# Alaska
# Marine Mammal
# Observer Program
# Manual

# 2007

ALASKA
MARINE
MAMMAL
OBSERVER
PROGRAM

**Errata: AMMOP Manual 2007**

Please ensure the following corrections are updated in your copy of the manual.

- General Instructions.
  - Use #2 pencil (not mechanical). Strikethrough errors, and write any correction to the side of the struck item
  - All yes/no fields are to be completed with "Y" or "N" for yes or no
  - Cross zeros, sevens, letter zee (especially in alphanumeric fields like permit number and vessel number)
  - Comments concerning people should use descriptions like 'permit holder, crew, E01, skiff driver' instead of personal names
- Trip Form
  - #5 Fishery Name and Code. Yakutat salmon set gillnet = "11"
  - #14 Permit Owner Status. Based on is based on what the permit holder tells observer, for that trip. [Status can change over time]
  - #19 Research: do not use #2, 3,4. They referred to specific projects that are not going on further. Should you see tags on shark or fish, please make a note of this on the haul form. Should you see tagged birds or marine mammals, please make a note of this on either the sighting form or take form, depending on the circumstance
  - #22 Number of Skiffs. Hauling the net, on this trip
  - #24 Number of Primary Species Retained. Retained for any reason- so if disposition is 'K', include in sum
  - #25 Dealer Names are on reference sheet

- Gear Form
  - #17 Twine size number. Add the name of the manufacturer if known directly into the field. The database is capable of recording the information, but the forms were already printed.
  - #22 Hanging Ratio. Strike "according to instructions in appendix". It is only obtained from the fisher.
  - #43 -- The number 43 was skipped during numbering. No fields are missing.
- Haul Form
  - Do not use the catch tally sheet. The focus should be on the gear at all times.
  - Get depths from fishermen. Do not use a chart; no depth sounders provided.
  - Fish and Soak durations are recorded as elapsed times using a period "." so 75 minutes looks like 1.15 while 2 and half days is 60.00
  - Haul begin and end time is recorded using the 24 hour clock with a colon (" : ")
  - #23 Species Codes are now found in appendix 8. Request information from the permit holder; except for unforeseen circumstance, no reason where observer will be counting fish
  - Sec 4 page 23-24, fields 25-27 cross out last sentence
  - Minimum distance is the distance between the closest-to-shore end of net to the low tide of that haul

    - Maximum distance is the distance between the furthest-from-shore end of net to the high tide of that haul
    - Sec 4 page 23-24, fields 30-33 cross out last sentence
    - Sec 4 page 26, field 39 cross out "and any debris"
    - #33 Gear Damage. This is actually two fields in the database. Use both damage and debris codes as needed
    - # 38 Observation Quality now functions as "Net View Ranking". Please see the handout concerning this new field and new protocol for its use.
    - # 47 Comments: please record the fisher's responses to a. and b. on the fisher comment form, not the haul form
- Marine Bird Sample Form
    - For a dead bird, wither or not collected, the only steps are:
        - Photo w/ item for scale, trip id, date as MMDDYYYY
        - Take photo of dorsal, ventral, wing etc
        - Take CL length measurement
        - Use plastic bill guide to make id
        - No other measurements
- Sighting Form
    - Sec 4 page 59, soak watch **is** associated with a trip
    - Repetitive data: 1st line write out, then use arrows, until last line and/or end of page, when you write out again.
    - Preferred date is MMDDYYYY not the typo DDMMYYYY, but no penalty for following format
    - Do not record bird sightings
- Appendix
    - Pg. 28 the hook diagram #11 didn't photocopy

<u>Clarifications</u>

- Haul and Soak watches. The preferred periods for soak watches are the hour before and after a haul. All hauls for the day should be watched. Schedule breaks as needed, keeping in mind the preferred periods for soak watches. Leads/ coordinators will be monitoring trip data collection during the season, and can determine if this approach needs to be adjusted.
- Key characteristic for marine mammal id is recorded in sighting comment; sketch if needed
- On the actual Haul Form, both lat and long fields have a format typo: should read "mm" not hh

## Net View Ranking

The Net View Ranking field is a new field based on the previously used "observation quality," as named on the Haul Form and in the manual instructions. Please use the following information in place of the text currently found in the 2007 Alaska Marine Mammal Observer Program Manual.

## On section 3, page 4:

*4. Sampling Watches*

Once a permit is selected and the observer deploys for the set net site the observer's data collection duties commence. There are priorities of what data must be collected if events conflict in area or time, and the following is a summary of those priorities. However, the order in which they occur may vary on a given permit sample day (trip).

Haul Watch: The observer's first sampling priority is to observe the entire pick of a net, and a haul watch is conducted while the vessel is picking fishing gear. The haul watch provides information on the fishing operations, marine mammal interactions, and marine mammals that are in the vicinity of the gear during fishing operations. Detailed instructions on how to conduct a haul watch are found in Section 4 Marine Mammal Sighting Watches. Detailed haul data are recorded on the Haul Form. Any incidental takes will be recorded and necessary sampling conducted and recorded as directed in Section 4 of this manual. Additional documentation of the haul watch is recorded on the Sighting Form as directed in Section 4 of this manual under Marine Mammal Sighting Watches.

## On section 4, page 25 (Haul Form instructions):

**38. NET VIEW:** Assess and record the view you had of the net during your observation of the pick. Choose one of the following codes that best describes your view of the net:

**1 =** For most or all of the pick, the observer had a clear view of the full depth of the net under the water near the picking operation; **AND** the observer's view of the picking operation was unobstructed for the duration of the pick; **AND** the observer skiff was within 20 ft of the fishing skiff/picking operation at all times.

**2 =** The observer could see at least the top 1/3 of the net depth underwater; **AND** the observer's view of the portion of the net being pulled was obstructed for less than 25% of the pick; **AND** the observer skiff was within 20 ft of the fishing skiff for most or all of the pick.

**3 =** No underwater portion of the net could be seen by the observer due to glare, poor water clarity or other reason; **AND/OR** the observer's view of the portion of the net being pulled was obstructed for 25% - 50% of the pick; **AND/OR** the observer skiff could not get closer to the net than 30 ft for most or all of the pick.

**4 =** No underwater portion of the net could be seen by the observer due to glare, poor water clarity or other reason; **AND/OR** view was obstructed more than 50% of the pick; **AND/OR** skiff could not get within 50 ft of the net to observe the picking for most or all of the pick;

**9 = Other** (record in comments)

## On section 4, page 55:

2. SIGHTING HAUL WATCH

A haul watch is conducted while the vessel is hauling back or picking fishing gear. The observer focus is on looking for incidental takes of marine mammals. This watch must be concentrated on the water near and around the net, including down into the water column in the immediate area adjacent to where picking takes place and the net comes out of the water. **The focus of the observer should be the net where the fisherman is picking to ensure an entangled marine mammal does not drop out of the net unseen. Quick sharp glances around the net area are possible without missing drop outs from the net.** The haul watch also provides information on marine mammals that are in the vicinity of the gear during fishing operations. This additional information is used to assess possible interactions and associations of marine mammals with fishing activity.

A sighting haul watch is conducted during every haul/pick, but will be suspended when the Beaufort sea state reaches 6 or more. During a sighting 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 sighting haul watch while remaining out of the way of normal vessel operations. This location should provide an unobstructed view of 1) the net next to the vessel, 2) the area 180° around the net (perpendicular to and on either side of the float line), 3) down into the water column where the net emerges from the water as it is hauled or picked, 4) and immediately in front of where the net emerges from the water. Observers are expected to remain at the same location (or same relative distance to picking skiff) during the entire watch. During a sighting haul watch, the observer should face the net looking down along the float line of the net as it exits the water and is brought up to the vessel. The primary focus should be along that line, where the net breaks the water's surface, and immediately prior to where it exits the water. Quick scans should be made intermittently to the area 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.

Any biological sampling necessary will occur after the pick is over. During a sighting haul watch, scanning the water and net for incidental takes is a priority over all other data collection. Therefore, all catch composition data should be collected after the pick is done. The observer should detail the circumstances in comments if at any point they feel they can not confidently watch for takes.

**The**
**Alaska Marine Mammal Observer Program**
**Manual**
**2007**

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Section One

# The Alaska Marine Mammal Observer Program

## Introduction

The Marine Mammal Protection Act (MMPA) was enacted in 1972 to protect and conserve marine mammals and in response to growing public concern that many marine mammal populations were declining at an alarming rate. Congress intended that marine mammal populations should be "protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management and that the primary objective of their management should be to maintain the health and stability of the ecosystem." 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.

The MMPA prohibits the "taking" (killing, injuring, or importation) of marine mammals. Marine mammals may be taken incidentally in the course of commercial fishing operations, provided the appropriate exemptions are issued. However, the *intentional* lethal take of any marine mammal in the course of commercial fishing operations is prohibited.

Congress gave the Departments of Commerce and Interior the responsibility and authority to manage marine mammals, and this is delegated to their respective agencies, the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service. NMFS is authorized to conduct observer programs in commercial fisheries to assess levels of mortality and serious injury of marine mammals that occur during fishing operations. In Alaska, NMFS' Alaska Marine Mammal Observer Program collects information on fishery interactions with marine mammals. This information is incorporated into assessments of the general status of marine mammal populations in Alaska. NMFS is required by the Act to publish an annual "List of Fisheries" which categorizes commercial fisheries according to their relative impact on the health of marine mammal stocks.

## Marine Mammal Stock Assessment Reports

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 to 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.

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. Published since 1995, these Stock Assessment Reports (SARs) compile current marine mammal status information and make it available as a summary document. Regional SARs contain a stock assessment for each marine mammal stock that occurs in the region. Updates are made annually for strategic stocks and stocks for which there is significant new information, 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 Potential Biological Removal level, 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).

A stock's Potential Biological Removal (PBR) level, defined as the level of removal that the stock can withstand, excluding natural mortality, while still obtaining their Optimum Sustainable Population (OSP), is calculated as follows:

> 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)]:
>
> $$PBR=N(min) \times 0.5R(max) \times F(R)$$

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. Using the best available data these reports must assess status of each marine mammal stock, including whether it is considered a strategic stock. A strategic stock is one that is listed as threatened or endangered under the Endangered Species Act; is likely to be listed as threatened under the Act in the near future; or which has a level of direct human-caused mortality and serious injury that exceeds the stock's potential biological removal level.

## Commercial Fishery Interactions

Section 118 of the MMPA addresses the interaction of fisheries with marine mammals, categorizes fisheries based on the level of fishery-related serious injury or mortality of marine mammals, and places certain 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 to NMFS incidental "takes", including mortalities and serious injuries of marine mammals. A primary goal of the MMPA is to reduce marine mammal takes in all fisheries.

### Annual List of Fisheries and Fishery Categorization

The List of Fisheries, published annually by NMFS, is a list of all commercial fisheries that legally operate in U.S. waters. The list contains information on each fishery including number of participants, marine mammal stocks affected by the fishery, and the classification of the fishery relative to its impact on those marine mammal stocks.

NMFS classifies each U.S. commercial fishery (state and Federal) in one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in the fishery. A serious injury is defined as one that is likely to lead to mortality. Each fishery is classified through a two-tiered analysis which assesses the potential impact of fisheries on each marine mammal stock by comparing serious injury and mortality levels to stock PBRs.

**Tier 1:** For each stock, serious injuries and mortalities from all commercial U.S. fisheries are totaled. If the total is less than or equal to 10% of the PBR of that stock, then all fisheries interacting with this stock are placed in Category III. This process is repeated for each stock. A fishery remains in Category III unless it interacts with a stock for which PBR is exceeded by more than 10%. All fisheries that interact with a stock for which PBR is exceeded by more than 10% are subject to a Tier 2 analysis. Fisheries with no serious injuries or mortalities to any marine mammal stock are placed in Category III.

**Tier 2:** For each fishery, the annual mortality and serious injury for each marine mammal stock is evaluated relative to the PBR of that stock. The fishery is categorized accordingly:

**Category I:** Mortality $\geq$50% PBR
**Category II:** 50% PBR > Mortality > 1% PBR
**Category III:** Mortality $\leq$ 1% PBR

NMFS relies on observer data in the analyses, but also evaluates other factors such as fishing techniques, gear, methods used to deter marine mammals, seasons and areas fished.

Observers may be placed in Category I and II fisheries on a mandatory basis. They also can be placed in Category III fisheries on a voluntary basis.

## Marine Mammal Authorization Program

The Marine Mammal Authorization Program (MMAP) provides an exemption for the accidental injury or mortality of marine mammals during commercial fishing operations. To lawfully incidentally take a marine mammal in a commercial fishery, the fishing permit holder in a Category I or II fishery must obtain a certificate from NMFS. NMFS has automated the registration process for Alaskan fisheries. When fishermen register with the Alaska Department of Fish and Game or NMFS for a Category I or II fishery permit, the permit holder receives a free exemption certificate, which must be available or displayed while fishing. All mortalities and injuries to marine mammals during commercial fishing activities must be reported to NMFS within 48 hours.

## MMPA Observer Programs

With the 1994 MMPA Amendments, fishermen were no longer required to fill out and submit to NMFS annual logbooks documenting marine mammal takes that occurred during the course of commercial fishing operations. As noted above, fishermen are now required to submit individual reports of incidental mortality or injury events to NMFS within 48 hours of the event or return to port. However, a lower reporting rate for these reports compared to reports from the logbook program has been documented. Consequently, since 1995, NMFS has received little 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, the agency 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.

Consequently, NMFS has determined that observer programs are the best means of obtaining accurate and objective data for determining rates of marine mammal takes in fisheries. The MMPA gives NMFS the authority to place observers aboard commercial fishing vessels to collect data for the purposes of assessing the impacts of commercial fisheries in the U.S. on marine mammal populations.

The objectives of the marine mammal observer programs are provided by the MMPA:

- 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 Observer Programs in Alaska*

To achieve a basic understanding of the rate of mortality and serious injury occurring to marine mammals in Alaska fisheries, NMFS may require any Category I or II fishery to be monitored for interactions with marine mammals. The North Pacific Groundfish Observer Program, based out of the Alaska Fishery Science Center in Seattle, WA, places observers aboard Federally-managed groundfish boats according to requirements in the Fishery Management Plans that govern those fisheries. The **Alaska Marine Mammal Observer Program**, based out of the Alaska Regional Office in Juneau, AK, focuses on observer placement in state-managed Category II fisheries in Alaska.

In Alaska, while there are currently no Category I fisheries, the final 2007 List of Fisheries contains 18 Category II fisheries in Alaska. Four of these Category II fisheries are Federally-managed groundfish fisheries, and 14 are state-managed salmon gillnet or purse seine fisheries. Of the Alaska state-managed Category II fisheries, those that have been observed are the Prince William Sound drift and set net gillnet fisheries (1990-1991), Alaska Peninsula drift gillnet fishery (1990), Cook Inlet drift and set gill net fisheries (1999-2000), and the Kodiak set gillnet fishery (2002, 2005).

Several stocks of marine mammals in Alaska prompt the prioritization of observing the Category II state-managed fisheries. The Northern Gulf of Alaska has several marine mammal stocks with a population status in decline. These stocks include the Cook Inlet stock of beluga whale and the Gulf of Alaska harbor seal. The population of the endangered Western U.S. stock of Steller sea lion saw serious decline over a long period of time, but is recently thought to be showing some stabilization. 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.

## ALASKA MARINE MAMMAL OBSERVER PROGRAM (AMMOP)

The primary goal of the AMMOP is to report on the number, condition, and nature of incidental injury and mortality to marine mammals and sea birds occurring during the course of Category II commercial fishing operations in Alaska state-managed fisheries. Its main objectives are, in order of priority, to: 1) obtain reliable estimates of incidental serious injury and mortality of marine mammals; 2) determine the reliability of reports submitted by vessel owners and operators; 3) identify changes in fishing methods or technology that may increase or decrease marine mammal incidental serious injury or mortality if necessary; 4) obtain reliable estimates of incidental serious injury and mortality of seabirds and other protected species; 5) collect biological samples for scientific studies that may otherwise be unobtainable, and 6) record data on by-catch and discard levels of all catch species.

The specific tasks of this contract include: 1) scoping studies of fisheries to be observed; 2) the collection of observer data during fishery operations, in accordance with the above priorities, 3) industry outreach in fisheries that may include the Prince William Sound drift gillnet, Southeast drift gillnet and purse seine fisheries, Bristol Bay set and drift gillnet fisheries, and the Yakutat set gillnet fishery.

The AMMOP determines the needed coverage levels for each of the Category II fisheries based on a number of factors. Coverage may be revised based on changes in fishing effort, marine mammal population assessment, and future agency concerns, data needs, and funding availability. Ideally, the observation period for each fishery will be spread evenly over two or three consecutive fishing seasons.

Multiple year coverage is advantageous for several of reasons: It allows for the observation of each fishery over a time frame that will allow the agency 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 optimum 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.

When an observer program commences in a previously unobserved fishery, the first step is to collect some baseline data on fishing operations and any marine mammal interactions. Coverage levels at that point are largely influenced by available funding, the number of participants in the fishery, and program goals. The AMMOP generally wants to determine at the outset that PBR is not exceeded for any marine mammal stock. Once some baseline data are collected and an annual expected mortality level can be estimated, minimum observer coverage levels that will ensure statistical confidence in the mortality estimates can be determined. This also helps to ensure that observer resources are not wasted by collecting too much data.

Depending on the results from an observed fishery, the fishery may remain in same category or may be re-categorized. Category III fisheries are not required to be observed, since the level of marine mammal take is considered to be rare or zero. A Category I or II fishery that has been observed for two to three years may not be observed again for several years, or it may continue to be observed if the level of marine mammal take is determined to need close monitoring.

## AMMOP Partners and Affiliates

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 with support and direction, and the contractor supports the observers and provides the observer-collected data and information NMFS.

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 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, which encompasses the distribution and level of observer coverage, providing observer training, and for the final reports and analysis of the data. NMFS also supports the contracted observer provider with technical guidance, observer gear, field communication equipment and other gear as need to support field operations. Observer training is provided in conjunction with the Observer Training Center through a contract with the University of Alaska Anchorage. The Protected Resources Division of the Alaska Regional Office (Juneau) is the NMFS entity directly responsible for the Alaska MMPA Observer Program.

### The Contracted Observer Provider

The observer provider is responsible for obtaining data from fishing operations in the area of study according to sampling protocol. This entails 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 observer provider is responsible for working with the fleet to understand the fishing effort distribution to achieve the coverage and project goals and exchanging information with fishermen during in-season meetings. In addition, the observer provider is responsible for managing the hiring, logistics, deployment, data entry, and debriefing of observers. The observer provider is 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. This information is critical to successfully developing and implementing sampling protocols appropriate to the fishery operations.

### 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, which all permit holders received in the mail prior to the fishing season. Additional copies can be requested through NMFS Enforcement, the NMFS AK Regional Office or agency Headquarters (contact info on page X), or accessed through the internet at: http://www.fakr.noaa.gov/protectedresources/observers/mmapform.pdf

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.

### Skiff and Support 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 collected seabird sighting data in the Kodiak setnet fishery in 2002. They bring with them a specialized, and sometimes local, knowledge to help with scientific data collection. In Yakutat, observers will sometimes work on land owned and or managed by the US Forest Service, US Park Service, and native Organizations. Other agency and university research is often supported by this program. The data and biological samples collected by observers can be requested for use in scientific studies.

## THE OBSERVERS

Good observers are the key to every observer program. No exception, they are critical to the successful implementation of the AMMOP. Observers collect the data and are the field representatives of the program. Collection of accurate, unbiased, and representative data is the goal. Safety is the first priority in accomplishing that goal.

NMFS specifically required the hiring of experienced observers for the AMMOP due to the complicated nature of the program and the AMMOP's rigorous sampling protocols. NMFS recognizes the value of experience and expects observers to provide high quality data and useful information to help NMFS meet it's statutory mandate to return and maintain marine mammal populations to their place as a healthy, functioning element in the marine ecosystems of Alaska.

Observers' input on various aspects of the program (such as suggestions on improving data forms and sampling protocol) can and have strengthened the quality of data and program design and operations. 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 fishermen interacting with the AMMOP observers have never had to cooperate with any kind of observer program and may not be fully aware of the potential 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 program.

To build professional relationships of trust and respect between the observers and the fishing community, it is essential that the observers professionalism 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 will work together to coordinate their efforts in arranging their deployments and carrying out their duties. It is important that observers 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 this AMMOP 2007 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 and seabirds. Observers will work cooperatively and professionally with fishermen, provide information to the industry regarding the program as directed, and conduct in-season data review and editing. Observers will be central to determining fishing effort distribution and helping the lead observers remain up to date on changes to effort due to changing distribution of the fishermen. Communication with fishermen will be key to achieving this on a real-time basis, and will affect the ultimate accuracy of the data analysis. Observers will be working from small commercial fishing boats, research vessels, skiffs, or on shore. Observers must be prepared to operate all terrain vehicles (ATV), hike long distances, and be willing to travel in small aircraft to remote areas.

Observers will submit data weekly and participate in weekly debriefings, during which data collection methods will be discussed and any issues of concern may be raised by the observer or lead observer. Final debriefings will be required and observer will be responsible for the condition and disposition of the safety and sampling gear issued to them.

## Lead Observers

NMFS requires the contracted observer provider to appoint 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 or necessary, lead observers will participate as field observers in the collection of data.

# Section 2

## THE YAKUTAT ENVIRONMENT

### Introduction

This section is a brief introduction to the environment of Yakutat. For more detailed information observers are encouraged to research literature about Yakutat.

### WELCOME

Yakutat, Alaska, sits on Monti Bay. There are approximately 800 residents of which 60% are Alaska Natives. Yakutat has a diverse cultural history, which presently maintains a traditional Tlingit culture. Commercial, sport and subsistence fishing are the big contributors to its economy. Sport fishers come to Yakutat for world- class sport fishing and fill up the local lodges during the summer. As strange as it may seem, Yakutat is known to have some incredible surfing just outside Yakutat Bay. The Alsek River, also, is known to be one of the top 10- whitewater rivers in the country, thus drawing large numbers of adventure seekers during the summer months.

The community offers all the amenities you would find in many small towns, such as small grocery stores, restaurants, a surf shop, churches, a post office, True Value Hardware, gas stations, auto shops, rental cars, a medical clinic, and National Park and Forest Service offices. While you can get around town on foot or ATV, most people drive vehicles.

The local newspaper is the Monti Bay Times and can be purchased for 50 cents at local stores and restaurants. While there is no cell phone service in Yakutat, there are regular land-lines for telephone service and Satellite phones.

Yakutat has numerous community events including a 4$^{th}$ of July parade, the Cape Fairweather fair and numerous lunch bake gatherings. Other activities include; bird watching, hiking, berry picking, fishing, surfing and sight seeing. Lodges host bands and other community events throughout the summer. Locals get around town by car, ATV, bikes and walking. Be aware bears are commonly seen in town and the surrounding areas.

### Geography

Yakutat is located along the NE coast of the Gulf of Alaska - north of Southeast Alaska's Inside Passage and south of Prince William Sound. It is almost equidistant between Juneau, which is 212 miles southeast, and Cordova which is 225 miles to the northwest. The town of Yakutat is located in lowlands at the mouth of Yakutat Bay. It is surrounded by the glaciers and peaks of the St. Elias range which includes 20 peaks in excess of 11,000 feet. The scale of the St. Elias range is huge and includes the Hubbard and Malaspina glacier which is larger than the state of Rhode Island.

## Climate

The Yakutat area has a maritime climate with average summer temperatures ranging from 42 to 60 degrees Fahrenheit and winter temperatures of 17 to 39 degrees Fahrenheit. Summers tend to be rainy, and during the winter Yakutat can receive some of the heaviest rainfall in the state. Fog can be a regular feature of the coast in the summer, and late fall winds can top 100 mph in places.

## Flora AND Fauna

The Yakutat forest contains mainly Sitka Spruce and a smaller amount of Western Hemlock. Other plants include devils club, skunk cabbage, blueberries, salmonberries, high-bush cranberries and willow. Sandy beaches with grassy areas and beach strawberries are common at the mouths of the rivers in the Yakutat area. Berry pickers should be aware there are some poisonous berries in the Yakutat area, and a good berry book is recommended before picking.

Terrestrial mammals in the Yakutat area include brown bear, black bear, glacier bear (rare), moose, Sitka black tail deer, mountain goats, wolves, wolverines, lynx, weasels, mink, river otters and various species of birds.

Marine mammals are common along the shores of the Gulf of Alaska and include sea lions, sea otters and Harbor seals. A number of cetaceans are present around Yakutat and include porpoises, killer, minke , humpback, sperm, gray, Fin, Beluga and Sei whales.

Numerous birds can be spotted in the local Yakutat area including: bald eagles, hawks, falcons, crows, trumpeter swans, sparrows, wood warblers, thrushes, swallows, ptarmigan, owls, terns, gulls, cranes, loons, geese and ducks.

All five species of salmon (king, sockeye, coho, pink, and chum) are present in the Yakutat area. Other fish found around Yakutat include cutthroat trout, Dolly Varden, and rainbow trout.

## Yakutat's Commercial Salmon Fishery

The Yakutat salmon fishery takes place in the waters off Alaska between Cape Fairweather and Cape Suckling. The Alaska Department of Fish and Game (ADF&G) manages the fishery, and has divided the area into two management districts: the Yakutat District, between Cape Fairweather and Icy Cape, and the Yakataga District, between Icy Cape and Cape Suckling. For the purposes of this study, NMFS and Saltwater Inc. have further divided the Yakutat fishery area into four sub areas: the Alsek River Area (Y1); the Situk River Area (Y2); the Yakutat Bay Area (Y3); and the Tsiu River Area (Y4).

Set gillnet gear, or "setnets," are the only net gear permitted in the Yakutat area salmon fishery. ADF&G estimates there are 25 unique setnet fisheries within the Yakutat District; all five salmon species are caught over the summer season. Most of these fisheries target sockeye salmon from mid-June through July, and coho salmon in August and September.

Each year approximately 170 fishers renew their commercial setnet permits for the Yakutat area, but only about 100 actually fished in 2005 and 2006. ADF&G expects renewals will be similar in 2007, but effort is less predictable. Setnet permit holders do not have registered sites and may fish in any open fishing area. They may also move between fishing areas during the season, as long as not more than one area is fished concurrently.

ADF&G manages the Yakutat setnet fisheries to ensure that adequate numbers of salmon reach the rivers to spawn (escapement goals). During the summer season, the ADF&G Area Management Biologist, Gordie Woods, is responsible for adjusting fishing times and areas in response to in-season assessments of run strength.

## Yakutat Set Gillnet Gear and Operations

The only gear allowed for commercial salmon fishing in the Yakutat area is set gillnets or setnets. Setnets are multi-filament nets that hang down like a curtain in the water and are staked or anchored in place. The nets are kept afloat by corks along the top of the net and a lead line running along the bottom. Setnets are usually set perpendicular to the shore in the path of salmon moving along the ocean shoreline or along the rivers. Fish swim into the nets and are caught by their gills. Small skiffs are used to collect fish caught in the net and to reach offshore sites.

The ADF&G sets limits on the maximum number of nets and total length of all nets that can be fished by each permit holder. These limits vary by river and, in some places, change during the season. For example, on the Alsek River permit holders can fish a maximum of three nets, and each net can vary in length from 10-25 fathoms. Prior to the third Monday in July the total combined length cannot exceed 50 fathoms. After the third Monday in July the maximum combined length increases to 75 fathoms. In most areas no part of a setnet may be set or operated within 100 yards of any part of another setnet.

The following table details the gear restrictions on the rivers that will be observed.

***Gear Restrictions On The Rivers That Will Be Observed***

| River | Maximum # of Nets | Max Single Net Length (fa) | Max Aggregate Net Length (fa) |
|---|---|---|---|
| Alsek (6/4-7/15/07) | 3 | 25 | 50 |
| Alsek (7/16-close) | 3 | 25 | 75 |
| East Alsek (6-9/07) | 1 | 20 | 20 |
| East Alsek (Later) | 2 | 20 | 40 |
| Akwe | 1 | 15 | 15 |
| Situk | 2 | 20 | 20 |
| Situk Emergency | 2 | 20 | 40 |
| Dangerous | 3 | 25 | 75 |
| Monti Bay | 1 | 25 | 25 |
| Ocean Cape | 1 | 75 | 75 |
| Manby Shores | 1 | 75 | 75 |
| Tsiu | 1 | 15 | 15 |
| Kaliakh | 1 | 25 | 25 |

## SET NET FISHING EFFORT AND DISTRIBUTION

Nets can be picked in sections allowing the gillnets to effectively fish the entire period. Nets might be picked continuously or according to the tides, catch, and stamina of the permit holder. 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 ATV, planes or skiffs. Fishermen often live near the setnet site for the season, many in a small cabins or in the town of Yakutat.

Setnet fishing effort and practices vary so widely across the Yakutat area that ADF&G describes the area as having 25 unique setnet fisheries. In some rivers, nets are left in the water "soaking" for the entire length of an opener. In other areas nets are pulled hourly, or with the tides so debris can be cleaned from the net. The frequency with which fishers pick the salmon out of their nets varies even more widely. River characteristics, tides, weather, run strength, and permit holder practices all influence the frequency of picks. Nets are picked anywhere from once per 24-hour period to every couple of hours. This section describes the fishing effort in the four major areas of the Yakutat AMMOP project.

Marine mammal interactions with gillnets can occur anytime nets are in the water, but picks will be an especially important time for observation. During the picking of the net observers will be able to see if any marine mammals are entangled, or if there is other evidence of interactions (e.g., seal bites on fish).

### *The Alsek Area (Y1)*

***Alsek River***

On the Alsek River, permit holders often split their nets into sections, fishing different sections of the net in different parts of the river, including some in mid-channel. Nets are typically left to soak during the opener except for those fishing at the mouth of Dry Bay. The nets at the mouth are not left unattended to soak. Along Dry Bay and the length of the river, some permit holders spend the entire day checking their nets, and pulling fish out as soon as they are caught. Others check their nets every few hours until about 10pm and then start again at 6am. Throughout the river, run strength greatly determines how often nets are picked. The high waters of spring typically bring down a lot of debris so nets are checked and cleaned more frequently.

***East Alsek River***

Fishers on the East Alsek River tend to pick their nets often due to the large amount of moss and debris coming down the river. Typically, nets are picked every hour as the tide comes in, and are tied up/rolled up, but not pulled completely out of the water, when the tide goes out. Nets are

generally not left unattended. Some fishers wear chest-waders and go into the river to pick their nets while others use skiffs.

***Akwe River***

Fishers on the Akwe typically pick their net every 30-60 minutes throughout the set. Permit holders often set on the incoming tide and, after picking, pull the net on the outgoing tide. Nets are fished for a couple of hours at a time on the incoming and outgoing tides.

## *The Situk Area (Y2)*

***The Situk-Ahrnklin Inlet***

On the Situk-Ahrnklin Inlet, permit holders commonly move their nets from site to site, sometimes within the day. Many permit holders set their nets along the beach area of the inlet, while a lesser number set their nets on the inlet side of Blacksand Spit. Some fish the mouth on the incoming tide, and as the mouth gets too rough to fish, they move up the beach. Others set along the beach and then stay in one place for the entire opener.

Permit holders fishing the Situk-Ahrnklin Inlet vary widely as to how often they pick their nets. Those who are trying to sell to the very fresh market may pick every hour, while others may pick only once a day. Permit holders fishing the mouth tend to pick their nets more often than those in the inlet. In some cases the permit holders fishing the mouth pick their net, deliver, and then go back to pick their net again.

## *The Yakutat Bay Area (Y3)*

***Yakutat Bay***

In Monti Bay, nets are set just offshore along the southwestern shores from the plant docks down to Ocean Cape. They are typically placed at the opener and remain out until the fishery closes. Nets are picked by skiff an average of three to four times per day with some of the picks determined by the tides.

In Ocean Cape, nets are set with both ends in open water well offshore of the coastline, and out of the surf zone. Nets typically remain in the water through the opener and are picked by skiff three to four times a day, with picks based on the tides.

In the Manby Shore, most nets are anchored at both ends in open water. Nets are typically set at the opening and allowed to soak until the close of the fishery. Nets are picked from skiffs, and permit holders tend to pick the nets as the tides change from slack low to slack high tide. Manby Inlet river-fishers set nets from shore at the mouth of the rivers. They reach the permit site by ATV. Getting close to the mouths of streams is very dangerous. Growlers (icebergs) floating down from Hubbard glacier can tear nets, so nets are picked more frequently when growlers are present.

***Dangerous River***

In 2006, two different permit holders fished the Dangerous with two very different styles. One permit holder fished the mouth of the river. During a full moon, he set and picked his net at high slack tide then quickly pulled his nets as the tide went out. His goal was to get off the river before the tide started to go out because of a very strong current (12 knots) at the narrow mouth of the river. On the half moon, he set his net at low slack tide and picked it as the tide came in. He pulled his net as the tide went out. The second permit holder fished in the river over an 8-mile stretch of eddies. He set his nets and then went home for the night, returning the following day to pick his net.

## *The Tsiu Area (Y4)*

***Tsiu River***

Pick and soak patterns vary widely on the Tsiu. During the 2006 season, one permit holder told us he picked his net every couple of hours. We saw another net that appeared to have been left in the water for a few days unattended.

***Kaliakh River***

Nets are typically fished on the tides, set on the incoming and pulled on the outgoing. Depending on the size of the tide change and the amount of debris in the water, nets may be left to soak for longer periods.

# Section 3

# Operations: Yakutat Set Gillnet Fishery 2007- 08

## Sampling Protocol

AMMOP sampling for marine mammal interactions in the Yakutat set gillnet fishery will follow a sampling approach similar to sampling protocols followed in the Kodiak set gillnet fishery in 2002 and 2005. Adjustments have been made to the sampling protocol to accommodates specific characteristics of the Yakutat set gillnet fishery.

Optimal observer coverage effort for a sample unit, or "permit sample", is considered to be:

**The observation of all retrievals, picks, or hauls (with a minimum of one retrieval, pick or haul observed) during a 24 hour period during which permitted fishing gear is submerged and fishing during an ADF&G fishing opener**.

It is understood that factors such as weather, changes to fishing operations, and other unforeseen circumstances may interfere with observer effort and is taken into consideration in program design and data analysis.

The level of observer coverage for this fishery is set initially at 300 permit sample, based on an analysis of past effort in the Yakutat set gillnet fishery, to achieve a target CV of 20%. This level may change as fishing effort changes throughout the season. Sampling is designed to be conducted in a random stratified sampling scheme, with observer coverage in each stratum to be proportional to the overall fishing effort in that stratum over time.

Observer effort will be calibrated over each bi-weekly period, or two openers for each area, and the overall area. If observer effort is high or low in the early or middle period of that two week period, the last couple of days of that period can be used to adjust the coverage to close in on the target level.

*1. Yakutat set gillnet sampling strata*

For the purposes of the Yakutat study for 2007 and 2008 the geographic sampling strata are defined as follows:

**Y1 Alsek Area**.

This includes ADF&G statistical areas and corresponding geographical areas:

- Alsek River - Statistical Area 182-30
- East Alsek River - Statistical Area 182-20
- Alsek River surf - Statistical Area 182-31
- East Alsek River surf - Statistical Area 182-21
- East River Ocean - Statistical Area 182-22
- Italio River - Statistical Area 182-50
- Mid-Italio River - Statistical Area 182-52
- Old Italio River - Statistical Area 182-55

**Y2 Situk Area**

This includes the ADF&G statistical areas and corresponding geographical areas:

- Situk Ahrnklin Inlet - Statistical Area 182-70
- Lost River - Statistical Area 182-80
- Situk-Lost River Ocean - Statistical Area 182-70

**Y3 Yakutat Bay Area**

This includes the ADF&G statistical areas and corresponding geographical areas:

- Ocean Cape outside - Statistical Area 183-10
- Yakutat Bay Main - Statistical Area 183-10
- Yakutat Bay Inner harbor- Statistical Area 183-10
- Manby Shore - Statistical Area 183-20
- Esker Creek- Statistical Area 183-90
- Sudden Stream - Statistical Area 183-80
- Spoon River - Statistical Area 183-55
- Manby Stream - Statistical Area 183-25
- Dangerous River - Statistical Area 182-60
- Akwe River - Statistical Area 182-40

**Y4 Tsiu Area**

This includes the ADF&G statistical areas and corresponding geographical areas:

- Tsiu River - Statistical Area 192-42
- Kaliakh River - Statistical Area 192-41

*2. Tracking Fishing Effort*

Accurately tracking fishing effort on a real-time basis is one of the biggest challenges in this sampling scheme *and is one of the most critical elements in conducting the post-season analysis of the data collected*. Achieving accurate tracking of the fishing effort will help ensure that sampling efforts meet the target levels. To achieve this, a fishing effort tracking system will be implemented and modified in-season as needed.

The lead observer will coordinate the fishing effort tracking for their area and all leads will coordinate to track effort across all areas, especially for those permit holders moving from one area to another. Separate effort tracking methods will be employed for fishers in areas not typically covered on a daily basis.

At the start of the season, a list of all the permit holders in the fishery will be checked for fishing status of each participant. This will be accomplished through various means, including ADF&G and direct contact with fishers. The first day of the first opener of the season will be the trickiest day for sampling, since it will be difficult to really know who is fishing where, until they actually begin. Lead observers in the areas where effort is expected can conduct area-wide surveys by actually speaking to individual permit holders asking them where they expect to fish for that opener. Observers will assist as directed by the lead observers.

Thereafter throughout the season, fishing effort should be tracked by daily contact with fishers – most likely at their set net sites or at the seafood buying station in the area, if there is one. We will want to know several things from each fisher:

1. During the previous day during the open period, how many hours was their net in the water and fishing (not tied up) and the location of the net (generally stat area - name or number - or AMMOP area). On the last day of an opener, this question should include the previous day and the current day fishing time expectations, since the fisher will likely not be available the next day (non-opener day) to answer this.
2. Do they expect to fish in the same location the next day or next opener. If not, where?

*3. Permit Sample Selection*

Once effort has generally been established, the following sampling scheme will be followed:

1. For June, because the different areas have staggered seasonal start dates, each area Y1- Y4 will have a random list of permit holders fishing in that area for the month. Beginning with the first stat week in July, a random master list will be generated of all permits issued for entire fishery without regard to AMMOP Yakutat sampling areas. For the areas lists in June and the master list from July on, each list will be completely sampled (all permit holders sampled if they are

actually fishing) in the order the permit numbers appear on the list. Once all permit numbers have been sampled once and crossed off the list, and all inactive permits positively identified, a new random list will be generated (including all assumed inactive permits, in case they become active during the period this list is sampled from). Sampling with this list will begin immediately.

2. For each AMMOP area Y1- Y4, the number of permit samples needed for the opener will be determined according to the sampling target.

3. The permits to be sampled for a given day or opener are chosen from the top of the current list in use. The permits will be sampled in the order that they appear on the list. It is critical that the master list of permits be updated daily regarding the permits already sampled, so that a permit holder, who was sampled in one area and moves to another area, is not sampled again until the list is completely sampled and a new list is generated. If a permit on the top of the list is not able to be sampled on the day for which it was chosen (due to weather, mechanical failure, etc), the observer will sample the *next* name on the list for their area. However, that unsampled permit number stays at the top of the list and is the top priority for observation on the next open fishing day. Such permits will remain at the top of the list until sampled.

4. If not enough information is available on "who is fishing where" at the start of the first opener, alternate methods of permit selection may be employed for the first day of sampling.

*4. Sampling Watches*

Once a permit is selected and the observer deploys for the set net site the observer's data collection duties commence. There are priorities of what data must be collected if events conflict in area or time, and the following is a summary of those priorities. However, the order in which they occur may vary on a given permit sample day (trip).

Haul Watch: The observer's first priority is to observe the entire pick of a net. A haul watch is conducted while the vessel is picking fishing gear. Data are recorded on the Haul Form. Any incidental takes will be recorded and necessary sampling conducted and recorded as directed in Section 4 of this manual. Additional documentation of the haul watch is recorded on the Sighting Form as directed in Section 4 of this manual under Marine Mammal Sighting Watches. These watches provide information on the fishing operations, marine mammal interactions as well as on marine mammals that are in the vicinity of the gear during fishing operations.

*In addition to watching and recording data on picks, the observer will conduct additional marine mammal sighting watches. Specific instructions for conducting these watches and recording data can be found in Section 4 of this manual under Marine Mammal Sighting Watches.*

Transit Watch: A transit watch is conducted while traveling over water to or from the 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 without break for a minimum of 15 minutes and a maximum of 60 minutes, followed by a 15 minute break.

Soak Watches: The standard soak watch period is 60 minutes. However, observers may conduct a soak watch anytime during the trip if he or she can expect an uninterrupted period of at least 30 minutes. Therefore, soak watches should never be shorter than 30 minutes and or longer than 60 minutes. If a soak watch is less than 60 minutes, the observer should document the reason for not achieving a 60 minute duration. A new soak watch may be begun again after not less than a 15 minute break following the last soak watch.

Set Watch: A set watch is conducted while the vessel is setting out fishing gear. This information is used to assess possible interactions and associations of marine mammals with this aspect of the fishing activity. Set watches are a lower priority if the observer is working up samples, preparing for the haul/pick, or needs to take a break. In the set gillnet fishery, sets may be rarely observed and are of limited importance. A set watch can be conducted during every set, regardless of weather conditions.

*5. Beaufort Scale Sampling Reduction Plan*

Weather can potentially affect all observations and could bias observer coverage of more exposed sites. Many of the sites may receive extreme weather. The contractor will ensure that observer coverage at exposed sites is in proportion to other sites in a region based on fishing effort. Weather will also reduce the quality of observations during soak watches due to wave action and sampling platform movement. Moderate weather will reduce visibility and obscure interactions, while strong winds and heavy seas will cause serious safety concerns.

Lead observers will use a combination of National Weather Service forecasts, USCG weather reports, local mariners' and skiff operators' evaluations, and information provided by area radio contacts. Lead observers will attempt to establish the weather at sites before deploying observers. If the weather begins to worsen, observers will relay information to the lead observer, or other appropriate parties and a determination to change sampling protocols appropriately will be made. Avoidance of placing observer/skiff operator teams in danger during severe weather conditions is paramount. For these reasons, the contractor will deploy observers based on sea-state and implement a Beaufort Scale Sampling Reduction Plan as follows:

**Beaufort 0-3** (wind 0-10 kts; seas 0 – 3.5 ft): All sampling will occur as scheduled.

**Beaufort 4** (wind 11 to 16 kts; seas 3.5-5 ft ): All skiff-based soak watches will be suspended. At Beaufort 4, frequent white caps and waves begin to limit visibility, affecting the dependability of soak watch data. Anchoring a skiff to a buoy becomes quite dangerous in four-foot seas. Observer effort will focus on observing picks.

**Beaufort 5** (wind 17-21 kts; seas 6-8 ft): Lead observers may direct observer-skiff operator teams to use alternate sites. Lead observers will restrict deployment of skiffs during Beaufort 5 weather. Leads will determine if a skiff can safely be deployed during picks only.

**Beaufort 6 and higher** (wind 22+ kts; seas 9.5 ft +)**:** All skiff-based observations will be suspended. Ten-foot white-capped waves with scattered spray will reduce visibility beyond acceptable observation levels. Observers may establish if the net is fishing and try to contact the permit holder to determine if the site will be picked that day.

## Observer Deployments

Observers will be deployed at the direction of the observer provider. Remote sampling locations, such as the Tsiu, the Alsek , East Alsek , and other locations will require transportation via small plane or boat. Remote camps will be self-sufficient and will be in daily communications with the main camp in Yakutat. The contracted observer provider will coordinate all logistics for travel and living accommodations, including lodging and food.

## Observer Gear

Observers will be issued NMFS-furnished gear, which will consist of sampling and safety equipment. A full complement of gear for each observer will be provided by NMFS to the contracted observer provider, who will then issue it to the observer. The observer will be responsible to keep track of their gear, conduct required in-season maintenance and testing of certain items, and return the gear in clean, useable condition at the end of the season. Each observer will complete, sign and date a gear check-out list, which will be used at the end of the season to ensure that all checked-out gear is returned. Some sampling and safety gear will be checked out to the skiff drivers and kept aboard the skiffs to minimize observers lugging extra weight around unnecessarily. A list of gear for observers and skiff drivers can be found in the Appendices.

## Field Communications

The Yakutat set gillnet fishery is about as remote as it gets. Anywhere. There are numerous logistical requirements to get the job done that require on-going teamwork, and safety is an ever-present concern. **Good field communications are essential to this program**. As with any observer program, and particularly so starting in a new fishery, there will be a daily need to adjust to changes and new circumstances arise or information comes to light. Ensuring a communications network that is well-used will minimize, as much as it is possible, confusion and create a reliable transfer of information. This will help keep everyone in the program safer and will provide a better chance for success of the program.

Daily radio check protocols between field camps will be set up prior to field deployments. Communications protocols will also be set for observers and skiff drivers in transit to/from or situated at set net sites for sampling. Remote camps will have satellite phones for voice communication and data transfer, as well as VHF radios. Each observer and skiff driver will be issued a handheld VHF radio and each skiff will be equipped with a VHF radio and antenna.

A password-protected AMMOP intranet site, accessible by observers, skiff drivers and program managers, will be established to allow for a central posting site for information on the program, particularly for updates on sampling protocols, answering questions, etc.

This will help ensure that all field personnel receive the same information and in a timely manner.

Observers and skiff drivers should follow the established chain of communication regarding and concerns or problems. However, if there is no response, or the response appears to be ineffectual, the observer or skiff driver should consider whether the issue is of a nature that requires direct communication to the observer contractor operations manager or NMFS. Those lines of communication will ALWAYS BE OPEN. Bridget Mansfield, AMMOP coordinator, can be reached M-F 7 am – 3:30 pm at (907) 586-7642. A cell phone number and home number will be provided during training. She can be called 7 days a week, 24 hours a day. The observer provider will provide contact information during training.

## Communications with Fishermen

Good communication with fishermen is the backbone of the program. A courteous and respectful manner must be observed at all times when speaking with fishermen. The AMMOP wants to foster a good working relationship with fishermen for several reasons. Although NMFS and your contractor have done pre-season outreach to try to explain the goals and objectives of the AMMOP, many fishermen will still have many questions about the program. Many may be concerned about additional government oversight and worried that any data collected may have a negative impact on their fishery. The perception may be that NMFS is entering their "workplace" with what may be perceived as an intrusive program. We want to try to dispel these worries to the degree possible.

While this is a mandatory program and fishermen are required by law to provide information and access to the needed data, we want to ensure that fishermen understand that we respect their livelihood and that we would like to work cooperatively with them. The information that they can provide us will be critical in getting an accurate picture of the levels of marine mammal interactions.

## Sampling Logistics

Observers and skiff drivers will work together as a team. Specifics on sampling protocols are found in Section 4 of this manual. However, the logistics required to ensure the data is able to be collected require additional planning. Each sampling day, the observer and skiff driver will coordinate on all pre-trip logistics, travel together to the set net site, work in tandem to achieve the day's sampling goals, return safely to base camp after the day's sampling, and wrap up the details of the day.

**The observer's minimum responsibilities include:**

- Understand and present observer program in professional manner
- Collect and record accurate and precise data
- Collect and record biological samples
- Review and edit data to ensure data quality
- Maintain conduct standards and safety protocols
- Care for assigned gear, including recording maintenance, problems, and disposition
- Work with all program staff in a cooperative manner to ensure a successful program

The night before a sampling day:

- determine what permit he or she is to sample the next day;
- coordinate with the lead observer to ensure the permit holder was notified the day before sampling and ascertain:
    - 1) the set net site location
    - 2) the estimated time of the first pick of the day;
- Communicate with the skiff driver on the next day's sampling logistics, including permit number, location, and estimated time of departure from the camp and arrival at the set net site.
- Establish radio check procedures with the lead observer and the skiff driver.
- Ensure personal and sampling gear is clean, ready, and working.

Sampling day:

- Prior to departure: Coordinate with the skiff driver on the weather and route to the set net site, ensure all needed gear is loaded on the skiff or ATV for transport; review radio check protocols.
- Prior to departure: Double check that the skiff driver filed the float plan with the lead observer or base camp in Yakutat.
- Arrive at the set net site at least 30 minutes prior to the first pick of the day.
- Introduce yourself to the permit holder. When appropriate, initiate permit holder interview to understand the general fishing plan for the day and gain information for data collection.
- Begin data collection and recording on appropriate data forms. Conduct data collection according to sampling protocols throughout the day.
- Conduct radio checks with base camp according to radio check protocols.

- Return to camp.
- Remove gear from skiff; clean as appropriate.
- Complete paperwork for the day and turn it in to the lead observer.
- Submit any biological samples to the lead observer.
- Consult with lead observer, if appropriate, on any pressing concerns.

**The skiff driver's minimum responsibilities include**:

The night before a sampling day:

- Communicate with the observer on the next day's sampling logistics, including permit number, location, and estimated time of departure from the camp and arrival at the set net site.
- Check the weather forecast
- Establish radio check procedures with the lead observer and the skiff driver.

Sampling day:

- Check weather forecast to/at set net site.
- Coordinate with the observer on the weather and route to the set net site, ensure all needed gear is loaded on the skiff or ATV for transport; review radio check protocols.
- File float plan
- Complete skiff departure checklist
- Begin skiff log entry
- Leave the dock in a timely manner to arrive at the intended permit sample site at least 30 minutes prior to the expected first pick of the day.
- If on land for the sampling day, maintain vigilant bear look out.
- Maintain skiff operations in a manner that ensures the safety of the vessel and people aboard, as well as nearby vessels and crew.
- Operate vessel in manner that allows the observer to successfully complete his/her duties.
- Conduct radio checks with base camp according to radio check protocols
- Return to camp.
- Remove gear from skiff as appropriate, secure skiff for the evening.
- Close Float Plan
- Complete skiff Return checklist
- Complete daily logbook entry

## 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 data in the field. In-season debriefing of the observer ensures that the data are complete and as accurate as possible before data entry. During the 2007 field season, observer will debrief with the area lead observer **on a weekly basis**, after each opener.

The lead observer will review the data and conduct a face-to-face discussion with the observer on the previous week's data. During the debriefing, two-way communication between the observer and the lead should focus on data quality, logistical issues related to the trips made, sampling protocols that need to be examined, and any safety issues that may arise.

The lead will complete a debriefing form for each debriefing, and discrepancies or errors in collecting or recording data will be noted, with suggestions for improvement discussed. The observer will be expected to make all needed corrections to the data at the time of the debriefing. Data collection methods will be discussed and documented before the data is transmitted. Observers will provide feedback to the lead observer on data sampling protocols or other issues or concerns, such as logistical questions or comments and any interactions with fishermen that are noteworthy. Any safety concerns must be discussed as soon as they are noted. If a serious concern arises, the lead should be notified immediately, without waiting for the weekly debriefing. Lead observers will ensure that all concerns and suggestions are discussed in a professional manner and that observers are provided with appropriate responses to their concerns.

A final debriefing with AMMOP staff will be required for each observer at the end of the fishing season. 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, and a general review of the observer's experience during the summer. The observer provider 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, as well as return of all issued gear, unless other arrangements are made in the case of missing or damaged gear, as required in the contract with NMFS.

## Data Entry

The observer provider is not responsible for the bulk of the data entry into electronic format, but observers will perform some data entry of 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 on a biweekly basis for data entry. The contractor 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.

# 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 allow an observer access to fishing operations for the collection of data critical to this program. A refusal occurs when an observer informs a fisherman that they have been selected for observer coverage and the fishermen 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 will note 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) is not a legitimate reason 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. For set net fisheries, the observer must have access to the fishing operations to collect the needed data. This may be visual access from an independent observation platform.

2. After being notified by NMFS, or by a designated contractor providing observer services to NMFS, that the vessel or permit holder is required to have their fsishing operations observed, the vessel owner/operator (permit holder) 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 are required to have a Marine Mammal Authorization Certificate in their possession while they are fishing or accessible at the set net site. The Marine Mammal Authorization Certificate allows for lawful incidental serious injury and mortality of marine mammals during the course of fishing. If a person is operating in one of these fisheries and has not received a certificate, they may contact Rhonda McMichael, National Marine Fisheries Service, Alaska Regional Office, Protected Resources, P.O. Box 21668, Juneau, Alaska 99802, at (907) 586-7236. *It is not the job of the observer to enforce this provision of the MMPA.* A copy of the certificate can be found in the Appendix of this manual.

### 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. This report must be submitted regardless of whether there was an observer observing the fishing operations or present at the site. The report must be sent by mail or fax within 48 hours of the end of the fishing trip (or within 48 hours of an occurrence of a take in the case of a set net fishery) 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)]. Copies of the Injury/Mortality Report Form may be provided by observers to permit holders. For additional copies, contact Rhonda McMichael, National Marine Fisheries Service, Alaska Regional Office, Protected Resources, P.O. Box 21668, Juneau, Alaska 99802, at (907) 586-7236. The reporting form is also available on the internet at:
http://www.fakr.noaa.gov/protectedresources/observers/mmapform.pdf

When an observer witnesses an incidental take, the observer will record the information as appropriate on the AMMOP data forms. The observer may want to offer to the fisherman the information that a the report must also be made to NMFS

**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 encouraged 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.

Section 5 of this manual provides a more in-depth review of safety issues.

**Procedures For Observers During a Coast Guard Boarding -** *not applicable for 2007-08*

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 judgment 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, such as a notary public. In the case of a possible regulatory violation, any follow-up must begin with the observer preparing a written affidavit. The observer must be prepared to 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, relevant experience, 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.

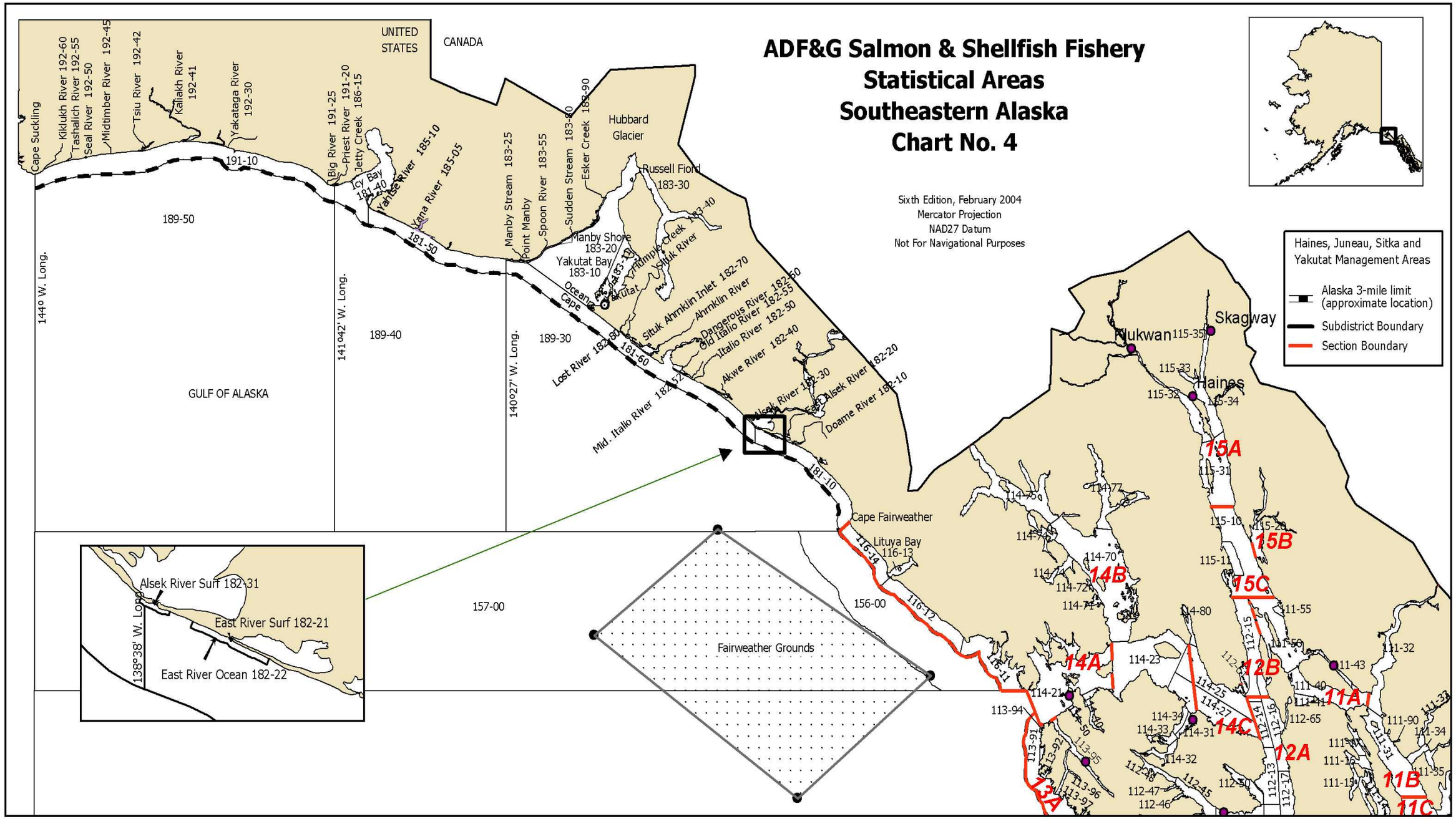
You should close the affidavit with the following and sign and date:

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 is 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)


ADF&G Salmon & Shellfish Fishery
Statistical Areas
Southeastern Alaska
Chart No. 4
Sixth Edition, February 2004
Mercator Projection
NAD27 Datum
Not For Navigational Purposes
UNITED STATES
CANADA
GULF OF ALASKA
Cape Suckling
Kiklukh River 192-60
Tashalich River 192-55
Seal River 192-50
Midtimber River 192-45
Tsiu River 192-42
Kallakh River 192-41
Yakataga River 192-30
Big River 191-25
Priest River 191-20
Jetty Creek 186-15
Icy Bay 191-40
Yahtse River 185-10
Yana River 185-05
Manby Stream 183-25
Point Manby
Spoon River 183-55
Sudden Stream 183-60
Esker Creek 183-90
Hubbard Glacier
Russell Fiord 183-30
Manby Shore 183-20
Yakutat Bay 183-10
Yakutat
Oceanic Cape
Lost River 182-60
Situk River
Situk Ahrnklin Inlet 182-70
Ahrnklin River
Dangerous River 182-50
Old Italio River 182-55
Italio River 182-50
Akwe River 182-40
Alsek River 182-30
East Alsek River 182-20
Doame River 182-10
Mid. Italio River 182-52
Cape Fairweather
Lituya Bay 116-13
Fairweather Grounds
157-00
156-00
189-50
189-40
189-30
144° W. Long.
141°42' W. Long.
140°27' W. Long.
191-10
181-50
181-60
181-10
116-14
116-12
116-11
Alsek River Surf 182-31
East River Surf 182-21
East River Ocean 182-22
138°38' W. Long.
Haines, Juneau, Sitka and Yakutat Management Areas
Alaska 3-mile limit (approximate location)
Subdistrict Boundary
Section Boundary
Klukwan 115-35
Skagway
Haines
115-33
115-32
115-34
15A
115-31
115-10
115-20
15B
115-11
15C
14B
14A
14C
12B
12A
11A
11B
11C
114-77
114-76
114-74
114-70
114-72
114-71
114-80
114-23
114-21
114-25
114-27
114-34
114-33
114-31
114-32
113-94
113-91
113-92
113-95
113-96
113-97
112-65
112-15
112-14
112-16
112-13
112-17
112-48
112-47
112-46
112-45
112-50
111-55
111-50
111-43
111-40
111-41
111-32
111-37
111-34
111-90
111-31
111-33
111-16
111-15
111-35

Section Four

# Data Forms and Instructions

1. General Data Guidelines
2. Trip Information Form
3. Set Gillnet Gear Characteristics Form and Net Illustration
4. Set Gillnet Haul Form
5. Incidental Take Form
6. Marine Mammal Biological Sampling Guidelines
7. Marine Mammal Sample Form
8 Marine Bird Biological Sampling Guidelines
9. Marine Bird Sample Form
10. Marine Mammal Sighting Watches and Watch Priority Table
11. Marine Mammal Sighting Form
12. Photo Form
13. Marine Mammal Stranding Reports
14. Marine Mammal Stranding Report Level A Data Form
15. Biological Sample Chain of Custody Form
16. Fisher's Comment Form

# General Data Guidelines

Please follow these general data guidelines on all forms, at all times:

All Forms should be completed with clear, legible writing.

- 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 with a *single slanted* line.
- Unknown fields should be dashed (one solid horizontal line), 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.
- Errors should be corrected with a single line through the error. Do not erase or darken over errors. Errors corrected in debriefing will be corrected with a colored pencil.
- Record a leading zero for decimal formats less than one (ex: 0.4)
- Pay particular attention to the units required for each field.
- Comments should be objective and made in a professional tone.

# TRIP INFORMATION FORM

This form serves as a header sheet for an observed trip. An observed trip is defined as the entire period of time, during a 24 hour period, beginning when an observer departs to observe fishing operations for a selected set gillnet permit, to the time an observer returns from observing fishing operations for that permit, **provided at least one haul or pick is observed for the selected permit.** One Trip Information Form is recorded per trip. All fully and partially observed trips will have a Trip Information Form. Arrested trips have a trip form completed, but no hauls are recorded.

- 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)
- Pay particular attention to the units required for each field.

| Definitions | |
|---|---|
| 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 | In-water location of set net gear. |
| Random sample | Each permit has an equal chance of being selected |
| Stratified sampling | The selection of the permit is related to the location of fishing sites by areas defined by the Alaska dept of Fish and Game |
| Secondary sample | Permits observed because they are associated with the randomly selected permit. |
| Trip | For the set gillnet fishery, a trip consists of observing fishing operations associated with a specific permit in a 24 hour period, beginning at midnight, with a minimum of one retrieval or pick observed. |
| Fully observed | All hauls or picks during a trip were observed, with each pick observed in its entirety, with a |

| | |
|---|---|
| | minimum of one retrieval or pick observed. |
| Partially observed | Either a portion of one or more picks or entire picks during a trip or were not observed. |
| Arrested | Where a trip was scheduled and the observer departed for the set net site, fishing was canceled and the trip ended due to weather, fishing vessel or gear problems, or other unforeseen circumstances. Fishing must have been intended but not achieved due to circumstances beyond the observer ort permit holder's control. Intent to fish, contact with the permit holder confirming this intent, and a departure for the set net site are required to consider a trip arrested. A trip form will be completed for arrested trips. |
| Single owner/operator | The permit holder is original owner and single operator of the permit. |
| Joint venture | Two permit holders combine their gear and fish under one permit. Both still operate under their own permit numbers. Both permit numbers are recorded on the trip form, with the primary permit being the one that was randomly selected for sampling. |
| Co-op | Several permit holders fish and sell their catch as a unit, dividing the combined profit. |
| Temporary transfer | Temporary arrangement to transfer the fishing permit and operations to another fisherman. |
| Permanent transfer | Transfer of a permit through a sale to another party. |

## 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 all forms in the order they are listed in the Table of Contents. The trip form serves as the cover sheet for a trip and is considered page 1 for the trip.

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

**3.** MONTH: 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 the name of the fishery as "Yak Set" to ensure proper filing and coding. Record the fishery code assigned to identify this fishery. The Fishery Name Code for Yakutat 2007 is:

6 = Yakutat salmon set gillnet

**6.** GEOGRAPHICAL REGION AND CODE: Record the region and code of where this trip occurred, using the Region Codes. If fishing gear overlaps two regions, record the region where the majority of the gear is set:

**Y1 = Alsek Area**.

Alsek River - Statistical Area 182-30
East Alsek River - Statistical Area 182-20
Alsek River surf - Statistical Area 182-31
East Alsek River surf - Statistical Area 182-21
East River Ocean - Statistical Area 182-22
Italio River - Statistical Area 182-50
Mid-Italio River - Statistical Area 182-52
Old Italio River - Statistical Area 182-55

**Y2 = Situk Area**

Situk Ahrnklin Inlet - Statistical Area 182-70
Lost River - Statistical Area 182-80
Situk-Lost River Ocean - Statistical Area 182-70

**Y3 = Yakutat Bay Area**

Ocean Cape outside - Statistical Area 183-10
Yakutat Bay Main - Statistical Area 183-10
Yakutat Bay Inner harbor- Statistical Area 183-10 Manby Shore - Statistical Area 183-20
Esker Creek- Statistical Area 183-90
Sudden Stream - Statistical Area 183-80
Spoon River - Statistical Area 183-55
Manby Stream - Statistical Area 183-25
Dangerous River - Statistical Area 182-60
Akwe River - Statistical Area 182-40

**Y4 = Tsiu Area**

Tsiu River - Statistical Area 192-42
Kaliakh River - Statistical Area 192-41

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

**8.** TRIP BEGIN TIME: Record the time, in hours and minutes (hh:mm) you left for this trip. Record time in the 24 hour format.

**9.** TRIP END DATE: Record the date (mmddyy) that you returned after completing the trip.

**10.** TRIP END TIME: Record the time (hh:mm) that you returned after completing the trip. Record time in the 24 hour format.

**11.** TRIP TYPE: At the completion of the trip, record whether the trip was fully observed, partially observed or an arrested trip using the Trip Type Codes:

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

**12.** FISHING Permit Number: Record the state fishing permit number(s) being observed. List the selected permit number first, followed by secondary permit number(s) if applicable (i.e., at joint venture or cooperative fishing sites). For each permit number entered complete fields 13 and 14 as well.

**13. P**ERMIT SELECTION TYPE: For each permit numbers recorded in Field 12, record the selection method. The permit number which was randomly selected should be listed first in field 12, and in field 13 record "1," the code for "primary." Other permit numbers associated with the selected number (i.e., other permit numbers observed this trip) are record as "4," the code for "secondary."

**14. P**ERMIT OWNER STATUS: For each permit number observed, record the ownership status of that permit number as of the trip for which it was observed. Ownership of permits may change temporarily or permanently over the course of a fishing season.

**15.** OPERATION TYPE: Indicate how the permit number(s) being observed is/are operated. Complete for arrested trips.

1 = Single operator
2 = Joint venture
3 = Co-op
9 = Other (record in comments)
0 = Unknown

**16. L**EASED NET: Record whether the permit being observed is involved in a lease arrangement (i.e., if the net length is shorter or longer due to a lease agreement). The amount of net leased is recorded in field 17.

**17. L**ENGTH OF LEASED NET (Fm): Record the length of gear (fathoms) involved in a lease arrangement. Specify if the length is **gained** by lease *from* another permit holder by writing

"+." If the length is **shortened** by lease *to* another permit holder, specify by writting "-."

**18.** VESSEL Registration Number: Record the registration number(s) written on the hull(s) of the vessel/skiff(s) 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. All vessels and skiffs should have a registration number, however if it has not been registered, record "No Number" for each skiff/vessel not numbered.

**19. A**DDITIONAL TRIP RESEARCH: Circle each supplemental research that was conducted during this trip. Circle "none" if no supplemental research took place. More than one research type can be selected:

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

**20.** EXPECTED NUMBER OF HAULS: Prior to the first haul/pick, ask how many hauls/picks are expected to be done on this trip. This may not match the number of actual hauls completed (e.g., fishing slow or weather picks up).

**21.** NUMBER OF NETS FISHING: Prior to the first pick, ask how many nets this permit is currently fishing during the observed trip. This may be greater than the number of nets actually observed.

**22.** NUMBER OF SKIFFS USED: Ask how many commercial skiffs 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.

This number should match the number of individual vessels recorded in "Vessel Registration Number" field, including all "no number" vessels.

**23.** PRIMARY SPECIES RETAINED: 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 retained species making up the majority of the catch, in mass.

**24.** NUMBER OF PRIMARY SPECIES RETAINED: Record the number of retained fish 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 retained species making up the majority of the catch.

**25.** DEALER NAME: Record the name and code of the company or person to which the fish are sold. See Dealer's Name below for a list of buyers. Corresponding codes are provided in the Appendix. This listing is not all-inclusive; if dealer is not on this list, write name, leave code blank, and note in comments that a code needs to be assigned. If the dealer is unknown include tender vessel name in Field 26 (Delivery Location)

Yakutat Seafoods
Wild Situk Salmon & Seafood
Captain's Glacier Fresh salmon
Raven's Table
The Yakutat Fisherman
Mystic Salmon
Other

**26.** DELIVERY 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.

**27.** NUMBER OF MARINE MAMMALS: Record the total number of marine mammals incidentally taken during this trip. Incidentally taken means the animal was entangled, momentarily or longer, in the fishing gear during 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.

**28.** NUMBER OF SEABIRDS BIRDS: Record the number of seabirds incidentally taken during this trip. Incidentally taken means the animal was entangled, momentarily or longer, in the fishing gear during 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 seabirds taken, record a zero.

**29** NUMBER OF NETS OBSERVED: Record the number of individual nets observed during this trip. If multiple nets were observed by multiple observers for this trip (such as in co-op or joint venture cases), record total number of nets observed by all observers. If no nets were observed during this trip, record a zero.

**30.** NUMBER OF HAULS OBSERVED: Record the number of picks or hauls observed during this trip. If no hauls occurred during this trip (an arrested trip), record a zero.

**31.** COMMENTS: Record any comments relating to this trip if not recorded elsewhere. Circle Y (yes) or N (no) to indicate if comments are continued on the back of the form.

NOAA Fisheries Alaska Marine Mammal Observer Program

# Trip Information Form

| Year (2) | Month (3) | Trip ID # (4) | Fishery name & code (5) | Geographical Region & Code (6) |
|---|---|---|---|---|
| Trip Begin Date (7) | Trip Begin Time (8) | Trip End Date (9) | Trip End Time (10) | Trip Type (11): 1 fully observed, 2 partially observed, 3 arrested, 9 other |
| Fishing Permit # (12) | Permit Selection Type (13): 1 Primary, 4 Secondary, 3 Other | Ownership Status (14): 0 Original Owner, 1 Unknown, 2 Permanent Transfer, 3 Temporary Transfer, 9 Other | Operation Type (15): 1 Single operator, 2 Joint venture, 3 Co-operative, 9 Other, 0 Unknown | Vessel Registration # (18) |
| | | | Leased Net (16): Y N | |
| | | | Length of Net Leased (Fm) (17): + / – | |

Additional Trip Research: (19) 1 none; 2 marine bird sampling (obs); 3 shark tagging; 4 fish sampling; 5 stranding; 9 other

| Expected # Hauls (20) | # Nets Fishing (21) | # Skiffs Used (22) | Primary Species Landed (name & code) (23) | # Primary Species Landed (24) |
|---|---|---|---|---|
| Dealer (name & code) (25) | | | Delivery Location (26) | |
| # Marine Mammals Taken (27) | # Marine Birds Taken (28) | # Nets Observed (29) | # Hauls / Picks Observed (30) | |

Comments (continued on back: Y N ) (31)

| Tracking | Debriefed | Received by NMFS | Reviewed by NMFS | Data Entered |
|---|---|---|---|---|
| Date | | | | |
| Initials | | | | |

(blank)

# SET GILLNET GEAR CHARACTERISTICS FORM

This form contains detailed information on the characteristics of the gear that is observed during the trip. **If the trip was arrested (stopped before any hauls were observed), do not complete this form.** Complete a new form for each uniquely configured net observed during each trip, numbering each net sequentially. One form is completed per net at a permit site, with two exceptions. (1) If a permit holder changes the configuration of a net during the trip, a new form is used, as it is now considered a new net. On the new form, circle the area which has changed and in comments note that all other aspects have remained the same. (2) If two nets at a site are exactly the same, only one form needs to be completed, but assign two net numbers (e.g. "1, 2" ) in the "Net ID".

Gear Forms must be completed for each trip, even if the permit holder was previously sampled and a gear form previously filled out by another observer. It is permissible to bring a copy of the previous form for that gear, but the observer MUST confirm, FIELD by FIELD that nothing has been changed since the last time the permit holder was observed.

**Observers should not handle permit holder's gear. If a permit holder does not know a measurement, record the field as unknown.**

- 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)
- Pay particular attention to the units required for each field.

| Definitions | |
|---|---|
| Gear | Goods/equipment used for fishing |
| Gillnet | A net primarily designed to catch fish by entanglement in the mesh and consisting of a single sheet of webbing hung between the cork line and the lead line. |
| Set Gillnet | A gillnet which has been intentionally set, staked or otherwise fixed in place. |
| Site Marker | A sign staked to shore at the net gear site, displaying the set net permit number and permit holder's name. |
| Net | Commonly refers to the gear as a unit, including gillnet, corkline, bridle, etc |
| Bridle | Lines extending from the cork line and the lead line, that join a single shore line shoreward and the anchor line seaward. |
| Float Line or cork line | A line that floats or has floats attached and from which the gillnet is hung. |
| Lead line | A weighted line strung on the bottom of the gillnet webbing. |
| Anchor | Device used to hold a set net in a fixed position relative to the beach. |
| 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. Not generally used in the Yakutat set gillnet fishery. |
| Shoreline | Line that secures the shoreward end of the net to the beach. |
| Depth of net | The perpendicular distance of the webbing between the cork line and the lead line, measured in number of meshes. |
| Pinger | An acoustic alarm that is a 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: Record the year (yyyy) when the trip ended.

**3.** MONTH : 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). If more than one observer participated on the same trip to observe multiple permit numbers (see joint venture or co-op descriptions), the number of the observer assigned to the randomly-selected permit is recorded here

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

**Fields 6-13 below relating to the net "lead" are not expected to be used in Yakutat, as Yakutat set gillnet gear does not typically use leads. However the lead fields remain on the data form, since those forms are used in other set gillnet fisheries, but are shaded out for 2007-2008. The field descriptions are included here for consistency and in case they are needed.**

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

Y = Yes
N = No

**7.** 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.

**8.** LEAD DEPTH (meshes)**:** Record the minimum, maximum and average number vertical meshes on the shore lead. If there was no lead used, record a zero.

**9.** LEAD TWINE SIZE NUMBER: Record the twine size number of the shore lead twine. This information should be obtained by asking the captain. If known, record the manufacturer in the comments section. If no lead was used, cross out field box.

**10.** 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 (record in comments)
9 = Other (record in comments)
0 = Unknown

**11.** LEAD MESH SIZE - MINIMUM: Record, in tenths of inches, the minimum mesh size of the gillnet. This should be obtained from the permit holder. If the permit holder does not know, mark unknown.

**12.** LEAD MESH SIZE - MAXIMUM : Record, in tenths of inches, the minimum mesh size of the gillnet. This should be obtained from the permit holder. If the permit holder does not know, mark unknown.

**13.** LEAD COLOR: Record the primary color of the shore lead by using the Color Codes listed below. If unable to distinguish between similar colors, use "undetermined" code best describing most likely shades. If no suitable code is listed, select "other" and describe in comments. If net repair or paneling uses varying colors, select "combination"and decribe in comments. If no lead was used, cross out field.

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)
20 = Blues/Greens, Undetermined
22 = Tans/Blues/Greens/Greys, Undetermined
99 = Other (record in comments)

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

Y = Yes
N = No

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

**16.** NET DEPTH (meshes)**:** Record the minimum, maximum and average number of vertical meshes in the gillnet. This information should be obtained from the permit holder. If net tapers or is constructed with panels, draw a diagram in comments. Note

the diagram with the maximum and minimum mesh count in the taper (or panels) and the length of the taper (or panels) relative to the length of the entire net.

**17.** NET TWINE SIZE NUMBER: Record the industry standard twine size number of the gillnet webbing. This information should be obtained by asking the captain. If known, record the manufacturer in the comments section. If unknown, dash the field.

**18.** NET MATERIAL: Record the material that the gillnet is made of, using the Gillnet Material Codes. This information should be obtained from the fisherman:

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

**19.** NET MESH SIZE - MINIMUM: Record, in tenths of inches, the minimum mesh size of the gillnet. This should be obtained from the permit holder. If the permit holder does not know, mark unknown.

**20.** NET MESH SIZE - MAXIMUM: Record, in tenths of inches, the minimum mesh size of the gillnet. This should be obtained from the permit holder. If the permit holder does not know, mark unknown.

**21.** NET COLOR: Record the primary color of the net by using the Color Codes listed below. If unable to distinguish between similar colors, use "undetermined" code best describing most likely shades. If no suitable code is listed, select "other" and describe in comments. If net repair or paneling use varying colors, select "combination" and describe in comments.

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)
20 = Blues/Greens, Undetermined
22= Tans/Blues/Greens/Grays, Undetermined
99 = Other (record in comments)

**22.** HANGING RATIO: Record the hanging ratio according to instructions in the appendix. This value is always less than (or equal to) one; the standard hang ratio for this fishery is 0.5.

**23.** NUMBER OF STRANDS: Record the number of strands of twine in the gillnet webbing. If the number of strands in webbing varies between net panels, 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."

**24.** 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

**25.** 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.

**26.** 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

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

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

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

Y = Yes
N = No

**29.** LENGTH OF FLOAT: Record, in whole inches, the length or diameter, whichever is greater, of the floats. If various lengths or diameters occur choose the predominant size and note in comments.

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

**31.** FLOAT DISTANCE: Record, in whole inches, the average distance between the center of one float to the center of the next float. If there is a predominant distance between floats, record that distance in the field and note in comments.

**32.** 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)

**33.** FLOAT SHAPE: Indicate the shape of the floats, using the most appropriate Float Shape Code. See Appendix X for diagrams:

1 = Sphere / ball
2 = Disk / donut / cylinder
3 = Oval / football
4 = Rectangle / rhombus
5 = Square / Cube
8 = Combination (note details in comments)
9 = Other (record in comments)

**34.** 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

**35.** LEADLINE WEIGHT: Record the weight of the leadline, in whole pounds per 100 fathoms. Example: if leadline weighs 1.0 lb/ft, then record 600 lbs/100 fm.

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

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

Y = Yes
N = No

**40.** NUMBER OF ANCHORS: Record the number of anchors used on this net and/or running line. This information may be obtained from the captain. If no anchors were used, record a zero.

**41.** ANCHOR TYPE: Record the type of anchors used. This information may be obtained form 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
12 = Combination (record in comments)
99 = Other (record in comments)
0 = Unknown

**42.** HOOK SHAPE: Indicate the hook shape by using the most appropriate Hook Shape Code (see Appendix 3). Where a hook is removed for a haul or pick, but nothing else on the gear has changed, begin a new Gear Form. Record year, month, trip ID and Net ID#. Record "none" for Hook Shape. Leave the remaining fields blank and record in comments that this new gear is identical to net # (fill in), except the hook was removed. Also, if a hook shape is is changed or added, complete a new form accordingly. 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 during the fishing period of the observed haul, even if not turned on all the time. Ask fishermen to verify. Use the Yes/ No Codes:

Y = Yes
N = No

**45.** NUMBER OF LIGHTS: Record the number of lights used during a haul. If no lights were used during the haul, record a zero.

**46.** PINGERS USED: This is a small, low-intensity sound-generating device intended to function as an acoustic alarm. Record whether pingers were used to deter mammals from the net (activated during fishing period of the observed haul). 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 pingers were used between nets, include in count for each net they were intended to affect. If no pingers were used, record a zero.

**48.** PERCENT PINGERS OPERATING: Pingers are powered by batteries and may or may not be salt water activated. 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 manufacturer 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 during hte observed haul/pick. 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. Seal bombs or firearm shots should be included; provide comments. Use the Yes /No Codes:

Y = Yes
N = No

**52.** NUMBER OF ALARMS: Record the number of alarms used on this gear. Seal bombs or firearm shots should be included, provide comments. If no alarms are used, record a zero.

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

NOAA Fisheries Alaska Marine Mammal Observer Program

# Set Gillnet Gear Characteristics Form

| Year (2) | Month (3) | Trip ID # (4) | Net ID #s (5) |
|---|---|---|---|
| Lead Used (6) YES / NO | Net Combo (14) YES / NO | Hang Ratio (22) / # Strands (23) | Leadline Used (34) YES / NO |
| Lead Length (fm) (7) | Net Length (fm) (15) | Dropline Used (24) YES / NO | Leadline Weight (lbs/100 fm) (35) |
| Lead Depth (mesh count) (8) min max avg | Net Depth (mesh count) (16) min max avg | Dropline Height (") (25) | # Bouys (36) |
| Lead Twine Size (9) | Net Twine Size (17) | Weedline Used (26) YES / NO | Floatline Used (37) YES / NO |
| Lead Material (10): 1 = poly; 2 = nylon; 8 = combination; 9 = other (comment); 0 = unknown | Net Material (18): 1 = monofilament nylon; 2 = multi-filament nylon; 3 = six-strand mono; 4 = multi-strand mono; 8 = combination; 9 = other (comment) | Weedline Material (27): 1 = twisted poly; 2 = braided poly; 9 = other (comment); 0 = unknown | Floatline Material (38): 1 = floating (w/poly core); 2 = twisted poly; 3 = braided nylon; 9 = other; 0 = unknown |
| Lead Mesh Size Min (0.1") (11) | Net Mesh Size Min (0.1") (19) | Float Combination (28) YES / NO | Float Length (") (29) | Anchors Used (39) YES / NO |
| Lead Mesh Size Max (0.1") (12) | Net Mesh Size Max (0.1") (20) | # Floats (30) | Float Distance (") (31) | # Anchors (40) |
| Lead Color (13): 1 = clear; 2 = white; 3 = black; 4 = gray; 5 = green; 6 = blue; 7 = red; 8 = pink; 9 = orange; 10 = yellow; 11 = purple; 12 = tan; 13 = combination; 20 = blue/green; 22 = blue/green/tan/gray; 99 = other | Net Color (21): 1 = clear; 2 = white; 3 = black; 4 = gray; 5 = green; 6 = blue; 7 = red; 8 = pink; 9 = orange; 10 = yellow; 11 = purple; 12 = tan; 13 = combination; 20 = blue/green; 22 = blue/green/tan/gray; 99 = other | Float Color (32): 1 = clear; 2 = white; 3 = black; 4 = gray; 5 = green; 6 = blue; 7 = red; 8 = pink; 9 = orange; 10 = yellow; 11 = purple; 12 = tan; 13 = combination; 99 = other | Float Shape (33): 1 = sphere / ball; 2 = disk / donut / cylinder; 3 = oval / football; 4 = 3D rectangle/rhombus; 5 = square or cube; 8 = combination (comment); 9 = other (comment)<br>Hook Shape (42): 1 = L- shaped; 2 = V - shaped; 3 = J - shaped; 4 = Umbrella; 5 = Arrowhead; 6 = Flag; 7 = Diamond; 8 = Box; 9 = Zig Zag; 10 = None; 11 = Pennant; 99 = Other (comment) | Anchor Type (41): 1 = Danforth; 2 = Kedge; 3 = Manta; 4 = Bruce; 5 = Claw; 6 = Grapnel; 7 = Mushroom; 8 = Quick set; 9 = Screw; 10 = Scrap metal; 11 = Tied to vessel; 12 = Combo; 99 = Other; 0 = Unknown |
| Pingers Used (46) YES / NO | Pinger Brand (49): 1= Dukane; 9= Other(comments); 0=Unknown | Alarms Used (51) YES / NO | | Lights Used (44) YES / NO |
| # Pingers (47) | | # Alarms (52) | | # Lights (45) |
| Pinger Operating (48) | Pinger Frequency (kHz) (50) | Comments (Cont'd on back Y N ) (53) | | |

Form AMMOP 002-07

Page (1) of _____


shore line
anchor

# Set GILLNET HAUL FORM

This form contains information associated with the observed pick. Although the term "haul" is not typically used in this fishery, it is used interchangeably in the data forms and the manual with the colloquial set gillnet term "pick". The reason for this is because the data forms and the database were initially designed for a number of different fisheries, many of which use the term "haul". At this point, we cannot change the database, and the data forms must match the database.

The Haul Form describes the location of the haul/pick, fishing practices, catch and bycatch. 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.** 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. Catch tally sheets must be submitted with the trip forms.

- 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.
- Pay particular attention to the units required for each field.
- 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.

If dead incidental takes are retrieved and cannot 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.

When in doubt of where to record certain data, remember that an observer's job is to detail and document events as accurately as possible. This is preferably done immediately on the data forms, and by recording notes and taking 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

| Definitions | |
|---|---|
| Incidental Take | A marine mammal or seabird (alive or dead) that is in any way entangled or snagged in fishing gear, whether it is ultimately brought aboard the fishing vessel, falls from gear or is released or self-released. |
| Open water | An area, when facing seaward, where the majority of the horizon is water. |
| Large bay | A bay with considerable exposure to the open ocean or the other side cannot be seen with the naked eye. |
| Sheltered bay | A bay sheltered from the open ocean and all surrounding land is visible. |
| 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 principle landmass of a continent; or a very large island, if smaller islands are found just off the coast. |
| Peninsula | A long projection of lands into the water, connected to the mainland. |
| Island | A land mass completely surrounded by water. |
| Bar | A ridge of sand or gravel adjacent to shore or nearshore or in a river or stream, that is formed by currents or tides. |
| Reef | A strip or ridge of rocks, sand or coral that rises to or close to the surface of a body of water. |
| Ebb Tide | The period of a tide between high water and succeeding low water. |
| Flood Tide | Incoming tide. |
| High Slack | A period of high water prior to onset of ebb tide & lack of discernible current. |
| Low Slack | A period of low water prior to onset of flood tide & lack of discernible current. |

## 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:** Record the year (yyyy) when the trip ended.

**3. MONTH:** 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 (PICK) NUMBER:** Record the pick number each time gear is picked and observed on this trip. To be considered a haul/pick, a net must be pulled from the water with the intention of picking fish. Ask the fisherman if in doubt. If a net is "run" but not "pulled" with the intention to pick fish, it is not considered a haul/pick. If the net is "pulled" with the intention of picking fish and no fish are found, it is still considered a haul/pick. Sequentially number the hauls/picks by trip.

**6. NET IDENTIFICATION NUMBER:** Record the net number observed for this haul/pick as uniquely identified on the 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
6 = River mouth/estuary
7 = River mouth/open water
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 = Main shoreline
2 = Peninsula or small 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 hau/pickl*. Visual cues should be used in addition to tide tables. 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. If a net overlaps two statistical areas, record in this field where the majority of the net fishes and note in comments the other area. (If a take occurs, specify in comments in which area the take occurred.)

**11. WATER TEMPERATURE:** Record the water temperature, in *tenths of degrees Celsius*, at the fishing location at the *beginning of each observed hau/pickl*. Note in comments where along net length the temperature was collected. This information is collected with a bucket thermometer just below the surface. Do not record temperature estimates.

**12. WATER CLARITY:** Record the water clarity, *in tenths of meters*, at the beginning of each observed haul/pick. Measure by lowering a Secchi disc on a calibrated line and using an aqua scope to avoid interference from surface glare. Only a limited number of observers will be issued this gear. Record a dash (-) if this cannot 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 hau/pick*. This is collected with a temperature gauge on the wind meter. Do not estimate temperature or include the wind chill factor.

**14. MINIMUM DISTANCE TO SHORE LINE:** Record, *in whole meters*, the minimum distance of the closest section of net (mesh) to the shore line during the haul/pick. This distance usually will be estimated.

**15. MAXIMUM DISTANCE TO SHORE LINE:** Record, *in whole meters*, the maximum distance of the furthest section of net (mesh) to the shore line during the haul/pick. This distance usually will be estimated.

**16. PRESSURE WASHER (HYDRAULIC PUMP) USED:** Record whether a pressure washer was used to clean the net of debris during or directly after this hau/pick.

**17. NUMBER OF SKIFFS USED:** Record the total number of skiffs used to pick or haul this net (do not include the observer's skiff or fishermen's fish "holding" skiff).

**18. NUMBER OF CREW:** Record the number of crew members per skiff. If several skiffs are used, record 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. ACTIVE Fishing Duration**: Record the length of time, *in hours and minutes (hh.mm)*, since the initial setting of the gear for this opener to the beginning of this observed haul. Ask fisherman if the net has been tied up (i.e., not fishing) since the beginning of the opener. The time the net has been tied up is subtracted from the length of time since the initial setting of the gear. Record in comments how this number was calculated.

**21. ACTIVE 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 to the begin time of this haul. Ask fisherman if the net was tied up at all since the last pick. The time the net has been tied up is subtracted from the length of time since the last pick of the gear. Record in comments how this number was calculated.

**22. PRIMARY SPECIES TARGET:** Record the species and the species code targeted during this haul/pick (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.

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

**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 fishing began on this haul/pick. This information can be obtained from your personal GPS unit (be sure settings are correct). If GPS location cannot be achieved, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes. Use location at net end distant from shore.

**26. HAUL BEGIN LONGITUDE:** Record the longitude location, *in tenths of minutes (dddmm.m)*, where the fishing began on this haulpick. This information can be obtained from your personal GPS unit (be sure settings are correct). If GPS location cannot be achieved, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes. Use location at net end distant from shore

**27. HAUL BEGIN DEPTH:** Record the water depth, *in whole fathoms*, where fishing began on this haul/pick. This information is collected by asking the fisherman. Record a dash if this cannot be obtained. Use location at net end distant from shore

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

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

**30. HAUL END LATITUDE:** Record the latitude location, *in tenths of minutes (ddmm.m)*, where the fishing ended on this haul/pick. This information can be obtained from your personal GPS unit (be sure settings are correct). If GPS location cannot be achieved, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes. Use location at net end distant from shore

**31. HAUL END LONGITUDE:** Record the longitude location, *in tenths of minutes (dddmm.m)*, where the fishing ended on this haul/pick. This information can be obtained from your personal GPS unit (be sure settings are correct). If GPS location cannot be achieved, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes. Use location at net end distant from shore.

**32. HAUL END DEPTH:** Record the water depth, *in whole fathoms*, where the fishing ended on this haul/pick. This information is collected by asking the fisherman. Record a dash is this cannot be obtained. Use location at net end distant from shore.

**33. GEAR DAMAGE/OBSTRUCTION CODE:** Indicate the condition of the gear at the end of the haul/pick. Ask the fisherman if any damage noted occurred since the last haul/pick or pre-existed. Assume obstruction occurred since last pick. Use Gear Damage Codes to reflect damage/obstruction that occurred while net was fishing and since last pick. If obstruction code 6 or 7 is recorded, list debris type in species name/code list:

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 NET RUN:** Record the percent of the total net length that was run (scanned from picking skiff, but not lifted from the water. No fish picked and retained or discarded).

**35. PERCENT OF NET PULLED:** Record the percent of the total net length that was actually pulled out of the water to any degree during this haul/pick, whether or not fish were picked. This refers to the horizontal length of the net, not the vertical amount of net removed from the water.

**36. PERCENT OF NET OBSERVED:** Record the percent of the total length of the net that was actually observed being pulled/picked during this haul/pick. The percent of the net observed cannot exceed the percent of the net pulled.

Example 1: The net is 35 fathoms (210 ft) long. The fisherman pulls/picks 158 ft of net and goes back to shore with some fish. The observer watched the entire operation. That translates to 75% of the net being observed. In this case the % net observed equals the percent net pulled/picked.

Example 2: The net is 35 fathoms long. The fisherman pulls/picks about 50 ft of net on the shore end, stops and runs to the seaward end of the net and pulls/picks about 50 ft toward shore. This totals about 100 feet of the net being picked/pulled, and the observer observed all of that operation. The observer should record that about 48% of the net was observed. In this case the % net observed equals the percent net pulled/picked.

Example 3: The net is 35 fathoms long and the fisherman pulls/picks about 50 ft of net on the shore end, stops and runs to the seaward end of the net and pulls/picks about 50 ft toward shore. This totals about 100 feet of the net being picked/pulled. However, in this case, the water was really rough and the observer was getting sick over the side during the 2nd part of the pick (the 50 ft of net picked from the seaward end of the net). In this case, only about 24% of the net was observed. In this example the % net observed is less than the percent net pulled/picked.

If a portion of the actual picking operation was not observed, 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 of marine mammal, sea bird, or sea turtle occurred during this haul.

**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**: For most or all of the pick, the observer had a clear view of the full depth of the net under the water near the picking operation; the observer's view of the picking operation was unobstructed for the duration of the pick; the observer skiff was within 20 ft of the fishing skiff/picking operation at all times.

**2 = Good**: The observer could see at least the top 1/3 of the net depth underwater; the observer's view of the portion of the net being pulled was unobstructed for most or all of the pick; the observer skiff was within 20 ft of the fishing skiff for most or all of the pick.

**3 = Fair**: No underwater portion of the net could be seen by the observer due to glare or other reason; the observer skiff could not get closer than
**4 = Poor**: skiff could not get within 50 ft of the net to observe the picking; view was obstructed by the fishing skiff;
**9 = Other** (record in comments)

**39. SPECIES NAME**: Record the common name of each species caught and any debris. Also include the associated code from the Species Codes (Appendix 4 - Species Codes). Please be sure to use the most recent list. Describe and draw any unidentified species in comments. Unidentified debris should be described in comments.

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

**41. NUMBER TYPE:** Indicate how the species individual 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 the species weight was determined by recording the type of Weight. Use the Type Codes:

A = Actual
E = Estimated
F = Fishermen's
L = Landing ticket
D = ADFG weight estimate table

**44. CATCH DISPOSITION:** Indicate whether this catch category was kept or discarded. Use Catch Disposition Codes:

K = Kept
D = Discarded

**45. ANIMAL CONDITION:** Indicate the ultimate condition at the end of the trip of each species catch category. All kept species should be dead, unless they are being kept for a live market. Indicate whether discards are released alive or dead. Record Debris disposition as Unknown. Recording the most appropriate Animal Condition Code:
A = Alive
D = Dead
R = Recovering in tank or comatose
U = Unknown

**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 (if Code 32 is chosen, note in comments whether this is due to pinniped damage)
33 = Kept, other reason (record in comments)
34 = Kept, reason unknown
0 = Unknown disposition

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

a. Ask the permit holder his or her opinion on what they estimate the overall percentage of catch must be discarded because there is no commercial or personal value to the catch due to damage from seals or sea lions.

b. Ask the permit holder his or her opinion on what they estimate the overall percentage of catch is kept for personal consumption (or pet food) because there is no commercial value to the catch due to damage from seals or sea lions.

# Set Gillnet Haul Form

| Year (2) | Month (3) | Trip ID # (4) | Haul # (5) | Net ID # (6) |
|---|---|---|---|---|
| Zone (7): 1 = Open water; 2 = Large bay; 3 = Sheltered bay; 4 = River; 5 = Channel or canal; 6 = River mouth/estuary; 7 = River mouth/open water; 9 = Other (comment) | Land (8): 1 = Main shoreline; 2 = peninsula /small island; 3 = sand bar; 4 = rocky reef; 5 = submerged land; 8 = not set from land; 9 = other (comment) | Tide (9): 1 = Ebb; 2 = Flood; 3 = High slack; 4 = Low slack; 9 = Other (comment) | Statistical Area (10) | Water Temp (0.0 C) (11) |
| | | | Water Clarity (0.0m) (12) | Air Temp (0.0 C) (13) |
| Min Shore Distance (m) (14) | Max Shore Distance (m) (15) | Hydraulic Pump Used? (16) Y ☐ N | # Skiffs (17) | # Crew per Skiff (18) |
| Skiff Size (ft) (19) | Fishing Duration (hh.mm) (20) | Soak Duration (hh.mm) (21) | Primary target species (& code) (22) | |
| Begin Haul — Date (mmddyy) (23) | Time (24 hr) (24) | Latitude (ddhh.m) (25) | Longitude (dddhh.m) (26) | Depth (fm) (27) |
| End Haul — Date (mmddyy) (28) | Time (24 hr) (29) | Latitude (ddhh.m) (30) | Longitude (dddhh.m) (31) | Depth (fm) (32) |
| Gear Damage (33): 1= no damage; 2= < 5%of net torn; 3= 5%< net torn < 25%; 4= 25%< net torn < 50%; 5= net torn > 50%; 6= obstructed by debris < 50%; 7= obstructed by debris > 50%; 8= net totally balled up; 9= other (comments) | % Net Ran (34) | % Net Pulled (35) | % Net Observed (36) | Incidental Take (37) YES / NO |
| | Observation Quality (38): 1= Excellent; 2= Good; 3= Fair; 4= Poor; 9= Other (comments) | CODES: Number & Weight Type — A = Actual; E = Estimated; F = Fisherman's; L = Landing/Fish Ticket | CODES: Animal Condition — A = Alive; D = Dead; R = Recovering Tank; U = Unknown | CODES: Disposition — K = Kept; D = Discarded |

| Species Code (39) | Number (40) | Number Type (41) | Weight (0.0 kg) (42) | Weight Type (43) | Disposition (44) | Animal Condition (45) | Reason (see codes) (46) |
|---|---|---|---|---|---|---|---|
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COMMENTS: (Cont'd on back: Y N ) (47)

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# INCIDENTAL TAKE FORM

This form is used to record information on all incidental takes observed during the trip. An incidental take is a marine mammal, seabird, or sea turtle that is observed entangled in the gear. A new Incidental Take Form must be started for each haul/pick in which one or more incidental take occurs. The incidental takes are numbered consecutively *per trip*. All incidental takes must be photographed (see the Photo Form for more details). Dead incidental takes will be uniquely tagged and sampled. Carcasses that cannot 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, seabird, or sea turtle (although sea turtles are relatively rare in Alaska). If at any point during an observed trip, a marine mammal or seabird (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 incidental take and is recorded on the Incidental Take Form. 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. Not all physical contact with the net is considered an incidental take. Examples of direct contact with fishing gear that are not considered incidental takes include: a sea otter scratching its back on the floatline, a sea lion picking a fish out of the net and swimming away, a bird landing on a float for a rest.

Depending on the species and age of the animal, response behaviors may differ. Some animals are extremely sensitive to shock, are quickly overcome or incapacitated, and are unable to free themselves. Other species will have a powerful, continuous response until exhaustion, while other species are strong enough to tear or rip through the gear. Some animals may escape uninjured, while others may drown, asphyxiate, break a limb, have deep lacerations or bleeding wounds, and others may escape with internal injuries or shock responses not obvious externally.

**Serious injuries are defined as injuries that are likely to lead to mortality. Federal guidelines have been developed to assist the agency in making serious injury determinations, but it is still extremely difficult to determine what constitutes a serious injury. Experts carefully review observer data on incidental takes to determine whether a serious injury or mortality occurred. Making this judgment is extremely difficult after the fact. Therefore, the observer who observed the take in the field must provide as much information as possible on the condition of the animal and the circumstances surrounding the take. This should include drawings, diagrams, full descriptions of events, animal behavior, and injuries. A description of how codes like condition and disposition were decided upon should be included. Opinions based on observations are extremely helpful. If gear remained on the animal, how much? What parts of the gear? Documentation of marine mammal takes is the *most critical element* of this program.**

An observed incidental take may be alive or dead. 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.

Proper species identification is critical. The observer should take care that species identification is made properly and all information used to make that identification must be documented. Photos MUST be taken.

- 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

**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:** Record the year (yyyy) when the trip ended.

**3. MONTH:** 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. INCIDENTAL TAKE ID NUMBER**: Assign a consecutive number, *by trip*, to each animal recorded on this form. If there are insufficient lines on one form, continue on a new Incidental Take Form. Start a new Incidental Take Form for each haul/pick, but continue consecutive incidental take ID numbers through entire trip.

**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 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 (describe the colors in comments):

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 (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 at the time of release, by recording the most appropriate Animal Condition Code:

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

**15. INJURY:** Indicate the degree of injury, if any, the animal had upon release. Record one most appropriate Injury Code. If ingested gear or gear left on animals (codes 7 or 8), also indicate other injury code, if applicable, in comments :

1 = No external injury, responsive
2 = No external injuries, unresponsive
3 = Saturated wet plumage or oiled
4 = Small lacerations and/or missing plumage
5 = Large wounds and/or 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 (marine mammals); OR Juvenile/hatch-year (birds)
2 = Immature
3 = Adult
0 = Unknown

*Guidelines for Determining Age:*
**Pinnipeds**: Relative size is the best guide.
**Cetaceans:** Age class may be hard to determine from field examination, so only distinguish between calves of < 1 year and adults.
**Birds:** 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. If recording a juvenile bird, note whether an egg-tooth is present at the tip of the bill.

**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:

**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.

**20. COMMENTS:** Record any additional information regarding the marine mammal incidental take(s), especially when samples are unable to be collected. Reference each comment with its corresponding field name and, if applicable, Incidental Take ID #. For each animal the observer must record (i.e., sketch and/or describe):

- **Identifying characteristics**: condition, marks, scars, gear on the animal, injuries, etc.

- **Presence of** foam or other excretions coming from blowhole, mouth, eyes, mammary glands, etc.

- **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. If it swam away, describe swimming strength as strong or weak. Did the animal seem lopsided or misshapen? Did it swim in circles or directly away? Did it hesitate or seem disoriented?

NOAA Fisheries Alaska Marine Mammal Observer Program

# INCIDENTAL TAKE FORM

| YEAR | MONTH | TRIP IDENTIFICATION # | HAUL # |
|---|---|---|---|
| (2) | (3) | (4) | (5) |

| ID # | SPECIES (& CODE) | TAG # | 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) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) |
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## Tag Type Codes

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

## Tag Status Codes

0 = No tag
1 = Applied by observer
2 = Already on; left on by observer
3 = Already on; removed by observer
9 = Other (comment)

## Disentanglement Codes

0 = Unknown
1 = Momentary snag; self-release
2 = Released from net; unknown location
3 = Released from net underwater
4 = Released from net out of water
5 = Released with gear damage
6 = Released with cut to animal
7 = Release required untangling
9 = Other (comment)

## Horizontal Location Codes

0 = Unknown
1 = Animal in first 1/3 of net
2 = Animal in middle 1/3 of net
3 = Animal in final 1/3 of net

## Vertical Location Codes

0 = Unknown
1 = At water surface
2 = Top 1/3 of net
3 = Middle 1/3 of net
4 = Bottom 1/3 of net

## Animal Condition Codes

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

## Injury Codes

0 = Unknown
1 = No external injury; responsive
2 = No external injury; unresponsive
3 = Wet plumage or oiled
4 = Small Lacerations; missing plumage
5 = Large wounds; excessive bleeding
6 = Broken appendages
7 = Ingested gear
8 = Gear remained on the animal
9 = Moderate decomposition
10 = Severe decomposition

## Age Class Codes

0 = Unkown
1 = Calf; pup; juvenile (hatch year)
2 = Immature
3 = Adult

## Comments

(include animal I D#; Cont'd on back? Y___ N ___)

(20)

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# MARINE MAMMAL BIOLOGICAL SAMPLING GUIDELINES

The following are guidelines for documenting biological samples of incidentally taken 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.

## 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. See Photo Form instructions for guidance on recording photographic information.

### Dead Animals

1. Identify and Photograph

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

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.

*Tag Placement*

- Porpoise: cinch the cable tie around the caudal peduncle (tail stock).
- 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.

For each biological sample collected from that animal, record the tag number on a Tyvek biological sample label (along with other pertinent info – see below), and attach the label to the corresponding sample packaging.

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. DNA Sample (Skin)

Cetaceans: Obtain a fin clip sample by removing a 3 cm x 3 cm sample from the tip of the dorsal fin or fluke with the skin intact.

Pinnipeds: Obtain a skin sample by removing a 3 cm x 3 cm sample from one of the flippers with the skin intact.

All samples will be double bagged, with a waterproof (Tyvek) label enclosed between the first and second bag. The sample label must include the animal Tag #, the species name, and sample type. Record this information with a permanent (sharpie) marker. Exclude as much air as possible from both sample bags. Samples from each animal should be kept together in one larger bag, and frozen or iced. See instructions below for completing the Biological Sample Tracking Sheet.

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).

- **Standard (or 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. Sex Determination

- Cetaceans: Sex may be determined by inserting a probe into the genital slit. *Females* - the probe will insert anteriorly. *Males* - the probe will insert posteriorly. It is important to determine the sex of the animals correctly, and the use of photographs of the genital area will help the agency confirm your

determination. You may also note the presence of mammary slits on both sides of the genital slit on females, and the absence of mammary slits on males. Additionally, confirm the sex by examining the animals' reproductive tract if you cut the animal open.

- Seals: *Females:* note presence of two mammary nipples posterior of the umbilicus on females. *Males*: note penile aperture posterior of the umbilicus on males. The genital opening on females is near the base of the tail, anterior to 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, what part of the gear remain, and where the gear is attached or wrapped.

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

7. 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. **Once ashore, the lead observer must be notified immediately that there is a whole animal that needs to be taken care of.**

## II. ADDITIONAL SAMPLING/ MEASUREMENTS

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

These additional samples are collected once all the minimum sampling requirements are obtained, and after recording the catch for that haul/pick.

### 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 (Tyvek) label enclosed between the first and second bag. The sample label must include the animal Tag #, the species name, and sample type. Record this information with a permanent (sharpie) marker. Exclude as much air as possible from both sample bags. Samples from each animal should be kept together in one larger bag, and frozen or iced. See instructions below for completing the Biological Sample Tracking Sheet.

1. Position: When sampling mammals, the animal should be placed on its right side if possible, with it's 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.

2. Incision: 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.

3. Liver & Stomach: 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.

3. Kidneys: 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.

4. Gonads: 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.

| Sample | Instructions |
|---|---|
| Skin | Obtain DNA Sample (Skin) above, under Minimum Requirements. |
| 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. |
| 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. |
| 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. |

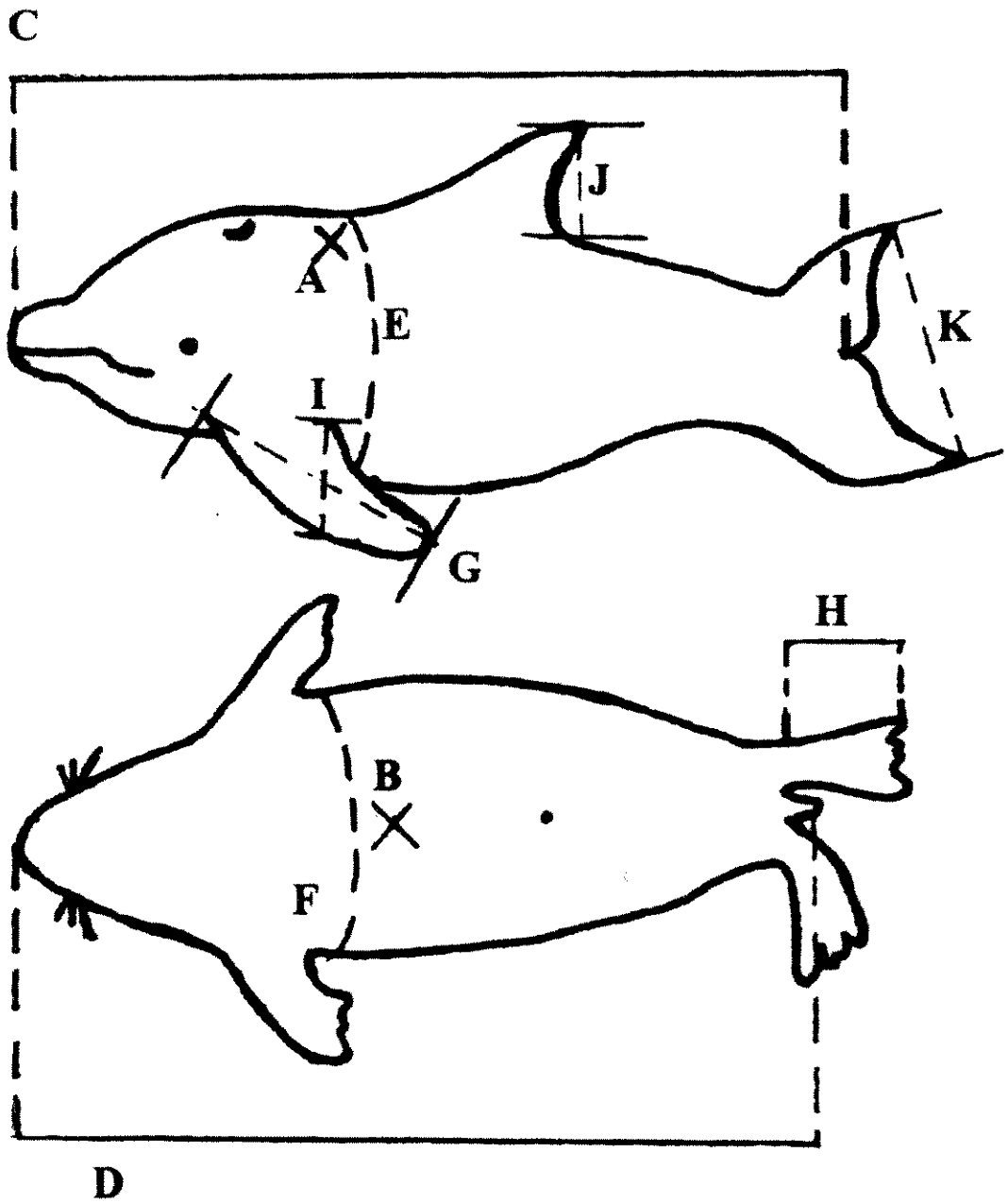


Figure 1. Marine Mammal Body Measurements

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# MARINE MAMMAL SAMPLE FORM

This form is used when marine mammals incidental takes are measured or sampled. Refer to the preceding Marine Mammal Sampling Guidelines for detailed sampling instructions. 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 Marine Mammal Sample Form for each haul/pick when marine mammals are sampled or measured

- 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:** Record the year (yyyy) when the trip ended.

**3. MONTH:** 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 (PICK) NUMBER:** Record the consecutive haul/pick number assigned to the haul/pick with the take. This number must agree with the haul/pick number recorded on the corresponding Haul Form and Incidental Take 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 all forms and sample labels. See Marine mammal Sampling guidelines for tag placement. 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 from the Incidental Take Form.

**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:** 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, record 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 outside anterior insertion of the hind flipper to tip of the longest toe, not including the nail.

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

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

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

**14. BLUBBER THICKNESS:** For cetaceans, record, *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. **Reference each description with the animal's unique tag number.** For each animal the observer must sketch and describe:

- **Notes from** external and internal examination (colors, shapes, etc.)

**- Location where** samples and measurements were taken

**- Storage method, size and packaging** of samples

NOAA Fisheries Alaska Marine Mammal Observer Program

# MARINE MAMMAL SAMPLE FORM

| YEAR | MONTH | TRIP IDENTIFICATION # | HAUL # |
|---|---|---|---|
| 2 | 3 | 4 | 5 |

| TAG # | SPECIES (& CODE) | Standard Length (cm) | Girth (cm) | Flipper Length (cm) | Flipper Width (cm) | Dorsal Fin Height (cm) | Fluke Width (cm) | Blubber Thickness (mm) | Skin (Y / N) | Retained Whole (Y / N) | Jaw or Teeth (Y / N) | Stomach (Y / N) | # Other Samples |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
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Comments
(Include tag number of referenced animal; Cont'd on back? Y____ N____)

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# 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. *Birds must be individually double-bagged, with the waterproof tag placed between the first and second bags, and NOT inside the bag with the bird carcass.* Exclude as much air as possible from both the inner and outer sample bags. Double check tag on bird matches the tag number on the sample form and the chain of custody form.

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 one leg of all dead birds. 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. Ensure the tag number matches the number on the sample form.

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 taxanomic 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 feath

ers 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. Avoid putting more than one bird in a bag.

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 ovary 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.

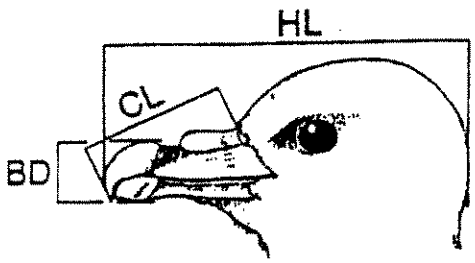
3. If time allows, check for obvious injuries to bird.

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).**



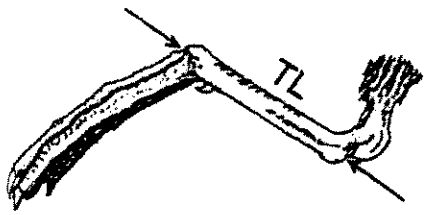
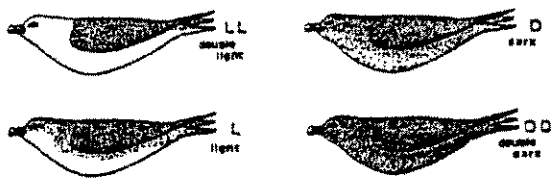




Fig. 1. Four measurements taken on fulmarine petrels: head length (HL); bill depth (BD); bill length (CL); and tarsus length (TL).

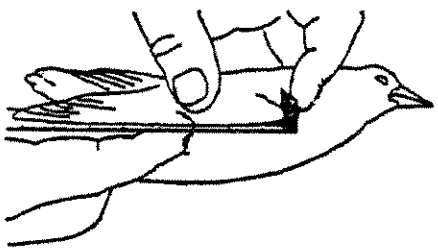
**For Norther Fulmars, try to identify the colorphase as close to possible to these four categories.**



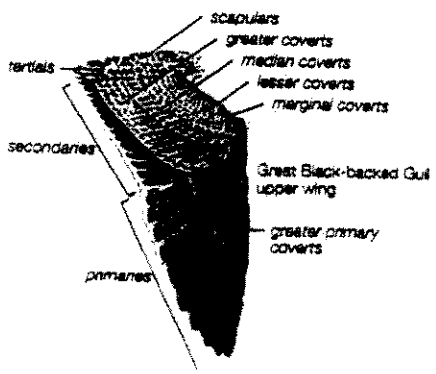

*Colourphases of the northern fulmar, Fulmarus glacialis.*

*Description based on Fisher (1952) 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).

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# 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:** Record the year (yyyy) when the trip ended.

**3. MONTH:** 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 carcasswith 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 notkept**, 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 othersamples 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.

| Year (2) | Month (3) | Trip Identification Number (4) | Haul Number (5) |
|---|---|---|---|
| | | | |

*NMFS Alaska Marine Mammal Observer Program*

**MARINE BIRD SAMPLE FORM**



| Tag Number (or Id #) (6) | Species (& code) (7) | Plumage | | Body Measurements | | | | | Condition | | Retained Samples | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase (8) | Feather (9) | Weight (g) (10) | Head-Bill (mm) (11) | Culmen Length (mm) (12) | Tarsus Length (mm) (13) | Wing Chord (cm) (14) | Brood Patch (15) | Fat Index (16) | Whole (Y;N) (17) | Head Feet (Y;N) (18) | Stomach (Y;N) (19) | # Other Samples (20) |
| | | | | | | | | | | | | | | |
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**Phase Codes**

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

**Feather Codes**

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

**Brood Patch Codes**

1 = No defeathering
2 = Loss of down and some contour feathers
3 = Loss of down & most contour feathers; vasc. 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

**Fat Index Codes**

1 = Skin very thin, feather ends obvious; no fat along keel or around heart; emaciated
2 = Skin moderately smooth with fat; little fat along keel but none around heart; not emaciated
3 = Skin has moderate fat; fat evident along keel, with some traces around heart
4 = Skin smooth with fat; fat deposits along keel and around heart
5 = Skin thick with fat, feather points barely visible; heavy fat along keel and heart, and spots of fat in interstitials
0 = Unknown / unable to check

Comments (include the tag number of the referenced animal)
(Continued on Back: Y ___ N ___)

(21)

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# MARINE MAMMAL SIGHTING WATCHES

Marine mammal sighting watches are conducted to collect detailed information on sightings of marine mammals encountered during the program. This information is critical in determining the temporal and spatial distribution and relative abundance and behavior of marine mammals in the vicinity of fishing operations.

In addition to marine mammals sighted during dedicated sighting watches, all marine mammals observed by the observer (and determined not to be incidental takes) during a trip are recorded on the Marine Mammal Sighting Form. Animals determined to be incidental takes may not be recorded as sightings on the Sighting Form, and vice versa. If a dead marine mammal is observed, and the observer determines it is not an incidental take as direct result of the gear being observed, the animal is recorded on the Sighting Form, with extensive comments on how that determination was made. A Marine Mammal Stranding Form should be completed for any dead animal that is determined not to be an incidental take. Photographs should be taken, as the Photo Form instructions detail. If a marine mammal (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.

## WATCH TYPES

Observers will conduct focused marine mammal watches during each trip. Watch types is described in detail below. It is *very 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. SIGHTING TRANSIT WATCH

A transit watch is conducted while traveling over water to or from the 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 without break for a minimum of 15 minutes and a maximum of 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. At each angle, the distance between the vessel and up to 3 or more miles is covered. Continuous scanning of the water surface

back and forth across the designated area in a continuous sweep 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. If biological samples are to be collected as the vessel resumes transit after a haul/pick the transit watch is pre-empted by the biological sampling priorities.

### 2. SIGHTING HAUL WATCH

A haul watch is conducted while the vessel is hauling back or picking fishing gear. These watches provide information on marine mammals that are in the vicinity of the gear during fishing operations. This information is used to assess possible interactions and associations of marine mammals with fishing activity. This watch must be concentrated on the water near and around the net, looking for marine mammals in the area and incidental takes of marine mammals and marine birds. **The focus of the observer should be the net where the fisherman is picking to ensure an entangled marine mammal does not drop out of the net unseen, but quick sharp glances around the net area are possible without missing drop outs from the net.**

A sighting haul watch is conducted during every haul/pick, but will be suspended when the Beaufort sea state reaches 6 or more. During a sighting 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 sighting 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 sighting 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.

Any biological sampling necessary will occur after the pick is over. During a sighting haul watch, scanning the water and net for incidental takes is a priority over all other data collection. Therefore, all catch composition data should be collected after the pick is done. The observer should detail the circumstances in comments if at any point they feel they can not confidently watch for takes.

### 3. SIGHTING SOAK WATCH

A sighting 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 may be 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 various platforms. If an observer is dropped

off on shore for a soak watch, the observer's skiff 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 without break for at least 30 minutes and up to 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; or as opportunity arises during the trip. 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.* The observer may record marine mammals out to a nautical mile from the gear. Marine mammals are the primary object of concern. Observing hauls/picks takes priority over the transit or soak watches.

4. Set Watch

A set watch is conducted while the vessel is setting out fishing gear. This information is used to assess possible interactions and associations of marine mammals with this aspect of the fishing activity. Set watches are a lower priority if the observer is working up samples, preparing for the haul/pick, 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.

A set watch can be conducted during every set, but will be suspended when the Beaufort sea state reaches 6 or more. 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 fishing skiff) during the entire watch. The primary focus should be along the 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.

**SIGHTING TYPES**

1. ON-WATCH SIGHTING - A sighting of a marine mammal made while conducting one of the sighting watches described above.

2. OFF-WATCH SIGHTING - An opportunistic sighting of a marine mammal made at a time when the observer is not conducting a formal sighting watch.

Marine mammal 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. 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.

5. HORIZON SCAN

**This watch is intended to concentrate on seabirds present on the fishing grounds and will not be conducted during the 2007 field season.**

When available, specially trained bird observers will be assigned to collect marine bird data exclusively. During a trip, these observers will always be working with a marine mammal observer to supplement the primary observer's trip information with marine bird data. 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, he or she should inform the marine mammal observer who will verify the sighting before recording it on the appropriate data 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 concentrates on marine birds in close proximity to a fishing net when it is being hauled and will not be conducted during the 2007 field season.** Specially trained observers will be assigned to collect marine bird data exclusively. During a trip, these observers will always be working with a marine mammal observer to supplement the trip information with marine bird data. They may help the marine mammal observer keep track of 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, he or she should inform the marine mammal observer so it may be recorded on appropriate 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.

## Yakutat 2007-2008 Watch Types

| Watch Type | Applicability | Focus | Rotation | Priority |
|---|---|---|---|---|
| Haul/Pick | All hauls/picks. Suspended at Beaufort sea state 6. Always associated with a "trip". | Incidental Takes of marine mammals and seabirds; marine mammals w/in vicinity of gear, esp within 300 m. | Entire haul or pick | 1 |
| Soak | Soaking or fishing nets. One hour before haul/pick is preferred. Suspended at Beaufort 5 sea state. Need not be associated with a "trip". | Incidental Takes of marine mammals and seabirds; marine mammals in vicinity of gear, generally w/in 1000 m. | 1 hour on, 15 min off; up to 4 hrs | 2 |
| Transit | When transit is likely to be 15 min or more. Suspended at Beaufort 5 sea state. Need not be associated with a "trip". | Marine mammals near fishing grounds; under ideal conditions, cetaceans can be seen up to 3000 m. | 1 hour on, 15 min off; up to 4 hrs | 3 |
| Set | During setting of gear. Suspended at Beaufort sea state 6. Always associated with a "trip". | Incidental Takes of marine mammals and seabirds; marine mammals w/in vicinity of gear, esp within 300 m. | Entire set | 4 |

# SIGHTING FORM

This form is used to record all sighting watches and sightings. A sighting includes marine mammals that are in the fishing area but do not become entangled in the fishing gear. A new Sighting Form must initiated for a new day of sightings and more than one form may be used in a day, if needed. There may be several records per day, but each time recorded for each sighting should be unique. Marine mammal sightings may or may not occur during a trip. Sightings must NOT be double-counted (do not record re-sightings). If working with another 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 beginning and end (or occurrence) of a watch, only the fields to the left of the dashed line are 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.

- 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:** Record the year (yyyy) when the trip ended. Dash (-) if not associated with a trip.

**3. MONTH:** 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). Dash (-) if not associated with a trip.

**5. OBSERVER IDENTIFIER NUMBER:** Record your three-character Observer Identifier Number (ex: X01).

**6. DATE:** Record the date when this sighting /event or sequence of sightings/events occurred, with month, day, year (mmddyy). A new form must be initiated for each day of sightings/events.

**7. EVENT NUMBER:** This number is used to associate the start ("begin") of a haul, set, soak or transit watch with the end of that same watch, as well as any on-watch sightings for that watch. Start with "1" for the first watch of the trip and record the same event number for all events that occur for that watch (on-watch sightings, end watch, other). You must record an "end watch" event before beginning a new watch. Continue to number watches sequentially within a trip. If multiple observers are on a trip, they each begin with "1" on their respective forms. Use a slash (/) in this field for off-watch sightings.

**EXAMPLE:**

| EVENT NUMBER | EVENT TYPE | TIME |
|---|---|---|
| 1 | 1 | 1156 |
| 1 | 11 | 1223 |
| 1 | 2 | 1226 |
| [SLASH BOX] | 12 | 1235 |
| 2 | 1 | 1255 |
| 2 | 11 | 1305 |
| 2 | 11 | 1356 |
| 2 | 2 | 1415 |
| 3 | 1 | 1448 |
| 3 | 2 | 1515 |

**8. EVENT TYPE:** Record the code to describe an event 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 (not used in 2007)
10 = Net scan (not used in 2007)
11 = Sighting, on-watch
12 = Sighting, off-watch
99 = Other (record in comments)

* NOTE: If weather, Beaufort sea state, 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.

**9. 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)

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

**11. 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 latitude cannot be fixed by GPS, plot the position on a NOAA nautical chart and record the coordinates, *converting to tenths of minutes.*

**12. 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 GPS unit (be sure settings are correct). If longitude cannot be fixed by GPS, plot the position on a NOAA nautical chart and record the coordinates, converting to tenths of minutes.

**13. 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

**14. BEAUFORT SEA STATE:** Record the sea state condition for each event, using Beaufort Scale Sea State Codes:

**0** = < 1 Wind speed in knots (kt) ; mirror-like surface
**1** = 1-3 kt; wave height 0.25 ft; ripples; no foam crests
**2** = 4-6 kt; wave height 0.5 - 1 ft; small wavelets; crests glassy, not breaking
**3** = 7-10 kt; wave height 2-3 ft; large wavelets; crests beginning to break; scattered whitecaps
**4** = 11-16 kt; wave height 3.5 - 5 ft; small waves becoming longer; numerous whitecaps
**5** = 17-21 kt; wave height 6 - 8 ft; moderate waves becoming longer; many whitecaps; some spray
**6** = 22-27 kt; wave height 9.5 – 13 ftlarger waves forming; whitecaps everywhere; more spray
**7** = 28-33 kt; wave height 13.5 - 19 ft; sea heaps up; white foam from breaking waves blown in streaks
**8** = 34-40 kt; wave height 19 - 25 ft; moderate high waves; waves breaking into spindrift; blowing foam

**15. WAVE HEIGHT:** Record the average estimated wave height, *in tenths of meters*.

**16. SPECIES:** Record the common name of the species to the most specific group possible. The species code must also be recorded (reference Appendix 4, Species Codes). Complete one line for each species in each sighting. Multi- species sightings will have the same event number and time, but be recorded on separate lines. Detail multi-species groups in the comments.

**17. 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.

**18. 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)

**19. DISTANCE TO GEAR:** Record the closest distance that the animal came to the net, *estimated in whole meters*.

**20. 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 seabird scan count, dash (-) this field.

**21. COMMENTS:** Detail the animals' behavior, reactions, characteristics used to identify species, 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 event # and time** so the comment is specify the appropriate event.

Comment should include remarks regarding:

- Behavior
- Reactions
- Identifying Characteristics
- Sign of injury/ Scarring
- Environment (human activities)

NOAA Fisheries Alaska Marine Mammal Observer Program

# Marine Mammal Sighting Form

| Year (2) | Month (3) | Trip ID # (4) | Observer ID # (5) | Date (DD/MM/YY) (6) |
|---|---|---|---|---|
| | | | | |

| Event # (7) | Event Type (8) | Platform (9) | Time (hh:mm) 24 hr (10) | Latitude (ddhh.m) (11) | Longitude (dddhh.m) (12) | Weather (13) | Beaufort Sea State (14) | Wave Height (0.1 m) (15) | Species Name and Code (16) | Number (17) | Animal Behavior (18) | Distance to Gear (m) (19) | Distance to Vessel (m) (20) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
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**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 (comment)

**Platform Codes**
1 = Observer skiff
2 = fishing skiff/vessel
3 = Research vessel
4 = Shore, beach
5 = shore, cliff/hill
6 = shore, dock
7 = aerial
9 = other (comment)

**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

**Beaufort Wind /Sea State Codes**
*Code = Wind Speed & Sea State*
0 = < 1 kt & mirror-like surface
1 = 1-3 kt & ripples / no foam crests
2 = 4-6 kt & small wavelets / crests glassy – not breaking
3 = 7-10 kt & large wavelets / breaking crests / scattered whitecaps
4 = 11-16 kt & small waves / numerous whitecaps
5 = 17-21 kt & moderate waves / many whitecaps / some spray
6 = 22-27 kt & large waves / whitecaps everywhere
7 = 28-33 kt & sea heaps up / streaks of foam
8 = 34-40 kt & moderate high waves / sprindrifts/ blowing foam

**Animal Behavior Codes**
1 = Swimming
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 = On land
99 = Other (comment)

Comments: (include Event # and time; cont'd on back Y____ N____)
(21)

(blank)

# 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 (mmddyy).

**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<br>1 = Excellent 3 = Fair<br>2 = Good 4 = Poor |
|---|---|---|---|

| Frame | Date | Time | Species / Tag Number / Subject | Description | Quality |
|---|---|---|---|---|---|
| **3** 1 | **4** | **5** | **6 7 8** | **9** | **10** |
| 2 | | | | | |
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**Marine Mammal Stranding Reports**

Contact: **Aleria Jensen, Stranding Coordinator**, NMFS, Alaska Regional Office, Juneau, AK (907) 586-7248 or **Barbara Mahoney**, NMFS, Alaska Regional Office, Anchorage, AK (907) 271-3448. After hours, the NMFS Enforcement hotline can be called at 800-853-1964. The U.S. Coast Guard may also be called in these events and will pass on reports to appropriate personnel.

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[Extracted from NMFS' Draft Programmatic Environmental Impact Statement for The Marine Mammal Health and Stranding Response Program, 2007.]

**Marine Mammal Health and Stranding Response Program**

Marine mammals are considered sentinels of ecosystem health and may provide valuable links to human health. NMFS responds to marine mammals in distress, including those stranded, entangled, and out of habitat and in answer to research and management questions about marine mammal health. Response to marine mammals is also conducted out of a concern for animal welfare and ocean stewardship.

In 1992, the Marine Mammal Health and Stranding Response Program was formalized with the passage of Title IV, an amendment to the MMPA. This Act charged the Secretary of Commerce to develop a marine mammal health and stranding response program with three goals:

1. Facilitate the collection and dissemination of reference data on the health of marine mammals and health trends of marine mammal populations in the wild;
2. Correlate the health of marine mammals and marine mammal populations, in the wild, with available data on physical, chemical, and biological environmental parameters; and
3. Coordinate effective responses to unusual mortality events (UMEs) by establishing a process in the Department of Commerce in accordance with Section 404 of the MMPA.

In this legislation, there is specific language relative to stranding networks. First, a stranding was defined as "an event in the wild in which (A) a marine mammal is dead and is (i) on a beach or shore of the United States; or (ii) in waters under the jurisdiction of the United States (including any navigable waters); or (B) a marine mammal is alive and is (i) on a beach or shore of the United States and is unable to return to the water; (ii) on a beach or shore of the United States and, although able to return to the water, is in need of apparent medical attention; or (iii) in the waters under the jurisdiction of the United States (including any navigable waters), but is unable to return to its natural habitat under its own power or without assistance" (16 U.S.C. 1421h). Secondly, the Department of Commerce is authorized by Section 112(c) of the MMPA to enter into agreements with individuals or groups to "take" marine mammals in response to a stranding event. "Take" means to "harass, hunt, capture, or kill or to attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. 1362).

To respond to marine mammal strandings, volunteer stranding networks were established in all coastal states and are authorized through Letters of Authority from the NMFS regional offices. Through a National Coordinator and five regional coordinators, NMFS oversees, coordinates, and authorizes these activities and provides training to personnel. These agreements are known as Stranding Agreements (SAs), previously termed Letters of Agreement (LOAs). Organizations with SAs include non-profits, for-profits, institutions of higher education, museums, governmental agencies, and individuals. **Section 109(h) of the MMPA allows Federal, state, and local government employees (or authorized contracted employees) in the line of duty to take a stranded marine mammal in a humane manner (including euthanasia) if such taking is for: the protection or welfare of the mammal; the protection of the public health and welfare; or the non-lethal removal of nuisance animals.**

## Stranding Response to Endangered Species

The NMFS Office of Protected Resources, Permits, Conservation and Education Division issues the ESA/MMPA permit to authorize takes of marine mammals, including threatened and endangered species. The permit covers some of the MMHSRP's activities including emergency response activities for threatened and endangered species, health assessment studies, and other research projects.

In Alaska, all response to threatened or endangered species must occur under this permit. Therefore, clearance from the NMFS permit holder must occur before any activities conducted by AMMOP observers under this permit are authorized.

The current permit allows the MMHSRP Coordinator, or by extension AMMOP observers, to:

- Collect, preserve, label, and transport all species of the Orders Cetacea and Pinnipedia (except walrus), for tissue and fluid samples for physical, chemical, or biological analyses, import, and export;
- Take stranded or distressed marine mammals, including threatened or endangered species;
- Salvage specimens from dead marine mammals, including threatened or endangered species;
- Conduct aerial surveys to locate imperiled marine mammals or survey the extent of disease outbreaks or die-offs;
- Harass marine mammals on land incidental to other MMHSRP activities authorized by the permit; and
- Develop and maintain cell lines from species under NMFS jurisdiction.

Takes of live marine mammals include those that are stranded, entangled, disentangled, trapped out of habitat, extra-limital, in peril (*e.g.*, in vicinity of an oil spill), or are a nuisance. The permit does not authorize takes of USFWS species, but fluid and tissue samples of USFWS species may be received if they were collected legally.

Under the current ESA/MMPA permit, animals may be taken during close approach, capture, tagging, marking, biopsy sampling, collection of sloughed skin and feces, breath sampling, blood sampling, administration of drugs, euthanasia, video recording, and incidental harassment. Live threatened and endangered species may be taken during emergency response. This includes returning the animal back to the wild; treating a distressed condition; disentangling an animal on the beach or at sea; transporting the animal for return to the wild or a treatment/rehabilitation facility; or humanely euthanizing the animal.

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## AMMOP Marine Mammal Strandings Protocol

If a stranded marine mammal carcass is found, the following steps should be taken by the observer:

For Harbor Porpoise and Harbor Seals:

1) Complete a Level A Strandings Form.
2) Mark the carcass with colored grease stick as instructed.
3) Take a skin sample (about the size of the tip of your thumb) and place in vial with DMSO or EtOH.
4) Submit sample, completed Level A Strandings Form, and Biological Sample Chain of Custody Form to lead observer, as per standard operating procedure.

For All Other Species:

1) Partially complete Level A Strandings Form as follows:

*HEADER:*
- Marine mammal common name (best guess)
- Observer name
- Affiliation: AMMOP

*LOCATION OF INITIAL OBSEERVATION:*
- State (but not city or county)
- Body of Water and locality (give good detail on back, including tide, animal location level on beach, any local reference marks nearby – shack, etc)
- Latitude/Longitude (and how determined: GPS, etc)
- Occurrence Details: Ignore everything but # of animals
- On back of form, detail any obvious signs of human interactions (include location on animal of any marks, types of marks, etc)

*INITIAL OBSERVATION:*
- Date

- First Observed
- Condition of initial observation

*WHOLE CARCASS STATUS:*
- Always record “left at site”

*TAG DATA*
- Note if any tags or intentional markings already on carcass

*MORPHOLOGICAL DATA*
- Note if obvious sign of sex and age class (describe size)
- Estimate length
- TAKE PHOTOS!! Record when film given to lead observer

2) Contact lead observer immediately via radio to notify him/her of stranded carcass. Lead will contact Yakutat Stranding network personnel (Bill Lucey and Eileen Henniger). At this point the strandings network will take the lead in all further action regarding this animal. Immediate notification is critical to avoid the next tide re-floating and removing animal or depredation by eagles and bears.

3) Mark the carcass with colored grease stick as instructed.

# 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: _____

**LOCATION OF INITIAL OBSERVATION**
State:_____ County:_____
City: _____
Body of Water: _____
Locality Details: _____
_____
_____
Latitude: _____ N ☐ actual
Longitude: _____ W ☐ estimated
How lat/long determined (Check ONE):
☐ GPS
☐ Map
☐ Internet/Software

**OCCURRENCE DETAILS** ☐ Restrand GE#: _____ (NMFS USE)

**Group Event:** ☐ YES ☐ NO
If Yes, Type: ☐ Cow/Calf Pair ☐ Mass Stranding # Animals: _____ ☐ actual ☐ estimated

**Findings of Human Interaction**: ☐ YES ☐ NO ☐ Could not Be Determined (CBD)
If Yes, Check one or more: ☐ 1. Boat Collision ☐ 2. Shot ☐ 3. Fishery Interaction
☐ 4. Other Human Interaction: _____
Describe How Determined:_____
Gear Collected? ☐ YES ☐ NO Gear Disposition: _____

**Other Findings upon Level A:** ☐ YES ☐ NO ☐ CBD
If Yes, Check one or more: ☐ 1. Illness ☐ 2. Injury
☐ 3. Other Findings: _____
Describe How Determined:_____

**INITIAL OBSERVATION**
Date: Year: _____ Month: _____ Day: _____
First Observed: ☐ Beach or Land ☐ Floating ☐ Swimming

**CONDITION AT INITIAL OBSERVATION** (Check ONE)
☐ 1. Alive
☐ 2. Fresh dead
☐ 3. Moderate decomposition
☐ 4. Advanced decomposition
☐ 5. Mummified/Skeletal
☐ 6. Unknown

**LEVEL A EXAMINATION** ☐ Not Able to Examine
Date: Year: _____ Month: _____ Day: _____

**CONDITION AT EXAMINATION** (Check ONE)
☐ 1. Alive
☐ 2. Fresh dead
☐ 3. Moderate decomposition
☐ 4. Advanced decomposition
☐ 5. Mummified/Skeletal

**INITIAL LIVE ANIMAL DISPOSITION** (Check one or more)
☐ 1. Left at Site
☐ 2. Immediate Release at Site
☐ 3. Relocated
☐ 4. Disentangled
☐ 5. Died at Site
☐ 6. Euthanized at Site
☐ 7. Transferred to Rehabilitiation:
Date: _____ Facility:_____
_____
☐ 8. Died during Transport
☐ 9. Euthanized during Transport
☐ 10. Other: _____

**CONDITION/DETERMINATION** (Check one or more)
☐ 1. Sick ☐ 4. Deemed Healthy 7. Location Hazardous:
☐ 2. Injured ☐ 5. Abandoned/Orphaned ☐ a. To animal
☐ 3. Out of Habitat ☐ 6. Inaccessible ☐ b. To public
☐ 8. Unknown/CBD ☐ 9. Other: _____
Comments:_____
_____

**MORPHOLOGICAL DATA**

**SEX** (Check ONE)
☐ 1. Male
☐ 2. Female
☐ 3. Unknown

**AGE CLASS** (Check ONE)
☐ 1. Adult
☐ 2. Subadult
☐ 3. Yearling
☐ 4. Pup/Calf
☐ 5. Unknown

Straight Length:_____ ☐ cm ☐ in ☐ actual ☐ estimated
Weight:_____ ☐ kg ☐ lb ☐ actual ☐ estimated

**PHOTOS/VIDEOS TAKEN:** ☐ YES ☐ NO
Photo/Video Disposition:_____
_____

**TAG DATA**
Tags Were:
Present at Time of Stranding (pre-existing): ☐ YES ☐ NO
Applied during Stranding Response: ☐ YES ☐ NO

| ID # | Color | Type | Placement * (Circle ONE) | Applied | Present |
|---|---|---|---|---|---|
| _____ | | | D DF L LF LR RF RR | ☐ | ☐ |
| _____ | | | D DF L LF LR RF RR | ☐ | ☐ |
| _____ | | | D DF L LF LR RF RR | ☐ | ☐ |

* D = Dorsal; DF= Dorsal Fin; L = Lateral Body
LF=Left Front; LR = Left Rear; RF = Right Front; RR = Right Rear

**WHOLE CARCASS STATUS** (Check one or more)
☐ 1. Left at site
☐ 2. Buried
☐ 3. Rendered
☐ 4. Towed: Lat _____ Long _____
☐ 5. Sunk: Lat _____ Long _____
☐ 6. Frozen for Later Examination
☐ 7. Landfill
☐ 8. Unknown
☐ 9. Other:____

**SPECIMEN DISPOSITION** (Check one or more)
☐ 1. Scientific collection
☐ 2. Educational collection
☐ 3. Other: _____
Comments:_____
_____

**NECROPSIED** ☐ YES ☐ NO Date:_____
**NECROPSIED BY:** _____



PLEASE USE THE BACK SIDE OF THIS FORM FOR ADDITIONAL REMARKS

# ADDITIONAL REMARKS

**ADDITIONAL IDENTIFIER**: _____ (If animal is restranded, please indicate any previous field numbers here)

**DISCLAIMER**

**THESE DATA SHOULD NOT BE USED OUT OF CONTEXT OR WITHOUT VERIFICATION. THIS SHOULD BE STRICTLY ENFORCED WHEN REPORTING SIGNS OF HUMAN INTERACTION DATA.**

**DATA ACCESS FOR LEVEL A DATA**

**UPON WRITTEN REQUEST, CERTAIN FIELDS OF THE LEVEL A DATA SHEET WILL BE RELEASED TO THE REQUESTOR PROVIDED THAT THE REQUESTOR CREDIT THE STRANDING NETWORK AND THE NATIONAL MARINE FISHERIES SERVICE. THE NATIONAL MARINE FISHERIES SERVICE WILL NOTIFY THE CONTRIBUTING STRANDING NETWORK MEMBERS THAT THESE DATA HAVE BEEN REQUESTED AND THE INTENT OF USE. ALL OTHER DATA WILL BE RELEASED TO THE REQUESTOR PROVIDED THAT THE REQUESTOR OBTAIN PERMISSION FROM THE CONTRIBUTING STRANDING NETWORK AND THE NATIONAL MARINE FISHERIES SERVICE.**

**PAPERWORK REDUCTION ACT INFORMATION:**

**PUBLIC REPORTING BURDEN FOR THE COLLECTION OF INFORMATION IS ESTIMATED TO AVERAGE 30 MINUTES PER RESPONSE, INCLUDING THE TIME FOR REVIEWING INSTRUCTIONS, SEARCHING EXISTING DATA SOURCES, GATHERING AND MAINTAINING THE DATA NEEDED, AND COMPLETING AND REVIEWING THE COLLECTION OF INFORMATION. SEND COMMENTS REGARDING THIS BURDEN ESTIMATE OR ANY OTHER ASPECT OF THE COLLECTION OF INFORMATION, INCLUDING SUGGESTIONS FOR REDUCING THE BURDEN TO: CHIEF, MARINE MAMMAL CONSERVATION DIVISION, OFFICE OF PROTECTED RESOURCES, NOAA FISHERIES, 1315 EAST-WEST HIGHWAY, SILVER SPRING, MARYLAND 20910. NOT WITHSTANDING ANY OTHER PROVISION OF THE LAW, NO PERSON IS REQUIRED TO RESPOND TO, NOR SHALL ANY PERSON BE SUBJECTED TO A PENALTY FOR FAILURE TO COMPLY WITH, A COLLECTION OF INFORMATION SUBJECT TO THE REQUIREMENTS OF THE PAPERWORK REDUCTION ACT, UNLESS THE COLLECTION OF INFORMATION DISPLAYS A CURRENTLY VALID OFFICE OF MANAGEMENT AND BUDGET (OMB) CONTROL NUMBER.**

NOAA Form 89-864 (rev.2004)
OMB No. 0648-0178; Expires August 31, 2007

NOAA Fisheries
Alaska Marine Mammal Observer Program

# Biological Sample Chain of Custody Form

## Animal Information

Trip:
Haul:
Date taken:
Tag Number:
Species:
Comments:

*Copy of Original?* ☐

***IMPORTANT:***
Samples are obtained under permits issued to:
**NOAA/NMFS/ AK Marine Mammal Observer Prgm**
**POB 21668**
**Juneau, AK 99802**
1. When sending samples to next custodian, notify AMMOP Coordinator at (907) 586-7642
2. On receiving or destroying of samples: complete the Log with your initials/date and location, and send a photocopy to address above or fax to (907) 586-7012.

## Sample Information

**Initial and date when sample is collected, shipped, received, or destroyed per instructions on back of form**

| Type | Collector | Custodian I | Custodian II | Custodian III | Custodian IV | **Transfer** Name and Contact Info | **Destroyed** Date |
|---|---|---|---|---|---|---|---|
| Whole Carcass | | | | | | | |
| Skin | | | | | | | |
| Head | | | | | | | |
| Jaw | | | | | | | |
| Stomach | | | | | | | |
| Blubber/ Fat glob. | | | | | | | |
| Muscle | | | | | | | |
| Repro. Tract | | | | | | | |
| Fetus | | | | | | | |
| Liver (Bird) | | | | | | | |
| Heart (Bird) | | | | | | | |
| Leg (Bird) | | | | | | | |
| Other 1: | | | | | | | |
| Other 2: | | | | | | | |
| Other 3: | | | | | | | |
| Other 4: | | | | | | | |
| Other 5: | | | | | | | |

## Name and Location

Collector:
Custodian I:
Custodian II:
Custodian III:
Custodian IV:

**Instructions**

1. At time of sample collection, one form is completed (in triplicate) per each animal sampled.
2. Use ballpoint pen and PRESS FIRMLY to ensure triplicate legibility.

Animal Information

The observer completes this section.

**Trip**: Trip Identification number (A#####)

**Haul**: Haul Identification number (#)

**Date Taken**: Date animal was collected (MM/DD/YYYY)

**Tag Number**: Number from carcass tag applied by observer (A####).

**Species**: Identify only to level confident; do not guess. Code is not required here.

**Comments**: Comments as needed. *Note here if observer who completes form differs from primary trip observer.*

***Copy of Original?***: This form is designed to accompany a group of samples taken from an individual animal kept together as a cohesive unit, or a carcass. When a sample is removed from this cohesive group of samples, an additional white form **must** be created to accompany the sample that is being removed. On the additional white form, **check this box.** If a photocopier is not available, the additional copy of the white form must include the animal information section and the information relevant to the sample being removed.

Sample Information

**Type:** This column contains the types of samples that are collected following standard sampling protocol. If additional samples are collected for supplemental research, write in the type of sample collected on rows marked "Other."

**Collector:** The observer completes this column. Initial (using observer code) and date, or write "N/A" for each sample type not collected.

**Custodian I**: Lead observer should complete this column. Initial (using observer code) and date, or write "N/A" for each sample type not collected.

**Custodian II- IV:** Subsequent sample recipients initial and date each sample type received. Then fax or send a photocopy of the form to NMFS.

**Transfer:** When a sample is separated from an initial group of samples, a copy of the white form must be made. On the copy of the form that will accompany the sample that has been separated, write in this column the name and contact information of the next custodian for the sample being transferred. (On the original form, this field remains empty.)

**Destroyed:** Date when sample has been destroyed. Then fax or send a photocopy of the form to NMFS. (When a sample is destroyed, the last custodian is assumed to be the person who destroyed the sample.)

Name and Location

**Collector**: Observer and general area collected. Example: "A10, Uyak Bay, Kodiak, AK"

**Custodian I:** Lead observer and field office or vessel where stationed. Example: "A10, Village Islands, Kodiak, AK"

**Custodian II – IV**: Name, mailing address and contact information.

**Chain of Custody Protocol**

1. Observer collects animal and completes the Animal Information section of this Form. **One triplicate form is completed per animal collected.**
2. Observer completes the Collector column of this Form. **When multiple samples are collected from an individual animal, ensure that the samples remain together as a group based on the individual animal represented by this form.**
3. Observer submits samples, with triplicate form attached to the sample or sample group, to the lead observer upon return from the trip during which samples were collected.
4. Lead observer reviews samples collected (by individual animal). Under "Custodian I," the lead observer initials and dates each sample that they receive.
    a. Lead observer places the **white copy with the sample or group of samples from an individual animal.**
    b. Lead observer provides the observer with pink copy.
    c. Observer includes the pink copy with trip data forms.
5. Lead observer keeps gold copy and enters information into the electronic Sample worksheet.
6. Lead observer sends gold copy of log to NMFS with bi-weekly data shipment.
7. Lead observer arranges storage or shipping of samples.
    a. If a sample is removed from an individual animal sample group, **an additional white form must be created to accompany the separated sample** (by photocopying or completing a new white form). If hand copying onto a new white form, include the information relevant to the sample that is being removed (Animal Information, and sample Collector, Custodian I, and Location.) Then, on the original white form **only**, record in the Transfer column the name and contact information of the custodian who will receive the sample [that was removed from the initial sample group].
    b. Inform the next custodian regarding shipping details and confirm that the shipment arrived.
8. New custodian initials and dates the appropriate column for sample type received, adds custodian Name and location, and then sends a photocopy or fax to NMFS.
9. For any subsequent transfer (or any time a sample is removed from a group of samples): See #6. **Custodians should notify NMFS prior to transferring samples.**
10. Custodian destroying samples should date "Destroyed" column and send photocopy to NMFS.

## FISHER'S COMMENT FORM

| Year | Month | Trip Identification Number | Fishery Name (& code) |
|---|---|---|---|
| | | | |
| Vessel Name | | Vessel Number | Fishing Permit Number |
| | | | |
| Today's Date | | Fisher's First Name | Fisher's Last Name |
| | | | |

Comments (Continued on Back: Y ___ N ___)

2002

Section Five

# Health and Safety

Table of Contents



## Introduction

The Alaska salmon fisheries operate with smaller boats than most other observer programs around the country. Likewise, Alaska marine environments can be some of the most punishing in the world. Observers hired for this project will complete safety training and will be issued safety equipment prior to deploying for observer work duties, and are expected to be aware of the inherent dangers of that working environment. This manual gives some safety guidelines, and introduces safety and survival topics and should be used as a supplement to your training and common sense. Seek further information, practices drills, understand equipment, and be well aware of your surroundings at all times.

## Safety Protocol For Observers

*These protocols must be followed by all AMMOP observers*

* Observers will not deploy in set gillnet skiffs to perform observer duties.

* Observers may not board a commercial set gillnet skiff for transit or performance of observer duties unless the vessel meets the AMMOP safety checklist and U.S. Coast Guard safety requirements. Boarding to determine if safety standards are met is acceptable.

* Observers may not board fishing tenders or commercial fishing vessels for transit or performance of observer duties that do not display a current USCG safety inspection sticker. Boarding to determine if current sticker is displayed is acceptable.

* 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.

* 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, including skiffs (unless operating in an immersion-suit-exempted area). There will be a whistle and 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 PLB, GPS, VHF radio, flashlight, signaling device, and first aid kit.

* Observer skiffs will carry safety gear that includes: VHF radio, flares and day markers, extra PFDs, horn, floating throw cushions,

* 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: leather gloves, ear plugs, ear muffs, bear spray, insect repellant, mosquito head net, and wilderness survival book.

* 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≥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 deployed aboard chartered boats and boats that belong to the government. Skiff operators have been hired to operate the skiffs and the chartered support vessels have licensed crew aboard. You should not be operating these boats except under extreme emergencies where the normal operator is not able to do so. Following is a brief introduction to general small boat safety and operation (in the unlikely event that you are required to operate the boat.)

### 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 skiff operator:

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?** Discuss the plan for the day, including an agreed upon series of steps to follow if plans go awry, and help the skiff operator complete the float plan. The skiff operator is responsible for filing the float plan with the lead observer. 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 as 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)

Skiff operators are responsible for the following, but it would be wise for observers to be aware of these as well:

- 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 maxi-

mum 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 predeparture 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-peed. 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 is 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. A rule to remember is "Red, Right, Return": red channel markers are on the 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.


Figure 1. The "HELP" Position

### IF A PERSON GOES OVERBOARD

Whoever first sees or hears someone go overboard should shout "man overboard (port or starboard)". 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 persom 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 and 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.

## 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 immersions suits, or conducting drills.

An important item to check during, or before, the orientation is the **Commercial Fishing Vessel Safety Examination decal** (figure 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.

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 5-4 to 5-5; and for larger boats, the checklist on page 5-11 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.

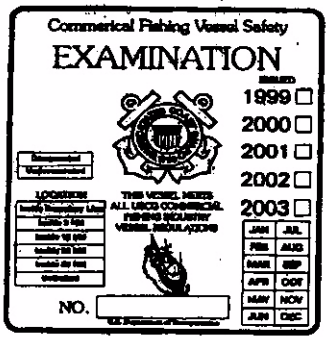



Figure 2. Commercial Fishing Vessel Safety Exam Decal

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). The USCG, NMFS, and observer providers strive 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.

### 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.

# VESSEL SAFETY CHECKLIST

| | | |
|---|---|---|
| 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, 1st 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:<br>survival craft embarkation stations/survival craft assignments<br>fire/emergency/abandon ship signals<br>immersion suits (survival suit locations and donning instructions)<br>procedures for making a distress call<br>procedures for rough weather at sea<br>procedures for anchoring<br>procedures for recovering a person overboard<br>procedures for fighting a fire |
| 12 | Larger Vessels | As you walk through the vessel, make yourself aware of potentially hazardous areas.<br>Identify the watertight doors, both on the interior and the outside–can they be secured in case of heavy weather or other emergencies?<br>Are any hatches or passageways blocked or difficult to access?<br>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 or 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 and is a requirement to be an observer in this program.

### Emergency Procedures

On larger vessels, there may be posted 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 reboard 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 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. 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 PFD, which MUST be worn at ALL times aboard any vessel while you are deployed.

### Immersion suits

An immersion suit is required for everyone aboard a vessel that operates in cold water. There are different brands and styles, but most are made of neoprene. There is a "universal" size, and other sizes are available. You will be provided one by the program for assignments where they are required, and can take one where they are not required if you choose to. Be sure that you can find your suit and put it on 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

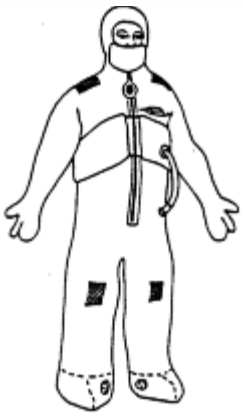
## Donning an Immersion Suit

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.

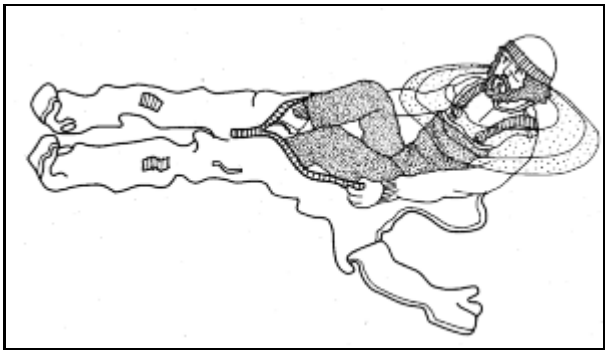
Place your weak arm in first, then pull the hood over your head (or hood first, then weak arm). If you have long hair, make sure that it is safely tucked in the hood. Then place your stronger arm in the sleeve.

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.



wax to lubricate), a whistle, and a signal device such as a strobe light attached. You may also consider attaching your PLB.

### Life Rafts

Any vessel that operates offshore 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.

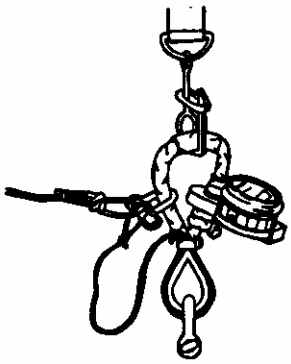


Figure 3. Hydrostatic Release

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 a polastic ring, a red cord, or soft metal, that will break and prevent the sinking boat from pulling the raft under.

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: A vessel that operates outside of 3 miles 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.In addition to the EPIRBS owned by vessels, you will be issued a PLB or personal locator beacon, which also operates on the 406 mHz frequency. Be sure to know how to test and operate the PLB. Instructions are in the appendix of this manual.

## The Seven Steps to Survival

The Seven Steps to Survival were developed by the U.S. Coast Guard 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 of than on the water, 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 debri 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 pants 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. Do not leave soap, food, toothpaste or other tasty items in tents or campsites. Stow these items appropriately--away from where you sleep.

### The Essentials for Traveling in Bear Country

(Source: ADFG)

**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 continues 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.

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.

### 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 neccessary 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 arer 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.

## Natural hazards

### Earthquake Safety

1. **If you are indoors,** duck or drop down to the floor. Take cover under a sturdy desk, table or other furniture. Hold on to it and be prepared to move with it. Hold the position until the ground stops shaking and it is safe to move. Stay clear of windows, fireplaces, woodstoves, and heavy furniture or appliances that may fall over. Stay inside to avoid being injured by falling glass or building parts. Stay calm and encourage others to do likewise.
2. **If you are outside,** get into the open, away from buildings and power lines.
3. **If you are in a mountainous area,** or near unstable slopes or cliffs, be alert for falling rock and other debris that could be loosened by the earthquake.
4. **If you are at the beach**, move quickly to higher ground or several hundred yards inland.
5. **Expect aftershocks.** Most of these are smaller than the main earthquake. Some may be large enough to do additional damage to weakened structures.

### Tsunami safety rules

When you feel a strong earthquake, or hear a tsunami warning, you should assume a dangerous wave is on its way. Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinke, and Port Lions all have tsunami warning signals and designated tsunami shelters.

- A strong earthquake felt in a low-lying coastal area is a natural warning of possible immediate danger. Keep calm and quickly move to higher ground, away from the coast.

- Not all large earthquakes cause tsunamis, but many do. If the quake is located near or directly under the ocean, the probability of a tsunami increases. If you have trouble standing, the earthquake last 15 seconds or more, or you hear that an earthquake has occurred in the ocean or coastline region, prepare for a tsunami emergency.

- A tsunami is not a single wave, but a series of waves. The first wave is not necessarily the largest. Stay out of danger until an "all clear" is issued by a competent authority

- Approaching tsunamis are sometimes heralded by a noticeable rise or fall of coastal water. This is nature's tsunami warning and should be heeded.

- Approaching large tsunamis are usually accompanied by a loud roar that sounds like a train or aircraft.

- A small tsunami at one beach can be a giant a few miles away. Don't let the modest size of one make you lose respect for all.

- Never go down to the beach to watch for a tsunami. When you can see the wave you are too close to escape.

- If you are on a boat or ship and there is time, move your vessel to deeper water (at least 100 fathoms). If it is the case that there is concurrent severe weather, it may may safer to leave the boat at the pier and physically move to higher ground.

- Stay tuned to your radio, marine radio, NOAA Weather Radio, or television stations during a tsunami emergency.

### Volcanic Eruptions

Alaska is home to more than 40 volcanoes that have erupted in the last 200 years, and more than half of the state's population lives within 100 miles of an active volcano. The single greatest hazard from an explosive volcanic eruption is ash, fine fragments of rock blown into the atmosphere during volcanic eruption. Ash is carried downwind where the coarser particles fall to the ground and fine ash forms a cloud that is carried with the air currents. Ash is extremely abrasive, does not dissolve in water, and is heavy and slippery when wet. Inhaling ash can be dangerous, especially for those with breathing problems, for children, and the elderly.

**What to do during a volcanic ash fall:**

- Stay indoors if possible.
- Minimize activity to keep inhalation of fine ash to a minimum.
- Close windows, doors, and dampers; do not run clothes dryers or exhaust fans.
- Place damp towels at door thresholds and other drafty areas.
- Remove ash from flat or low-pitched roofs and gutters to prevent their collapse.
- Shut down and cover sensitive equipment, like computers, TVs, and stereos.
- Listen to radio or TV for further information and instructions.

## 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. 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, and your employer.

2) Take the recommended clothing and safety equipment specified by OTC, NMFS, and your employer.

3) Before you leave port, find the 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.

# APPENDIX

1. AMMOP Mission/ Goals/ Objectives
2. Observer Standards of Conduct
3. Conflict of Interest
4. Laws and Regulations
5. Gear List and Instructions
6. Anchor Type Codes and Diagrams
7. Hook Shape Codes and Diagrams
8. Species Codes
9. Disposition Reason Codes
10. Gear List
11. MMAP 2007 Authorization Certificate

Editor's note: Appendices have change since 2005 manual.
Fishery Name Codes [in section 4]; Geographical Region and Statistical Area Code Map [in section 3]; Dealer's Name Codes [section 4]; Marine Mammal Haulouts and Seabird Colonies of Kodiak Island [no longer valid]

# Appendix 1.

**Alaska Marine Mammal Observer Program**
**Mission/Goals/Objectives**

I. **Mission**:

Provide the highest quality data to promote stewardship of marine mammal stocks found in the North Pacific and waters off Alaska for the benefit of the nation.

II. **Goal**:

Provide reliable information on interactions between marine mammals and inshore Category I and II Alaska fisheries, essential for the management of marine mammals in the North Pacific and waters off Alaska, to meet the mandates of the Marine Mammal Protection Act (MMPA), and, where feasible, to provide reliable information on incidental mortality and injury of non-marine mammal species including seabirds, sea turtles, and other marine species that may be taken in commercial fisheries.

III. **Objectives**:

a. *Provide accurate and precise incidental take, serious injury and mortality, interaction, and biological information for conservation and management of marine mammals, seabirds, and other marine species.*

**Tasks**:

1. Provide timely, reliable information on marine mammal interactions with commercial fishing operations, particularly serious injuries and mortalities, for management of marine mammal stocks. Data must provide information to assist in the following MMPA requirements:

    A. Annual determination that marine mammal mortalities or serious injuries do/ do not occur in conjunction with fishing operations.
    B. Annual determination that the Potential Biological Removal level for each marine mammal stock is/ is not exceeded by fisheries that interact with each stock.
    C. Annual List of Fisheries categorization based on marine mammal incidental take.
    D. Annual assessment of achievement toward a zero mortality rate goal for each marine mammal stock.

2. Provide information to document and reduce commercial fishery/marine mammal interactions.
3. Collect biological data and samples required for marine mammal stock assessment analyses.
4. Collect observations and samples as appropriate for marine ecosystem research.

b. *Support NMFS policy development and decision-making*.

**Tasks**:

1. Provide information, analyses, and other support in the development of proposed management measures.

c. *Conduct research to support the mission of the Alaska Marine Mammal Observer Program*.

**Tasks**:

1. Conduct scientific analyses to assess current and proposed sampling protocols and coverage levels.

*d. Provide information to monitor and promote compliance with NOAA regulations.*

**Tasks**:

1. Work with NMFS Enforcement to monitor compliance with NOAA regulations.

e. *Foster and maintain effective communications.*

**Tasks**:

1. Enhance awareness of the benefits of the collection of quality observer data.
2. Promote two-way communication between NMFS and interested parties.

## Appendix 2. Observer 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:

i Must diligently perform their assigned duties;

ii Must accurately record their sampling data;

iii 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;

iv 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 conduct which may be perceived as prejudicial to the Government.

v Are prohibited from conducting personal research or from retaining specimens or data 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 discharging an observer. **Falsification of observer data is grounds for dismissal and possible 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, unexcused absenteeism or tardiness, unsatisfactory performance of duties, loss 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.

## Appendix 3. 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.

## Appendix 4. 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) 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 species 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]

Title 50: Wildlife and Fisheries
PART 600—MAGNUSON-STEVENS ACT PROVISIONS
Subpart H—General Provisions for Domestic Fisheries

§ 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, 300, 600, 622, 635, 648, 660, 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, as amended at 67 FR 64312, Oct. 18, 2002]

Article 02. WEAPONS AND EXPLOSIVES

Sec. 11.61.190. Misconduct involving weapons in the first degree.

(a) A person commits the crime of misconduct involving weapons in the first degree if the person

(1) uses or attempts to use a firearm during the commission of an offense under AS 11.71.010 - 11.71.040; or

(2) discharges a firearm from a propelled vehicle while the vehicle is being operated and under circumstances manifesting substantial and unjustifiable risk of physical injury to a person or damage to property.

(b) Misconduct involving weapons in the first degree is a class A felony.

Sec. 11.61.195. Misconduct involving weapons in the second degree.

(a) A person commits the crime of misconduct involving weapons in the second degree if the person knowingly

(1) possesses a firearm during the commission of an offense under AS 11.71.010 - 11.71.040;

(2) violates AS 11.61.200 (a)(1) and is within the grounds of or on a parking lot immediately adjacent to

(A) a public or private preschool, elementary, junior high, or secondary school without the permission of the chief administrative officer of the school or district or the designee of the chief administrative officer; or

(B) an entity, other than a private residence, licensed as a child care facility under AS 47.32 or recognized by the federal government for the care of children; or

(3) discharges a firearm at or in the direction of

(A) a building with reckless disregard for a risk of physical injury to a person; or

(B) a dwelling.

(b) Misconduct involving weapons in the second degree is a class B felony.

Sec. 11.61.200. Misconduct involving weapons in the third degree.

(a) A person commits the crime of misconduct involving weapons in the third degree if the person

(1) knowingly possesses a firearm capable of being concealed on one's person after having been convicted of a felony or adjudicated a delinquent minor for conduct that would constitute a felony if committed by an adult by a court of this state, a court of the United States, or a court of another state or territory;

(2) knowingly sells or transfers a firearm capable of being concealed on one's person to a person who has been convicted of a felony by a court of this state, a court of the United States, or a court of another state or territory;

(3) manufactures, possesses, transports, sells, or transfers a prohibited weapon;

(4) knowingly sells or transfers a firearm to another whose physical or mental condition is substantially impaired as a result of the introduction of an intoxicating liquor or controlled substance into that other person's body;

(5) removes, covers, alters, or destroys the manufacturer's serial number on a firearm with intent to render the firearm untraceable;

(6) possesses a firearm on which the manufacturer's serial number has been removed, covered, altered, or destroyed, knowing that the serial number has been removed, covered, altered, or destroyed with the intent of rendering the firearm untraceable;

(7) violates AS 11.46.320 and, during the violation, possesses on the person a firearm when the person's physical or mental condition is impaired as a result of the introduction of an intoxicating liquor or controlled substance into the person's body;

(8) violates AS 11.46.320 or 11.46.330 by entering or remaining unlawfully on premises or in a propelled vehicle in violation of a provision of an order issued or filed under AS 18.66.100 - 18.66.180 or issued under former AS 25.35.010 (b) or 25.35.020 and, during the violation, possesses on the person a defensive weapon or a deadly weapon, other than an ordinary pocketknife;

(9) communicates in person with another in violation of AS 11.56.740 and, during the communication, possesses on the person a defensive weapon or a deadly weapon, other than an ordinary pocketknife;

(10) resides in a dwelling knowing that there is a firearm capable of being concealed on one's person or a prohibited weapon in the dwelling if the person has been convicted of a felony by a court of this state, a court of the United States, or a court of another state or territory, unless the person has written authorization to live in a dwelling in which there is a concealable weapon described in this paragraph from a court of competent jurisdiction or from the head of the law enforcement agency of the community in which the dwelling is located;

(11) discharges a firearm from a propelled vehicle while the vehicle is being operated in circumstances other than described in AS 11.61.190(a)(2); or

(12) knowingly possesses a firearm that is concealed on the person after having been convicted of a felony or adjudicated a delinquent minor for conduct that would constitute a felony if committed by an adult by a court of this state, a court of the United States, or a court of another state or territory.

(b) It is an affirmative defense to a prosecution

(1) under (a)(1) of this section that

(A) the person convicted of the prior offense on which the action is based received a pardon for that conviction;

(B) the underlying conviction upon which the action is based has been set aside under AS 12.55.085 or as a result of post-conviction proceedings; or

(C) a period of 10 years or more has elapsed between the date of the person's unconditional discharge on the prior offense or adjudication of juvenile delinquency and the date of the violation of (a)(1) of this section, and the prior conviction or adjudication of juvenile delinquency did not result from a violation of AS 11.41 or of a similar law of the United States or of another state or territory;

(2) under (a)(2) or (10) of this section that

(A) the person convicted of the prior offense on which the action is based received a pardon for that conviction;

(B) the underlying conviction upon which the action is based has been set aside under AS 12.55.085 or as a result of post-conviction proceedings; or

(C) a period of 10 years or more has elapsed between the date of the person's unconditional discharge on the prior offense and the date of the violation of (a)(2) or (10) of this section, and the prior conviction did not result from a violation of AS 11.41 or of a similar law of the United States or of another state or territory.

(c) It is an affirmative defense to a prosecution under (a)(3) of this section that the manufacture, possession, transportation, sale, or transfer of the prohibited weapon was in accordance with registration under 26 U.S.C. 5801-5872 (National Firearms Act).

(d) It is an affirmative defense to a prosecution under (a)(11) of this section that the person was using a firearm while hunting, trapping, or fishing in a manner not prohibited by statute or regulation.

(e) The provisions of (a)(3) and (11) of this section do not apply to a peace officer acting within the scope and authority of the officer's employment.

(f) For purposes of (a)(12) of this section, a firearm on a person is concealed if it is covered or enclosed in any manner so that an observer cannot determine that it is a firearm without removing it from that which covers or encloses it or without opening, lifting, or removing that which covers or encloses it. A firearm on a person is not concealed if it is unloaded and is encased in a closed container designed for transporting firearms.

(g) It is an affirmative defense to a prosecution under (a)(12) of this section that

(1) either

(A) the defendant convicted of the prior offense on which the action is based received a pardon for that conviction;

(B) the underlying conviction upon which the action is based has been set aside under AS 12.55.085 or as a result of post-conviction proceedings; or

(C) a period of 10 years or more has elapsed between the date of the defendant's unconditional discharge on the prior offense or adjudication of juvenile delinquency and the date of the violation of (a)(12) of this section, and the prior conviction or adjudication of juvenile delinquency did not result from a violation of AS 11.41 or of a similar law of the United States or of another state or territory; and

(2) at the time of possession, the defendant was

(A) in the defendant's dwelling or on land owned or leased by the defendant appurtenant to the dwelling; or

(B) actually engaged in lawful hunting, fishing, trapping, or other lawful outdoor activity that necessarily involves the carrying of a weapon for personal protection.

(h) As used in this section,

(1) "prohibited weapon" means any

(A) explosive, incendiary, or noxious gas

(i) mine or device that is designed, made, or adapted for the purpose of inflicting serious physical injury or death;

(ii) rocket, other than an emergency flare, having a propellant charge of more than four ounces;

(iii) bomb; or

(iv) grenade;

(B) device designed, made, or adapted to muffle the report of a firearm;

(C) firearm that is capable of shooting more than one shot automatically, without manual reloading, by a single function of the trigger; or

(D) rifle with a barrel length of less than 16 inches, shotgun with a barrel length of less than 18 inches, or firearm made from a rifle or shotgun which, as modified, has an overall length of less than 26 inches;

(2) "unconditional discharge" has the meaning ascribed to it in AS 12.55.185.

(i) Misconduct involving weapons in the third degree is a class C felony.

Sec. 11.61.210. Misconduct involving weapons in the fourth degree.

(a) A person commits the crime of misconduct involving weapons in the fourth degree if the person

(1) possesses on the person, or in the interior of a vehicle in which the person is present, a firearm when the person's physical or mental condition is impaired as a result of the introduction of an intoxicating liquor or a controlled substance into the person's body in circumstances other than described in AS 11.61.200 (a)(7);

(2) discharges a firearm from, on, or across a highway;

(3) discharges a firearm with reckless disregard for a risk of damage to property or a risk of physical injury to a person under circumstances other than those described in AS 11.61.195 (a)(3)(A);

(4) manufactures, possesses, transports, sells, or transfers metal knuckles;

(5) manufactures, sells, or transfers a switchblade or a gravity knife;

(6) knowingly sells a firearm or a defensive weapon to a person under 18 years of age;

(7) other than a preschool, elementary, junior high, or secondary school student, knowingly possesses a deadly weapon or a defensive weapon, without the permission of the chief administrative officer of the school or district or the designee of the chief administrative officer, within the buildings of, on the grounds of, or on the school parking lot of a public or private preschool, elementary, junior high, or secondary school, on a school bus while being transported

to or from school or a school-sponsored event, or while participating in a school-sponsored event, except that a person 21 years of age or older may possess

(A) a deadly weapon, other than a loaded firearm, in the trunk of a motor vehicle or encased in a closed container in a motor vehicle;

(B) a defensive weapon;

(C) an unloaded firearm if the person is traversing school premises in a rural area for the purpose of entering public or private land that is open to hunting and the school board with jurisdiction over the school premises has elected to have this exemption apply to the school premises; in this subparagraph, "rural" means a community with a population of 5,500 or less that is not connected by road or rail to Anchorage or Fairbanks or with a population of 1,500 or less that is connected by road or rail to Anchorage or Fairbanks; or

(8) being a preschool, elementary, junior high, or secondary school student, knowingly possesses a deadly weapon or a defensive weapon, within the buildings of, on the grounds of, or on the school parking lot of a public or private preschool, elementary, junior high, or secondary school, on a school bus while being transported to or from school or a school-sponsored event, or while participating in a school-sponsored event, except that a student may possess a deadly weapon, other than a firearm as defined under 18 U.S.C. 921, or a defensive weapon if the student has obtained the prior permission of the chief administrative officer of the school or district or the designee of the chief administrative officer for the possession.

(b) *[Repealed, Sec. 4 ch 63 SLA 1990]*.

(c) The provisions of (a)(7) of this section do not apply to a peace officer acting within the scope and authority of the officer's employment.

(d) Misconduct involving weapons in the fourth degree is a class A misdemeanor.

*Sec. 11.61.215. Intoxication as applicable to possession of a firearm. [Repealed, Sec. 11 ch 59 SLA 1991]*.

Repealed or Renumbered

Sec. 11.61.220. Misconduct involving weapons in the fifth degree.

(a) A person commits the crime of misconduct involving weapons in the fifth degree if the person

(1) is 21 years of age or older and knowingly possesses a deadly weapon, other than an ordinary pocket knife or a defensive weapon,

(A) that is concealed on the person, and, when contacted by a peace officer, the person fails to

(i) immediately inform the peace officer of that possession; or

(ii) allow the peace officer to secure the deadly weapon, or fails to secure the weapon at the direction of the peace officer, during the duration of the contact;

(B) that is concealed on the person within the residence of another person unless the person has first obtained the express permission of an adult residing there to bring a concealed deadly weapon within the residence;

(2) knowingly possesses a loaded firearm on the person in any place where intoxicating liquor is sold for consumption on the premises;

(3) being an unemancipated minor under 16 years of age, possesses a firearm without the consent of a parent or guardian of the minor;

(4) knowingly possesses a firearm

(A) within the grounds of or on a parking lot immediately adjacent to an entity, other than a private residence, licensed as a child care facility under AS 47.32 or recognized by the federal government for the care of children, except that a person 21 years of age or older may possess an unloaded firearm in the trunk of a motor vehicle or encased in a closed container of a motor vehicle;

(B) within a

(i) courtroom or office of the Alaska Court System; or

(ii) courthouse that is occupied only by the Alaska Court System and other justice-related agencies; or

(C) within a domestic violence or sexual assault shelter that receives funding from the state;

(5) possesses or transports a switchblade or a gravity knife; or

(6) is less than 21 years of age and knowingly possesses a deadly weapon, other than an ordinary pocket knife or a defensive weapon, that is concealed on the person.

(b) In a prosecution under (a)(6) of this section, it is an affirmative defense that the defendant, at the time of possession, was

(1) in the defendant's dwelling or on land owned or leased by the defendant appurtenant to the dwelling; or

(2) actually engaged in lawful hunting, fishing, trapping, or other lawful outdoor activity that necessarily involves the carrying of a weapon for personal protection.

(c) The provisions of (a)(2) and (4) of this section do not apply to a peace officer acting within the scope and authority of the officer's employment.

(d) In a prosecution under (a)(2) of this section, it is

(1) an affirmative defense that

(A) *[Repealed, Sec. 7 ch 62 SLA 2003]*.

(B) the loaded firearm was a concealed handgun as defined in AS 18.65.790; and

(C) the possession occurred at a place designated as a restaurant for the purposes of AS 04.16.049 and the defendant did not consume intoxicating liquor at the place;

(2) a defense that the defendant, at the time of possession, was on business premises

(A) owned by or leased by the defendant; or

(B) in the course of the defendant's employment for the owner or lessee of those premises.

(e) For purposes of this section, a deadly weapon on a person is concealed if it is covered or enclosed in any manner so that an observer cannot determine that it is a weapon without removing it from that which covers or encloses it or without opening, lifting, or removing that which covers or encloses it; a deadly weapon on a person is not concealed if it is an unloaded firearm encased in a closed container designed for transporting firearms.

(f) For purposes of (a)(2) and (e) of this section, a firearm is loaded if the

(1) firing chamber, magazine, clip, or cylinder of the firearm contains a cartridge; and

(2) chamber, magazine, clip, or cylinder is installed in or on the firearm.

(g) Misconduct involving weapons in the fifth degree is a class B misdemeanor.

(h) The provisions of (a)(1) and (6) of this section do not apply to a

(1) peace officer of this state or a municipality of this state acting within the scope and authority of the officer's employment;

(2) peace officer employed by another state or a political subdivision of another state who, at the time of the possession, is

(A) certified as a peace officer by the other state; and

(B) acting within the scope and authority of the officer's employment; or

(3) police officer of this state or a police officer or chief administrative officer of a municipality of this state; in this paragraph, "police officer" and "chief administrative officer" have the meanings given in AS 18.65.290 .

(i) In a prosecution

(1) under (a)(4)(B) of this section, it is a defense that the defendant, at the time of possession, was authorized to possess the firearm under a rule of court;

(2) under (a)(4)(C) of this section, it is a defense that the defendant, at the time of possession, was authorized in writing by the administrator of the shelter to possess the firearm.

(j) In (a)(1) of this section, "contacted by a peace officer" means stopped, detained, questioned, or addressed in person by the peace officer for an official purpose

## Appendix 5. 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 to163.000 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 radio-telephone 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.

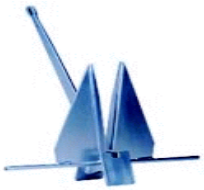
**Dial Caliper**

The dial caliper is capable of measuring to a much smaller level of accuracy than needed for your data collection. Knowing how to read 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.

**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).

# Appendix 6. Anchor Type Codes and Diagrams

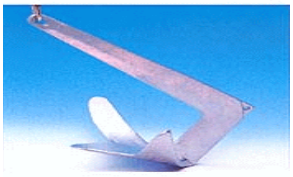


1. Standard Danforth anchor

2. Kedge anchor

3. Manta anchor

4. Bruce anchor



5. Claw anchor

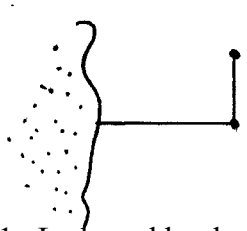
6. Grapnel anchor

7. Mushroom anchor

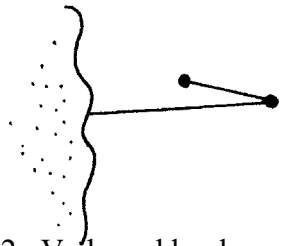
8. Quick set anchor

9. Screw anchor

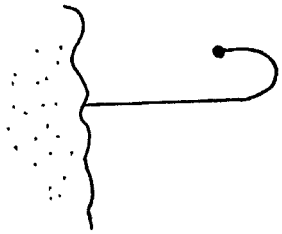
# Appendix 7. Hook Shape Diagrams



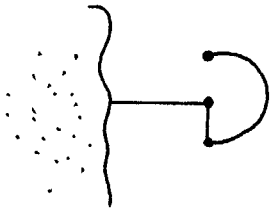
1. L-shaped hook



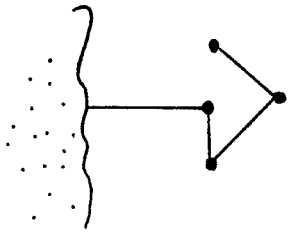
2. V-shaped hook



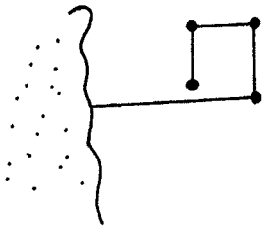
3. J-shaped hook



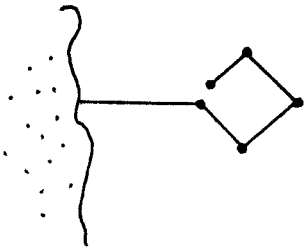
4. Umbrella hook



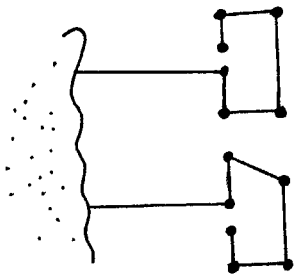
5. Arrowhead hook



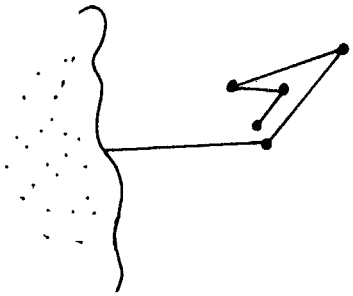
6. Flag hook



7. Diamond hook



8. Box hook



9. Zigzag hook

11. Pennant

# Appendix 8. 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 |

| 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 | ALABATROSS, 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 | FULMARUS GLACIALIS |
| 2022 | GREBE, HORNED | PODICEPS AURITUS |
| 2023 | GREBE, UNIDENTIFIED | |
| 2024 | GREBE, RED-NECKED | PODICEPS GRISEGENA |

| 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 GLAUCESCENS |
| 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 | |

| CODE | COMMON NAME | SCIENTIFIC NAME |
|---|---|---|
| 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 KEMPII |
| 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 | |

| 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 | BOREOGADUS 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 |

| 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 | ANOTOPTERUS PHARAO |
| 4044 | DOLLY VARDEN | SALVELINUS MALMA |
| 4045 | DOLPHINFISH (MAHI MAHI) | CORYPHAENA HIPPURUS |
| 4046 | DOLPHINFISH (POMPANO) | 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 | |

| CODE | COMMON NAME | SCIENTIFIC NAME |
|---|---|---|
| 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 | MERLUCCIUS 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 |

| 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 | MELAMPHID, CRESTED | POROMITRA CRASSICEPS |
| 4110 | MELAMPHID, 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 STARSNOUT | 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, SHORTRAKER | 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, SCISSORTAIL | TRIGLOPS FORFICATA |
| 4238 | SCULPIN, SHORTHORN | MYOXOCEPHALUS SCORPIUS |
| 4239 | SCULPIN, SILVERSPOTTED | BLEPSIAS CIRRHOSUS |
| 4240 | SCULPIN, SISSORTAIL | 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 |

| CODE | COMMON NAME | SCIENTIFIC NAME |
|---|---|---|
| 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 | SMOOTHTONGUE, CALIFORNIA | LEUROGLOSSUS STILBIUS |
| 4367 | SMOOTHTONGUE, UNIDENTIFIED | |
| 4267 | SMOOTHTONGUE, 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 | SNIPE EEL, SLENDER | NEMICHTHYS SCOLOPACEUS |
| 4282 | SNIPE-EEL, BLACKLINE | BORODINULA INFANS |
| 4369 | SNIPE-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, DEEPSEA | 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 |

| 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 PIDSCHIAN |
| 4378 | WHITEFISH, UNIDENTIFIED | |
| 4334 | WHITEFISH, PYGMY | PROSOPIUM COULTERI |
| 4335 | WHITEFISH, ROUND | PROSOPIUM CYLINDRACEUM |
| 4336 | WOLF-EEL | ANARRHICHTHYS OCELLATUS |
| 4337 | WOLFFISH, BERING | |
| 4338 | WRYMOUTH, DWARF | LYCONECTES 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 |

| 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 | |

| 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 |

| 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 BOBTAILED | ROSSIA PACIFICA |
| | **OTHER LIFE** | |
| 7000 | ASCIDIAN/ SEA SQUIRT/ TUNICATE | |

| 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) | |

| 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 | |

| 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 | |

# Appendix 9. 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 10. AMMOP Gear List

| Skiff Gear | |
|---|---|
| ICOM VHF handheld radio (1) & charger | |
| ICOM VHF deckmount ICOM502 | |
| PLB(1) | |
| GPS (1) | |
| Safety line cutter | |
| PFD/whistle, no cork (1) | |
| Mustang PFD pouch | |
| First aid kit (1) backpacker | |
| Immersion suit/Strobe light (1) | |
| **Sampling Kit:** | |
| Nitrile gloves (10 pairs) in zip lock bag | |
| Sampling bags (assorted) | |
| Carcass tags (1 bag) | |
| Cable ties (bundle of 30) | |
| Tyvek sample labels (30) | |
| forceps | |
| Pigskin gloves (1 pair) | |
| Elastics (1 bag) | |
| Write-in-the-rain notebook (1) | |
| Watertight tool kit (1) | |
| Ear plugs, disposable (as needed) | |
| SOS kits | |
| Safety glasses | |
| goggles | |
| Lightstick (2) | |
| Mosquito head net | |
| Scrub Brush (1) | |
| Sponge (3) | |
| Tarp (10'x12') (1) | |
| bear spray | |
| copper coat/ syringes | |
| Bucket (1) | |
| Bucket cover ( 1) | |
| Insect repellent (1) | |
| biodegradable degreaser | |
| bungee cords (2) | |
| dry bag blue | |
| Soap | |

| Observer Gear |
|---|
| **Ziploc Sampling Kit Contents:** |
| Paperclips (1 bag) |
| Write-in-the-rain notebook (1) |
| #2 pencils (8) |
| Blue pens (2) |
| Highlighters (1) |
| Sharpies - extra or ultra fine (2) |
| Eraser, rubber (1) |
| Permanent marker - thick (1) |
| rubber bands |

| **Pelican Tool Box Contents:** |
|---|
| Fujinon Mariner 7x50 binoculars (1) |
| ICOM VHF handheld radio & Charger (1) |
| Flashlight (1) |
| PLB (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) white handle |
| Frosts serrated fishing knife in holder (optional - 1) |
| Redden marine supply fish pick (1) |
| Pruning shears (1) |
| Protractor (1) |
| Ruler (1) |
| Calculator (1) |
| stop watch |
| First aid kit adventure solo |
| Eye protection (1) |
| Lightstick (2) |
| Mosquito head net (1) |
| Magnetic compass (1) |
| Wind meter (1) |
| GPS (1) |
| Pentax 105WR camera (1) |
| Film (2) |
| Batteries (10) |
| Marine Mammals of Alaska field guide (1) |
| Practical Outdoor Survival |
| Outward Bound Wilderness First Aid |
| Birds of Pacific NW |
| Laminated marine mammal sampling sheet (1) |
| Laminated safety checklist (1) |
| AMMOP manual (1) |
| Copies of forms (as needed) |
| **Rain and Survival Gear to be issued individually (Dry Bag)** |
| Grunden’s medium duty hooded jacket (1) |
| Grunden’s medium dutybib pants (1) |
| Grunden’s Clipper 26 sleeves (1) |
| Vinyl fishing gloves (1 pair) |
| Glove liners (1 pair) |
| PFD/whistle (1) |
| Immersion suit |
| strobes (to be put on Imm suits |
| mustng PFD pouch |
| safety line cutter |
| sos KIT |
| large dry bag (red bag) |
| small dry bag (blue) |
| bear spray |

# National Marine Fishery Service
# MARINE MAMMAL AUTHORIZATION PROGRAM
# 2007 AUTHORIZATION CERTIFICATE

A. Authorization:

Pursuant to Section 118 of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1387), the implementing regulations at 50 CFR Part 229, and subject to the terms and conditions below, NOAA's National Marine Fisheries Service (NMFS) issues this Authorization Certificate, which, when presented in combination with a current/valid state or federal fisheries permit, authorizes the incidental, but not intentional, taking of non-endangered/threatened marine mammals while engaged in commercial fishing operations in the fisheries listed on the reverse side. This Authorization is valid for January 1, 2007 through December 31, 2007.

B. Terms and Conditions:

- All incidental mortality or injury of marine mammals occurring in the course of commercial fishing operations must be reported to NMFS within 48 hours after the end of each fishing trip in which the incidental mortality or injury occurred using the appropriate MMAP mortality/injury reporting form. For non-vessel or set net fisheries, reports must be submitted within 48 hours of tending gear or the next delivery of catch.

- This Authorization Certificate, or a photocopy of it, must be on board the vessel during commercial fishing operations. For non-vessel or set net fishing, this certificate must be in the possession of the permitted fishermen.

- Authorization Certificate holders must comply with any applicable take reduction plans and emergency regulations.

- If requested to do so by NMFS or a designated contractor providing observer services to NMFS, an Authorization Certificate holder must take aboard an observer to accompany the vessel on fishing trips. For non-vessel or set net fishing, the Authorization Certificate holder must allow observer access to fishing operations.

- When necessary to deter a marine mammal from damaging fishing gear, catch, other private property, or from endangering personal safety, the vessel owner, operator, or crew members may use measures which do not result in serious injury or mortality of the animal pursuant to the deterrence provisions of the Act.

- A marine mammal may not be intentionally killed in the course of commercial fishing operations except where imminently necessary in self defense or to protect the life of a person in immediate danger. Such lethal taking must be reported to NMFS within 48 hours after the end of each fishing trip in which the mortality occurred using the appropriate MMAP mortality/injury reporting form. For non-vessel or set net fisheries, reports must be submitted within 48 hours of tending gear or the next delivery of catch.

- Any marine mammal incidentally taken must be immediately returned to the sea unless directed otherwise by NMFS or a NMFS-authorized observer.

- Any person who violates these Terms and Conditions, regulations under 50 CFR Part 229, or any provisions of Section 118 of the MMPA shall be subject to the penalties set forth in the MMPA.

- This Authorization Certificate, or a copy, must be made available in combination with a current/valid state or federal fisheries permit , upon request to any state or federal enforcement agent authorized to enforce the MMPA, any designated agent of NMFS, or any contractor providing observer services to NMFS.

- This certificate is not transferable. In the event of a change in vessel or fishing permit ownership, the Authorization Certificate is void and a new Authorization Certificate must be obtained by the new owner.

- If the registered vessel is sold or destroyed, or is replaced by a new designated vessel, an authorization must be obtained for the new vessel.

- If there are changes in the mailing address or vessel or permit ownership, the NMFS Alaska Regional Office, Protected Resources Division, must be notified of the change within 30 days at this address: PO Box 21668, 709 W 9th St, Juneau, Alaska 99802.

# 2007 List of Fisheries

Alaska Fisheries

| CATEGORY I FISHERIES | | | | |
|---|---|---|---|---|
| Management Authority | Gear | Area | Target Species | MMAP Fishery Code |
| None | | | | |

| CATEGORY II FISHERIES | | | | |
|---|---|---|---|---|
| Management Authority | Gear | Area | Target Species | MMAP Fishery Code |
| State | Drift Gillnet | Bristol Bay | Salmon | 47 |
| | | Alaska Peninsula | | 08 |
| | | Cook Inlet | | 45 |
| | | Prince William Sound | | 06 |
| | | Southeast Alaska | | 15 |
| | | Metlakatla/Annette Is | | 15 |
| | Set Gillnet | Bristol Bay | | 48 |
| | | Alaska Peninsula | | 19 |
| | | Kodiak Island | | 18 |
| | | Yakutat | | 16 |
| | | Cook Inlet | | 122 |
| | Purse Seine | Southeast Alaska | | 67 |
| | | Cook Inlet | | 121 |
| | | Kodiak | | 120 |
| Federal | Trawl | Bering Sea / Aleutian Islands | Flatfish | 101 |
| | | Bering Sea / Aleutian Islands | Pollock | 102 |
| | Longline | Bering Sea / Aleutian Islands | Pacific Cod | 104 |
| | Pot | Bering Sea | Sablefish | 105 |