USCG safety requirements and display a current safety decal (issued within the previous two years). Vessels that do not meet these requirements are deemed unsafe for purposes of carrying an observer and must correct noted deficiencies prior to departing to fish [50 CFR § 600.746(d) (2)].

If you need to schedule a dockside examination, call your nearest Coast Guard Marine Safety Office Dockside Examiner:
Marine Safety Detachment in Kodiak at (907) 486-5918

2. **Marine Mammal Authorization Certificate**

All participants in the Kodiak salmon set gillnet fishery must obtain a Marine Mammal Authorization Certificate in order to lawfully participate in the fishery, because the fishery is designated as a Category II fishery under the MMPA. The Marine Mammal Authorization Certificate allows for lawful incidental serious injury and mortality of marine mammals. You should automatically receive the Marine Mammal Authorization Certificate in the mail which is integrated with the state fishing registration process. If you are planning to fish in the Kodiak salmon set gillnet fishery, or any other Category I or II fisheries, and you have not obtained a Marine Mammal Authorization Certificate, please contact Judy Roberts, National Marine Fisheries Service, Alaska Region, P.O. Box 21668, Juneau, Alaska 99802, at (907) 586-7235, or E-mail at Judy.Roberts@noaa.gov.

3. **Injury and Mortality Reporting Requirements**

Operators of All fishing vessels must report all incidental injuries and mortalities of marine mammals that have occurred as a result of commercial fishing operations on a NMFS Marine Mammal Injury/Mortality Report Form regardless of whether an observer was aboard the vessel. The report must be sent by mail or fax within 48 hours of the end of the fishing trip in which the injury or mortality occurred [50 CFR § 229.6(a)]. Failure to report all injuries and mortalities within 48 hours may result in suspension, revocation, or denial of a Marine Mammal Authorization Certificate [50 CFR § 229.10(e)]. For copies of the Injury/Mortality Report Form, contact Judy Roberts, National Marine Fisheries Service, Alaska Region, P.O. Box 21668, Juneau, Alaska 99802, at (907) 586-7235, fax (907) 586-7012,

or E-mail at Judy.Roberts@noaa.gov.

4. **Prohibitions**

Failure to take an observer on a fishing trip: it is unlawful to fail to take an assigned observer on a fishing trip [50 CFR § 600.746(c)(1)].

Harassment of an observer: it is unlawful for any person to assault, harm, harass, (including sexual harassment), oppose, impede, intimidate, impair, or in any way influence or interfere with an observer, or to attempt the same. This includes any action which has the purpose or effect of interfering with the observer's responsibilities, or which creates an intimidating, hostile, or offensive environment [50 CFR § 229.3(b)].

Violations of the MMPA may result in sanctions on Authorization Certificates, civil penalties of up to \$12,000 and criminal penalties. A complete list of MMPA prohibitions can be found at 50 CFR § 229.3.

5. **Insurance**

Observers will carry a Certificate of Liability Insurance detailing their coverage. DCI has insurance from Alaska National Insurance, including Alaska State Act Workers' Compensation, \$1,000,000 in each Employer's Liability, Maritime Employers' Liability, US Longshoreman and Harbor-workers' Act - Alaska, Contractual Liability, and Other States Coverage.

Questions involving the above conditions or the management of the Alaska Marine Mammal Observer Program should be directed to Amy Van Atten, Protected Resources, Alaska Region, National Marine Fisheries Service, P.O. Box 21668, Juneau, Alaska 99802, at (907) 586-7642, or E-mail Amy.Van.Atten@noaa.gov. For more information and program updates, NMFS hosts a website at <http://www.fakr.noaa.gov/protectedresources/observer/mmop.htm>.

If you have questions concerning the program, you may contact Bryan Belay at the DCI office in Anchorage, at (800) 770-2210. Neither the designated Contractor, DCI, nor the contract observer assigned to cover your permit, have the authority to modify these instructions or provisions.

2002 AMMOP Manual

Sincerely,

James W. Balsiger
Administrator, Alaska Region

Enclosures:

1. Program Overview
2. The Observer's Role and the Captain's Role
3. Marine Mammal Authorization Program Mortality/Injury Reporting Form
4. U.S. Coast Guard Safety Requirements and Exemption Letter

Enclosure 1.

*The Alaska Marine Mammal Observer Program
Kodiak Salmon Set Gillnet Fishery 2002*

PROGRAM OVERVIEW

Data Contractors Inc. (DCI) has been selected by the National Marine Fisheries Service (NMFS) to provide the observer coverage for the Kodiak Island Marine Mammal Observer Program during the summers of 2002 and 2003. DCI has provided observers for the North Pacific Groundfish and Shellfish observer programs since 1989. DCI also conducted the Marine Mammal Observer Program in Cook Inlet for 1999 and 2000 and the Kodiak Feasibility Study in 2001.

NMFS will have 11 marine mammal observers, and two lead observers in the Northwest and Alitak Districts during the summers of 2002 and 2003. Through a cooperative effort, the program will be assisted by three observers from U.S. Fish & Wildlife Service with specialized experience in bird identification and sampling. Observers will participate in a 12-day training course which will include data collection responsibilities, data sensitivity, completing forms, debriefing, species identification, skiff and vessel safety, protocols for safety during set gillnet picks, weather and tidal recognition, communications and charting, and survival training among other things. The training will be held in Anchorage from May 20th through 24th, continuing on to Kodiak from the May 27th through June 2nd, 2002. DCI has hired eight local skiff operators, two deck hands, and two vessel operators for this program. The skiff and vessel personnel will participate in the portion of the training held in Kodiak.

The observer program in Kodiak will operate from two main field offices. Through an agreement with the Akhiok-Kaguyak Native Corporation, the observers are housed at the Chip Cove Cannery in Moser Bay. Five observers and one lead observer are assigned to the Alitak District. The lead observer will coordinate the deployment of observers to fishing sites and work with four skiff drivers and skiffs that will be assigned to the Alitak District.

DCI will use a combination of skiffs, research vessels (R/V), and a field office in the Village Islands to deploy observers in the Northwest District. The R/V Captain Kidd, operated by Butch Gange, and R/V Viking Star, operated by Thorvold Olsen, will transport and deploy observers to sites in Kupreanof Straits, Viekoda Bay, and Uyak Bay. Several observers and a skiff driver are housed at the Village Islands field camp, along with another lead observer. And finally, a skiff driver and observer are

located in Larsen Bay.

Permits for coverage will be selected using a stratified systematic system. The permit numbers are stratified, or grouped, into five geographical regions. Permits will be selected randomly for each stratum or geographical region. Permits will be sampled according to the order they were selected. If a permit can not be sampled due to weather or safety concerns on the scheduled day, the next permit on the list will be sampled. That missed permit will be sampled on the next available sample day. Every effort will be made to maintain the established sampling order. The sampling order will be re-selected on a monthly basis in order to avoid sampling biases.

At the set gillnet sites, observers will observe each pick of the fishing gear for the selected permit within a 24-hour period, beginning at midnight on the day in which sampling occurs. It is expected that a permit may be sampled two to three times per month, depending on the length of the open periods. The number of observers assigned to each region is based on the estimated fishing effort. The program will sample approximately 5% of the fishing effort in the fishery, about 515 sample days. Observer coverage will be in direct relation to the fishing effort in each region.

DCI will begin collecting data during the 33-hour open period on June 9th and 10th. This period will be a test run for the sampling procedures, and will enable any final changes to the sampling protocol. The goal is to collect the most accurate data possible. Observers will sample every day the fishery is open, weather and safety concerns allowing. As permit holders pull their nets for the season, DCI will reduce its workforce in the field. Tentatively, reduction of the observer workforce will begin in early August, and continue through early September. Observers will continue to collect data until mid-September or until the all the permit holders have completed their fishing effort for the season.

Observers complete the data forms in the field. Permit holders have the opportunity to look at the forms and fill out a Fisher's Comment Form if they believe additional information should be included. Also, the Fisher's Field Notes can be completed throughout the season and mailed directly to NMFS. Permit holders also have the option of completing a short Data Release Form if they would like a copy of the data collected on their permit during the summer. Lead observers will debrief each observer every three to four days. This process will clarify any responses or information that may be vague or unclear on the

forms. The data are sent to NMFS in Juneau for data entry and final archival. Amy Van Atten, the NMFS Program Coordinator, is responsible for writing any reports based on the data. Reports created will not identify particular permit holders, nor contain geographical information or other details that could identify individual permit holders.

US Coast Guard safety examinations have been arranged in the Alitak Region for June 11th and 12th and in the Uganik Region for June 16th and 17th, weather permitting. This is a courtesy service offered to provide fishermen at remote sites with the opportunity to get the Commercial Fishing Vessel Safety Examination decal. As for now, the Coast Guard will entertain a one day trip to Larsen Bay for sometime around June 25th as well. This will be determined by 1) interest expressed between now and then; 2) coordination by members ensuring there is more than one skiff needing decals; and 3) is subject to change to meet majority requests. The Marine Safety Detachment is also available everyday in Kodiak and Anton Larsen if scheduled.

Enclosure 2a.

THE OBSERVER'S ROLE

Observers are expected to:

- collect objective data on fishing activity, the take of target and non-target species and selected specimen samples;
- perform their duties in such a manner as to minimize interference with fishing operations;
- keep open communication with vessel personnel by informing them about observer duties and collected data;
- use work cameras for photographing specimens;
- obtain permission from the vessel captain before using any boat equipment or touching fishing gear;
- collect whole specimens as instructed by NMFS and clean up thoroughly afterwards;
- bring issued rain gear, life vests, survival suit, and safety kit;
- share housekeeping routines with the crew if needed.

Observers should not:

- dictate procedures or direct fishing operations;
- be involved with crew responsibilities such as standing watch or helping with fishing;
- keep personal diaries in any form, bring aboard recording devices, personal computers, or personal cameras of any type;
- compromise data or record extemporaneous or personal comments;
- conduct personal research of any kind, or keep personal specimens or edible fish of any kind; or
- talk about any boat's business while aboard another boat or to any fishermen dockside.

Enclosure 2b.

THE CAPTAIN'S ROLE

Captains are expected to:

- cooperate with the observer in the performance of the observer's duties;
- notify the observer when commercial fishing operations are to begin and end;
- bring aboard, or transfer to observation skiff, marine mammals and sea birds that were killed during fishing operations for biological processing if requested by the observer;
- record comments on the Fisher Comment Form which can be provided by the observer, if there is a disagreement with the observer's collected data or need to provide additional information;
- request, if so wanted, copies of the observer forms collected at their permitted sites, by completing a Data Release Form, provided by the observer; and
- comply with other guidelines, regulations, or conditions that NMFS may provide in writing to ensure the effective use of observers.

Captains should not:

- assault, harass, or sexually harass, intimidate or attempt to influence observers, interfere with or impede observer duties;
- ask observers to stand watch or help with fishing operations; or
- fish without an observer after the owner or agent of the owner has been directed by NMFS or the designated contractor to carry an observer.

2002 Kodiak Tide Tables

Tide predictions around Kodiak Island are based upon corrections made from either the Seldovia or Kodiak City tide tables. Use the correction table below, applied to the appropriate tide table which follows.

Kodiak and Afognak Islands Tide Corrections

Station	Time Diff.		Hgt. Diff.		Ref. Station
	High	Low	High	Low	
Andreon Bay, Shuyak Island	+0 35	+0 44	+2.5	+0.3	Kodiak
Perenosa Bay	+0 28	+0 39	+2.5	+0.3	Kodiak
Seal Bay	+0 29	+0 36	+2.4	+0.3	Kodiak
Tonki Bay	+0 12	+0 21	+2.3	+0.2	Kodiak
Marmot Island, Marmot Strait	+0 18	+0 07	+0.9	0.0	Kodiak
Izhut Bay	+0 12	+0 21	+0.1	0.0	Kodiak
Kazakof Bay, Marmot Bay	+0 04	+0 06	+0.6	+0.2	Kodiak
Fox Bay, Whale Island	+0 22	+0 37	+1.2	+0.2	Kodiak
Kizhuyak Bay	+0 06	+0 11	+0.8	0.0	Kodiak
Kizhuyak Point	+0 05	+0 09	+0.6	+0.1	Kodiak
Ouzinkie, Spruce Island	-0 05	-0 04	+0.2	0.0	Kodiak
Spruce Island (north side)	+0 02	+0 08	+0.4	+0.1	Kodiak
Kodiak, Port of Kodiak	-0 03	-0 02	0.0	0.0	Kodiak
Kodiak, St. Paul Harbor	-0 05	-0 02	-0.1	0.0	Kodiak
KODIAK, Womens Bay			Daily predictions		Kodiak
Ugak Bay (Saltery Cove)	-0 29	-0 20	-0.3	-0.1	Kodiak
Port Hobron, Sitkalidak Island	-0 18	-0 06	-0.3	+0.1	Kodiak
Three Saints Bay	-0 22	-0 13	-0.2	+0.1	Kodiak
Jap Bay	-0 17	-0 10	-0.3	+0.1	Kodiak
Sitkinak Lagoon	-0 20	+0 07	-1.0	+0.2	Kodiak
Lazy Bay, Alitak Bay	-0 02	+0 15	*1.39	*1.47	Kodiak
Moser Bay (Trap Point)	+0 09	+0 29	*1.37	*1.47	Kodiak
Olga Bay (A. P. A. Cannery)	+3 44	+4 13	*0.14	*0.09	Kodiak
Uyak Bay					
Uyak	-0 16	-0 01	*0.77	*0.77	Seldovia
Larsen Bay	-0 14	-0 01	-4.4	-0.1	Seldovia
Mining Camp	-0 37	-0 10	-4.1	-0.1	Seldovia
Zachar Bay	-0 09	0 00	*0.77	*0.77	Seldovia
Uganik Bay					
Village Islands	-0 15	-0 02	*0.80	*0.80	Seldovia
Northeast Arm	-0 12	-0 01	*0.77	*0.77	Seldovia
Uganik Passage	-0 07	+0 02	*0.81	*0.81	Seldovia
Viekoda Bay	-0 11	-0 03	*0.80	*0.80	Seldovia
Kupreanof Strait					
Onion Bay	0 00	-0 01	*0.80	*0.80	Seldovia
Dry Spruce Island	+0 02	+0 13	*0.77	*0.77	Seldovia
Nachalni Island	+0 10	+0 24	*0.76	*0.76	Seldovia
Uzkosti Point	-0 43	+0 34	*0.64	*0.64	Seldovia
Dolphin Point, Raspberry Strait	-0 25	-0 05	-4.1	-0.1	Seldovia
Malina Bay, Shelikof Strait	-0 14	0 00	*0.81	*0.81	Seldovia
Redfox Bay, Shuyak Strait	-0 14	-0 02	-4.4	-0.2	Seldovia
Shuyak Island					
Big Bay	+0 10	+0 15	*0.77	*0.77	Seldovia
Carry Inlet	+0 06	+0 07	*0.73	*0.73	Seldovia

Seldovia Tide Tables

Seldovia, Alaska

May, 2002 Daylight Saving Time

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
20 M	328am L	5.5	924am H	14.1	358pm L	1.4	1042pm H	15.4
21 Tu	448am L	4.0	1048am H	14.4	506pm L	1.3	1138pm H	16.7
22 W	555am L	1.8	1203pm H	15.5	605pm L	0.9		
23 Th	1228am H	18.2	650am L	-0.5	105pm H	16.7	658pm L	0.6
24 F	113am H	19.6	739am L	-2.6	200pm H	17.9	746pm L	0.4
25 Sa	156am H	20.6	825am L	-4.1	250pm H	18.7	832pm L	0.5
26 Su	237am H	21.2	909am L	-4.9	337pm H	19.0	917pm L	0.8
27 M	319am H	21.1	952am L	-5.0	423pm H	18.8	1001pm L	1.4
28 Tu	400am H	20.5	1035am L	-4.3	509pm H	18.2	1045pm L	2.3
29 W	442am H	19.4	1118am L	-3.2	556pm H	17.2	1131pm L	3.4
30 Th	525am H	18.0	1203pm L	-1.7	644pm H	16.1		
31 F	1219am L	4.5	611am H	16.3	1249pm L	0.0	737pm H	15.1

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Seldovia Tide Tables
June, 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
1 Sa	113am L	5.5	702am H	14.7	141pm L	1.5	833pm H	14.3
2 Su	217am L	6.1	802am H	13.3	238pm L	2.9	933pm H	14.0
3 M	332am L	6.2	913am H	12.4	342pm L	3.8	1031pm H	14.1
4 Tu	446am L	5.5	1031am H	12.2	444pm L	4.3	1120pm H	14.6
5 W	547am L	4.3	1142am H	12.6	539pm L	4.5		
6 Th	1202am H	15.3	634am L	2.9	1240pm H	13.5	625pm L	4.4
7 F	1239am H	16.2	713am L	1.5	129pm H	14.5	707pm L	4.2
8 Sa	114am H	17.1	750am L	0.1	211pm H	15.5	747pm L	3.9
9 Su	149am H	17.9	825am L	-1.1	252pm H	16.3	825pm L	3.7
10 M	225am H	18.5	902am L	-2.1	331pm H	16.9	904pm L	3.5
11 Tu	302am H	19.0	939am L	-2.8	411pm H	17.2	944pm L	3.4
12 W	340am H	19.1	1018am L	-3.1	452pm H	17.2	1025pm L	3.5
13 Th	421am H	19.0	1059am L	-3.0	536pm H	16.9	1109pm L	3.7
14 F	504am H	18.4	1142am L	-2.6	622pm H	16.6	1158pm L	3.9
15 Sa	553am H	17.6	1230pm L	-1.9	711pm H	16.3		
16 Su	1252am L	4.1	649am H	16.5	122pm L	-0.8	804pm H	16.1
17 M	155am L	4.1	754am H	15.3	219pm L	0.3	901pm H	16.2
18 Tu	307am L	3.6	908am H	14.5	323pm L	1.4	959pm H	16.7
19 W	421am L	2.5	1028am H	14.2	428pm L	2.1	1056pm H	17.3
20 Th	530am L	1.0	1145am H	14.7	532pm L	2.6	1150pm H	18.1
21 F	630am L	-0.7	1253pm H	15.5	631pm L	2.7		
22 Sa	1242am H	18.9	723am L	-2.2	152pm H	16.5	725pm L	2.6
23 Su	131am H	19.6	811am L	-3.3	243pm H	17.3	814pm L	2.5
24 M	217am H	19.9	856am L	-3.9	330pm H	17.9	901pm L	2.4
25 Tu	301am H	20.0	939am L	-4.0	414pm H	18.0	946pm L	2.5
26 W	344am H	19.6	1021am L	-3.6	456pm H	17.8	1030pm L	2.8
27 Th	427am H	18.9	1101am L	-2.8	538pm H	17.4	1114pm L	3.3
28 F	508am H	18.0	1141am L	-1.7	619pm H	16.7	1158pm L	3.9
29 Sa	551am H	16.8	1221pm L	-0.3	700pm H	16.0		
30 Su	1244am L	4.5	636am H	15.4	101pm L	1.1	743pm H	15.4

July 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
1 M	135am L	5.1	725am H	14.1	144pm L	2.5	827pm H	14.9
2 Tu	232am L	5.4	823am H	13.0	232pm L	3.9	913pm H	14.6
3 W	337am L	5.2	931am H	12.2	328pm L	5.0	1002pm H	14.6
4 Th	444am L	4.6	1046am H	12.0	429pm L	5.8	1052pm H	14.9
5 F	545am L	3.5	1159am H	12.5	530pm L	6.1	1142pm H	15.5
6 Sa	636am L	2.2	100pm H	13.5	626pm L	5.9		
7 Su	1229am H	16.3	720am L	0.8	151pm H	14.6	715pm L	5.4
8 M	115am H	17.3	802am L	-0.6	235pm H	15.7	801pm L	4.7
9 Tu	159am H	18.3	842am L	-2.0	316pm H	16.7	845pm L	4.0
10 W	243am H	19.2	922am L	-3.0	356pm H	17.5	929pm L	3.2
11 Th	327am H	19.8	1003am L	-3.7	437pm H	18.1	1012pm L	2.7
12 F	412am H	20.0	1045am L	-3.9	518pm H	18.4	1058pm L	2.3
13 Sa	458am H	19.7	1127am L	-3.5	600pm H	18.4	1146pm L	2.1
14 Su	547am H	18.9	1212pm L	-2.6	644pm H	18.3		
15 M	1238am L	2.0	641am H	17.7	1259pm L	-1.2	731pm H	18.1
16 Tu	135am L	2.1	741am H	16.2	151pm L	0.5	821pm H	17.8
17 W	240am L	2.1	850am H	14.9	249pm L	2.2	916pm H	17.5
18 Th	352am L	1.8	1009am H	14.0	355pm L	3.7	1016pm H	17.3
19 F	506am L	1.0	1133am H	14.1	505pm L	4.5	1119pm H	17.4
20 Sa	615am L	0.0	1248pm H	14.8	613pm L	4.7		
21 Su	1221am H	17.8	713am L	-1.1	149pm H	15.8	713pm L	4.3
22 M	117am H	18.3	803am L	-1.9	239pm H	16.7	805pm L	3.8
23 Tu	207am H	18.8	848am L	-2.5	322pm H	17.5	852pm L	3.2
24 W	252am H	19.2	928am L	-2.7	401pm H	18.0	934pm L	2.8
25 Th	333am H	19.3	1005am L	-2.6	437pm H	18.1	1014pm L	2.6
26 F	413am H	19.1	1040am L	-2.1	511pm H	18.1	1053pm L	2.6
27 Sa	451am H	18.5	1114am L	-1.3	544pm H	17.8	1131pm L	2.9
28 Su	529am H	17.7	1148am L	-0.2	617pm H	17.3		
29 M	1210am L	3.3	608am H	16.5	1221pm L	1.2	650pm H	16.7
30 Tu	1251am L	3.9	650am H	15.2	1256pm L	2.7	724pm H	16.0
31 W	136am L	4.4	738am H	13.9	134pm L	4.3	802pm H	15.4

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August, 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
1 Th	229am L	4.8	837am H	12.7	221pm L	5.8	847pm H	14.9
2 F	334am L	4.9	952am H	12.0	322pm L	7.0	943pm H	14.7
3 Sa	449am L	4.4	1119am H	12.1	438pm L	7.5	1047pm H	14.9
4 Su	558am L	3.2	1236pm H	13.0	552pm L	7.3	1152pm H	15.7
5 M	654am L	1.7	132pm H	14.4	652pm L	6.3		
6 Tu	1250am H	16.9	741am L	-0.1	217pm H	15.8	743pm L	5.0
7 W	142am H	18.3	823am L	-1.7	257pm H	17.3	829pm L	3.6
8 Th	230am H	19.7	904am L	-3.1	335pm H	18.6	913pm L	2.2
9 F	316am H	20.8	944am L	-4.0	412pm H	19.6	957pm L	1.0
10 Sa	401am H	21.3	1025am L	-4.2	451pm H	20.3	1041pm L	0.1
11 Su	448am H	21.1	1106am L	-3.7	530pm H	20.5	1128pm L	-0.2
12 M	536am H	20.2	1148am L	-2.4	611pm H	20.3		
13 Tu	1216am L	-0.1	627am H	18.8	1233pm L	-0.6	654pm H	19.7
14 W	110am L	0.4	724am H	17.0	121pm L	1.6	741pm H	18.7
15 Th	210am L	1.1	831am H	15.2	218pm L	3.7	836pm H	17.6
16 F	323am L	1.8	953am H	14.0	327pm L	5.5	942pm H	16.7
17 Sa	446am L	1.9	1127am H	13.8	449pm L	6.3	1058pm H	16.3
18 Su	605am L	1.3	1248pm H	14.7	608pm L	6.1		
19 M	1213am H	16.6	707am L	0.4	146pm H	15.8	711pm L	5.2
20 Tu	114am H	17.3	756am L	-0.5	230pm H	16.9	800pm L	4.1
21 W	203am H	18.2	836am L	-1.2	307pm H	17.8	842pm L	3.1
22 Th	244am H	18.9	911am L	-1.5	338pm H	18.4	919pm L	2.3
23 F	321am H	19.3	943am L	-1.5	408pm H	18.8	954pm L	1.8
24 Sa	356am H	19.4	1013am L	-1.2	436pm H	19.0	1028pm L	1.5
25 Su	430am H	19.2	1043am L	-0.5	503pm H	18.9	1101pm L	1.6
26 M	505am H	18.5	1112am L	0.5	531pm H	18.5	1135pm L	1.9
27 Tu	541am H	17.5	1143am L	1.8	558pm H	17.9		
28 W	1209am L	2.5	618am H	16.2	1214pm L	3.4	627pm H	17.1
29 Th	1247am L	3.3	701am H	14.7	1247pm L	5.0	700pm H	16.2
30 F	131am L	4.1	754am H	13.3	128pm L	6.6	740pm H	15.2
31 Sa	230am L	4.7	908am H	12.2	228pm L	7.9	839pm H	14.5

September, 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
1 Su	353am L	4.8	1046am H	12.1	357pm L	8.6	1001pm H	14.3
2 M	521am L	3.9	1214pm H	13.1	528pm L	8.0	1125pm H	15.1
3 Tu	628am L	2.3	110pm H	14.7	635pm L	6.5		
4 W	1233am H	16.7	717am L	0.4	152pm H	16.5	727pm L	4.5
5 Th	128am H	18.6	800am L	-1.4	229pm H	18.3	812pm L	2.4
6 F	217am H	20.3	841am L	-2.8	305pm H	20.0	856pm L	0.4
7 Sa	303am H	21.6	921am L	-3.6	342pm H	21.3	938pm L	-1.2
8 Su	348am H	22.2	1000am L	-3.6	418pm H	22.1	1022pm L	-2.2
9 M	434am H	22.0	1041am L	-2.8	456pm H	22.2	1106pm L	-2.5
10 Tu	521am H	21.0	1122am L	-1.3	535pm H	21.7	1153pm L	-2.0
11 W	612am H	19.3	1206pm L	0.7	617pm H	20.5		
12 Th	1243am L	-0.8	707am H	17.3	1254pm L	3.0	704pm H	18.9
13 F	141am L	0.7	814am H	15.4	152pm L	5.3	800pm H	17.1
14 Sa	254am L	2.1	941am H	14.1	307pm L	6.9	913pm H	15.6
15 Su	426am L	2.8	1121am H	14.0	444pm L	7.3	1045pm H	15.0
16 M	553am L	2.4	1239pm H	15.0	609pm L	6.5		
17 Tu	1210am H	15.5	655am L	1.6	131pm H	16.2	708pm L	5.1
18 W	110am H	16.6	740am L	0.8	209pm H	17.3	750pm L	3.7
19 Th	154am H	17.6	815am L	0.2	240pm H	18.2	826pm L	2.5
20 F	231am H	18.5	845am L	-0.1	306pm H	18.9	859pm L	1.4
21 Sa	304am H	19.2	914am L	-0.2	331pm H	19.5	930pm L	0.7
22 Su	336am H	19.5	942am L	0.1	356pm H	19.8	1000pm L	0.3
23 M	409am H	19.4	1010am L	0.7	421pm H	19.7	1031pm L	0.2
24 Tu	442am H	18.9	1039am L	1.6	447pm H	19.4	1102pm L	0.5
25 W	516am H	18.0	1108am L	2.8	513pm H	18.7	1134pm L	1.2
26 Th	553am H	16.7	1139am L	4.3	540pm H	17.8		
27 F	1209am L	2.1	634am H	15.3	1213pm L	5.7	611pm H	16.7
28 Sa	1250am L	3.1	725am H	13.8	1253pm L	7.2	650pm H	15.5
29 Su	145am L	4.0	838am H	12.7	155pm L	8.4	751pm H	14.4
30 M	307am L	4.5	1017am H	12.6	332pm L	8.9	927pm H	14.0

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Kodiak, Womens Bay, Alaska
Tide Predictions (High and Low Waters)

May, 2002

25 Sa	119am H	9.9	801am L	-1.7	225pm H	7.5	748pm L	1.2
26 Su	200am H	10.3	846am L	-2.1	314pm H	7.6	831pm L	1.6
27 M	241am H	10.4	930am L	-2.2	402pm H	7.5	914pm L	1.9
28 Tu	322am H	10.3	1014am L	-2.0	449pm H	7.3	958pm L	2.3
29 W	403am H	9.8	1057am L	-1.5	537pm H	7.0	1042pm L	2.7
30 Th	446am H	9.2	1142am L	-0.9	627pm H	6.6	1130pm L	3.1
31 F	531am H	8.4	1229pm L	-0.2	720pm H	6.4		

June, 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
1 Sa	1224am L	3.4	620am H	7.6	119pm L	0.4	818pm H	6.2
2 Su	130am L	3.5	717am H	6.8	213pm L	0.9	915pm H	6.3
3 M	250am L	3.4	825am H	6.1	309pm L	1.4	1007pm H	6.5
4 Tu	412am L	3.0	944am H	5.7	404pm L	1.7	1051pm H	6.9
5 W	517am L	2.3	1101am H	5.7	454pm L	1.9	1128pm H	7.4
6 Th	607am L	1.5	1207pm H	5.8	539pm L	2.1		
7 F	1202am H	8.0	649am L	0.8	101pm H	6.1	620pm L	2.3
8 Sa	1236am H	8.5	726am L	0.1	147pm H	6.4	659pm L	2.4
9 Su	111am H	9.0	803am L	-0.5	229pm H	6.6	738pm L	2.5
10 M	146am H	9.4	839am L	-1.0	309pm H	6.8	816pm L	2.5
11 Tu	222am H	9.6	916am L	-1.4	349pm H	6.9	855pm L	2.6
12 W	301am H	9.7	955am L	-1.6	430pm H	6.9	935pm L	2.6
13 Th	341am H	9.7	1037am L	-1.6	514pm H	6.8	1020pm L	2.7
14 F	425am H	9.4	1120am L	-1.5	600pm H	6.7	1109pm L	2.7
15 Sa	512am H	8.9	1206pm L	-1.2	649pm H	6.8		
16 Su	1206am L	2.7	606am H	8.2	1256pm L	-0.7	742pm H	6.9
17 M	113am L	2.6	709am H	7.4	149pm L	-0.2	837pm H	7.2
18 Tu	230am L	2.2	822am H	6.7	246pm L	0.4	932pm H	7.7
19 W	352am L	1.6	945am H	6.2	345pm L	1.0	1025pm H	8.3
20 Th	506am L	0.7	1110am H	6.0	444pm L	1.4	1117pm H	8.9
21 F	609am L	-0.2	1226pm H	6.2	542pm L	1.8		
22 Sa	1206am H	9.4	703am L	-1.0	130pm H	6.5	636pm L	2.0
23 Su	1253am H	9.8	752am L	-1.6	224pm H	6.8	726pm L	2.2
24 M	139am H	10.1	837am L	-1.9	313pm H	7.0	814pm L	2.3
25 Tu	223am H	10.1	920am L	-1.9	357pm H	7.1	859pm L	2.4
26 W	305am H	9.9	1000am L	-1.7	439pm H	7.1	943pm L	2.5
27 Th	347am H	9.5	1040am L	-1.4	519pm H	7.0	1027pm L	2.6
28 F	428am H	9.0	1119am L	-0.9	559pm H	6.9	1111pm L	2.8
29 Sa	509am H	8.3	1157am L	-0.4	638pm H	6.8	1159pm L	2.9
30 Su	552am H	7.6	1236pm L	0.2	719pm H	6.7		

July, 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
1 M	1252am L	3.0	640am H	6.8	115pm L	0.8	801pm H	6.7
2 Tu	154am L	2.9	735am H	6.1	158pm L	1.4	845pm H	6.9
3 W	304am L	2.7	842am H	5.5	245pm L	2.0	930pm H	7.1
4 Th	417am L	2.2	1002am H	5.2	338pm L	2.5	1017pm H	7.5
5 F	521am L	1.6	1126am H	5.2	434pm L	2.8	1104pm H	7.9
6 Sa	614am L	0.9	1236pm H	5.5	529pm L	3.0	1150pm H	8.4
7 Su	659am L	0.1	130pm H	5.9	621pm L	3.0		
8 M	1235am H	8.9	741am L	-0.6	216pm H	6.3	709pm L	2.9
9 Tu	119am H	9.4	821am L	-1.2	257pm H	6.6	755pm L	2.7
10 W	203am H	9.8	901am L	-1.7	336pm H	6.9	839pm L	2.4
11 Th	247am H	10.0	941am L	-2.0	415pm H	7.1	925pm L	2.2
12 F	332am H	10.0	1022am L	-2.0	455pm H	7.3	1012pm L	1.9
13 Sa	418am H	9.7	1103am L	-1.9	536pm H	7.5	1103pm L	1.8
14 Su	506am H	9.1	1145am L	-1.4	619pm H	7.7	1158pm L	1.6
15 M	559am H	8.2	1229pm L	-0.8	705pm H	7.9		
16 Tu	101am L	1.5	658am H	7.3	116pm L	0.1	754pm H	8.1
17 W	211am L	1.3	808am H	6.3	207pm L	0.9	848pm H	8.3
18 Th	330am L	1.0	932am H	5.7	305pm L	1.8	945pm H	8.5
19 F	449am L	0.4	1107am H	5.5	411pm L	2.4	1045pm H	8.8
20 Sa	558am L	-0.2	1230pm H	5.8	519pm L	2.7	1144pm H	9.1

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21	Su	656am	L	-0.7	133pm	H	6.2	622pm	L	2.8			
22	M	1238am	H	9.3	745am	L	-1.1	223pm	H	6.6	718pm	L	2.7
23	Tu	128am	H	9.5	828am	L	-1.4	306pm	H	6.9	806pm	L	2.5
24	W	213am	H	9.6	908am	L	-1.4	343pm	H	7.1	850pm	L	2.3
25	Th	255am	H	9.5	944am	L	-1.3	417pm	H	7.2	930pm	L	2.2
26	F	333am	H	9.3	1017am	L	-1.1	449pm	H	7.3	1009pm	L	2.1
27	Sa	411am	H	8.9	1049am	L	-0.7	519pm	H	7.3	1048pm	L	2.1
28	Su	448am	H	8.3	1121am	L	-0.2	549pm	H	7.3	1129pm	L	2.1
29	M	526am	H	7.6	1152am	L	0.3	620pm	H	7.3			
30	Tu	1212am	L	2.2	607am	H	6.9	1224pm	L	1.0	654pm	H	7.3
31	W	102am	L	2.2	654am	H	6.1	1258pm	L	1.7	733pm	H	7.3

August, 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.					
1	Th	200am	L	2.2	751am	H	5.5	139pm	L	2.4	818pm	H	7.3
2	F	310am	L	2.1	908am	H	5.0	229pm	L	3.0	911pm	H	7.5
3	Sa	427am	L	1.7	1047am	H	4.9	335pm	L	3.4	1011pm	H	7.8
4	Su	537am	L	1.0	1216pm	H	5.2	448pm	L	3.5	1112pm	H	8.2
5	M	632am	L	0.3	113pm	H	5.7	554pm	L	3.3			
6	Tu	1208am	H	8.7	719am	L	-0.5	157pm	H	6.2	650pm	L	2.9
7	W	100am	H	9.3	801am	L	-1.2	235pm	H	6.8	740pm	L	2.3
8	Th	149am	H	9.8	841am	L	-1.8	311pm	H	7.3	827pm	L	1.7
9	F	236am	H	10.1	920am	L	-2.1	347pm	H	7.8	914pm	L	1.2
10	Sa	322am	H	10.1	959am	L	-2.0	424pm	H	8.2	1002pm	L	0.7
11	Su	409am	H	9.7	1038am	L	-1.7	502pm	H	8.5	1051pm	L	0.5
12	M	458am	H	9.0	1117am	L	-1.1	542pm	H	8.7	1144pm	L	0.4
13	Tu	549am	H	8.1	1158am	L	-0.2	625pm	H	8.8			
14	W	1242am	L	0.4	647am	H	7.1	1242pm	L	0.8	712pm	H	8.7
15	Th	148am	L	0.6	757am	H	6.1	132pm	L	1.8	806pm	H	8.5
16	F	306am	L	0.7	927am	H	5.4	233pm	L	2.7	910pm	H	8.4
17	Sa	431am	L	0.5	1113am	H	5.4	352pm	L	3.2	1022pm	H	8.3
18	Su	547am	L	0.2	1233pm	H	5.8	515pm	L	3.3	1132pm	H	8.5
19	M	647am	L	-0.2	128pm	H	6.3	624pm	L	3.0			
20	Tu	1233am	H	8.7	734am	L	-0.6	211pm	H	6.8	717pm	L	2.6
21	W	123am	H	9.0	814am	L	-0.8	246pm	H	7.2	801pm	L	2.2
22	Th	206am	H	9.1	848am	L	-0.8	316pm	H	7.4	839pm	L	1.8
23	F	244am	H	9.1	918am	L	-0.8	343pm	H	7.6	914pm	L	1.5
24	Sa	319am	H	9.0	947am	L	-0.5	408pm	H	7.8	949pm	L	1.3
25	Su	352am	H	8.7	1014am	L	-0.2	433pm	H	7.9	1023pm	L	1.2
26	M	426am	H	8.2	1041am	L	0.3	458pm	H	7.9	1058pm	L	1.2
27	Tu	501am	H	7.6	1109am	L	0.9	526pm	H	7.9	1136pm	L	1.3
28	W	539am	H	7.0	1137am	L	1.5	556pm	H	7.9			
29	Th	1218am	L	1.5	621am	H	6.3	1208pm	L	2.2	632pm	H	7.7
30	F	108am	L	1.7	715am	H	5.6	1244pm	L	2.9	716pm	H	7.6
31	Sa	212am	L	1.8	829am	H	5.0	134pm	L	3.5	814pm	H	7.5

September, 2002

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.					
1	Su	334am	L	1.7	1017am	H	4.9	250pm	L	3.9	925pm	H	7.5
2	M	458am	L	1.2	1156am	H	5.3	421pm	L	3.8	1040pm	H	7.9
3	Tu	602am	L	0.4	1248pm	H	5.9	537pm	L	3.3	1147pm	H	8.5
4	W	652am	L	-0.4	127pm	H	6.6	637pm	L	2.5			
5	Th	1245am	H	9.2	734am	L	-1.1	202pm	H	7.4	727pm	L	1.6
6	F	136am	H	9.7	814am	L	-1.5	237pm	H	8.1	815pm	L	0.7
7	Sa	224am	H	10.0	852am	L	-1.6	311pm	H	8.8	901pm	L	-0.1
8	Su	312am	H	9.9	930am	L	-1.5	347pm	H	9.3	947pm	L	-0.6
9	M	359am	H	9.5	1008am	L	-0.9	424pm	H	9.6	1035pm	L	-0.8
10	Tu	448am	H	8.8	1047am	L	-0.2	504pm	H	9.7	1125pm	L	-0.7
11	W	540am	H	7.9	1127am	L	0.8	546pm	H	9.5			
12	Th	1220am	L	-0.4	638am	H	6.9	1211pm	L	1.8	633pm	H	9.1
13	F	123am	L	0.2	749am	H	6.1	103pm	L	2.8	729pm	H	8.5
14	Sa	240am	L	0.6	928am	H	5.6	212pm	L	3.5	839pm	H	8.0
15	Su	410am	L	0.8	1111am	H	5.8	350pm	L	3.8	1005pm	H	7.7
16	M	529am	L	0.6	1220pm	H	6.2	522pm	L	3.5	1125pm	H	7.8
17	Tu	628am	L	0.3	107pm	H	6.8	626pm	L	2.9			
18	W	1227am	H	8.1	712am	L	0.1	144pm	H	7.2	712pm	L	2.3
19	Th	114am	H	8.4	747am	L	-0.1	213pm	H	7.6	750pm	L	1.7
20	F	154am	H	8.6	818am	L	-0.1	238pm	H	8.0	824pm	L	1.2
21	Sa	229am	H	8.7	845am	L	0.1	301pm	H	8.2	855pm	L	0.8
22	Su	302am	H	8.6	911am	L	0.3	323pm	H	8.5	926pm	L	0.6
23	M	335am	H	8.4	936am	L	0.7	346pm	H	8.6	957pm	L	0.4
24	Tu	407am	H	8.0	1002am	L	1.2	411pm	H	8.7	1030pm	L	0.5

Section Three

Data Forms and Instructions

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Supplemental Research and Forms

Shark Research, Alaska Shark Assessment Program 3-76
(Lee Hulbert, NMFS, Auke Bay Laboratory, Juneau, AK)

Sablefish Tagging 3-77
(Michael Sigler, NMFS, Auke Bay Laboratory, Juneau, AK)

High Seas Salmon Research Program 3-78
(Katherine Myers, School of Aquatic and Fishery Sciences, U of Washington, Seattle, WA)

Marine Mammal Stranding Report 3-79
(Kaja Brix, NMFS, Alaska Regional Office, Juneau, AK) A nation-wide data reporting system to report dead or seriously injured marine mammals floating or stranded ashore.

Haulout Count and Steller Sea Lion Brand Re-Sight Form 3-81
(Rod Towell, NMFS, National Marine Mammal Laboratory, Seattle, WA) Report sightings of branded sea lions. (See Appendix for locations of haulout sites)

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Data Forms and Instructions

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Supplemental Research Forms (continued)

Colony Status Record 3-83
(Kathy Kuletz, USF&WS, Anchorage, AK) To update marine bird colony counts on Kodiak Island. (See Appendix for locations of seabird colonies)

Spawning Forage Fish Data 3-85
(Susan Payne, NMFS, Kodiak, AK) A study to compare hydrographic and astronomical data as well as other conditions surrounding the beach spawning events of capelin and Pacific sandlance.

Reporting Forms 3-87

Debriefing Log 3-90
Debriefing Log (often a lead observer) records discussions and clarifications that were provided to the observer regarding their performance and needs in the field.

Trip Report Log 3-91
Observer records a brief summary of a completed trip and reports it to the office to provide real-time feedback on coverage and by-catch levels.

Weekly Activity Log 3-92
Observer records a diary of their activity, including contacts they have made and time spent on various work assignments.

Sample Tracking Log 3-94
This log tracks biological samples collected by observers as they are moved from one location to the next.

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Data Release Form - Submitted by fishermen to request copies of their trips 3-99

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ALASKA MARINE MAMMAL OBSERVER PROGRAM
DATA COLLECTION ORGANIZATION CHART



TRIP FORMS

TRIP INFORMATION FORM

This form serves as a header sheet for the observed trip. One Trip Information Form is recorded per trip. All observed trips will have a Trip Information Form. The trips are filed and archived by fishery, year, month, and trip identification number. The fields in the “Tracking” box are completed at the appropriate times to indicate the date and initials of the individuals who processed the data. This includes when the trip was received in the field office, when it was reviewed, when the observer was debriefed on this trip, and when it was entered and by whom.

For fields requesting a name and code, denoted by “Field Name (& code)”, the codes may be filled in and verified after the trip when the manual can be more appropriately referenced in a sheltered environment. Be sure to complete the codes prior to debriefing and please keep your handwriting legible to ensure accurate data entry.

Cross out fields that do not apply with a single slanted line. If the field does not apply and has check boxes with codes that do not apply, cross out the entire block. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed codes are appropriate for the situation, record or check the code for “other” and provide details in the comment section. Record a leading zero for decimal formats less than one (ex: 0.4).

Definitions	
ADF&G	Alaska Department of Fish and Game. ADF&G’s mission is to manage, protect, maintain, and improve the fish, game and aquatic plant resources of Alaska. The primary goals are to ensure that Alaska’s renewable fish and wildlife resources and their habitats are conserved and managed on the sustained yield principle, and the use and development of these resources are in the best interest of the economy and well-being of the people of the state. State agency that manages state fisheries and game. The fishing regulations are set by the Alaska Board of Fisheries. The licensing and permits for fishing are handled by the Alaska Commercial Fisheries Entry Commission (CFEC)
Commercial fishing vessel	A floating craft powered, towed, rowed, or otherwise propelled, which is used for or equipped to be used for commercial fishing or fish processing, fish transport, fish storage, including temporary storage.
Fishing site	A structure or vessel used by a permit holder for providing shelter in support of the operation of stationary net gear.
Net gear site	The in-water location of stationary net gear.
Random sampling	Each member of the population has an equal and independent chance of being selected. Each permit has an equal chance of being chosen for observer coverage and the selection of any permit does not influence the selection of any other member.
Systematic sampling	The selection of the permit to sample is carried out in a step-by-step procedure. The selection is methodical, purposefully regular, relating to the location of the observers and fishing sites. This may still be random sampling from a stratified sample.
Voluntary sampling	A fisherman, acting on their own initiative, offers to take an observer without any external persuasion.
Secondary sampling	The coverage of a selected permit can not occur due to safety concerns and a secondary, or replacement selection from an alternative list is done.
Opportunistic sampling	The observer, acting on their own initiative, takes advantage of conditions or circumstances to observe a permit that was not specifically pre-selected.

Definitions	
Trip	For the set gillnet fishery, a trip, consists of observing all the fishing associated with a specific permit in a 24 hour period, beginning at midnight.
Fully observed	All of the hauls, from when picking began to when picking ended for that trip were observed.
Partially observed	Either portions of the picks or entire hauls were missed during the trip.
Arrested	A trip was scheduled, the observer departed for the trip, then due to worsening weather or vessel problems or gear trouble, fishing was canceled and the trip ended. Fishing and observing was intended but could not be achieved due to circumstances beyond their control. There must be an intent to fish, contact made to confirm intent to fish, weather was good enough to start off the trip, and then an unexpected turn of events makes fishing and/or observing unobtainable.
Single operator/owner	The permit holder is the original owner and single operator of the permit.
Joint venture	Two permit holders may combine their gear and fish under one permit, following ADF&G fishing regulations. Both fishermen must still operate under their CFEC permit. Both permit numbers must be recorded on the trip, the first one being the one that was selected.
Co-op	Several permit holders may fish and sell their catch as a unit, dividing the combined profit.
Temporary transfer	A temporary arrangement to transfer the fishing permit and operations to another fisherman. This may be due to a medical emergency.
Permanent transfer	The transfer of a permit through a sale to another party. Occasionally, the permit may revert back to the original owner after a specified time period, with a private contract between the fishermen. In which case, for our purposes, it would be considered a single operator/original owner.

Trip Information Form Field Descriptions

1. PAGE NUMBERING: This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents. This form serves as the cover sheet for a trip.

2. YEAR LANDED: Record the year (yyyy) when the trip ended.

3. MONTH LANDED: Record the month (mm) when the trip ended.

4. TRIP IDENTIFICATION NUMBER: Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).

5. FISHERY NAME AND CODE: Write out the name of the fishery to ensure proper filing and coding. Record the fishery code assigned to identify this fishery. See Fishery Name Codes below for a complete listing of codes:

- 1 = Bristol Bay salmon drift gillnet
- 2 = Bristol Bay salmon set gillnet
- 3 = Cook Inlet salmon drift gillnet
- 4 = Cook Inlet salmon set gillnet
- 5 = Kodiak salmon set gillnet
- 6 = Metlakatla/Annette Island salmon drift gillnet
- 7 = Peninsula/Aleutian Islands salmon drift gillnet
- 8 = Peninsula/Aleutian Islands salmon set gillnet
- 9 = Prince William Sound salmon drift gillnet
- 10 = Southeast salmon drift gillnet
- 11 = Yakutat salmon set gillnet
- 12 = Southeast salmon purse seine

6. VESSEL NAME: Record the name of the vessel which you are observing. Care should be taken to record the correct spelling of the vessel's name. Record "No Name" for vessels without a name.

7. VESSEL NUMBER: Record the number written on the hull of the vessel which you are observing. This number will be either the U.S. Coast Guard Documentation Number or the state registration number. This number may have up to eight characters. This is not the same as the NMFS or state fishing permit number. All vessels and skiffs should have a registered number, however if it has not been registered, record "No Number".

8. HOME TOWN: Record the town of the permit holder's permanent residence. Dash (-) the field if unknown. Do not complete for arrested trips.

9. HOME STATE: Record the state name (ex: Alaska) and postal abbreviation (ex: AK) of the permit holder's permanent residence. Dash (-) the field if unknown. Do not complete for arrested trips.

10. PERMIT NUMBER: Record the Federal NMFS or state fishing permit number under which they are fishing. This field should not be left blank. If this is a joint venture trip, record both permit numbers, listing the selected permit number first.

11. PORT TOWN: Record the name of the port or town where the vessel is usually tied up or stored when not fishing. Dash (-) if field is unknown. Do not complete for arrested trips.

12. PORT STATE: Record the state name (ex: Alaska) and postal abbreviation (ex: AK) where the vessel is usually tied up or stored when not fishing. Dash (-) if field is unknown. Do not complete for arrested trips.

13. GEOGRAPHICAL REGION AND CODE: Record the region and code of where this trip primarily occurred, using the Region Codes:

KI1 = Northern Northwest Region, Kodiak. This area includes the Whale Island, Viekoda Bay, and Uganik Bay areas in the Northwest District. It includes ADF&G statistical areas: 253-11, 253-13, 253-14, 253-31, 253-33, 253-35, 259-36, 259-37, 259-38, 259-39.

KI2 = Southern Northwest Region, Kodiak. This area includes the Uyak Bay area in the Northwest District. It includes ADF&G statistical areas: 254-10, 254-20, 254-30, 254-40.

KI3 = Olga Bay Region, Kodiak. This is the Olga Bay area in the Alitak District. It includes ADF&G statistical areas: 257-40.

KI4 = Inner Moser Bay Region, Kodiak. This is the inner portions of Moser Bay in the Alitak District. It includes the inner part of ADF&G statistical area: 257-41.

KI5 = Outer Moser Bay Region, Kodiak. This is the outer portion of Moser Bay, Alitak Bay, and Deadman Bay in the Alitak District. It includes ADF&G statistical area 257-50 and the outer portion of 257-41.

SE1 = Haines Region. ADF&G District 15, SE AK

SE2 = Juneau Region. ADF&G District 11, SE AK

SE3 = Petersburg Region. ADF&G District 6, SE AK

SE4 = Wrangell Region. ADF&G District 8, SE AK

SE5 = Ketchikan Region. ADF&G District 1, SE AK

14. SELECTION METHOD: Record the method used to select this trip for observer coverage, using the following Selection Method Codes (definitions listed above):

- 1 = Random (not stratified or systematic)
- 2 = Systematic (random sample from stratified area, in an ordered fashion)
- 3 = Voluntary (by fisherman's accord)
- 4 = Secondary (alternative list)
- 5 = Opportunistic (by observer's accord)
- 9 = Other (record in comments)

15. TRIP RESEARCH: Indicate if and what kind of supplemental or specialized research was conducted during this trip, by using the Trip Research Codes:

- 1 = None
- 2 = Marine bird observer
- 3 = Shark sampling or tag
- 4 = Fish sampling or tag
- 5 = Stranding found
- 9 = Other (record in comments)

16. TRIP TYPE: At the completion of the trip, record whether the trip was fully observed, by using the Trip Type Codes (arrested means the trip began and fishing was intended but was cancelled during the trip due to a change in weather or engine problems and no fishing was observed):

- 1 = Fully observed
- 2 = Partially observed
- 3 = Arrested
- 9 = Other (record in comments)

17. OPERATION TYPE: Indicate how the permit is being fished and operated, by using the Operation Type Code. Do not complete for arrested trips.

- 1 = Single operator/owner
- 2 = Joint venture
- 3 = Co-op

- 4 = Temporary transfer
- 5 = Permanent transfer
- 9 = Other (record in comments)

18. EXPECTED NUMBER OF HAULS: Prior to the first haul/pick, ask how many hauls/picks are expected to be done on this trip. Do not complete for arrested trips.

19. NUMBER OF NETS FISHING: Prior to the first pick, ask how many nets this permit is currently fishing. Do not complete for arrested trips.

20. NUMBER OF SKIFFS USED: Ask how many commercial skiffs or vessels are used to tend the nets under this permit. If this is a co-op, this would be the total number of picking skiffs available to pick this permit number. Do not include holding skiffs or tenders. Do not complete for arrested trips.

21. CAPTAIN'S EXPERIENCE: Ask how many years of experience the permit holder has, estimated in full years, operating in this particular fishery. Do not complete for arrested trips.

22. STEAM TIME: Record the amount of time, in hours and minutes (ex: 02.10) it took the fishermen to transit from their fishing site (shelter) to the first net gear site to begin this trip. Do not complete for arrested trips.

23. TRIP BEGIN DATE: Record the date (mmddyy) you left shore or the research platform for this trip.

24. TRIP BEGIN TIME: Record the time, in hours and minutes (hh:mm) you left for this Trip.

25. TRIP END DATE: Record the date (mmd-dyy) that you returned after completing the trip.

26. TRIP END TIME: Record the time (hh:mm) that you returned after completing the trip.

27. PRIMARY SPECIES LANDED: Record the primary species landed for this trip and the appropriate species code (see Appendix 4. Species Codes for a listing of codes). This is the species offloaded making up the majority of the catch, in mass. Do not record for arrested trips.

28. NUMBER OF FISH LANDED OF PRIMARY SPECIES: Record the number of fish landed of the primary species. This may be an estimate which can be obtained by summing observer data, asking the fishermen, or asking the dealer. This is the species offloaded making up the majority of the catch, in mass. Do not record for arrested trips.

29. DEALER NAME: Record the name and code of the company or person to which the fish are sold. See Dealer's Name Codes below for a list of fish buyers and their corresponding codes. This listing will not be all-inclusive and will be periodically updated. Do not record for arrested trips.

- 13 =Alaska Fresh Seafoods
- 12510 =Alaska Pacific Seafoods
- 28347 =Cook Inlet Processing
- 287 = Island Seafoods
- 12566 = Kodiak Seafood Processing
- 12567 = Kodiak Smoking and Processing
- 443 = Ocean Beauty Seafoods (King Crab)
- 8184 = Trident Seafoods
- 12554 = True World Foods
- 648 = Wards Cove Packing
- 2652 = Western Alaska Fisheries

30. DEALER LOCATION: Record the name of the tender vessel (ex: T/V Boat), bay, port, or cannery where the transfer for the sale of fish took place. If you are not there for the final sale of fish, ask the fishermen where and to whom they intend to sell their catch. If you don't have the opportunity to ask, dash the field. Do not record for arrested trips.

31. NUMBER OF MARINE MAMMALS: Record the number of marine mammals incidentally taken during this trip. Incidentally taken means the animal was momentarily or permanently entangled in the fishing gear of this observed trip, which may or may not result in injury or death of the animal. They will be recorded on the Incidental Take Form. If there were no marine mammals taken, record a zero. Do not record for arrested trips.

32. NUMBER OF MARINE BIRDS: Record the number of marine birds incidentally taken during this trip. Incidentally taken means the animal was momentarily or permanently entangled in the fishing gear of this observed trip, which may or may not result in injury or death of the animal. They will be recorded on the Incidental Take Form. If there were no marine birds taken, record a zero. Do not record for arrested trips.

33. NUMBER OF NETS OBSERVED: Record the number of individual nets observed during this trip. If no nets were observed during this trip, record a zero.

34. NUMBER OF HAULS OBSERVED: Record the number of picks or hauls observed during this trip. If no hauls occurred during this trip, record a zero.

35. COMMENTS: Record any comments relating to this trip if not recorded elsewhere.

Make certain comments have a neutral tone. Limit the usage of fisher's names on forms. Because comments are entered verbatim, privacy of all involved should be considered. Please use "Fisher" "Crew" "Captain" to describe people involved instead of names. Always specify which vessel is being referred to in a comment – "observer skiff", "R/V", "fisher skiff", "T/V" - are all useful labels.

TRIP INFORMATION FORM

				Tracking	Date	Initials
Year 2	Month 3	Trip Identification Number 4	Fishery Name (& code) 5	Received		
				Reviewed		
Vessel Name 6			Vessel Number 7	Debriefed		
				Entered		
Home Town (& code) 8		Home State (& code) 9		Fishing Permit Number 10		
Port Town (& code) 11		Port State (& code) 12		Geographical Region (& code) 13		
Selection Method <input type="checkbox"/> 1 = Random <input type="checkbox"/> 2 = Systematic <input type="checkbox"/> 3 = Voluntary <input type="checkbox"/> 4 = Secondary <input type="checkbox"/> 5 = Opportunistic <input type="checkbox"/> 9 = Other (comment)		Additional Trip Research <input type="checkbox"/> 1 = None <input type="checkbox"/> 2 = Marine bird sampling <input type="checkbox"/> 3 = Shark tagging <input type="checkbox"/> 4 = Fish sampling <input type="checkbox"/> 5 = Stranding recovery <input type="checkbox"/> 9 = Other (comment)		Expected # Hauls 18	Trip Begin Date (mmddyy) 23	
				# Nets Fishing 19	Trip Begin Time (24h hhmm) 24	
Trip Type <input type="checkbox"/> 1 = Fully observed <input type="checkbox"/> 2 = Partially observed <input type="checkbox"/> 3 = Arrested <input type="checkbox"/> 9 = Other (comment)		Operation Type <input type="checkbox"/> 1 = Single operator/own <input type="checkbox"/> 2 = Joint venture <input type="checkbox"/> 3 = Co-op <input type="checkbox"/> 4 = Temp transfer <input type="checkbox"/> 5 = Permanent transfer <input type="checkbox"/> 9 = Other (comment)		# Skiffs Used 20	Trip End Date (mmddyy) 25	
				Capt's Experience 21	Trip End Time (24h hhmm) 26	
Primary Species Landed (& code) 27		# Landed 28		Steam Time (hrs) 22		
Dealer Name (& code) 29			Dealer Location 30			
# Marine Mammals Taken 31	# Marine Birds Taken 32	# Nets Observed 33		# Hauls/Picks Observed 34		
Comments (Continued on Back: Y ___ N ___) 35						

SET GILLNET GEAR CHARACTERISTICS FORM

This form contains detailed information on the characteristics of the gear that is observed during the trip. Complete a new form for each uniquely configured net observed during the trip. Number each net sequentially.

If the net is used more than once during a trip for multiple hauls, record on the Haul Form which Net Identification Number is being hauled; you do not need to complete a new Gear Form. If identical nets are being used for separate hauls within the same trip, record the consecutively numbered Net Identification Numbers of all the identical nets in the "Net Identification Number" field on this form.

The data on this form is collected in nautical and English measurements (i.e. inches, feet, pounds, and fathoms) since this is the industry standard for most fields. Other forms will be collected in metric (i.e. centimeters, meters, Celsius, and grams). Before handling any part of the fishermen's commercial gear, inform them of what you are collecting and do your best not to get in their way or interfere with their operations. Observers should not touch any gear without the fishermen present and informed.

Cross out fields that do not apply with a single slanted line. If the field does not apply and has check boxes with codes that do not apply, cross out the entire block. For measurement fields relating to a field that does not apply because it is not used on this gear, record a zero. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed-codes are appropriate for the situation, record or check the code for "other" and provide details in the comment section.

Definitions	
Gear	A type of fishing apparatus.
Gillnet	A net primarily designed to catch fish by entanglement in the mesh and consisting of a single sheet of webbing hung between cork line (float line) and leadline.
Set gillnet	Gillnet that has been intentionally set, staked, anchored, or otherwise fixed.
Site marker	A sign staked to shore, displaying the permit number and permit holder's name of the net gear site. The marker should be posted in 1" lines at least 6" high and be of a color contrasting with the background.
Lead	Length of net employed for guiding fish into a seine or set gillnet. May be called a shore lead.
Net	The entire piece of fishing gear, including the gillnet, lead, etc. acting as a unit.
Float line	Cork line. A line that floats or has floats attached and from which either droplines are strung or gillnet webbing is hung.
Weedline	A line from which the gillnet webbing is hung and does not float at the surface.
Leadline	A weighted line strung on the bottom of the gillnet webbing.
Dropline	The perpendicular distance between the floats or floatline and the net webbing.

Definitions	
Anchor	Device used to hold a salmon fishing vessel or net in a fixed position relative to the beach; this includes using part of the seine or lead, a ship's anchor or being secured to another vessel or net that is anchored.
Hook	The seaward end of an otherwise straight gillnet, shaped into a configuration to catch fish. Also referred to as a trap in some areas.
Keg Buoy	Large buoy at the seaward end of the gillnet. This buoy should display the permit number. Also referred to as the king buoy.
Running line	This may be a line set from shore to a safe mooring distance for a skiff or a line running from the shore to the shore lead or net.
Depth of net	Perpendicular distance of the webbing between the floatline and the leadline.
Pinger	Acoustic alarm that is low-intensity and high-frequency sound generator used to reduce bycatch of cetaceans.
AHD	Acoustic Harassment Device. A high-intensity sound generator used to deter pinnipeds and reduce depredation on fish.

Set Gillnet Characteristics Form Field Descriptions

1. PAGE NUMBERING: This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents.

2. YEAR LANDED: Record the year (yyyy) when the trip ended.

3. MONTH LANDED: Record the month (mm) when the trip ended.

4. TRIP IDENTIFICATION NUMBER: Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).

5. NET IDENTIFICATION NUMBER: Record the consecutive number(s) assigned to identify each unique net hauled per trip. If two or more identical nets are used, assign consecutive numbers to each net and record all of these numbers on one Gear Form (although a record will be entered for each net number). Nets should be

numbered consecutively according to the order in which they are hauled.

6. NUMBER OF NET CONFIGURATIONS: Record the total number of unique nets/net configurations during this trip. This number should equal the maximum Net Identification Number.

7. LEAD USED?: Record whether or not a shore lead was used on this net. Use the Yes No Codes:

Y = Yes
N = No

8. LEAD LENGTH: Record, in whole fathoms, the horizontal distance of the shore lead on this net. This information may be obtained from the captain. If there was no lead used, record a zero.

9. LEAD DEPTH: Record the average number of vertical meshes on the shore lead. This information may be obtained from the captain or counted. If lead tapers, record the minimum and maximum depth. If there was no lead used, record a zero.

10. LEAD TWINE SIZE NUMBER: Record the thickness of the shore lead twine by comparing to twine card or asking the captain. If no lead was used, cross out field box.

11. LEAD MATERIAL: Indicate the type of material making up the shore lead by using the Lead Material Codes. If no lead was used, cross out field box.

- 1 = Poly (usually seine webbing)
- 2 = Nylon
- 8 = Combination
- 9 = Other (record in comments)
- 0 = Unknown

12. LEAD MINIMUM MESH SIZE: Record, in tenths of inches, the minimum mesh size of the shore lead. This is measured with calipers, vertically from the inside-to-outside of the knots. If the shore lead can not be accessed, ask the captain. If no lead was used, cross out field box. If unknown, dash the field.

13. LEAD MAXIMUM MESH SIZE: Record, in tenths of inches, the maximum mesh size of the shore lead. This is measured with calipers, vertically from the inside-to-outside of the knots. If the shore lead can not be accessed, ask the captain. If no lead was used, cross out field box. If unknown, dash the field.

14. LEAD COLOR: Record the primary color of the shore lead by using the Color Codes listed below. If no lead was used, cross out field box.

- 1 = Clear
- 2 = White
- 3 = Black
- 4 = Gray
- 5 = Green
- 6 = Blue
- 7 = Red
- 8 = Pink

- 9 = Orange
- 10 = Yellow
- 11 = Purple
- 12 = Tan/Brown
- 13 = Combination (mixed colors in material)
- 99 = Other (record in comments)

15. NET COMBINATION: Record whether there was a combination of different materials, twine sizes, mesh sizes, and colors making up the gillnet. Use the Yes/No Codes:

- Y = Yes
- N = No

16. NET LENGTH: Record, in whole fathoms, the total length of the gillnet. This information may be estimated or obtained from the captain. This measurement may be confirmed by using laser range finders or radar.

17. NET DEPTH: Record the average number of vertical meshes of the gillnet. This information may be obtained from the captain or counted. If net tapers, record the minimum and maximum depth.

18. NET TWINE SIZE NUMBER: Record the industry standard twine size number of the gillnet webbing. This information may be obtained by using a twine size card or asking the captain. If unknown, dash the field.

19. NET MATERIAL: Record the material that the gillnet is made of, using the Gillnet Material Codes:

- 1 = Monofilament nylon
- 2 = Multi-filament nylon
- 3 = Six-strand mono
- 4 = Multi-strand mono (mono twist)
- 8 = Combination
- 9 = Other (record in comments)

20. NET MINIMUM MESH SIZE: Record, in tenths of inches, the minimum mesh size of the gillnet. This may be measured with calipers vertically from inside-to-outside the knots.

21. NET MAXIMUM MESH SIZE: Record, in tenths of inches, the maximum mesh size of the gillnet. This may be measured with calipers vertically from inside-to-outside the knots.

22. NET COLOR: Record the color of the gillnet by using the Color Codes:

- 1 = Clear
- 2 = White
- 3 = Black
- 4 = Gray
- 5 = Green
- 6 = Blue
- 7 = Red
- 8 = Pink
- 9 = Orange
- 10 = Yellow
- 11 = Purple
- 12 = Tan/Brown
- 13 = Combination (mixed colors in material)
- 99 = Other (record in comments)

23. HANGING RATIO: Record, in decimal format, in tenths of degrees, the ratio of the length of the hanging line to the length that the gillnet would be if it was taken off the hanging line and stretched out. This value can be calculated by counting 10 or 12 meshes horizontally, measuring the length of the hanging line they are attached to, and comparing that distance to the stretched out length of the meshes. This value is always less than (or equal to) one.

24. NUMBER OF STRANDS: Record the number of strands of twine in the gillnet webbing. An average should not be recorded here. If more than one number is used, record the number of strands used in the greatest amount of netting and provide details in the comment section. If there are too many strands to count individually, record "multi".

25. DROPLINE USED: Record whether or not a dropline was attached between the float line or floats and the weedline or top of the gillnet. Use the Yes No Codes:

- Y = Yes
- N = No

26. DROPLINE HEIGHT: Record, in whole inches, the height of the dropline. If height varies, calculate average and detail in comments. If no droplines are used, record a zero.

27. WEEDLINE USED: Indicate whether a weedline was attached to the top of the gillnet; separate from the float line. Use the Yes No Codes:

- Y = Yes
- N = No

28. WEEDLINE MATERIAL: Record the material the weedline was made from by using the Weedline Material Codes:

- 1 = Twisted poly
- 2 = Braided poly
- 9 = Other (record in comments)
- 0 = Unknown

29. FLOAT COMBINATION: Indicate whether there was a combination of different float shapes, colors, and distance between floats. Use the Yes No Codes:

- Y = Yes
- N = No

30. LENGTH OF FLOAT: Record, in whole inches, the average length of the floats.

31. NUMBER OF FLOATS: Record the number of floats on the gillnet. Do not include floats on lead.

32. FLOAT DISTANCE: Record, in whole inches, the average distance between the center of one float to the center of the next float.

33. FLOAT COLOR: Indicate the most commonly used color of floats, using the Color Codes:

- 1 = Clear
- 2 = White
- 3 = Black
- 4 = Gray
- 5 = Green
- 6 = Blue
- 7 = Red
- 8 = Pink
- 9 = Orange
- 10 = Yellow
- 11 = Purple
- 12 = Tan/Brown
- 13 = Combination (mixed colors on float)
- 99 = Other (record in comments)

34. FLOAT SHAPE: Indicate the shape of the floats, using the most appropriate Float Shape Code:

- 1 = Round or soccer ball-shaped
- 2 = Disk-shaped, donut-shaped or cylindrical
- 3 = Oval or football-shaped
- 4 = Rectangular or odd-sided cube
- 5 = Square or even-sided cube
- 8 = Combination
- 9 = Other (record in comments)

35. LEADLINE USED: Record whether or not a leadline (line with lead filled core) attached to the bottom of the net. Use the Yes No Codes:

- Y = Yes
- N = No

36. LEADLINE WEIGHT: Record the weight of the leadline, in whole pounds per 100 fathoms.

37. FLOAT LINE USED: Record whether a float line was attached to the top of the gillnet. Use the Yes No Codes:

- Y = Yes
- N = No

38. FLOAT LINE MATERIAL: Indicate the float line material by using the Float Line Material Codes:

- 1 = Floating (with a poly core)
- 2 = Twisted poly
- 3 = Braided nylon
- 9 = Other (record in comments)
- 0 = Unknown

39. NUMBER OF BUOYS: Record the number of buoys used for this net. Buoys are attached to the running lines, not directly to the netting.

40. ANCHORS USED: Record whether anchors were used to secure the net and running lines. Use the Yes No Codes:

- Y = Yes
- N = No

41. NUMBER OF ANCHORS: Record the number of anchors used on this net. This information may be obtained from the captain. If no anchors were used, record a zero.

42. ANCHOR TYPE: Record the type of anchors used. This information may be obtained from the captain. Use Anchor Type Codes (see Appendix 2. Anchor Type Codes and Diagrams for anchor images):

- 1 = Standard Danforth anchor
- 2 = Kedge anchor
- 3 = Manta anchor
- 4 = Bruce anchor
- 5 = Claw anchor
- 6 = Grapnel anchor
- 7 = Mushroom anchor
- 8 = Quick set anchor
- 9 = Screw anchor
- 10 = Scrap debris
- 11 = Tied to vessel
- 99 = Other (record in comments)
- 0 = Unknown

43. HOOK SHAPE: Indicate the hook shape by using the most appropriate Hook Shape Code (see Appendix 3. Hook Shape Codes and Diagrams for hook shape drawings):

- 1 = L-shaped
- 2 = V-shaped
- 3 = J-shaped
- 4 = Umbrella
- 5 = Arrowhead
- 6 = Flag
- 7 = Diamond
- 8 = Box
- 9 = Zigzag
- 10 = None
- 11 = Pennant
- 99 = Other (draw and describe in comments)

44. LIGHTS USED: Record whether lights were used to mark the net, even if not turned on all the time. Use the Yes No Codes:

- Y = Yes
- N = No

45. NUMBER OF LIGHTS: Record the number of lights attached to the gear. If no lights were used, record a zero.

46. PINGERS USED: Record whether pingers were used to deter mammals from the net. This is a small, low-intensity sound-generating device intended to function as an acoustic alarm. Use the Yes No Codes:

- Y = Yes
- N = No

47. NUMBER OF PINGERS: Record the number of pingers on the gear. This information can be obtained from the captain. If no pingers were used, record a zero.

48. PERCENT PINGERS OPERATING: Estimate the percentage of pingers that seem to be in operable condition. Pingers are powered by batteries and they may or may not be salt water activated. If you are on the fishing vessel and are witnessing the pingers coming onboard, it may be possible to hear the high pitched pinging sound. If there is a lot of surrounding noise, such as outboards or motors, it may be difficult to hear. Some pingers may be cracked open and obviously broken, others may be out of batteries or water damaged. If you are not sure, you may ask the captain what percentage seemed to be operating. If no pingers were used, cross out field box.

49. PINGER BRAND: Record the brand name of the pinger. This information can be obtained from the captain. If no pingers were used, cross out field box. Use the Pinger Brand Codes:

- 1 = Dukane
- 2 = Airmar
- 9 = Other (record in comments)
- 0 = Unknown

50. PINGER KILOHERTZ: Record the frequency of the sound emitted by the pinger (example 10 kHz). This information can be obtained from the captain. If no pingers were used, cross out field box.

51. ALARMS USED: Record whether alarms (i.e. Acoustic Harassment Devices) were used on the net to deter marine mammals. This is a high-intensity sound-generating device that is aversive to marine mammals and keeps or drives them away from an area or structure.

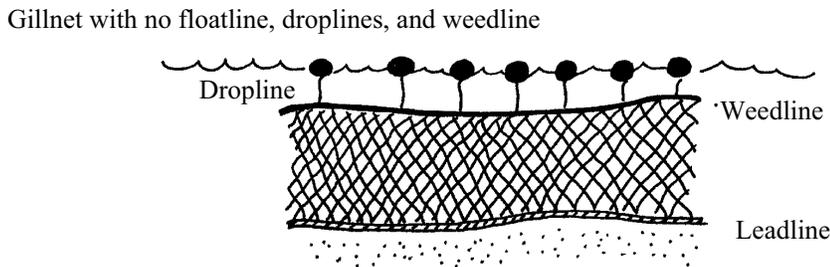
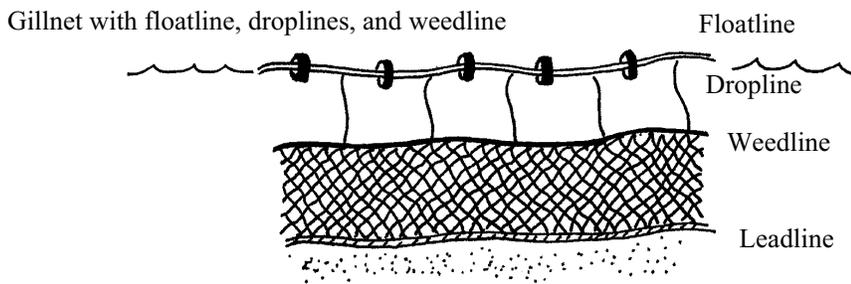
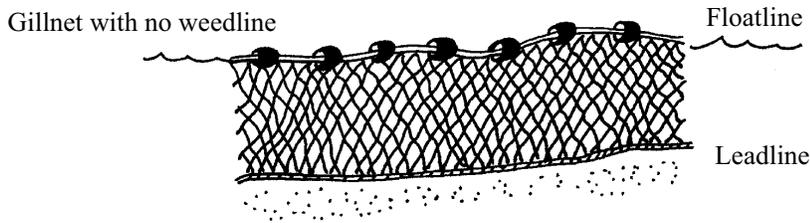
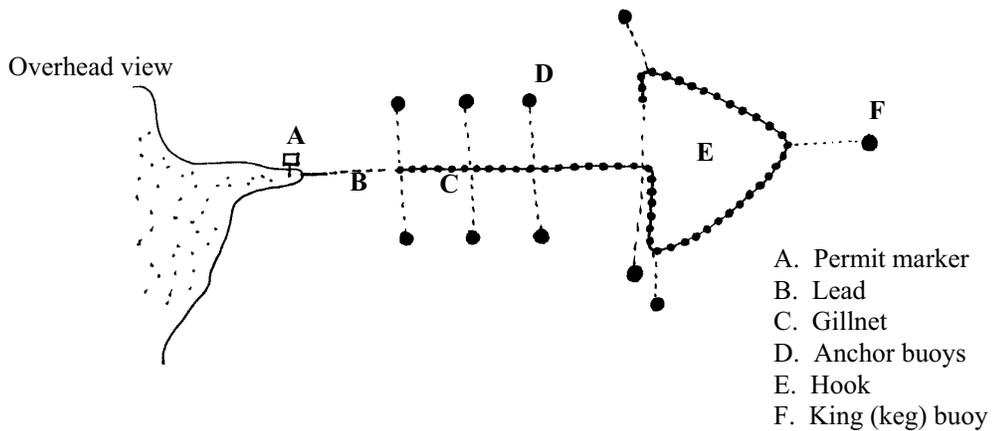
May consider use of seal bombs or firearm shots in this field and provide comments. Use the Yes No Codes:

- Y = Yes
- N = No

52. NUMBER OF ALARMS: Record the number of alarms used on this gear. May consider use of seal bombs or firearm shots in this field and provide comments. If no alarms are used, record a zero.

53. COMMENTS: Record any additional notes on the gear characteristics. If possible, record the length, or portion of net that forms the hook in comments.

DEMONSTRATION OF SET GILLNET GEAR CONFIGURATIONS



SET GILLNET GEAR CHARACTERISTICS FORM

Year 2	Month 3	Trip Identification Number 4	Net Id Number(s) 5	# Nets/Net Configs 6
Lead Used? <input type="checkbox"/> Y = Yes <input type="checkbox"/> N = No 7	Net Combo? <input type="checkbox"/> Y = Yes <input type="checkbox"/> N = No 15	Hang Ratio 23	# Strands 24	Leadline Used? <input type="checkbox"/> Y = Yes <input type="checkbox"/> N = No 35
Lead Length (fa) 8	Net Length (fa) 16	Dropline Used? <input type="checkbox"/> Y = Yes <input type="checkbox"/> N = No 25	Leadline Wgt (lbs/100fa) 36	
Lead Depth (mesh count) 9	Net Depth (mesh count) 17	Dropline Height (" 26	Floatline Used? <input type="checkbox"/> Y = Yes <input type="checkbox"/> N = No 37	
Lead Twine Size # 10	Net Twine Size # 18	Weedline Used? <input type="checkbox"/> Y = Yes <input type="checkbox"/> N = No 27	Floatline Material 38 1 = Floating (w/poly core) 2 = Twisted poly 3 = Braided nylon 9 = Other (comment) 0 = Unknown	
Lead Material 11 <input type="checkbox"/> 1 = Poly (seine webbing) <input type="checkbox"/> 2 = Nylon <input type="checkbox"/> 8 = Combination <input type="checkbox"/> 9 = Other (comment) <input type="checkbox"/> 0 = Unknown	Net Material 19 <input type="checkbox"/> 1 = Monofilament nylon <input type="checkbox"/> 2 = Multi-filament nylon <input type="checkbox"/> 3 = Six-strand mono <input type="checkbox"/> 4 = Multi-strand mono (mt) <input type="checkbox"/> 8 = Combination <input type="checkbox"/> 9 = Other (comment)	Weedline Material 28 <input type="checkbox"/> 1 = Twisted poly <input type="checkbox"/> 2 = Braided poly <input type="checkbox"/> 9 = Other (comment) <input type="checkbox"/> 0 = Unknown	# Buoys 39	
Lead Mesh Size Min (".0) 12	Net Mesh Size Min (".0) 20	Float Combo? <input type="checkbox"/> Y = Yes 29 <input type="checkbox"/> N = No	Float Length (" 30	Anchors Used? <input type="checkbox"/> Y = Yes 40 <input type="checkbox"/> N = No
Lead Mesh Size Max (".0) 13	Net Mesh Size Max (".0) 21	# Floats 31	Float Distance (" 32	# Anchors 41
Lead Color 14 <input type="checkbox"/> 1 = Clear <input type="checkbox"/> 2 = White <input type="checkbox"/> 3 = Black <input type="checkbox"/> 4 = Gray <input type="checkbox"/> 5 = Green <input type="checkbox"/> 6 = Blue <input type="checkbox"/> 7 = Red <input type="checkbox"/> 8 = Pink <input type="checkbox"/> 9 = Orange <input type="checkbox"/> 10 = Yellow <input type="checkbox"/> 11 = Purple <input type="checkbox"/> 12 = Tan <input type="checkbox"/> 13 = Combo <input type="checkbox"/> 99 = Other (cmt)	Net Color 22 <input type="checkbox"/> 1 = Clear <input type="checkbox"/> 2 = White <input type="checkbox"/> 3 = Black <input type="checkbox"/> 4 = Gray <input type="checkbox"/> 5 = Green <input type="checkbox"/> 6 = Blue <input type="checkbox"/> 7 = Red <input type="checkbox"/> 8 = Pink <input type="checkbox"/> 9 = Orange <input type="checkbox"/> 10 = Yellow <input type="checkbox"/> 11 = Purple <input type="checkbox"/> 12 = Tan <input type="checkbox"/> 13 = Combo <input type="checkbox"/> 99 = Other (cmt)	Float Color 33 <input type="checkbox"/> 1 = Clear <input type="checkbox"/> 2 = White <input type="checkbox"/> 3 = Black <input type="checkbox"/> 4 = Gray <input type="checkbox"/> 5 = Green <input type="checkbox"/> 6 = Blue <input type="checkbox"/> 7 = Red <input type="checkbox"/> 8 = Pink <input type="checkbox"/> 9 = Orange <input type="checkbox"/> 10 = Yellow <input type="checkbox"/> 11 = Purple <input type="checkbox"/> 12 = Tan <input type="checkbox"/> 13 = Combo <input type="checkbox"/> 99 = Other (cmt)	Float Shape 34 <input type="checkbox"/> 1 = Round <input type="checkbox"/> 2 = Disk <input type="checkbox"/> 3 = Oval <input type="checkbox"/> 4 = Rectangular <input type="checkbox"/> 5 = Square <input type="checkbox"/> 8 = Combination <input type="checkbox"/> 9 = Other (cmt)	Anchor Type 42 <input type="checkbox"/> 1 = Dansforth <input type="checkbox"/> 2 = Kedge <input type="checkbox"/> 3 = Manta <input type="checkbox"/> 4 = Bruce <input type="checkbox"/> 5 = Claw <input type="checkbox"/> 6 = Grapnel <input type="checkbox"/> 7 = Mushroom <input type="checkbox"/> 8 = Quick set <input type="checkbox"/> 9 = Screw <input type="checkbox"/> 10 = Scrap debris <input type="checkbox"/> 11 = Tied to vessel <input type="checkbox"/> 99 = Other (cmt) <input type="checkbox"/> 0 = Unknown
Pingers Used? <input type="checkbox"/> Y = Yes 46 <input type="checkbox"/> N = No	Pinger Brand 49 <input type="checkbox"/> 1 = Dukane <input type="checkbox"/> 9 = Other (cmt) <input type="checkbox"/> 0 = Unknown	Alarms Used? <input type="checkbox"/> Y = Yes 51 <input type="checkbox"/> N = No	Hook Shape 43 <input type="checkbox"/> 1 = L-shaped <input type="checkbox"/> 2 = V-shaped <input type="checkbox"/> 3 = J-shaped <input type="checkbox"/> 4 = Umbrella <input type="checkbox"/> 5 = Arrowhead <input type="checkbox"/> 6 = Flag <input type="checkbox"/> 7 = Diamond <input type="checkbox"/> 8 = Box <input type="checkbox"/> 9 = Zigzag <input type="checkbox"/> 10 = None <input type="checkbox"/> 99 = Other (cmt)	Lights Used? <input type="checkbox"/> Y = Yes 44 <input type="checkbox"/> N = No
# Pingers 47		# Alarms 52	# Lights 45	
Pingers Operating (%) 48	Pinger Frequency (kHz) 50	Comments (Continued on Back: Y ___ N ___) 53		

GILLNET HAUL FORM

This form contains information associated with the observed haul. It describes the location of the haul/pick and fishing practices. Complete a new form after each hauling or picking of gear. If the trip was arrested (stopped before any hauls were observed), do not complete this form nor the Gear Characteristics Form. At the bottom of this form and on the back are the areas to record a summary of the total catch in this haul. A Catch Tally Sheet may be used to tally catch as it occurs and will then be used to summarize the catch by Species, Disposition, Condition, and Disposition Reason. The re-usable tally sheets may be cleaned only after debriefing.

Cross out fields that do not apply with a single slanted line. If the field does not apply and has check boxes with codes that do not apply, cross out the entire block. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed codes are appropriate for the situation, record or check the code for “other” and provide details in the comment section. There are a limited number of Secchi disks with which to collect the water clarity measurements, so this field may be dashed (-) if you have not been supplied with the equipment.

Definitions	
Incidental take	A marine mammal or marine bird (alive or dead) that is in any way entangled or snagged in the gear being observed, whether it ultimately is brought on the vessel, falls from the gear, or is self-released.
Open water	An area, when facing seaward, where the majority of the horizon is water.
Large bay	An area inside a bay with considerable exposure to the open ocean or the other side can not be seen with the naked eye.
Sheltered bay	An area inside a bay that is sheltered from the open ocean and land is visible on all sides.
Channel	A broad straight or deep part of a river or harbor with a navigable passage.
Canal	An artificial waterway or artificially improved river used for shipping or travel.
Mainland	The principal land mass of a continent. For our purposes, the main land mass of Kodiak Island will be considered mainland.
Peninsula	A long projection of land into the water, connected to the mainland by a narrow strip of land with a larger land mass at the end.
Island	A land mass completely surrounded by water.
Bar	A ridge made of sand or gravel on a shore or streambed that is formed by tides or currents.
Reef	A strip of ridge of rocks, sand, or coral that rises to or close to the surface of a body of water.
Secchi disc	Acrylic disc with black and white quadrants lowered into the water on a calibrated line to determine the degree of visibility and turbidity (clarity) of aquatic environments.
Ebb tide	The period of a tide between high water and a succeeding low water.
Flood tide	The incoming tide.
High slack	A period of high tide when there is no visible flow of water.
Low slack	A period of low tide when there is no visible flow of water.
Hydraulic pump	A pressure washer. A high-powered water pump may be used from fishing vessels to pressure wash the nets after or while they are being hauled to clear them of debris, algae, or jellyfish. If this process is being used, be sure to wear eye protection as jellyfish particles can sting your eyes and skin.

Set Gillnet Haul Form Field Descriptions

1. PAGE NUMBERING: This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents.

2. YEAR LANDED: Record the year (yyyy) when the trip ended.

3. MONTH LANDED: Record the month (mm) when the trip ended.

4. TRIP IDENTIFICATION NUMBER: Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).

5. HAUL NUMBER: Record the haul number each time gear is hauled or picked on this trip. Sequentially number the hauls by trip.

6. NET IDENTIFICATION NUMBER: Record all net number(s) used for this haul as uniquely identified on each Gear Characteristics Form.

7. ZONE: Record the code that best describes the area where the fishing occurs, using Zone Codes:

- 1 = Open water
- 2 = Inside large bay
- 3 = Inside sheltered bay or inlet
- 4 = River
- 5 = Channel or canal
- 9 = Other (record in comments)

8. LAND: Record the code that best describe the physical land from where the gear is set, using Land Codes:

- 1 = Mainland shoreline
- 2 = Peninsula or island
- 3 = Sand bar
- 4 = Rocky reef
- 5 = Submerged land surface
- 8 = Not set from land
- 9 = Other (record in comments)

9. TIDE: Record the stage of the tidal cycle at the beginning of this haul. Visual cues should be used over tide table charts, where conditions apply to a half hour or either side of the tide. Use Tide Codes:

- 1 = Ebb tide
- 2 = Flood tide
- 3 = High slack
- 4 = Low slack
- 9 = Other (record in comments)

10. STATISTICAL AREA: Record the ADF&G Fisheries Management Statistical Area Codes at the haul location. See Appendix 1. Geographical Region and Statistical Area Code Map for a map of the areas.

11. WATER TEMPERATURE: Record the water temperature at the fishing location, in tenths of degrees Celsius. This information is collected with a bucket thermometer just below the surface.

12. WATER CLARITY: Record the water clarity, in tenths of meters, as measured by lowering an oceanographic Secchi disc on a calibrated line and using an aqua scope to deflect surface glare. Only a limited number of observers will be issued this gear as it is cumbersome to carry. Record a dash (-) if this can not be collected or the gear was not issued.

13. AIR TEMPERATURE: Record, in tenths of degrees Celsius, the air temperature at the beginning of this haul. This is collected with a temperature gauge on the wind meter. Do not include the wind chill factor.

14. MINIMUM DISTANCE TO SHORE LINE: Record, in whole meters, the minimum distance of the closest section of net (not including the shore lead) to the shore line during the haul. This distance can be estimated and verified with range finders.

15. MAXIMUM DISTANCE TO SHORE LINE: Record, in whole meters, the maximum distance of the furthest section of net to the shore line during the haul. This distance can be estimated and verified with range finders.

16. PRESSURE WASHER (HYDRAULIC PUMP) USED: Record whether a pressure washer was used to clean the net of debris during or directly after this haul. Use the Yes No Codes:

Y = Yes

N = No

17. NUMBER OF SKIFFS USED: Record the number of skiffs used to pick or haul this net (do not include the research skiff).

18. NUMBER OF CREW: Record the number of crew members per skiff. If several skiffs are used, record the average or the number in the primary picking skiff (explain in comment section).

19. SKIFF SIZE: Record the size, in whole feet, of the primary picking skiff. This information is obtained from the captain.

20. FISHING DURATION: Record the time passed since the initial setting of the gear. This is the length of time, in hours and minutes (hh.mm), since the net was first deployed for this opener. Time from initial time begin set to when the fisherman began to haul back for this haul.

21. SOAK DURATION: Record the fishing time, in hours and minutes (hh.mm), passed since last pick. This is the length of time from the end of last haul back to the begin time of this haul back.

22. PRIMARY SPECIES SOUGHT: Record the species and the species code that is being targeted during this haul (see Appendix 4. Species Codes for a list of species codes). Ask the fishermen what species they are intending to catch during this set. This does not have to be the primary species caught or the management plan species - it is what the fishermen want and are trying to catch.

23. HAUL BEGIN DATE: Record the date when the haul/pick began, with month, day, year (mmdyy).

24. HAUL BEGIN TIME: Record the time when the observer begins to observe the haul/pick, using the 24 hour clock (hh:mm).

25. HAUL BEGIN LATITUDE: Record the latitude location, in tenths of minutes (ddmm.m), where the haul began. This information can be obtained from your personal GPS unit (be sure settings are correct). If bearings can not be taken, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes.

26. HAUL BEGIN LONGITUDE: Record the longitude location, in tenths of minutes (dddmm.m), where the haul began. This information can be obtained from your personal GPS unit (be sure settings are correct). If bearings can not be taken, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes.

27. HAUL BEGIN DEPTH: Record the water depth, in whole fathoms, at the beginning of the haul. This information is collected with a depth sounder (hand held or mounted to the hull of the skiff/vessel) or from a nautical chart. Record a dash if this can not be obtained.

28. HAUL END DATE: Record the date when the haul/pick ended, with month, day, year (mmddy).

29. HAUL END TIME: Record the time when the observer finishes observing the haul/pick, using the 24 hour clock (hh:mm).

30. HAUL END LATITUDE: Record the latitude location, in tenths of minutes (ddmm.m), where the haul ended. This information can be obtained from your personal GPS unit (be sure settings are correct). If bearings can not be taken, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes.

31. HAUL END LONGITUDE: Record the longitude location, in tenths of minutes (dddmm.m), where the haul ended. This information can be obtained from your personal GPS unit (be sure settings are correct). If bearings can not be taken, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes.

32. HAUL END DEPTH: Record the water depth, in whole fathoms, at the end of the haul. This information is collected with a depth sounder (hand held or mounted to the hull of the skiff/vessel) or from a nautical chart. Record a dash if this can not be obtained.

33. GEAR DAMAGE CODE: Indicate the condition of the gear at the end of the haul and the damage done since the last pick. Use Gear Damage Codes to reflect damage done to gear while it was fishing:

- 1 = No gear damage, very few small holes
- 2 = Less than 5% of the net torn
- 3 = Between 5% and 25% of the net torn
- 4 = Between 25% and 50% of the net torn
- 5 = Greater than 50% of the net torn
- 6 = Obstructed by debris, affecting between 10% than 50% of the net (including jellyfish, algae, & seaweed)
- 7 = Obstructed by debris, affecting 50% of the net or more (including jellyfish, algae, & seaweed)
- 8 = Net totally balled up
- 9 = Other (record in comments)

34. PERCENT OF NET RAN: Record the percent of net that was run (scanned from picking skiff, but not lifted from the water). This may exceed 100 % if the net is run several times.

35. PERCENT OF NET PULLED: Record the percent of net that was actually pulled out of the water during this haul. This may exceed 100 % if portions of the net are pulled more than once.

36. PERCENT OF NET OBSERVED: Record the percent of the net that was observed during this haul. If a portion of the haul was missed, subtract the percent that was not observed and record the reasons in the comment section. Reasons may include engine failure, tardiness, feeling ill, or view was obstructed. Take into account length of net and haul time and number of skiffs picking the net at once.

37. INCIDENTAL TAKE: Indicate whether an incidental take occurred during this haul. Use the Yes No Codes:

Y = Yes
N = No

38. OBSERVATION QUALITY: Assess and record the overall conditions under which the observations were made, for the percentage of the net that was observed. Quality may be affected by amount of day light, glare, wave height and angle, relative positioning of skiffs, and interference factors. Excellent quality would indicate that all catch data and incidental takes were accurately counted and clearly identified as best could be expected; poor quality would indicate low confidence that all catch data and incidental takes were correctly noted and identified, perhaps due to light conditions, missed observation periods, etc. Use the following Quality Codes:

1 = Excellent
2 = Good
3 = Fair
4 = Poor
9 = Other (record in comments)

39. SPECIES NAME: Record the common name of the species caught. Also include the associated code from the Species Codes (Appendix 4 - Species Codes). Please be sure to be using the most recent list.

40. NUMBER: Record the number of individuals caught in this haul, summarized by Species, Disposition, Condition, and Reason.

41. NUMBER TYPE: Indicate how that count was determined by recording the type of Number. Use the Type Codes:

A = Actual
E = Estimated
F = Fishermen's
L = Landing ticket

42. WEIGHT: Record the summed weight, in tenths of kilograms, by Species, Disposition, Condition, and Reason.

43. WEIGHT TYPE: Indicate how that weight was determined by recording the type of Weight. Use the Type Codes:

A = Actual
E = Estimated
F = Fishermen's
L = Landing ticket
D = Department of Fish and Game chart

44. CATCH DISPOSITION: Indicate whether this catch category was kept or discarded by using the Catch Disposition Codes:

K = Kept
D = Discarded

45. ANIMAL CONDITION: Indicate the ultimate condition at the end of the trip of each catch category by recording the most appropriate Animal Condition Code:

A = Alive
D = Dead
R = Recovering tank or comatose
U = Unknown

* NOTE: All kept species should be dead, unless they are being kept for a live market. Indicate whether discards are released alive or dead.

46. DISPOSITION REASON: Indicate why the catch was either discarded or kept for each catch category, using the Disposition Reason Codes:

- 1 = Discarded, no market, reason not specified
- 2 = Discarded, no market, too small
- 3 = Discarded, no market, too large
- 4 = Discarded, no market, quota filled
- 5 = Discarded, no market, won't keep until trip end
- 6 = Discarded, regulations prohibit retention
- 7 = Discarded, poor quality, reason not specified
- 8 = Discarded, poor quality, due to sand flea damage
- 9 = Discarded, poor quality, due to seal damage
- 10 = Discarded, poor quality, due to shark damage
- 11 = Discarded, poor quality, due to cetacean damage
- 12 = Discarded, poor quality, due to scavenger damage
- 13 = Discarded, poor quality, due to gear damage
- 14 = Discarded, fell out of gear and lost
- 15 = Discarded, too large to bring on-board
- 16 = Discarded, vessel capacity filled
- 17 = Discarded, not enough fish to pump on-board
- 18 = Discarded, incidental take (mammal, bird)
- 19 = Discarded, debris
- 20 = Discarded, other reason (record in comments)
- 21 = Discarded, reason unknown
- 30 = Kept, landed/sold
- 31 = Kept, used for bait
- 32 = Kept, for personal consumption
- 33 = Kept, other reason (record in comments)
- 34 = Kept, reason unknown
- 0 = Unknown disposition

47. COMMENTS: Record any comments associated with this haul.

SET GILLNET HAUL FORM

Year 2		Month 3		Trip Identification Number 4		Haul Number 5		Net Id Number 6	
Zone 7 <input type="checkbox"/> 1 = Open water <input type="checkbox"/> 2 = Inside large bay <input type="checkbox"/> 3 = Inside sheltered bay <input type="checkbox"/> 4 = River <input type="checkbox"/> 5 = Channel or canal <input type="checkbox"/> 9 = Other (comment)		Land 8 <input type="checkbox"/> 1 = Mainland shoreline <input type="checkbox"/> 2 = Peninsula or island <input type="checkbox"/> 3 = Sand bar <input type="checkbox"/> 4 = Rocky reef <input type="checkbox"/> 5 = Submerged land <input type="checkbox"/> 8 = Not set from land <input type="checkbox"/> 9 = Other (comment)		Tide 9 <input type="checkbox"/> 1 = Ebb tide <input type="checkbox"/> 2 = Flood tide <input type="checkbox"/> 3 = High slack <input type="checkbox"/> 4 = Low slack <input type="checkbox"/> 9 = Other (comment)		Statistical Area 10		Water Temp c.0 11	
Min Shore Distance (m) 14		Max Shore Distance (m) 15		Hydraulic Pump Used? <input type="checkbox"/> Y = Yes 16 <input type="checkbox"/> N = No		# Skiffs 17		# Crew Per Skiff 18	
Skiff Size (ft) 19		Fish Duration (hh.mm) 20		Soak Duration (hh.mm) 21		Primary Species Sought (& code) 22			
BEGIN HAUL	Date (mmdyyy) 23		Time (24 hr) 24	Latitude (ddhh.m) 25		Longitude (ddhh.m) 26		Depth (fa) 27	
END HAUL	Date (mmdyyy) 28		Time (24 hr) 29	Latitude (ddhh.m) 30		Longitude (ddhh.m) 31		Depth (fa) 32	
Gear Damage <input type="checkbox"/> 1 = No gear damage 33 <input type="checkbox"/> 2 = Less than 5% of the net torn <input type="checkbox"/> 3 = Between 5% and 25% of the net torn <input type="checkbox"/> 4 = Between 25% and 50% of the net torn <input type="checkbox"/> 5 = Greater than 50% of the net torn <input type="checkbox"/> 6 = Obstructed by debris, affecting less than 50% of net <input type="checkbox"/> 7 = Obstructed by debris, affecting 50% or more of net <input type="checkbox"/> 8 = Net totally ballped up <input type="checkbox"/> 9 = Other (comments)			% Net Ran 34	% Net Pulled 35	% Net Observed 36	Incidental Take 37 <input type="checkbox"/> Y = Yes <input type="checkbox"/> N = No			
			Observation Quality 38 <input type="checkbox"/> 1 = Excellent <input type="checkbox"/> 2 = Good <input type="checkbox"/> 3 = Fair <input type="checkbox"/> 4 = Poor <input type="checkbox"/> 9 = Other (comment)		# / Wt Type Codes A = Actual E = Estimated F = Fishermen's L = Landing ticket Animal Condition Codes A = Alive D = Dead R = Recovering tank; comatose U = Unknown		Disposition Codes K = Kept D = Discarded		
Species	Code	Number	# Type	Weight (kg.0)		Wt Type	Disposition	Animal Condition	Reason (code list)
39		40	41	42		43	44	45	46
Comments (Continued on Back: Y___ N___)									
47									

FISH/SHARK SAMPLE FORM

This form is completed when fish or sharks are individually measured or sampled. The data collected include tagging information, length, sex, and individual weights. It should be completed whenever a tagged fish or shark is caught and when there are specific sampling requests for biological samples from fish or sharks. The animals recorded on this form are numbered consecutively per trip. Begin a new form with each haul.

Keep any tags from dead animals. The fisherman is entitled to any tag returns. Be sure to get their name and mailing address if this applies. The observer should turn in the tag along with the trip data and the fisherman will be ensured the award.

Cross out fields that do not apply with a single slanted line. If the field does not apply and has check boxes with codes that do not apply, cross out the entire block. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed codes are appropriate for the situation, record or check the code for "other" and provide details in the comment section.

1. PAGE NUMBERING: This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents.

2. YEAR LANDED: Record the year (yyyy) when the trip ended.

3. MONTH LANDED: Record the month (mm) when the trip ended.

4. TRIP IDENTIFICATION NUMBER: Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).

5. HAUL NUMBER: Record the consecutive haul number assigned to the haul where this animal was caught. This number must agree with the haul number recorded on the corresponding Haul Form.

6. IDENTIFICATION NUMBER: Assign a consecutive number, by trip, to each animal recorded on this form. If there are insufficient lines on one form, continue listing animals on the back

and then go to another Fish/Shark Sample Form. Start a new form for each haul.

7. SPECIES: Record the complete common name for each animal as listed in the Species Codes (Appendix 4. Species Codes). Include the appropriate Species Code for data entry (this can be filled in after the trip when codes can be referenced).

8. TAG NUMBER(S): Record the complete alpha-numeric number(s) from the tag(s) you attach, or that were already attached, to the animal. All cattle ear tags issued from 2001 on should begin with "A" followed by 4 digits. This tag number should be uniquely and individually assigned to a particular animal, and only if the animal is dead. If only one tag is recorded, cross out the field box for the second tag.

9. TAG TYPE(S): Indicate what kind of tag is (or was) on the animal. If only one tag is recorded, cross out the field box for the second tag. Use the Tag Type Codes (record a description of the color in comments):

1 = Cattle ear tag
2 = Brand

- 3 = Bleach, die, or ink
- 4 = Flipper tag
- 5 = Dorsal fin tag
- 6 = Metal leg band
- 7 = Plastic color leg band
- 8 = Nasal tag
- 9 = Spaghetti tag
- 10 = Coded wire tag
- 11 = Stomach tag
- 99 = Other (comment)
- 0 = No tag

10. TAG STATUS(S): Indicate whether the tag was on the animal, left on the animal, or put on the animal. If only one tag is recorded, cross out the field box for the second tag. Use the Tag Status Codes:

- 1 = Applied by observer
- 2 = Already on and left on
- 3 = Already on and removed
- 9 = Other (record in comments)
- 0 = No tag

11. ANIMAL CONDITION: Indicate the resulting condition of the animal when (condition at time of release) by recording the most appropriate Animal Condition Code:

- A = Alive
- D = Dead
- R = Recovering tank; comatose
- U = Unknown

12. INJURY: Indicate the degree of injury, if any, the animal had upon release by recording one of the most appropriate Injury Codes:

- 1 = No external injury, responsive
- 2 = No external injuries, unresponsive
- 3 = Saturated wet plumage or oiled
- 4 = Small lacerations; missing plumage
- 5 = Large wounds; excessive bleeding
- 6 = Broken appendage(s)
- 7 = Ingested gear
- 8 = Gear left on the animal

- 9 = Moderate decomposition (skin may be sunken, sloughing, or pieces missing)
- 10 = Severe decomposition (little or no muscle tissue left)
- 0 = Unknown

13. SEX: Indicate the sex of the animal by recording one of the following Sex Codes:

- M = Male
- F = Female
- U = Unknown

14. TOTAL LENGTH: Record the total length of the animal, in whole centimeters.

15. FORK LENGTH: Record the fork length of the animal, in whole centimeters.

16. GIRTH: Record the girth of the animal, in whole centimeters.

17. WEIGHT: Record the weight of the animal, in tenths of kilograms.

18. WEIGHT TYPE: Indicate how this weight determined, using the Field Type Codes:

- A = Actual
- E = Estimated
- F = Fishermen's
- L = Landing ticket
- D = Department of Fish and Game chart

19. SAMPLES TAKEN: Indicate whether samples were collected from the animal by recording one of the following:

- Y = Yes
- N = No

20. COMMENTS: Record any comments detailing behavior, condition, identification of this animal. When recording comments, identify the animal by referring to the animal's Identification Number.

Year	Month	Trip Identification Number	Haul Number	NMFS Alaska Marine Mammal Observer Program FISHSHARK SAMPLE FORM (BACK)															
2	3	4	5	1 Page Number _____ of _____															
Id #	Species (& code)	Tag Identification Number		Tag Type	Tag Status	Animal Condition	Injury	Sex (M;F;U)	Total Lgth (cm)	Fork Lgth (cm)	Girth (cm)	Weight (kg;0)	Weight Type	Sample (Y;N)					
		1	2																
6	7	1	8	9	10	11	12	13	14	15	16	17	18	19					
		2																	
		1																	
		2																	
		1																	
		2																	
		1																	
		2																	
Additional Comments																			

INCIDENTAL TAKE FORM

This form is for all incidental takes observed during the trip. An incidental take is a marine mammal, marine bird, or sea turtle that is observed entangled in the gear. Begin a new form with each haul when takes occur. The incidental takes are numbered consecutively per trip. All incidental takes shall be photographed (see the Photo Form for more details). Dead incidental takes will be uniquely tagged and sampled. Carcasses that can not be retained will be tagged and discarded at sea. Fishermen have a legal obligation to retain samples that are requested by observers [50 CFR 229.7(c)(4)(vi)].

It is important to understand the definition of incidental take. An incidental take involves direct contact between the gear and a marine mammal, marine bird, or sea turtle (although the latter is relatively rare in Alaska) and it is often a negative experience for the animal. There is no set minimum amount of time, such as number of seconds, that the animal has to be held or stuck or in contact with the gear. If a bird lands on a float for a rest, this is not an entanglement or an incidental take, it is recorded on the Sighting Form. If a sea otter scratches their back on the floatline, this is not an entanglement or an incidental take, it is recorded on the Sighting Form. If a sea lion picks a fish out of the net and swims away, this is not an entanglement or an incidental take, it is recorded on the Sighting Form. **If at any point during an observed trip, a marine mammal or marine bird (or sea turtle) makes physical contact with the fishing gear being observed AND any part of the animal's body gets snagged, ensnared, hung up, tangled, snarled for any period of time, regardless of the final condition and release of the animal, this is an entanglement and an incidental take and recorded on the Incidental Take Form.** If the observer witnesses the entanglement occur, they may see the animal have a confused, startled, panicked, anxious, escape response as they struggle to free themselves. Depending on the species and age of the animal getting entangled, their response behavior may differ. Some animals are extremely sensitive to shock and are quickly overcome and become incapacitated to free themselves, other species will have a powerful, continuous response until exhaustion, other species are strong enough to tear or rip themselves through the gear. Some animals may drown, others are asphyxiated, others may break a limb or have deep lacerations and bleeding wounds, and others may escape appearing uninjured.

An incidental take may be alive or dead at the time of entanglement. It is important to note the animal condition, state of decomposition, scavenger damage, environmental conditions, and fully describe the entanglement situation. If it is possible to retain the whole animal a complete necropsy can be done to determine the animal's cause of death, it's body condition at time of death, and it can be examined for resulting injuries from being entangled. If the remains of less than a quarter of an animal in skeletal form is retrieved in the gear, it is not recorded as an incidental take and should be photographed and described in detail in the Catch Section of the Haul Form. If dead incidental takes are retrieved and can not be kept whole, they should be sampled, and the carcass tagged and thrown overboard. If discarded birds already have a tag (leg band, etc.), they do not have to be carcass tagged. If numerous birds have to be discarded, the plastic carcass tags do not have to be used, and instead the observer can label with a smaller Tyvek sample label. Tagging the carcasses will enable the animal to be identified as already sampled if caught again or washed ashore.

An incidental take may be alive or dead at the time of entanglement. Just because the animal is recorded on the Incidental Take Form does not mean the the animal will be recorded as a “take” when reassessing the status of the stocks for the Stock Assessment Reports and completing the categorization of fisheries. “Take” in those documents will only include serious injuries likely to result in death and actual mortalities attributable to that fishery. A team of scientists will look at each record in detail, read the observer’s related comments, and examine other sources of information when making these assessments. “Take” under the Marine Mammal Protection Act can mean something else entirely. There, the word “take” means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. Because of the various uses of the word “take”, it is important to understand that “incidental take” for this program refers to a marine mammal, marine bird, or sea turtle caught in the fishing gear as described above. When in doubt of where to record certain data, remember that an observer’s job is to detail and document events as accurately as humanly possible. This is preferably done immediately on the data forms, and by taking lots of notes and photographs, although further clarifications may be needed during ensuing debriefings. The debriefing may include clarification and corrections, with the observers consent if they did not fully understand how to record the data. All original notes and forms are kept with the trip records and any corrections are clearly noted with a date and initials and why the correction was made. Observers are the eyes of this program and provide a means to collect objective information in the field; their burden is not to make judgement calls, their burden is to absorb the events of a multi-dimensional and diverse environment and record those events in detail

Incidental Take Form Field Descriptions

- 1. PAGE NUMBERING:** This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents.
- 2. YEAR LANDED:** Record the year (yyyy) when the trip ended.
- 3. MONTH LANDED:** Record the month (mm) when the trip ended.
- 4. TRIP IDENTIFICATION NUMBER:** Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).
- 5. HAUL NUMBER:** Record the consecutive haul number assigned to the haul with the take. This number must agree with the haulnumber recorded on the corresponding Haul Form.
- 6. IDENTIFICATION NUMBER:** Assign a consecutive number, by trip, to each animal recorded on this form. If there are insufficient lines on one form, continue listing animals on the back and then go to another Incidental Take Form. Start a new form for each haul.
- 7. SPECIES:** Record the complete common name for each animal incidentally taken on this trip as listed in the Species Code (Appendix 4. Species Codes). Include the appropriate Species Code for data entry (this can be filled in after the trip when codes can be referenced).

8. TAG NUMBER(S): Record the complete alpha-numeric number(s) from the tag(s) you attach, or that were already attached, to the animal. All cattle ear tags issued from 2001 on should begin with "A" followed by 4 digits. This tag number should be uniquely and individually assigned to a particular animal, and only if the animal is dead. If only one tag is recorded, cross out the field box for the second tag. Cross out fields that do not apply with a single slanted line. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed codes are appropriate for the situation, record or check the code for "other" and provide details in the comment section.

9. TAG TYPE(S): Indicate what kind of tag is (or was) on the animal. If only one tag is recorded, cross out the field box for the second tag. Use the Tag Type Codes (describe the colors in comments):

- 1 = Cattle ear tag
- 2 = Brand
- 3 = Bleach, die, or ink
- 4 = Flipper tag
- 5 = Dorsal fin tag
- 6 = Metal leg band
- 7 = Plastic color leg band
- 8 = Nasal tag
- 9 = Spaghetti tag
- 10 = Coded wire tag
- 11 = Stomach tag
- 99 = Other (record in comments)
- 0 = No tag

10. TAG STATUS(S): Indicate whether the tag was on the animal, left on the animal, or put on the animal. If only one tag is recorded, cross out the field box for the second tag. Use the Tag Status Codes:

- 1 = Applied by observer

- 2 = Already on and left on
- 3 = Already on and removed
- 9 = Other (record in comments)
- 0 = No tag(s)

11. DISENTANGLEMENT: Indicate the how the animal was released or disentangled from the gear by recording the most appropriate Disentanglement Code:

- 1 = Momentary snag with self release
- 2 = Released from gear at a point unknown
- 3 = Dislodged from gear under water
- 4 = Dislodged from gear once out of water
- 5 = Removal from gear resulted in damaging gear
- 6 = Removal from gear resulted in cutting the animal
- 7 = Removal from gear by unrolling or untangling gear
- 9 = Other (record in comments)
- 0 = Unknown

12. HORIZONTAL LOCATION: Indicate, horizontally, relative to shore, where in the gear the animal became entangled. The first third of gear would be that closest to shore, and the final third would be that furthest from shore. Use the most appropriate Horizontal Location Code:

- 1 = Found in first third of gear
- 2 = Found in middle third of gear
- 3 = Found in final third of gear
- 0 = Unknown

13. VERTICAL LOCATION: Indicate, vertically, where in the gear the animal became entangled by recording the most appropriate Vertical Location Code:

- 1 = At water surface
- 2 = Near top third of gear
- 3 = Middle third of gear
- 4 = Near bottom third of gear
- 0 = Unknown

14. Animal Condition: Indicate the resulting condition of the animal when (condition at time of release) by recording the most appropriate Animal Condition Code:

A = Alive
D = Dead
R = Recovering tank; comatose
U = Unknown

15. INJURY: Indicate the degree of injury, if any, the animal had upon release by recording one of the most appropriate Injury Codes:

1 = No external injury, responsive
2 = No external injuries, unresponsive
3 = Saturated wet plumage or oiled
4 = Small lacerations; missing plumage
5 = Large wounds; excessive bleeding
6 = Broken appendage(s)
7 = Ingested gear
8 = Gear left on the animal
9 = Moderate decomposition (skin may be sunken, sloughing, or pieces missing)
10 = Severe decomposition (little or no muscle tissue left)
0 = Unknown

16. AGE CLASS: Indicate the age class of the animal by using one of the following Age Class Codes:

1 = Calf or pup or juvenile (hatch-year)
2 = Immature
3 = Adult
0 = Unknown

If recording a juvenile bird, note whether an egg-tooth is present at the tip of the bill.

For many larids, plumage differs by age. Generally, juvenile gulls are < 1 year, also known as hatch-year; immature are 1-3 years old; and adults are > 3 years old.

For pinnipeds, generally, pups are < 1 year; immature are 1-3 years old; and adults are > 3 years old. For cetaceans such as harbor porpoise, age class may be hard to determine from

field examination, so only distinguish between calves of < 1 year and adults.

17. SEX: Indicate the sex of the animal by recording one of the following Sex Codes:

M = Male
F = Female
U = Unknown or too young

18. PHOTOS TAKEN: Indicate whether photos were taken of this animal by using the Yes No Codes:

Y = Yes
N = No

19. SAMPLES TAKEN: Indicate whether samples (including retained whole) or measurements were collected from this animal. For those animals with "Yes", there should be an accompanying Sample Form.

Y = Yes
N = No

20. COMMENTS: Record any additional information regarding the marine mammal incidental take(s), especially when data are unable to be collected. Reference each comment with its corresponding field name. For each animal the observer must sketch and describe identifying characteristics, condition, marks, scars, gear on the animal, injuries, etc. Record presence of foam or other excretions coming from blow-hole, mouth, eyes, mammary glands, etc. Record the color of the eyes and if there is any bleeding. If the animal fell from the gear, the observer should describe in detail at what point it fell, how the animal was entangled and became untangled, and if the animal sank, floated, and/or drifted away. Reference each description with the animal's unique Identifier Number.

NMFS Alaska Marine Mammal Observer Program
INCIDENTAL TAKE FORM

1 Page Number of

Year		Month		Trip Identification Number			Haul Number		1 Page Number of				
2		3		4			5						
Id #	Species (& code)	Tag Number	Tag Type	Tag Status	Disentanglement	Horizontal Location	Vertical Location	Animal Condition	Injury	Age Class	Sex (M;F;U)	Photos (Y;N)	Sample (Y;N)
6	7	1 2	9	10	11	12	13	14	15	16	17	18	19
		1 2											
		1 2											
		1 2											
		1 2											
		1 2											
		1 2											
<p>Tag Type Codes 1 = Cattle ear tag 2 = Brand 3 = Bleach, dye, or ink 4 = Flipper tag 5 = Dorsal fin tag 6 = Metal leg band 7 = Plastic color leg band 8 = Nasal tag 9 = Spaghetti tag 10 = Coded wire tag 11 = Stomach tag 99 = Other (comment) 0 = No tag</p> <p>Tag Status Codes 1 = Applied by observer 2 = Already on and left on 3 = Already on and removed 9 = Other (comment) 0 = No tag</p> <p>Disentanglement Codes 1 = Momentary snag, self release 2 = Released at a point unknown 3 = Dislodged under water 4 = Dislodged once out of water 5 = Removal with gear damage 6 = Removal with cutting animal 7 = Removal by untangling 9 = Other (comment) 0 = Unknown</p> <p>Horizontal Location Codes 1 = Found in first third of gear 2 = Found in middle third of gear 3 = Found in final third of gear 0 = Unknown</p> <p>Vertical Location Codes 1 = At water surface 2 = Near top third of gear 3 = Middle third of gear 4 = Near bottom third of gear 0 = Unknown</p> <p>Animal Condition Codes A = Alive D = Dead R = Recovering tank; comatose U = Unknown</p> <p>Age Class Codes 1 = Calf; pup; juvenile (hatch-year) 2 = Immature 3 = Adult 0 = Unknown</p> <p>Injury Codes 1 = No external injury, responsive 2 = No external injuries, unresponsive 3 = Wet plumage or oiled 4 = Small lacerations; missing plumage 5 = Large wounds; excessive bleeding 6 = Broken appendage(s) 7 = Ingested gear 8 = Gear left on 9 = Moderate decomposition 10 = Severe decomposition 0 = Unknown</p> <p>Comments (include the id# of the animal) (Continued on Back: Y___ N___) 20</p>													

Year	Month	Trip Identification Number				Haul Number		NMF/S Alaska Marine Mammal Observer Program INCIDENTAL TAKE FORM (BACK)											
2	3	4				5		1 Page Number of											
Id #	Species (& code)	Tag Number		Tag Type	Tag Status	Disentan- glement	Horizontal Location	Vertical Location	Animal Condition	Injury	Age Class	Sex (M;F;U)	Photos (Y;N)	Sample (Y;N)					
		1	8	9	10														
6	7	1				11	12	13	14	15	16	17	18	19					
		2																	
		1																	
		2																	
		1																	
		2																	
		1																	
		2																	

Additional Comments (include the id# of the animal)

20

MARINE MAMMAL BIOLOGICAL SAMPLING GUIDELINES

The following are guidelines for documenting incidental takes of, and biologically sampling, marine mammals. Each trip may present different challenges in accommodating these priorities and may be affected by circumstances such as rough weather conditions, the animal falling out of the net, etc. It is up to the observer to use his/her best judgment in following these guidelines.

All marine mammals, marine birds, and sea turtles accidentally or intentionally caught by the vessel, or entangled in its gear, during any stage of fishing activity, are considered incidental takes. Animals determined to be incidental takes may not be recorded as sightings on the Sighting Form, and vice versa.

Once the minimum requirements for each species have been recorded, additional species specific sampling and measurements should be obtained as time permits, after recording catch information.

I. MINIMUM REQUIREMENTS

Live Animals

Identify, photograph, and return to the sea as quickly as possible in a manner that minimizes further stress and injury.

Dead Animals

1. Obtain DNA Sample (Skin)

Cetacean: Obtain a fin clip sample by removing a 1.25 in² (3 cm²) sample from the tip of the dorsal fin or fluke with the skin intact.

Pinniped: Obtain a skin sample by removing a 1.25 in² (3 cm²) sample from one of the flippers with the skin intact.

2. Tagging

Attach a plastic cattle ear tag with a cable tie to all **dead** animals. Only one cattle ear tag should be used per animal. The cattle ear tags should start with one letter, followed by four numbers (ex: A0999) - be sure to record all letters and numbers accurately. For porpoise, cinch the cable tie around the caudal peduncle (tail stock). For pinnipeds, cinch the cable tie around the flipper, above the ankle. If it is not possible to retain the whole animal, attach the tag to the carcass and discard at sea. Record that tag number on the Tyvek biological sample labels to uniquely identify from which animal the samples were collected.

Seals and sea lions should be checked for previous tags, brands, tattoos, and other alphanumeric markings. Note the color, size, shape, and where on the body the marking or tag was located.

3. Identifying and Photographing

Refer to the identification guides to assist you while on a deployment. Identify animals to the most specific grouping you are sure of. Do not guess at identification. All animals MUST be photographed. Photographic instructions are outlined in the Photo Form instructions.

4. Body Measurements

If it is not possible to bring an animal aboard the vessel, record the estimated total length in the comment section of the Incidental Take Form. If the animal can be retained, actual length measurements are recorded on the Marine Mammal Sample Form. When measurements are taken which require a mammal to be placed on one side, the preferred method is for the animal to be lying on the right side, i.e. measurements taken on the left side.

Blubber Thickness: Record, to the nearest millimeter, the thickness of the blubber of the cetacean or pinniped. Measure from where the blubber meets the muscle, up to, but not including, the skin.

Cetacean: To obtain this measurement, make an incision two to three inches behind the blow hole of the marine mammal (Figure 1, Letter A).

Pinniped: To obtain this measurement, make an incision in the ventral surface of the marine mammal, about five or six inches anterior to the navel, in the middle of the body (Figure 1, Letter B).

Total Length:

Cetacean: Record the straight line length from the tip of the jaw (top or bottom jaw, whichever is longer) to the fluke notch (Figure 1, Letter C).

Pinniped: Record the straight line measurement from the snout to the tip of the tail (Figure 1, Letter D).

Girth:

Cetacean: Record the girth of the animal just under the pectoral flippers at the axilla. See Figure 1, letter E.

Pinniped: Record the girth of the animal just under the fore-flippers at the axilla. See Figure 1, Letter F.

Hind Flipper or Pectoral Flipper Length:

Cetacean: Record the straight line length of one flipper of the cetacean. This length is taken from the outside or anterior edge of the flipper to the tip of the flipper. This is the longest length along the pectoral flipper. See Figure 1, Letter G.

Pinniped: Record the straight line length of one rear flipper of the pinniped. This length is taken from the outside anterior edge of the flipper at the joint where the flipper connects to the body (this is best located by flexing the flipper forward and measuring from the point where the flipper flexes) to the tip of the flipper. See Figure 1, Letter H.

Pectoral Flipper Width:

Cetacean: Using the same flipper on which the length was measured, record the straight line width, at its widest part. See Figure 1, Letter I.

Pinniped: No measurement taken; dash (-) this field.

Dorsal Fin Height:

Cetacean: Record the straight line height of the dorsal fin of the cetacean from the posterior tip of the fin to the insertion at the body. See Figure 1, Letter J.

Pinniped: No measurement taken; dash (-) this field.

Fluke Width:

Cetacean: Record the width of the flukes of the cetacean, from one tip to the other. See Figure 1, Letter K.

Pinniped: No measurements taken; dash (-) this field.

5. Determining Sex

Sex of cetaceans may be determined by the presence of mammary slits on both sides of the genital slit on females, and the absence of mammary slits on males. However, inserting a probe into the genital slit is a more definite method to determine sex and is required to confirm your determination. When a probe is inserted in females, the slit will open forward; in males, the slit will open backward. It is important to determine the sex of the animals correctly, and the use of photographs of the genital area will help confirm your determination. Additionally, confirm the sex by examining the animals' reproductive tract if you cut the animal open.

The sex of seals can be determined by the presence of two mammary nipples posterior of the umbilicus on females, and by the penile aperture posterior of the umbilicus on males. The genital opening on females is near the base of the tail, anterior of the anal opening.

6. Describing Unusual Marks or Scar Locations

As you are collecting the body measurements of the animal, observe whether there are any marks or scars on the animal. Sketch and describe these in the comment section of the Marine Mammal Sample Form. If animals are released with gear still attached to any area of the body, be sure to illustrate and comment as to how much remains and where the gear remains attached.

* NOTE: Photographs of scars and marks, in addition to sketches, are extremely valuable.

II. ADDITIONAL SAMPLING/ MEASUREMENTS

These additional samples are collected once all the minimum sampling requirements are obtained, and after recording and possible sampling of the catch.

Retaining the Whole Animal

This is the most valuable sample and also the easiest to obtain, but care must still be taken in handling the animal. If an animal is retained in warm weather and cannot be frozen on board, it should be kept cool until it is unloaded from the vessel. If it must remain on deck or in the skiff, then it should be covered with a tarp and either be iced or occasionally hose with sea water.

Necropsy Guidelines for Sampling Animals not Retained

The tissue/organ samples listed below are to be taken only if the whole animal is not retained. The required length measurements must be taken before any tissue/organ sampling of the animal is done.

All samples will be double bagged, with a waterproof tag enclosed between the first and second bag. As much air as possible should be excluded from both sample bags. Samples from each animal should be kept together in one larger bag, and frozen or iced.

When sampling mammals, the animal should be placed on its right side if possible, with its head to the left of the observer. This is the standard method for marine mammal dissection, and will result in the stomach being in a more accessible position, because it is located on the animal's left side. This will also make other organs easier to locate.

To examine the internal organs, an incision is made from between the flippers to just forward of the anus. To the posterior of the rib cage, the intestines will be the main feature. Just posterior to the rib cage and under it, the liver, a large dark red organ, will be the main feature. The stomach will be located under the liver. Stomach removal is possible without removing the rib cage. However, in order to fully expose the upper part of the stomach and esophagus, and for more working room, removal of the ribcage can be helpful. As you push back the ribs, take care not to break them; broken ribs can leave sharp pieces attached to the backbone which can puncture gloves and hands, resulting in abrasions and infection. If the ribs are not removed, access to the esophagus can be made by cutting between and pushing apart the third and fourth ribs from the bottom.

In order to examine the other internal organs, the intestines should be removed. The kidneys will then become visible near the dorsal side of the abdominal wall. The kidneys have the appearance of compartmentalized globules, almost like a squeezed bunch of grapes.

The testes will appear as paired, sausage-like organs pointing forward and attached to the back wall of the body cavity. They will vary in size depending on species, season, and the maturity of the animal: from a few inches long (the size of your little finger) to a width of two to three inches and a length of six to seven inches. For male phocids, the testes are located in the inguinal area (groin), outside the abdomen, but deep under the skin and blubber.

The female reproductive tract is held in place by a broad ligament, a sheet of peritoneal tissue dorsal to the sheet holding the more ventral urinary bladder. The tract includes the uterus which is oriented along the midline of the body cavity, and the right and left uterine horns which branch laterally from the anterior portion of the uterus. The ovary is anterior to each uterine horn. The ovaries are light gray to tan in color and are bean-shaped.

When you have completed the required sampling for a species, the tagged carcass may be discarded.

Tissue/Organ Samples

Skin:

See 1. Obtain DNA Sample (Skin) above, under I. Minimum Requirements.

Jaw:

Do not collect this sample if you are going to retain the head of the animal. Remove either the whole lower jaw or the lower left jaw with at least four teeth (including the incisor, canine and post-canine for pinnipeds). Be careful not to puncture your skin or gloves, as cetacean and pinniped teeth are sharp.

Stomach:

If it is possible, collect the whole stomach. This should be done by tying off the esophagus and the small intestine near the stomach. Then remove the entire stomach by cutting before the tie on the esophagus and after the tie on the small intestine.

Blubber:

Remove approximately a 10 x 10 cm (.25 lb or 100 g) sample of blubber, including the skin. For cetaceans, take a blubber sample from the dorsal surface of the animal forward of the dorsal fin (Figure 1, Letter A). For pinnipeds, take a blubber sample from the ventral surface, about five or six inches anterior to the navel, along the midline (Figure 1, Letter B). If the animal is badly decomposed, do not collect this sample.

Muscle:

Remove approximately a 0.25 lb (100 g) sample of muscle beneath the blubber on the dorsal surface of the animal forward of the dorsal fin.

Reproductive Organs:

Remove the entire reproductive tract. Collect both gonads.

Head:

Remove the head by making a transverse cut halfway between the eye and the anterior insertion of the flipper.

Fetus:

Collect the whole fetus. If the fetus cannot be brought in whole, a total length measurement and a sex determination are required. Record this information in comments on the Marine Mammal Sample Form. A fetus should not be considered a separate incidental take, however, and should not be recorded on the Incidental Take Form.

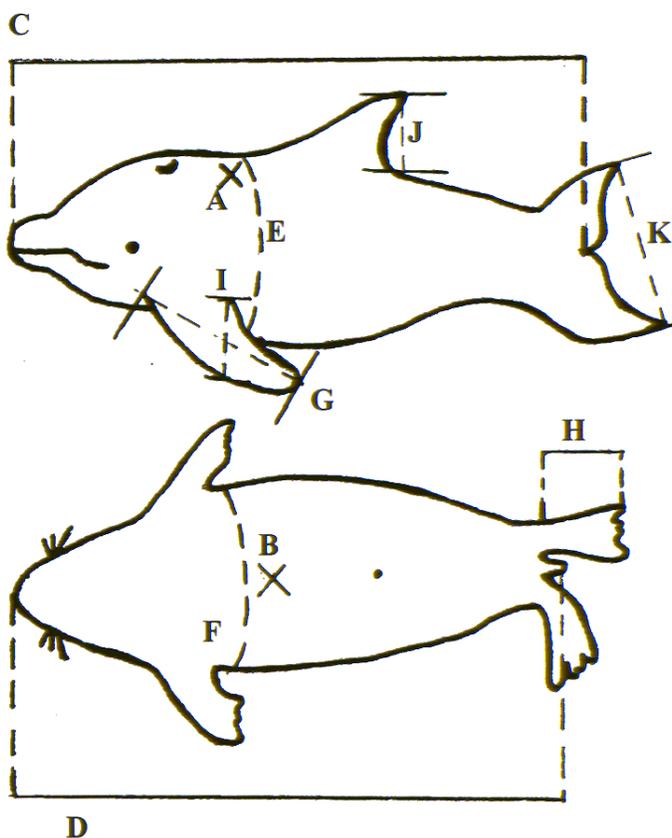


Figure 1. Marine Mammal Measurements

MARINE MAMMAL SAMPLE FORM

This form is used when incidental takes of marine mammals are measured or sampled. Only dead marine mammals are to be tagged and sampled. The dead marine mammals are uniquely numbered with a plastic cattle ear tag. Start a new page per haul when marine mammals are sampled.

Cross out fields that do not apply with a single slanted line. If the field does not apply and has check boxes with codes that do not apply, cross out the entire block. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed codes are appropriate for the situation, record or check the code for “other” and provide details in the comment section.

Marine Mammal Sample Form Field Descriptions

- 1. PAGE NUMBERING:** This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents.
- 2. YEAR LANDED:** Record the year (yyyy) when the trip ended.
- 3. MONTH LANDED:** Record the month (mm) when the trip ended.
- 4. TRIP IDENTIFICATION NUMBER:** Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).
- 5. HAUL NUMBER:** Record the consecutive haul number assigned to the haul with the take. This number must agree with the haul number recorded on the corresponding Haul Form.
- 6. TAG NUMBER:** Record the unique tag number that has been attached to the dead marine mammal. This tag is a plastic cattle ear tag and should be attached to the carcass with a cable tie. The tag number will start with an “A” and be followed by 4 digits. Be sure to record all alpha-digits accurately on allforms and sample labels. Tags should never be reused to identify another animal. If you are unable to assign a plastic tag and the animal already has a unique tag number or brand, record that number. This is NOT the consecutive identification number.
- 7. SPECIES:** Record the complete common name for each animal sampled as listed in the Species Codes (Appendix 4. Species Codes). Include the appropriate Species Code for data entry (this can be filled in after the trip when codes can be referenced).
- 8. STANDARD LENGTH:** Record the straight line total length, in whole centimeters, of the animal. For cetaceans, this is from the tip of rostrum to the notch in flukes. For pinnipeds, this is from the tip of snout to tip of tail.
- 9. GIRTH:** Measure and record the axillary girth, in whole centimeters. This is taken at the “armpits”, posterior of the fore-flippers or pectoral flippers.

10. FLIPPER LENGTH: For cetaceans, measure the straight line, in whole centimeters, from the anterior insertion of the pectoral flipper to tip of the flipper. For pinnipeds, measure the straight line, in whole centimeters, from the from outside anterior insertion of the hind flipper to tip of the longest toe, not including the nail.

11. FLIPPER WIDTH: For cetaceans only, measure, in whole centimeters, the widest straight line distance across the pectoral flipper.

12. DORSAL FIN HEIGHT: For cetaceans only, measure, in whole centimeters the straight line height of the dorsal fin, up and down.

13. FLUKE WIDTH: For cetaceans only, measure the width of the flukes, from one tip to the other, in whole centimeters.

14. BLUBBER THICKNESS: For cetaceans, measure, in millimeters, the depth of the blubber posterior of blow hole just off mid-line. For pinnipeds, measure, in millimeters, blubber thickness at sternum. The measurements are taken from the muscle layer to (but not including) skin layer.

15. SKIN: Was a skin sample collected (this includes a fin clip sample)?

Y = Yes
N = No

16. RETAINED WHOLE: Was the animal retained whole?

Y = Yes
N = No

17. JAW OR TEETH: Was a jaw sample taken (this would include a jaw, tooth, or head sample) ?

Y = Yes
N = No

18. STOMACH: Was the stomach retained whole?

Y = Yes
N = No

19. NUMBER OF OTHER SAMPLES: Record the number of other biological samples collected from this animal. If no other samples were collected, record zero.

20. COMMENTS: Record any additional information regarding the marine mammal incidental take(s), especially when data are unable to be collected. Reference each comment with its corresponding field name. For each animal the observer must sketch and describe identifying characteristics, condition, marks, scars, gear on the animal, injuries, etc. Record presence of foam or other excretions coming from blow-hole, mouth, eyes, mammary glands, etc. Record the color of the eyes and if there is any bleeding. If the animal fell from the gear, the observer should describe in detail at what point it fell, how the animal was entangled and became untangled, and if the animal sank, floated, and/or drifted away. **Reference each description with the animal's unique tag number.**

MARINE BIRD BIOLOGICAL SAMPLING GUIDELINES

The following are guidelines for biologically sampling incidental takes of marine birds. Each trip may present different challenges in accommodating these priorities and may be affected by circumstances such as rough weather conditions, the bird falling out of the net, etc. It is up to the observer to use his/her best judgment in following these guidelines.

All marine birds caught by the vessel, or entangled in its gear, during any stage of fishing activity, are considered incidental takes. Birds determined to be incidental takes are not recorded as sightings on the Sighting Form, rather they are recorded on the incidental take form.

LIVE ANIMALS

Identify to species or to the most specific grouping you are sure of, and return to the sea as quickly as possible in a manner that minimizes further stress and injury. To reduce handling time, do not attempt body measurements. If identification is not certain, and someone is available to assist, take a photograph and reference on the Photo Form. Record information for the bird onto the Incidental Take Form.

As you are untangling the bird or making a quick survey of its plumage, observe whether there are any marks, scars, or abrasions on the animal. Sketch and describe these in the comment section of the Marine Bird Sample Form. If birds are released with gear still attached to any area of the body, be sure to illustrate and comment as to how much remains and where the gear remains attached.

To the degree possible, given expertise, type of bird, and existing conditions:

1. Examine plumage characteristics (see below) and determine sex, age class (juvenile, immature, adult), and plumage phase (summer breeding, transitional, winter).
2. For fulmars, note if bird is light or dark phase, or use the four-phase classification described on the Bird Measurement Guidelines diagrams.
3. Note if any wing or tail feathers are missing.

DEAD ANIMALS

In most cases, we expect to have freezer facilities available to keep all dead birds for later processing in the lab, where conditions, measurements, and other factors can be more easily controlled. There, we will try to obtain the optimum amount of information from all bird carcasses, including external and internal exams, measurements, stomachs for diet information, tissue samples for genetic, diet, and possible contaminant tests, and preparation of museum and training study skins. We have prioritized the treatment of salvaged bird carcasses based on availability of freezers or quick pick up, number of carcasses the observer has to deal with, and conditions at time of salvage. Conditions such as safety, weather, intensity of day's observations, and observer

ability may determine what ‘Tier’ of treatment is applied to a carcass in the field. We have established 3 tiers of treatment, listed here from most preferred to least:

Tier I Facilities and time available to freeze whole carcass (most preferred).

Tier II Whole bird can not be frozen, because either there is

A) no freezer available or

B) freezer is available but there is not room to save whole birds

Tier III Too many birds captured at once to be frozen whole and too little time to process using Tier II protocols.

Ideally, process all birds using Tier I protocols; however, if freezer space is not available or limited process using Tier II protocols. If dozens of birds are caught simultaneously, sub-sample 10 birds of each species with Tier I protocols (examine and freeze whole), and apply Tier III protocols to the remainder.

Tier I birds: Facilities and time available to freeze whole carcass (most preferred).

This is the most valuable sample and also the easiest to obtain, but care must still be taken in handling the animal.

If an animal is retained in warm weather and cannot be frozen on board, it should be kept cool until it is unloaded from the vessel. If it must remain on deck or in the skiff, then it should be covered with a tarp and either be iced or occasionally hosed with seawater. When freezing birds, the animal should be placed on its back, with its neck laying naturally (for small birds) or curved back towards the body (for larger or long-necked birds). To save space, wings should be folded against the side and legs folded close to the body and the orientation of birds should be alternated.

1. Tagging

Attach a plastic cattle ear tag with a cable tie to all dead animals. Check all birds for previous tags, particularly leg bands. The USFWS leg band is metal with engraved numbers; record these numbers in the tag number field on the Sample Form. The return of leg band data provides valuable information. Also note presence of any colored plastic leg bands and alphanumeric markings they may have. In rare cases, birds may be fitted with radio antennae, nasal tags, or wing tags, or feathers may be dyed. **Always try to save the whole bird if it has leg bands, tags or other devices attached. If keeping the bird is not possible, remove all tags and devices that were on the bird, place in a bag marked with the unique cattle ear tag number and a note recording the species, date, location, and position of the tags or bands.** For leg bands, note which leg (right, left) and for double bands on a leg, the top (near body) and bottom (near foot) band.

2. Identification

Refer to the identification guides to assist you while on a deployment. Classify animals to the most specific grouping you are sure of. Do not guess at identification. All frozen birds will be identified to species in the lab.

3. External Examination of Plumage and Brood Patch

Sex: Note sex of the bird for species for which sex can be determined from plumages (i.e., waterfowl, sea ducks, phalaropes). Care must be taken when identifying females in these groups, because 1st year birds are often very similar (or for phalaropes, juveniles resemble males). If you are not certain, record the sex as 'unknown'.

Age-class: For many marine birds (loons, albatross, cormorants, phalaropes, gulls, terns, alcids), newly fledged juveniles (hatch-year birds) have distinct plumages. For albatross and gulls, it is possible to distinguish between immatures (1st - 3rd year birds) and adults. Most bird guides show all plumages. If age can be determined by plumage, record age-class and note in comments the identifying characteristics used to make this decision. Record sex and age class information on the Incidental Take Form. The remaining data go on the Marine Bird Sample Form.

Seasonal Plumage Phase: Note whether the plumage phase is closest to summer (breeding), winter, or transitional plumage. Again, care must be taken in identifying winter plumages, since juvenile or immature birds are often similar. Check bird guides for identifying characteristics, and note those in the comment section, if you make a classification. If uncertain, record the plumage as unknown.

Brood Patch: In seabirds, a large bare patch of skin on the belly indicates that the bird will be or has been incubating its egg(s), thus indicating breeding status. This is an important piece of information. It is possible to find the brood patch in frozen birds, but vascularization of the brood patch is most easily observed in a fresh bird. The brood patch may be a single large oval, bi-lobed, or several, discrete patches depending on species. It may be large relative to the body, but still not obvious, since dense feathers and down cover it. Search for the presence of a brood patch by turning the bird on its back, beginning near the cloaca, and brush abdominal feathers backwards towards the head. If a bare patch is found, push back all the feathers around the area to determine the status of the brood patch using criteria and codes indicated on the Marine Bird Sample Form.

4. Examination for Injuries, Oiling, and Rigor Mortis

Examine the carcass for obvious external injuries such as broken wings or legs, abrasions, missing feather patches (other than brood patch), etc. Note these on the Incidental Take Form using Injury Codes. Also check the plumage for spots of oiling, and note in the comments section the approximate size and location of oil patches on the bird. **If time allows**, use the comment section to record 'rigor' status of the carcass as limp, stiff, or decomposing, and the time of inspection. **If time allows and tools are available**, use the comment section to record internal body temperature using a rectal thermometer.

5. Weight

If time allows and weighing tools are available, weigh the bird regardless of its condition. In comments, note whether the carcass was relatively dry (external feathers shed water, deeper feathers and down are dry), damp (external feathers not shedding water), wet (under feathers and down are damp) or soggy (feathers and body soaked through). This information will be used to compare fresh weights to dry weights of the same carcasses in the lab and better-interpret weight data from birds processed using Tier II protocols.

Tier IIA. Can't keep whole bird, and freezer is not available.

When you have completed the required sampling, discard the carcass.

1. Tags

Record the unique ID# for each bird, even if the bird will not be frozen. Look for leg bands, tags, and other marking devices on the bird. Record and save all such bands as described in Tier I protocols.

2. Identification

As with Tier I procedures, identify carcasses to the most specific taxonomic grouping you are sure of. Do not guess at identification. If species identification is not certain, photograph the bird (be sure head and feet are clearly visible) and record on the Photo Form. If you can not take a photograph, note in the comments what identifying characteristics were used to determine the species or species group.

3. External Examination of Plumage and Brood Patch

Follow Tier I guidelines with the exception that if your determination is uncertain, photograph the bird and record on the Photo Form. If you can not take a photograph, note in the comments what characteristics were used to make the sex, age-class or phase determinations.

4. Injuries, Oiling, and Rigor Mortise

Check as for Tier I birds before conducting the necropsy.

5. Body Measurements

Body Weight: Regardless of condition, weigh birds to the nearest gram using an appropriately-sized hand-held pesola and weighing mesh bag. In comments, note whether the carcass was relatively dry (external feathers shed water, deeper feathers and down are dry), damp (external feathers not shedding water), wet (under feathers and down are damp) or soggy (feathers and body soaked).

Head-bill: Place one end of the calipers on the back of the head and the other at the tip of the beak, following Fig. 1 (HL). Press gently through the feathers to reach the skin of the head, but do not press into the skull. Do not compress the tip of the beak. Record to nearest millimeter.

Culmen Length: Place one end of the calipers at the base of the bill, at the feather line, and the other at the tip of the bill, following Fig. 1 (CL). Record to nearest millimeter.

Tarsus Length: Measure the left leg. Bend the leg and foot as in Fig 1 (TL), to find the tarsus joints. Place one end of the calipers on the end joining the foot, using the most protruding point of bone. Place the other end of the calipers at the joint with the femur, roughly diagonal from the lower joint. Press gently, but do not push into the flesh with calipers. Record to nearest millimeter.

Wing Chord: Lay the wing flat against the length of the caliper, or a ruler, but don't flatten or press the wing. Measure to the nearest centimeter from the flesh at the bend of the folded wing to the tip of the longest primary.

6. Determine Fat Index and Sex

The required length measurements should be taken before any tissue/organ sampling of the animal is done. All samples will be double bagged, with a waterproof tag enclosed between the first and second bag. As much air as possible should be excluded from both sample bags. Samples from each animal should be kept together in one larger bag, and frozen or iced.

To examine the internal organs and obtain a fat index, an incision is made from the cloacal opening to the neck.

Fat Index: After carefully peeling the skin away from the breast muscle and keel, examine the inner surface of the skin for degree of fat and record. Use the following criteria:

- 1) Skin fat associated with feather tracts on either side of the keel absent or membrane-thin; feather bases, "papillae", are prominent.
- 2) Skin fat surrounds papillae but tips of papillae still visible.
- 3) Skin fat covers papillae but dimples in fat still visible, especially when feathers are gently pressed inward.
- 4) Skin fat smooth over papillae, dimples absent even when feathers are gently pressed inward.
- 5) Skin fat over papillae globular and lumpy, 4+ mm thick.

Caution – newly-growing feathers with dark, rounded, swollen papillae should not be used as gauges of fat level. Use only pointy, light-colored papillae of established feathers.

Sex of Bird: Open the bird up fully by snipping between ribs along one side of the sternum and lifting up on the sternum. Large and small intestines fill the posterior (tail) half of the abdominal cavity. The dark red liver hangs just beneath and posterior to the posterior edge of the sternum and above the stomach.

Push the intestines to one side to reveal the dark red lobes of the kidneys flattened against the dorsal side of the abdominal wall. Testes and ovaries are attached to the body dorsal surface of the body cavity anterior to the kidneys and may be covered by mesentery membranes that potentially obscure their true color. The testes appear as roundish or sausage-shaped organs and will vary in size depending on species, season, and the maturity of the animal. Testes of breeding males are inflated during the breeding season and are an unmistakably creamy white in color. Testes of immature males and non-breeding males are much smaller, smoky grey-black and much less obvious. Regardless, the left testis is always slightly larger than the right.

A single ovaries occur only on the left side of the spine and look like a cluster of tiny, pale-white grapes. During the breeding season one or more ova may be inflated and yolk-like in appearance.

7. Preserve Stomach and Fat Samples

Stomach removal is often possible without removing the rib cage, especially if the stomach and esophagus are empty. If the bird has a full stomach remove the sternum and fully expose the upper part of the stomach and esophagus. As you push back the ribs, take care not to break them; broken ribs can leave sharp pieces attached to the backbone which can puncture gloves and hands, resulting in abrasions and infection.

If it is possible, collect the whole stomach. This should be done by tying off the esophagus as high up as possible and clipping the small intestine from the stomach. Then remove the entire stomach by cutting the esophagus above the tie and place it in a whirl pack. If you can not tie the ends, simply clip the esophagus as high above the stomach as possible and place the entire mass into a whirlpack. Add alcohol solution to the whirlpack to cover the organ mass. Place the preserved stomach sample in a zip-lock bag and include a Tyvek biological sample label with the tag number.

If time allows and materials are available, collect a glob of intra-peritoneal fat from around the organs in the body cavity of the bird and place in vial of anti-oxidant buffer. Include with stomach sample in the zip-lock bag for that carcass.

Tier IIB. Can't keep whole bird, but freezer is available.

These birds will be treated similar to Tier IIA birds, with the exception that some body parts can be frozen, and measurements do not have to be done in the field. Do the external and internal examination 1 through 6 as described previously in Tier IIA:

In addition to these procedures, collect and freeze the following tissue/organ samples:

Stomach: Remove and save the stomach as described in Tier IIA birds, but since the stomach will be frozen, there is no need to add alcohol to the whirlpack. After closing the whirlpack, place it inside the larger bag holding the remaining tissue samples, along with the ID tag.

Liver: Snip a finger-tip sized lobe of liver free and place in outer sample bag.

Heart: Use one finger to scoop heart away from rib cage, by reaching above and past the liver and include in outer sample bag.

Fat: Collect a glob of intra-peritoneal fat from around the organs in the body cavity of the bird and place in outer sample bag.

Muscle: Remove a tea-bag sized cube of breast muscle and include in outer sample bag. In small birds, this sample may be most of one breast muscle.

Head: Remove the head by making a transverse cut at the middle of the neck. Place in outer sample bag.

Feet and Legs: Remove the legs above the tarsus, cutting through the leg just below the feather line of the body and place in outer sample bag.

Tier III. Observer can not process all birds caught at once.

If time or conditions do not allow for processing of all birds, such as after a large incidental take of the same species in a single haul, subsample 10 birds for Tier I or Tier II treatments. For remaining birds, collect the following:

1. Identify species or species group. Note if it is the same as birds that are frozen.
2. Check plumage for sex and age-class. If time allows, check for brood patch.
3. If time allows, check for obvious injuries to bird.
4. If additional time allows, select 10 birds for removal and saving of stomachs.

Keep each stomach in a separate whirlpack, put all stomach sample bags from same haul and of same species in the same large sample bag, marked with ID#, species, date, observer identification number.

Marine Bird Sample Form Guidelines & Measurement Diagrams

Head-bill length, culmen (bill) length and tarsus length (bill depth not necessary).

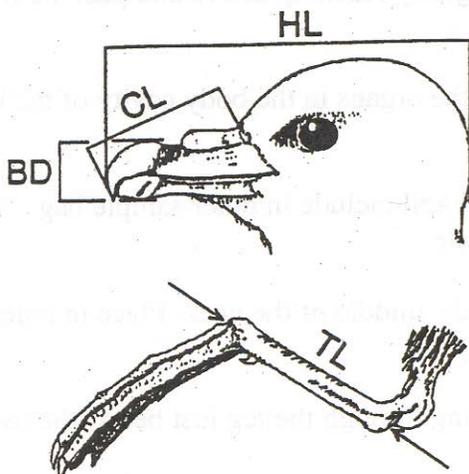
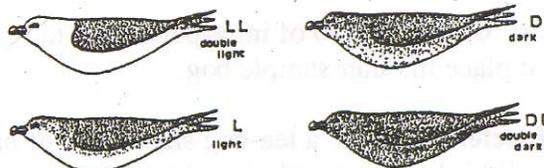


Fig. 1. Four measurements taken on fulmarine petrels: head length (HL); bill depth (BD); bill length (CL); and tarsus length (TL).

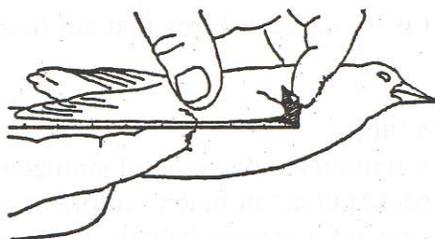
For Northern Fulmars, try to identify the colorphase as close to possible to these four categories.



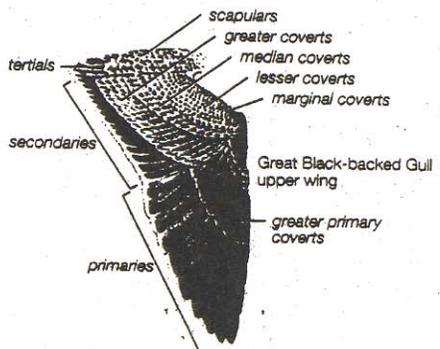
Colourphases of the northern fulmar, *Fulmarus glacialis*.

Description based on Fisher (1962) and slightly revised in van Franeker and Wattel (1982)

- LL double light - head, neck and underparts white, except for dark eye-mark. The white may be tinged with yellow.
- L light - crown of head, nape and hindneck grey, grading into grey of mantle. Underwing grey. Breast white, but other underparts of body may vary from white to grey.
- D dark - head, neck and underparts light or medium grey. Breast in most cases lighter, but never white.
- DD double dark - almost uniformly dark or very dark grey. Wings almost as dark as their tips.



Wing chord: Lay the wing flat against straight edge, but don't flatten or press wing. Measure from flesh at bend of folded wing to tip of longest primary.



Molting: Tail: note number of missing feathers and if central or outer. Wings, note number of missing feathers and if primary or secondary (1st primary is at wing tip, 10th primary is before secondaries).

Figure 2. Marine bird measurements.

MARINE BIRD SAMPLE FORM

This form is used when incidental takes of marine birds can not be saved whole, and are measured or sampled in the field. Some characteristics are best measured or examined prior to freezing the body, such as plumage status and brood patch; if time allows, record these aspects even when the carcass will be retained for examination in the lab. If birds have a leg band or other marker, record these (including the numbers) on the form. If the whole bird can not be retained, or is in very poor condition, retain the head and/or feet if possible, to confirm species identification.

Only dead marine birds are to be tagged and sampled. The dead marine birds are uniquely numbered with a tag tied around the leg. Start a new page per haul when marine birds are sampled.

Cross out fields that do not apply with a single slanted line. If the field does not apply and has check boxes with codes that do not apply, cross out the entire block. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed codes are appropriate for the situation, record or check the code for “other” and provide details in the comment section.

Marine Bird Sample Form Field Descriptions

1. PAGE NUMBERING: This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents.

2. YEAR LANDED: Record the year (yyyy) when the trip ended.

3. MONTH LANDED: Record the month (mm) when the trip ended.

4. TRIP IDENTIFICATION NUMBER: Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).

5. HAUL NUMBER: Record the consecutive haul number assigned to the haul with the take. This number must agree with the haul number recorded on the corresponding Haul Form.

6. TAG NUMBER: Record the unique tag number that has been attached to the dead marine bird. This tag is a plastic cattle ear tag and should be attached to the carcass with a cable tie. The tag number will start with a “D” and be followed by 4 digits. Be sure to record all alpha-digits accurately on all forms and sample labels. Tags should never be reused to identify another animal. If you are unable to assign a plastic tag and the animal already has a unique tag number or brand, record that number. This is NOT the consecutive identification number.

7. SPECIES: Record the complete common name for each animal sampled (Appendix 4. Species Codes). Include the appropriate Species Code for data entry (this can be filled in after the trip when codes can be referenced).

8. PHASE: Plumage varies seasonally, and may indicate breeding status. Select the most appropriate Plumage Phase Code:

- S = Summer (breeding) plumage
- T = Transitional (molt in progress)
- W = Winter (basic) plumage
- J = Juvenile plumage
- U = Unknown or can't tell

9. MISSING FEATHERS: Birds may molt sequentially or all at once, and this may affect ability to fly. Record if feathers are missing, or just growing back in (still in feather shaft) using the following Feather Codes:

- 1 = No missing feathers
- 2 = One or more primary flight feathers missing; record details in comments
- 3 = One or more secondary flight feathers missing; record details in comments
- 4 = One or more tail feathers missing
- 5 = Missing feathers in wings and tail
- 6 = Other missing feathers (body, head)
- 7 = Primary and secondary flight feathers missing; record details in comments
- 0 = Not checked, or can't tell

10. BODY WEIGHT: Weigh bird, to the nearest gram, using hand-held scale. Gently squeeze excess water first. If carcass is extremely waterlogged, do not weigh. If a bag is used to hold the bird, subtract the weight of the bag.

11. HEAD-BILL: For birds, use calipers to measure the head and bill together, in millimeters. Place one end of the calipers at the base of the skull and the other at the tip of the bird's beak.

12. CULMEN LENGTH: For birds, measure the length of the culmen (beak) in millimeters. Place one end of the calipers at the tip of the beak and the other at the top most end of the beak, where the forehead feather line begins, between the eyes.

13. TARSUS LENGTH: For birds, measure the length of the tarsus (main leg bone) in millimeters. The tarsus is the long bone connecting the ankle to the foot. Place one end of the calipers at the top of the upper joint, and the other at the end of the joint connecting to the foot.

14. WING CHORD: Measure, in centimeters, the length of the wing from the 'wrist' (where the wing bends to fold against the body) to the tip of the longest primary feather. Do not stretch out the wing. Place the feather flat (but not pressed tightly) against the ruler or long handle of the caliper, and measure.

15. BROOD PATCH CODE: Search the belly and abdomen of the bird by pulling the body feathers gently toward the head. If there is a bare patch present record its state as near as possible according to the following Brood Patch Codes:

- 1 = No defeathering
- 2 = Loss of down and some contour feathers
- 3 = Loss of down & most contour feathers; vascularization beginning
- 4 = Loss of feathers & heavy vascularization
- 5 = Regression beginning, down appearing
- 6 = Downy, feathers beginning to break sheath
- 7 = Partial or near-complete regression
- 0 = Didn't check, or carcass too degraded

16. FAT INDEX: If the whole carcass is **not-kept**, open the bird from the cloaca to the throat. Examine for fat deposits (yellowish, fatty material) on the inside of the skin, along the keel bone, and around the heart area. Use the following Fat Index Codes:

- 1 = Skin fat associated with feather tracts on either side of the keel absent or membrane-thin; feather bases, "papillae", are prominent
- 2 = Skin fat surrounds papillae but tips of papillae still visible
- 3 = Skin fat covers papillae but dimples still visible, especially when feathers are gently pressed inward
- 4 = Skin fat smooth over papillae, dimples absent even when feathers are gently pressed inward
- 5 = Skin fat over papillae globular and lumpy, 4+ mm thick
- 0 = Unknown or **did not check**

During the internal exam, note if there are any obvious parasites or discoloration on the liver, heart, or large muscles.

If the sex of the bird can be determined by examination of the ovaries or testes, indicate in the comments section and record the Age Class Code on the Incidental Take Form. Measure the largest egg follicle to the nearest millimeter, and record in comments.

17. RETAINED WHOLE: Was the whole bird carcass retained ?

- Y = Yes
- N = No

18. RETAINED HEAD/FEET: Were the head and/or feet of the bird retained?

- Y = Yes
- N = No

19. RETAINED STOMACH: Was the whole stomach of the bird retained?

- Y = Yes
- N = No

20. NUMBER OF OTHER SAMPLES: Record the number of other biological samples collected from this animal. If no other samples were collected, record zero.

21. COMMENTS: Record any other pertinent information about the animal's condition, state of injuries, or other details. Be sure to include a reference to the animal's tag number to relate the comment to the appropriate animal.

M/M/S Alaska Marine Mammal Observer Program
MARINE BIRD SAMPLE FORM

1 Page Number _____ of _____

Year	Month	Trip Identification Number	Haul Number	Body Measurements										Condition		Retained Samples			
				Tag Number (or Id #)	Species (& code)	Phase	Feather	Weight (g)	Head-Bill (mm)	Culmen Length (mm)	Tarsus Length (mm)	Wing Chord (cm)	Brood Patch	Fat Index (Y;N)	Whole (Y;N)	Head Feet (Y;N)	Stomach (Y;N)	# Other Samples	
2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
				Phase Codes															
				Brood Patch Codes															
				Fat Index Codes															
				Comments (include the tag number of the referenced animal) (Continued on Back: Y ___ N ___)															

MARINE MAMMAL AND MARINE BIRD WATCHES

Marine mammal and marine bird watches are designed to collect detailed information on sightings of marine mammals and marine birds encountered during a deployment. This information is critical in determining the temporal and spatial distribution of these animals as well as their relative abundance and behavior in the vicinity of fishing operations.

All marine mammals and marine birds observed during a deployment, which are determined not to be incidental takes by the observer, are recorded on the Sighting Form. Those marine mammals and marine birds which the observer determined to be actual incidental takes are recorded on the Incidental Take Form and other required forms, and not on the Sighting Form. Vessels may also be recorded as sightings, although they are the lowest priority.

If a marine mammal or marine bird (alive or dead) is seen entangled in or falling from the vessel's gear, the animal is recorded on the Incidental Take Form, accompanied by detailed comments. If a dead marine mammal or marine bird is seen in the fishing area, and the observer determines it is not a direct result of the gear being observed, the animal is recorded on the Sighting Form, with extensive comments on how that determination was made. Photographs should be taken, as the Photo Form instructions detail.

SIGHTING TYPES

Sightings must never be double-counted (by the same or different observers) or recorded as a re-sighting. If a pair of observers are working as a team, communication must be maintained to clarify which animals have been counted and the path they are traveling. Each separate grouping of animals, traveling or behaving as a unit, should be considered a sighting. If a multiple-species sighting occurs, each species will be recorded on separate lines, but will reflect the same sighting time. The observer should not get distracted by the sighting. Once the sighting is recorded and identified accurately, they must go back to the coordinated watch so other animals are not missed. Although it may be tempting and entertaining to observe an active animal, the observer must maintain their scientifically rigid watch. There are two types of sightings listed on the Sighting Form.

1. ON-WATCH SIGHTINGS - A sighting of a marine mammal, marine bird, or vessel made while conducting one of the watches described below.
2. OFF-WATCH SIGHTINGS - An opportunistic sighting of a marine mammal, marine bird, or vessel made at a time when the observer is not conducting a formal watch.

WATCH TYPES

Each watch type is described in detail below. With each, it is important that the observer does not extend the specified watch time without taking a break. Sighting survey data have shown reduced effectiveness when watches exceed the specified on-effort watch time period.

1. Transit Watch

A transit watch is conducted while steaming to or from fishing grounds and between fishing sites when transit is likely to be 15 minutes or more. Transit watches are conducted when the Beaufort sea state is 5 or less. The Beaufort Scale defines a Force 5 as 17 to 21 knot wind speed, 6 to 8 foot waves, many white caps, and some spray. Each transit watch is maintained for a continuous 60 minutes, followed by a 15 minute break. This cycle is repeated continuously (weather, daylight, and fishing operations permitting) while the vessel is underway. The observer should choose a watch position outside, facing the bow, free of obstructions and as high off the water as possible.

During a transit watch, the observer should thoroughly scan a 180° area from 270° abeam to port across the bow to 90° abeam to starboard. Continuous scanning of the water surface in the designated area is done with the naked eye. Once a sighting is made, binoculars are used to confirm the sighting, make an identification of the species, and determine the number of animals sighted. It is difficult to identify and record marine birds during transit while maintaining a watch for marine mammals. For this reason, only marine mammals are recorded during a transit watch (unless the observer has been assigned to exclusively collect bird data).

If biological samples are being collected as the vessel resumes transit after a haul, the transit watch is preempted by the biological sampling priorities.

2. Haul Watch

A haul watch is conducted while the vessel is hauling back or picking fishing gear. These watches provide information on marine mammals and marine birds that are in the vicinity of the gear during fishing operations. This information is used to assess possible interactions and associations of marine mammals and marine birds with fishing activity. Performing a haul watch for by-catch, marine mammals, and marine birds while doing fish tallies can at times be a daunting task that limits the confidence of the data. Therefore, this watch must be concentrated on the water near and around the net and primarily looking for marine mammals and by-catch of marine mammals and marine birds.

A haul watch is conducted during every haul, regardless of weather conditions. During a haul watch, the observer maintains a continuous watch until the gear is completely onboard or picked. The observer should choose the best possible location from which to conduct the haul watch while remaining out of the way of normal vessel operations. This location should provide an unobstructed view of the net next to the vessel and the area 180° around the net. Observers are expected to remain at the same location (or same relative distance to picking skiff) during the entire watch. During a haul watch, the observer should face the net looking down along the line of the net as it exits the water and is brought up to the vessel. The primary focus should be along

that line and where the net breaks the water's surface, and generally within 300 meters of the gear. Continuous scanning of the water surface in the designated area to either side of the net should be done with the naked eye.

Biological sampling of the catch will occur after the trip's last haul. During a haul watch, scanning the water and net for incidental takes is a priority over all other data collection. The observer should detail the circumstances in comments if at any point they feel they can not confidently watch for takes and tally the catch.

3. Soak Watch

A soak watch is conducted while the fishing gear is soaking and actively trying to catch fish. The observer should find the best view of the entire net. This is preferably done from an elevated point on shore looking seaward but may also be done from a vessel or skiff positioned at the outermost buoy (king buoy) looking shoreward. Safety comes first so the observer must weigh the risks of scaling cliffs, finding a landing site in rough surf, approaching submerged jagged reefs, cuing on rapidly changing weather and tidal conditions, and keeping a look out for meandering bears. If an observer is dropped off on shore for a soak watch, the vessel must remain in visual and radio contact at all times.

As with the transit watches, soak watches should be conducted when the Beaufort sea state is 5 or less. The Beaufort Scale defines a Force 5 as 17 to 21 knot wind speed, 6 to 8 foot waves, many white caps, and some spray. Each soak watch is maintained for a continuous 60 minutes, followed by a 15 minute break. This rotation may be repeated up to four hours at a given site. If possible, a soak watch should be attempted an hour before and an hour after an observed haul or pick. The observer should scan a 180° area with the net directly in front (at 0°). Depending on the weather and sea conditions and height off the water, the distance an observer should be looking out to would be a distance within which a harbor porpoise dorsal fin or seal head could be seen. Generally, the observer should focus on the water surface area within 1000 meters of the net. Marine mammals are the primary object of concern, however marine birds and vessels may be recorded if they do not become a distraction.

Observing hauls and picks take priority over the transit or soak watches. The observer may record marine mammals, marine birds, and vessels out to a nautical mile from the gear. In areas of high animal abundance, marine mammals take priority, then marine birds, then vessels. Also, as animal abundance increases, the viewing range may have to be adjusted closer to the gear. For example, distant whale blows or birds overhead should not become a distraction. The observer should record in comments if they can not keep up with all the sightings and the priority chain must be initiated.

4. Set Watch

A set watch is conducted while the vessel is setting out fishing gear. These watches provide information on marine mammals and marine birds that are in the vicinity of the gear during fishing operations. This information is used to assess possible interactions and associations of marine mammals and marine birds with fishing activity. Set watches are a lower priority if the observer

is working up samples, preparing for the haul back, or needs to take a break. In some fisheries, such as the set gillnet fishery, sets may be rarely observed and of limited importance. In other fisheries, such as drift gillnet and purse seine, the set watch becomes more critical as this may be when entanglements are observed. In areas of high animal abundance, the concentration is on incidental takes of marine mammals and marine birds and marine mammal sightings.

A set watch can be conducted during every set, regardless of weather conditions. During a set watch, the observer maintains a continuous watch until the gear is completely deployed. The observer should choose the best possible location from which to conduct the set watch while remaining out of the way of normal vessel operations. This location should provide an unobstructed view of the net and the area 180° around the net. Observers are expected to remain at the same location (or same relative distance to picking skiff) during the entire watch. The primary focus should be along that line and where the net breaks the water's surface, and generally within 300 meters of the gear. Continuous scanning of the water surface in the designated area to either side of the net should be done with the naked eye.

5. Horizon Scan

This watch is intended to concentrate on marine birds present on the fishing grounds. Specially trained observers will be assigned to collect marine bird data exclusively. During a trip, these observers will always be working with an other observer to supplement the primary observer's trip information with marine bird data. They may help the primary observer keep track of other sightings as well if the situation demands. A horizon scan can be done during a soak, haul, or transit from a remote shore platform, a research vessel, or the observer skiff, and may or may not be associated with an observed trip. If a marine bird observer witnesses an entanglement, they should inform the primary observer and have them record it on their trip forms.

A horizon scan is done in a continuous motion from left to right of the area 180° around and over the net for marine birds. Birds are tallied by species and behavior and recorded on the Sighting Form. If the horizon scan is done during transit, the transit watch protocols should be followed. If near a net, the area within 300 meters of the net should be the primary focus. The horizon scan, performed during a soak, should be done every 15 minutes, taking a 15 minute break every hour (following similar soak watch protocols). The period of observation following this rotation schedule should not exceed 4 hours at any given location. The horizon scan, performed during a haul, should be done every 15 minutes throughout the entire haul back, regardless of weather conditions (following similar haul watch protocols). During a haul, marine bird observers will merge the rotation schedules of the horizon scan and net scan. If the net scan falls on the 15 minute mark of the horizon scan, the net scan is preempted by the horizon scan.

6. Net Scan

This watch is intended to concentrate on marine birds within close proximity to a fishing net when it is being hauled. Specially trained observers will be assigned to collect marine bird data exclusively. During a trip, these observers will always be working with an other observer to supplement the primary observer's trip information with marine bird data. They may help the primary observer keep track of other sightings as well if the situation demands. A net scan can be done

during a haul from a remote shore platform, a research vessel, or the observer skiff. If a marine bird observer witnesses an entanglement, they should inform the primary observer and have them record it on their trip forms.

A net scan is done by scanning the area directly near and over the net for marine birds. Birds are tallied by species and behavior and recorded on the Sighting Form. The area within 10 meters of the net should be the primary focus. The net scan is only performed during a haul and should follow similar haul watch protocols. The net scan should be done every 5 minutes throughout the entire haul back, regardless of weather conditions. During a haul, marine bird observers will merge the rotation schedules of the horizon scan and net scan. If the net scan falls on the 15 minute mark of the horizon scan, the net scan is preempted by the horizon scan.

7. Pinniped Haul Out Count

This count is done opportunistically if it does not deter from the observers' regular duties. If observers are expected to be near or transiting by a haul out or rookery, an animal count can be taken being sure to follow all regulations to avoid marine mammal harassment. Special attention should be paid to any tagged or branded animals.

8. Marine Bird Colony Count

Marine bird colony counts are also done opportunistically if it does not deter from the observers' regular duties. If observers are expected to be near or transiting by a bird colony, a colony count should be recorded. This count only needs to be done once per season per colony. Marine bird observers will use the standard U.S. Fish and Wildlife Service Colony Status Record Form. The form includes the date, latitude, longitude, number of nests, number of birds and breeding status by species, and a description of the colony and surrounding habitat.

Table 1. A brief summary of the various watch types, when to do them, what to concentrate on, and what rotation and priority schedule to follow (1 being the highest priority of the watches).

Watch Type	Applicability	Concentration	Rotation	Priority
Haul watch	All hauls and picks. Regardless of weather. Always during a trip.	Incidental takes of mammals and birds. Marine mammals in the vicinity of gear, especially within 300 meters.	Entire haul or pick.	1
Soak watch	Soaking nets. One hour before haul is preferred. Beaufort < 5. Daylight. During a trip or not.	Incidental takes of mammals and birds. Marine mammals in the vicinity of fishing gear, generally within 1000 meters.	1 hour on, 15 minutes off for up to 4 hours.	2
Transit watch	When transit is likely to be 15 minutes or more. Beaufort < 5. Daylight. During a trip or not.	Marine mammals near the fishing grounds. Under ideal conditions, sightings of cetaceans may be made out to 3000 meters.	1 hour on, 15 minutes off.	6
Set watch	All sets. Regardless of weather. Always during a trip.	Incidental takes of mammals and birds. Marine mammals in the vicinity of gear, especially within 300 meters.	Entire set.	5
Horizon scan	Marine bird observers only. During a soak or haul or transit. During a trip or not.	Marine birds within 300 meters of the gear.	Every 15 minutes following haul or soak protocol.	4
Net scan	Marine bird observers only. During a haul. Always during a trip.	Marine birds within 10 meters of the gear.	Every 5 minutes following haul protocol, unless on the 15 minute mark when a horizon scan is done.	3
Pin-niped haul out count	During a trip or not. Beaufort < 5. Daylight.	Seals and sea lions at a haul out or rookery site.	Until an accurate count is made.	7
Marine bird colony count	Marine bird observers only. During a trip or not. Beaufort < 5. Daylight.	Marine birds at a colony site.	Until an accurate count is made.	8

SIGHTING FORM

This form is used to record all sighting watches and sightings. A sighting includes marine mammals, marine birds, and vessels that are in the fishing area but do not become entangled in the fishing gear. There may be several records per day, but each time should be unique. Sightings and watches may or may not be done during a trip. Sightings must NOT be double-counted (do not record re-sightings). If working with an other observer, be sure to communicate so sightings are not counted by multiple people.

There is a vertical dashed line on the Sighting Form. If recording the begin and end or occurrence of a watch, only the fields to the left of the line need to be completed. If recording a sighting, the entire line needs to be filled out. If the latitude, longitude, weather, Beaufort, and wave height has not changed, vertical arrows may be drawn through the lines that are the same. When doing scan watches for birds, prepare a tally sheet to group birds by species, behavior, and distance to gear categories. Then record summarized data on the Sighting Form.

Cross out fields that do not apply with a single slanted line. Unknown fields should be dashed (unless an unknown code is listed on the form). All unknown fields must be explained in comments and addressed in debriefing. For coded fields, if none of the listed codes are appropriate for the situation, record or check the code for “other” and provide details in the comment section.

Sighting Form Field Descriptions

- 1. PAGE NUMBERING:** This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents. If this form is not associated with an observed trip, then the page order would be date and time.
- 2. YEAR LANDED:** Record the year (yyyy) when the trip ended. Dash (-) if not associated with a trip.
- 3. MONTH LANDED:** Record the month (mm) when the trip ended. Dash (-) if not associated with a trip.
- 4. TRIP IDENTIFICATION NUMBER:** Record the unique three character Observer Identifier combined with the three character Trip Number consecutively numbered trips for this year of the primary observer (ex: X01001). For observers concentrating exclusively on bird counts during an observed trip, record the primary observer’s trip identification number and be sure that “Marine bird observer” is checked off on the Trip Information Form.
- 5. OBSERVER IDENTIFIER NUMBER:** Record your three character Observer Identifier Number (ex: X01).
- 6. DATE:** Record the date when this sighting or event occurred, with month, day, year (mmddy).

7. EVENT TYPE: Record the code to describe what event is taking place (i.e. beginning or ending a type of watch, or recording a sighting), by using the following Event Type Codes:

- 1 = Begin haul watch
- 2 = End haul watch
- 3 = Begin transit watch
- 4 = End transit watch
- 5 = Begin set watch
- 6 = End set watch
- 7 = Begin soak watch
- 8 = End soak watch
- 9 = Horizon scan
- 10 = Net scan
- 11 = Sighting, on-watch
- 12 = Sighting, off-watch
- 99 = Other (record in comments)

* NOTE: If weather, Beaufort, or wave height changes substantially (by 2 intervals or more) during an extended watch, use event code 99 and record new conditions. Otherwise, the weather change will be reflected at the begin or end watch.

8. PLATFORM: Record the type of platform where you are located for this event, by using the Platform Codes:

- 1 = Observer skiff
- 2 = Fishing skiff/vessel
- 3 = Research vessel
- 4 = Shore, beach
- 5 = Shore, elevated cliff or bluff
- 6 = Shore, dock
- 7 = Aerial
- 9 = Other (record in comments)

9. TIME: Record the time when this event took place, using the 24 hour clock (hh:mm).

10. LATITUDE: Record the latitude location, in tenths of minutes (ddmm.m), where you are when the sighting or event occurred. This

information can be obtained from your personal GPS unit (be sure settings are correct). If bearings can not be taken, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes.

11. LONGITUDE: Record the longitude location, in tenths of minutes (dddmm.m), where you are when the sighting or event occurred. This information can be obtained from your personal GPS unit (be sure settings are correct). If bearings can not be taken, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes.

12. WEATHER: Record the weather condition, using the Weather Codes:

- 1 = Clear (<10% cloud cover)
- 2 = Partly cloudy (10-50% cloud cover)
- 3 = Cloudy (51-90% cloud cover)
- 4 = Overcast (>90 cloud cover)
- 5 = Drizzle
- 6 = Rain
- 7 = Fog
- 8 = Sleet or snow
- 0 = Unknown

13. BEAUFORT: Record the sea state condition for each event, using Beaufort Scale Sea State Codes:

- 0 = Wind speed in knots (kt) < 1; sea like mirror
 - 1 = 1-3 kt; ripples with appearance of scales; no foam crests
 - 2 = 4-6 kt; small wavelets; crests glassy, not breaking
 - 3 = 7-10 kt; large wavelets; crests beginning to break; scattered whitecaps
 - 4 = 11-16 kt; small waves becoming longer; numerous whitecaps
 - 5 = 17-21 kt; moderate waves becoming longer; many whitecaps; some spray
- [more Beaufort codes on next page]

- 6 = 22-27 kt; larger waves forming; whitecaps everywhere; more spray
- 7 = 28-33 kt; sea heaps up; white foam from breaking waves blown in streaks
- 8 = 34-40 kt; moderate high waves; waves breaking into spindrift; blowing foam

14. WAVE HEIGHT: Record the average estimated wave height, in tenths of meters. ‘

15. SPECIES: Record the common name of this species, to the most specific grouping possible. The species code should also be filled in by referencing Appendix 4, Species Codes. Indicate the species sighted, using the species codes in the core application systems. Complete one line for each species making up a sighting. Therefore, multiple species sightings will have the same time, but be recorded on separate lines. Be sure to specify mixed-species groups in the comments. This field may also be used to record fishing vessels, cargo ships, or recreational boaters in the immediate area.

16. NUMBER: Record your best estimate of the number of individuals sighted. If you have a range for the number, record the average here, and the range in comments.

17. ANIMAL BEHAVIOR: Indicate the initial behavior of the animal when first seen by recording the most appropriate code:

- 1 = Swimming or blowing at surface
- 2 = Milling/circling
- 3 = Sounding
- 4 = Porpoising
- 5 = Bow riding
- 6 = Breaching
- 7 = Thrashing
- 8 = In-flight
- 9 = Taking flight
- 10 = Landing on water

- 11 = Feeding on catch
- 12 = Foraging on other prey
- 13 = Floating on surface
- 14 = Vessel avoidance
- 15 = Bird avoidance
- 16 = Hauled out on land
- 17 = Dead
- 99 = Other (record in comments)

18. DISTANCE TO GEAR: Record the closest distance that the animal came to the net where fishing is occurring, estimated in whole meters.

* NOTE: For birds, distance includes the area above (over) the net. If you are doing a **scan count for birds only, record distance groupings alpha codes** as one of the following:

- A = 0 meters
- B = 1- 10 meters
- C = 11-100 meters
- D = > 100 meters

19. DISTANCE TO VESSEL: Record the distance from the animal to the vessel (or platform) you are on, estimated in whole meters. If you are doing a scan count, dash (-) this field.

* NOTE: If you are doing a scan count for bird only, dash (-) this field.

20. COMMENTS: Detail the animals' behavior, reactions, identifying characteristics, any signs of injuries or scarring, species associations, vessel's or fishermen's activities during the event, etc. When referring to a specific event, **reference the time** so the comment is specify the appropriate event.

PHOTO FORM

This form is used to record information about what photos have been taken. It is completed per roll of film for each frame. Send the form along with the roll when handed into the office for processing. **Each roll of film should be labeled by the year, observer identification code, and the consecutive number of rolls of film they have used that year.** If there are photos of an incidental take or stranding on the roll, do not wait to complete the roll of film - send it in as soon as possible.

Photographs are required of all incidental takes and should also be taken of sharks and rare or hard-to-identify fish. Photos are an important part of the identification process and can also aid in determining the sex, age, unique markings, and condition of animals taken. Photographs of gear types, fishing operations, and/or observer duties are very useful for observer training and developing outreach materials. For confidentiality purposes, photographs should not be taken of vessel names, vessel numbers, or clear shots of crew members.

When photographing incidental takes of marine mammals and marine birds, photograph any unusual marks and scars, location of gear entanglement (preferably with gear still attached), and characteristics of the animal which can be used for species identification. Important photos of body parts would include a close-up of the animal's head (head-on, side shot, throat area, mouth), rostrum or tip of beak, flipper and fluke shapes, dorsal fin shape and relative placement on back, belly view, genital area, shape and color of feet and bill, gills, and placement of fins. Place a piece of paper with the observer/trip identifier number, the animal's tag number, and the date on it next to the animal's body, and include it in the series of photos. Do not cover important features of the animal's body with the paper. If the paper is wet down, it will be less apt to blow away. If time and conditions preclude this, try to include the carcass tag number in the photograph. It is helpful to include an object in the photo to be used as a size reference (i.e. clipboard, pen, measuring tape, tag).

Keep cameras and film away from excessive heat, moisture, salt, and vapors. Don't keep used film for extended periods of time as it becomes more susceptible to harmful elements once exposed. Keep exposed film in a protective case or bag and send in for processing as soon as possible.

Photo form Field Descriptions

- 1. OBSERVER IDENTIFIER NUMBER:** Record your three character Observer Identifier Number (ex: X01).
- 2. ROLL NUMBER:** Record the number of the roll of film, numbered sequentially by observer for the year.
- 3. FRAME NUMBER:** Record the frame number(s). Remember if taking a reading from the camera after the photo has been taken, subtract 1 for the number of the photo you just took.
- 4. DATE:** Record the date when this photo was taken, with month, day, year (mmddy).
- 5. TIME:** Record the time when this photo was taken, using the 24 hour clock (hh:mm).
- 6. SPECIES:** If this photo is of an animal, record the species and the species code (see Appendix 4. Species Codes for a list of species codes).
- 7. TAG NUMBER:** If this photo is of an animal with a unique tag number, include the tag in the first photo of the series and record the complete tag number.
- 8. SUBJECT:** In 2 or 3 words, briefly state the subject of the photo. This field may be used to create the label to be applied to the photo/slide.
- 9. DESCRIPTION:** A more detailed record of the subject. Include trip number, haul number, area location, operation description, specific markings, or what the photo intends to detail.
- 10. QUALITY:** This field will be completed after the film has been developed. It is a ranking of the quality of the photo by using one of the following Quality Codes:

1 = Excellent
2 = Good
3 = Fair
4 = Poor

NMFS Alaska Marine Mammal Observer Program

PHOTO FORM

Observer Identifier Number 1		Roll Number 2		Developing Notes			Quality Codes 1 = Excellent 3 = Fair 2 = Good 4 = Poor	
Frame	Date	Time	Species / Tag Number / Subject			Description	Quality	
3 1	4	5	6	7	8	9	10	
2								
3								
4								
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FISHER'S COMMENT FORM

This form is used by the fishermen if they wish to comment on the trip which was observed. The fisher must have been present at the time the observations were made and must be the permit operator. The observer should offer this option to the fishermen by the completion of each trip. The observer should complete the top portion of the form, allow the fishermen to fill in their comments, collect this completed form directly, within a day and include it in their trip data.

Fisher's Comment Form Field Descriptions

1. PAGE NUMBERING: This is for paperwork filing purposes. Number front and back of all double sided forms (if used) and backs with comments on them. The pages are numbered by trip with forms in order as they are listed in the Table of Contents.

2. YEAR LANDED: Record the year (yyyy) when the trip ended.

3. MONTH LANDED: Record the month (mm) when the trip ended.

4. TRIP IDENTIFICATION NUMBER: Record your unique three character Observer Identifier combined with the three character Trip Number consecutively numbering your trips for this year (ex: X01001).

5. FISHERY NAME AND CODE: Write out the name of the fishery to ensure proper filing and coding. Record the fishery code assigned to identify this fishery. See Fishery Name Codes below for a complete listing of codes:

- 1 = Bristol Bay salmon drift gillnet
- 2 = Bristol Bay salmon set gillnet
- 3 = Cook Inlet salmon drift gillnet
- 4 = Cook Inlet salmon set gillnet
- 5 = Kodiak salmon set gillnet
- 6 = Metlakatla/Annette Island salmon drift gillnet
- 7 = Peninsula/Aleutian Islands salmon drift gillnet
- 8 = Peninsula/Aleutian Islands salmon set gillnet
- 9 = Prince William Sound salmon drift gillnet

- 10 = Southeast salmon drift gillnet
- 11 = Yakutat salmon set gillnet
- 12 = Southeast salmon purse seine

6. VESSEL NAME: Record the name of the vessel to which you are deployed. Care should be taken to record the correct spelling of the vessel's name. Record "No Name" for vessels without a name. Record a dash (-) if this field does not apply.

7. VESSEL NUMBER: Record the number written on the hull of the vessel to which you are deployed. This number will be either the U.S. Coast Guard Documentation Number or the state registration number. This number may have up to eight characters. This is not the same as the NMFS or state fishing permit number.

8. PERMIT NUMBER: Record the Federal NMFS or state fishing permit number under which they are fishing.

9. DATE: Record today's date, with month, day, year (mmddyy).

10. FIRST NAME: Record the fishermen's first name. Verify correct spelling.

11. LAST NAME: Record the fishermen's last name. Verify correct spelling.

12. COMMENTS: Provide the form to the fisher to complete. Either wait to get the comments back or make arrangements to pick up the form later that day. Include this form with the trip data.

FISHER'S FIELD NOTES

This form is used by the fishermen if they wish to comment on events that may not be directly related to an observed trip. The fishermen can fill these forms out throughout the season and either hand in to an observer or mail directly back to the National Marine Fisheries Service. It was designed at the fishermen's request, and is used on a voluntary basis to record information on marine mammals, marine birds, or other significant events that occurred on the fishing grounds that may otherwise be missed by an observer. The address to send the completed forms is on the form and is: NOAA/NMFS/AKR/PRD/AMMOP, P.O. Box 21668, Juneau, Alaska 99802. The acronyms stand for: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Alaska Regional Office, Protected Resources Division, Alaska Marine Mammal Observer Program

Fisher's Field Notes Form Descriptions

1. NAME: Include a first name and last name.

2. CONTACT: Address and/or phone number where they can be contacted if more information or confirmation is needed.

3. DATE: Record when this sighting or event occurred with month, day, year (mmddy).

4. TIME: Record the time when this event took place, using the 24 hour clock (hh:mm).

5. LATITUDE: Record the latitude location, in tenths of minutes (ddmm.m), where you are when the sighting or event occurred.

6. LONGITUDE: Record the longitude location, in tenths of minutes (dddmm.m), where you are when the sighting or event occurred.

7. WEATHER: Record the weather condition, by checking one of the following options:

Clear	Cloudy
Light precipitation	Heavy precipitation
Foggy	Variable

8. SEA STATE: Record the sea state condition for each event, checking one of the following options:

Glassy / < 2 kt
Rippled / < 5 kt
Small chop / 6-10 kt
Whitecaps / 11-22 kt
Rough / > 22 kt

9. FISHER'S ACTIVITY: Record what you (the fisher) were doing at the time you witnessed the event, by checking one of the following options:

Working nets
Transiting in boat
On land
Other

10. AREA LOCATION: Describe where the event took place, such as the name of a bay or point of land.

11. DETERRENT DEVICE USED: Was a method used to deter animals away from your gear? If yes, please detail in the comments section.

12. INTERACTION WITH NETS: Did the animals have an interaction with the fishing gear? If yes, please detail in the comments section.

13. SPECIES: Record the common name of the species sighted. If unsure of the species id, record the animal grouping as specific as you can be without guessing (for example, large whale, gull, tern, etc.).

14. NUMBER: Record how many animals made up the sighting. A range may be recorded.

15. COMMENTS: Describe the event or observation, including what the species identification characteristics were, animal behavior, reaction, how many, how long were they there, etc.

2002 AMMOP Manual

NMFS Alaska Marine Mammal Observer Program
FISHER'S FIELD NOTES

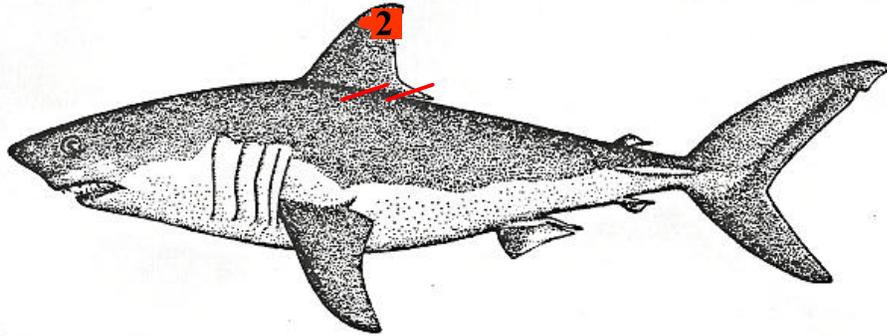
Send to: NOAA/NMFS/AKR/PRD/AMMOP
 P.O. Box 21668
 Juneau, Alaska 99802

This form is offered to fishermen as a means to report, on a voluntary basis, sightings of marine mammals, marine birds, or other significant events on the fishing grounds that may otherwise be missed by observers. The completed form may be handed in to an observer or mailed directly to the address above by the end of the current fishing season. Name and contact information are requested in case NMFS staff needs further clarification or confirmation of the event. Name and contact information will not be released.

Name (First and Last) 1		Contact (address and/or phone number) 2		
<i>Please check the most appropriate answer when options are given.</i>				
Date (dd/mm/yy) 3	Latitude (ddhh.m) 5	Weather <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Light precipitation <input type="checkbox"/> Heavy precipitation <input type="checkbox"/> Foggy <input type="checkbox"/> Variable	Sea State <input type="checkbox"/> Glassy/<2 kt <input type="checkbox"/> Rippled/<5 kt <input type="checkbox"/> Small chop/6-10 kt <input type="checkbox"/> Whitecaps/11-22 kt <input type="checkbox"/> Rough/>22 kt	Fisher's Activity <input type="checkbox"/> Working nets <input type="checkbox"/> Transiting in boat <input type="checkbox"/> On land <input type="checkbox"/> Other
Time (24 hr) 4	Longitude (ddhh.m) 6	7	8	9
Area Location 10		Deterrent device used? (If yes, describe) <input type="checkbox"/> Yes <input type="checkbox"/> No		Interaction With Nets? <input type="checkbox"/> Yes <input type="checkbox"/> No
Species (or kind of animal) 13	How many? 14	Describe event or observation (include id characteristics,behavior,etc) 15		
Date (dd/mm/yy)	Latitude (ddhh.m)	Weather <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Light precipitation <input type="checkbox"/> Heavy precipitation <input type="checkbox"/> Foggy <input type="checkbox"/> Variable	Sea State <input type="checkbox"/> Glassy/<2 kt <input type="checkbox"/> Rippled/<5 kt <input type="checkbox"/> Small chop/6-10 kt <input type="checkbox"/> Whitecaps/11-22 kt <input type="checkbox"/> Rough/>22 kt	Fisher's Activity <input type="checkbox"/> Working nets <input type="checkbox"/> Transiting in boat <input type="checkbox"/> On land <input type="checkbox"/> Other
Time (24 hr)	Longitude (ddhh.m)	7	8	9
Area Location		Deterrent device used? (If yes, describe) <input type="checkbox"/> Yes <input type="checkbox"/> No		Interaction With Nets? <input type="checkbox"/> Yes <input type="checkbox"/> No
Species (or kind of animal)	How many?	Describe event or observation (include id characteristics,behavior,etc)		

**SUPPLEMENTAL
RESEARCH
FORMS**

Shark Research



Reward For Tag Recoveries

If the shark tag(s) look like this:



Record the tag number, where caught (Latitude-Longitude preferred) and phone number on the tag, then release the shark and call in the Information for a reward.

If the shark tag look like this:



The shark has an electronic tag in it's stomach or surgically implanted in it's body cavity that looks like this:

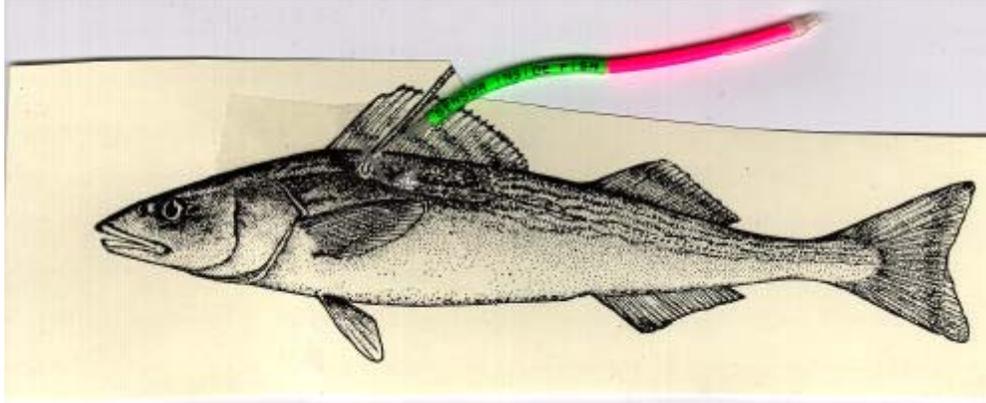


Look for sutures and/or in the shark's stomach to recover the tag and send to address printed on the tag with catch information (location, etc.) for a reward.

For more information on the Alaska Shark Assessment Program contact Lee Hulbert @ 907-789-6056 or Lee.Hulbert@noaa.gov or visit my website at: <http://www.fakr.noaa.gov/oil/sharks.htm>

\$500 REWARD

For Electronic Tag Inside Sablefish



The NMFS Auke Bay Laboratory is tagging sablefish with a 3/4 inch diameter x 2 1/4 inch long electronic tag found inside of the fish and a 3 inch long fluorescent green and fluorescent pink tag located near the first dorsal fin of the fish. The external tag reads – “Reward for Depth Sensor Inside Fish”. The electronic tag records depth and temperature. Data from those tags will provide information about sablefish behavior in the sea as well as the marine environmental conditions they experience.

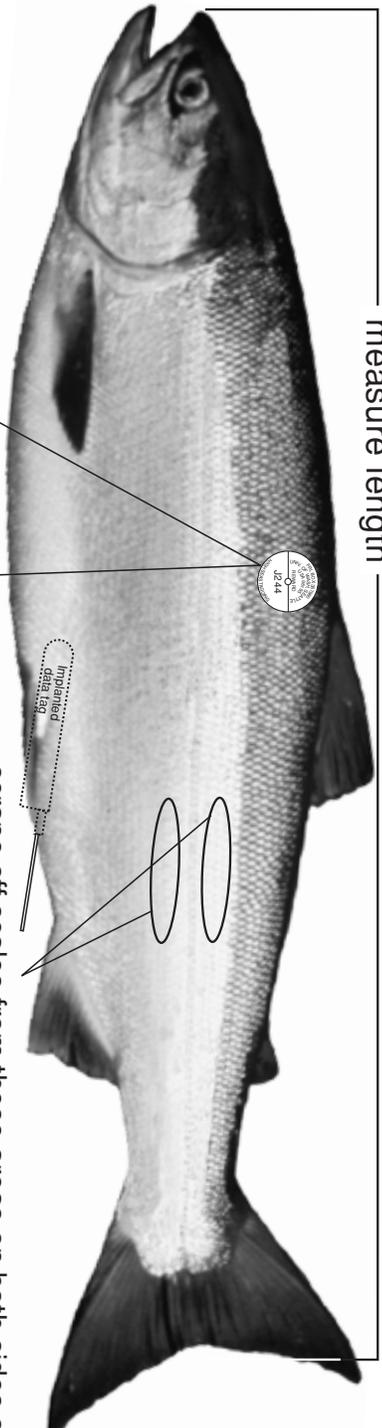
An electronic tagged sablefish was recovered on 1 August 1998. The fish was at large since 5 June 1998. Tagged in the Aleutian Islands, the 4-year old fish was recovered 2 nautical miles south of the release site. The fish remained at temperatures from 38 to 39 degrees Fahrenheit and ranged over depths of 200 to 300 fathoms. A plot of the temperature and depth history is attached.

You can help fishery research as well as receive a \$500 reward. If you recover an electronic tag please contact:

Michael Sigler
National Marine Fisheries Service
Auke Bay Laboratory
11305 Glacier Hwy
Juneau, Ak 99801
Call Collect @ 907-789-6037



RETURN HIGH SEAS SALMON AND STEELHEAD TAGS



RETURN a high seas salmon **disk or data tag**
GET a custom embroidered cap as a reward



Examples of high seas tags

Tag color is red and white

Some fish carry a high-seas data tag

\$ SPECIAL \$ CASH REWARD for return of an undamaged data tag

REWARD: Send tag, seal & info High Seas Salmon Tagging Seattle, WA 98195 206-543-1101
 Avoid magnetic fields

REWARD: LLWASH Box 325502 SEAT- O 98195 206-543-1101

Implanted in body cavity

scrape off scales from these areas on both sides of the fish and place the scales into a folded piece of paper

- Collect tag; if tag cannot be collected then get tag number and description
- Collect scales and carefully measure fish length as shown
- Record location, date, species, gear, sex, and weight
- Remove if present a data tag implanted in body cavity

Send to: **High Seas Salmon Research Program**
School of Aquatic & Fishery Sciences
University of Washington
Box 355020
Seattle, WA 98195-5020

For details call: (206) 543-1101
 e-mail: kwmymers@u.washington.edu
 Website: <http://www.fish.washington.edu/research/highseas/>

INTERNATIONAL HIGH SEAS SALMON TAGGING

MARINE MAMMAL STRANDING REPORT - LEVEL A DATA

FIELD #: _____ NMFS REGIONAL #: _____ (NMFS USE) NATIONAL DATABASE#: _____ (NMFS USE)

COMMON NAME: _____ GENUS: _____ SPECIES: _____

EXAMINER _____ Letterholder _____

Name: _____ Affiliation: _____

Address: _____ Phone: _____

<p>LOCATION</p> <p>State: _____ County: _____</p> <p>City: _____</p> <p>Locality Details: _____</p> <p>_____</p> <p>Latitude: _____ N</p> <p>Longitude: _____ W</p>	<p>OCCURRENCE DETAILS MS#: _____ (NMFS USE)</p> <p>Mass Stranding: <input type="checkbox"/> YES <input type="checkbox"/> NO # Animals: _____</p> <p>Signs of Human Interaction: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Could not be Determined (CBD)</p> <p>(Check one or more) <input type="checkbox"/> 1. Boat Collision <input type="checkbox"/> 3. Fishery Interaction</p> <p><input type="checkbox"/> 2. Shot <input type="checkbox"/> 4. Other Human Interaction: _____</p> <p>How determined: <input type="checkbox"/> External Exam <input type="checkbox"/> Internal Exam <input type="checkbox"/> Not Examined</p> <p>Other Causes: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> CBD Describe: _____</p>
--	--

<p>DATE OF INITIAL OBSERVATION</p> <p>Year: _____ Month: _____ Day: _____</p> <p>STATUS (Check ONE)</p> <p><input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced Decomposition</p> <p><input type="checkbox"/> 2. Fresh Dead <input type="checkbox"/> 5. Mummified/Skeletal</p> <p><input type="checkbox"/> 3. Moderate Decomposition <input type="checkbox"/> 6. Dead - Condition Unknown</p>	<p>DATE OF EXAMINATION (LEVEL- A) <input type="checkbox"/> Not Able to Examine</p> <p>Year: _____ Month: _____ Day: _____</p> <p>CONDITION (Check ONE)</p> <p><input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced Decomposition</p> <p><input type="checkbox"/> 2. Fresh Dead <input type="checkbox"/> 5. Mummified/Skeletal</p> <p><input type="checkbox"/> 3. Moderate Decomposition <input type="checkbox"/> 6. Dead - Condition Unknown</p>
---	--

INITIAL LIVE ANIMAL DISPOSITION (Check one or more)

1. Left at Site 5. Euthanized at Site

2. Immediate Release at Site 6. Died at Site

3. Relocated 7. Transferred to Rehabilitation

4. Disentangled 8. Died during Transport

9. Other

CONDITION (Check ONE)

1. Sick 3. Apparently Healthy 5. Other

2. Injured 4. Out of Habitat

Date: _____ Rehabilitation Facility: _____

Comments: _____

MORPHOLOGICAL DATA

SEX (Check ONE) **AGE CLASS** (Check ONE)

1. Male 1. Adult 4. Pup/Calf

2. Female 2. Subadult 5. Unknown

3. Unknown 3. Yearling

Straight Length: _____ cm in actual estimate

Weight: _____ kg lb actual estimate

PHOTOS/VIDEOS TAKEN: YES NO

Disposition: _____

TAG DATA

ID #	Color	Type	* Placement	Applied	Present
_____	_____	(Circle ONE) D DF L LF LR RF RR		<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	D DF L LF LR RF RR		<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	D DF L LF LR RF RR		<input type="checkbox"/>	<input type="checkbox"/>

* D = Dorsal; DF= Dorsal Fin; L = Lateral Body
LF=Left Front; LR = Left Rear; RF = Right Front; RR = Right Rear

WHOLE CARCASS DISPOSAL (Check one or more)

1. Left at site 4. Rendered 7. Unknown

2. Buried 5. Sunk

3. Towed 6. Frozen for Later Examination

SPECIMEN DISPOSITION (Check one or more)

1. Scientific collection

2. Educational collection

3. Other: _____

Comments: _____

NECROPSIED YES NO Date: _____

NECROPSIED BY: _____

Date	MM/DD/YYYY
Location	Name of site corresponding to current Site Description file if you know it, otherwise Island Name/Site name. Record latitude and longitude.
Start Time	This is the time observers start looking for brands/tags. Military time. HHMM
End Time	This is the time observers stop looking for brands/tags. Military time. HHMM
Observer Id	Observer identifier(s) of the observer(s) on effort. HHMM
Species	Record the species of animals hauled out.
Count	Total count by species of animals at haulout.
Temp	Temperature if available (C). Put temperature scale (C) in comments.
WS	Wind speed (kts) if available.
WD	Wind direction if available.
Precip	Precipitation status. N - none, R = rain, S = snow, H = hail, F - Fog. Combine if necessary. I.e. RF = rain and fog.
CC	Cloud Cover: 1 = 0 - 25%, 2 = 26 - 50%, 3 = 51 - 75%, 4 = 76 - 100%
Vis	Visibility: 1 - Excellent, 2 - Very Good, 3 - Good, 4 - Fair, 5 - Poor, 6 - Unacceptable
Tide	1 - high tide, 2 - on ebb (going out), 3 - low tide, 4 - on flood (coming in)
Surf	1 - calm seas, slight swell; 2 - some swell; 3 - moderate swell; 4 - High, surf covering portion of haul, 5 - severe, surf crashing over most of haul out.
Brand	Write the characters and/or digits that make up the brand mark. This is not a Y/N field. A \$ is used in place of an unreadable character. I.e. T\$9 means the middle digit/alpha is unreadable.
Side	Location of brand on the animal. L - left side/shoulder, R - right side/shoulder, B - across rump or back, U if unknown.
Quality	One of the following symbols for each branded character/digit. I.e. brand T91, quality +0- + Digit is readable with the naked eye or from a long distance with binos. Clear w/o scarring or hair coverage. 0 Digit is readable with binos or a spotting scope w/out difficulty. - Digit is difficult to read because of scarring, hair or smeared numbers. Note problem in comments.
Tag #	Characters and digits identified on the tag. \$ is used for unreadable characters. Similar to Brand field.
Left	Left tag info. Y - tag present, N - flipper seen but no tag present, U - unknown status of tag (did not see side/flipper).
Right	Right tag info. Y - tag present, N - flipper seen but no tag present, U - unknown status of tag (did not see side/flipper).
Color	Color of tag. B - blue, G - green, O - orange, P - purple, R - red, V - violet, W - white, Y - yellow, U - unknown
Time	Time of day of sighting.
Sex	F - female, M - male, U - unknown or indeterminate.
Age	P - pup (0-12 mo), J - juvenile (> pup and < adult), A - adult (more info can go in comments), NP - not sure if juvenile or adult
Dead	U - indeterminate. If you don't know or are unsure, U code. No Guessing!
RBI	Y - confirmed dead, N - not dead, U - indeterminate
	Repro/Behavior Indicator - information on reproduction or suckling behavior. AF = adult female, WP - at with pup, WJ - at with juvenile
	NP - af nursing a pup, NJ - af nursing a juvenile, PS - pup suckling, JS - juvenile suckling, TF - territorial male with females
	TN - territorial male w/out females, OM - other males, U - unknown or no category to describe.
Observer id	Observer identifier of the observer who made the sighting.
Photo	Y - if a photo of the branded animal was taken, N - otherwise. Roll/frame or file info in comments. U if unknown.
Comments	Other important info. May include distinguishing behavior. May include changes in weather, other distinguishing marks, changes in sighting or weather conditions. Platform for the sightings; shore, small boat, large boat, cliff top, etc. Comments about distinguishing marks or description of problem brands.

Appendix 5 (continued).

Area Number _____ **Description of Colony** _____ **Census Date** _____

Census methods for colony (where viewed from, special conditions, etc.) _____

Census conditions (weather, light, seas, etc.) _____

Description of colony (habitats, groups of birds, vegetation) _____

Mammalian predators, human activity, disturbances, etc. _____

Marine mammals _____

Access to colony _____

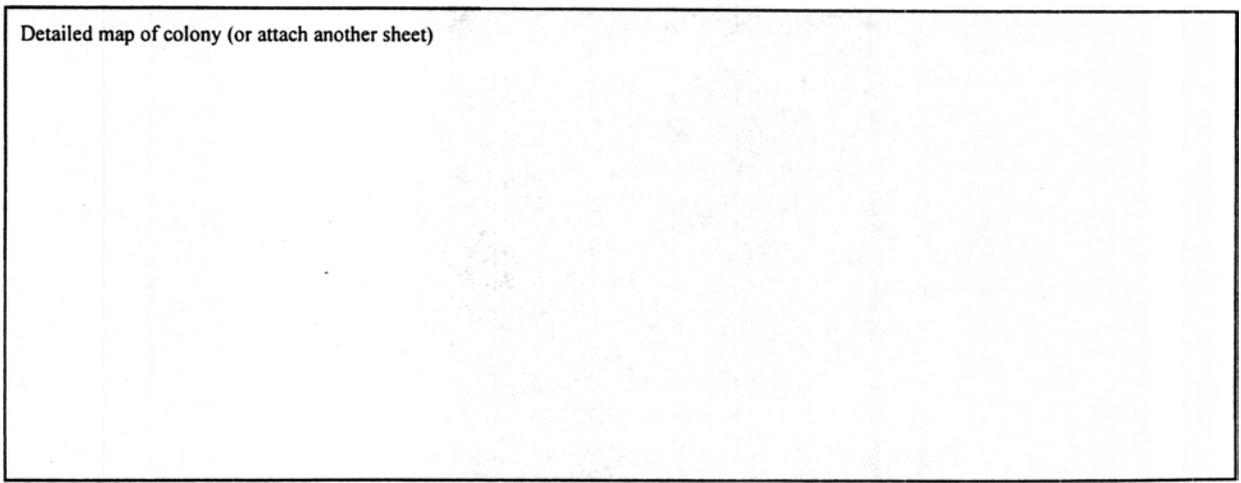
Evaluation of data quality (reliability of this census) _____

Overall evaluation of colony _____

Address and phone number of observer _____

Supplemental material (photographs, reports, etc.) _____

Detailed map of colony (or attach another sheet)



Attention Beachcombers

WANTED: Sightings of Capelin (*Mallotus villosus*) and Pacific Sandlance (*Ammodytes hexapterus*) on Kodiak Archipelago Beaches



Contact: Susan Payne

Alaska Fisheries Science Center / National Marine Fisheries Service / 301 Research Ct., Kodiak, AK 99615 / (907)481-1719 / susan.a.payne@noaa.gov

Background:

A study is underway to compare hydrographic and astronomical data as well as other conditions surrounding the beach spawning events of capelin and Pacific sandlance.

When to look:

Capelin typically spawn in May and June and Pacific sandlance in the Fall (August-November).

Where to look:

These small schooling fish prefer sandy/fine gravel beaches for spawning such as Roslyn Beach at Cape Chiniak and White Sand Beach and Pillar Creek Beach in Monashka Bay.



Capelin being measured for length

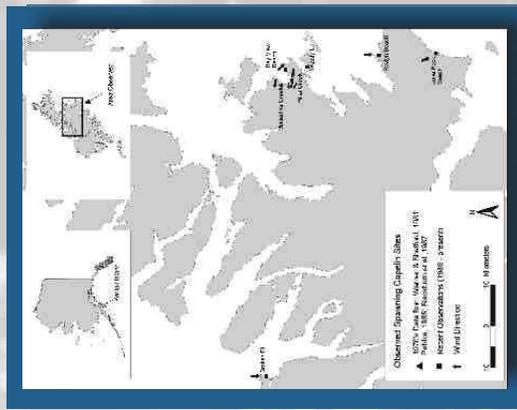
Photo by Jan Høiga

What to look for:

Small schooling fish washed up on the high tide line or in the surf. Marine mammals and birds may be feeding heavily. Female fish may be extruding eggs. Male capelin will have a noticeable ridge along their sides. The air may smell of cucumbers.

Please note:

- Beach name and Bay, and if possible, latitude and longitude.
- Date of sighting! Or duration of spawning, if observed over a period of time.
- Time of sighting!
- Tidal stage.
- Local wind direction and cloud cover.
- Animal activity in the area.
- Other pertinent information.



Graphic courtesy of Claire Armistead

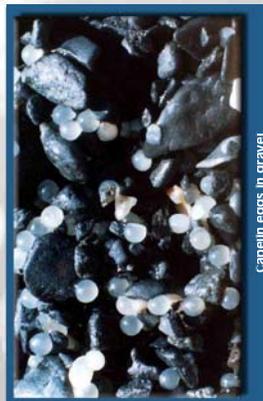
Collect (if possible):

100 fish (any number will do) in plastic bag and freeze. Especially important if species identity is in doubt!



Capelin larva just emerged from egg

Photo courtesy of Joseph Black, Kodiak, AK



Capelin eggs in gravel

Photo courtesy of Joseph Black, Kodiak, AK

Please call immediately:

Susan Payne at 481-1719 or 486-3737
(leave message if unavailable)!

Your assistance is greatly appreciated!

Forage Fish Data Sheet

Page _____

Data collected and entered by _____

Beach Name _____ Latitude _____ ' _____ " Longitude _____ ' _____ " Date / /

Beach Location _____ Time _____ (m/d/y)

Forage fish observed _____

Weather (wind direction, cloud cover, etc) _____

Tidal Stage:
Previous tide _____ ft at _____ : _____ Next tide _____ ft at _____ : _____

Time sampling began _____ : _____ Time sampling ended _____ : _____
length frequencies? yes / no data sheet #(s) _____

sample collected? yes / no sample # _____

Beach type sand/ course gravel/other

Other marine observations (include animal activity): _____

Please return this form to: Susan Payne, NMFS, 301 Research Court, Kodiak, AK 99615 Phone: 481-1719

REPORTING FORMS

REPORTING FORMS

Reporting Forms for In-Season Tracking

Observer trip forms are for data collection. Reporting forms, referred to as logs, are for in-season tracking of observer activities, coverage, and the transportation of biological samples. These logs serve as a real time representation of what is going on in the field. They are processed faster than the trip forms, and are therefore preliminary and unedited. They are not for long-term use and are less accurate than the Trip Forms.

Observers in the field will be responsible for entering the Weekly Activity Log and Trip Report Log. In addition the team lead observers will enter the Debriefing Log and Sample Tracking Logs. These forms will be used in season to report observer coverage, fishing effort, sampling problems, harassment and refusals, and observer suggestions. Observers will enter forms onto field office computers and upload to a webfolder. The observer contractor and NMFS will download the files and use the information to manage and support the program.

It is very important to enter forms in a timely and accurate manner. Forms will be uploaded to the website following the debriefing interview every three to four days. Observers are encouraged to begin entering forms prior to the debriefing, saving them on a disk. Each research vessel and field office will have a laptop or desktop computer.

WEEKLY ACTIVITY LOG

The Weekly Activity Log is used to document conversations, discussions, encounters, and observer activity on the docks or in the field. This does not have to be a detailed report regarding the trip (which is reported on the Trip Report Log), rather, it is for people, places, and times of meetings or other types of engagements. It will be entered into the computer in a MS Word format. Observers will click on the Observer ID and Week Ending Date fields to enter the information. A space is provided to enter each day's date and notes. Use a mouse or the tab key to toggle between fields. Once all information is entered the file must be saved in the following format: WAL + Observer ID + Week Ending Date (**WALXXXmm-dd-yy**)

TRIP REPORT LOG

The Trip Report Log is used to track the observer coverage in real time. It will give the home offices immediate feedback on where the trips have been accomplished, how many hauls were observed, if there were any takes, and where and with whom the trip occurred. The Trip Report Log will be entered into the computer in an Excel format. Observers will use the mouse or the enter key and arrow keys to toggle between fields. The Caps Lock button will be engaged during field entry. Check to ensure all fields are entered properly and completely. Once all information is entered the file must be saved in the following format: TRL + Observer ID + Week Ending Date (**TRLXXXmm-dd-yy**).

DEBRIEFING LOG

The Debriefing Log is used to document what was discussed during a debriefing. It should list the topics discussed, areas that need clarifications, and observer concerns and needs. The Debriefing Log will be entered by the team lead or assistant team lead observer during or following the debriefing interview. The Debriefing Log will be entered into the computer in an MS Word format. A space is provided to enter subject/form and notes. Team lead observers will use the mouse or tab keys to toggle between fields. Once all information is entered the file must be saved in the following format: DL + Observer ID + Week Ending Date (**DLXXXmm-dd-yy**).

SAMPLE TRACKING LOG

The Sample Tracking Log is used to track the transfer of samples from various storage locations. This log should be completed every time a biological sample is shipped or transported to a new location. At any given moment, the program must have an accounting for all the biological samples collected, especially concerning parts from endangered species, marine mammals, and migratory birds (all of which require special permitting). The Sample Tracking Log will be entered by the team lead or assistant team lead observer during or following the debriefing interview. The Sample Tracking Log will be entered in a MS Word format. Lead observers will click on the Tag Number and Date Sampled fields to enter the information. Use a mouse or the tab key to toggle between fields. In the place of signatures, type the name of the person who signed. Once all information is entered the file must be saved in the following format: STL + Observer ID + Week Ending Date (**STLXXXmm-dd-yy**)

The Alaska Marine Mammal Observer Program

TRIP REPORT LOG

Observer Id: _____ Week Ending Date (mm/dd/yy): _____

Trip Id #				
Platform code				
Fishery code				
Region code				
Vessel name				
Vessel #				
Permit #				
Date sailed				
Date landed				
# of sea days				
# of hauls				
# mammal takes				
# bird takes				
Dealer/tender name				
Offloaded location				
Primary spp code				
Primary spp #				
Secondary spp code				
Secondary spp #				
Comments				

The Alaska Marine Mammal Observer Program

SAMPLE TRACKING LOG

Tag Number: _____ **Date Sampled (mmddy):** _____

Species: _____ **Species Code:** _____

Fishery Code: _____ **Trip Id:** _____ **Haul Number:** _____

Sample Type(s): _____

Date In I		Date In II		Date In III	
Sample Location I		Sample Location II		Sample Location III	
Signature		Signature		Signature	

Tag Number: _____ **Date Sampled (mmddy):** _____

Species: _____ **Species Code:** _____

Fishery Code: _____ **Trip Id:** _____ **Haul Number:** _____

Sample Type(s): _____

Date In I		Date In II		Date In III	
Sample Location I		Sample Location II		Sample Location III	
Signature		Signature		Signature	

ADMINISTRATIVE FORMS

The Alaska Marine Mammal Observer Program

STATEMENT OF NON-DISCLOSURE

I have read the NOAA Administrative Order, NAO 216-100, dated July 18, 1994, on Confidentiality of Fisheries Statistics and understand its contents. I have read the Marine Mammal Protection Act (MMPA), Section 118 [16 U.S.C. 1387(d)(8) and 1387(d)(9)] on the confidentiality of data collected by programs monitoring incidental takes during commercial fishing operations, which states:

- 8) Any proprietary information collected under this subsection shall be confidential and shall not be disclosed except -
a. To Federal employees whose duties require access to such information;
b. To state or tribal employees pursuant to an agreement with the Secretary that prevents public disclosure of the identity or business of any person;
c. When required by court order; or
d. In the case of scientific information involving fisheries, to employees of Regional Fishery Management Councils who are responsible for fishery management plan development and monitoring.
9) The Secretary shall prescribe such procedures as may be necessary to preserve such confidentiality, except that the Secretary shall release or make public upon request any such information in aggregate, summary, or other form which does not directly or indirectly disclose the identity or business of any person.

I will not disclose any statistics identified as confidential to any person or persons, except as directed by the Assistant Administrator for Fisheries, or the Assistant Administrator's designee. I am fully aware of the civil and criminal penalties for unauthorized disclosure, misuse, or other violation of the confidentiality of such statistics.

I understand that I am subject to the provisions of Title 18 U.S.C. 1905 and Title 16 U.S.C. 1387, which is the primary Federal criminal statute prohibiting unauthorized disclosure of confidential information. I am also subject to civil penalties under the Trade Secrets Act, and under sections 307 and 308 of the Magnuson-Stevens Act and 50 CFR, parts 620 (Citations) and 621 (Civil Penalties), for data collected under the Magnuson-Stevens Act.

Name Printed Date Signature

- Affiliation:
(Check one)
NOAA/NMFS
Other Federal
State
Council Staff
Contractor
Grantee

The Alaska Marine Mammal Observer Program

DATA ACCESS AGREEMENT

Procedures for protecting National Marine Fisheries Service (NMFS) data confidentiality relating to the Alaska Marine Mammal Observer Program.

To insure the confidentiality of applicable National Marine Fisheries Service (NMFS) data the following procedures will apply to all authorized users.

- Only authorized users will have access to NMFS confidential data or its resultant confidential products.
- Care will be exercised not to leave computers unattended when working with NMFS confidential data.
- Actual confidential data provided by NMFS will be stored under lock and key and segregated from non-NMFS data.
- Only aggregate, summarized, NMFS data will be stored on-line on any time-sharing computer system.
- When the data is stored on multi-user computer systems a separate dedicated account with a unique access code will be used for NMFS data and analyses. Usage of this account is to be limited to the authorized individual.
- On multi-user systems, on-line data will be stored in files or directories to which only the owner has read access. All others including system operators or accounts are to be denied read access.
- On multi-user systems where access to files and directories cannot be restricted due to operating system limitations, specialized encryption software must be used to encrypt the confidential data files. A unique or series of encryption keys should be used for the project.
- On single user systems confidentiality will be maintained by securing the entire machine, either physically or with software that denies unauthorized access. Only the NMFS authorized individual is to be permitted access to the machine.
- If the single user machine is available to non-authorized users, the data confidentiality will be protected by security software which limits access to directories or files by password or performs data encryption. Passwords or encryption keys should be unique to the project.
- Confidential output will be retrieved promptly from output devices.
- Confidential output will be disposed of by shredding.

Alaska Marine Mammal Observer Program

DATA RELEASE FORM FOR COPIES OF TRIPS

- The only individuals who may request and receive copies of data include: the owner(s), or the captain acting as an authorized representative for the owner(s), or a vessel participating in the National Marine Fisheries Service (NMFS) Alaska Marine Mammal Observer Program. No other individuals may be issued any data with this release form.
- Any request for copies of observer forms must be submitted in writing on a form letter (see reverse side) which may be obtained from a NMFS observer, or the address below. Two signatures are required on this letter: that of the individual requesting the data, and that of the individual releasing the data. All letters must then be returned to the following address:
 - Program Coordinator, Alaska Marine Mammal Observer Program
 - National Marine Fisheries Service, Alaska Regional Office
 - Protected Resources Division
 - P.O. Box 21668, Room 461
 - Juneau, Alaska 99802
- Any questions or other requests relating to data release should also be directed to the above address.
- It should be understood that upon release of the requested data, the recipient then becomes responsible for it.
- The individual signing the letter as the “releaser” must issue the information requested on this form.
- Data may not be released upon an oral request, or without first completing and signing the authorized release letter mentioned above.
- Release of data for trips in which more than one vessel participated (i.e. pair trawl trips) may only occur if both vessel owners or captains complete and sign data release letters.
- Any requests for historical data (i.e. data that an observer has already turned in) should be forwarded to the address above.
- All letters should be completed in pen, not pencil.
- Data releases will be processed as quickly as possible however due to hardware limitations, observer travel time, and mail time allow four to six weeks to receive your copies.

SEE FORM ON REVERSE SIDE

DATA RELEASE FORM

(DATE OF REQUEST)

Program Coordinator, The Alaska Marine Mammal Observer Program
National Marine Fisheries Service
Office of Protected Resources
P.O. Box 21668, Room 461
Juneau, Alaska 99802

To whom it may concern,

I, _____, the _____ of the
(PRINT COMPLETE NAME) (OWNER AND/OR CAPTAIN)

F/V _____, permit number _____
(VESSEL NAME) (PERMIT NUMBER)

would like to request and authorize a release of the National Marine Fisheries Service Alaska Marine Mammal Observer data, collected and recorded aboard my vessel or at my site by a NMFS observer, to myself.

The information I request is from the _____ fishery.
(NAME OF FISHERY)

This information was collected on _____ in _____.
(DATE) (FISHING LOCATION)

I am making this request as the owner, or the authorized representative of the owner(s), of the said vessel/permit. I understand that I am responsible for these data upon release. I further understand that the data I receive may be preliminary, and not yet completely reviewed.

ADDRESS TO WHICH REQUESTED
DATA SHOULD BE SENT (if not received directly).

Sincerely,

(SIGNED NAME)

(PRINTED NAME)

OBSERVER/DATA RELEASER

Please check that all of the above information is complete, and correctly and legibly recorded.

Date requested data were copied and issued _____

Signature of data releaser

Printed name of data releaser

The Alaska Marine Mammal Observer Program, National Marine Fisheries Service

SUBSISTENCE REIMBURSEMENT FORM

Please submit the following information to receive reimbursement for food costs associated with hosting an observer. The observer will complete this form and will return it with the trip data for processing. Please be sure the information is legible so the reimbursement can be processed quickly. Thank you for your cooperation with the Alaska Marine Mammal Observer Program.

Date: _____ Trip Id: _____ Permit Number: _____
(today's date, mm/dd/yy)

I, _____, have been deployed aboard the
(observer's name, first and last)

F/V _____ or at fish camp _____
(fishing vessel name) (name of fish camp)

participating in fishery _____
(target species and gear type)

from _____ to _____ for a total of _____ night(s).
(begin date, mm/dd/yy) (end date, mm/dd/yy) (number)

Number of overnights multiplied by \$25 = \$_____.00
(amount due)

Print Captain/Permit holder's name: _____

Captain/Permit holder's signature: _____

Name and address where check should be sent: _____
(First and Last Name, if different from above)

(Street or P.O. Box)

(Town, State)

(Zip Code)

(Phone Number, optional)

(For Office Use)
Paid on:

Section Four

Health and Safety

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Introduction

You have been hired as an experienced field biologist. Observers hired for this project are expected to have had some safety training, worked successfully and commercial fishing boats, and are expected to be aware of the inherent dangers of that working environment. The salmon fisheries operate with smaller boats than other observer programs you may have experienced. There will be in-class and in-field safety training to help prepare you for deployment to the fisheries. You will also be issued safety equipment to use in the field. This manual gives some guidelines, but only introduces safety and survival topics. Seek further information, practices drills, understand equipment, and be well aware of your surroundings at all times.

SAFETY PROTOCOL FOR OBSERVERS

These guidelines must be followed by all observers

- * Observers must not board a commercial set gillnet skiff or other fishing vessel without meeting the AMMOP safety checklist and U.S. Coast Guard safety requirements.
- * Observers may not board fishing tenders or commercial fishing vessels (including skiffs) that do not display a current USCG Commercial Fishing Vessel Safety Examination decal.
- * Observers must wear a Personal Floatation Device (PFD - U.S. Coast Guard Approved, Type I, II, or III) at all times when aboard a skiff. There will be a whistle and personal marker light attached to the PFD.
- * Observers must carry an immersion suit on board all vessels (unless operating in an immersion-suit-exempted area). There will be a personal marker light attached to the immersion suit.
- * Observers will carry an emergency bag on board all vessels. Items in the bag or on their person will include a portable EPIRB, GPS, VHF radio, flashlight, signaling device, and first aid kit.
- * When working in the field, observers should always carry these additional survival essentials: map/chart of area, tide/current tables, pencil and paper, whistle, magnetic compass, emergency supply of food and water, extra clothing and rain gear, nylon rope, sunglasses and sun screen, pocket knife, matches or lighter, candle or fire starter, and emergency blanket or tarp.
- * Observers will be issued the following additional safety equipment, to be used as appropriate: pair of leather gloves, boat cushion, ear plugs, ear muffs, protective eye wear, bear spray, insect repellent, mosquito head net, wilderness survival book, and fire extinguisher.
- * Observers may decline to board a permit holder's skiff or other vessel if he/she feels that it is either not a safe vessel or will not be operated in a safe manner and will note on appropriate form.
- * If a permit holder refuses to carry an observer, citing safety concerns, the observer will note the refusal in the logbook or on the appropriate form.
- * If observers choose to carry a firearm for protection against wild animals, proof of an accredited firearms safety training and proper registration must be available and final approval must be given by the Program Manager, property owner, and Program Coordinator. The firearm must be stored in a locked hard case when not in use. Bullets must be stored in a separate case. Observers may not carry firearms when observing from fishermen's vessels.
- * Observers must never camp alone.

AMMOP SAFETY CHECKLIST FOR OBSERVERS

Observers must not board a skiff or other commercial fishing vessel without meeting these criteria.

The following are **REQUIREMENTS** aboard a skiff or commercial fishing vessel

- ✓ Immersion suit (unless operating in an immersion-suit-exempted fishery/area)
- ✓ Personal marker light
- ✓ Personal flotation device (PFD) (Observer must wear a PFD while on a skiff)
- ✓ Whistle
- ✓ EPIRB (Emergency Position Indicating Radio Beacon)
- ✓ Visual distress signal
- ✓ VHF radio
- ✓ GPS (Geographic Positioning System)
- ✓ Survival kit / First aid kit

The following additional items are **HIGHLY RECOMMENDED**

- ✓ USCG Commercial Fishing Vessel Safety Examination decal (required for observers to board commercial fishing vessels)
- ✓ State registration number or documentation number (USCG requirement)
- ✓ Throwable cushion (USCG skiff requirement. Life Ring Buoy if skiff \geq 26')
- ✓ Fire extinguisher
- ✓ Navigation lights
- ✓ Injury placard
- ✓ Anchor with sufficient line/chain
- ✓ Portable sound producing device (air/mouth horn) (USCG skiff requirement)
- ✓ Oars
- ✓ Spare outboard engine
- ✓ Tide/current tables

U.S. COAST GUARD SAFETY REQUIREMENTS
For State-Registered Commercial Fishing Vessels Inside Three Miles

- **Immersion Suit**** - One CG approved proper size for each person onboard.
- **Personal Marker Light** - Affixed to immersion suit and/or Personal Floatation Device (PFD)
- **Throwable Cushion** - For vessels < 26' one CG approved. For vessels ≥ 26' one ring life buoy (RLB).
- **Visual Distress Signals** - 3 CG approved, day and night visual distress signals or an electric distress light series 46 CFR 161.013 and a day distress flag series 46 CFR 160.072.
- **Fire Extinguishers** -
For vessels < 26' *if explosive gases can't be trapped* as when there are portable fuel tanks and they are uncovered, no fire extinguisher is required.
For vessels < 26' *if explosive gases can be trapped* as when tanks are installed or portable fuel tanks are covered one B-I CG approved portable fire extinguisher is required.

For vessels ≥ 26' one B-I CG approved portable fire extinguisher is required.
- **Navigation Lights** - If vessels operate at any time from sunset to sunrise.
Portable sound producing device (air/mouth horn)
- **Injury Placard** - Posted in highly visible location.
- **State Registration** - Valid original onboard, state numbers displayed on both sides of the bow, minimum 3 inch block style numbers and letters of contrasting color to the vessel's hull with current year dated decal.

Recommended Additional Safety Equipment

- **VHF radio** **
- **Anchor and sufficient line/chain**
- **First aid kit with manual and trained person onboard**
- **Oars**

** *If following an immersion suit exemption, must wear a PFD at all times on the vessel, have a VHF radio, and exemption letter. Check with local USCG for specific area exemptions.*

Small Boat Safety

In this observer program, you will be using fishermen's boats, chartered boats, and boats that belong to the government. If you will be using government owned boats, you will need to know some things about boat handling and maintenance. This is an introduction to those subjects.

Preparing for a safe trip

Before getting in a skiff or boat, consider six critical factors. Have a written check list to go over with your boat mates:

- 1) **Your boat or skiff.** Know what the boat can and cannot do. Sometimes the best decision is to not make that crossing (when in doubt, chicken out!). Think about what could go wrong and what you would do if it did go wrong (for example, a fouled spark plug, debris in the propeller, a dead battery) Have a plan for these events.
- 2) **How many people are aboard?** Are there enough PFDs? USCG approved Personal flotation devices (PFD) are required all times! Some flotation jackets (like Stormy Seas jackets) are not USCG approved PFDs.
- 3) **Where you going?** Make sure you give someone on shore your float plan, and have an agreed series of steps to follow if plans go awry. Know the nearest, best shelter from any point you may be in your travel, and those places should be known by all. If you are stranded, do you have enough gear to stay dry and warm?
- 4) **The environment.** Listen to weather forecasts and know the tides and currents. In most of Alaska, there are no published current tables, and you will rely almost solely on local knowledge. Tides tables are published and you should have a copy (or two). Winds are likely to change quickly without prediction. Get advice from anyone that knows the area, treacherous places, routes, and weather. Make notes and share information with others.
- 5) **Equipment.** Personal survival kits in a small waterproof container can save your life.
- 6) **Dress for the conditions.** Wear synthetics like polypropylene and polar fleece, or wool; which retain heat when wet--essential for cold water boating. Avoid cotton. You will lose body heat quickly to wet cotton. Sitting still for hours can get cold, but standing or moving around may not be safe in a small skiff. You need to dress warmer than the fishers, who are more active while picking nets. For added safety, wear bright colors so you are visible as possible.

Boating procedures

Know these things about the boat:

- How to start, stop and steer the boat.
- How to shut off the fuel supply.
- How to use the anchor.
- Where the fire extinguishers are.
- How to use the EPIRB.
- How to recover on overboard person.
- Where the first aid kit is.

Preventative maintenance (before any trip)

- Fuel: 1/3 to get there, 1/3 to get back, 1/3 to spare. Check the fuel tank, lines, and shutoffs for leaks test them. Secure portable fuel tanks. Give the boat a “smell test” for fuel odors. If you smell fuel—find the problem.
- Battery: secured and in place with no loose connections. Check for corrosion.
- Wiring: The most common cause of breakdowns is electrical problems. See that wiring is secure and in place. Keep electrical connections free of corrosion by using WD40. Test the bilge pump, all gauges, and visually check lights.
- Engine: visual inspection for leaks; check, fuel lines, wiring,, steering, propeller
- Hull: Check for plugs, lighting, scratches and dents, and water under the floor.

Boarding

Before leaving dock, have an undocking plan that you discuss with passengers. You should consider the direction of wind and current and the depth of the water. Do not assume that everyone onboard has the same boating experience that you have. Follow these guidelines:

- Never walk around on a boat without holding on.
- Enter a small boat by stepping into the center.
- Hand equipment into the boat, do not try to carry it aboard as you enter.
- Distribute the load evenly fore and aft and from side to side.
- Check the boat’s capacity plate.
- Don’t overload the boat; it will reduce stability and make capsizing more likely.
- Maintain a proper lookout. A proper lookout can avoid surprises. Assign a person to act as a lookout.

To comply with Federal law, every boat has a capacity plate that displays the maximum weight of persons aboard in pounds, the maximum carrying weight of the boats in pounds, and the maximum horsepower recommended for the boat. They are the limits during normal operating conditions. In rough weather, a lighter load may be needed.

Overloading will cause the boat to be unstable. Balance the load for proper trim. Overloading the side will cause a list. Too much bow weight will make the boat plow, too much in the stern will show by making a large wake. In any case, the boat will be unstable and difficult to handle.

Make sure that your engines have run for a few minutes and that they are warmed up before casting off lines. (Long idle periods are not recommended.) Also, check other items on your pre-departure check list prior to leaving the dock.

With outboard engines, look to see if the cooling system is functioning. Most outboards circulate water through the exhaust system and have an outlet stream above the water line.

While Underway

You have a responsibility to know all you can about any boat used by the program. This applies to riders as well as drivers. Practice maneuvers and plan for emergencies before they happen.

- In a powered vessel, you must give way to non-motorized vessels; vessels that are actively fishing, and vessels with limited maneuverability (tugs and barges).
- If you meet a powered vessel head on, pass port to port if possible. One short blast of a signaling device shows this intent, and the signal should be returned. If not, two short blasts request that you will pass starboard to starboard.
- If vessel meet at right angles, the vessel to the right (stand-on vessel) continues course and speed. The other vessel gives way (give-way vessel), and should take action to pass the stand-on vessel on the stern.
- Navigation lights show green to a vessel on your starboard side, indicating it is the stand-on vessel. You will see the red lights of the port side of the stand-on vessel--give way.
- During restricted visibility, such as fog, a sound signal should be given as one prolonged blast every two minutes. All boats must carry a sound device such as a horn or whistle.
- Have a chart and GPS receiver available so you always know where you are. Plan for changes in wind and weather, and consider the tides and currents. Wind against current will produce standing waves, slowing your progress and giving a rough ride.
- Leeway is when wind or currents push you off course, although your bow is pointing to a specific heading. You can tell if you are experiencing leeway if your wake is off to the side, not directly behind. Compensate by steering into the wind or current.
- Channels are marked with red and green buoys or fixed devices. The rule to remember is "Red, Right, Return"; --red channel markers should be to your starboard when returning from sea.
- Navigation aids are shown on charts. For example, a notation on a chart such as G "9" Fl G 4s describes a buoy (the lettering is in italics) that is green (G), marked "9", that flashes a green light every four seconds (G Fl 4s). NOAA chart number 1 is the legend for nautical charts, and can be obtained for free (also on the internet).

Anchoring

Slowly release anchor while facing into wind (anchor is on bow, never on the stern). Make sure that it is releasing tangle free while allowing vessel to drift downwind with the motor in neutral. When about 1/3 is out, tie it off and allow the anchor to dig in. Release more line to achieve the desired scope (rope 10 times the minimum water depth, chain 5 - 7 times the minimum depth). Raise the outboard so that it doesn't tangle with the anchor line. Check for a dragging anchor.

Docking

Practice docking so that your first time is not under adverse conditions. Have a re-docking checklist. Prepare the lines, fenders, and gear well before reaching the dock, and then approach low angle. Shift to reverse to slow quickly, if necessary.

If a Person Goes Overboard

Whoever first sees or hears someone go overboard should shout “man overboard (port or star-board)”. This person should become the spotter and continually point to the person in the water until the boat is safely alongside. Try not to lose sight of the person overboard.

Turn quickly toward the side the person fell over and stop the boat. Turning toward the person will push the stern and propeller away. Immediately throw a life saving device toward the person so they will have some assistance in keeping afloat. Your type IV throwable flotation device should always be immediately accessible and within reach of the helm.

- Slowly turn the boat and make a gentle turn keeping the person in view.
- Approach the person slowly into the wind or current.
- When the person is alongside turn off the engine.
- Get the victim on board as soon as possible.
- Treat them for hypothermia—assume hypothermia and treat for it.

CPR may be necessary, followed by treatment for hypothermia. Reduce further heat loss, treat the victim gently, and apply heat to the core of the body.

First Rule of Recovery: Do not become a victim yourself! Stay in the boat and reach for the victim (Reach, Throw, Don't Go!) . It will be very difficult to get the victim back in the boat—you may have to signal for help and try to keep the victim as much out of the water as possible while others come to help in the recovery. Don't let the victim pull you in the water—it is recommended that you use line, throwable items, or other implements to decrease the chance that a panicked victim pulls you in. If the victim is between two vessels, keep the vessels apart.

Adjust the weight to keep the boat trimmed and help the person aboard. You may have to pull them over the stern. It may be possible to recover an overboard victim by grabbing their clothing under the arms, bouncing them down into the water (don't submerge the head), then pulling aboard by stepping or leaning back in the boat.

If there two rescuers in the boat, one should grab the wrists of the victim and guide their hands to the boat, then grasp them under the arms and raise their torso to the boat. The other person can then grasp the knee, getting it over the rail and roll the victim into the boat.

Dangers at Setnet Sites and Camps

- Use caution boarding skiffs, which can shift unexpectedly from loading and waves. Stay clear of propellers (even if the engine isn't running).
- Be cautious near lines around nets that lead to anchors or land. Always tie off the boat.
- Keep gear well above the high tide line, and secure it if unattended.
- Be aware of the tides and don't attempt to cross mud flats.



Figure 1. The “HELP” Position

Fishing Vessel Safety

During training, you will learn about safety and survival procedures and practice drills. However, training alone will not be enough. It is up to you to learn as much as you can about the general emergency procedures for all vessels and the procedures particular to your assignment.

Fishing Vessel Safety Requirements

Your assigned vessel may operate beyond the Boundary Line (an imaginary line drawn from points of land), and therefore be subject to equipment regulations that do not apply to the same size vessel and crew within the boundary. These regulations are published in the Code of Federal Regulations (CFR) Title 46, and are available at USCG offices and in your training.

When you board a vessel, the safety regulations mandate that you receive a safety orientation. This may be as simple as showing you around; but may include watching videos, donning immersion suits, or conducting drills.

An important item to check during, or before, the orientation is the **Commercial Fishing Vessel Safety EXAMINATION decal** (fig. 2). The U.S. Coast Guard operates a free vessel inspection program to assure that a vessel's safety equipment meets Coast Guard standards. Though the program is voluntary, Federal regulations mandate that any vessel "required to carry an onboard observer" will "provide proof of compliance with U.S. Coast Guard vessel safety requirements" (See Regulatory Compliance in Section 1). Upon successful completion of the exam, the vessel is issued the decal that certifies the vessel's compliance with Coast Guard requirements. The inspection is valid for two years from the date (month/year) marked.

If you are assigned to a vessel without a decal or one with an expired decal, you are to immediately disembark and inform your employer. Document any conversations with the skipper or crew. This is not an acceptable practice, and leads to bias in the random selection of observed vessels.

It is important to remember that the safety decal is simply an indicator of the vessel's safety at the time of inspection. The person ultimately responsible for your safety is you. Use the checklist on pages 4-4 to 4-5; and for larger boats, the checklist on page 4-11 as a guide to do your own inspection of the vessel. Be aware that only a large boat with more than 16 individuals would be subject to all the regulations. Check these things before you leave port. After departure, you may be seasick; and an emergency is possible at any time.

Setnet skiffs present several challenges to observer safety. Because they are commercial fishing vessels, the Observer Health and Safety regulations, 50 CFR §600.725 and §600.746, apply. The biggest ramification of this requirement is the US Coast Guard Commercial Fishing Vessel Safety Examination. Upon completing a safety examination by the USCG or other certified person, the vessel is issued a decal that is valid for two years. The decal verifies that, at the time of the examination, the vessel has the safety equipment and training to meet the USCG Commercial Fishing Vessel Safety Regulations.

A setnet skiff owner may be reluctant to obtain a safety examination for several reasons, such as 1) There is no one to do the examination in remote areas, 2) The examination is a voluntary program (not required), 3) Required safety equipment of larger vessels are not convenient to have in a skiff, 4) Safety equipment can be expensive and difficult to obtain in remote areas.

Owners and operators of fishing vessels may not be aware that a Safety Examination is required. It is a voluntary program for most boats, but is a requirement for vessels that carry Federal observers (and ADFG observers).

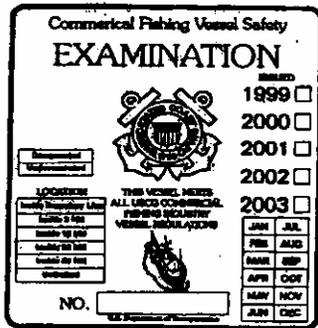


Figure 2. Commercial Fishing Vessel Safety Exam Decal

The USCG, NMFS, and Observer providers (contractors) have been working to make vessel operators aware of these requirements. The Coast Guard has conducted Safety Examinations in the field to help vessels meet requirements. Not having a valid decal, or any of the required safety equipment, is cause for an observer to NOT board a vessel, and will be treated similar to any vessel that refuses to take observers. This is a violation of the MMPA and the Magnuson-Stevens Act, and will be forwarded to the NMFS Alaska Enforcement Division. Document any conversations or events, and do not assume that tickets or fines will be issued—our goal is to randomly place observers on safe vessels, with cooperation of the fleet.

In some areas, exemptions to the commercial fishing vessel safety requirements have been made. For example, setnet skiffs less than 26 feet, operating from Ouzinkie Channel south to Rocky Point (this includes Uganik and Uyak Bays) are not required to have immersion suits if they stay within 1.5 miles of shore and wear PFD's at all times.

Another factor that increases your safety is the knowledge and experience of the vessel's crew. Although it varies, most vessels are operated by safety-minded skippers who realize the extreme danger of their occupation and consider safety in all that they do. They are certainly concerned about the safety of the observer, a guest on their vessel, and strive to minimize the dangers.

Guidelines Aboard Small Commercial Vessels

In this observer program, you will be boarding a variety of small vessels. Always orient yourself when boarding a new vessel.

- Stow gear away and keep the work area free of clutter.
- Gillnets in motion will snag rings, other jewelry, clothes with exposed snaps, buttons, buckles, loose cords or flaps. If you are on a driftboat, don't get near the net or try to remove items while the drum is turning or the gear is setting. Know how to stop the drum.
- Don't sit on the roof or bow where you cannot be seen.
- Don't impede the visibility of the person at the wheel.
- Avoid transferring between vessels as much as possible. Do not transfer in rough weather. ALL parties must believe it is safe to transfer. One person should be in charge a guiding the transfer and the communication between boat operators, crew, and observer should be established and clearly defined before proceeding.

Checklist of Vessel Safety Equipment

- | | | |
|----|---|---|
| 1 | Any fishing vessel | Check for safety inspection documentation. A USCG Commercial Fishing Vessel Safety Examination is required on fishing vessels that carry observers. |
| 2 | Larger vessels | Find the station billet (commonly called the station "bill"), a posted placard describing the role of all hands on board in an emergency. |
| 3 | Vessels > 36 ft | Locate life rafts. Are you assigned to a particular one? Check the service dates and capacity displayed on the canister. |
| 4 | All fishing vessels (some exempt) | Immersion suits/life preservers - where are the survival suits and PFDs located? Are there enough for everyone on board? Are they accessible at all times? Keep yours where you can get to it in a hurry. Your cabin is recommended, but you may have limited space. |
| 5 | Vessel > 26 ft | Life rings. Where are they? Are they accessible? |
| 6 | All vessels | Flares—where are the flares located? Check the expiration dates. |
| 7 | All outside of 3 miles | EPIRBS—Where is the Emergency Position Indicating Radio Beacon? Is there more than one? Read the instructions. |
| 8 | Vessel > 26 ft | Fire extinguishers—where are they? Are they accessible, up to date and charged? |
| 9 | CPR, 1 st Aid if > 3 persons | First aid materials—where are first aid materials kept? Is there a reference book on board? Who in the crew has had first aid and CPR training? |
| 10 | Larger vessels | Radios—where are the radios? Are emergency call instructions posted nearby? Do you know how to operate the radio for an emergency call? |
| 11 | Larger vessels | Are there emergency instructions for, and did you get a safety orientation on:
survival craft embarkation stations/survival craft assignments
fire/emergency/abandon ship signals
immersion suits (survival suit locations and donning instructions)
procedures for making a distress call
procedures for rough weather at sea
procedures for anchoring
procedures for recovering a person overboard
procedures for fighting a fire |
| 12 | Larger Vessels | As you walk through the vessel, make yourself aware of potentially hazardous areas.

Identify the watertight doors, both on the interior and the outside—can they be secured in case of heavy weather or other emergencies?

Are any hatches or passageways blocked or difficult to access?

Ask the skipper what the general alarm sounds like, and if he will test it. |

Emergency Preparation

If there is a problem, follow the instructions of the skipper. As master of the vessel, the skipper is responsible for the safety of all aboard. It is imperative that you are familiar with the safety equipment and emergency procedures of any boat. Required safety equipment **MUST** be present, otherwise you should not be aboard. Emergency procedures may not be clear or established, in which case you need to establish them. Discuss them with the vessel operators. If they don't seem to share your concern about safety—discuss them anyway. You are a guest on their boat, and need to be informed about emergencies. Some salmon fishing vessels (gillnetters) are operated by one person, making your role on safety very prominent.

Some safety regulations apply to certain sizes or classes of vessels. Fishing vessel safety regulations are more complex on vessels with more than 16 persons aboard. In this observer program, it is unlikely that you will be on a fishing vessel of that size. Fishing vessels with three or more persons must have someone aboard that is certified in First Aid and CPR. Because you may be the third person on what is usually a two person vessel, this program requires that you have a current First Aid and CPR certification. Of course, it is a good idea regardless of the safety regulations.

Emergency Procedures

On larger vessels, there may be post placards that describe the procedures for specific emergencies. In addition, drills and instruction must be conducted involving each individual at least once a month. Each person on board who has not participated in the drills and instruction must be given a safety orientation before the vessel is underway.

You should get a safety orientation on any boat that you board, no matter what size. Use the checklist and find the listed required equipment. You should ask about, and take every opportunity to learn or review safety and survival procedures.

Other good sources of information about safety and survival include the Vessel Safety Manual, by the North Pacific Fishing Vessel Owner's Association; or Alaska Sea Grant's Beating the Odds On the North Pacific. They are written for the North Pacific Area, and sometimes found aboard larger vessels. They are good sources of information on many sea safety and survival topics, including some that you will learn in training. Ask to see these books at the North Pacific Fisheries Observer Training Center. "Beating the Odds" and other Sea Grant publications are available for purchase.

Abandon Ship

Never give up your best shelter unless it not as good as your alternative. Boats have been abandoned too soon, costing unnecessary loss of lives. If you do abandon, stay near the boat as long as possible. It is your last reported position, a bigger search target, and it may be possible to re-board if it doesn't sink. Keep the raft tied to the boat and be prepared to cut it (there is a knife in a sleeve by the entrance). Of course, a boat on fire may be a threat to a raft, and you should try stay near using the paddles from the emergency kit. In an immersion suit, hang on to the boat, maybe climb up on the hull if it is overturned. If it sinks, make sure you are safe from any entanglement with the boat. It is a myth that a sinking boat will pull you down in its wake.

Fire

It often takes more than one fire extinguisher to put out a fire. Know where all fire extinguishers are, and get them at the first sign of fire. Be ready to back up another person who is using a fire extinguisher. Aim low and use a sweeping motion. Keep your head low to avoid smoke. Fire extinguishers have several classes. An ABC fire extinguisher is appropriate for most fires. Resist the urge to abandon ship in a fire. Get out the immersion suits and raft, stay upwind and out of the smoke if possible, and be prepared to abandon.

Flooding

Your role in a flooding emergency is probably limited to standing by, with an immersion suit. Consider that anything that can at least slow down, if not stop, water from coming in, it will be to your advantage. The USCG can deliver pumps by aircraft to vessels in trouble.

Grounding

Mistakes are made, and grounding doesn't usually result in injuries or fatalities. Injuries can occur due to a sudden, unexpected stop. Before you pull off the obstruction, check for hull and propeller damage. If on bottom, check the tides—you may get lucky and float off. Stay in shallow water until you are confident in the boat's integrity.

Emergency Equipment

Personal Floatation Devices

A common element of the majority of boating fatalities is the lack of a Personal Floatation Device (PFD). They are designed to provide flotation and keep your head and neck high out of the water, reducing the exposure of heat loss areas to water. A USCG approved type I, II, III, or V PFD is required for all aboard, and is required of observers in any skiff or during transfers. A type V PFD meets the requirement only if worn. A Type IV is a throwable flotation device. Look for the USCG certification on your PFD. Some PFDs, such as Stormy Seas brand inflatables, are not USCG approved. There are several brands of inflatable PFDs available that are USCG approved. You will be provided with a Type III vest while you are deployed.

Immersion suits

An immersion suit is a shelter and PFD that is required by the safety regulations for everyone aboard a vessel that operates in cold water. There are different brands and styles, but most are made of neoprene rubber. Most are a universal size, other sizes are available; and sizes vary among brands. You will be provided by the program for assignments where they are required. You can take one where they are not required if you choose to. Be sure that you can find your suit and put on the suit in less than a minute, even in the dark. They should be stored in an easily accessible place that you can get to in the dark. The suits should have a working zipper (add some wax to lubricate) and a signal device such as a strobe light attached. You may also consider attaching an EPIRB and a whistle.

Donning an Immersion Suit



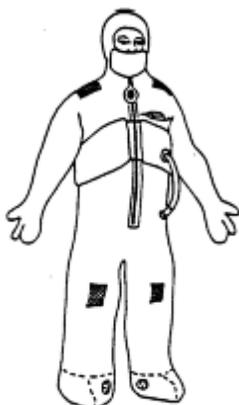
Sit on deck and work your legs into the suit. You may have to remove your boots to do so, but plastic bags over them may help your legs slide in easier.

Place your weaker arm in first, then pull the hood over your head (or hood first, then weaker arm). If you have long hair, make sure that it is safely tucked in the hood. Then place your stronger arm in the sleeve.

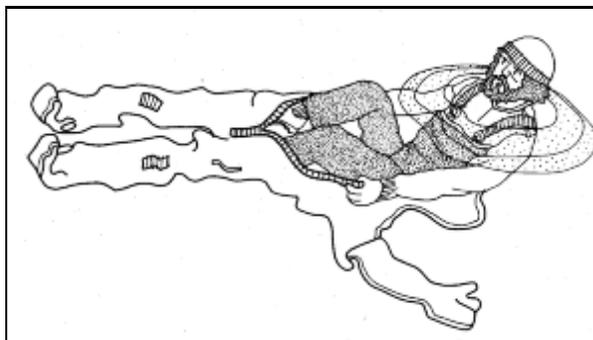


Holding the zipper below the slide with one hand, lean back to straighten the zipper and pull the lanyard with the other hand. Secure the face flap. Do not inflate the air bladder until you are in the water.

Jumping in the water is the last resort. Ease yourself into the water if possible. If jumping, protect your head and keep your feet together to protect from floating debris.



If you are already in the water, it is much more difficult to put on an immersion suit. In cold water, it may not be possible to get in the suit before hypothermia sets in. The general technique is to lay on or straddle the suit, then move quickly to get both legs in at once, with the feet all the way to the bottom. Once the legs are in, arms and head will be a little easier. Loss of body heat will quickly make your hands non-functional, and you will be mentally slow and disoriented. You should use the "HELP" position if there is any chance of being rescued quickly and avoid the increased risk of hypothermia.



Life Rafts

Any vessel that operates off shore will have enough life raft capacity for all aboard. Many salmon fishing vessels are not required to have them. If present, life rafts are stored in canisters that allow them to float free and automatically inflate if the vessel sinks. It is much better to manually launch and inflate the raft if there is time. Know where the rafts are stored, how to remove them from the cradle, where to launch them, and how to inflate them.

Pay special attention to the hydrostatic releases that are often used to secure the life raft canister to the cradle. They are not required if the raft is not attached to the cradle and it can float free. You should determine how to release the canister manually, and if the hydrostatic release is correctly mounted. It should be dated, and not expired.

The release should let the canister free.

The painter line (goes in the canister and is attached to the inflation trigger) should stay attached to the boat by a weak link.

The weak link is a low breaking strength material, such as cord or soft metal, that would break and prevent the sinking boat from pulling the raft under.

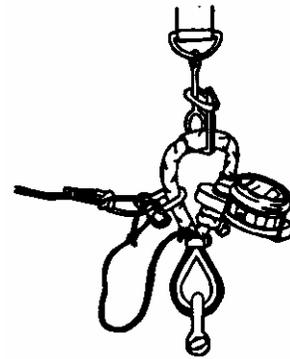


Figure 3. Hydrostatic Release

If the function of the hydrostatic release and raft is not clear to you, ask for guidance. You may be doing everyone a favor by finding a dangerous mistake

EPIRBs

Emergency Position Indicating Radio Beacon: The vessel will have at least one EPIRB mounted in a float-free bracket that will be automatically activated in case of sinking. The signal is received by satellite, and in 406 MHz models, will identify the sender. It is important to know where the EPIRB is mounted and how to activate it manually. In case of an abandon ship emergency it is an item you want to take with you. Someone will be assigned that duty on the station bill. Be sure to locate the EPIRB(S) on your vessel and read the directions on how to activate them. An EPIRB should be tested, and the test logged, on a monthly basis.

The Seven Steps to Survival

The US Coast Guard assembled the Seven Steps to Survival from personal accounts of those who survived emergencies. Committing the seven steps to survival to memory should be one of your goals in learning how to survive the marine environment.

Recognition

This step should be taken the moment you board a vessel--an inherently dangerous environment. Become familiar with normal operations on a vessel, and then reassess anytime the situation changes. In the event of an emergency, you must quickly recognize the seriousness of the situation and that your life is in danger. Hesitation or denial may cost your life, especially in the harsh environment of Alaska. When the situation changes (boarding a raft or reaching shore, for example), the "Seven Steps" begin again with recognition of new dangers and things that may help protect you against them.

In shore survival, recognition of the dangers you face is an important first step. You need to prepare for the unexpected, and the worst case scenario. Although you are probably better off on land, being on land adds another set of dangers to consider. Water is still your enemy and will cause hypothermia. Rain, fog, and waves can contribute to how wet you are, and prolong your exposure by impeding your rescue. Wind, tides, and animals are some of the possible immediate threats that you should consider.

Inventory

Stop and assess the situation. Decide what will help you and what will hurt you. Inventory equipment, weather, your skills, injuries, and your mental condition. Doing so will help you to make good decisions that will help you survive. Inventory should be reassessed each time you recognize a change of situation.

On shore, inventory injuries and the health of all individuals. Inventory what is available in the area. Everything you have is important. What may have been trash before is now a possible contributor to your survival. Something as simple as a piece of plastic may make the difference to save lives! The Inventory step builds confidence by showing that you have the means and desire to survive. Find out where you are, consider where to make effective signals (a high rocky outcrop, a wide beach, on top of a hill) and collect anything that may be useful for shelters and signals. Look along the shoreline for man-made debris and inventory what kinds of natural items are present. Never let anyone travel alone--you cannot risk additional victims, and two persons are much less likely to encounter tragedy than one.

Survival kits: A personal survival kit can take up very little space in an immersion suit while greatly enhancing your ability to survive. The items to include in your kit should enhance your ability to address the issues of shelter, signals, fire and personal medical needs. Items such as a knife, dental floss (a strong multi-purpose line), plastic garbage bags, matches, signal mirrors, a compass, small flares, or a space blanket are small items that fit in a zip-lock bag and could save your life.

Comfort Kit: A comfort kit contains a more extensive inventory than a personal survival kit. The items in it should more broadly cover issues raised in the Seven Steps to Survival such as emergency water and food supplies, a first aid kit or a radio. Vessels may have an emergency bag stored and a person named in the station bill to bring it.

Shelter

Your biggest enemy in Alaska is the cold. Your primary shelter is your clothing. Secondary shelter is anything that further protects you against the loss of your body heat such as an immersion suit, a raft, or an overturned vessel. Water can take heat away from your body much quicker than air, so shelter also helps you keep as dry as possible. High heat areas, including the head and neck, need to be protected most.

In clothing, the air spaces between cloth fibers provide insulation. When cotton cloth absorbs water, it is held in the interstitial spaces between the fibers, rendering it useless as insulation. Therefore cotton, although very comfortable, offers little protection in a damp environment. In contrast, when wool or polyfiber clothes absorb water, the fibers hold the water. This leaves the interstitial spaces, which provide the clothing's insulation, intact. Consider wearing clothes made of wool, polar fleece, or polypropylene. Wool pants and sweaters that cost about \$5 in a thrift store could make the difference between life and death. If they are too warm to wear for work, keep them with your immersion suit. Polar fleece, polypropylene, and similar synthetics cost more, but dry quickly and are well suited for many outdoor pursuits beyond your work as an observer.

On shore, shelter is your first priority. You need to start building shelter as soon as you reach shore (maybe some crude signals can be made first). The shelter needs to be small to be warm, as watertight as possible, and close to your signals so that you can tend them. It is usually best to try and take advantage of naturally occurring items, such as downed logs, rocks, or cliffs. These offer some protection from wind and weather immediately, and have some inherent strength to build upon. Cut green evergreen boughs can provide you with insulation from the ground as padding, and can be piled enough to make effective rain shelter by leaning against objects. Look for water runoff patterns and avoid depressions that may collect water. You may never be totally dry, but you will be warmer and drier than outside! Look around the shore and beach for manmade materials that may improve your shelter, your signals, or to collect water.

Signals

Anything that attracts attention and conveys a message is a signal. Radios, EPIRBS, and flares are signals carried by vessels.

Radios: The emergency frequencies are Channel 16 on VHF radios and 2182 kHz or 4125 kHz on single side band radios (SSB). VHF radios are short range and SSB radios are for long range communications. Near the radios, there will be a placard posted that describes MAYDAY calls. Be familiar with what constitutes a proper MAYDAY call. Vessels are required to monitor the emergency frequencies at all times. If you hear a MAYDAY call on the radio, listen carefully and take notes. Inform the person on watch and be ready to respond to the call if the Coast Guard does not. (Information about radio use is in the Appendix)

Flares: The vessel will have flares and/or smoke signals stored in the liferaft and other locations on the vessel (most likely the wheelhouse). Each type, either hand held, rocket, smoke flares, etc. will have instructions for use printed on its canister. If you see a flare launched at sea, inform the person on watch immediately.

Other Signals: Anything that makes you bigger or brighter is a signal. Immersion suits have lights attached. You may have a signal mirror in your personal survival kit. If abandoning ship, anything that can be tossed overboard may help an aircraft spot your position.

In a shore survival situation, three of anything (fires, buoys, immersions suits on the beach) is an internationally recognized distress signal to show distress. Three fires, three piles of trash, or three immersion suits laid out are some examples of effective signal—they need to be seen, and they need to convey a message. If you make an “SOS” on the beach, use a large (16:1) ratio of the letter height to width so that it can be read from low angles by aircraft. Gathering man-made debris, especially brightly colored plastics, make your search target bigger and brighter for a party that is searching for you. If passing boats or planes see piles of debris, three fires, or overturned boat on the beach hopefully they will recognize that this is out of the ordinary and investigate.

Fire starting is an art they may be critical to your survival. Waterproof matches and disposable lighters should be in everyone’s personal survival kit. A 9 volt battery and steel wool makes a hot fire starter. Steel scraped on magnesium strips makes sparks, and several types of fire starters are commercially available. In high rainfall areas look for standing dead wood as opposed to downed wood that may not burn well. Dry driftwood usually burns well. Practice making fires when you have spare time and know the local items that easily burn. Try rubbing sticks and making fires with sparks—an interesting contest when it is for play, and a skill that could save you life!

Water

It is recommended that humans drink two liters of water per day to stay healthy. You can live without water for only a few days, and will suffer dehydration from the onset of any abandon ship emergency. Life rafts have limited rations of water, but it is advised to gather as much as possible before abandoning ship, if time permits. Have a strategy for gathering extra water in an emergency. Never drink seawater or urine. Water from most surface sources in Alaska are reasonably safe to drink. It is always best to treat water for Giardia, the most common problem in Alaska, if possible. Boil, or have water purification tablets or gear in your personal survival kit. A one minute boil will kill Giardia cysts, 20 minutes will kill viruses and bacteria. Rainwater is always safe. Devise means of collecting it and be prepared—in Alaska, it will likely rain soon!

Food

A person can go without food much longer than without water. Never eat food without water-- your body will rob itself of water to digest food. Life rafts are supplied with limited food rations. In a shore survival situation, many types of edibles can be found near shore. Almost any animals or leafy green plants in the inter-tidal zone are edible (*Desmarestia ligulata* is brown and not recommended). Learn some of the edibles in your areas. Avoid mussels or clams, they may cause paralytic shellfish poisoning; and snails may contain toxins as a natural defense mechanism. You should familiarize yourself with edible wild foods in the area that you will be working. Almost any type of berry (salmonberry, blueberry), chickweed, goosetongue, beach asparagus, and seaweeds (ribbon, brown, fucus, bull kelp) are edible plants you should learn to identify. A good source of information is Surviving on the Foods and Water from Alaska’s Southern Shores, by Dolly Garcia, UAF Marine Advisory Bulletin 38.

Play

Studies have shown that mental attitude makes a positive difference in a survival situation. Play is anything that keeps you occupied and prevents your mind from dwelling on the difficulties you are facing. Play could be reading, telling jokes or stories, completing a task, improving your shelter and signals, finding food and water--anything that keeps your mind active and focused on life. The will to survive has been shown to be a major contributor to surviving incredible circumstances.

Personal Health and Safety

Fatigue

The potential for fatigue is high in this job. You will be sitting for long hours watching nets, and be fairly inactive. Warm, sunny weather while rocking and back and forth will make you sleepy. This is certainly an issue about getting your job done, but is also a safety issue. Both you and the crew may be tired and more careless, less attentive, and a liability to themselves and others.

“Boater’s hypnosis” is the fatigue from exposure to noise, vibration, sun, glared, wind, and motion that occurs while on the water.

Another factor is sleep loss. Most people have reduced alertness and stamina between 2 a.m. and 6 a.m., the time in which they are usually sleeping. Disruptions in your sleep cycle have a large effect on your mood. We become more irritable, depressed, and unable to concentrate and make decisions. These effects tend to be more sporadic than continuous. Reaction times are also slowed-- a dangerous thing around moving gear and boats.

The best solution is to sleep. Five to twelve hours of uninterrupted sleep will recover most people from sleep deprivation. Rest up before an extended work period. Have your gear and supplies prepared well in advance so you have the last 12 hours free to rest and sleep. Naps can be beneficial (especially during what is usually your sleep time). Eat well, and include food high in protein, carbohydrates, and fat. Avoid foods high with high sugar content which cause a quick rise in blood sugar, then a rapid fall that makes you feel tired.

To increase productivity:

- Exercise to increase circulation and and your oxygen supply.
- Listen to music (but do not compromise your safety by drowning out sounds)
- Splash cold water in your face, chew gum, drink soda, stand, change your position
- Drink plenty of water and eat well.

Sea sickness

You need to have some seasickness medication. You will be on smaller boats than you may have experienced in other observer programs, and there will limited opportunities to buy medications. A small investment in over-the-counter motion sickness is well worth the expense. But types that do not cause drowsiness. Dramamine II and Bonine are two of many brands available.

Animal Safety

Wildlife interactions can be dangerous:

- Do not approach or feed wildlife (as a biologist, you should be aware of this already)
- Do not leave soap, food, toothpaste or other goodies in tents or campsites. Stow these items appropriately--away from where you sleep

The Essentials for Traveling in Bear Country

(Source: ADFG website)

Bear Behavior

One of the things that makes Alaska so special is that all three species of North American bears flourish here. There is a chance that you may be lucky enough to see a bear. But even if you don't, you will never be far from one, because Alaska is bear country. Brown/grizzly bears are found from the islands of southeastern Alaska to the arctic. Black bears inhabit most of Alaska's forests. Polar bears frequent the pack ice and tundra of extreme northern and western Alaska.

Bears are curious, intelligent and potentially dangerous animals, but undue fear of bears can endanger both bears and people. Many bears are killed each year by people who are afraid of them. Respecting bears and learning proper behavior in their territory will help so that if you encounter a bear, neither of you will suffer needlessly from the experience.

Most bears tend to avoid people. In most cases, if you give a bear the opportunity to do the right thing, it will. Many bears live in Alaska and many people enjoy the outdoors, but surprisingly few people even see bears. Only a tiny percentage of those few are ever threatened by a bear. A study by the state epidemiologist showed that during the first 85 years of this century, only 20 people died in bear attacks in Alaska. In the 10 years 1975-85, 19 people in Alaska were killed by dogs.

Most people who see a bear in the wild consider it the highlight of their trip. The presence of these majestic creatures is a reminder of how privileged we are to share some of the country's dwindling wilderness.

Bears and People

Bears Don't Like Surprises! If you are hiking through bear country, make your presence known — especially where the terrain or vegetation makes it hard to see. Make noise, sing, talk loudly or tie a bell to your pack. If possible, travel with a group. Groups are noisier and easier for bears to detect. Avoid thick brush. If you can't, try to walk with the wind at your back so your scent will warn bears of your presence. Contrary to popular belief, bears can see almost as well as people, but trust their noses much more than their eyes or ears. Always let bears know you are there.

Bears, like humans, use trails and roads. Don't set up camp close to a trail they might use. Detour around areas where you see or smell carcasses of fish or animals, or see scavengers congregated. A bear's food may be there and if the bear is nearby, it may defend the cache aggressively.

Don't Crowd Bears! Give bears plenty of room. Some bears are more tolerant than others, but every bear has a personal "space" — the distance within which a bear feels threatened. If you stray within

that zone, a bear may react aggressively. When photographing bears, use long lenses; getting close for a great shot could put you inside the danger zone.

Bears Are Always Looking for Something to Eat!

Bears have only about six months to build up fat reserves for their long winter hibernation. Don't let them learn human food or garbage is an easy meal. It is both foolish and illegal to feed bears, either on purpose or by leaving food or garbage that attracts them.

Cook away from your tent. Store all food away from your campsite. Hang food out of reach of bears if possible. If no trees are available, store your food in airtight or specially designed bear-proof containers. Remember, pets and their food may also attract bears.

Keep a clean camp. Wash your dishes. Avoid smelly food like bacon and smoked fish. Keep food smells off your clothing. Burn garbage completely in a hot fire and pack out the remains. Food and garbage are equally attractive to a bear so treat them with equal care. Burying garbage is a waste of time. Bears have keen noses and are great diggers.

If a bear approaches while you are fishing, stop fishing. If you have a fish on your line, don't let it splash. If that's not possible, cut your line. If a bear learns it can obtain fish just by approaching fishermen, it will return for more.

Close Encounters: What to do

If you see a bear, avoid it if you can. Give the bear every opportunity to avoid you. If you do encounter a bear at close distance, remain calm. Attacks are rare. Chances are, you are not in danger. Most bears are interested only in protecting food, cubs, or their "personal space." Once the threat is removed, they will move on. Remember the following:

Identify Yourself

Let the bear know you are human. Talk to the bear in a normal voice. Wave your arms. Help the bear recognize you. If a bear cannot tell what you are, it may come closer or stand on its hind legs to get a better look or smell. A standing bear is usually curious, not threatening. You may try to back away slowly diagonally, but if the bear follows, stop and hold your ground.

Don't Run

You can't outrun a bear. They have been clocked at speeds up to 35 mph, and like dogs, they will chase fleeing animals. Bears often make bluff charges, sometimes to within 10 feet of their adversary, without making contact. Continue waving your arms and talking to the bear. If the bear gets too close, raise your voice and be more aggressive. Bang pots and pans. Use noisemakers. Never imitate bear sounds or make a high-pitched squeal.

If Attacked

If a bear actually makes contact, surrender! Fall to the ground and play dead. Lie flat on your stomach, or curl up in a ball with your hands behind your neck. Typically, a bear will break off its attack once it feels the threat has been eliminated. Remain motionless for as long as possible. If you move, and the bear sees or hears you, it may return and renew its attack. In rare instances, particularly with black bears, an attacking bear may perceive a person as food. If the bear contin-

ues biting you long after you assume a defensive posture, it likely is a predatory attack. Fight back vigorously.

Protection

Firearms should never be used as an alternative to common-sense approaches to bear encounters. If you are inexperienced with a firearm in emergency situations, you are more likely to be injured by a gun than a bear. It is illegal to carry firearms in some of Alaska's national parks, so check before you go.

A .300-Magnum rifle or a 12-gauge shotgun with rifled slugs are appropriate weapons if you have to shoot a bear. Heavy handguns such as a .44-Magnum may be inadequate in emergency situations, especially in untrained hands.

State law allows a bear to be shot in self-defense if you did not provoke the attack and if there is no alternative. But the hide and skull must be salvaged and turned over to the authorities.

Defensive aerosol sprays which contain capsicum (red pepper extract) have been used with some success for protection against bears. These sprays may be effective at a range of 6-8 yards. If discharged upwind or in a vehicle, they can disable the user. Take appropriate precautions. If you carry a spray can, keep it handy and know how to use it.

In Summary

- Avoid surprising bears at close distance; look for signs of bears and make plenty of noise.
- Avoid crowding bears; respect their "personal space."
- Avoid attracting bears through improper handling of food or garbage.
- Plan ahead, stay calm, identify yourself, don't run.

In most cases, bears are not a threat, but they do deserve your respect and attention. When traveling in bear country, keep alert and enjoy the opportunity to see these magnificent animals in their natural habitat.

Fish

Be careful handling fish. Fish slime has a high bacterial content. Any open wounds or punctures need to be washed and treated with antiseptic to reduce the possibility of "fish poisoning". If a wound becomes infected, you may need antibiotics.

Gloves, raingear, and boots will protect from most of the spines, teeth, or stingers you encounter. Goggles and shields may be necessary to avoid contact with jellyfish—especially when nets are power-washed. Vinegar or other weak acids can reduce the discomfort of jellyfish stings.

Marine Mammals and Birds

Live marine mammals and birds should be handled as little as possible for your protection and theirs. Stressed, injured, or sick animals can be dangerous. Regardless of their condition, heavier gloves and protective gear may be necessary before handling animals. Diseases can be transferred to you from other warm-blooded animals. Using knives to collect samples adds to the danger.

Weather

You should be provided with supplementary materials about weather that you can carry with you to help in your weather observations and predictions. Seek out information about local weather patterns and predictions from the National Weather Service and the local people. Here are a few general definitions and guidelines:

- Radiation fog occurs in clear, calm weather; and is formed by heat radiating off the earth's surface. The air cools and condenses as it rises. The fog clears at low elevations first, but is slow to clear over water.
- Advection fog occurs when warmer air moves over cooler surfaces. It is common in coastal areas, and is the most common type of fog at sea. It is slow to clear, and usually does so by a change in wind direction or increase in speed.
- In the Northern hemisphere, air circulates counter-clockwise around a low pressure system, clockwise around a high pressure. Weather systems usually approach from the west; and local geography, such as mountains or bodies of water, affect its progress. A strong high pressure can often fend off low pressure systems by diverting them or stalling them until they lose their strength.
- Falling barometric pressure indicates worsening conditions. Rising pressure indicates that the worst weather is over. Barometric pressure affects tides--a high pressure lowers tide predictions, low pressure causes higher tides than predicted.
- Clouds that are becoming lower and thicker may indicate worsening weather. If cloud bases are rising in mountains, fair weather will generally continue. High, thin clouds are an early sign of approaching poor weather.
- In coastal areas, onshore (towards shore) breezes often occur in the morning, switching to offshore in the afternoon. In mountainous areas, these down-slope, offshore breezes can cause localized high winds (sometimes called williwaws); and can be magnified by glaciers, valleys, and steep slopes. Be prepared for wind conditions to change quickly in Alaska's steep coastlines.
- VHF radios have several weather channels. Listen to forecasts two or three times and be familiar with the geographic references. Have a map or chart to refer to as you hear the forecast and make notes--your memory can make mistakes, and your VHF radio might not work next time!
- Larger vessels receive weather faxes from the National Weather Service. If you have access to larger vessels, ask to see the latest forecast and synopsis.

Safety Summary

Ultimately, you are responsible for your own safety. Take the time to learn as much as you can, and consider what your actions will be in emergencies. This manual and your training serves only as an introduction to observer safety. Your life is worth far more than any data you could collect in the fishery. Here are some steps you should take:

- 1) Pay close attention to safety related materials presented and made available to you by the OTC, NMFS, ADF&G, and your contractor.
- 2) Take the recommended clothing and safety equipment specified by OTC, NMFS, ADF&G, and your contractor.
- 3) Before you leave port, find your vessel's safety and survival equipment and learn their procedures whether you are shown them or not.
- 4) Participate in any drills conducted by the vessel and discuss the safety procedures with crew.
- 5) Read materials and watch safety related videos that are available on the vessel.
- 6) Learn about your environment. Study charts and know how to navigate the area. Know the place names, tide effects, radio contacts, and listen to advice. Practice emergency procedures that work in each aspect of your daily travels—on shore, in skiffs, on larger vessels, and in airplanes.

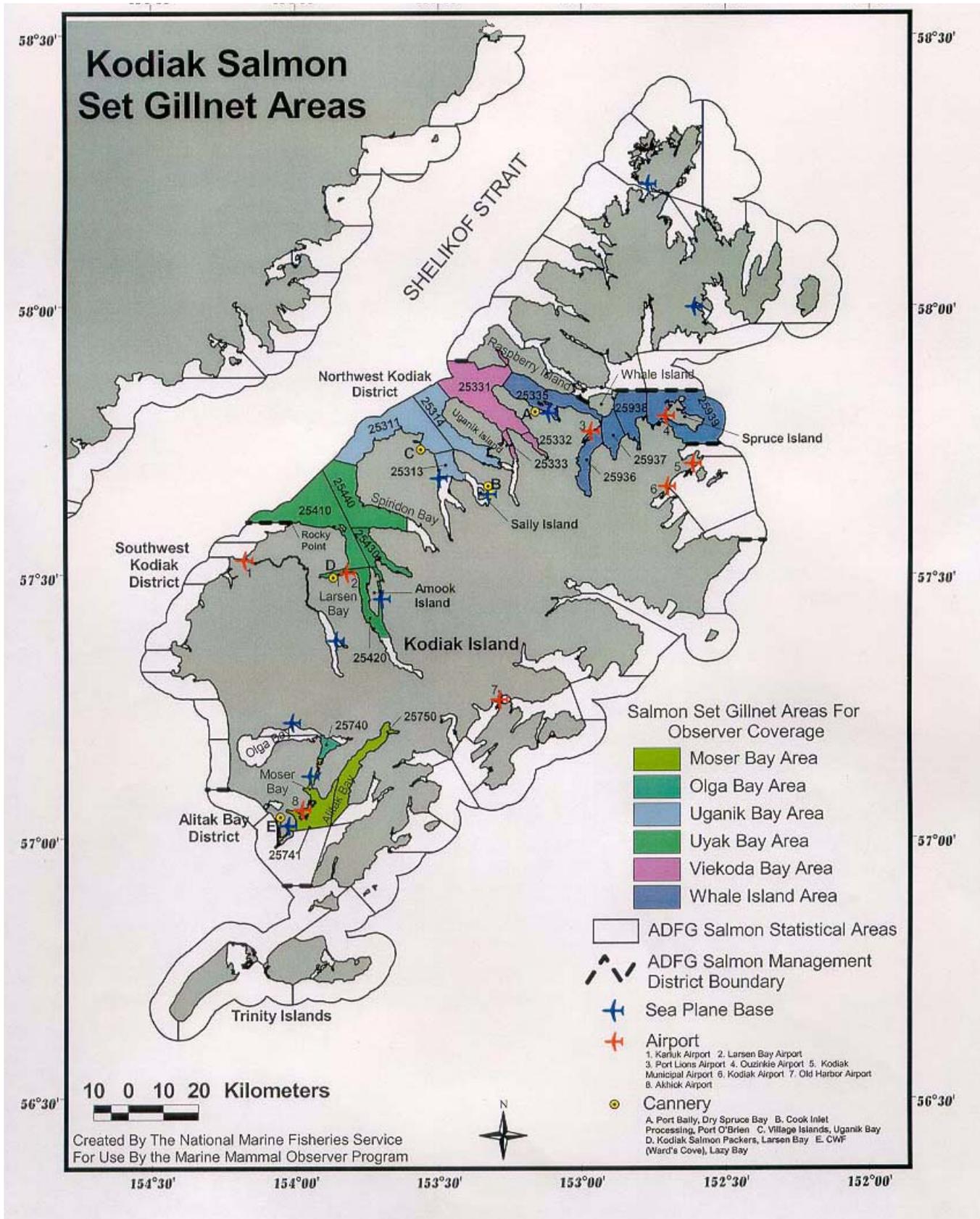
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Appendix 1: Fishery Name Codes

CODE	FISHERY NAME
1	Bristol Bay salmon drift gillnet
2	Bristol Bay salmon set gillnet
3	Cook Inlet salmon drift gillnet
4	Cook Inlet salmon set gillnet
5	Kodiak salmon set gillnet
6	Metlakatla/Annette Island salmon drift gillnet
7	Peninsula/Aleutian Islands salmon drift gillnet
8	Peninsula/Aleutian Islands salmon set gillnet
9	Prince William Sound salmon drift gillnet
10	Southeast salmon drift gillnet
11	Yakutat salmon set gillnet
12	Southeast salmon purse seine

Appendix 2. Geographical Region and Statistical Area Code Map



APPENDIX 3. DEALER'S NAME CODES

CODE	PROCESSOR NAME
F05343	Alaska Fresh Seafoods
F05342	Alaska Pacific Seafoods
F05321	Cook Inlet Processing
F07100	Global Seafoods
F05631	Island Seafoods
F07091	Kodiak Seafood Processing
F05535	Kodiak Smoking and Processing
F05370	Ocean Beauty Seafoods (King Crab)
F05367	Trident Seafoods
F05392	True World Foods
F05348	Wards Cove Packing
F05347	Western Alaska Fisheries

Appendix 4. Anchor Type Codes and Diagrams



1. Standard Danforth anchor



2. Kedge anchor



3. Manta anchor



4. Bruce anchor



5. Claw anchor



6. Grapnel anchor



7. Mushroom anchor

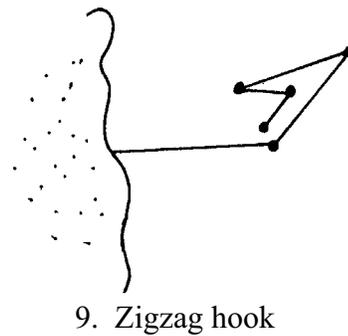
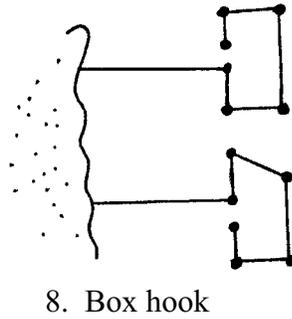
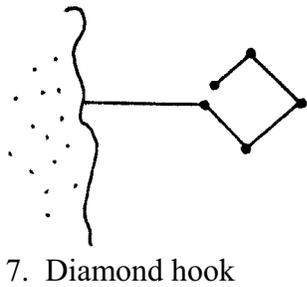
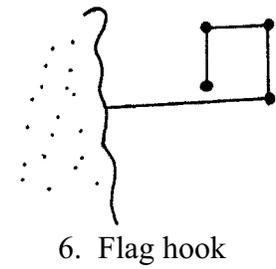
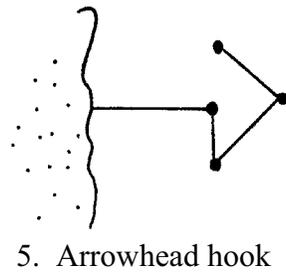
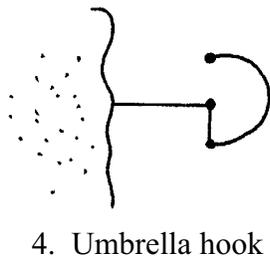
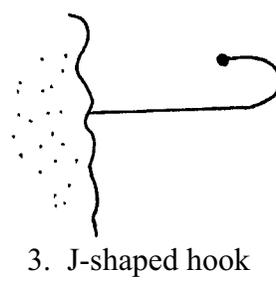
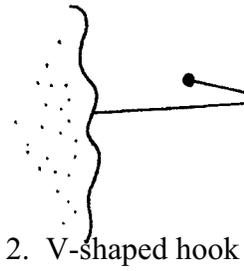
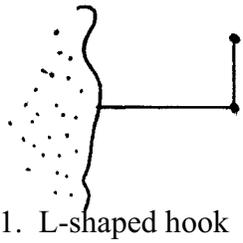


8. Quick set anchor



9. Screw anchor

Appendix 5. Hook Shape Diagrams



Appendix 6. Species Codes (Revised 8/1/02)

CODE	COMMON NAME	SCIENTIFIC NAME
1000	BEAKED WHALE, BAIRD'S (BOTTLENOSE)	BERARDIUS BAIRDII
1001	BEAKED WHALE, CUVIER'S (GOOSEBEAK)	ZIPHIUS CAVIROSTRIS
1002	BEAKED WHALE, UNIDENTIFIED	
1003	BEAKED WHALE, STEJNEGER'S (BERING SEA)	MESOPLODON STEJNEGERI
1004	BEAR, POLAR	URSUS MARITIMUS
1005	DOLPHIN, BOTTLENOSE	TURSIOPS TRUNCATUS
1006	DOLPHIN, NORTHERN RIGHT WHALE	LISSODELPHIS BOREALIS
1007	DOLPHIN, PACIFIC WHITE-SIDED	LAGENORHYNCHUS OBLIQUIDENS
1008	FUR SEAL, NORTHERN (PRIBILOF)	
1009	OTTER, RIVER	LONTRA CANADENSIS
1010	OTTER, SEA	
1011	PORPOISE, DALL'S	
1012	PORPOISE, HARBOR	PHOCOENA PHOCOENA
1013	PORPOISE/DOLPHIN, UNIDENTIFIED	
1014	SEA LION, CALIFORNIA	ZALOPHUS CALIFORNIANUS
1015	SEA LION, STELLER (NORTHERN)	
1016	SEA LION/ FUR SEAL, UNIDENTIFIED	
1017	SEAL, BEARDED	ERIGNATHUS BARBATUS
1018	SEAL, HARBOR	PHOCA VITULINA
1019	SEAL, UNIDENTIFIED	
1020	SEAL, NORTHERN ELEPHANT	MIROUNGA ANGUSTIROSTRIS
1021	SEAL, RIBBON	PHOCA FASCIATA
1022	SEAL, RINGED	PHOCA HISPIDA
1023	SEAL, SPOTTED	PHOCA LARGA
1024	SEAL/ SEA LION/ WALRUS, UNIDENTIFIED	
1025	WALRUS, PACIFIC	
1026	WHALE, BALEEN UNIDENTIFIED	
1027	WHALE, BELUGA	DELPHINAPTERUS LEUCAS
1028	WHALE, BLUE	BALAENOPTERA MUSCULUS
1029	WHALE, BOWHEAD	BALAENA MYSTICETUS
1030	WHALE, FIN (FINBACK)	BALAENOPTERA PHYSALUS
1031	WHALE, GRAY	ESCHRICHTIUS ROBUSTUS
1032	WHALE, HUMPBACK	MEGAPTERA NOVAEANGLIAE
1033	WHALE, KILLER (ORCA)	ORCINUS ORCA
1034	WHALE, MINKE	BALAENOPETERA ACUTOROSTRATA
1035	WHALE, UNIDENTIFIED	
1036	WHALE, NORTHERN RIGHT	EUBALAENA GLACIALIS

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CODE	COMMON NAME	SCIENTIFIC NAME
1037	WHALE, SEI	BALAENOPTERA BOREALIS
1040	WHALE, SEI/ FIN UNIDENTIFIED	
1038	WHALE, SPERM	PHYSETER CATODON
1039	WHALE, TOOTHED UNIDENTIFIED	
BIRDS		
2001	ALBATROSS, LAYSAN	PHOEBASTRIA IMMUTABILIS
2002	ALBATROSS, BLACK-FOOTED	DIOMEDEA NIGRIPES
2000	ALBATROSS, UNIDENTIFIED	
2003	ALBATROSS, SHORT-TAILED	PHOEBASTRIA ALBATRUS
2004	ALCID, UNIDENTIFIED	
2005	AUKLET, CASSIN'S	PTYCHORAMPUS ALEUTICUS
2006	AUKLET, CRESTED	AETHIA CRISTATELLA
2007	AUKLET, LEAST	AETHIA PUSILLA
2084	AUKLET, UNIDENTIFIED	
2008	AUKLET, PARAKEET	AETHIA PSITTACULA
2009	AUKLET, RHINOCEROUS	CERORHINCA MONOCERATA
2010	AUKLET, WHISKERED	AETHIA PYGMAEA
2011	BUFFLEHEAD	BUCEPHALA ALBEOLA
2013	CORMORANT, BRANDT'S	PHALACROCORAX PENICILLATUS
2014	CORMORANT, DOUBLE-CRESTED	PHALACROCORAX AURITUS
2012	CORMORANT, UNIDENTIFIED	
2015	CORMORANT, PELAGIC	PHALACROCORAX PELAGICUS
2016	CORMORANT, RED-FACED	PHALACROCORAX URILE
2088	DUCK, UNIDENTIFIED	
2093	DUCK, HARLEQUIN	HISTRIONICUS HISTRIONICUS
2081	EAGLE, BALD	HALIAEETUS LEUCOCEPHALUS
2089	EAGLE, UNIDENTIFIED	
2017	EIDER, COMMON	SOMATERIA MOLLISSIMA
2018	EIDER, KING	SOMATERIA SPECTABILIS
2085	EIDER, UNIDENTIFIED	
2019	EIDER, SPECTACLED	SOMATERIA FISCHERI
2020	EIDER, STELLER'S	POLYSTICTA STELLERI
2078	FULMAR, UNIDENTIFIED	
2021	FULMAR, NORTHERN	FULMAREUS GLACIALIS
2022	GREBE, HORNED	PODICEPS AURITUS
2023	GREBE, UNIDENTIFIED	
2024	GREBE, RED-NECKED	PODICEPS GRISEGENA

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CODE	COMMON NAME	SCIENTIFIC NAME
2025	GREBE, WESTERN	AECHMOPHORUS OCCIDENTALIS
2026	GUILLEMOT, BLACK	CEPPHUS GRYLLE
2027	GUILLEMOT, UNIDENTIFIED	
2028	GUILLEMOT, PIGEON	CEPPHUS COLUMBA
2029	GULL, BONAPARTE'S	LARUS PHILADELPHIA
2030	GULL, GLAUCOUS	LARUS HYPERBOREUS
2031	GULL, GLAUCOUS-WINGED	LARUS GLAUDESCENS
2032	GULL, HERRING	LARUS ARGENTATUS
2033	GULL, IVORY	LARUS EBURNEA
2034	GULL, MEW	LARUS CANUS
2079	GULL, UNIDENTIFIED	
2035	GULL, SABINE'S	LARUS SABINI
2036	GULL/KITTIWAKE, UNIDENTIFIED	
2037	JAEGER/SKUA, UNIDENTIFIED	
2038	JEAGER, LONG-TAILED	STERCORARIUS LONGICAUDUS
2039	JEAGER, PARASITIC	STERCORARIUS PARASITICUS
2040	JEAGER, POMARINE	STERCORARIUS POMARINUS
2041	KITTIWAKE, BLACK-LEGGED	LARUS TRIDACTYLA
2080	KITTIWAKE, UNIDENTIFIED	
2042	KITTIWAKE, RED-LEGGED	LARUS BREVIROSTRIS
2043	LOON, COMMON	GAVIA IMMER
2044	LOON, UNIDENTIFIED	
2045	LOON, PACIFIC	GAVIA PACIFICA
2046	LOON, RED-THROATED	GAVIA STELLATA
2047	LOON, YELLOW-BILLED	GAVIA ADAMSII
2048	MALLARD	ANAS PLATYRHYNCHOS
2092	MERGANSER, UNIDENTIFIED	
2090	MERGANSER, RED-BREASTED	MERGUS SERRATOR
2049	MURRE, COMMON	URIA AALGE
2050	MURRE, UNIDENTIFIED	
2051	MURRE, THICK-BILLED	URIA LOMVIA
2052	MURRELET, ANCIENT	SYNTHLIBORAMPHUS ANTIQUUS
2091	MURRELET, KITTLITZ/ MARBLED UNIDENTIFIED	BRACHYRAMPHUS
2053	MURRELET, KITTLITZ'S	BRACHYRAMPHUS BREVIROSTRIS
2054	MURRELET, MARBLED	BRACHYRAMPHUS MAMMORATUS
2086	MURRELET, UNIDENTIFIED	
2055	OYSTERCATCHER, BLACK	HAEMATOPUS BACHMANI
2082	PETREL, UNIDENTIFIED	
2056	PHALAROPE, UNIDENTIFIED	

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2057	PINTAIL, NORTHERN	ANAS ACUTA
2058	PUFFIN, HORNED	FRATERCULA CORNICULATA
2059	PUFFIN, UNIDENTIFIED	
2060	PUFFIN, TUFTED	FRATERCULA CIRRHATA
2061	SCAUP, GREATER	AYTHYA MARILA
2062	SCOTER, BLACK	MELANITTA NIGRA
2087	SCOTER, UNIDENTIFIED	
2063	SCOTER, SURF	MELANITTA PERSPICILLATA
2064	SCOTER, WHITE-WINGED	MELANITTA DEGLANDI
2065	SEABIRDS, UNKNOWN (AUKS, GUILLEMOTS, GULLS, MURRES, PUFFINS, TERNS)	
2066	SHEARWATER, DARK STORM UNIDENTIFIED	
2083	SHEARWATER,	
2067	SHEARWATER, SHORT-TAILED	
2068	SHEARWATER, SOOTY	PUFFINUS GRISEUS
2069	SHEARWATER/PETRELS/STORM PETRELS, NK	
2070	STORM PETREL, FORK-TAILED	OCEANODROMA FURCATA
2071	STORM PETREL, LEACH'S	OCEANODROMA LEUCORHOA
2072	TEAL, GREEN-WINGED	ANAS CRECCA
2073	TERN, ALEUTIAN	STERNA ALEUTICA
2074	TERN, ARCTIC	STERNA PARADISAEA
2075	TERN, COMMON	STERNA HIRUNDO
2076	TERN, TYPICAL UNIDENTIFIED	
2077	TUBENOSES, UNIDENTIFIED	PROCELLARIDAE FAMILY
TURTLES		
3000	SEA TURTLE, GREEN	CHELONIA MYDAS
3001	SEA TURTLE, HAWKSBILL	ERETMOCHELYS IMBRICATA
3002	SEA TURTLE, KEMP'S RIDLEY	LEPIDOCHELYS KEMPPII
3003	SEA TURTLE, LEATHERBACK	DEMOCHELYS CORIACEA
3004	SEA TURTLE, LOGGERHEAD	CARETTA CARETTA
3005	SEA TURTLE, UNIDENTIFIED	
3006	SEA TURTLE, RIDLEY UNIDENTIFIED	
BONY FISH		
4000	ALEWIFE	ALOSA PSEUDOHARENGUS
4001	ALLIGATORFISH, ALEUTIAN	
4341	ALLIGATORFISH, UNIDENTIFIED	

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CODE	COMMON NAME	SCIENTIFIC NAME
4002	ALLIGATORFISH, SMOOTH	
4003	ANCHOVY, NORTHERN	ENGRAULIS MORDAX
4004	ARGENTINE, PACIFIC	
4005	BARRACUDA, PACIFIC	SPHYRAENA ARGENTEA
4006	BARRACUDINA, DUCKBILL	PARALEPIS ATLANTICA
4342	BARRACUDINA, UNIDENTIFIED	
4007	BARRACUDINA, RIBBON (WHITE)	
4008	BARRACUDINA, SLENDER	LESTIDIUM RINGENS
4009	BARRELEYE	MACROPINNA MICROSTOMA
4010	BIGSCALE	MELAMPHAEIDAE FAMILY
4011	BLACKFISH, ALASKA	
4012	BLACKSMELT, EARED (OKHOTSK)	
4013	BLENNY, NK	
4014	BRISTLEMOUTH(BRISTLEFISH), BLACK	
4343	BRISTLEMOUTH, UNIDENTIFIED	
4015	BRISTLEMOUTH, PHANTOM	CYCLOTHONE PSEUDOPALLIDA
4016	BRISTLEMOUTH, SHOWY	CYCLOTHONE SIGNATA
4017	BRISTLEMOUTH, SLENDER	GONOSTOMA GRACILE
4018	BRISTLEMOUTH, TAN (BICOLORED)	
4019	BULBOUS DREAMER	ONEIRODES ESCHRICHTI
4020	BURBOT	LOTA LOTA
4021	CAPELIN	MALLOTUS VILLOSUS
4022	CHAR, ARCTIC	SALVELINUS ALPINUS
4023	CHUB, LAKE	COUESIUS PLUMBIUS
4024	CISCO, ARCTIC	COREGONUS AUTUMNALIS
4025	CISCO, BERING	COREGONUS LAURETTAE
4026	CISCO, LEAST	COREGONUS SARDINELLA
4344	CISCO, UNIDENTIFIED	
4027	COCKSCOMB, HIGH	ANOPLARCHUS PURPURESCENS
4345	COCKSCOMB, NK	
4028	COCKSCOMB, SLENDER	ANOPLARCHUS INSIGNIS
4029	COD, ARCTIC	BOREGADUS SAIDA
4030	COD, LONGFIN	ANTIMORA ROSTRATA
4346	COD, UNIDENTIFIED	GADIDAE FAMILY
4031	COD, PACIFIC	GADUS MACROCEPHALUS
4032	COD, SAFFRON	ELEGINUS GRACILIS
4033	CODLING, BERING SEA (LONGFIN)	
4034	CODLING, HUNDRED-FATHOM	PSYSICULUS RASTRELLIGER
4347	CODLING, UNIDENTIFIED	MORIDAE FAMILY

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CODE	COMMON NAME	SCIENTIFIC NAME
4035	CODLING, PACIFIC FLATNOSE	ANTIMORA MICROLEPIS
4036	CUSK-EEL, BASKETWEAVE	OPHIDION SCRIPPSAE
4348	CUSK-EEL, UNIDENTIFIED	
4037	CUSK-EEL, SPOTTED	CHILARA TAYLORI
4038	DAB, GULF SAND	CITHARICHTHYS FRAGILIS
4039	DAB, LONGFIN SAND	CITHARICHTHYS XANTHOSTIGMA
4040	DAB, LONGHEAD	LIMANDA PROBOSCIDEA
4349	DAB, UNIDENTIFIED	
4041	DAB, PACIFIC SAND	CITHARICHTHYS SORDIDUS
4042	DAB, SPECKLED SAND	CITHARICHTHYS STIGMAEUS
4043	DAGGERTOOTH	ANOPTERUS PHARAO
4044	DOLLY VARDEN	SALVELINUS MALMA
4045	DOLPHINFISH (MAHI MAHI)	CORYPHAENA HIPPURUS
4046	DOLPHINFISH (POMPAÑO)	CORYPHAENA EQUISETIS
4350	DOLPHINFISH, UNIDENTIFIED	
4047	DRAGONFISH, LONGFIN	TACTOSTOMA MACROPUS
4048	EELPOUT, BIGFIN	LYCODES (APRODON) CORTEZIANUS
4049	EELPOUT, BLACK	LYCODES DIAPTERUS
4050	EELPOUT, BLACKBELLY	LYCODOPSIS PACIFICA
4051	EELPOUT, EBONY	LYCODES CONCOLOR
4052	EELPOUT, KAMCHATKA	LYCENCHELYS CAMCHATICA
4053	EELPOUT, MARBLED	LYCODES RARIDENS
4351	EELPOUT, UNIDENTIFIED	
4054	EELPOUT, PALLID	LYCODAPUS MANDIBULARIS
4055	EELPOUT, POLAR	LYCODES TURNERI
4056	EELPOUT, SHORTFIN	LYCODES BREVIPES
4057	EELPOUT, TWOLINE	BOTHROCARA BRUNNEUM
4058	EELPOUT, WATTLED	LYCODES PALEARIS
4059	EULACHON	THALEICHTHYS PACIFICUS
4381	FLATFISH, UNIDENTIFIED	
4061	FLOUNDER, ARCTIC	LIOPSETTA GLACIALIS
4062	FLOUNDER, ARROWTOOTH	ATHERESTHES STOMIAS
4063	FLOUNDER, BERING	HIPPOGLOSSOIDES ROBUSTUS
4065	FLOUNDER, KAMCHATKA	ATHERESTHES EVERMANNI
4064	FLOUNDER, LONG	
4352	FLOUNDER, UNIDENTIFIED	
4066	FLOUNDER, STARRY	PLATICHTHYS STELLATUS
4067	FROSTFISH	BENTHODESMUS ELONGATUS
4068	GRAYLING, ARCTIC	

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4069	GREENLING, KELP	HEXAGRAMMOS DECAGRAMMUS
4070	GREENLING, MASKED	HEXAGRAMMOS ACTOGRAMMUS
4353	GREENLING, UNIDENTIFIED	
4071	GREENLING, ROCK	HEXAGRAMMOS LAGOCEPHALUS
4072	GREENLING, WHITESPOTTED	HEXAGRAMMOS STELLERI
4073	GUNNEL, BANDED	PHOLIS FASCIATA
4074	GUNNEL, BERING	PHOLIS GILLI
4075	GUNNEL, CRESCENT	PHOLIS LAETA
4076	GUNNEL, KELP	ULVICOLA SANCTAEROSAE
4077	GUNNEL, LONGFIN	PHOLIS CLEMENSI
4354	GUNNEL, UNIDENTIFIED	
4078	GUNNEL, PENPOINT	APODICHTHYS FLAVIDUS
4079	GUNNEL, RED	PHOLIS SCHULTZI
4080	GUNNEL, ROCKWEED	APODICHTHYS FUCORUM
4081	GUNNEL, SADDLEBACK	PHOLIS ORNATA
4082	GUNNEL, STIPPLED	RHODYMENICHTHYS DOLICHOGASTER
4083	HAKE, PACIFIC	MERLUCCIIUS PRODUCTUS
4084	HALIBUT, PACIFIC	HIPPOGLOSSUS STENOLEPIS
4085	HATCHETFISH, SILVERY	ARGYROPELECUS LYCHNUS
4086	HEADLIGHTFISH, CALIFORNIA	
4087	HERRING, PACIFIC	CLUPEA HARENGUS PALLASI
4088	HIGHFIN DRAGONFISH	BATHOPHILIUS FLEMINGI
4089	IRISH LORD, BROWN	HEMILEPIDOTUS SPINOSUS
4355	IRISH LORD, UNIDENTIFIED	
4090	IRISH LORD, RED	HEMILEPIDOTUS HEMILEPIDOTUS
4091	IRISH LORD, YELLOW	HEMILEPIDOTUS JORDANI
4092	KING-OF-THE-SALMON	TRACHIPTERUS ALTIVELIS
4093	LAMPFISH, BROKENLINE	LAMPANYCTUS JORDANI
4094	LANCETFISH, LONGFISH	
4095	LANTERNFISH, BLUE	TARLETONBEANIA CRENULARIS
4356	LANTERNFISH, UNIDENTIFIED	
4096	LANTERNFISH, NORTHERN	STENOBRACHIUS LEUCOPSARUS
4097	LIGHTFISH, STAREYE	POLLICHTHYS MAULI
4098	LINGCOD	OPHIODON ELONGATUS
4099	LOOSEJAW, SHINY (SHINING)	
4100	LUMPSUCKER, LEATHERFIN	EUMICROTREMUS DERJUGINI
4357	LUMPSUCKER, UNIDENTIFIED	
4101	LUMPSUCKER, PACIFIC SPINY	EUMICROTREMUS ORBIS
4102	LUMPSUCKER, SMOOTH	APTOCYCLUS VENTRICOSUS

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CODE	COMMON NAME	SCIENTIFIC NAME
4103	MACKEREL, ATKA	
4104	MACKEREL, CHUB	
4105	MACKEREL, JACK	
4358	MACKEREL, UNIDENTIFIED	
4106	MANEFISH	CARISTIUS MACROPUS
4107	MARLIN, STRIPED	TETRAPTURUS AUDAX
4108	MEDUSAFISH	ICICHTHYS LOCKINGTONI
4109	MELAMPID, CRESTED	POROMITRA CRASSICEPS
4110	MELAMPID, HIGHSNOUT	MELAMPHAES LUGUBRIS
4111	MIDSHIPMAN, PLAINFIN	
4112	OARFISH	REGALECUS GLESNE
4113	OPAH	LAMPRIS GUTTATUS
4114	PAPERBONES, UNIDENTIFIED	
4115	PEARLEYE, NORTHERN	
4116	PERCH, PACIFIC OCEAN	
4117	PIKE, NORTHERN	ESOX LUCIUS
4118	PLAICE, ALASKA	
4119	POACHER, BERING	OCCELLA DODECAEDRON
4120	POACHER, BIGEYE	BATHYAGONUS PENTACANTHUS
4121	POACHER, BLACKFIN	BATHYAGONUS NIGRIPINNIS
4122	POACHER, BLACKTIP	XENERETMUS LATIFRONS
4123	POACHER, DRAGON	PERCIS JAPONICUS
4124	POACHER, GRAY STARNOUT	BATHYAGONUS ALASCANA
4125	POACHER, N. SPEARNOSE	AGONOPSIS VULSA
4359	POACHER, UNIDENTIFIED	
4126	POACHER, SAWBACK	SARRITOR FRENATUS
4127	POACHER, STURGEON	AGONUS ACIPENSERINUS
4128	POACHER, WARTY	OCCELLA VERRUCOSA
4129	POLLOCK (WALLEYE POLLOCK)	
4132	POMFRET, UNIDENTIFIED	
4130	POMFRET, PACIFIC	BRAMA JAPONICA
4131	POMFRET, ROUGH	TARACTES ASPER
4133	POMPANO, PACIFIC	
4134	PRICKLEBACK, BLACK	XIPHISTER ATROPURPUREUS
4135	PRICKLEBACK, LONGSNOUT	LUMPENELLA LONGIROSTRIS
4360	PRICKLEBACK, UNIDENTIFIED	
4136	PRICKLEBACK, PEARLY	BRYOZOICHTHYS MARJORIUS
4137	PRICKLEBACK, RIBBON	PHYTICHTHYS CHIRUS
4138	PRICKLEBACK, ROCK	XIPHISTER MUCOSUS

CODE	COMMON NAME	SCIENTIFIC NAME
4139	PRICKLEBACK, SNAKE	LUMPENUS SAGITTA
4140	PRICKLEBACK, WHITEBARRED	POROCLINUS ROTHROCKI
4141	PROWFISH	ZAPRORA SILENUS
4142	QUILLFISH	PTILICHTHYS GOODEI
4143	RAGFISH	ICOSTEUS AENIGMATICUS
4144	RATTAIL(GRENADIER), CALIFORNIA	
4145	RATTAIL, FILAMENTED	CORYPHAENOIDES FILIFER
4146	RATTAIL, GIANT	ALBATROSSIA PECTORALIS
4361	RATTAIL, UNIDENTIFIEDK	MACROURIDAE FAMILY
4147	RATTAIL, PACIFIC	CORYPHAENOIDES ACROLEPIS
4148	RIBBONFISH, WHIPTAIL	DESMODEMA LORUM
4149	ROCKFISH, AURORA	SEBASTES AURORA
4150	ROCKFISH, BANK	SEBASTES RUFUS
4151	ROCKFISH, BLACK	SEBASTES MELANOPS
4152	ROCKFISH, BLACKGILL	SEBASTES MELANOSTOMUS
4153	ROCKFISH, BLUE	SEBASTES MYSTINUS
4154	ROCKFISH, BOCACCIO	SEBASTES PAUCISPINIS
4155	ROCKFISH, BROWN	SEBASTES AURICULATUS
4156	ROCKFISH, CANARY	SEBASTES PINNIGER
4157	ROCKFISH, CHAMELEON	SEBASTES PHILLIPSI
4158	ROCKFISH, CHILIPEPPER	SEBASTES GOODEI
4159	ROCKFISH, CHINA	SEBASTES NEBULOSUS
4160	ROCKFISH, COPPER	SEBASTES CAURINUS
4161	ROCKFISH, DARK DUSKY	SEBASTES CILIATUS
4162	ROCKFISH, DARKBLOTCHED	SEBASTES CRAMERI
4163	ROCKFISH, FLAG	SEBASTES RUBRIVINCTUS
4164	ROCKFISH, GRAY	SEBASTES GLAUCOUS
4165	ROCKFISH, GREENSPOTTED	SEBASTES CHLOROSTICTUS
4166	ROCKFISH, GREENSTRIPED	SEBASTES ELONGATUS
4167	ROCKFISH, HARLEQUIN	SEBASTES VARIEGATUS
4168	ROCKFISH, LIGHT DUSKY	SEBASTES SPP
4060	ROCKFISH, UNIDENTIFIED	
4169	ROCKFISH, NORTHERN	SEBASTES POLYSPINIS
4170	ROCKFISH, OLIVE	SEBASTES SERRANOIDES
4171	ROCKFISH, PINK ROSE	SEBASTES SIMULATOR
4172	ROCKFISH, PYGMY	SEBASTES WILSONI
4173	ROCKFISH, QUILLBACK	SEBASTES MALIGER
4174	ROCKFISH, REDBANDED	SEBASTES BABCOCKI
4175	ROCKFISH, REDSTRIPE	SEBASTES PRORIGER

CODE	COMMON NAME	SCIENTIFIC NAME
4176	ROCKFISH, ROSETHORN	SEBASTES HELVOMACULATUS
4177	ROCKFISH, ROSY	SEBASTES ROSACEUS
4178	ROCKFISH, ROUGHEYE	SEBASTES ALEUTIANUS
4179	ROCKFISH, SHARPCHIN	SEBASTES ZACENTRUS
4180	ROCKFISH, SHORTBELLY	SEBASTES JORDANI
4181	ROCKFISH, SHORTTRAKER	SEBASTES BOREALIS
4182	ROCKFISH, SILVERGRAY	SEBASTES BREVISPINIS
4183	ROCKFISH, SPECKLED	SEBASTES OVALIS
4184	ROCKFISH, SPLITNOSE	SEBASTES DIPLOPROA
4185	ROCKFISH, STARRY	SEBASTES CONSTELLATUS
4186	ROCKFISH, STRIPETAIL	SEBASTES SAXICOLA
4187	ROCKFISH, TIGER	SEBASTES NIGROCINCTUS
4188	ROCKFISH, VERMILION	SEBASTES MINIATUS
4189	ROCKFISH, WIDOW	SEBASTES ENTOMELAS
4190	ROCKFISH, YELLOWEYE	SEBASTES RUBERRIMUS
4191	ROCKFISH, YELLOWMOUTH	SEBASTES REEDI
4192	ROCKFISH, YELLOWTAIL	SEBASTES FLAVIDUS
4193	RONQUIL, ALASKAN	BATHYMASTER CAERULEOFASCIATUS
4363	RONQUIL, UNIDENTIFIED	
4194	RONQUIL, NORTHERN	RONQUILUS JORDANI
4195	SABLEFISH	ANOPLOPOMA FIMBRIA
4196	SALMON, CHINOOK	ONCORHYNCHUS TSHAWYTSCHA
4197	SALMON, CHUM	ONCORHYNCHUS KETA
4198	SALMON, COHO	ONCORHYNCHUS KISUTCH
4380	SALMON, MIXED	
4340	SALMON, UNIDENTIFIED	
4199	SALMON, PINK	ONCORHYNCHUS GORBUSCHA
4200	SALMON, SOCKEYE	ONCORHYNCHUS NERKA
4201	SAND LANCE, PACIFIC	AMMODYTES HEXAPTERUS
4202	SANDFISH, PACIFIC	
4203	SARDINE, PACIFIC	SARDINOPS SAGAX
4204	SAURY, PACIFIC	COLOLABIS SAIRA
4205	SCABBARDFISH, BLACK	
4206	SCORPIONFISH, ALEUTIAN	
4207	SCULPIN, ANTLERED	ENOPHRYS DICERUS
4208	SCULPIN, ARCTIC	MYOXOCEPHALUS SCORPINOIDES
4209	SCULPIN, ARCTIC STAGHORN	GYMNOCANTHUS TRICUSPIS
4210	SCULPIN, ARMORHEAD	GYMNOCANTHUS GALEATUS
4211	SCULPIN, BIGMOUTH	HEMITRIPTERUS BOLINI

CODE	COMMON NAME	SCIENTIFIC NAME
4212	SCULPIN, BLACKFIN	MALACOCOTTUS KINCAIDI
4213	SCULPIN, BLOB	PSYCHROLUTES PHRICTUS
4214	SCULPIN, BUFFALO	ENOPHRYS BISON
4215	SCULPIN, BUTTERFLY	HEMILEPIDOTUS PAPILIO
4216	SCULPIN, CALICO	CLINOCOTTUS EMBRYUM
4217	SCULPIN, COASTRANGE	COTTUS ALEUTICUS
4218	SCULPIN, CRESTED	BLEPSIAS BILOBUS
4219	SCULPIN, DUSKY	ICELINUS BURCHAMI
4220	SCULPIN, FOURHORN	MYOXOCEPHALUS QUADRICORNIS
4221	SCULPIN, GREAT	MYOXOCEPHALUS POLYACANTHO- CEPHALUS
4222	SCULPIN, GYMNOCANTHUS UNIDENTIFIED	
4223	SCULPIN, ICELUS CANALICULATUS	ICELUS CANELICULATUS
4224	SCULPIN, ICELUS EURYOPS	ICELUS EURYOPS
4225	SCULPIN, ICELUS UNIDENTIFIED	ICELUS SPP
4226	SCULPIN, LEISTER	ENOPHRYS LUCASI
4227	SCULPIN, MOSSHEAD	CLINOCOTTUS GLOBICEPS
4228	SCULPIN, MYOXOCEPHALUS UNIDENTIFIED	MYOXOCEPHALUS SPP
4364	SCULPIN, UNIDENTIFIED	
4229	SCULPIN, NORTHERN	ICELINUS BOREALIS
4230	SCULPIN, PACIFIC STAGHORN	LEPTOCOTTUS ARMATUS
4231	SCULPIN, PLAIN	MYOXOCEPHALUS JAOK
4232	SCULPIN, PRICKLY	COTTUS ASPER
4233	SCULPIN, RIBBED	TRIGLOPS PINGELI
4234	SCULPIN, RIFFLE	COTTUS HYPSELURUS
4235	SCULPIN, ROUGHSPINE	TRIGLOPS MACELLUS
4236	SCULPIN, SAILFIN	NAUTICHTHYS OCULOFASCIATUS
4237	SCULPIN, SCISSERTAIL	TRIGLOPS FORFICATA
4238	SCULPIN, SHORTHORN	MYOXOCEPHALUS SCORPIUS
4239	SCULPIN, SILVERSPOTTED	BLEPSIAS CIRRHOSUS
4240	SCULPIN, SISSERTAIL	TRIGLOPS FORFICATUS
4241	SCULPIN, SLIM	RADULINUS ASPRELLUS
4242	SCULPIN, SLIMY	COTTUS COGNATUS
4243	SCULPIN, SPECTACLED	TRIGLOPS SCEPTICUS
4244	SCULPIN, SPINYHEAD	DASYCOTTUS SETIGER
4245	SCULPIN, TADPOLE	PSYCHROLUTES PARADOXUS
4246	SCULPIN, THORNY	ICELUS SPINIGER
4247	SCULPIN, THREADFIN	ICELINUS FILAMENTOSUS
4248	SCULPIN, THYRISCUS ANOPLUS	THYRISCUS ANOPLUS

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4249	SCULPIN, TRIGLOPS UNIDENTIFIED	
4250	SCULPIN, WARTHEAD	MYOXOCEPHALUS NIGER
4251	SCULPIN, WARTY	MYOXOCEPHALUS GROENLANDICUS
4252	SEABASS, UNIDENTIFIED	
4253	SEADEVIL, N. GIANT (DEEPSEA ANGLER)	
4254	SHAD, AMERICAN	ALOSA SAPIDISSIMA
4255	SHANNY, ARCTIC	STICHAEUS PUNCTATUS
4256	SHANNY, DAUBED	LUMPENUS MACULATUS
4365	SHANNY, UNIDENTIFIED	
4257	SHEEFISH (ICONNU)	
4258	SKILFISH	ERILEPIS ZONIFER
4259	SMELT, DELTA	HYPOMESUS TRANSPACIFICUS
4260	SMELT, LONGFIN	SPIRINCHUS THALEICHTHYS
4261	SMELT, NIGHT	SPIRINCHUS STARKSI
4366	SMELT, UNIDENTIFIED	
4262	SMELT, POND	HYPOMESUS OLIDUS
4263	SMELT, RAINBOW	OSMERUS MORDAX
4264	SMELT, SURF	HYPOMESUS PRETIOSUS
4265	SMELT, WHITEBAIT	ALLOSMERUS ELONGATUS
4266	SMOOTH TONGUE, CALIFORNIA	LEUROGLOSSUS STILBIUS
4367	SMOOTH TONGUE, UNIDENTIFIED	
4267	SMOOTH TONGUE, NORTHERN	LEUROGLOSSUS SCHMIDTI
4268	SNAILFISH, ALASKA	CAREPROCTUS COLLETTI
4273	SNAILFISH, BIGHEAD	
4269	SNAILFISH, BLACKFINNED	CAREPROCTUS CYPSELURUS
4270	SNAILFISH, BLACKTAIL	CAREPROCTUS MELANURUS
4271	SNAILFISH, CHRYSTALLICHTHYS UNIDENT.	
4272	SNAILFISH, FORKTAIL	CAREPROCTUS FURCELLUS
4275	SNAILFISH, LOBEFIN	POLYPERA GREENI
4276	SNAILFISH, MARBLED	LIPARIS DENNYI
4368	SNAILFISH, UNIDENTIFIED	
4274	SNAILFISH, OKHOTSK	
4277	SNAILFISH, PINK	CAREPROCTUS RASTRINUS
4278	SNAILFISH, RIBBON	LIPARIS CYCLOPUS
4279	SNAILFISH, RINGTAIL	LIPARIS RUTTERI
4280	SNAILFISH, VARIEGATED	LAPARIS GIBBUS
4281	SNIFE EEL, SLENDER	NEMICHTHYS SCOLOPACEUS
4282	SNIFE-EEL, BLACKLINE	BORODINULA INFANS
4369	SNIFE-EEL, UNIDENTIFIED	

CODE	COMMON NAME	SCIENTIFIC NAME
4283	SOLE, BUTTER	ISOPSETTA ISOLEPIS
4284	SOLE, C-O	PLEURONICHTHYS COENOSUS
4285	SOLE, CURLFIN	PLEURONICHTHYS DECURRENS
4286	SOLE, DEESEA	EMBASSICHTHYS BATHYBIUS
4287	SOLE, DOVER	MICROSTOMUS PACIFICUS
4288	SOLE, ENGLISH	PLEURONECTES VETULUS
4289	SOLE, FLATHEAD	HIPPOGLOSSOIDES ELASSODON
4290	SOLE, HYBRID	INOPSETTA ISCHYRA
4370	SOLE, UNIDENTIFIED	
4291	SOLE, NORTHERN ROCK	LEPIDOPSETTA POLYXYSTRA
4292	SOLE, PETRALE	EOPSETTA JORDANI
4293	SOLE, REX	ERREX ZACHIRUS
4382	SOLE, ROCK UNIDENTIFIED	
4294	SOLE, ROUGHSCALE	CLIDODERMA ASPERRIMUM
4295	SOLE, SAKHALIN	LIMANDA SAKHALINENSIS
4296	SOLE, SAND	PSETTICHTHYS MELANOSTICTUS
4297	SOLE, SLENDER	LYOPSETTA EXILIS
4298	SOLE, SOUTHERN ROCK	LEPIDOPSETTA BILINEATA
4299	SOLE, YELLOWFIN	PLEURONECTES ASPER
4300	SPINYCHEEK STARSNOUT	BATHYAGONUS INFRASPINATA
4301	SQUARETAIL, SMALLEYE	
4302	STICKLEBACK, NINESPINE	PUNGITIUS PUNGITIUS
4371	STICKLEBACK, UNIDENTIFIED	
4303	STICKLEBACK, THREESPINE	GASTEROSTEUS ACULEATUS
4304	STURGEON, GREEN	ACIPENSER MEDIROSTRIS
4372	STURGEON, UNIDENTIFIED	
4305	STURGEON, SIBERIAN	ACIPENSER BAERI
4306	STURGEON, WHITE	ACIPENSER TRANSMONTANUS
4307	SUCKER, LONGNOSE	CATOSTOMUS CATOSTOMUS
4308	SUNFISH, OCEAN	MOLA MOLA
4309	SWORDFISH	XIPHIAS GLADIUS
4310	THORNYHEAD, BROAD BANDED	SEBASTOLOBUS MACROCHIR
4311	THORNYHEAD, LONGSPINE	SEBASTOLOBUS ALTIVELIS
4373	THORNYHEAD, UNIDENTIFIED	
4312	THORNYHEAD, SHORTSPINE	SEBASTOLOBUS ALASCANUS
4313	THREADFIN SLICKHEAD	TALISMANIA BIFURCATA
4314	TOMCOD, PACIFIC	MICROGADUS PROXIMUS
4315	TONGUEFISH, CALIFORNIA	
4316	TROUT, BROOK	SALVELINUS FONTINALIS

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CODE	COMMON NAME	SCIENTIFIC NAME
4317	TROUT, CUTTHROAT	ONCORHYNCHUS CLARKI
4318	TROUT, LAKE	SALVELINUS NAMAYCUSH
4374	TROUT, UNIDENTIFIED	
4319	TROUT, PERCH	PERCOPSIS OMISCOMAYCUS
4320	TROUT, RAINBOW	ONCORHYNCHUS MYKISS
4322	TUBESHOULDER, UNIDENTIFIED	
4321	TUBESHOULDER, SHINING	
4323	TUNA, ALBACORE	THUNNUS ALALUNGA
4324	TUNA, BIG EYE	THUNNUS OBESUS
4376	TUNA, UNIDENTIFIED	
4325	TUNA, YELLOWFIN	THUNNUS ALBACARES
4326	TURBOT, GREENLAND	
4327	VIPERFISH, PACIFIC	CHAULIODUS MACOUNI
4328	WARBONNET, DECORATED	CHIROLOPHIS DECORATUS
4329	WARBONNET, MOSSHEAD	CHIROLOPSIS NUGATOR
4377	WARBONNET, UNIDENTIFIED	
4330	WEARYFISH, SCALY	
4331	WHALEFISHES, FLABBY UNIDENTIFIED	
4332	WHITEFISH, BROAD	COREGONUS NASUS
4333	WHITEFISH, HUMPBACK	COREGONUS PIDSCHEAN
4378	WHITEFISH, UNIDENTIFIED	
4334	WHITEFISH, PYGMY	PROSOPIUM COULTERI
4335	WHITEFISH, ROUND	PROSOPIUM CYLINDRACEUM
4336	WOLF-EEL	ANARRHICHTHYS OCELLATUS
4337	WOLFFISH, BERING	
4338	WRYMOUTH, DWARF	LYCONNECTES ALEUTENSIS
4339	WRYMOUTH, GIANT	DELOLEPIS GIGANTEA
4379	WRYMOUTH, UNIDENTIFIED	
OTHER FISH		
5000	HAGFISH, BLACK	EPTATRETUS DEANI
5037	HAGFISH, UNIDENTIFIED	
5001	HAGFISH, PACIFIC	EPTATRETUS STOUTI
5002	LAMPREY, ARCTIC	LAMPETRA JAPONICA
5038	LAMPREY, UNIDENTIFIED	
5003	LAMPREY, PACIFIC	LAMPETRA TRIDENTATUS
5004	LAMPREY, RIVER	LAMPETRA AYRESI
5005	LAMPREY, WESTERN BROOK	LAMPETRA RICHARDSONI

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CODE	COMMON NAME	SCIENTIFIC NAME
5006	RATFISH, SPOTTED	HYDROLAGUS COLLIEI
5007	RAY, PACIFIC ELECTRIC	
5008	SHARK, BLUE	PRIONACE GLAUCA
5009	SHARK, BROWN CAT	APRISTURUS BRUNNEUS
5010	SHARK, MAKO	ISURUS OXYRINCHUS
5039	SHARK, UNIDENTIFIED	
5011	SHARK, PACIFIC SHARPNOSE	RHIZOPRIONODON LONGURIO
5012	SHARK, PACIFIC SLEEPER	SOMNIOSUS PACIFICUS
5013	SHARK, PYGMY	EUPROTOMICRUS BISPINATUS
5014	SHARK, SALMON	LAMNA DITROPIS
5015	SHARK, SIXGILL	HEXANCHUS GRISEUS
5016	SHARK, SOUPFIN	GALEORHINUS ZYOPTERUS
5017	SHARK, SPINY DOGFISH	SQUALUS ACANTHIAS
5018	SHARK, THRESHER	ALOPIAS VULPINUS
5019	SKATE EGG CASE, UNIDENTIFIED	
5020	SKATE, ALASKA	BATHYRAJA PARMIFERA
5021	SKATE, ALEUTIAN	BATHYRAJA ALEUTICA
5022	SKATE, BERING	BATHYRAJA INTERRUPTA
5023	SKATE, BIG	RAJA BINOCULATA
5024	SKATE, CALIFORNIA	RAJA INORNATA
5025	SKATE, COMMANDER	BATHYRAJA LINDBERGI
5026	SKATE, DEEPSEA	BATHYRAJA ABYSSICOLA
5027	SKATE, FLATHEAD	BATHYRAJA ROSISPINIS
5028	SKATE, GOLDEN	BATHYRAJA SMIRNOVI
5029	SKATE, LONGNOSE	RAJA RHINA
5040	SKATE, UNIDENTIFIED	
5030	SKATE, OKHOTSK	BATHYRAJA VIOLACEA
5031	SKATE, ROUGHTAIL	BATHYRAJA TRACHURA
5032	SKATE, SANDPAPER	BATHYRAJA KINCAIDI
5033	SKATE, SOFT NOSED	BATHYRAJA SPP
5034	SKATE, STARRY	RAJA STELLULATA
5035	SKATE, WHITEBLOTCHED	BATHYRAJA MACULATA
5036	SKATE, WHITEBROW	BATHYRAJA MINISPINOSA
 MOLLUSKS		
6000	ABALONE	HALIOTOS KAMTSCHATKANA
6001	CHITON, UNIDENTIFIED	
6002	CLAM, SOFTSHELL	

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CODE	COMMON NAME	SCIENTIFIC NAME
6003	CLAM, ALASKA RAZOR	
6004	CLAM, BUTTER	SAXIDOMUS GIGANTEUS
6005	CLAM, GEODUCK	PAROPE GENEROSA
6006	CLAM, HORSE	TRESUS CAPAX
6007	CLAM, PACIFIC (NORTHERN) RAZOR	
6008	CLAM, PACIFIC LITTLENECK	PROTOTHACA STAMINEA
6009	CLAM, SURF	SPISULA POLYNYMA
6010	COCKLE, NUTTALL (COCKLE CLAM)	
6011	LIMPETS	
6012	MUSSEL, BLUE	MYLITUS EDULIS
6013	NUDIBRANCH , UNIDENTIFIED	
6014	OCTOPUS, COMMON PACIFIC	OCTOPUS DOFLEINI
6015	OCTOPUS, PELAGIC	ORDER VAMPYROMORPHA
6016	OYSTER, PACIFIC	CRASSOSTREA GIGAS
6017	SCALLOP, ARCTIC PINK	CHLAMYS PSEUDISLANDICA
6018	SCALLOP, HINDS	CHLAMYS RUBIDA
6019	SCALLOP, PACIFIC PINK	CHLAMYS HASTATA
6020	SCALLOP, WEATHERVANE	PECTEN CAURINUS
6021	SHELL, ALASKA VOLUTE	BOREOMELON STEARNSII
6022	SHELL, ANGULAR WHELK	BUCCINUM ANGULOSUM
6024	SHELL, ANTIPLANES UNIDENTIFIED	
6023	SHELL, ANTIPLANES PIONA	ANTIPLANES PIONA
6025	SHELL, BERING WHELK	BERINGIUS BEHRINGI
6026	SHELL, BOREOTROPHON UNIDENTIFIED	
6027	SHELL, BROWN WHELK	CLINOPEGMA MAGNA
6029	SHELL, BUCCINUM UNIDENTIFIED	
6028	SHELL, BUCCINUM PHYSEMATUM	BUCCINUM PHYSEMATUM
6030	SHELL, CHANNELED WHELK	BUCCINUM SOLENUM
6031	SHELL, CLATHRATE TROPHON	BOREOTROPHON CLATHRATUS
6032	SHELL, COLUS ESYCHUS	COLUS ESYCHUS
6033	SHELL, COLUS NK	
6034	SHELL, CREPIDULA NK	
6035	SHELL, DALL'S TROPHON	BOREOTROPHON MURICIFORMIS
6036	SHELL, ELEGANT TROPHON	BOREOTROPHON PACIFICUS
6037	SHELL, FAT WHELK	NEPTUNEA VENTRICOSA
6038	SHELL, FRAGILE WHELK	VOLUTOPSIUS FRAGILIS
6039	SHELL, FRIELES WHELK	BERINGIUS FRIELEI
6040	SHELL, GLACIAL WHELK	BUCCINUM GLACIALE
6041	SHELL, HALL'S WHELK	COLUS HALLI

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CODE	COMMON NAME	SCIENTIFIC NAME
6042	SHELL, INCISED WHELK	PLICIFUSUS INCISUS
6043	SHELL, KEELED AFORIA	AFORIA CIRCINATA
6044	SHELL, KROYER'S WHELK	PLICIFUSUS KROYERI
6045	SHELL, LADDER WHELK	BUCCINUM SCALARIFORME
6046	SHELL, LITTLE WHELK	NEPTUNEA BOREALIS
6047	SHELL, LYRE WHELK	NEPTUNEA LYRATA
6048	SHELL, NATICA UNIDENTIFIED	
6049	SHELL, NEPTUNEA AMIANTA	NEPTUNEA AMIANTA
6050	SHELL, NEPTUNEA INTERSCULPTA	NEPTUNEA INTERSCULPTA
6051	SHELL, NEPTUNEA UNIDENTIFIED	
6052	SHELL, NORTHERN WHELK	NEPTUNEA HEROS
6053	SHELL, OBLIQUE WHELK	COLUS HYPOLISPUS
6054	SHELL, OREGON TRITON	FUSITRITON OREGONENSIS
6055	SHELL, PLICIFUSUS UNIDENTIFIED	
6056	SHELL, POLAR WHELK	BUCCINUM POLARE
6057	SHELL, PRIBILOF WHELK	NEPTUNEA PRIBILOFFENSIS
6058	SHELL, ROSY WHELK	COLUS ROSEUS
6059	SHELL, SHOULDERED WHELK	VOLUTOPSIUS STEFANSSONI
6060	SHELL, SINOUS WHELK	BUCCINUM PLECTRUM
6061	SHELL, SNAIL UNIDENTIFIED	
6062	SHELL, THICK-RIBBED WHELK	COLUS SPITZBERGENSIS
6063	SHELL, THIN-RIBBED WHELK	COLUS HERENDEENII
6064	SHELL, THREADED WHELK	VOLUTOPSIUS FILOSUS
6065	SHELL, TULIP WHELK	VOLUTOPSIUS MIDDENDORFFII
6066	SHELL, VELUTINA VELUTINA	VELUTINA VELUTINA
6067	SHELL, WARPED WHELK	VOLUTOPSIUS DEFORMIS
6068	SNAIL, CROWNED HAIRY SNAIL	TRICOTROPIS CORONATA
6069	SNAIL, EGGS UNIDENTIFIED	
6070	SNAIL, ERODED TURRET SNAIL	TACHYRHYNCHUS EROSUS
6071	SNAIL, PALLID MOON SNAIL	POLINICES PALLIDA
6072	SNAIL, RUSTY MOONSNAIL	CRYPTONATICA RUSSA
6073	SNAIL, SHELL NK	
6074	SQUID, CALIFORNIA MARKET	LOLIGO OPALESCENS
6075	SQUID, GIANT	MOROTEUTHIS ROBUSTA
6076	SQUID, MAJESTIC	BERRYTEUTHIS MAGISTER
6077	SQUID, PACIFIC BOBTAIL	ROSSIA PACIFICA

OTHER LIFE

7000 ASCIDIAN/ SEA SQUIRT/ TUNICATE

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CODE	COMMON NAME	SCIENTIFIC NAME
7001	BARNACLE, UNIDENTIFIED	
7002	CORAL	CORALLIUM SP.
7003	CORAL, RED TREE	PRIMNOA WILLEYI
7004	CORALS, BRYOZOANS UNIDENTIFIED	
7005	CRAB, ALASKAN HERMIT	PAGURUS OCHOTENSIS
7006	CRAB, ALEUTIAN HERMIT	PAGURUS ALEUTICUS
7007	CRAB, ARCTIC LYRE	HYAS COARCTATUS
7008	CRAB, BAIRDI TANNER	CHIONOECETES BAIRDI
7009	CRAB, BLUE KING	PARALITHODES PLATYPUS
7010	CRAB, BROWN BOX	LOPHOLITHODES FORAMINATUS
7011	CRAB, DECORATOR	OREGONIA GRACILIS
7012	CRAB, DUNGENESS	CANCER MAGISTER
7013	CRAB, FUZZY	ACANTHOLITHODES HISPIDUS
7014	CRAB, GOLDEN/BROWN KING	LITHODES AEQUISPINA
7015	CRAB, GROOVED TANNER	CHIONOECETES TANNERI
7016	CRAB, HAIR	ERIMACRUS ISENBECKII
7017	CRAB, HELMET	TELMESSUS CHEIRAGONUS
7018	CRAB, HYBRID TANNER	CHIONOECETES HYBRID
7082	CRAB, UNIDENTIFIED	
7019	CRAB, OPILIO TANNER	CHIONOECETES OPILIO
7020	CRAB, OREGONIA BIFURCA	OREGONIA BIFURCA
7021	CRAB, PACIFIC LYRE	HYAS LYRATUS
7022	CRAB, PARALOMIS MULTISPINA	PARALOMIS MULTISPINA
7023	CRAB, PARALOMIS VERILLI	PARALOMIS VERILLI
7024	CRAB, PEA	PINNIXA OCCIDENTALIS
7025	CRAB, PURPLE HERMIT	ELASSOCHIRUS CAVIMANUS
7026	CRAB, PYGMY ROCK	CANCER OREGONENSIS
7027	CRAB, RARE KING	PARALITHODES BREVIPES
7028	CRAB, RED BOX	LOPHOLITHODES MANDTII
7029	CRAB, RED HERMIT	ELASSOCHIRUS GILLI
7030	CRAB, RED KING	PARALITHODES CAMTSCHATICUS
7031	CRAB, RHINOCEROS	RHINOLITHODES WOSNESSENSKII
7032	CRAB, SCALED	PLACETRON WOSNESSENSKII
7033	CRAB, SCARLET KING	LITHODES COUESI
7034	CRAB, SPLENDID HERMIT	LABIDOCHIRUS SPLENDESCENS
7035	CRAB, TRIANGLE TANNER	CHIONOECETES ANGULATUS
7036	CRAB, WIDEHAND HERMIT	ELASSOCHIRUS TENUIMANUS
7037	CRINOIDS, UNKNOWN(FEATHER STARS, SEA LILLIES)	

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CODE	COMMON NAME	SCIENTIFIC NAME
7038	HERRING, ROE ON KELP	
7039	HYDROIDS, UNIDENTIFIED	
7040	INVERTEBRATE UNIDENTIFIED	
7041	ISOPOD	ISOPODA
7042	JELLYFISH (ALL)	
7085	KELP, UNIDENTIFIED	
7043	KRILL	EUPHAUSIACEA, ORDER
7044	LAMP SHELL, UNIDENTIFIED	
7045	LEECH, UNIDENTIFIED	
7046	POLYCHAETE, UNIDENTIFIED	
7047	SEA ANEMONE, UNIDENTIFIED	
7048	SEA CUCUMBER, BROWNSCALED	PSOLUS FABRICII
7049	SEA CUCUMBER, CRESCENT	PENTAMERA LISSOPLACA
7050	SEA CUCUMBER, RED	PARUSTICHOPUS
7051	SEA CUCUMBER, REDSCALED	PSOLUS SP.
7052	SEA CUCUMBER, SEA FOOTBALL	CUCUMARIA FALLAX
7053	SEA CUCUMBER, SLENDER	BATHYPLOTES SP.
7055	SEA ONIONS, UNIDENTIFIED	
7056	SEA PEN/ SEA WHIP, UNIDENTIFIED	
7057	SEA POTATO, UNIDENTIFIED	
7058	SEA SPIDERS, UNIDENTIFIED	
7059	SEA STAR, BASKET	GORGONOCEPHALUS
7060	SEA STAR, BRITTLE UNIDENTIFIED	
7061	SEA STAR, SUNSTAR	SOLASTERIDAE
7062	SEA STARS, UNIDENTIFIED	
7063	SEA URCHIN, FRAGILE	ALLOCENTROTUS FRAGILIS
7064	SEA URCHIN, GREEN	STRONGYLOCENTROTUS DROE- BACHIENSIS
7065	SEA URCHIN, HEART	BRISASTER LATIFRONS
7066	SEA URCHIN, RED	STRONGYLOCENTROTUS FRANCISCA- NUS
7067	SEA URCHIN/SAND DOLLAR, UNIDENTIFIED	
7068	SEARCHER	BATHYMASTER SIGNATUS
7084	SEAWEEDS (ALSO SEE KELP 7085)	
7069	SHRIMP, ARCTIC ARGID	ARGIS DENTATA
7070	SHRIMP, COONSTRIPE	PANDALUS DANAE
7071	SHRIMP, DEEP	PANDALOPSIS ALEUTICA
7072	SHRIMP, HUMPY	PANDALUS GONIURUS
7083	SHRIMP, UNIDENTIFIED	

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CODE	COMMON NAME	SCIENTIFIC NAME
7073	SHRIMP, NORTHERN/PINK	PANDALUS BOREALIS
7074	SHRIMP, OCEAN	PANDALUS JORDANI
7075	SHRIMP, SIDESTRIPE	PANDALOPSIS DISPAR
7076	SHRIMP, SPOT	PANDALUS PLATYCEROS
7077	SPONGE, UNIDENTIFIED	
7078	WORM, BRISTLE (SEA MOUSE)	APHRODITA NEGLIGENS
7079	WORM, OLIGOCHAETE UNIDENTIFIED	
7080	WORM, PEANUT, UNIDENTIFIED	
7081	WORM, SPOON	

VESSELS

8001	F/V, DRIFT GILLNET
8002	F/V, LONGLINE
8003	F/V, POT
8004	F/V, PURSE SEINE
8005	F/V, SET GILLNET
8006	F/V, TENDER
8007	F/V, TRAWL
8008	F/V, TROLL
8009	RECREATIONAL, FISHING
8010	RECREATIONAL, KAYAK
8000	RECREATIONAL, OTHER
8011	RECREATIONAL, WILDLIFE VIEWING
8012	SHIP, CARGO
8013	SHIP, FERRY
8015	VESSEL, OTHER LARGE (>60 FEET)
8015	VESSEL, OTHER MID-SIZE (25-60 FEET)
8016	VESSEL, OTHER SMALL (<25 FEET)

DEBRIS

9001	DEBRIS, MAN-MADE (I.E, METALS, PLASTICS)
9002	DEBRIS, UNIDENTIFIED
9000	DEBRIS, NATURAL (I.E., WOOD)

Appendix 7. Disposition Reason Codes

- 1 = Discarded, no market, reason not specified
- 2 = Discarded, no market, too small
- 3 = Discarded, no market, too large
- 4 = Discarded, no market, quota filled
- 5 = Discarded, no market, won't keep until trip end
- 6 = Discarded, regulations prohibit retention
- 7 = Discarded, poor quality, reason not specified
- 8 = Discarded, poor quality, due to sand flea damage
- 9 = Discarded, poor quality, due to seal damage
- 10 = Discarded, poor quality, due to shark damage
- 11 = Discarded, poor quality, due to cetacean damage
- 12 = Discarded, poor quality, due to scavenger damage
- 13 = Discarded, poor quality, due to gear damage
- 14 = Discarded, fell out of gear and lost
- 15 = Discarded, too large to bring on-board
- 16 = Discarded, vessel capacity filled
- 17 = Discarded, not enough fish to pump onboard
- 18 = Discarded, incidental take (mammal, bird)
- 19 = Discarded, debris
- 20 = Discarded, other reason (record in comments)
- 21 = Discarded, reason unknown
- 30 = Kept, landed/sold
- 31 = Kept, used for bait
- 32 = Kept, for personal consumption
- 33 = Kept, other reason (record in comments)
- 34 = Kept, reason unknown
- 0 = Unknown disposition

Appendix 8. Marine Mammal Haulouts and Seabird Colonies of Kodiak Island

Table 2. Steller Sea Lion Haulouts, Kodiak. Known locations of Steller sea lion haulouts on Kodiak Island.

(Provided by B. Gerke, NMFS, 2002.)

Haulout Name	Latitude (N)	Longitude (W)
CAPE KULIAK	58.13333	-154.20833
CAPE ALITAK	56.84167	-154.31167
CAPE IKOLIK	57.28667	-154.79167
CAPE KULIUK	57.80833	-153.93333
CAPE UYAK	57.63333	-154.35000
MALINA POINT	58.03333	-153.36667
STEEP CAPE	58.20833	-153.19167
STURGEON HEAD	57.51667	-154.61667
SUNDSTROM	56.68333	-154.15000
TOMBSTONE ROCKS	57.35267	-154.81933
NOISY	57.93333	-153.55833
PUALE BAY	57.67667	-155.38500

Table 3. Kodiak Island Marine Bird Colony Description. A listing of the marine bird colonies inside AMMOP's study area. The map number and site numbers are referencing Figure 1. The table lists the Alaska Department of Fish and Game (ADF&G) statistical area, AMMOP's regional area code, relative priority among colony counts for this area, common site name, latitude, longitude, and number of birds at last count. (Provided by U.S. Fish and Wildlife Service, Migratory Bird Management, 2002.)

Map #	Site #	ADF&G Area	Region	Priority	Site Name	Latitude	Longitude	# Birds
32	3	25741	KI5	MOD	Egg Island	56.89	-154.22	792
32	5	25741	KI5	MOD	Fox Island	56.99	-154.03	1291
32	18	25741	KI5	MOD	Little Fox Island	56.98	-154.06	534
34	11	25420	KI2	LOW	Alf Islands	57.4	-153.83	1156
34	12	25430	KI2	LOW	Carlsen Point	57.57	-153.85	617
34	19	25440	KI2	LOW	Bird Rock	57.69	-153.9	2857
34	20	25440	KI2	LOW	Chief Point	57.71	-153.91	76
34	21	25936	KI1	HI	Reef 2	57.76	-152.86	450
34	23	25313	KI1	HI	S.E. Of Rock Point	57.77	-153.48	20
34	24	25313	KI1	LOW	Village Islands	57.79	-153.54	2222
34	25	25313	KI1	LOW	Gull Light	57.79	-153.45	579
34	26	25314	KI1	LOW	Unganik Pass Islets	57.81	-153.29	658
34	27	25936	KI1	HI	Barabara Cove	57.82	-152.91	50
34	28	25936	KI1	HI	N. Barabara Cove Point	57.82	-152.9	2060
34	29	25936	KI1	HI	Trout Triangle	57.82	-152.89	200
34	32	25937	KI1	HI	Kekur Point Rock	57.86	-152.79	400
34	34	25331	KI1	LOW	Naugolka Point Island	57.9	-153.23	499
34	36	25939	KI1	HI	Otmeloi Point	57.91	-152.51	34
34	37	25939	KI1	HI	Low Island	57.91	-152.55	1835
34	38	25314	KI1	LOW	North Noisy Island	57.93	-153.55	1794
34	39	25314	KI1	LOW	South Noisy Island	57.92	-153.55	451
34	40	25335	KI1	HI	Koniuji Island	57.93	-152.84	120
34	41	25335	KI1	HI	Bare Island	57.95	-153.08	-1
34	42	25335	KI1	HI	Chernof Point	57.95	-152.93	7
34	43	25335	KI1	HI	Island W. Of Bare Island	57.96	-153.1	4000
34	44	25937	KI1	HI	Whale Island	57.94	-152.75	6686
34	45	25938	KI1	HI	Treeless Island	57.98	-152.71	300
34	46	25939	KI1	MOD	The Triplets	57.98	-152.48	108347
34	48	25313	KI1	LOW	Uganik Bay - 2 Islets	57.73	-153.55	455

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34	71	25311	KI1	HI	1.25 Mi Sw Of Miner'S Pt.	57.89	-153.75	30
34	72	25311	KI1	HI	Pt. 4 Mi. Sw Of Miners Pt.	57.87	-153.81	82
34	73	25311	KI1	HI	Island Off Cape Ugat	57.87	-153.85	912
34	74	25440	KI2	LOW	Aux Triangle	57.69	-153.86	312
34	75	25440	KI2	HI	Pt. 1 Mi Se Of Cliff Triangle	57.67	-153.68	24
34	76	25440	KI2	LOW	S. Shore Spiridon Bay Islands	57.64	-153.65	316
34	77	25440	KI2	LOW	Ditto Islands	57.65	-153.68	399
34	78	25440	KI2	MOD	Island S. Ditto Islands	57.64	-153.68	175
34	79	25440	KI2	LOW	Anguk Islands	57.65	-153.71	285
34	80	25440	KI2	LOW	Unnamed Island Spiridon Bay	57.65	-153.75	52
34	81	25440	KI2	LOW	Thistle Rock	57.66	-153.8	350
34	82	25440	KI2	LOW	Clover Rock	57.65	-153.82	517
34	83	25420	KI2	MOD	Amook Bay Island	57.48	-153.82	689
34	84	25420	KI2	LOW	Is. Nw Side Amook Bay	57.53	-153.88	628
34	91	25939	KI1	HI	Monashka Seastack	57.85	-152.4	58
34	92	25939	KI1	HI	Largest Island, S. Icon Bay	57.89	-152.35	364
34	93	25939	KI1	HI	Eider & Nelson Islands	57.89	-152.41	3976
34	94	25939	KI1	HI	Knee Bay Stack	57.94	-152.41	30
34	95	25939	KI1	HI	Island Bay Islets	57.96	-152.41	3940
34	96	25939	KI1	HI	Small Triangle	57.94	-152.52	32
34	97	25938	KI1	HI	Anton Larsen Bay Islands	57.88	-152.64	5200
34	102	25937	KI1	HI	Island Near Sharatin Bay	57.87	-152.71	308
34	117	25420	KI2	LOW	"Small Island", Amook Pass	57.47	-153.82	592
34	118	25420	KI2	LOW	Twin Islands	57.42	-153.86	983
34	127	25311	KI1	LOW	Miners Point	57.9	-153.72	127
34	128	25311	KI1	LOW	West of Broken Point	57.88	-153.65	54
34	129	25420	KI2	LOW	Southeast of Alf Island	57.37	-153.77	12
34	130	25331	KI1	LOW	Uganik Island	57.93	-153.35	170
34	131	25314	KI1	MOD	Cape Uganik	57.97	-153.5	30
35	18	25410	KI2	HI	Bear Island	57.66	-154.04	96

Figure 1. Steller Sea Lion Haulouts, Kodiak. (Provided by B. Gerke, NMFS, 2002.)

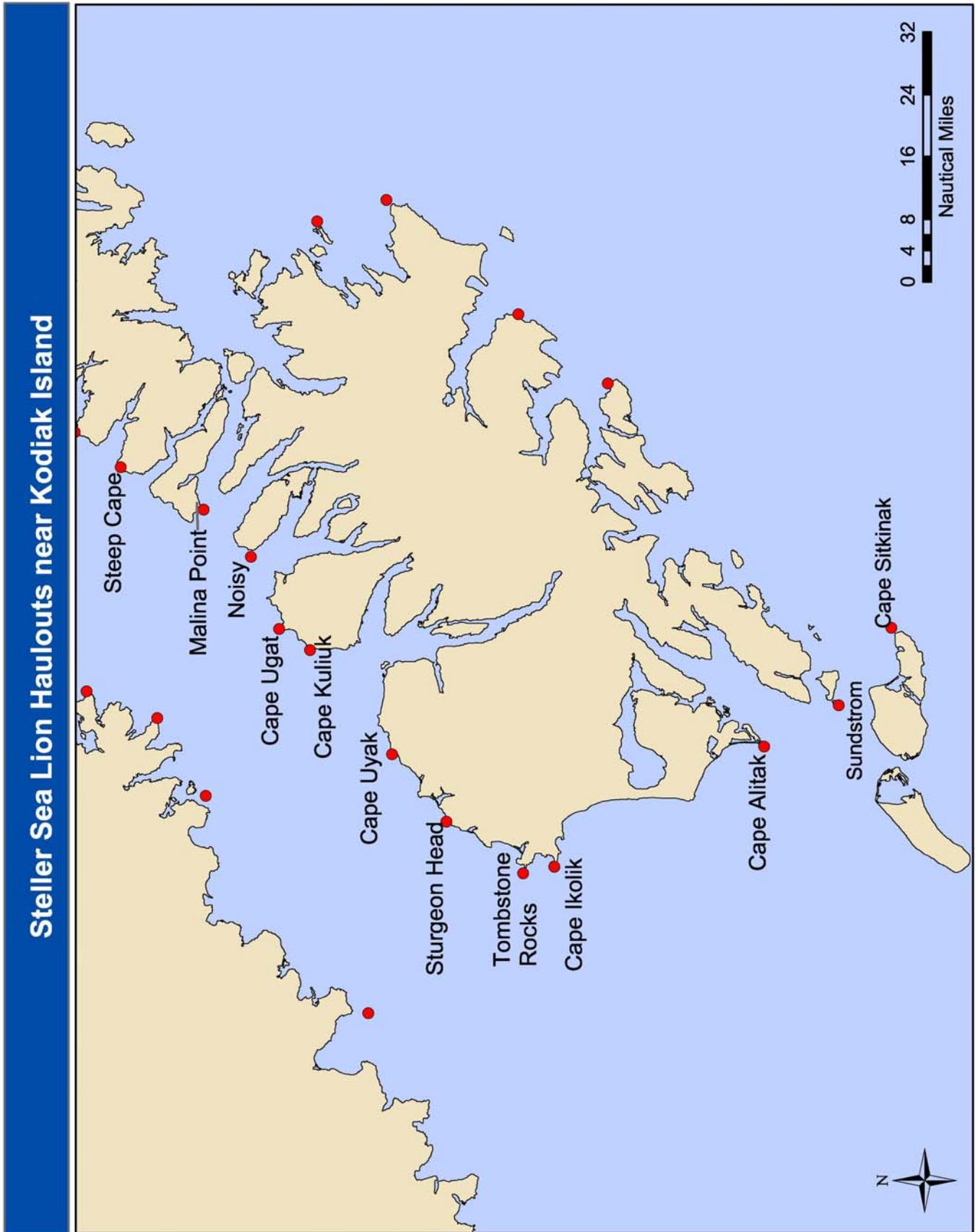
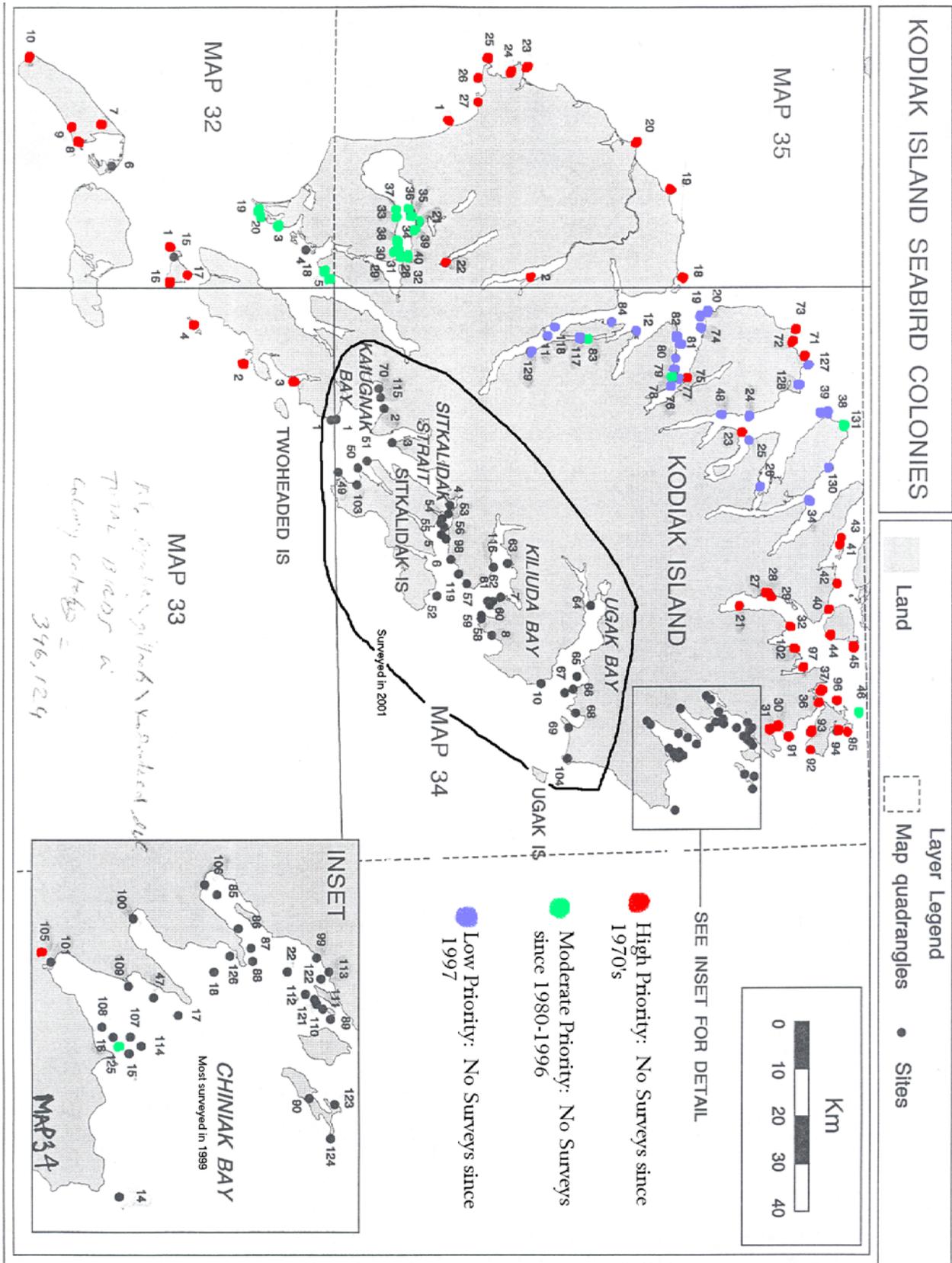


Figure 2. Marine Bird Colonies of Kodiak Island. (Provided by U.S. Fish and Wildlife Service, Migratory Bird Management, 2002.)



Appendix 9: Gear Instructions

Radios

The radios that you use most often are VHF-FM (Very High Frequency Modulation), used for short-range vessel-to-vessel and vessel-to-shore communication, and HF-SSB (High Frequency-Single Side Band), used for communication when the stations are out of VHF range with each other. Both types offer certain special advantages, and each requires a specific operating procedure.

VHF-FM Radios

In the United States, the VHF Band is broken up into 71 channels, with a frequency range of from 156.000 to 163.000 MHz, including six WX (Weather) channels. By law, all operating VHF stations are required to have at least three of these channels: channel 6, channel 16, and at least one other working channel.

Channel 6 (156.300 MHz) is the Intership Safety Channel, used for intership safety purposes, search-and-rescue (SAR) communications with ships and aircraft of the U.S. Coast Guard, and vessel movement reporting within ports and inland waterways. This channel must not be used for non-safety communications.

Channel 16 (156.800 MHz) is the International Distress, Safety, and Calling Channel (Intership and Ship-to-Coast).

This channel must be monitored at all times the station is in operation (except when actually communicating on another channel). This channel is also monitored by the U.S. Coast Guard, Public Coastal Stations, and many Limited Coastal Stations. Calls to vessels are normally initiated on this channel. Then, except in an emergency, you must switch to a working channel. It is against FCC regulations to conduct business on this channel. In addition, vessels calling must use their assigned call sign at the beginning and end of each transmission.

Channel 22A (157.100 MHz) is the U.S. Coast Guard Liaison Channel. This channel is used for communications with U.S. Coast Guard ships, aircraft, and coastal stations after first establishing contact on channel 16. Navigational warnings and, where not available on WX channels, Marine Weather forecasts are also broadcast on this frequency.

Channels 24, 25, 26, 27 and 28 (also 84, 85, 86 and 87) are the Public Correspondence channels (ship-to-coast). These are available to all vessels to communicate with Public Coastal stations (Marine Operator).

Channels 26 and 28 are the primary public correspondence channels.

Channels 1. 3. 5. 12. 13. 14. 15. 17. 65. 66. 73. 74. 77. 81. 82 and 83 are channels with special designations (port traffic communications, U.S. government communications, locks and bridges, environmental, etc.), and their use close to shore or to ports should be minimized.

Channels 7. 8. 9. 10. 11. 18. 19. 67. 68. 69. 70. 71. 72. 78. 79. 80 and 88 are commercial and non-commercial working channels that are available for conducting business. The abbreviated format (no call signs) is acceptable on these frequencies. It should be noted that some of these channels may be locally restricted, in which case their use for business should be avoided.

HF-SSB Radios

To communicate over distances of beyond twenty miles, you will need to use satellite communication or a medium to high frequency radiotelephone referred to as Single Side Band (SSB) radio. The signal is poorer in quality than VHF and susceptible to slight atmospheric shifts. Lower frequencies are used for medium distances and higher frequencies for greater distances. The general rule for single sideband frequency selection is: multiply the frequency in MHz by 100 to obtain the approximate coverage distance in miles. At night however, the ranges of SSB radiowave travel are from 2-3 times greater. Therefore, use a lower frequency at night to cover the same distance.

All ship SSB radiotelephones must be capable of operating on 2182 kHz, the international distress and calling frequency, and at least 2 other frequencies. 4125 kHz is the "hailing frequency" and is also used as an Emergency channel. Numerous channels are available for your use; which ones are available varies from place to place. However, channel 2670 kHz is only used for communicating with the Coast Guard and should not be used for other purposes.

When using SSB radiotelephone, you must observe radio silence on channel 2182 kHz and 4125 kHz for 3 minutes immediately after the hour and the half hour. The purpose of radio silence on the emergency hailing channel is to clear the airwave for weak or distant distress signals. No radio silence is used on the VHF emergency channel: channel 16.

Radio Procedures

The airwaves are in the public domain, and it is the responsibility of the radio station operator to conduct business according to established guidelines and procedures. While on the air, the operator should follow the following guidelines:

1. Listen before beginning transmission in order to ensure that you are not interfering with other stations or with emergency radio traffic.
2. Identify your station when calling. On the SSB, a calling station must limit the duration of the hail to not more than 30 seconds. If there is no reply, the hail may be repeated at 2 minute intervals up to a maximum of three times, at which time the calling station must sign off

and wait a minimum of 15 minutes before making another attempt. This requirement does not apply in emergency situations.

3. Keep transmissions short and concise, giving the other station a chance to respond, ask questions, or reconfirm an unclear message. A long, complicated message can best be effected in short segments with breaks in between to ensure that the receiving station has copied each portion of the message correctly.
4. Follow correct radio procedure while on the air. The phonetic alphabet should be learned and used. You should also know and use the radio "punctuation" words ("over", "clear", "out", "roger", "words twice", "say again", "standing by", and "break"). Since most radio communication is only one way at a time, these words can be valuable for signaling your intentions to the receiving station. Make sure to speak directly into the microphone; loudly, slowly, and distinctly—but not shouting. The use of profanity is strictly forbidden.
5. Upon completing a transmission, you must sign off by identifying your station and using the words "clear" or "out" (or, if you expect to soon resume contact with the same station, by using the phrase "standing by").

Radios cannot transmit and receive simultaneously. When you have temporarily finished talking and are ready to listen, say "over," and release the button on your microphone. When the other party is ready to listen they will say "over." At the end of your entire message, say "out" rather than "over." Keep in mind that people on other ships can hear your conversation, so be careful about sensitive or personal information.

Sounds are easily garbled on radios so the phonetic alphabet is used:

A - Alpha	B - Bravo	C - Charlie	D - Delta
E - Echo	F - Foxtrot	G - Gulf	H - Hotel
I - India	J - Juliet	K - Kilo (keelo)	L - Lima (Leema)
M - Mike	N - November	O - Oscar	P - Papa
Q - Quebec	R - Romeo	S - Sierra	T - Tango
U - Uniform	V - Victor	W - Whiskey	X - X-ray
Y - Yankee	Z - Zulu		

Every ship and all Coast Guard stations continually listen to the emergency frequencies, which are also the "hailing" frequencies. Therefore when you want to talk to someone, call on an emergency frequency. As soon as you contact them, arrange to switch to another channel. It is illegal, impolite, unfair, and dangerous to talk on emergency channels. Sometimes atmospheric conditions are such that the emergency frequencies are the only ones that work. At those times you simply cannot communicate via radio except to report emergencies.

Emergency frequencies are:

VHF: Channel 16, international distress

VHF: Channel 13, for ships to avoid collisions, but not to contact Coast Guard shore stations.

SSB: 2182 kHz or 4125 kHz, international distress frequencies

GPS

Data collection in the salmon fisheries includes the location of the fishing. You will be issued hand-held GPS units to navigate and determine the latitude and longitude of observed fishing operations.

The lines of longitude and latitude form a grid around the Earth and are enumerated by degrees. Each degree is divided into 60 minutes, each minute into 60 seconds.

The lines of Latitude run east-west and are parallel to the Equator (0 degrees latitude). The North pole is 90 ° North, and the South pole is 90° South latitude. Each degree of latitude is equal to 60 nautical miles (a handy fact when measuring distances on charts).

Lines of longitude run north-south, and meet at the North pole and South pole. They are not parallel, and divide the earth into shapes similar to sections of an orange. The “Prime Meridian” is the “Zero degrees Longitude” and runs through Greenwich, Great Britain. As you move west, towards North America, the longitude increases until you reach 179 59.9' West, less than a tenth of a mile from the 180 degree latitude line. If you go East from Greenwich, the longitude increases until you reach the 180° line.

An accurate method of determining your latitude and longitude is by Global Positioning System (GPS), which is a series of satellites in orbit around the Earth that emit signals at specific times. A GPS receiver can receive the signal and determine your distance from a given satellite by the time delay from emission to reception. Several signals from different satellites can fix a position, but the satellite must be above the horizon so that its signal can be received.

Instructions for Garmin GPS 12 Personal Navigator

Determine your position. Hold the button with the “light bulb” down until the display turns on.

After a system test, it should display the **Satellite page**, which identifies which orbiting satellites are detectable above the horizon. You may have to select your location or use the “autolocate” feature first.

Once the unit determines the latitude and longitude of your location, it displays the **Position page**. Strong signals and more satellites increase accuracy. Buildings, mountains, and heavy tree cover

will block some signals. If you are getting at least three satellite signals, your position is fairly accurate. If you receive four or more, the altitude of your location should also be correct. Satellite coverage is sometimes low in Alaska, and if the unit takes more than about three minutes to show the Position page, you may have to try later (this should be rare). There are differing opinions about the accuracy of the GPS positioning, but it is generally within about 50 feet, or about a tennis court at its worst. Differential GPS, which is available in some areas but requires a differential receiver, corrects for errors in satellite orbits and is more accurate.

The **Main Menu** will lead you to menus to change the “setup” of the unit. Latitude and longitude in can be displayed in several formats. For example, hddd mm’ ss.s’ would show the coordinates to tenths of a second. hddd mm.mm’ would show hundredths of minutes. Remember that there are 60 minutes in a degree, so 59 50.5’ = 59 50’ 30”.

Map Datums probably will not affect your accuracy of position fixing, but if using a chart or map for navigation, consult the legend for Datum information and change the GPS to this new reference. WGS 84 is usually the default datum.

The **Navigation page** should be used when traveling. The display can be in several formats, and includes compass bearings. Once you have entered waypoints in the GPS receiver, you can use it to navigate with several modes, either by compass bearing or a “highway” display.

The **Map Page** shows your route and waypoints. Waypoints are Latitudes and Longitudes that you store in the receiver. Press the “Mark” key. The unit will prompt you for a three digit name. If you change the name of the waypoint, press “enter”. If you press “enter”, a default name will be assigned. You can delete or replace waypoints using the menu.

Bushnell Yardage Pro Rangefinder

A rangefinder is simple to use, *but is not weatherproof and should be taken out of the case only when necessary.* Measure distances in meters (hold the MODE button down for 5 seconds to . The unit measures distances from 20 to 800 meters (850 m for highly reflective objects), and is accurate to +/- 2 meters.

To use, hold the power button down until a range is displayed. Once a range is displayed, release the power button and the display will remain active for 8 seconds. If you hold the power button down for more than 3 seconds, the unit will switch to “scan” mode, and be continuously updated. “Rain” mode can be used to ignore pulses reflected from precipitation. “Reflective” mode (REFL) is for highly reflective targets and has increased maximum range, but it decreases the ability to detect less reflective targets that you will encounter. “>150” mode is for filtering out brush or objects that are less than 150 meters away. In your data collection, “Standard” mode (which has no LCD indication) should be used in most situations. You may find the “RAIN” mode to be useful, which will be indicated by “RAIN” in the LCD display.

Dial Caliper

The dial caliper is capable of measuring to a much smaller level of accuracy than needed for your data collection. Knowing how to read the dial to 1/1000 of an inch or .02 mm is not necessary. It is an expensive instrument and should be rinsed of salt water, oiled, and stored in its case.

Depth Meter

The depth meter runs a 9 volt battery. Do not drop it—it is not shockproof. Hold the front cap in the water, push the switch, remove it and read it. It will shut off after 10 seconds. To change between feet and meters, remove the front cap with a counter-clockwise and flip the third switch away from the wire back for meters, forward for feet. You will need a paper clip to flip this small switch.

Kestrel 2000 Pocket Thermo Wind Meter

If there is little wind (<2 mph), wave the meter to measure air temperature, increasing air circulation into the unit. Use the MODE key to change display between “current wind speed”, “Maximum wind speed”, “Average wind speed”, “air temperature”, and “wind chill”. Hold down the ON button while pressing MODE to change the scale from “Beaufort force”, “Knots”, “MPH”, etc.

Stopwatch

Press the upper right button to start or stop time measurement. Reset to zero with the upper left button. Other functions are probably not necessary. The center button, held down for two seconds, is used to choose between “stopwatch” (plain time measurement) and “interval timer” (lap measurement).

The Alaska Marine Mammal Observer Program				
OBSERVER GEAR CHECK LIST				
Observer Name _____				
Observer Signature _____				
Date of Issue _____				
Date of Return _____				
Notes/ Comment _____				

	Item	ID#	Number Issued	Number Returned
	Heavy duty 24" tool box (1) (BRING TO TRAINING)	-		
	Fujinon Mariner 7x50 binoculars (1)			
	Depth sounder (1)			
	Horizon VHF handheld radio (1)			
	Flashlight (1)			
	EPIRB (1)			
	Pesola spring scale/carbine hook (1)			
	Metal clipboard (1)	-		
	Calipers (1)			
	Thumb counter (2)	-		
	Scoopmaster bucket thermometer (1)	-		
	Fiberglass tape measure (1)	-		
	Russell Harrington 8" knife (1)			
	Frosts serrated fishing knife in holder (optional - 1)			
	Redden marine supply fish pick (1)			
	Pruning shears (1)			
	Marine mammal kits (10)	-		

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Nitrile gloves (10 pairs)	-		
Sampling bags (assorted)	-		
Carcass tags (1 bag) (NOTE: List issued & returned tag Numbers)			
Cable ties (30)	-		
Tyvek sample labels (30)	-		
Forceps (1)	-		
Pigskin gloves (1 pair)	-		
Elastics (1 bag)	-		
Small sealed box (1)	-		
Protractor (1)	-		
Pocket calendar (1)	-		
Post-It notes (1)	-		
Ruler (1)	-		
Calculator (1)	-		
Paperclips (1 bag)	-		
Write-in-the-rain notebook (1) (addi checked out as needed)	-		
Mechanical pencils w/refills (2) (addi. Checked out as needed)	-		
Blue pens (2) (addi. Checked out as needed)	-		
Highlighters (1) (addi. Checked out as needed)	-		
Sharpies - ultra fine (1) (addi. Checked out as needed)	-		
Sharpies - extra fine (1) (addi. Checked out as needed)	-		
Permanent marker - thick (1) (addi. Checked out as needed)	-		
First aid kit (1)			
Ear plugs, disposable (as needed)	-		
Ear muffs (1)	-		
Face Shield (1)	-		
Eye protection (1)	-		
Lightstick (2)	-		
Mosquito head net (1)	-		

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Magnetic compass (1)	-		
Scrub Brush (1)	-		
Sponge (1)			
Field Equipment Dry Bag (1) Bring to Training			
Wind meter (1)			
Rangefinder (1)			
GPS (1)			
Pentax 105WR camera (1)			
Film (2)	-		
Batteries (10) additional checked out as needed	-		
Marine Mammals of Alaska field guide (1)			
Pacific Coast Fishes Peterson field guide (1)			
Birds of the Pacific Northwest Coast field guide (1)			
NA Seashore Creatures Audubon Society field guide (1)			
MM of the Eastern North Pacific field guide sheet (1)	-		
Mac's field guide Northwestern Coastal Fish sheet (1)	-		
Mac's field guide Trout and Salmon of North America sheet (1)	-		
Mac's field guide Northwestern Coast Waterbirds sheet (1)			
Zip waterproof pouch (Bring to Training)			
Laminated AMMOP sheets (20)	-		
AMMOP booklets (10)	-		
NOAA key chains (10)	-		
Practical Outdoor Survival (1)	-		
The Outward Bound Wilderness First-Aid handbook (1)	-		
Laminated US F&W Service Migratory Bird permit (1)	-		
Laminated marine mammal sampling sheet (1)	-		
Laminated safety checklist (1)	-		
Charts as needed	-		
Flexible cover sheet for charts (1)	-		

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Flexible cover sheet for codes (1)	-		
AMMOP manual (1)	-		
Copies of forms (as needed)	-		
Rain and Survival Gear (DCI transport to Kodiak)	Size		
Grunden's medium duty Clipper 82 hooded jacket (1)			
Grunden's medium duty Clipper 116 bib pants (1)			
Grunden's Clipper 26 sleeves (1)	-		
Vinyl fishing gloves (1 pair) Add. checked out as needed			
Glove liners (1 pair) Add. checked out as needed	-		
PFD/whistle (1)			
Immersion suit/Strobe light (1)			
Tarp (10'x12') (1)	-		
Plastic expandable filing case (1)	-		
OPTIONAL ITEMS			
Pack-mate reusable bag - large (for clothes)	-		
Pack-mate reusable bag - medium (for clothes) (optional)	-		
Portable cooler (1)	-		
Bucket (1)	-		
Bucket cover (optional - 1)	-		
Insect repellent (1)	-		
Bear deterrent and holster (1)	-		
Stopwatch (1)	-		
Steno spiral notebook (1)	-		
AMMOP hat (1)	-		
Windex	-		
Soap	-		

Appendix 10: Conversions: WEIGHTS AND MEASUREMENTS

Distances

1 inch (in) = 2.54 centimeters (cm)

1 cm = 10 millimeters (mm) = .3937 in

1 foot (ft) = 0.3048 meters (m) = 0.1667 fathoms (fm)

1 m = 100 cm = 3.2808 ft = 0.5468 fm

1 fathom = 6 ft = 1.829 m

1000 m = 1 kilometer (km) = .6214 statute miles (mi)

1 statute mile = 5280 ft = 1.609 km = 880 fathoms

1 nautical mile (nm) = 1.15078 statute miles (mi) = 1.852 km = 1012.6859 fathoms

1° Latitude = 60 nm

Weight

1 pound (lb) = .4536 kilogram (kg)

1 kg = 2.2046 lb

Temperature

° Fahrenheit (F) = (1.8 x °Celsius) + 32 °

°Celsius (C) = 5/9(°F - 32°)