

Hawaii Longline Observer Program Field Manual



Pacific Islands Regional Office Observer Program

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Cover Image: Keith Davis, a fisheries observer and observer advocate who was lost at sea on Sept. 10, 2015 while observing on a tuna transshipment vessel off the coast of Peru. His talents and energy are dearly missed by his friends and colleagues.

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Chapter 1 Introduction

Longline Observer Authority and Goal

NMFS' Pacific Islands Regional Observer Programs (PIROP) operates in the waters surrounding the Hawaiian Islands and the Territory of American Samoa. In the late 1980s there was a rapid expansion of the Hawaii longline fishery for tuna and swordfish. Most of the vessels came from the US east coast and the Gulf of Mexico. The increase in fishing activity raised serious concerns about the impact of longline fishing on the stocks of fish being harvested. The increased number of vessels also raised concerns over sea turtle interactions. To understand impacts on sea turtles, interim emergency rules were promulgated. These temporary measures (rules) included requirements for federal longline fishing permits, mandatory logbooks, official identification numbers, and notification to NMFS whenever a longline vessel intended to fish within 50 nautical miles of a protected species study area or if fishing activities would take place around French Frigate Shoals, Gardner Pinnacles, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Island, and Kure Atoll of the Northwestern Hawaiian Islands.

A NMFS 1993 Biological Opinion resulted in the initiation of a voluntary observer program. A letter was sent to all vessel owners with limited-entry Hawaii longline permits requesting their cooperation to carry fishery observers. An interim final rule establishing a mandatory program was published on December 22, 1993, and the first mandatory observers were deployed on longline fishing vessels in February 1994. A final rule for the mandatory observer program was published on April 19, 1994, to ensure that observers would continually be placed aboard longline vessels.

In 2000, the Pacific Islands Regional Observer Programs (PIROP) significantly increased its observer coverage. During the period March 1994 to September 2000, 322 observer trips were completed. The program averaged 46 trips per calendar year from 1994 to 1999. From October '00 to September '01, 234 observer trips were completed. That was an increase of over 500% from the previous years. Since then, PIROP has maintained 17-22% observer coverage for the deep set fishery (tuna). Since 2005 it has a 100% observer coverage in the shallow set fishery (swordfish). In addition, the program was able to establish a core multidisciplined observer debriefer/resource management staff to work with observers as they return from sea.

Currently, NMFS's two observer programs in the Pacific Islands are focused on collecting information on protected species interactions with commercial fisheries in the region. Catch composition, fishing effort and disposition information are other main categories of data collected by the programs. Target species of the pelagic longline fisheries are swordfish and tunas. Future observing efforts in the region may be expanded to the fisheries around the Commonwealth of the Northern Mariana Islands, and Guam.

The program has also developed relationships with the Forum Fisheries Agency and the Secretariat of the Pacific Community, with the intention of sharing information on program practices, species identification, labor issues, data harmonization, data sharing, and the "observer" as an effective management tool. PIROP has the resources and experience to offer valuable assistance and support to other observer programs within the greater Pacific region. Intra-program contact and familiarity can help to implement additional data collection and reporting requirements. The response to this outreach led to the development of multilateral fisheries resource management contacts and an invitation to participate in the annual Pacific Islands Observer Coordinators and Managers meeting which ultimately lead to the Pacific Islands Observer Program becoming a member. PIROP can directly help improve quality of observers, data, and safety training. Indirectly, PIROP can assist foreign observer programs to develop their own capacity to train and maintain observers and observer programs. The Pacific Islands Regional Office, office of International Fisheries has provided logistical support to national and regional observer programs under the South Pacific Tuna Treaty. By helping the SPC/FFA with their observer and debriefer trainings, PIROP is expanding upon a pre-existing relationship.

NMFS is concerned with the management of False killer whales (*Pseudorca crassidens*). Under the Marine Mammal Protection Act, NMFS has defined multiple stocks of False killer whales in the Pacific islands region (as stated in the Stock Assessment Reports). Research and observer collected data indicate that there are genetically distinct stocks in the waters utilized by the vessels in the Hawaii-based longline fleet. More information is needed to assess the impact of the fishery on these different stocks.

In addition to national and regional roles, NMFS also plays a role in the Western and Central Pacific Fisheries Commission (WCPFC). The WCPFC was established by the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC Convention) which entered into force on 19 June 2004. As an agency of a Commission member nation, NMFS is responsible for adhering to all subsequent management and regulatory policies of the Commission. These policies, called Conservation and Management Measures (CMMs), include (but are not limited to) such things as providing authority for the development of Regional Observer Programs, vessel registration and monitoring, catch limits, and observer rights and responsibilities.

Some important milestones in US fisheries management related to observers

1. Starting in **1963**, U.S. biologists were placed on some Japanese trawlers and factory ships in the Bering Sea and Gulf of Alaska to obtain data on the catch by species, area, and quantity and on gear efficiency. In essence, this was the first fishery observer program.
2. In **1964**, the Bartlett Act was passed. This act prohibited fishing in US territorial waters (out to 3 miles) by foreign flagged vessels unless they were allowed access by treaty.
3. In **1966**, Public Law 89-658 was passed. This law extended the US exclusive zone to 12 miles.
4. In **1973**, the NMFS began placing observers on foreign fishing vessels operating off the northwest and Alaskan coasts of the US. This was known as the North Pacific Foreign Fisheries Observer Program. These observers were placed on vessels only upon invitation by host countries.
5. The passage of the US Marine Mammal Protection Act (MMPA) in **1972** led to placing observers on purse seine vessels.
6. In **1978** US fishers began fishing for groundfish in joint ventures with foreign processing vessels.
7. In **1983**, President Reagan declared the US Economic Exclusive Zone (EEZ) to cover the area from 12 nmi from the coast, out to 200 nmi. By 1991, all foreign fishing within the US EEZ was terminated.
8. By **1986** all non joint-venture foreign fisheries in U.S. controlled waters were halted.
9. In **1988** amendments to the MMPA required vessels in fisheries identified as having frequent interactions with marine mammals to carry observers for 20-30 percent of their fishing days.*
10. -In **1987**, the Platform Removal Observer Program begins.(GOMEX)
-In **1989**, observing began in the Northeast domestic commercial fisheries (NER)
-In **1990** the North Pacific Groundfish Observer Program begins.(BSAI/GOA)
-In **1990** the CA Set-net & Drift-net Observer Programs begin.
-In **1992** the Pelagic Longline Observer Program begins.(GOMEX/NER)
-In **1994** the Hawaii Longline Observer Program begins (PIR)
-In **1994**, the Commercial Shark Observer Program begins. (GOMEX/FL & SE)

Objectives for Longline Fishery Observers

To meet NMFS' field responsibilities, the following objectives are established for scientific technicians working as observers aboard longline fishing vessels:

- Obtain reliable information about the incidental interaction of protected species.
- Record fishing effort.
- Record the number and composition of fish kept and discarded.
- Collect biological information from selected species

Guidelines and Responsibilities

It is important that you conscientiously follow the guidelines outlined below, with SAFETY and INTEGRITY as the watchwords of your job:

It is your responsibility to observe and accurately record biological research data as instructed. Everything you record is available to the vessel operator or his designate and is subject to legal interpretation. Almost everything you record may be made available as public information. You are not to record extemporaneous comments or personal opinions. It is not your job to evaluate or interpret data; simply record your observations on the data forms that you are issued.

It is your responsibility to maintain open communication with the vessel operator and other vessel personnel to facilitate a clear understanding as to what data are being collected.

It is your responsibility to share with the vessel operator all data items recorded, when requested. **This does not include your Documentation Notebook.** If he or she is in disagreement with you, allow operators to record their own views on the original data forms. If they choose, the vessel operators may record their own comments on these forms, in the comments section.

You are hired to be an observer, *not an enforcement agent*. You are **not empowered to write citations, make arrests, or carry out enforcement activities**. Your responsibilities require you to make observations and collect data, some of which pertain to regulations. Your data could be used as evidence to assess penalties. There may be instances where you are required to write incident reports. Observers do not interpret regulations; however, observers are asked to assist fishermen by providing copies of the current regulations to them upon request, and to direct them to NOAA's Office of Law Enforcement (OLE) for assistance in interpretation. Government attorneys perform legal interpretation.

Your responsibility of observing and recording data is to be performed in such a manner as to minimize interference with fishing operations. Likewise, the vessel operator and any other vessel personnel are not to interfere with your duties. It is up to you to maintain a functional working relationship with the vessel operator and crew in order for you to perform all tasks that are required of you.

Observers should not keep personal diaries during a fishing trip. This does not include material issued to you for documentation purposes. Data forms are to be used for collecting data, not as a sketch pad or notebook. Notebooks are not to be used for collecting data.

Intentionally entering the water from an assigned vessel is prohibited; such activity will compromise personal safety and data collection duties. Sea-assignment readiness is determined by personal fitness, training preparation, and NMFS staff assessments.

Because observer objectives are mandated by federal regulations, personal research is prohibited aboard vessel assignments, and retaining specimens (especially "edible" specimens) of any kind for any personal reason is prohibited.

Port Coordinators select sea assignments through a predetermined sampling plan and confirm that the boats meet minimum U.S. Coast Guard safety requirements. Observers do not choose vessel assignments; however, **observers have the right to refuse deployment on a vessel they perceive as unsafe.** Any refusal to board a vessel after an inspection must be documented and discussed with management to determine the appropriate course of action.

Fishing activity dictates vessel departures and arrivals. Since vessel notification requirements may limit response time, observers should be prepared for sudden sea assignments of extended and uncertain duration.

An observer's vessel assignment (trip) continues until the vessel returns to port to unload its catch. Occasionally, the port of arrival will be different from the port of departure. In these instances, the trip is considered completed when the vessel arrives in port to off-load its catch. If you are directed by PIROP (or a designated authority) to remain on the vessel and observe the subsequent fishing trip, do not use the same trip number; contact the PIROP office in Honolulu or your contractor for the trip number to use.

Never leave your assigned vessel prematurely without approval from the PIROP Coordinator, Port Coordinator, or acting designate; **to do so is grounds for dismissal.**

Safeguard the return of your data to the port field station. Your work is a valuable investment; treat it like your wallet. **Data loss may be grounds for dismissal.**

Alcohol dependency and other illicit drug use are incompatible with observer duties and are not tolerated. **If detected, disciplinary action will be initiated.**

Falsification of data is grounds for dismissal, and subject to criminal prosecution.

Chapter 2 Summary of Duties

Employment Purpose

Observers are deployed on commercial pelagic longline fishing vessels to collect objective and accurate data on the following:

- Vessel fishing gear characteristics and operations
- Species Composition of the catch
- Incidental catch of protected species, Biological (life history) data
- Compliance with selected regulations, both domestic and international.
- International treaty specific data

General Duties

- Work at sea aboard longline vessels.
- Work as directed by the PIROP under the authority of the Magnuson-Stevens Fishery Conservation Management Act (MSA)
- Collect research and management data from the Hawaii longline fisheries.
- Collect data on vessel activity and fishing operations.
- Identify protected species, target species, and bycatch species.
- Record the number and position of protected species, target species, and bycatch species caught during fishing operations or sighted while the vessel is under way.
- Sample selected species.
- Record biological data from protected species and other caught species.
- Debrief collected data and enter data into the database once on shore.

The Observer's Role

(Adapted from an article by P. Cullenberg and K. Rivera in the OTC Quarterly, Vol. 8, No. 3)

Since February 1994, observers have played a role in monitoring interactions between the Hawaii-based longline fleet and sea turtles in the North-Central Pacific. Starting in 2000, the observer's role expanded to cover seabird bycatch in the fishery as well. The observer program has greatly improved the understanding of what the levels of bycatch and interaction are, and what changes can be made in the fishery for the benefit of fishermen and protected species.

When stepping onto a fishing vessel for one week, or one month, you the observer are entering a workplace and a home. It is a place where the crewmen have already established a system of communication and responsibilities. An individual observer's ability to deal with the situation is a reflection of the person's flexibility and resilience. The environment can be lonely, unwelcome, cramped, and some-times hostile. Your sleeping and eating habits will definitely be disrupted.

The quality of your working relationship with the crew can be more important to the overall nature of the trip than the nature of the vessel itself. A good working relationship with the crew makes a good trip. A good working relationship on a good boat makes a great trip!

A longline observer's job in Hawaii has two important phases. The first is the initial collection of the data at sea. The second is processing and verifying the data on land. At the end of a trip, you'll begin the debriefing phase.

Some quotes on observing:

"When I was working as an observer, I was always interested in seeing what would come up next."
- Joe Arceneaux, NMFS

"They tell you how hard life at sea is and the conditions you may face, but they never mention how hard of a mental strain it is."

- Anonymous, observer

"You have to be flexible."

-Josee Vincent, observer contractor/ex-observer

Before a Vessel Assignment

The Placement Meeting

Before each cruise, observers will meet with the vessel operator to ensure that the vessel meets all NMFS, MSA, and MMPA requirements for carrying an observer and to review respective responsibilities. This meeting is usually led by the Port Coordinator, or acting designate. Occasionally, observers may have to conduct their own placement meetings. After the meeting, observers have the responsibility to place their gear aboard their assigned vessels and to be aboard **at least 1/2 hour** before the scheduled departure time. Federal regulations outlining minimum vessel requirements for carrying observers can be found in the appendices, and a checklist can be found in Ch. 22

Observers assigned to a vessel should report to their contractor representative each day until their vessel departs.

An observer's trip begins when the vessel leaves port to conduct fishing operations and, generally, ends when the vessel offloads its catch.

During a Vessel Assignment

This list of *Do's and Dont's* is the observer provider's list that is reviewed with vessel captains, observers, and the placement coordinators during the placement meetings before each cruise. It is reviewed after the mandatory safety orientation, and signed by all present. This list is designed to establish a clearly outlined relationship between the captain and the observer. It affords both parties an opportunity to address potential issues before they arrive at sea. This is a good time for you to direct questions to the captain about any specific boat rules.

Observers are to:

1. Collect objective data on all fishing activities, including the take of target and non-target species and selected specimen samples.

This means the observer must see everything that is caught on the line. Observers record information on fishing gear and locations, collect biological data on fish and protected species caught, and collect samples.

2. Perform their duties in a way that minimizes interference with fishing operations.

Again, the observer must see everything that is caught on each hook. This means that you may need to slow the vessel down so the observer can identify everything that is caught on the line. Do not cut the line until the observer has seen it and says it is ok to cut the line. If it is a shark, they need to identify it to species, including the different species of Thresher and brown sharks.

3. Keep open lines of communication with vessel personnel by informing them about observer duties and collected data.

The observer will let you know what they are doing, and you are welcome to look at the data they are collecting.

4. Obtain permission from the vessel captain before using any boat equipment.

The observer will ask you before they use the SSB (Single side-band radio) or any other vessel equipment. The observer will also abide by the house rules of the vessel.

5. Collect specimens as instructed by NMFS and clean up thoroughly afterwards.

After the observer is done collecting samples they will clean up their mess and wash the remaining fish guts over the side of the vessel.

6. Use work cameras only for photographing specimens.

If you catch a turtle, marine mammal or unidentified fish the observer will need to take picture of these. However, they are not to take pictures of the crew or anything that will identify the vessel or crew.

7. Bring issued rain gear, boots, life jackets, survival suits, and EPIRBs.

8. Ask the captain about emergency procedures and familiarize themselves with the locations of life rafts, fire extinguishers, and first aid kits.

Note: The observer accompanies the Port Coordinator during the safety meeting so the observer will already be familiar with the location of the safety equipment.

9. Remain onboard the vessel until the vessel returns to port to unload their catch..

For example, if the vessel stops on Kauai or at another port, does not off-load, but will return to Honolulu to off-load the catch, the observer will remain onboard the vessel until you return to Honolulu. If you land at another port and unload your fish the observer will get off the vessel the e and arrangements will be made for the observer to return to Honolulu.

10. Share housekeeping routines such as dishes and general clean up with the crew.

If the crew takes turns washing dishes or cleaning up, the observer will take their turn as well. However, the observer is not to be the designated person for this job during the cruise.

Observers are not to:

1. Dictate procedures or direct fishing operations.

The observer will not tell you how or where to fish.

2. Be involved with crew responsibilities such as standing watch or helping with fishing.

The observer is not to drive the boat or help with actual fishing operations.

3. Keep personal diaries in any form.

4. Use personal recording devices, smart phones, cameras or lap top computers to record or save observer data.

5. Compromise data or record extemporaneous comments.

6. Conduct personal research of any kind.

What this means is the observer is collecting data for NMFS only, they are not working for anyone else. In addition, the observer is to record only what he/she sees. They will not write down any assumptions or opinions.

7. Keep specimens or edible fish of any kind.

If the crew eats fish everyday, that is ok. The observer eats what the crew eats. However, the observer can not take any fish home from the cruise.

8. Discuss boat business from one vessel to another or to any fishermen shoreside.

Observers will not go around telling anyone about your fishing secrets.

Captains are to:

1. Cooperate with the observer in the performance of the observer's duties.

Allow the observer to do his/her job. If you catch a turtle or any other protected species, you will need to stop the vessel and assist the observer to get the turtle aboard the vessel.

2. Provide living quarters comparable to a full crew member.

Note: The captain is asked to designate a bunk for the observer during the safety meeting.

3. Provide the same meals, snacks, and amenities provided to crew members.

Often the observer will have a list of additional food items. Is that ok for the observer to give you a list? The vessel will be reimbursed \$20 for every day the observer is onboard the vessel. We also request that you get bottled water for the observer.

4. Allow the observer access to areas of the vessel necessary to conduct observer duties.

Allow the observer to go to the pilothouse to obtain GPS positions, to store specimens in the ice hold, or any other areas necessary to do his/her job.

5. Allow the observer access to communications and navigation equipment, as necessary to perform observer duties.

The observer will need to get the latitude and longitude from the GPS.

6. Notify the observer when commercial fishing operations are to begin and end.

For example, if the observer is sleeping make sure you let them know when you are about to set or haul gear.

7. Provide true vessel locations by latitude and longitude upon request by the observer.

Let the observer go to the pilothouse to get the position from GPS.

8. Bring aboard sea turtles and marine mammals killed during fishing operations that are readily accessible to crewmembers, if requested by the observer.

9. Provide refrigerated bait well storage space for observer collected specimens.

The observer may need to store specimens in the ice hold or freezer.

10. Record personal statements on the back of the observer's original forms, if there is disagreement with the observer's collected data.

For example, if the observer writes a fish down as a Blue marlin and you say it is a Striped marlin, then you can write on the back of the observer's forms that it is a Striped marlin.

11. Comply with other guidelines, regulations, or conditions that NMFS may provide in writing to ensure that the observer can complete his or her required duties.

Captains are not to:

1. Ask observers to stand watch or help with fishing operations.

You cannot ask the observer to drive the vessel or help with the actual fishing operations.

2. Forcibly assault, harass or sexually harass, intimidate, attempt to influence observers, interfere with or impede the observer duties.

If the observer has any questions or problems during the cruise he/she will address these with you (the captain). If you (the captain) have any questions or problems concerning the observer during the cruise, he/she should feel free to address the observer with these concerns.

3. Fish without an observer onboard the vessel after the owner or agent has been directed by NMFS to make accommodations available for an observer.

Now that you know the observer is going fishing with the vessel you can not leave port without the observer.

Captain, do you understand that the \$20 a day paid to the owner at the end of the trip is provided for food and water for the observer AND that if the observer doesn't receive adequate supplies money can be withheld from reimbursement? Yes/ No

Captain, was enough food bought for the trip to provide the observer with adequate meals for the duration of the trip? Yes/ No

Has enough water been bought, if the water tank isn't adequate to provide the observer with enough water for the duration of the whole trip? Yes/ No

Captains are to operate the vessel safely and according to established Coast Guard safety regulations. This includes conducting proper wheel watches in accordance with USCG and international navigation rules.

At this point, the observer, the captain and the port coordinator will sign this document. A few further pertinent references are listed below to provide more detail on the origin of some points that were included.

International Regulations for Preventing Collisions at Sea (COLREGS) Rule 5 - "Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision." You may also refer to Chapter 19 for more detailed safety compliance guides.

Interference and Harassment

Record in the Hawaii Longline Observer Program (HLOP) Documentation Notebook any attempt to interfere with you or your observer work, including harassment, by preparing brief, non-inflammatory answers to **WHO, WHAT, WHERE, WHEN, WHY, HOW, and HOW MANY TIMES.**

Documentation notebooks are to be filled out in ink and pages are not to be removed. Don't wait for a situation to get out hand, document it at it's first occurrence to establish the conditions that may lead to a more serious situation later. You should also include any discussion you have with the captain or crew in addressing this issue, especially if it helps resolve the situation.

Harassment is defined as conduct which has the purpose or effect of unreasonably interfering with the observer's work performance, or which creates an intimidating, hostile, or offensive environment.

Federal law defined sexual harassment as "any unwelcome conduct of a sexual nature which has the purpose or effect substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment". NMFS treats all situations of harassment seriously, and any reports are treated as confidential information.

Injuries

If you are injured while aboard an assigned vessel, record the details in the PIROP Documentation Notebook. Record the time of the occurrence, the type and extent of the injury, how it occurred, what treatment you received, by whom, and the names of any witnesses.

You may be eligible for compensation under the Federal Employee's Compensation Act (FECA) under an extension of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) section 403 (c).

The MSA section 403 (c) reads as below:

“ An observer on a vessel and under contract to carry out responsibilities under this Act or the Marine Mammal Protection Act of 1972 (16 USC 1361 et seq.) shall be deemed to be a Federal Employee for purposes of compensation under the Federal Employee Compensation Act (5 USC 8108 et seq.) ”

If you are an observer working for NMFS or under contract as above, you are covered under FECA regardless of how long you have worked as an observer or your work schedule, including if you work on a seasonal, part-time, intermittent, or contracted basis.

If you are injured aboard a vessel, you are legally required to notify the captain of the vessel within seven days of any injury or illness incurred while aboard the vessel.

Make sure to report any injuries or illnesses incurred during a cruise to your employer and your debriefer.

In order to obtain FECA benefits you must submit the appropriate FECA claim form within 30 days of the injury. The most common claim forms are:

CA-1 Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation.

Traumatic injuries are defined as a wound or other condition of the body caused by a single specific event or a series of events or incidents within a single day or work shift.

CA-2 Notice of Occupational Disease and Claim for Compensation

Occupational diseases are defined as a condition produced in the work environment over a period of longer than one workday or shift. It may result from systemic infections, repeated stress or strain, exposure to toxins, poisons, or fumes, or other work conditions of the work environment.

After a Vessel Assignment

An observer's trip assignment ends when the vessel returns to port to sell its catch.

Observers are accountable for all data, some issued equipment, and manuals. Avoid leaving your data forms and equipment unattended. To avoid being charged for unserviceable gear, return broken and worn out equipment.

LOSS OF DATA IS GROUNDS FOR DISMISSAL

After each sea assignment observers are to report to the PIROP for debriefing. When observers report for debriefing all data must be complete and in order by form types and set numbers. Data Quality Control sheets must be completed and the electronic gear bag must be brought into the office along with all data and your current field manual. **You will be assigned a debriefer, PLEASE remember to call the debriefer assigned to you and schedule an appointment to come to the office.** As part of your debriefing duties you will be required to complete the following:

- 1- Post-cruise questionnaire.
- 2- Protected Species Permit reports (if applicable).
- 3- Incident reports for injuries, enforcement violations, and marine casualties (if applicable).
- 4- Verify data with debriefer and make all necessary corrections.
- 5- Enter all data into the Longline Observer Database (LODS).
- 6- Complete a full read back of the data with your debriefer.
- 7- Verify Data Quality Control Sheet.
- 8- Obtain clarification on any issues or collections that are unclear.
- 9- Replenish data forms for next trip.
- 10- Update Circulars and trip packets

* At the conclusion of their first trip, each observer will also fill out a first-trip training critique, and an exit questionnaire. After a trip, each observer should ask if there have been any changes to the procedures for data editing and/or entry.

* At the conclusion of their last trip, each observer will also complete the exit questionnaire.

Travel Responsibilities

Always conduct yourself in a courteous and professional manner. Travel in clean clothes. When departing from any port other than Honolulu, board your assigned vessel, as soon as possible.

Keep your collected data and electronics bag in close possession at all times. **DO NOT CHECK DATA AS BAGGAGE. DO NOT MAIL ORIGINALS.**

Remember your data are the results of a significant investment; treat it as you would your wallet. Do not entrust it with anyone except observer program staff.

If you incur expenses during transit to or from your vessel, retain all your receipts for reimbursement. If you encounter any travel delays, contact your contractor or the NMFS PIROP office as soon as possible.

NO DATA IS BETTER THAN BAD DATA!

Chapter 3 Data Collection Instructions

General Instructions

If the information requested on a data collection form is not available or not applicable, leave the data field or code box blank. Describe the situation in the Comments section of the form. Use the Documentation Notebook to record information that does not correspond to a specific data form, but that may be worth noting. Documentation notebooks must always be filled out in INK.

1. Use a soft, #2 pencil on all forms. Draw a single line through any errors, and write the correct data above the lined-out item. **DO NOT** make any changes over information that is already recorded.
2. **Print legibly!**
3. Observe and accurately record descriptive and quantitative data, with explicit notes and explanations. **Record the data as events occur, trusting nothing to memory.**
4. Record times as four digits using the 24 hour clock format: for example, 5:34 A.M. is written as 0534, and 5:38 P.M. is written as 1738. Use Hawaii Standard Time.
5. **Protected species are the top priority. Never allow collection of secondary data to interfere with the collection of protected species data.**
6. If data are not available in the proper units, write the measurement and units in the margin or Comments section for later conversion: for example, meters from fathoms.
7. If additional space is required on a data form, continue data entries on additional forms.
8. Include all pertinent facts when writing notes or narrative explanations. Remember that people who were not present will read about the events you are describing. Don't assume that the readers will automatically know what you are describing if you did not write it down.
9. Generally, leading zeros are helpful when filling in data fields. If they are not necessary or desired then the appropriate chapter will explain in the data element definitions section.
10. Unless otherwise specified, right-justify your numerical entries into the data field boxes. For example, if the vessel documentation number is only six numbers, the far left box of the 7-box data field would be empty.
11. If illness, injury, or rough weather impact your ability to perform your duties, describe the situation in your Documentation Notebook and on any appropriate data collection forms.
12. **No abbreviations.**
13. **Follow basic rounding rule. If it's more than or equal to 5 round up, if it less than 5 it remains unchanged.**

Data Collection Priorities

As an observer in the Hawaii Longline Fishery your primary duty is to obtain reliable information about sea turtle and other protected species interactions. All protected species data and sample collection has higher priority than any fish data. In instances where there is a protected species interaction collect all data and samples and just make a note if you are not able to collect lower priority fish data. Keep in mind that while you are collecting protected species data and samples you still need to watch what is coming up on the line so additional protected species are not missed.

Sample Collection General Comments

Make sample collections only if you have the proper storage medium and storage space. *An important note to remember is that it is easier to discard a specimen or sample after it is collected and confirmed you do not need it, than to assume that you do not need to collect it and find out later that the sample was highly valuable for research.*

Sample and Data Collection Priorities Samples

- Sea turtles: Positive ID, skin biopsies or whole dead animals
- Marine mammals: Positive ID, skin biopsies, or small whole dead animals if possible
- Seabirds: Positive ID, refer to circular update for current protocol
- Fishes: selected biological samples as directed - see Circular Updates

Data

- Collect and document data from all incidental catches and interactions of protected species. Sea turtles and marine mammals have a higher priority over seabirds.
- Record species composition and disposition of the catch.
- Record fishing locations and gear characteristics
- Collect fish and shark measurements
- Describe all incidents where tags are applied, observed, or removed on any caught animal.

If you are unable to complete all of your duties, due to illness, dangerous conditions, etc., use this list of priorities to help determine what is feasible to collect and what might have to be discontinued. These situations are rare and require detailed comments. Try to be creative and find alternative methods to help you perform your duties when needed. For example; if you are vomiting off the starboard side of the vessel while gear is being retrieved from port, video the hauling operation while you are unable to monitor it. This is not preferred, but it's better than missing a possible interaction.

Chapter 4 Trip Specifications Record

Introduction

The Trip Specifications form is used to record the specifics of the fishing trip. It is the only place where the vessel name, vessel documentation number, and name of the operator are recorded together. When separated from other observer data, the data cannot easily be associated with a specific vessel or operator so care must be taken not to separate these. This form is completed only once for each observed fishing trip.

Data Elements

Form Header

Observer ID - in the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Declared Trip Type - the type of set the vessel will make on this trip. The Port Coordinator will tell you what type of set the vessel will employ during the cruise. Write in the appropriate letter code in the box. There are only two types of sets, Deep Set or Shallow Set. If the type is a **Deep Set**, then enter **D** in the box. If the type is a **Shallow Set**, then enter **S** in the box. This box must be filled in, it can not be left blank.

If the vessel did not declare the type of set they will fish when they called in, enter **N** for **Non-declared**. Do not change the Declared Trip Type if the type of gear configuration (“set type”) fished during the trip is different from what was declared before the start of the trip. This box must be filled in, it cannot be left blank.

Trip Number - in the upper right hand corner, enter the unique 6-character number assigned by the Operations Coordinator. In the first two blocks enter LL for longline. Starting in the third block, enter the 4-digit number.

Manual Version - in the upper right hand corner of the form, fill in the spaces with the Manual version number. The version number is located on the title page of the manual. The first two characters are LM for Longline Manual. The number should be left-justified and do not fill in zeros "0" for blanks.

Vessel Documentation Number - (*aka* Vessel ID No.) A 6 to 7 digit number assigned to the vessel by the U.S. Coast Guard. It is NOT painted on the sides of the pilothouse, and both sides of the bow. It is written on vessel gear, such as floats and life rings, and it is also in the vessel's official documents. This number is also recorded on the vessel's longline permit. Right-justify this number and do not put in any leading zeros.

Vessel Name - print the name of the vessel as it appears on the bow, transom, or official records. It is not necessary to precede the vessel name with F/V or “FISHING VESSEL.”

Operator Name - print in block letters the first name, middle initial, and last name of the person responsible for operation of the vessel. Confirm the spelling of all names (a good way to do this is to check the captain's Protected Species Workshop card or from another picture ID). Do not use NMI in this field. **Do not put paper captains in this field. Fill in the name of the actual vessel operator.**

Trip Start

Departure Date/Time - the exact date and time the vessel first departs (lines to the dock are pulled in) for the fishing area using the Day Month Year format (DD MMM YYYY). Use two digits for the day. Write the first three letters of the month (ex: JAN, FEB). Fill in the last four blank spaces representing the year. Example: August 5, 2007 would be recorded as 05 AUG 2007. Use Hawaii Standard Time and the 24-hour clock with two digits for the hour and two digits for the minutes (e.g. 9:09 AM is 0909; 5:13 PM is 1713).

Departure Port - print the name of the port city the vessel departed from, e.g., HONOLULU (do not put in what pier, or what state you departed from).

Intermediate Port Stops

Occasionally, some trips will include port stops for reasons other than to unload the catch. If your assigned vessel makes a Port Stop, complete the required lines in the section. Sometimes a vessel will leave from the pier to tie up in another part of the port to take on ice, bait, or other supplies. These stops should not be considered Port Stops. A stop is considered a Port Stop if the vessel has been untied from the dock, left for the fishing grounds and then returns to the dock for some reason.

Stop No. - record a single digit indicating the number of the Port Stop starting with 1.

Stopped (Day Month Year Hour Minute) - the date and exact time the vessel made a Port Stop (i.e., returned to any port for any reason *other* than the end of the trip). Use the standard date format DD MMM YYYY (ex: 07 AUG 2007) and the 24-hour clock (e.g., 2311).

Resumed (Day Month Year Hour Minute) - the date and exact time the vessel departed port after the Port Stop to resume operations. Use Hawaii Standard Time and the 24-hour clock.

Trip End

Arrival Date/Time - the date and exact time the vessel returns to port (lines to the dock are tied up) after completing the fishing trip. Use the correct date format, Hawaii Standard Time and the 24-hour clock.

Arrival Port - print the name of the port city where the vessel offloads its catch, e.g., HONOLULU (do not put in what pier, or what state you departed from).

Comments - Use this section to explain details of Port Stops or to record information not included in the data boxes. You may also use this section to record information specific to the entire trip that does not get recorded on any other form. **This includes any protected species interactions, experimental trips (i.e. Shark pilot study), and bird strikes that may occur during the trip.** If fish or crew are transferred to/from another vessel, note that here and write detailed comments in your Documentation Notebook. **If seabirds are collected as a result of a bird strike, remember to fill out a Seabird Biological Data form.**

High -grading? -Check this box if you observed the vessel performing “high-grading”. This is the practice of throwing fish overboard after previously deciding to keep them. This is usually done to exchange lower value fish for those of higher value, or simply to throw out old fish. If this box is checked, record your comments on the High-grading Comments sections on the back of the form. Your comments should include items such as species and number discarded, length and reason for discard & date of discard, if available. High grading is not illegal in the Hawaii longline fishery.

Trip Issues?- This box, and the Trip Issues Comments section on the back of the form are for debriefer use only.

6000

Observer ID

OMB Control No. 0648-0593 exp. 10/31/2018

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

Trip No. LL0711

Observer Manual Version ID

Declared Trip Type

LM.16.06.

Trip Specifications

Vessel Documentation No.

916712

Vessel Name

Jus' Keep Swimmin'

Operator Name

JOE L

SCHMO

First Name and Middle Initial

Last Name

Trip Times and Port Stops

Trip Start

16 FEB 2016 14 32

Departure Date/Time

Departure Port

HONOLULU

Intermediate Port Stops

Stop No.

Stopped

Resumed

Stop Port

Stop No.	Day	Month	Year	Hour	Minute	Day	Month	Year	Hour	Minute	Stop Port
1	16	FEB	2016	17	00	16	FEB	2016	20	00	HONOLULU
			20					20			
			20					20			
			20					20			
			20					20			

High-grading?

If checked document on back

Trip Issues?
(Debriefers Use Only)

Y Yes
N No If Y document on back

Trip End

03 MAR 2016 20 50

Arrival Date/Time

HONOLULU

Arrival Port

Comments

PORT STOP 1: MECHANICAL ISSUES

Fig. 4.1. Trip Specifications Example

**DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program**

From front of
this form

Trip No.

Trip Specifications Comments

Comments (cont. from the front of this form)

High-grading Comments

Trip Issues Comments (Debriefing Use Only)

Chapter 5 WCPFC Mandatory Data Elements

Introduction & General Instructions

As a member of the WCPFC, the United States has agreed to share fisheries management information with the commission. NMFS has been delegated this responsibility, and observers are required to fill out this form for each fishing trip they observe. This form supplements information not recorded by the Hawaii longline data forms, and gets reported to the commission on a regular basis.

Data Elements

Header Information- Observer ID and Trip # are to be filled out on both the front and back of the form. These data are the same as the data you use for the HILOP data forms.

Vessel Identification Block

This block will be filled out during the placement meeting by the Port Coordinator. The Port Coordinator will give the form to the observer to finish completing during the fishing trip

Vessel Flag – This identifies the country of registry for the vessel you are observing on. This should be USA.

Vessel Owner/ Company – This information must match the owner or company name listed on a vessel's Hawaii Limited Entry Permit.

International Call Sign- Listed on the FCC radio license that each vessel is required to maintain for use with SSB radios. In the Pacific Islands Region, this is usually 3 letters followed by 3-4 numbers.
ex. WCY456

Marking consistent with CMM 2004-03 (Y/N) – This box must be checked YES or NO and cannot be left blank. The listed CMM defines an international WCPFC Identification Number for registered vessels. This will be the International call sign for PIR permitted vessels.

Observer Information

Information details who is collecting the information and the time frame the information was collected.

Nationality of Observer - Fill in your nationality (country that issued your passport). For example, if the United States of America issued your passport, record "United States".

Observer Provider -Country or Organization – Provide your employer's company abbreviation followed by PIROP, then USA *e.g.*: [contractor company], PIROP, USA This is prefilled on the form.

Date, Time and Location of Embarkation – This will be when the vessel departs the dock to begin its fishing trip. Record the information using the following format: 07 JUL 2011 1535 Honolulu,USA

Date, Time and Location of Disembarkation – This marks the end of the fishing trip when the vessel returns to a port to offload its catch. Record the time the vessel ties up to the dock. Use the same format as the embarkation.

Reported Crew Information Block

This information will have to be asked directly of the vessel Captain and crew.

Nationality of Captain- Record which nation the Captain declares to have a passport from. Simply ask, “What country issued your passport?”.

Identification Document- This will be an official passport. There is no need to see this document, only to record that a passport was declared as confirmation of nationality. If person does not have a passport, record what other type of document they have. Driver's licenses, state issued ID, social security cards, or library cards are not accepted as proof of citizenship. A passport card is an accepted proof of citizenship.

Nationality of Fishing Master- The Fishing Master cannot be the Captain. For the purposes of this document, the fishing master is considered to be the person, other than the Captain, who runs the vessel during fishing operations. A typical fishing master makes decisions about where and when a vessel fishes, and may even operate the vessel during those times. A Captain differs from a fishing master because of his legal requirement to sign the NMFS logbook and control the vessel during departures and landings. Record which ever nation this person claims to have a passport from.

Name of Fishing Master- Record the person serving as fishing master, if there is one. Use the first name, last name format.

Total Number of Crew by Nationality- Nationality is determined by the country of passport issuance. Do not include the Captain or Fishing Master in this Tally. Tally each nationality present in the number block alongside the nationality. Remember ethnicity and nationality can be different. Some examples are: Philippines = Filipino, Kiribati (Gilbertese.) = Kiribati, USA = American,

Reported Vessel Attributes

This is information that does not generally change without major reconstruction of a vessel.

Vessel Cruising Speed - Record the predominant speed at which a vessel travels to or from fishing operations. Do not consider speed during the hauls or sets. This should be recorded from the vessel GPS using knots (kts).

Vessel Fish Hold Capacity – Ask the vessel operator what the capacity of the vessel is in tons. An approximation is sufficient, but be sure to record the units in metric tons (mT). 1 lb = 0.0004536 m . Perform any conversion in the comments section.

Refrigeration Method- Record the means by which a vessel preserves its catch for delivery. Most vessels in Hawaii use ice to store fish at a sashimi grade quality. If you are unsure of the method employed, ask the Captain. Accepted method descriptions are listed beside this data field.

Gross Tonnage (GRT)- Ask the Captain what the vessel’s documented gross tonnage is. If unknown, leave this field blank

Engine Power(hp) – Ask the Captain what the power output of the vessel’s engines are. This is recorded in horsepower.

Reported Vessel Electronics

For each equipment item listed record a “Y” if the item was present or “N” if it was not. For items that were present on the vessel use the appropriate usage code from the *Usage Codes* table. Any usage not covered by the codes, or that may require additional explanation should be documented in the comments section.

Vessel Monitoring System- All US permitted longline vessels in the Pacific fisheries are required to have a vessel monitoring system (VMS) that is supplied and installed by NMFS. This is a small black or white box that is mounted in the wheelhouse and transmits vessel position via satellite communications.

Present- Confirm the absence or presence of this unit. This field cannot be left blank. If you cannot find the VMS record U in this block.

Security Seals Intact- Older versions of the VMS might have a foil sticker placed along the seam of the unit (fig 5.1). If the unit has been opened, the foil sticker will tear. If the sticker is untornd, record “Y” for intact, or “N” for not-intact, if you cannot find the sticker, use code U. If it is a unit that comes w/o a security seal, use the code "W" for "Without" (fig 5.2).



Fig.5.1. Old version of VMS with a seal.



Fig 5.2. New version of VMS without seal.

6000
Observer ID

WCPFC Mandatory Data Elements

Trip No. 120711

GENERAL VESSEL AND TRIP INFORMATION FOR ALL VESSEL TYPES

Vessel Identification

Vessel Flag: USA
Vessel Owner/Company: Busscher Fisheries
International Call Sign: WPDZ1234
Markings consistent with 50 CFR § 300.217:

Observer Information

Nationality of Observer: United States
Observer Provider - Country or Organization: Techsea - PIROP - USA
Date, Time and Location of Embarkation: 16 FEB 2016 1432 HONOLULU
Date, Time and Location of Disembarkation: 03 MAR 2016 2050 HONOLULU

Reported Crew Information

Nationality of Captain: United States
Nationality of Fishing Master:
Name of Fishing Master:
Identification Document*: PASSPORT
Identification Document*:
* 50 CFR § 300.215 (c)
Total Number Of Crew by Nationality:

Nationality	Number
Phillipines	6

Reported Vessel Attributes

Vessel Cruising Speed: 7.5
Gross Tonnage (GRT): 141
Vessel Fish Hold Capacity (mT): 20.41
Engine Power (hp): 770
Refrigeration Method: ICE

Ice
Chilled Sea Water
Refrigerated Sea Water
Blast Freezer
Other

Fig. 5.3. WCPFC for example

6000

OMB Control No. 0648-0593 exp. 10/31/2018

WCPFC Mandatory Data Elements

Trip No. 220711

Observer ID

GENERAL VESSEL AND TRIP INFORMATION FOR ALL VESSEL TYPES

Reported Vessel Electronics

Equipment	Y/N	Usage Code
Radars	Y	ALL
Depth Sounder	N	
Global Positioning System (GPS)	Y	ALL
Track Plotter	Y	ALL
Weather Facsimile	N	
Sea Surface Temperature (SST) Gauge	Y	ALL
Sonar	N	
Radio/Satellite Buoys	Y	OIF
Doppler Current Meter	N	
Expendable Bathythermograph (XBT)	N	
Satellite Communications Service (Phone/Fax/Email)	Y	RAR
Fishery Information Services	Y	RAR

Usage Codes

Usage Code	Definition
ALL	Used all the time
TRA	Used only in transit
OIF	Used often but only in fishing
SIF	used sometimes only in fishing
RAR	Rarely used
BRO	Broken
NOL	No longer ever used

Vessel Monitoring System

50 CFR § 300.219 (f)

Present (Y/N)

Security Seals Intact? (Y/N)

Comments:

45,000 lbs (.0004536) = 20.412 mt

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Chapter 6 Longline Set and Haul Information

Introduction & General Instructions

The Set and Haul Information form is used to record the basic set and haul parameters of longline sets on observed trips. This form should be filled out for each set of gear deployed. Rarely a vessel will make multiple sets in the same day. Each individual portion of deployed gear will get its own Set and Haul form, and own set number. If this happens, inform the captain that he should use a separate logsheet for each portion of the gear fished.

The information necessary to complete this form is obtained through direct observation. If the information for any data elements is not available or applicable, leave the field(s) blank and describe the situation in the Comment section. If additional space is needed for notes, use extra paper.

Documentation of the incidence of incidental take of protected species is extremely important to the management of this fishery. **Observers must monitor the entire first hour of the setting of gear and during the entire haul back, or gear retrieval process.**

Data Elements

Trip No. - in the upper right corner goes the unique 6-digit number assigned by the Port Coordinator. In the first two blocks enter LL for longline. After the second block, enter the 4-digit number.

Set No. - record the set number; sets are numbered consecutively for each observed trip beginning with 01. Rarely, some vessels will deploy their gear in two, shorter "sets". If this happens, record the second set as "Set 02". Make sure to record catch from each set on separate forms.

Logbook Page No. - record the page number from the *NMFS Western Pacific Daily Longline Fishing Log* that the captain uses to report the catch for this set. **Note:** Right justify and do not use leading zeros. It is highly recommended that observers obtain the page numbers daily.

Note on Elog: Some vessels will record their fishing effort and catch data on a computer. Instead of a page number, they will have a "E-log" file number. If your vessel is using an E-log, record the file number in the blanks labeled for the logbook page number.

Set Information Block

Begin Set

Date - the date when the setting operations start (the first piece of gear goes into the water). Use the standard date format (i.e., DD MMM YYYY).

Time - Use **Hawaii Standard Time (HST)** to record the exact time when the setting operations start. Write the times using the 24-hour clock. **DO NOT** round the time to the nearest 5mins, 10mins or 15mins. Document any situations that prevent you from obtaining exact times.

Latitude - the latitude of the vessel at the beginning of the setting operation. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter N in the trailing block for the Northern Hemisphere, and S for the Southern Hemisphere (ex: 21° 18.3'N). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Longitude - the longitude of the vessel at the beginning of the setting operation. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter E in the trailing block to indicate East longitude and W for West longitude (ex: 157° 55.3' W). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Weather Code - record the 2-digit number representing the weather conditions at the end of the setting operation (pg. 6-5).

Beaufort Scale - record the Beaufort sea state number 0-10 describing sea conditions at the end of setting operation. Refer to the reference tables in your manual and at the bottom of the form (pg. 6-6).

Sea Surface Temperature - record the *in situ* sea surface temperature as a 3-digit number to the nearest 0.1 degree Fahrenheit. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer. When using a back-up thermometer, follow these steps. Cast the water-collecting container overboard into water which is least affected by external heating from the vessel (*i.e.*, away from engine cooling water discharges). Avoid sampling near overboard discharges. Collect enough water to fill the well and insert the thermometer. Allow roughly 15 seconds for the thermometer to equilibrate before recording the temperature.

End Set

Date - the date when the setting operations ended (the last piece of gear was put into the water). Use the standard date format.

Time - Use **Hawaii Standard Time (HST)** to record the exact time when the setting operations ended. Write the times using the 24-hour clock. **DO NOT** round the time to the nearest 5mins, 10mins or 15mins. Document any situations that prevent you from obtaining exact times.

Latitude - the latitude of the vessel at the end of the setting operation. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter N in the trailing block for Northern Hemisphere and S for the Southern Hemisphere (ex: 21° 18.3' N). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Longitude - the longitude of the vessel at the end of the setting operation. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter E in the trailing block to indicate East longitude and W for West longitude (ex: 157° 55.3' W). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Weather Code - record the 2-digit number representing the weather conditions at the end of the setting operation.

Beaufort Scale - record the Beaufort sea state number 0-10 describing sea conditions at the end of setting operation. Refer to the reference tables in your manual and at the bottom of the form.

Sea Surface Temperature - record the *in situ* sea surface temperature as a 3-digit number to the nearest 0.1 degree Fahrenheit. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued backup thermometer.

Haul Information Block

Begin Haul

Date - the date when the haul back operation is begun (the first piece of gear was pulled out of the water). This is almost always a radio buoy, and is considered *Float No. 1* for counting purpose on the catch record. Use the standard date format (i.e., DD MMM YYYY).

Time - Use **Hawaii Standard Time** (HST) to record the exact time when the haul back operations start. Write the times using the 24-hour clock. **DO NOT** round the time to the nearest 5mins, 10mins or 15mins. Document any situations that prevent you from obtaining exact times.

Latitude - the latitude of the vessel at the beginning of the haul back. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter N in the trailing block for the Northern hemisphere, and S for the Southern hemisphere (ex: 21°18.3'N). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Longitude - The longitude of the vessel at the beginning of the haul back. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter E in the trailing block to indicate East longitude and W for West longitude (ex: 157°55.3'W). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Weather Code - Record the 2-digit number representing the weather conditions at the end of the setting operation.

Beaufort Scale - Record the Beaufort sea state number 0-10 describing sea conditions at the end of setting operation. Refer to the reference tables in your manual and at the bottom of the form.

Sea Surface Temperature - Record the *in situ* sea surface temperature as a 3-digit number to the nearest 0.1 degree Fahrenheit. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued backup thermometer.

End Haul

Date - The date when the haul back operation is ended (the last piece of gear was pulled out of the water). Use the standard date format.

Time - Use **Hawaii Standard Time** (HST) to record the exact time when the haul back operations end. Write the times using the 24-hour clock. **DO NOT** round the time to the nearest 5mins, 10mins or 15mins. Document any situations that prevent you from obtaining exact times.

Latitude - The latitude of the vessel at the end of the haul back. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter N in the trailing block for Northern Hemisphere, and S for the Southern Hemisphere (ex: 21°18.3'N). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Longitude - the longitude of the vessel at the end of the haulback. Enter Degrees, Minutes, and Tenths of Minutes. Obtain positions from the vessel's GPS unit, or your handheld. Enter E in the trailing block to indicate East longitude and W for West longitude (ex: 157°55.3'W). **DO NOT** record positions from the captain's logbook without noting this in the comments section.

Weather Code - record the 2-digit number representing the weather conditions at the end of the haulback.

Beaufort Scale - record the Beaufort sea state number 0-10 describing sea conditions at the end of the haulback operation. Refer to the reference tables in your manual and on the bottom of the form.

Sea Surface Temperature - record the *in situ* sea surface temperature as a 3-digit number to the nearest 0.1 degree Fahrenheit. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use your issued, backup thermometer.

Set/Haul Events

Haul Back Direction Code - Enter the appropriate 2-digit code to indicate which end they started hauling the gear from. If the haul back commences more than five (5) floats from an end, select 03 (Other) and describe the float number and situation in the Comments section

Line Parted? - Place a check mark or X in the box if the main line unintentionally parted while the gear was hauled. If the crew cuts the line to fix a bad section or cut out a bad line tangle, do not count that as a line part.

Number of Sections Retrieved - If the main line parts, enter the number of pieces that were hauled back. For example, if the main line parts one time and all of the gear was retrieved, then you would enter 02 to indicate that two sections were hauled back. It is always one more section hauled back than the number of times the main line parted unless a section is lost. Enter descriptive remarks in Comments section if a portion of the main line is lost.

Set Interaction? - Place a check or X in the box if you observe a protected species interaction during the observed portion of the set. If there was an observed interaction (contact on gear), make sure to record the details in the **Protected Species Event Log** form and the appropriate Biological Data form. **Remember to write down a sentence or two** about the interaction in the comments section of this form.

Haul Interaction? - Place a check or X in the box if there was a protected species interaction during the haul back. If you observe a protected species make contact, get hooked or entangled during hauling operations or have a protected species come up in the gear place a check or X in the box. If there was an observed interaction, make sure to record the details in the PSEL form, the CEL form, and the appropriate Biological Data form. **Remember to write down a sentence or two** about the interaction in the comments section of this form.

Comments - Use this section to describe any particulars that could not be codified from the available data element choices. If any data elements were left blank, record what was left blank and why the information could not be collected, in this section. If you run out of room, indicate that there are notes elsewhere, and continue on another form. Unknown objects/animals also get recorded in this section since they can not be put on the Catch Event Log. Record the hook and float number whenever possible for these situations. Ensure that you record a very brief statement about protected species interactions in this section. For example; *Leatherback, float 45/hook 19, hooked and released Injured*

Weather Code Table

01 - Clear

07 - Thunderstorms

02 - Partly Cloudy

08 - Rand and Fog

03 - Cloudy (one or more layers)

09 - Fog/Thick Haze

04 - Drizzle

10 - Snow, or Rain/Snow Mix

05 - Showers

99 - Other

06 - Rain

Beaufort Scale*

<u>Sea Surface State</u>	<u>Beaufort</u>	<u>Wave Height</u>	<u>Wind Speed</u>
Surface is like a mirror	0	0ft	less than 1kt
Ripples, looks like scales, no foam	1	1/4ft	1-3kts
Small wavelets, glassy crests, not breaking	2	1/2ft	4-6kts
Large wavelets, crests break, some scattered whitecaps	3	2ft	7-10kts
Small waves, (1-4') becoming longer, numerous whitecaps	4	1-4ft	11-16kts
Moderate waves (4-8') longer form, many whitecaps, some spray	5	4-8ft	17-21kts
Larger waves forming (8-13'), whitecaps everywhere, more spray	6	8-13ft	22-27kts
Sea heaps up (13-19') white foam from breaking waves blown into streaks.	7	13-19ft	28-33kts
Moderately high waves (18-25') of greater length, edges of crests break into spindrift, foam is blown into well marked streaks	8	18-25ft	34-40kts
High waves (23-32') vessel rolling starts, foam in dense streaks, spray may reduce visibility	9	23-32ft	41-47kts
Very high waves (29-41') with overhanging crests, sea looks white, foam blown in dense streaks obscuring visibility, heavy rolling of vessel	10	29-41ft	48-55kts

*The Beaufort Scale is best used as a way to determine the approximate wind speed in nautical miles/hour (kts) based on the appearance of the sea surface. It was developed in a time when anemometers (measures wind speed) were not commonly found on vessels. Reading the chart *backwards*, *i.e* taking a known wind speed and trying to match the observed sea conditions on the chart will result in an error.

The wave heights and surface conditions, as described for the Beaufort Scale require long periods of sustained winds over large areas of open water (fetch). Surface conditions may not match the chart if the winds are short in duration or the area(s) exposed to them are not large enough. There are two additional levels, 11 and 12, that are not included in this chart.

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Trip No.

L	L	0	7	1	1
---	---	---	---	---	---

Set No.

0	1
---	---

Logbook Page No.

			5	2	2	2	2
--	--	--	---	---	---	---	---

Set and Haul Information

Begin Set

Date/Time Day Month Year Hour Minute

1	7	F	E	B	2	0	1	6	1	0	4	2
---	---	---	---	---	---	---	---	---	---	---	---	---

End No.

1

Latitude Deg. Decimal Min. N/S

2	3	S	7	.	7	N
---	---	---	---	---	---	---

Longitude Deg. Decimal Min. E/W

1	6	3	S	2	.	2	N
---	---	---	---	---	---	---	---

Weather Code

0	1
---	---

Beaufort Scale

0	3
---	---

Sea Surface Temperature

7	9	.	5
---	---	---	---

 Degrees F.

End Set

Date/Time Day Month Year Hour Minute

1	7	F	E	B	2	0	1	6	1	6	1	2
---	---	---	---	---	---	---	---	---	---	---	---	---

End No.

2

Latitude Deg. Decimal Min. N/S

2	3	S	3	.	8	N
---	---	---	---	---	---	---

Longitude Deg. Decimal Min. E/W

1	6	4	S	1	.	9	N
---	---	---	---	---	---	---	---

Weather Code

0	3
---	---

Beaufort Scale

0	3
---	---

Sea Surface Temperature

7	9	.	5
---	---	---	---

 Degrees F.

Begin Haul

Date/Time Day Month Year Hour Minute

1	7	F	E	B	2	0	1	6	1	8	3	7
---	---	---	---	---	---	---	---	---	---	---	---	---

Latitude Deg. Decimal Min. N/S

2	3	S	3	.	8	N
---	---	---	---	---	---	---

Longitude Deg. Decimal Min. E/W

1	6	4	S	1	.	8	N
---	---	---	---	---	---	---	---

Weather Code

0	3
---	---

Beaufort Scale

0	3
---	---

Sea Surface Temperature

7	9	.	3
---	---	---	---

 Degrees F.

End Haul

Date/Time Day Month Year Hour Minute

1	8	F	E	B	2	0	1	6	0	8	2	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Latitude Deg. Decimal Min. N/S

2	3	S	4	.	8	N
---	---	---	---	---	---	---

Longitude Deg. Decimal Min. E/W

1	6	4	S	0	.	2	N
---	---	---	---	---	---	---	---

Weather Code

0	1
---	---

Beaufort Scale

0	2
---	---

Sea Surface Temperature

7	9	.	1
---	---	---	---

 Degrees F.

Weather Codes

- 01 Clear
- 02 Partly cloudy
- 03 Layers of clouds
- 04 Drizzle
- 05 Showers
- 06 Rain
- 07 Thunderstorms
- 08 Rain and fog
- 09 Fog/thick haze
- 10 Snow, rain/snow mix
- 99 Other

Beaufort Scale

- 00 Surface like a mirror 0 ft
- 01 Ripples like scales, no foam .25 ft
- 02 Sm. wavelets, glassy crests .50 ft
- 03 Lg wavelets, some whitecaps 2 ft
- 04 Sm. waves, numerous whitecaps 4 ft
- 05 Mod. waves, some spray 6 ft
- 06 Lg. waves, more spray 10 ft
- 07 Sea heaps up, spray & foam 14 ft
- 08 Mod. waves, foam in streaks 18 ft
- 09 High waves, rolling, reduced vis. 23 ft
- 10 Very high waves, hanging crests, heavy rolling 29 ft

Set/Haul Events

Haul Back Dir. Code

0	2
---	---

- 01 Begin Set
- 02 End Set
- 03 Other

Line Parted?

No. Sections Retrieved

0	4
---	---

Protected Species Interactions

- During Set?
- During Haul?

Comments

Squid Float #79
hook #7

Fig. 6.1. Set and haul Information form example.

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Chapter 7 Gear Configuration

Introduction & General Instructions

The Gear Configuration form is a record of longline fishing gear characteristics. The data on this form is used to describe specific parts of the gear and give an overall picture of the vessels gear configuration. Vessels may occasionally change or alter their gear according to local conditions. This data can be used with other observer collected data elements to determine the effects on the catch of protected species as well as on target species.

This form should be filled out before fishing operations begin. Most data elements on this form are only filled out for the first set, but some must be recorded for each set. An easy way to remember is **the top half of the form gets filled out for every set while the bottom half gets filled out for the first set and only thereafter if something changes.** An example of a gear change would be if the vessel has a second tote of float lines with a different average length that they switch to during the trip.

Data Elements

Trip No. - Record the number of the cruise assigned by the Port Coordinator.

Set No. - Record the number of the set.

Hooks/Floats Block- Record this for each set

Hook Characteristics Table:

Hook Type Codes - Hook Type Codes - Select the appropriate code indicating the type of hooks used in this configuration. Use the *longline terminal gear identification guide* issued with your gear to determine the type of hook. **Photograph** each type and size of hook being used against the identification guide. (refer to fig. 7.2 for hook type examples and fig. 7.1 for an example of the desired photos.) If the code 06 (Other) is used, describe the hook in the comments section of the first set and ask for a hook as an example to bring into the office. Fill out one line for each type and each size of hook being deployed. You may need to use the same code twice if there are multiple sizes of the same hook type.

Codes

06-Anything that does not match code 08 or 09.

08-Offset Round Circle hook has no flat edges along its shank. (refer to fig. 7.2)

09-Offset Flat Circle hook will have at least some portion of its shank flattened. (refer to fig. 7.2)

How to determine if a hook is offset - Hold the hook with both the eye and point pointing upwards with the point in line and in front of the shank. If the point does not line up exactly with the shank, it is offset. Also, if the hook does not lay flat on both sides with the point in line with the shank, it is offset. Offset hooks do not lay flat.

Hook Size - Record the size of the hooks used (refer to fig.7.1 for directions and an example). Ignore “aught” (zero) designations. For example, a 15/0 (“15 aught”) hook would be entered as 15. Some hooks (e.g., tuna hooks) may have a metric measurement, such as 3.6 sun. In that case, disregard the decimal point and enter the size as 36. Tuna hooks are an example of Type Code 06.

When Determining hook size use the **Longline terminal gear identification guide** issued to you with your gear. To determine hook size lay the hook against the hook diagram covering up the correct hook size. Make sure to match up the hook as close as possible to the outline in the book. The correct hook size is the one that shows as little black on the diagram as possible. Take a **photo** of each hook type and size against the chart. If you are unsure if it is a match bring back a hook to the office. Do not forget to note whether the hook is offset or not.



Fig. 7.1 Hook sizing technique.

Hook Diameter (mm) - Use your Vernier calipers to measure the diameters of **5 of each type and size** of hook. Measure the diameter along the fully round portion of the shank of the hook (If it is a flat type circle hook the round portion is located near the eye of the hook). For example, if you have 14/0 offset flat circle hooks, 15/0 offset round circle hooks, and 15/0 offset flat circle hooks you will need to measure 15 hook diameters. **All measurements** must be recorded on the back of the form in the **comments** section of the **first set**. The **predominant** measurement will be the number you record in this field. If there is no predominant measurement after 5 measurements, measure hooks until there is one. If there are more than 4 hook types/sizes record the least predominant hook type/size in the comments section of the first set. The point you choose to measure must be free from defects or deformations and must be fully round. If you have difficulty collecting this measurement, or are unsure of your measurement, take a picture of the problem, and try to bring the hook back into the office.

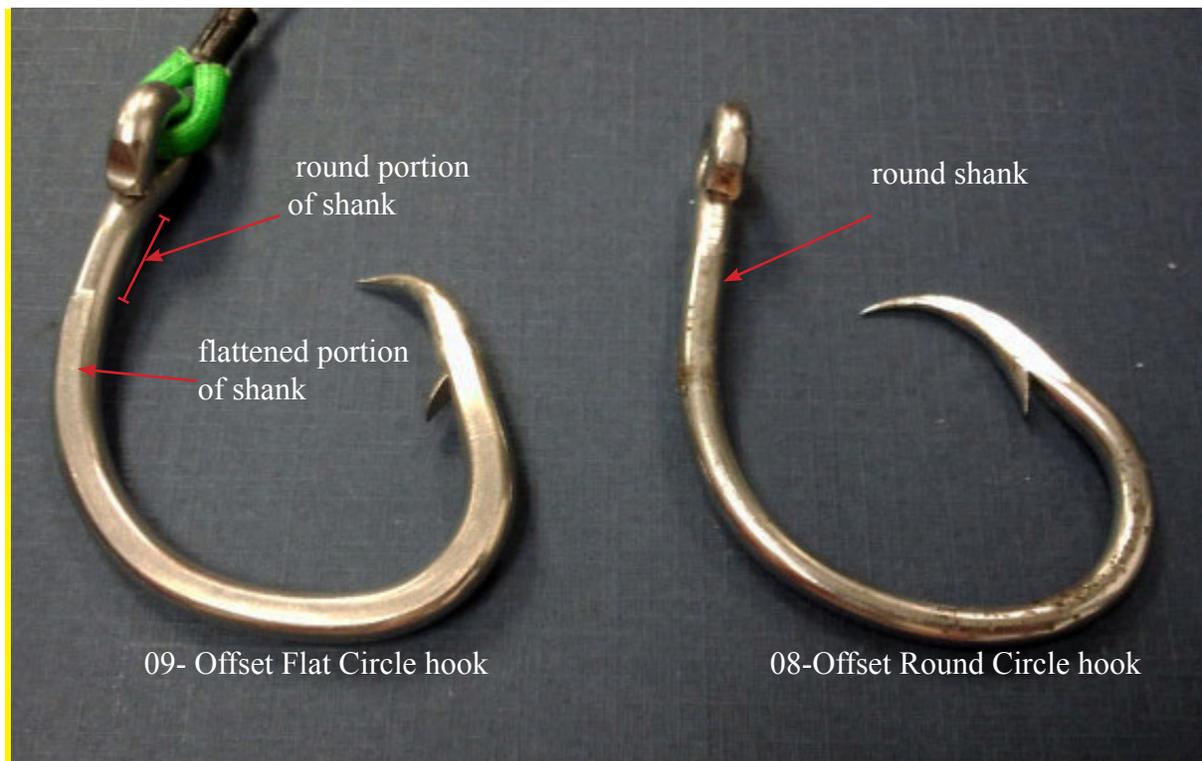


Fig. 7.2 Round and Flat Circle Hooks Comparison

Hooks % - For each type of hook being used, estimate what percentage of the totals hooks is comprised of each type/size. For example: If 3000 hooks are 15/0 offset flat circle hooks and 1000 hooks are 14/0 offset flat circle hooks you would record 75% for the 15 line in the table, and 25% for the 14 line. Try to get the best estimate as possible. You can get this estimate by measuring a subset of hooks.

No. Floats - Record the number of float lines used on this set to suspend the gear in the water column. There is usually one float attached to each float line, but this is not always the case (i.e.: radio buoys). Radio buoys are considered floats and counted the same as the other floats. Occasionally some crews will connect 2-3 floats together to one float line. In these cases, all the connected floats would be counted as one (**1 float line = 1 float**). This number should be obtained by tallying the floats as they come up during the haul.

Hooks Per Float - Record the typical number of hooks deployed between the floats. The area between floats is called a basket. (refer to fig. 7.3) Count several baskets of gear during the set to find the predominant number, and confirm during the haul. If the crew is inconsistent in how many hooks they set per basket, note this in the comments section. If there are empty baskets where no hooks are set between floats, note this in the comments section. These **comments** are necessary for the **first set** and **any set** thereafter that **differs from the first**.

No. Hooks Set - Record the total number of hooks deployed on each set. Attain this number by **counting** all the hooks/branch lines in the boxes **before the setting operations** start each day. **After the setting is completed**, count the remaining hooks/branch lines and subtract from the first count. Record your counts in the **comments** section for **each set**. As branch lines are repaired or manufactured, be sure to include these in your counts. It is advisable to ask the captain or crew daily how many lines were made. If the lines were made during the haul, you should be able to incorporate them into your begin set count. There are times when it is impossible to get a total count before the set due to the hooks being inaccessible. In these situations try to get the count during the haul while the hooks are accessible. If this is not possible or is disrupting to fishing operations then an average may be used. Only use averages for hooks that cannot be physically counted. Document any variation to the counting method in the **comments** section along with any equations used for **each set** where this methodology had to be utilized.

Fishing Techniques Block - Record this for each set

Target Species Code - Enter the 3-digit code from the Species Code List (Chapter 21).

Bait Code - Enter the 2-digit code from the list to indicate which bait was used on this set. Small squid (code 02) are 4 to 7 inch long calamari-sized squid. If the bait code is 05 (Mixed), or 06 (Other), describe in the **comments** section the approximate amounts or percentages for each set. If you are unsure of what the bait type is, take a picture. Examples: “Mixed bait, 80/20 sanma/sardines” or “8 cases sanma, 2 cases sardines”

Light Devices Block - Record this for each set

Type Code - Enter the 2-digit code representing the type of light device, if any, attached to the gear to help catch fish. This does not include strobes or other lights attached to floats or radio buoys. These lights are used to help locate the gear if the main line parts. If you use code 03 (Other), describe the device with notes in the **comments** section. If you use code 00 (None), leave the No. Devices and Color Code elements blank. Some vessels use small glow-in-the-dark plastic wedges near the hook on the branch lines to help hold the wire leader loop open. These are not considered light devices and should not be counted as such.

No. Devices - Record the number of light devices deployed on this set. You do not need to count every light stick that is deployed individually. You can get an estimate based on hook count and the placement on branch lines. An example would be if they put one on every other branch line or 3 out of 4 branch lines between each float. In other words, it is acceptable to do calculations based on baskets set and number of light sticks placed on a basket. Please include these calculations in the **comments** section **for each set**.

Color Code - Record the color light the devices emit. If you use code 08 (Mixed), describe the colors used and approximate percentages in the **comments** section for **each set**.

Main Line Block - Record this for the first set only

Material Code - Select the appropriate code. If the code is 03 (Other), describe the material in the comments section, and collect a short sample. If the main line is constructed of two or more different materials, record the material code of the predominant material in the space provided on the form. Record the less predominant materials and approximate amounts in the **comments** section of the **first set**.

Diameter - Measure the main line in at least **three** places using your Vernier calipers. Record the average diameter of the main line to the nearest tenth of a millimeter (0.1 mm). Try to choose round areas of mainline to measure. If the main line is constructed of two or more different materials/colors with different diameters, record the diameter of the longest length of main line in the space provided on the form. Record less predominant diameters in the **comments** section of the **first set**. Example: A vessel has a main line composed of two different types of monofilament line of two different diameters. One piece is 25 miles long and 3.6 mm in diameter. The second is 7 miles long and 4.1 mm in diameter. In this case you would record the data on the 25-mile piece on the front of the form, and the information on the shorter, 7- mile piece in the **comments** section of the **first set**.

Color Code - Select the appropriate code indicating the color of the branch line. If the code is 09 (Other), describe in the **comments** section of the **first set**. If the main line is constructed of different colors, record the color code of the majority of material in the space provided on the front of the form. Record the color and estimated percentage of the less predominant colors in the **comments** section of the **first set**.

Float Line Block - Record this for the first set only

Material Code - Select the appropriate code. If the code is 03 (Other), describe the material in the comments section, and collect a short sample if possible. If the float line is constructed of two or more different materials, record the material code of the predominant material in the space provided on the form. Record the less predominant materials and approximate amounts in the **comments** section of the **first set**. Multi- 02 (refers to rope) is the most common example of a float line.

Diameter - Measure at least **three** typical float lines using your Vernier calipers. Record the average diameter of the float line to the nearest tenth of a millimeter (0.1mm). If the float line is constructed of two or more different materials with different diameters, record the diameter of the longest length of float line in the space provided on the form. Record the diameters of the shorter materials in the **comments** section of the **first set**. Example: A vessel is using float lines composed of two different types of materials with different diameters. One section is 18.2m long and 4.8mm in diameter. The second is 2.4m long and 5.9mm in diameter. In this case you would record the diameter of the 18.2m section on the front of the form, and the information on the shorter 2.4m portion of the float line in the **comments** section of the **first set**.

Measured Length - Measure at least **three** typical float lines using your 2m calipers. Record the average length of the float lines to the nearest tenth of a meter (0.1m). Measure the line from end to end without the float attached to it. If the float line is constructed of two or more materials; measure all of the materials together as a single length. Record the measurements and calculations in the **comments** section of the **first set**.

Branch Line Block - Record this for the first set only

Material Code - Select the appropriate code. If the code is 03 (Other), describe the material in the comments section, and collect a short sample. If the branch line is constructed of two or more different materials, record the material code of the predominant material in the space provided on the form. Record the less predominant material, (its material code, average diameter, and average length) in the **comments** section of the **first set**. This often happens with a small section of red braided cord (Bloodline) that is attached to the snap. Example: If a branch line was made of 2.5 m of multifilament line and 10.5 m of monofilament line, you would enter the code for monofilament on the form and record the secondary material in the comments.

Diameter - Measure at least **three** typical branch lines using your Vernier calipers. Record the average diameter of the branch line to the nearest tenth of a millimeter (0.1mm). If the branch line is constructed of two or more materials with different diameters, record the diameter of the longest length of branch line in the space provided on the form. Record the diameters of the shorter materials in the **comments** section of the **first set**.

Measured Length - Measure at least **three** typical branch lines using your 2m calipers. Record the average length of the branch lines to the nearest tenth of a meter (0.1m). Measure from the top of the snap to the line section that is directly attached to the hook. This is usually to below the weight however if there is two types of materials below the weight, the material closest to the weight is measured as part of the branchline. **If the branch line is constructed of two or more materials; measure all of the materials together as a single length.** (refer to fig. 7.4)

Color Code - Select the appropriate code indicating the color of the branch line. If the code is 09 (Other), describe in the **comments** section of the **first set**. If the branch line is constructed of different materials of different colors, record the color code of the majority of material in the space provided on the front of the form. Record the color of the other material used to construct the branch line in the **comments** section of the **first set**.

Leader Block - Record this for the first set only

Material Code - A "leader" is a section of line that is directly attached to the hook. Select the appropriate code. If the code is 03 (Other), describe the material in the **comments** section, and collect a short sample if possible. Twisted monofilament is an example of the "other" code. If different branch lines have leaders that are different materials, record the percentages of materials used (names of the materials and the average diameters) in the **comments** section on the back of the **first set**.

Diameter - Measure at least **three** typical leaders using your Vernier calipers. Record the average diameter of the leaders to the nearest tenth of a millimeter (0.1mm). This should be left blank for twisted monofilament and a **comment** should be written on the back of the **first set**.

Measured Length - Measure at least **three** typical leaders using your 2m calipers. Record the average length of the leader to the nearest tenth of a meter (0.1m). Measure from the eye of the hook to the end of the material. If there's more than 1 type of material between the hook and the weight/swivel, **only measure the material attached to the hook**. (refer to fig. 7.4)

Weight Size - Record the predominant size of the weights used in grams on the front of the form. If weights of different sizes are used, take an estimate of the different sizes and record the percentages in the **comments** section of the **first set**. If you cannot determine the weight size ask the captain for one to bring back to the office.

Comments - Comments that do not change are recorded on the first set only

This section is used to record equations and any information that doesn't get summarized on the front of the form such as secondary gear composition, hook and empty basket counts, measurements, and all comments regarding any unusual situations, or variations in gear. There is no need to repeat comments from a previous set, only comment on gear information that has changed; such as a changing no. of empty baskets, changing float length averages, or any math that must be recalculated.

Examples:

Hook counts - Before and after counts and any computation involved if a different methodology had to be used.

Hook diameters - At least 5 hook diameters for every type and size of hook.

Line measurements - At least 3 diameter and length measurements for float lines, branch lines, and leaders and their averages.

Secondary materials - The types of materials along with three diameter and length measurements and their averages and the estimated % of gear makeup.

Secondary bait, weights, and light device types - If two or more kinds are used, record the less predominant and the estimated % of each.

Empty baskets set - This includes empty baskets at the beginning and end of the set along with any you notice during the haul.

Light device estimates - Please include the methodology and any equations you used to obtain light device estimates.

***For deeps sets** - Please remember to comment on any float lines less than 20m and any baskets you notice with less than 15 hooks.

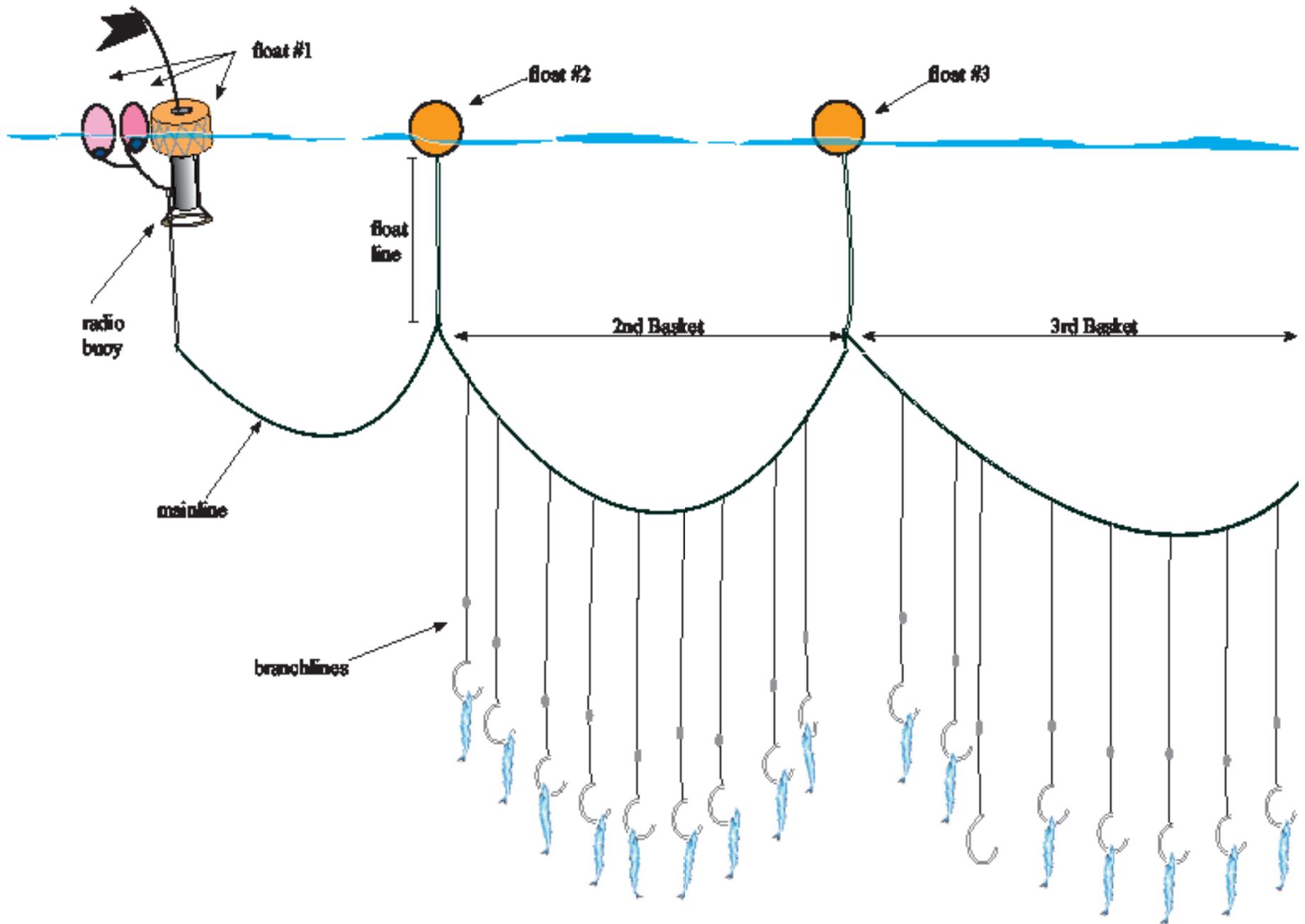


Fig. 7.3 Pelagic longline gear diagram.

Branch Line Diagrams

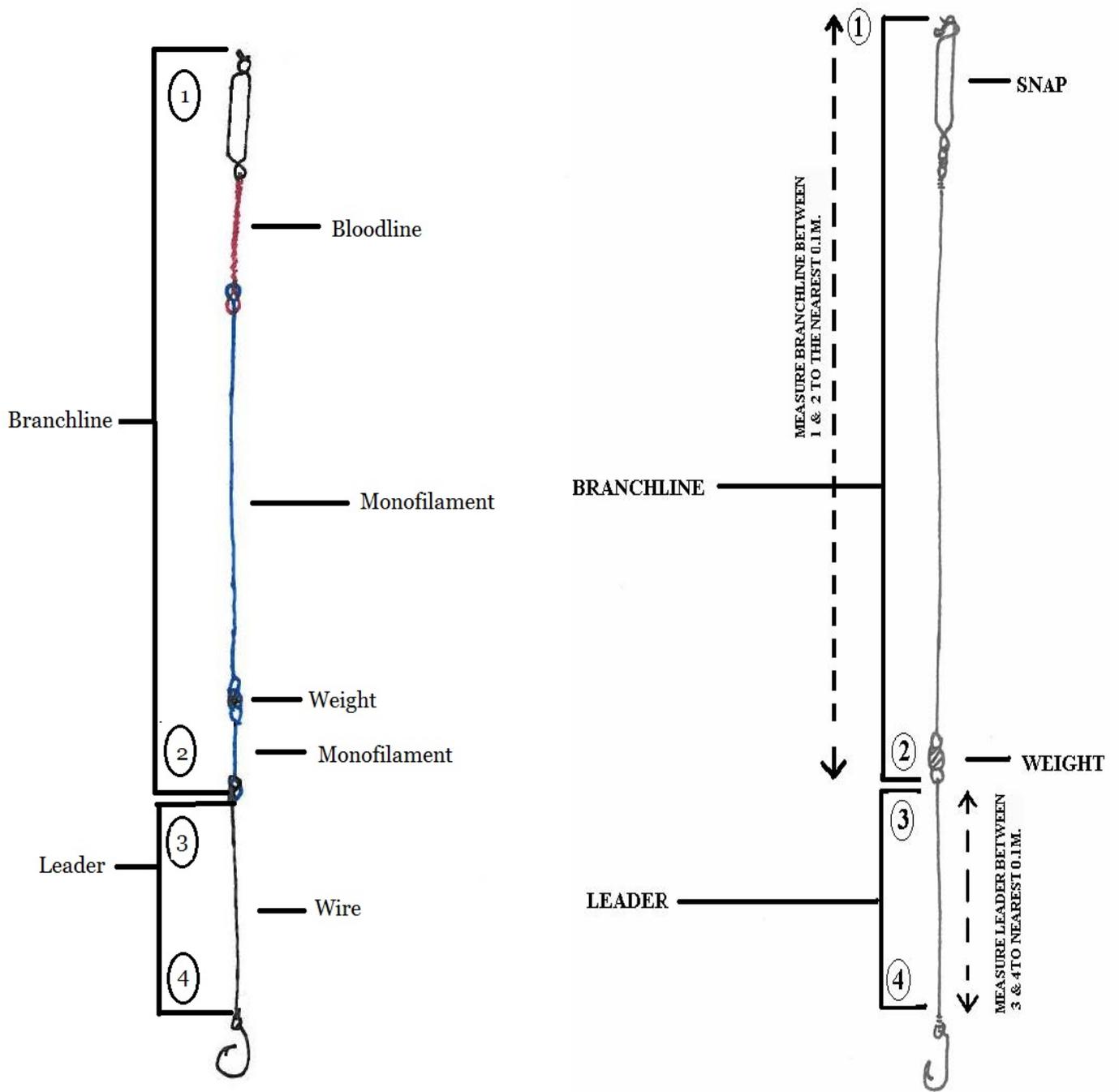


Fig.7.4

- Points 1 and 2 indicate the points to measure to obtain the branch line length.
- Points 3 and 4 indicate the points to measure to obtain the leader length.

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Trip No.

Set No.

Gear Configuration

Hooks/Floats

- 06 Other
- 08 Offset Round Circle
- 09 Offset Flat Circle

Hook Characteristics

Hook Type Code	Hook Sizes	Hook Diameter (mm)	Hook %
08	15	4.0	100

No. Floats Hooks Per Float No. Hooks Set

Fishing Techniques

Target Species Code

Bait Code

- 01 Large Squid 05 Mixed
- 02 Small Squid 06 Other
- 03 Saury (Sanma) 07 Sardine
- 04 Mackerel (Saba)

Light Devices

Type Code

00 None 01 Light Stick

No. Devices

Color Code

- 01 Blue 06 Yellow 11 Red
- 02 Green 07 Magenta 12 Orange
- 03 Black 08 Mixed 13 Silver/Metal
- 04 Pink 09 Other
- 05 White 10 Clear

Collect information for Data Elements below for first set only unless there is a change on subsequent sets

Main Line

Material Code

01 Mono 03 Other
02 Multi

Diameter mm

Color Code

- 01 Blue 06 Yellow 11 Red
- 02 Green 07 Magenta 12 Orange
- 03 Black 13 Silver/Metal
- 04 Pink 09 Other
- 05 White 10 Clear

Float Line

Material Code

01 Mono 03 Other
02 Multi

Diameter mm

Measured Length m

Branch Line

Material Code

01 Mono 03 Other
02 Multi

Diameter mm

Measured Length m

Color Code

- 01 Blue 06 Yellow 11 Red
- 02 Green 07 Magenta 12 Orange
- 03 Black 13 Silver/Metal
- 04 Pink 09 Other
- 05 White 10 Clear

Leader

Material Code

01 Mono 03 Other
02 Wire

Diameter mm

Measured Length m

Weight Size g

Fig. 7.5. Gear configuration example.

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

From front of
this form

Trip No. LL0711

Set No. 01

Gear Configuration Comments

One empty basket @ beginning and end of set. Comments

Main Line

Diameter:
4.0 mm 4.0 mm
4.0 mm

Float Line

Diameter: ~~6.2 mm~~ 6.0 mm 5.8 mm
= 18 mm / 3 = 6.0 mm
Length:
24.0 m 24.6 m 23.9 m
= 72.5 m / 3 = 24.2 m

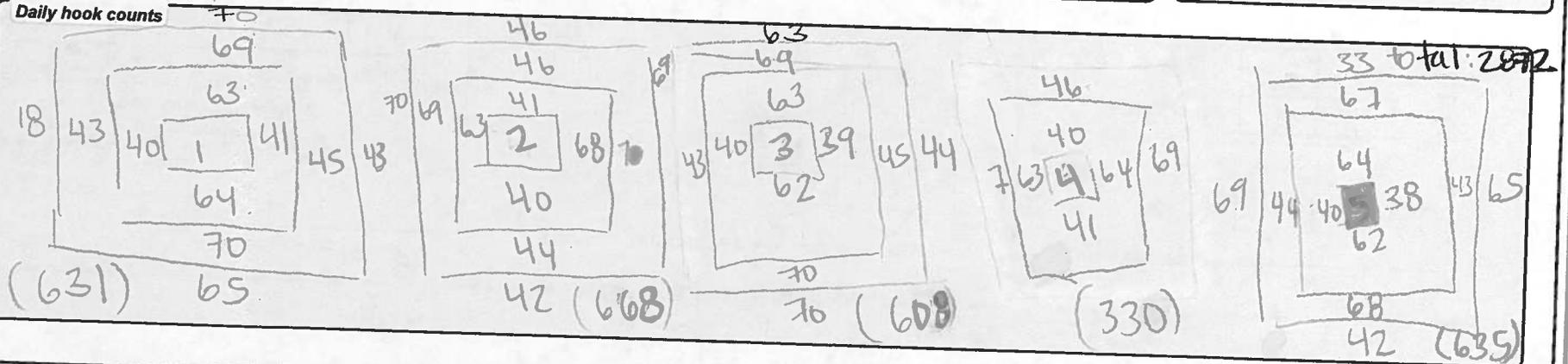
Branch Line

Diameter:
1.7 mm 1.6 mm 1.7 mm
5.0 mm / 3 = 1.7 mm
Length:
13.7 m 13.9 m 13.2 m
= 40.8 m / 3 = 13.6 m

Leader

Diameter:
1.2 mm 1.0 mm 1.0 mm
3.2 mm / 3 = 1.1 mm
Length:
0.5 m 0.5 m 0.5 m
1.5 m / 3 = 0.5 m

Daily hook counts



Chapter 8 Protected Species Event Log

Introduction

The Protected Species Event Log (PSEL) is where data describing the nature and numbers of protected species observed in association with longline fishing operations are recorded. This form encompasses data from sightings and interactions which have been categorized into three types of events: Behaviors, Contacts, and Scans.

Behaviors (B)- Descriptions of marine mammal, sea turtle, or Short-tailed Albatross sightings that do not involve contact with the fishing gear. In general, this event type is used to describe all recorded sightings and marine mammal attempts on gear that do not lead to contacts. Described behavior data can be a critical tool in managing protected species, and this information is highly valuable to NMFS.

Contacts (C)- Events where an animal other than a seabird is observed coming into contact with any part of the gear are **Contacts**. Data from animals observed getting caught as a result of gear contact are also recorded on the Catch Event Log (Ch.10). Instances when protected species are observed consuming bait or catch which has been removed from, or fallen off the gear are not classified as contacts. Seabirds that land on, or come into contact with the boat or buoys are not considered contacts. If you have a protected species come up on a hook or is entangled in the gear, *but you did not actually observe it happening* then DO NOT record this on the PSEL; it will be recorded on the Catch Event Log and other pertinent forms, such as the Biological data forms.

Scan Count (Seabirds only) (S)- This event type is only used to describe seabird sightings at prescribed times. Seabird sightings outside of scan counts should only be recorded for Short-tailed albatross. Birds observed on buoys are only recorded during scan counts. Scan counts should only include birds within 150 yds of the vessel (use your best judgment of distance) and are light dependent. A Scan Count is performed by doing a visual sweep around the vessel within a 5 minute window, to determine the species and number of seabirds around the vessel (not on it). Do not spend more than 5 minutes scanning for seabirds. DO NOT conduct scans while the vessel is traveling to a new spot, or searching for gear.

Special Notice for Short-tailed Albatross Observations

Short-tailed albatross observations are a high priority. Record ALL sightings no matter when you see one and try to get a photo IMMEDIATELY!

General Instructions - Observations of protected species can be separated into a series of steps based on changes in the behavior or condition of the animal(s). For example, a single event like an observed hooking could include such steps as:

1. The observed arrival, investigation, or sighting. (BEHAVIOR).
2. The observed contact with the fishing gear, whether this results in a capture or not (CONTACT).

Incidents that are clearly separated by relatively long periods of time should be considered separate events. This form allows observers to record information from a group of animals or a single individual. A group is defined as an association of animals behaving in a similar or unified manner. Groups composed of separate species get recorded on separate lines, but as one event.

During the Set

Seabird Scans During the Set - During setting operations, you will observe for seabirds at two periods in the hour immediately after the start of the set. You will do a scan count during a 5 minute window when they start setting (after recording Set and Haul data) and a second scan count 30 minutes after the start of the set. You will not do these scans if it is too dark to ID birds.

For example, if they start setting at 0812 then you would start your first scan count between 0812 and 0817. The second scan would be between 0842 and 0847. Only record your scan count if you can start within the 5 minutes window of prescribed time. If you missed the window, make a comment that the scan time was missed in the next scan's comment section. A scan count is performed by doing a visual sweep around the vessel to determine the species and number of seabirds around (not on) the vessel. After you've done a scan count for seabirds, you will need to record the following data elements on the PSEL. Do not record any positions during scan counts.

Data Recorded for Scan Counts:

1. Page number
2. Date & start time
3. Event type code
4. Activity of the vessel
5. Set number
6. Species Code
7. Species count (best estimate)
8. Association code (only if more than 1 species is observed during the same event)

If multiple species are observed during the same scan period, **each species is to be recorded on its own line**. All required data, elements, except the date and time, are to be recorded for each line of the same scan. Subsequent lines of the same scan can use “ for the date/time information. The associations must be filled in if there is more than one line for a single event.

If you don't see any birds during a scan count, you will still need to record the data; leave the species code blank, and the number of birds will be recorded as zero. If you see birds after you've completed a scan count, even one minute later, do not record them as being observed during the scan count since they were not there when you did your scan. They will be included as birds present on the Seabird Mitigation form (chapter 9).

Contacts During the Set

All incidents of marine mammals or sea turtles observed becoming hooked or entangled with the gear should be recorded on the PSEL as soon and completely as possible. Each marine mammal or sea turtle observed making contact with the gear get it's own line.

During the setting operations, any seabirds observed becoming hooked or entangled ARE NOT RECORDED on the PSEL. Under ideal circumstances, even experienced field workers attempting to accurately quantify seabird numbers during fishing operations would be hard pressed to record data as precisely as one might desire.

NMFS and USFWS are aware of the realities of working at sea. **Even imprecise estimates of the numbers of interactions, species involved with associated time / location factors are useful.**

At times, you may only be able to get the lat/lon coordinates from the GPS receiver after the interaction is over. It is acceptable to record the lat/lon coordinates at the next possible opportunity that does not jeopardize your other duties. When there has been a period of several minutes between the time of the interaction and when you were able to record the lat/lon coordinates, make a note of when you were finally able to record the coordinates in the Comments section.

During the Haul

Seabird Scans During the Haul - During the haul back operations, record seabird sightings and numbers by performing a Scan (S). Haul scans will be conducted **once** during the haul back of each set. The haul scan should be performed within a 5 minute window at the start of the haul.

If for some reason you are not able to perform a scan at the prescribed time, skip it and document why it was not done by making a note in the comments section that the scan was skipped. Do not do scan counts if it is too dark to identify birds to type. Do not record position data for scans. The same data elements recorded during the Set Scan are also recorded for the Haul Scan.

If multiple species are observed during the same scan, **each species is to be recorded on its own line**. All required data elements, except the date and time, are recorded for each line of the same scan. Subsequent lines of the same scan can use “ ” for the date/time information. The associations must be filled in if there is more than one line for a single event.

If you don't see any birds during a scan count, you still need to record the data; leave the species code blank, and the number of birds will be zero (0). If you see birds after you've completed a scan count, even one minute later, do not record them as being observed during the scan count since they were not there when you did it. They will be included as birds present on the Seabird Mitigation form (Ch. 8).

Contacts During the Haul - All incidents of marine mammals and sea turtles observed making contact or becoming hooked or entangled with the gear should be recorded on the PSEL as completely and as soon as possible.

Contacts that result in a Catch - During longline retrieval when a marine mammal or sea turtle is observed becoming hooked or entangled, record the steps up to the hooking/entanglement on the Protected Species Event Log and then the information (i.e., float and hook numbers, and condition information) about the catch/entanglement on the Catch Event Log form and the appropriate Biological Data form.

NOTE: If you did not actually observe the animal becoming hooked or entangled during retrieval, do not record the information on this form. In these cases, the data would be entered on the Catch Event Log form and the appropriate biological data form. Don't forget to check the interaction box on the Set and Haul Information form.

Data Elements

Trip Number - The unique 6-digit number assigned by the Operations Coordinator. In the first two blocks, record LL for longline. After the second block, enter the 4-digit number of the trip.

Protected Species Page No. - Enter 01 for the first PSEL form used, 02 for the second form used, etc.

Page No. - Enter the page number (same number as Protected Species Page No.) for every line that contains data. You may enter the page number on the first line and then draw an arrow down to the end. Do NOT start a new page for each set. Fill in all the lines, then start a new page.

Line Number- This element should be pre-filled.

Date/Time - The date and time the event occurred. Use the this date format DD MON YYYY, ex 12 Feb 2007. Time is standard, Hawaii Standard. Do Not Correct time for Daylight Savings.

Event Type Code - Enter the letter code that describes the type of event.

Event Type Codes List

B = Behavior, **C** = Contact, **S** = Scan (Scan Count), **X** = Event ended (B and C events only)

B - Behavior is used to signify that the data on that line describes an animal(s) exhibiting a specific pre-defined behavior from the Behavior Codes list. **Note:** This Event Type Code is used for any sightings of short-tailed albatross, and sightings of marine mammals and sea turtles.

C - Contact is used to signify that the data on that line describes an animal(s) that were observed making contact with the gear. Contact means hooking or entanglement. Do not count Contacts as instances where an animal touched the gear and did not get hooked or entangled. This Event Type Code should only be used if you saw the animal make the contact.

S - Scan or Scan Counts are used to signify that the data on that line(s) describes seabirds that were sighted during a specifically scheduled observation period. The "S" Event Type Code should not be used to describe seabirds observed preying on baited hooks or caught fish. Type S should not be used as the Event Type code when recording sightings of marine mammals or sea turtles. S is the only Event Type that will not have an end event X.

X - Event ended. This code is used to signify that an event is completed or your observations of the situation ceased. A catch-contact is ended when the animal is no longer attached to the gear. Every event, except for Scans, will end with an Event Type Code of X. After entering X in the Event Type Code Box, no additional information is required, except the association codes.

Vessel Activity Code - Record the activity of the vessel at the time of sighting.

Vessel Activity Codes List

01 - Gear Retrieval - Fishing gear is being brought back on board the vessel.

02 - Gear Set - Fishing gear is being deployed into the water.

03 - Gear Drift/Soak - Use only if gear is in the water after setting operations are completed and hauling or retrieval operations have not started.

07 - Other- Any code that does not fit the other descriptions.

Set Number - Record the set number if the vessel activity is setting, soaking, or retrieving. Sets are numbered consecutively for each observed trip beginning with 01. This number will be the same as on the Set and Haul Information form for this set.

Sighting Method - Enter the code that indicates the method by which you first became aware of the event. Leave this field blank for Scan Count events.

Sighting Method Codes List

01 - Sighted with naked eye

02 - Sighted with binoculars

09 - Other

Latitude and Longitude - Record the vessel's lat/lon coordinates from the GPS receiver or plotter at the time of the sighting. Record the minutes to the nearest tenth (only one place behind the decimal point; for example, 15^o 45.3' N or 153^o1 9.1'W). If you are unable to obtain the coordinates right away, record them as soon as you are able. You may encounter a situation where there are many changes in behavior in a short period of time. In a case like this, record the initial position and leave the coordinates in the following lines blank.

Direction N/S - Indicate the hemisphere of the latitude. North = N, South = S.

Direction E/W - Indicate the hemisphere of the longitude. East = E, West = W.

Species Code - Enter the 3-digit species code corresponding to the species you are recording (some commonly encountered species are listed at the bottom of the form). 600 and 601 species codes need comments on the back of the form for identification and/or explanation. Anytime the 600 and 601 code is used, comments must be recorded. Record all 600 members of the same family (e.g., Petrels) on the same line, with species noted in the comments section.

Behavior Code - Indicate the activity of the animal(s) by using the code that best describes the situation.

Behavior Codes List

01 - Physical Contact with Gear - The animal(s) were observed making contact with any part of the gear (including hooked bait, but not catch). Animals observed becoming hooked or entangled always get this code and are also recorded onto the Catch Event Log form.

02 - Attempt, no contact - An observed unsuccessful attempt to steal/feed on hooked bait or catch, but with no actual contact made. The animal(s) were observed making direct close approaches/dives at the gear or hooked catch, and were neither observed making contact nor showing evidence of making contact. *This code should not be used to record seabird activity on this form.*

03 - Near gear, within 50 m - Animal observed within 50 m of gear or vessel.

04 - Near gear, 51 to 150 m - Animal observed within 51 m to 150 m of gear or vessel.

05 - More than 150 m from gear- Animal is observed more than 150 m from gear or vessel. **DO NOT USE THIS CODE FOR BIRDS**

08 - Bow riding - The animal(s) were observed keeping pace with the vessel in front of the bow wave.

09 - Breaching - The animals were observed leaping or jumping clear out of the water and crashing down on flank, back, or belly.

10 - Swimming at surface - The animal(s) were observed to be at or just under the surface, not diving for long periods of time. They may be moving slowly.

12 - Motionless at surface - The animal(s) were observed floating at the surface and not moving.

15 - Feeding on discard- Animal(s) were observed feeding on discarded fish, fish parts, or bait that was thrown overboard.

16- Feeding on Catch-Animal(s) were observed feeding on fish that was still attached to gear. This does not include bait, and may only occur during the soak or haul. A fish on a hook is considered catch, and not fishing gear.

99 - Other - The animal(s) were observed exhibiting a behavior not described in the above available choices. *Please describe the behavior(s) on the back of the form in the Comments section.*

Species Count

Occasionally, you may observe a large group of mixed species, such as a flock of albatrosses or a large pod of dolphins. In these cases it may be difficult to accurately determine the number of individuals in the group(s). If the group is too large to get an actual count, record your best estimate.

Best Estimates - Record your best estimate of the number of individuals of this species present. Use leading zeros if entering a single digit. For Scan Counts, enter a zero “0” if no seabirds are seen.

Sketch Drawn? - Place a check mark or X in the box if you drew a sketch of the animal(s).

Photo Taken? - Place a check mark or X in the box if a photo was taken. Make sure to record the details on your Photo Log form.

Comment Written? - Place a check mark or X in the box if there are comments recorded. Always include comments about tended or untended lines whenever possible. **For protected species interactions/sightings please include identifying characteristics as well as a brief description of the situation.**

Association Code

The elements in this section associate which other lines or forms relate to this event. For example, if the event on line 3 is a continuation or the same event as line 2, the form code PS indicates that there is another preceding event on this log. The association code would tie line 3 with line 2. It is possible to have other forms other than the PSEL in association with an event. If an animal is observed becoming hooked or entangled, the form code CL will indicate that the capture information is in the Catch Event Log. **Just remember that association codes always connect with only one other line. You cannot have more than one association code with the same page and line numbers!** If you have one event with three different lines, the third line would associate with the second, and the second would associate with the first.

Form Code - The 2-letter abbreviation of each form title. It can be found in the lower right hand corner of each form. (PS for Protected Species Event Log, CL for Catch Log)

Page Number, Line Number - The page and line number of the form that contains the related information.

**DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program
Protected Species Event Log**

Trip No. 240711

Protected Species Page No. 01

Write *PSI comments* and *PSI Identifying Characteristics* for specific Protected Species Event Log records in the Comments Log.

Page No.	Line No.	Day	Month	Year	Hour	Minute	Event Type Code	Vess. Activity Code	Set No.	Sighting Method	Degree	Minute	Direction N/S	Degree	Minute	Direction EW	Species Code	Behavior Code	Best Estimate	Sketch Drawn ?	Photo Taken ?	Comment Written?	Form Code	Page No.	Line No.
01	1	17	FEB	2016	10	42	S	02	01										0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	2	17	FEB	16	11	12	S	2	01										0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	3	17	FEB	2016	18	37	S	01	01										0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	4	18	FEB	2016	06	27	S	02	02										0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	5	18	FEB	2016	06	57	S	02	02										0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
		18	FEB	2016	18	00	S	01	02										0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	7	19	FEB	2016	07	30	S	02	03								681		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
			FEB	2016	08	00	S	02	03								681		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	↓	11	11	11	11	11	S	02	03								682		1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	PS	01	08
01	20	FEB	2016	11	00		S	02	04										0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Event Type Codes
 B Behavior
 C Contact
 S Scan Count
 X Event Ended

Vessel Activity Codes
 01 Gear Retrieval
 02 Gear Set
 03 Gear Drift/Soak
 07 Other

Sighting Method Codes
 01 Sighted with naked eye
 02 Sighted with binoculars
 09 Other

Sea Turtles

Code	English Name
504	Loggerhead Sea Turtle
505	Olive Ridley Sea Turtle
506	Leatherback Sea Turtle
502	Green Sea Turtle
500	Unid. Hard Shell Sea Turtle

Most Common Protected Species

Marine Mammals	
Code	English Name
742	False Killer Whale
746	Risso's Dolphin
743	Short-Finned Pilot Whale
731	Bottlenose Dolphin
755	Humpback Whale

Seabirds

Code	English Name
681	Black-Footed Albatross
682	Laysan Albatross
601	Other Identified Bird

Behavior Codes

- 01 Physical contact w/gear
- 02 Attempt. no contact
- 03 Near gear, within 50 m
- 04 Near gear, 51 to 150 m
- 05 More than 150m from gear
- 08 Bow riding
- 09 Breaching
- 10 Swimming at surface
- 12 Motionless at surface
- 15 Feeding on discard
- 16 Feeding from gear
- 99 Other

Fig. 8.1. Protected Species Event Log example.

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Chapter 9 Seabird Mitigation Techniques

Introduction

The Seabird Mitigation form is used to record the mitigation techniques employed by the vessel during setting and retrieval operations. **The questions and comments are designed for monitoring compliance with fishing regulations.**

General Instructions

The mitigation techniques are recorded during the set and haul of the longline gear. Observers are required to observe the **first hour** of the set and the **entire gear retrieval**. This form provides a place for observers to record seabirds associated with fishing operations, and the techniques vessels employ to deter seabird interactions.

Any observed marine mammal or sea turtle **contact** during gear setting or retrieval, needs to be recorded on the PSEL form. Any observed contact that results in a **hooking or entanglement** is also recorded on the PSEL, and Catch Event Log (CEL). Also, complete the appropriate Biological Data Form with a Sketch.

Data Elements

During Observed Portion of Set Block

Place a check mark or X in the appropriate box for each deterrent used during the observed portion of the setting operations. **If the deterrent was not used throughout the first hour of setting operations, leave the box unchecked. Comment when appropriate.**

Number of Floats Observed During Set - Record the number of floats you watched being set during the hour of setting operations you observed. Use leading zeros as necessary.

Set at Night? - Check this box if the **Begin Set** time is **at least one hour after sunset**, and the set is completed at least one hour before sunrise. Use your issued GPS to figure out the time of local sunset. Do this by pressing menu-celestial-sun and moon after the GPS has been connected to the satellites for a couple of minutes.

Towed Buoy Used? - A buoy or any object towed behind the vessel that is intended to deter birds when baited hooks are deployed during the observed portion of the set. Describe this deterrent in the comments section and **take a photo of the device.**

Tori Line Used? - Check this box if a line **150 m** in length with intermittent swivels and streamers, towed behind the vessel that covers the area where baited hooks are deployed during the observed portion of the setting of the longline gear. Refer to page 9-5 for a diagram of a Tori Line. Describe in the comments section any line used by the vessel to deter seabird bycatch. **Take a photo of the line in use.**

Shooter Used? - Mechanical line setting device ("line shooter") was used to deploy the main line during the observed portion of the set.

Water Sprayed on Sea Surface? - During the observed portion of the set, water was sprayed on the sea surface, near, or behind the area where the fishing gear was entering the water.

Bird Curtain? - During the observed portion of the setting of the longline gear the vessel deployed a bird curtain aft of the line shooter. Refer 50 CFR § 665.815 for specific details.

Gear Set from Side? - Check this box if the gear was deployed from the port or starboard side of the vessel at a point 1m or more forward fo the stern. Refer to 50 CFR § 665.815 for specific details.

Bait Blue-Dyed? - During the observed portion of the setting of the longline gear, the bait was dyed blue. The blue color must be at least the same intensity as the NMFS blue color standard for bait. If the blue does not match the NMFS color standard, leave this box blank, and make comments.

Branch Line Weighted? - Weighted branch lines are used during the observed portion of the setting of the longline gear.

Strategic Offal Discard? - Did you see vessel personnel discard offal (fish parts, excluding bait, not intended for human consumption) off the opposite side of the vessel from where the longline gear is set out when there were seabirds present? If so, mark this box. **If you see this action occur at any time during setting operations, mark this box. Note: Use of this deterrent is typically not possible while deploying the gear for the first set of a trip or when no birds are present. Comment when appropriate.**

Strategic Bait Discard? - Did the vessel personnel discard spent bait off the opposite side of the vessel from where the longline gear is being set out when seabirds were present? If so, mark this box. **If you see this action occur at any time during setting operations, mark this box. Note: Use of this deterrent is not possible when no birds are present. Comment when appropriate.**

Bait Thawed? - During the observed portion of the setting of the longline gear, **all** of the bait was completely thawed **when it was deployed.**

Bait Cast Outside Wake? - During the observed portion of the set, **all** bait was thrown out side the vessel's wake.

Other Deterrent? - During the observed portion of the set, the vessel crew did something specifically to reduce seabird bycatch that is not included elsewhere in this list. **This would include such things as: deploying a towed line that does not meet the definition of a Tori Line; or any other measure that was employed specifically to deter seabird-gear interactions.**

Birds Present? - Were there seabirds present at any time during the setting of the gear? **If this box is checked, record the common name of which seabird(s) were present in the Comments section. List all the species observed during the set, including those recorded on the PSEL, and those observed outside of prescribed scan times.**

During Set Seabird Mitigation Comments - Describe any other seabird deterrent(s) used during the set. **Include comments on techniques that were not completely or properly deployed, or employed. List ALL seabird species by common name that were seen, including the seabird species listed on the PSEL for the scans conducted during this set. Use this section to further describe any 'Other Deterrent' employed.**

During Haul Block

Place a check mark or X in the appropriate box for each deterrent used during the hauling of the longline gear. **If the deterrent was not used throughout the hauling operations, leave the box unchecked. Comment when appropriate.**

Towed Buoy Used? - A buoy or any object towed behind the vessel that is intended to deter birds when baited hooks are present during the hauling of the longline gear. **Describe this deterrent in the comments section, and take a photo of the device.**

Tori Line Used? - Check this box if a line 150 m in length with intermittent swivels and streamers towed behind the vessel that covers the area where baited hooks are deployed during the observed portion of the setting of the longline gear. Refer to page 9-5 for a diagram of a Tori Line. **Describe in the comments section any line used by the vessel to deter seabird bycatch. Take a photo of the line in use.**

Water Sprayed on Sea Surface? - During the haul, water was sprayed on the sea surface on or near the area where the fishing gear was exiting the water.

Bait Blue-Dyed? - During the hauling of the longline gear, the bait retained a bluish color. Properly dyed bait will be faded upon the haul back, but a light blue color should still be evident in the fins and eyes. If more than a few baits appear undyed or several undyed baits are on consecutive hooks (*i.e.*, one or more baskets), do not check this box. Document the details in the comments section.

Branch Line Weighted? - During the haul, all branch lines observed had weights attached. If more than a few branch lines did not have weights on them, leave this blank, and describe the situation in the comments section on the form.

Strategic Offal Discard? - Did vessel personnel discard offal (fish parts, excluding bait, not intended for human consumption) off the opposite side of the vessel from where the longline gear is hauled aboard when seabirds are present? If so, mark this box. **Note: Do not check this box if seabirds aren't present. Comment when appropriate.**

Strategic Bait Discard? - Did the vessel personnel discard spent bait off the opposite side of the vessel from where the longline gear is hauled aboard when birds were present? If so, mark this box. **Note: Do not check this box if seabirds aren't present. Comment when appropriate.**

Other Deterrent? - During the haul, the vessel crew did something specifically to reduce seabird bycatch that is not included elsewhere in this list, or recorded during the set. **This would include such things as: deploying a towed line that does not meet the definition of a Tori Line, a Bird Curtain, or any other measure that was employed specifically to deter seabird-gear interactions. Checking this box requires a comment.**

Birds Present? - Were there seabirds present at any time during the hauling of the gear? **If this box is checked, record the common name of which seabird(s) were present in the Comments section. List all the species observed during the set, including those recorded on the PSEL, and those observed outside of prescribed Scan times.**

During Haul Seabird Mitigation Comments - Describe any other seabird deterrent(s) used during the haul, including those that were not properly deployed or performed. List all seabird species that were present. If the 'Birds Present' box is checked, all the species observed during the haul must be listed by common name. Include all seabird species listed on the PSEL in the Scans and those observed outside of scan counts. Use this section to further describe any 'Other Deterrent' employed; and/or to provide more information regarding the characteristics or use of a specific deterrent.

Seabird Mitigation

During Observed Portion of Set

Mitigation Techniques Used ✓

Number of floats observed during set 6 0 1 2

- | | |
|---|---|
| ¹ Set At Night ? <input type="checkbox"/> | Bait Blue-dyed ? <input checked="" type="checkbox"/> |
| Towed Buoy Used ? <input type="checkbox"/> | Branch Line Weighted ? <input checked="" type="checkbox"/> |
| Tori Line Used ? <input type="checkbox"/> | Strategic Offal Discard ? <input checked="" type="checkbox"/> |
| Line Shooter Used ? <input checked="" type="checkbox"/> | Strategic Bait Discard ? <input checked="" type="checkbox"/> |
| Water Sprayed on Sea Surface ? <input type="checkbox"/> | Bait Thawed ? <input checked="" type="checkbox"/> |
| Bird Curtain? <input type="checkbox"/> | Bait Cast Outside Wake ? <input checked="" type="checkbox"/> |
| Gear Set From Side ? <input type="checkbox"/> | Other Deterrent ? <input type="checkbox"/> |

Birds Present? ✓

During Set Seabird Mitigation Comments

Blackfoot albatross

¹ Set at Night - the Begin Set time is at least one hour after local sunset, and setting is completed at least one hour before sunrise (>60 mins.). Obtain local sunset/sunrise by pressing menu->celestial->sun and moon on GPS handheld device.

During Haul

Mitigation Techniques Used ✓

- | | |
|---|---|
| | Bait Blue-dyed ? <input checked="" type="checkbox"/> |
| Towed Buoy Used ? <input type="checkbox"/> | Branch Line Weighted? <input checked="" type="checkbox"/> |
| Tori Line Used ? <input type="checkbox"/> | Strategic Offal Discard ? <input type="checkbox"/> |
| | Strategic Bait Discard ? <input type="checkbox"/> |
| Water Sprayed on Sea Surface ? <input type="checkbox"/> | |
| Other Deterrent ? <input type="checkbox"/> | |

Birds Present? ✓

During Haul Seabird Mitigation Comments

Fig. 9.1. Seabird Mitigation example

An example of a Tori Line

Tori Lines are used by longline vessels to deter seabird bycatch. They must meet specific dimensions of certain components in order to meet the legal or regulatory definition of a Tori Line. If any of the components listed below do not meet the specified dimensions, the "line" is categorized as "Other" on the Seabird Mitigation Form.

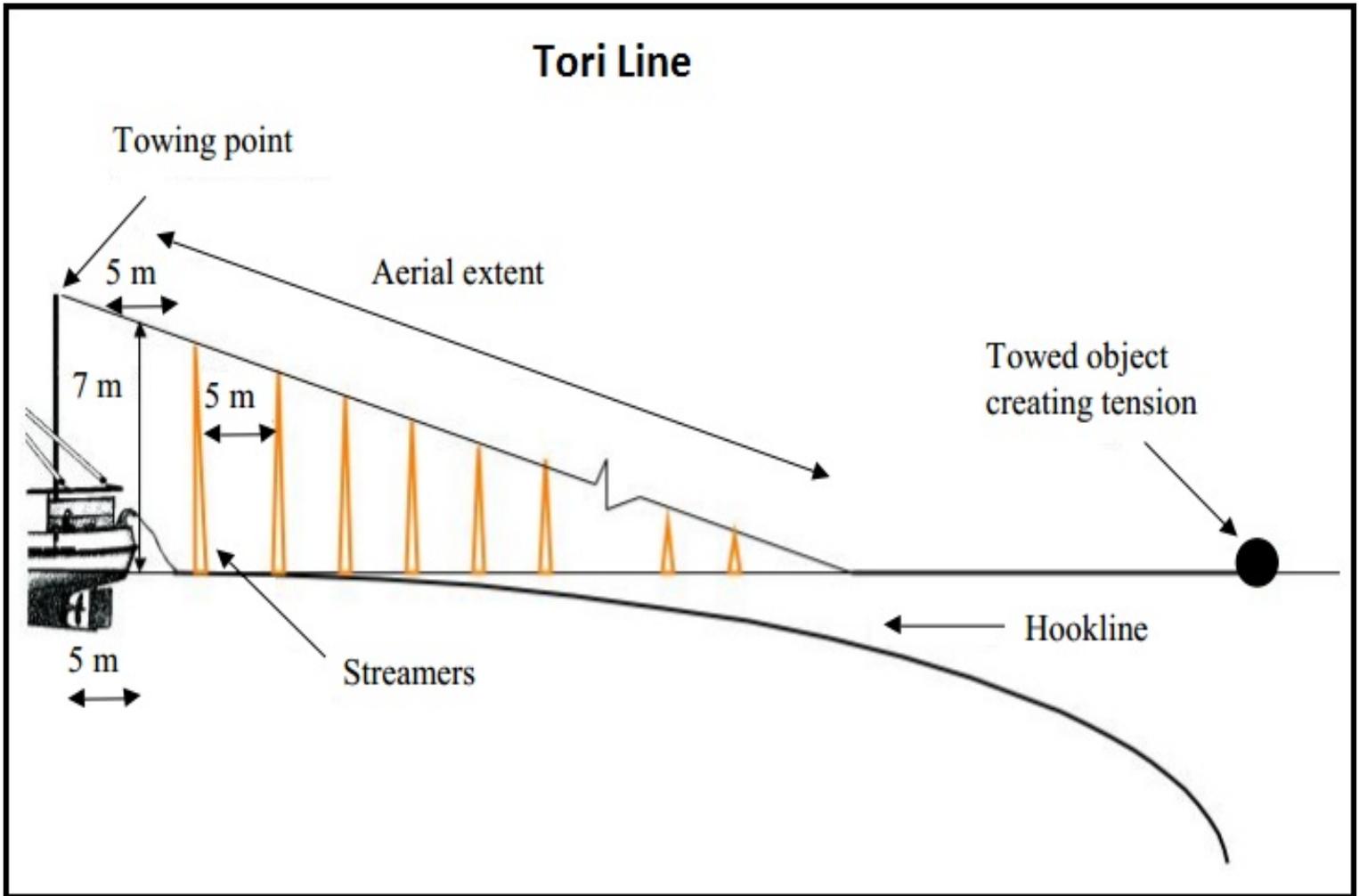


Fig. 9.2. Tori Line diagram.

Length: 150m or greater.

Height of attachment on vessel: 7m+ above the water

Length of streamers: must reach the water in calm conditions

Spacing between streamers: not to exceed 5m.

Aerial extent: must cover an area at least 100m+ behind the vessel.

If a line with streamers deployed as a seabird deterrent does not meet any one of the above items, it is not a Tori Line.

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Chapter 10 Catch Event Log and Data Quality Control Sheet

Introduction

The Catch Event Log form is a record of all fish and protected species (sea turtles, seabirds, and marine mammals) caught during a set and their condition, disposition, and measurements. The data are used to determine catch rates for target and non-target species in the fisheries.

General Instructions

Record each fish and protected species in the order they are **retrieved from the gear**. Use the common English names from the Species Code List (Chapter 21) for the species caught. Each fish and protected species should be listed individually. Corresponding photos, specimens, tags, sketches, and comments should be marked in the check boxes at the end of a line. Free floating animals brought on board should be recorded without a hook and float number. Animals caught on handlines do not go this form.

It is your duty to personally see everything that comes up on the line. You must tell crew members to wait until you have witnessed and identified the catch before they cut or unsnap any leader to release an animal. This request may need to be made several times for some crews who continue to cut or unsnap leaders before you have identified the catch. If your requests are denied, document each incident of potential interference in your Documentation Notebook.

DO NOT record unknown objects, unseen animals, or squid and other invertebrates on this form. Remoras that come up on the gear, like buoys, or on animals *but are not hooked or entangled* do not get recorded on the Catch Event Log. Remoras should be treated like any other catch when they are hooked or entangled. If there is an unknown object on the line (i.e., something that came off the hook/line before you could determine what it was), describe the situation in the comments section of the Set & Haul form. Likewise, squid or other invertebrates that come up hooked or entangled will be also be recorded on the Set and Haul comments section.

***** Special Note For Observing Seabirds and Recording Protected Species Interactions *****

During bird scans or protected species interaction reporting on the PSEL, you must continue to keep track of what is coming up on the hooks and record everything caught on the data forms. However, it is alright if you do not get all of your measurements. Record the approximate length (AL) for fish or sharks that you are unable to measure. Do not measure fish with missing tails, broken or damaged spinal columns, or if taking the measurement will endanger you (such as with a large active shark, or during severe weather). Record the approximate length of fish that fall off or are accidentally knocked off the hook before they are landed.

Data Elements

Trip Number - The unique 6-digit number assigned by the Operations Coordinator. In the first two blocks, record LL for longline. After the second block, enter the 4-digit number.

Set Number - Sets are numbered consecutively for each observed trip beginning with 01.

Line Number - These are already filled in and cannot be changed.

Page Number - Number the first page of each set as “1.” This means that the first page you start with each day should be 1; do not number pages consecutively throughout the trip. It is acceptable to record the page number on the first line and draw an arrow down the column.

Catch Page Number- Number the first page of each set 01. This means that the first page you start with each day should be 01. Do not number pages consecutively throughout the trip.

Species English Name - Record the English common name of the species caught. A list of commonly encountered fish with their species codes is at the lower left corner of this form. A complete list is located in Chapter 21 of this manual. If several fish of the same species are retrieved one after another, it is acceptable to write the name of the species on the first line and then draw an arrow down through subsequent lines. Write the species name before writing the species code. If a species name and code do not match during debriefing, the species name will take priority.

Species Code - Enter the 3-digit species code from the Species Code List for all fish. **Note:** There are separate codes for unidentified types of animals and other identified animals. Write the species name before writing the species code. If a species name and code do not match during debriefing, the species name will take priority. “Other Identified” means you were able to identify the animal, but the species doesn’t have a species code assigned to it. DO NOT draw arrows down for repeated species codes.

Float Number - Floats are numbered sequentially. Start with number 1 for the first float retrieved. Record the number of the float that immediately *preceded* each fish caught. Should the mainline part continue to record float numbers sequentially. If more than one float is retrieved in reverse order, make a comment. DO NOT draw arrows down for repeated float numbers. Anything observed becoming caught on a branchline while that branchline is not connected to the mainline (either “tended” or “untended”) does not get a hook or float number, and must have comments. Retrieved animals not caught on hooks do not get hook or float numbers.

Hook Number - Hooks are counted sequentially between each float. Start with number 1 after each float is brought aboard. For example: If float 10 comes up, then three hooks later a fish is caught, record hook number 3 for that fish. Occasionally two fish will come up on the same hook due to predation on the first fish that was hooked. Both fish should be recorded on separate lines with the same hook and float number. If one animal is caught by more than one hook, record the first hook, and make comments. After a line part, do not record any more hook numbers until the next float comes aboard. Anything observed getting caught on a branchline, while that branchline is not connected to the mainline (either “tended” or “untended”) does not get a hook or float number, and must have comments. Animals not caught on hooks do not get hook or float numbers.

Caught Condition Codes - Indicate the condition of the animal prior to boarding and release with these codes: A = Caught Alive (active). D = Caught Dead (or inactive). If you are unable to determine whether or not a fish is alive enter D. I = Caught Injured, U = Caught Condition Unknown.

Condition Codes I and U are reserved for sea turtles, seabirds and marine mammals. They will not be accepted for fish or sharks. If an interaction occurs with a live protected species the default condition code should be recorded as I, caught injured. It is extremely rare to have a caught condition code A "caught alive" for Protected Species.

Kept/Return Codes - Indicate if a fish is kept or returned, and its condition at the time of return, by entering the appropriate letter code from one of the following categories.

Anything retained by the observer as a specimen (for identification purposes or a research request) should be marked as though it were returned dead. If you retain a specimen from an animal that the vessel retains for its catch, this should be recorded as Kept.

K = Kept - Fish retained, in part or whole, by the fishermen for sale or personal consumption. Any shark that is kept must have a comment describing the fate of its fins. If any fin is removed or partially cut (so they can be folded back along the body), state which fin, and what happened to it.

A = Returned Alive - *For fish* a return code of *Returned Alive* indicates that the animal was active when it was returned to the sea.

For a protected species, a return code of *Alive* indicates that the animal freed itself and swam or flew away from the gear with no visible injuries or deformations. They must have freed themselves (completely) from the gear through their own efforts. For example, an animal is observed lightly entangled, but frees itself and swims free of the gear. **Note:** This situation will be very rare. However, protected species that are observed hooked before freeing themselves should be marked as **I** (Returned Injured), even if you don't see any blood or a wound.

D = Returned Dead - Fish returned to the water with no visible activity are recorded as D, "returned dead". This is also the default return condition if you are unsure of a fish's condition when discarded. There may be no visible muscular activity. The animal may be stiff from rigor mortis or limp. Anything retained by an observer as a specimen (for identification purposes or a research request) should be marked as D (Returned Dead), if the vessel would not otherwise keep it. The vessel's crew would be assumed to have discarded the fish, and not retained it for sale or personal consumption. Do not make assumptions as to an animal's potential to survive; the only exception is Lancetfish that have their heads pulled off, but are still moving, these are recorded as D.

I = Returned Injured (Only for Protected Species) - "I" indicates the sea turtle, seabird or marine mammal was physically damaged or injured as a result of becoming hooked or entangled in the longline gear. The injuries can be visible, like open wounds, or not visible, like bruising, internal bleeding, and stress. Mark as I (Returned Injured) any animal that: has visible deformations of the body or body parts; flies or swims in an abnormal manner after being released; is hooked, no matter the severity; is observed entangled and is unable to free itself, or is disentangled or cut free of the longline gear, or is released with part(s) of the fishing gear attached to its body. Describe all injuries of protected species on the appropriate biological form as fully as you can, in addition to recording the data elements required to complete the form. Take photographs of the injury, if possible. Make sketches to help describe the location of the injury. For the injury, make notes on the color, the shape, any bleeding or other discharge(s), missing body parts, any abnormal function, and the behavior of the animal after it was released.

Damage Codes - Record the appropriate code for any predation damage observed. Do not consider damage caused by efforts to land the fish, such as marks from the lines or gaffs, or if the fish falls apart from the stresses of being hooked. **Do not record bite marks from Cookie cutter sharks (*Isistius brasiliensis*) as damage.** It is NOT acceptable to draw an arrow down for repeated damage codes.

In cases where more than one source of damage is identified, enter the code for the highest priority damage and enter a comment for that line detailing what other damage was observed on the animal. Marine mammal damage is highest priority, followed by shark damage, and then depredation damage.

No Damage (ND) - Use this code if there is no sign of predation. This is also the default damage code. It is unnecessary to record the frequently seen damage from Cookie Cutter Sharks, this will be recorded as ND.

Marine mammal damage (MM) - This damage will often result in nearly all of the fish's body being removed leaving only the fish's head or mouthparts on the hook. Bites to the body have jagged edges with trailing strips of skin and tendons and toothmarks more widely spaced than seen in shark damage. Take photos of the first tuna seen each set with MM damage.

Shark damage (SX) - This damage will have sharp, defined edges of flesh removed as if cut from the body. You may see tooth marks as linear cuts in the skin near the bite edges, or slashes in the flesh.

Depredation Damage (DP) - This damage comes from known predation source other than marine mammals or sharks. This includes damage caused by birds, squid, swordfish, and other animals.

Occasionally when a hooked fish is preyed upon, the preying animal becomes caught on the same hook. When this happens, record DP damage for the first fish caught and enter a comment on that line describing that it was preyed upon by the second fish. Both fish will have the same float and hook number.

Undetermined Damage (UN) - Damage from an unidentified source.

Gender Codes - Gender should be determined for measured fish whenever safely possible without interfering with fishing activities. Do not record the sex of unmeasured fish, or for fish with only approximate measurements. Do not gut fish solely to determine the sex, and do not instruct the crew to gut fish when they would not otherwise do so. Do not record the sex of live sharks or sharks too large to bring aboard, attempting to do so may interfere with fishing activities and create an unsafe situation.

Tuna and billfish genders are highest priority, followed by those of other marketable fish and landable sharks. Genders of unmarketable fish not gutted by crew are not generally required. Specimens may require gender to be recorded, refer to the circular. Refer to the species group instructions in this chapter for information on determining the gender of an individual fish.

Measurements

Measure every 3rd fish caught (hooked or entangled), whether or not the vessel intends to keep the fish. **Record the length to the nearest centimeter.** Measure the 1st fish caught and every 3rd fish after that, you will record measurements for fish recorded on lines 1, 4, 7, 10, and 13 of each page of catch logs. These are the gray shaded lines on the form. You may need to ask the crew to bring aboard species that they don't usually keep. Do not ask them to bring aboard live sharks, or very large fish they do not intend to keep when this would interfere with fishing operations.

Stingrays: DO NOT MEASURE!

Small tunas: Some vessel crews do not want to injure small tunas by bringing them aboard. If they are doing this, ask them to bring aboard the fish so you can measure them quickly before returning them over board.

Out of protocol measurements: When directed for specimen collections or unusual and rare examples of animals are recorded. Out of protocol measurements require comments unless they coincide with a collected specimen. Billfish under 100cm EF and over 300cm EF are examples of unusual fish.

Approximate length: Should also be used when fish can not be measured due to higher priority duties, dangerous conditions, and in cases where you observe the fish but are unable to measure it. If a fish comes off the hook before being brought on board, make a visual approximation of the fork length in feet. Accurate length measurements cannot be obtained from fish that have a severed or damaged spinal column. If the fish is too damaged to accurately measure, record the appropriate approximate length (AL); however, do not record an approximate length if portions of the body length that include the spinal column are completely missing.

Measurement Codes - Enter the 2-letter code indicating which measurement(s) were taken. Different species groups have the following different measurements taken:

Billfish: EF - Eye to Fork Length

Sharks: FL - Fork Length

PC - Pre-Caudal Length

CI - Clasper Inner Length

All other Fishes: FL - Fork Length

AL - Approximate Length

Out of Protocol Measurement Codes - Write an "O" in front of the 2-letter measurement code to show a measurement was recorded for a fish that was not a "3rd" fish. Ex. OFL, OEF, OAL.

Measurement - Enter the length to the nearest whole centimeter. The dimension(s) of the animal as measured with the 2 m calipers (or measuring tape for the clasper inner length (CI) of male sharks). There are instructions and diagrams at the end of this section for clarification. Do not write **cm** in the box after the numbers.

Approximate (Fork) Length:

Billfish: For approximate lengths (AL) estimate the Eye to Fork Length (EF) in whole feet (estimated length in feet from the posterior margin of the eye orbit to the fork in the tail).

Sharks and other Fishes: For approximate lengths (AL) estimate the Fork Length (FL) in whole feet (estimated length in feet from the tip of upper snout to the fork in the tail).

Check Boxes Block

Tagged - Check or X this box to indicate that a tag was recaptured or applied on this animal. If no tags were recaptured or applied, then leave this blank.

Specimen - Check or X this box to indicate that a biological specimen was collected from this animal. This could include a whole animal (fish, turtle, or bird). All specimens require photos. If a specimen was not collected from the animal, leave this blank.

Photo - Check or X the box if you took a photo of the animal. See Photo Log chapter for a list of required photos.

Sketch - Check or X the box if you made a sketch on a Sketch Log form of this animal. **Do NOT check this box for species ID sketch forms.**

Comments - Check or X this box to indicate that notes exist describing damaged animals, unknown disposition, shark fin dispositions, or other notes on the catch. If an animal is missing a required measurement, but has a damage code of **MM or SX**, no comments are required. If any fin is removed from a shark that is not kept, record this in the comments section as well. For protected species that are caught please write “see Biological Data Form”, as every caught protected species is required to have a Biological Data Form filled out, and in-depth comments are recorded there. When multiple successive lines have the same comment, it is advisable to record one comment referring to all the lines effected; e.g. “Lines 3-8, tangled branchlines”. Be sure to check each comments box for lines 3-8.

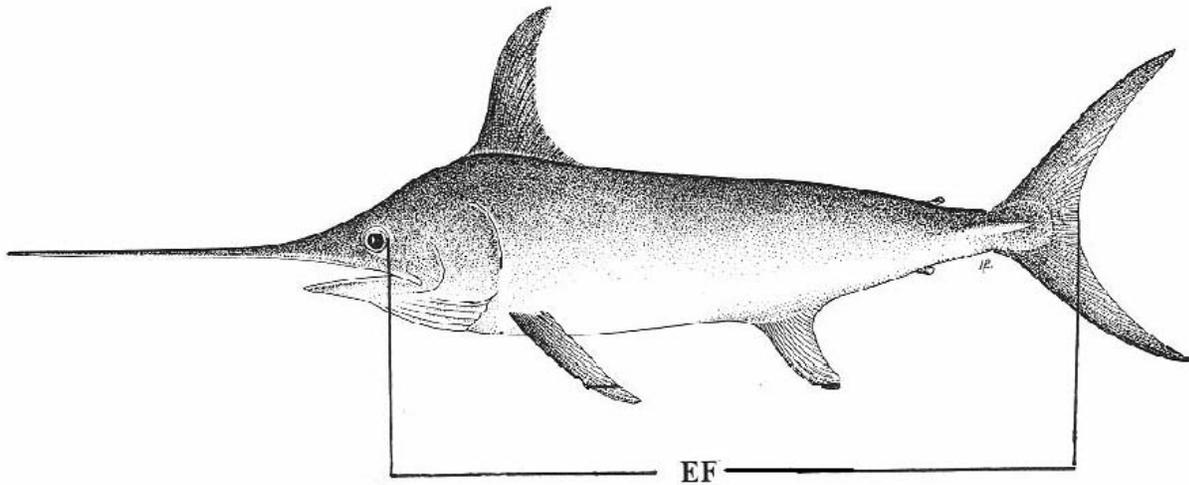
Use comments to note when breaks are taken from observing. Like a quick break to get some food from inside or use the restroom if you return and find a an unaccounted for animal on deck. All other times off deck , during the haul should be recorded in the documentation notebook. In cases like these though, it would be a good idea to wait until just after a float comes up to take your leave. That way you have a better chance of maintaining a more accurate float count. Remember that you are responsible for monitoring the entire haul, so plan any breaks at times when fishing operations are halted; like searching for a float, untangling a snarl, or putting fish in the hold.

With instances that require time away from on deck observations, be sure to add a comment to the last line entered about why you need to leave the deck, and the period of time you were absent (very bad weather, seasickness, etc.).

Fish Measurement Instructions and Gender Identification Diagrams

Billfish: Marlins, Swordfish, Spearfish

Eye to Fork Length (EF): Measure from the posterior margin of the LEFT EYE orbit to the inside of the fork of the tail. This measurement is taken with the 2 meter calipers.



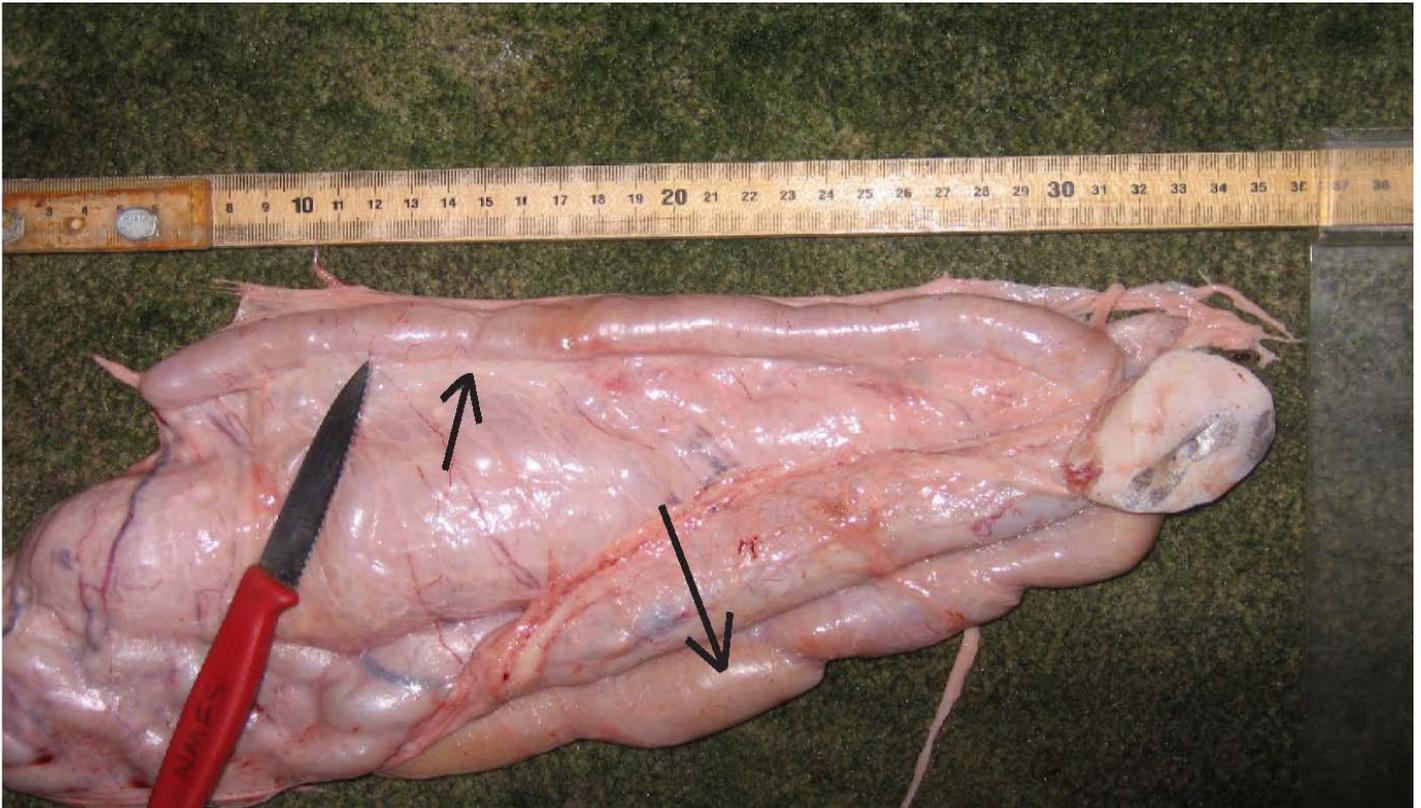
Arrow pointing to location of gonads when fish is split open. These gonads are ovaries.



Mature Ovary



Cross section of an immature ovary. Notice the granulated texture of the lumen.



Arrows pointing to testes

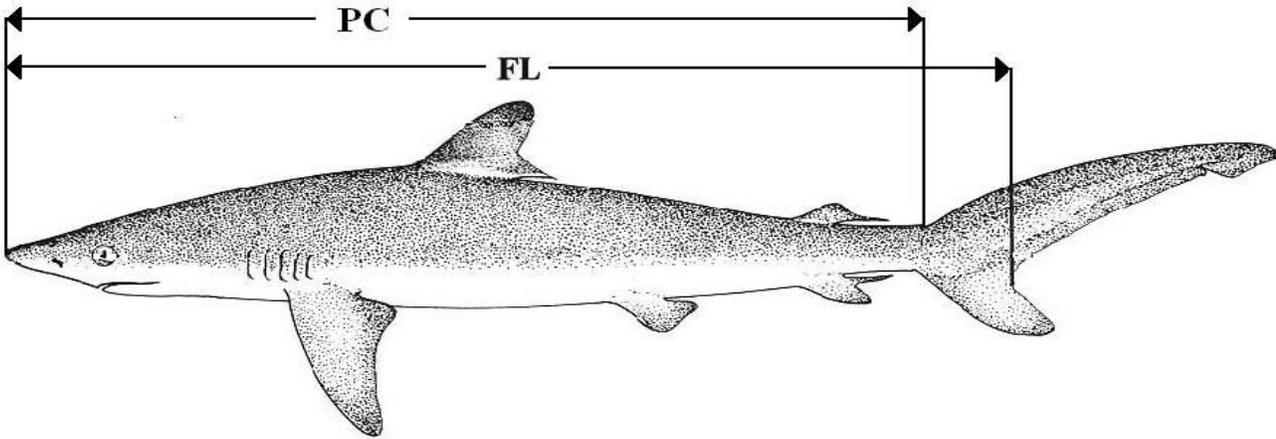


Cross section of a testis. Notice the smooth texture compared to the granulated texture of the ovary.

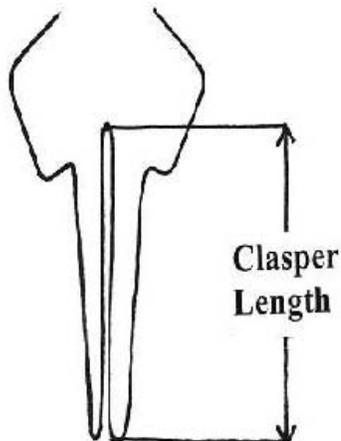
SHARKS

Fork Length (FL): Measure from the tip of the snout to the center of the fork in the tail.

Pre-Caudal Length (PC): Measure from the tip of the snout to the pre-caudal pit (small crease) at the end of the caudal peduncle. If the shark does not have a pre-caudal pit, use the point where the front edge of the upper tail lobe meets the caudal peduncle.

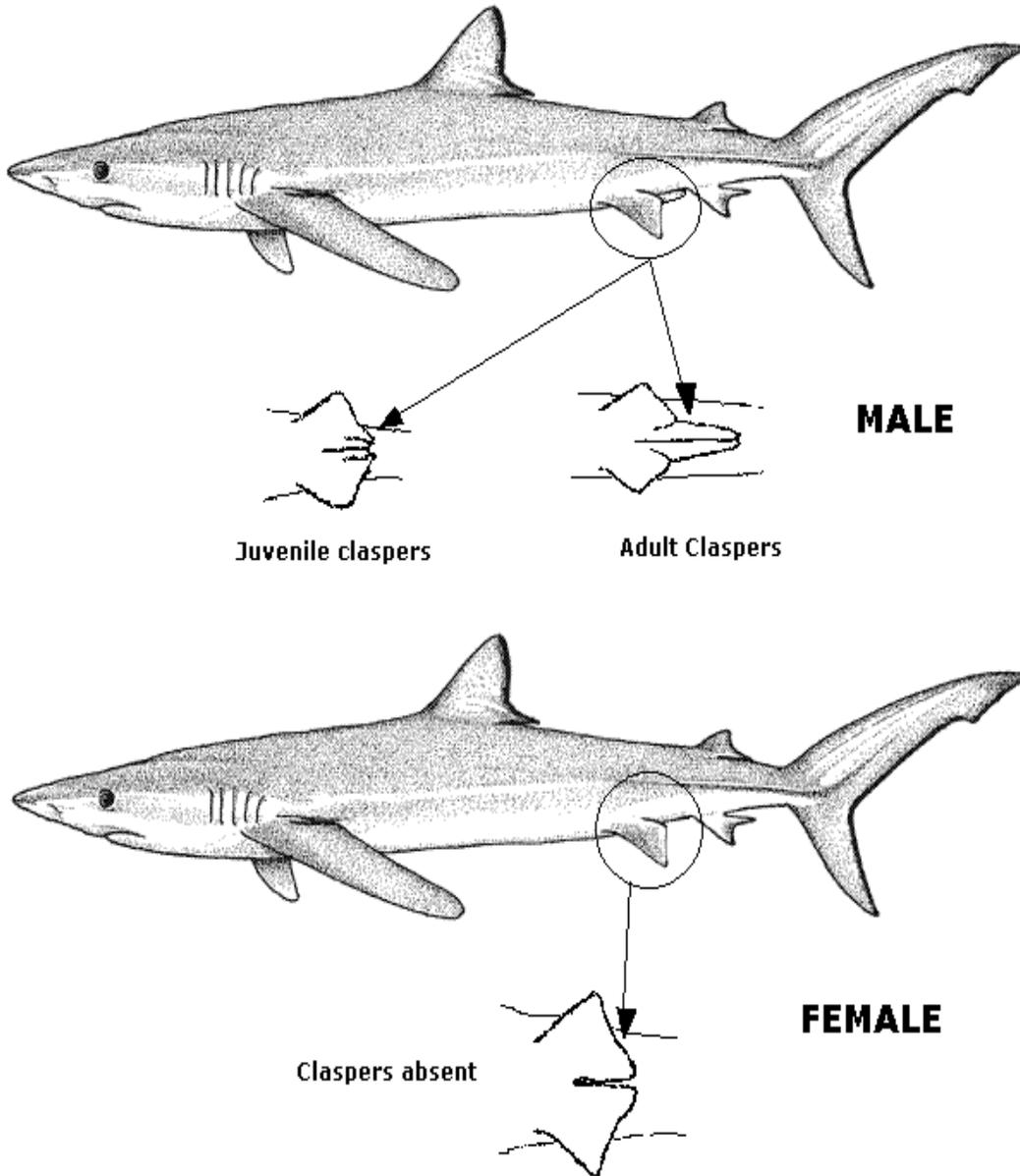


Clasper Inner Length (CI): For male sharks, measure from the tip of the clasper to the center of the angle between the claspers. Use the tape measure to obtain the clasper inner length measurement.



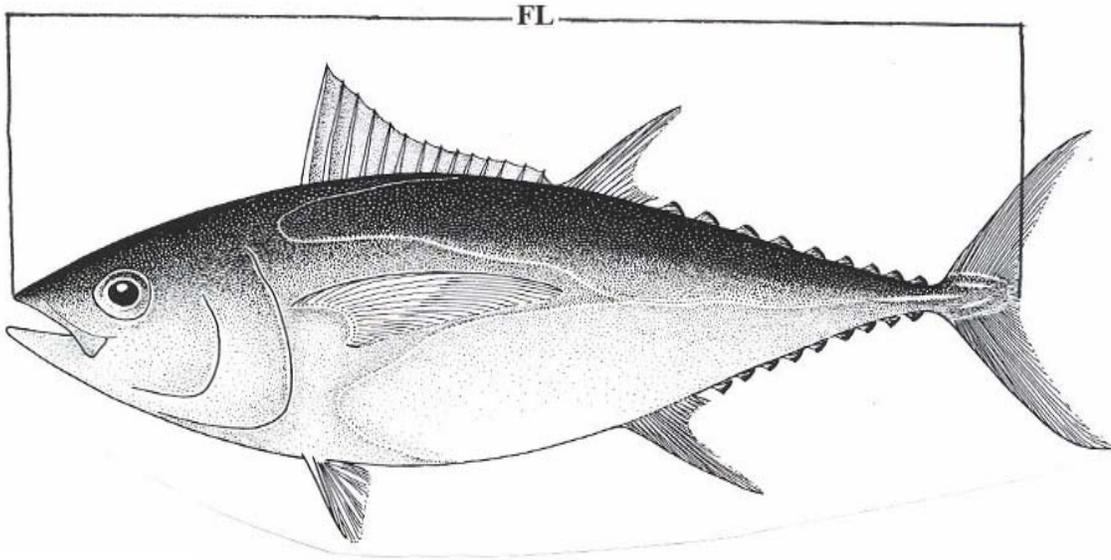
HOW TO DISTINGUISH MALE AND FEMALE SHARKS

Shark Sexing Diagram (also works for rays)



TUNAS and All Other Fishes

Fork Length (FL) - Measure from the tip of the snout to the inside of the tail. If an opah's mouth is open, close it to take the measurement. **NOTE:** For fish with modified caudal fins (e.g., slender molas, crestfish, etc.), Measure to the middle of the tail.



TUNA SEXING:

The only way to sex a tuna is to look at the gonads after the crew has gutted the tuna. At first it may be difficult to determine the sex, especially in immature fish. Use the following pictures and descriptions to distinguish ovaries from testes. Whenever possible compare ovaries and testes of similar sized fish to become familiar with the differences. If you are unsure take photos similar to the ones shown in this chapter for verification.

Females: The ovaries are fusiform (spindle shaped) paired structures. They are suspended from the ventral surface of the gas bladder, which can be confused with the dorsal wall of the coelom (gut cavity), and are united at their posterior extremities, terminating just behind the anus. The ovaries are yellowish/orange in color and circular in cross section.

Males: The testes are compressed (somewhat flattened compared to ovaries) lanceolate paired structures. The testes are white or light cream in color inside and flattened in cross-section. The chief distinctions between the sexes are the cross sectional shape of the gonad, and the size of the lumen (central cavity of the gonad). In female tunas the gonad cross section should reveal a round shape and the lumen should be large and convoluted. The male gonad should be flatter and have a small, smooth lumen. In all cases, squeeze the gonad gently prior to looking for a lumen. This should open the lumen for observation.



Top: Mature ovary
Bottom: Mature testis



Pair of immature ovaries



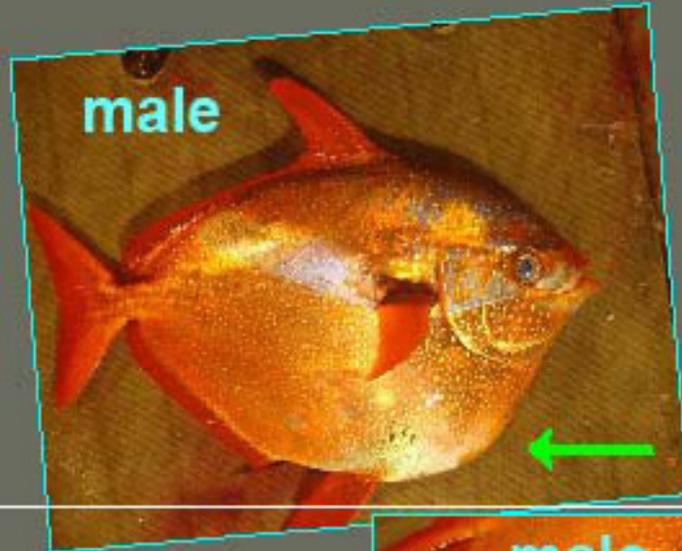
Immature tuna ovary cut open to show the fringes of egg producing tissues.



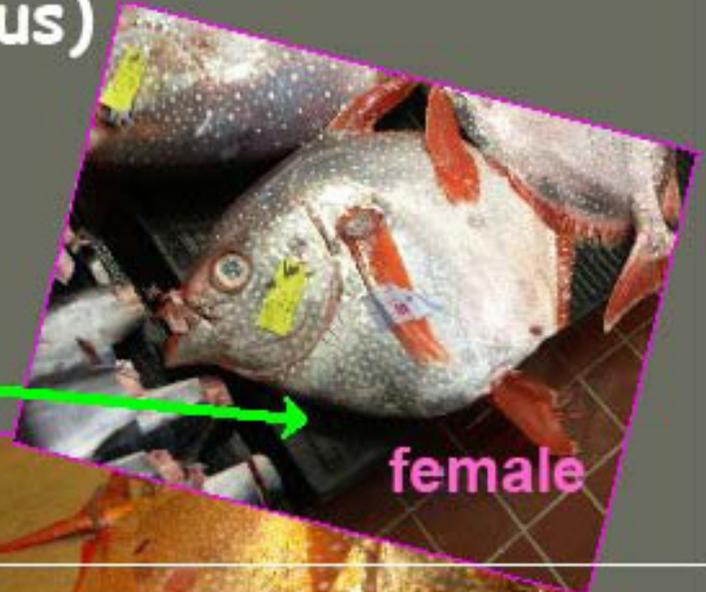
Left side: Cross section of testis.
Right side: Cross section of ovary showing lumen in center.

Do not attempt to collect gender on Opahs less than 85 cm FL.

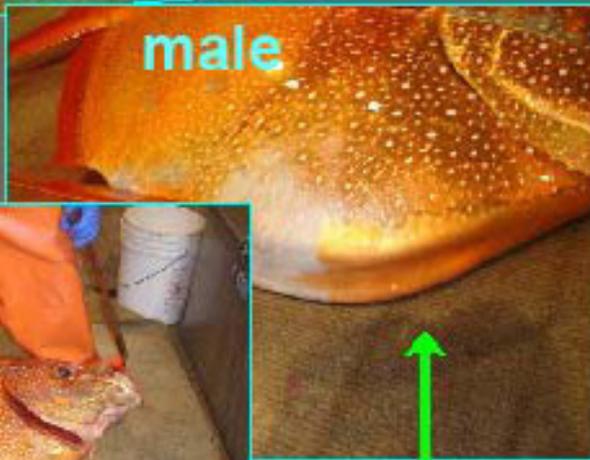
Sexual dimorphism of the pectoral girdle in opah (*Lampris guttatus*)



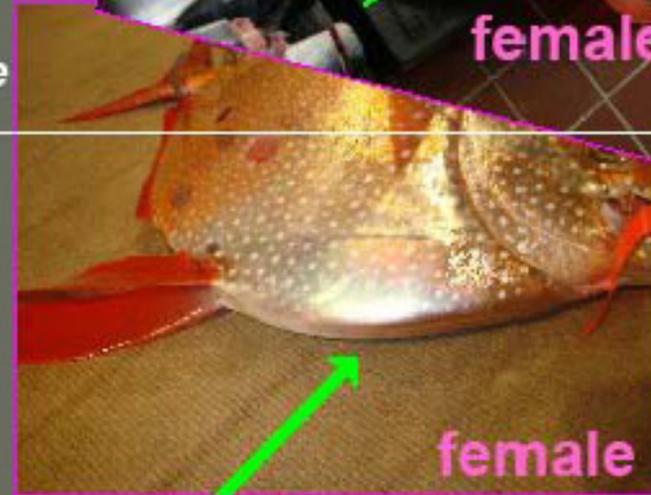
deep, abrupt angle



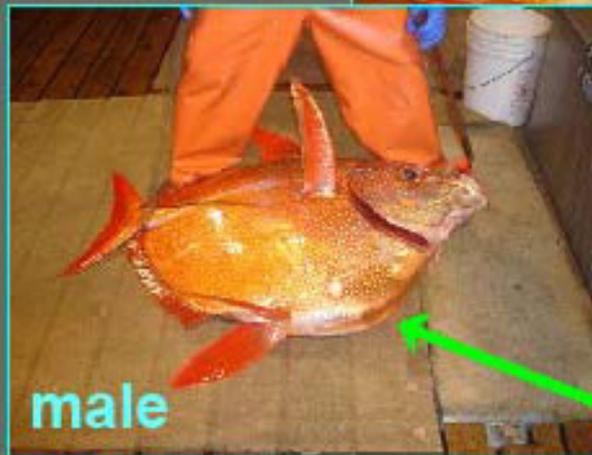
gradual rounding



thick, concave



narrow, convex



Dolphinfish Sexing Diagram

Male



Do not sex dolphinfish less than 65 cm!

Female

* Note the pronounced bony crest of the male forehead and the gently sloping, convex nature of the female forehead.

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

From front of this form
Trip No.

2	2	0	7	1	1
---	---	---	---	---	---

Set No.

0	1
---	---

This Catch Page No.

2	2
---	---

Log comments for specific Catch Log records on the back of this form.

Catch Event Log

Page No.	Line No.	Species Common Name	Species Code	Float No.	Hook No.	Caught Condition Code (A, D, I, U)	Kept/Return Code (K/A, D, F, I, U)	Damaged Code	Gender Code (M, F, U)	Code	Measurement	Code	Measurement	Code	Measurement	Tag(s)?	Specimen(s)?	Photo(s)?	Sketch(es)?	Comment(s)?
										Length 1	Length 2	Length 3								
		Pink snapper	457	20	05	A	K	ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		in B eye	211	24	19	D	K	DP							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		T. skipjack	212	24	21	A	K	ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Lanternfish	121	25	01	D	D	ND	AL	2					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5		Lanternfish	121	29	06	D	D	ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Lanternfish	121	26	10	D	D	ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7		Tuna, yellow fin	216	26		A	K	ND	FL	120					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8		Opah	144	28		D	K	ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Lanternfish	121	9	8	D	D	ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Martin striped	302	30	01	A	K	ND	GF	136					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		hark, silky	413	32		D	D	ND	F	ORL	103	OPC	97		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12		Dolphin fish	218	32			K								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13		Dolphin fish	218	32		A	K	DP	F	FL	30				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
14		Lanternfish	121	33	06			ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2		Lanternfish	121	34		D	D	ND							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Pg.	Ln.	Catch Record Comments (from either the front or back of this form, indicate appropriate catch record page and line number for each comment)
02	01	Kept for n
02	11-13	lost hook count, tangle

Fig. 10.1. Catch Event Log example.

Data Quality Control Sheet (Data QC)

This form is to be completed at sea and will be used during debriefing to verify that the data has been entered correctly. It is a summary of effort and catch for each set of the trip that allows for the entire trip to be reviewed in a one page format that also serves as a validation between the electronic and hard copy versions of the data. This form should be completed after each haul when you are rested and clear headed enough to do a lot of counting. The three forms that will need to be completed in order to fill out the data QC are the set & haul, gear configuration, and the catch event logs. Each form used has it's own header across the top of the Data QC form. Accurately completing this form will speed up your debriefing process by helping pinpoint any data entry errors.

Set & Haul

Fill out the date the set was made and the captain's logbook page number that you record on your set & haul form.

Gear Configuration

Record the number of hooks set out for that set #; this is the number you obtain after doing your before and after count which requires you to count each hook every day. Record the # of floats set for that day; this is the float count on your Gear Configuration form that is obtained by counting all of the floats during the haulback.

Catch Event log

There are 3 sections here; Caught Condition, Kept/Returned Condition, and Species Totals. These totals are obtained by counting the number of lines filled out for the entire set. For the Caught Condition record the total number of A,D,I, and U from the caught condition column. You can validate your own work here by adding all the A,D,I, and U's for each set together and comparing them to the Total on the left hand column of Caught Condition...they should match. Likewise, record the total number of K,A,D,F,I, and U from the Kept/Return condition column. For the Species Totals section record the total numbers of tuna, sharks, pomfret, opah, billfish. Note that the **billfish count will include the swordfish count (swordfish are billfish)**. The catch event log portion of this form is where particular care should be taken when doing the counts. If changes are made during debriefing you will need to go back and edit the counts for those sets so the data QC sheet matches the computer at the end of data entry.

Tips for filling out the form:

Fill it out as soon as possible after each haul when you are rested. Do Not wait until all sets are finished and you are on your way back in. A good time to fill this in is after you watch the first hour of the next days set. Make sure you do your counts at least twice and the numbers match; taking the time at sea will save time in the office during debriefing. At the end of your trip and before you come to the office to debrief make sure the totals are calculated for each column.

Reminder: Ignore the instruction to split the billfish and swordfish counts.

Trip # : _____

Departure date: N 2 Time: 1

Vessel: N

Arrival date: 2 Time: 0

Observer: CS

Data Quality Control Sheet

Set&Haul		Gear Configuration		Catch Event Logs																
Set#	Set Date	Logbook Page #	# Hooks	# Floats	Caught Condition				Kept/Return Condition				Species Totals							
					Total	A	D	I*	U*	K	A	D	I*	U*	Tuna	Shrk	Pmft	Opah	Bill ¹	Swd ²
1	11-Nov-2015	612742	3067	128	87	60	27	0	0	62	16	9	0	0	34	7	11	5	3	1
2	12-Nov-2015	612743	3021	128	00	64	36	0	0	71	20	9	0	0	47	5	13	4	3	1
3	13-Nov-2015	612744	2998	123	119	66	53	0	0	71	24	24	0	0	53	7	15	0	4	1
4	14-Nov-2015	612745	2906	123	108	61	47	0	0	67	27	14	0	0	53	12	11	2	7	2
5	15-Nov-2015	612746	2534	108	54	40	14	0	0	35	15	4	0	0	31	4	5	0	0	0
6	16-Nov-2015	612747	2942	123	77	28	49	0	0	55	14	8	0	0	37	8	3	0	5	1
7	17-Nov-2015	612748	2640	112	82	48	34	0	0	61	11	10	0	0	31	7	17	0	5	1
8	18-Nov-2015	612749	26	113	76	48	28	0	0	54	17	5	0	0	28	12	14	1	4	0
9	19-Nov-2015	612750			70	89	31	0	0	36	8	26	0	0	27	6	11	1	1	0
10	20-Nov-2015	612751	2908	123	81	87	24	0	0	59	15	7	0	0	24	9	15	2	4	1
11	21-Nov-2015	612752	2996	123	82	54	28	0	0	63	13	6	0	0	28	5	17	0	7	2
12	22-Nov-2015	612753	2990	27	99	55	44	0	0	71	16	12	0	0	42	9	3	0	3	0
13																				
14																				
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16																				
17																				
18																				
19																				
20																				
21																				
22																				
23																				
24																				
25																				
Total			34317	1454	1035	620	419	0	0	705	196	134	0	0	435	91	135	15	46	10

Notes:

- * For Protected species only
- ¹ All Billfish including swordfish
- ² Swordfish only

Fig. 10.2. Data Quality Control Sheet example.

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Chapter 11 Sea Turtle Handling and Data Collection

Introduction

If a sea turtle is caught, there are specific protocols that are required to be followed during handling. These protocols and guidelines have been developed to reduce the risk of further injury to the turtle and to the people handling it. The required protocols on handling and release are codified, and are ultimately the vessel operators responsibility. However, observers have the unique situation of being highly trained in dealing with sea turtle interactions (often time, far more than the vessel's crew) and may provide assistance when requested. It's going to be your job to make yourself an asset in these situations, to both the vessel and NMFS by collaborating with the crew in a team effort to get the turtle on board safely or alongside the vessel in order to collect your specimens/data. Special dehooking equipment has been developed to remove gear from hooked and/or entangled sea turtles and is described in detail in the first section of this chapter.

Once a sea turtle has been safely brought onboard or alongside the vessel, your job is to collect samples, take photographs and measurements, apply tags to turtles being released or retrieve tag information from previously tagged turtles, and draw a sketch. Procedures are found throughout this chapter. All information is to be documented on the Sea Turtle Biological Data form. Instructions on how to fill out this form can be found towards the end of this chapter. In addition, photographs, sketches, specimens, and tags applied or recaptured need to be filled out on the appropriate logs. Incidentally caught protected species need to be reported as soon as possible to PIROP using the satellite phone. Instructions on what needs to be reported when calling in can be found at the end of this chapter or in your Circular Updates. (Note: Follow the most recent procedure as reporting instructions may change.)

Data Collection Requirements:

1. Take photographs and draw a sketch.
2. Record the lat/long position and time of capture and release.
3. Measure turtles that are brought on board.
4. Record identifying characteristics.
5. Write a **detailed description** of fishing gear that couldn't be removed.
6. Write a **detailed description** of how the turtle was landed and handled on deck.
7. Collect skin biopsies from ALL turtles.
8. Apply flipper tags to live turtles brought aboard, and photograph tag location.
9. Retain carcass of dead animals when possible to bring aboard.
10. Call NMFS Protected Species Hotline and report the interaction.

The order in which these duties are performed may be influenced by the order in which each situation unfolds. **The only way to be ready for any interaction is to prepare for these situations by establishing coordinated efforts, communication, and expectations of everyone involved.** What does this mean? It means you, and all the vessel's personnel will have to work together to safely and effectively deal with an interaction.

Take photographs of all turtles to enable positive identification by scute counts, as well as a photo showing gear interaction **location** on the turtle. (Note: If the hook will be removed, take the photo before removing the hook). If a tag (PSAT or flipper) is applied to the turtle, take a picture showing the tag after attachment. For turtles that are too large to bring aboard, try to get as many photos as possible showing any distinguishing ID characteristics and where the gear is attached. It is important to record, as accurate and descriptive as possible, the precise location and effect of gear on the turtle. This data is used to estimate survival rates and efficacy of mitigation measures

Data collected on turtles will be used to determine the number, species, size, and condition of sea turtles interacting with the region's longline fishery. Other data are recorded on the movements and preferred habitats of the various populations of sea turtles. These data are critical to the development of conservation and recovery strategies for these marine reptiles.

Sea Turtle Handling and Dehooking

The shallow-set swordfish fishery for Hawaii-based longline vessels requires the use of specialized equipment, specific gear configurations, 100% observer coverage, and turtle interaction limits to manage fishery impacts to sea turtles. Dehooking equipment is required aboard all vessels with a permit for the Hawaii longline fisheries. The dehooking equipment is used for the safe release of incidentally caught sea turtles and has been demonstrated to be effective at increasing the post-hooking survival of sea turtles. In Hawaii, there is currently a limit on how many loggerheads and leatherbacks that can be caught in the shallow-set fishery in a calendar year. When either of the two sea turtle interaction limits has been reached, the shallow-set fishery will be closed for the remainder of the calendar year. Vessel owners will be notified of the closure and must stop shallow-set longline operations north of the Equator immediately when the shallow-set fishery is declared closed by NMFS.

Releasing turtles with minimal injury:

As a NMFS observer, you must be familiar with the dehooking equipment your assigned vessel has and where it is kept, to have it readily available, in case you need to use it. Though there are a few different options in the regulations, most vessels carry the “pigtail” version of the dehooker. There are also “J-style” and “Scotty’s” dehookers for external hooks. The most important purpose of the dehooker is to reduce the mortality of turtles by minimizing further injury during gear removal.

What are the observer’s responsibilities?

Observers are NOT responsible for attempting to remove hooks or entangled gear from “captured” turtles. Handling and disentangling efforts are the responsibility of the vessel operator, though you may assist when requested. Be sure to document any assistance you provide in the documentation notebook.

All efforts should be made to release the turtle with minimal injury. Owners and captains are required to attend an annual protected species workshop where they are presented with the dehooking techniques and turtle handling procedures. Each vessel has the same laminated instructional placards given out during observer training.

During the haul, while scanning the mainline, keep watch for turtles. Upon sighting a caught turtle, the vessel operator should stop the vessel and bring the turtle alongside the vessel by slowly and gently retrieving the branchline. Do not use gaffs or any other sharp devices to retrieve the turtle. Determine if the turtle can be brought on board safely, depending on its size and the sea conditions. The required turtle dip nets can accommodate turtles around three (3') feet in carapace length, which can generally be brought aboard safely. Coordinate your work with the vessel operator and crew. Dehooking a turtle, especially one that is too large to bring aboard, requires the assistance and cooperation of more than one person. Cooperation will result in the best possible release of the turtle. If possible, take a picture of the turtle as it is being pulled to the vessel or while it remains in the water. Assess the location of the hook/entanglement and prepare your biopsy pole while the vessel crew determines the best possible hook/line removal method that will be *least injurious* to the turtle. Afterwards, you also need to draw a sketch clearly illustrating the location and effect of the gear on the turtle.

What should be done if the turtle is too large to bring aboard or safety conditions are questionable? If the turtle can’t be brought aboard due to size or safety considerations, take video/photos, collect samples then video the removal of the gear while the turtle remains in the water. The turtle may need a short time to calm down. Make sure to try to do the following in the order below:

1. Take photos to show where the turtle is entangled/hooked and for species identification
2. Get a skin sample with the biopsy pole
3. Video the dehooking/release process
4. Complete a Sea Turtle Biological Data Form
5. Complete a Sketch form

What should be done if the turtle is small enough to board?

1. The vessel will bring the turtle aboard using a dip net
2. Take photos to show where the turtle is entangled/hooked and for species identification
3. Dehooking (only if sea turtle is alive)
3. Resuscitation (if turtle appears comatose or dead)
4. Biological sampling (ONLY after animal has had sufficient time to recover from the trauma of being caught and brought on board)
5. Apply flipper tags (ONLY to live recovered turtles)
6. Complete a Sea Turtle Biological Data Form
7. Complete a Sketch form

What if removing the hook may cause more damage?

Deciding whether or not to remove a hook is a judgment call; however, almost all external hooks should be able to be removed. If the hook is in a place where removal may cause further damage to a live turtle, then the hook should be left alone. For example, a hook embedded in the brain or glottis should not be removed. Remove hooks where the insertion point is visible. Bolt cutters may be more efficient than using a dehooker. Cut the eye or barb of the hook (or flatten the barb) and pull out the other end using the longnose pliers. If the hook cannot be removed, cut off as much of the visible part of the hook as possible. **Always cut away as much gear as possible on live turtles.**

What equipment is required on all Hawaii longline vessels?

Make sure you familiarize yourself with each vessel's equipment types and locations. All observers will go through classroom and dock side training with the pigtail dehookers (both long- and short-handled).

1. Long-handled dehooker for ingested hooks
2. Long-handled dehooker for external hooks
3. A long-handled device used to pull an "inverted V"
4. Short-handled dehooker for ingested hooks - pigtail with bite block
5. Short-handled dehooker for external hooks - such as J-style and Scotty's
6. Long-handled device for pulling an "inverted V" - gaff or long-handled J-style dehooker for external hooks
7. Long-handled line clipper - such as NOAA/LaForce or Arceneaux line cutter.
8. Tire
9. Long-handled dip net
10. Mouth openers and gags (a minimum of 2 of the following list of 7): block of hard wood; set of 3 canine mouth gags; set of two sturdy canine chew bones (*e.g.*, Nylabones); set of two rope loops covered with hose; hank of rope; set of 4 PVC splice couplings; large avian oral speculum (to be used to hold a turtle's mouth open and control the head with one hand while removing a hook with the other).
11. Wire or bolt cutters

Gaff: A standard gaff found on almost any fishing vessel can be used to fulfill the requirement of device to “pull an inverted V” (technique described later in chapter). It will be used to assist in disentangling, never to control the turtle.

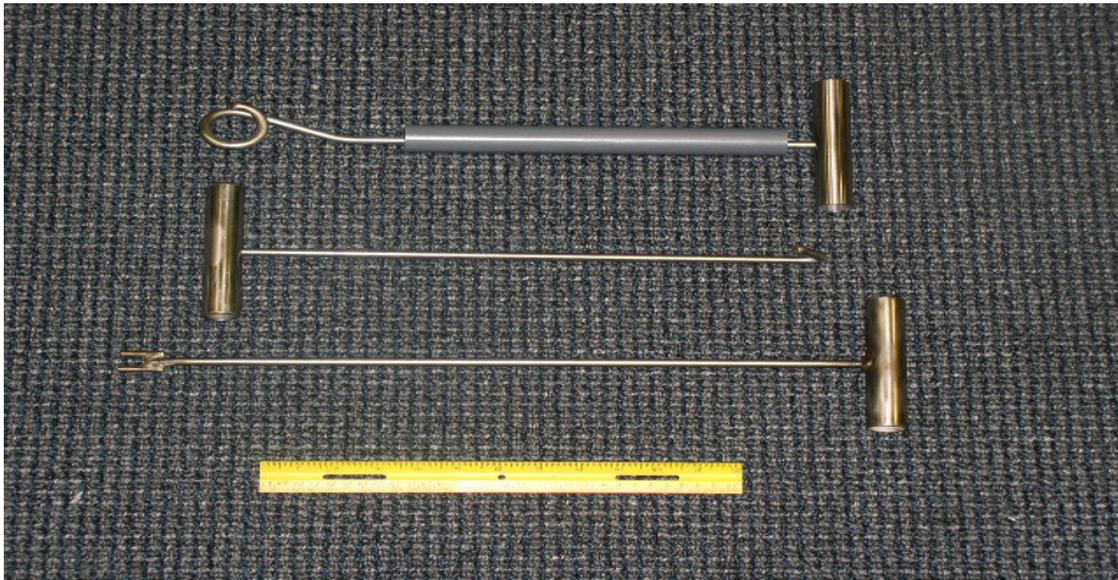
Long-handled “pigtail” dehooker: This dehooker may come in two pieces that can easily be assembled by twisting them together. Use this dehooker to remove hooks from turtles that are too big to be boarded.

Line cutter: Every vessel must carry a long-handled line cutter to assist in cutting the lines from turtles that are released while they remain in the water.



*Top: Line cutter
Middle: Long-handled pigtail dehooker
Bottom: Long-handled J-style dehooker*

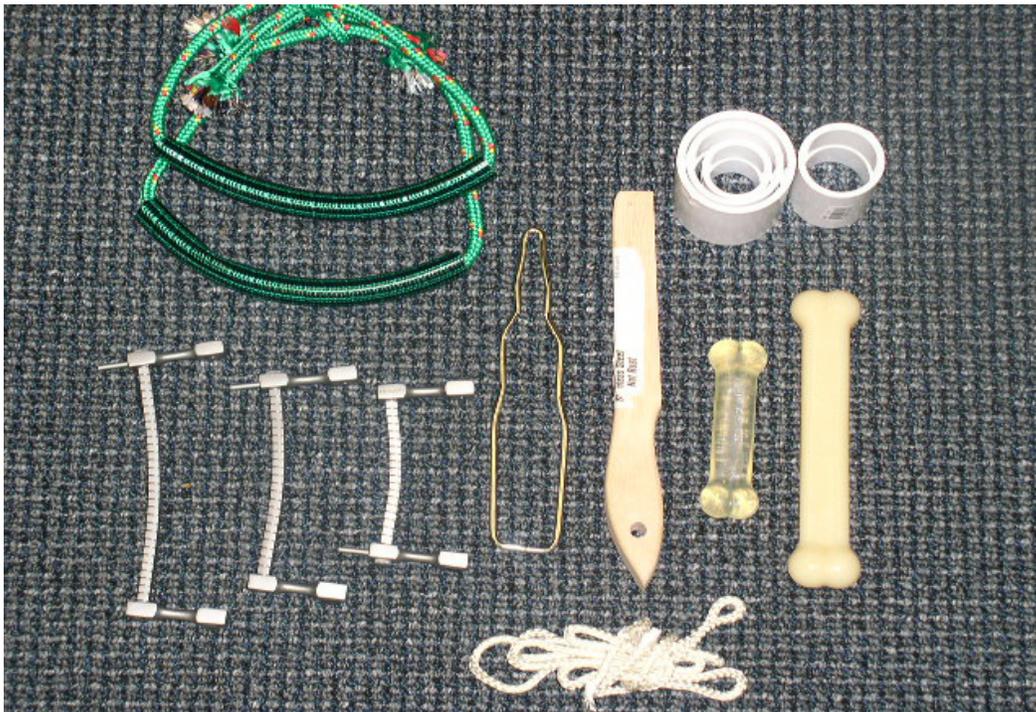
Short-handled “pigtail” dehooker: This dehooker is used for turtles brought on board. The PVC pipe is to protect the turtle’s beak from becoming damaged from the metal of the dehooker. It also serves to shield the barb of the hook to prevent reengagement once the hook has been released. The J-style and Scotty’s dehookers are also shown here and are used to remove external hooks that are not too deep.



Top: Short-handled pigtail dehooker

Middle: J-style dehooker

Bottom: Scotty’s dehooker



Examples of mouth openers and gags

How to use a long-handled pigtail dehooker.

Note: It is the responsibility of the vessel to perform these actions. Observers are trained and can provide assistance if asked by the vessel master.

1. The person holding the line attached to the turtle should try to stay to the left of the dehooking person while keeping the line taut. The dehooking person should have the mono to the left, and the dehooker to the right. Make sure to stay clear of being in between the leader and the dehooking device because if the line snaps it could be dangerous.
2. The person dehooking will place the dehooker on the line (perpendicular, at a 90-degree angle) with the opening of the pigtail facing up.
3. Pull the device toward you as you would a bow and arrow, until you engage the line.
4. Turn the dehooker a 1/4-turn clockwise, putting the line in the center of the curl.
5. Slide the dehooking device down the line until it engages the shank of the hook and bottoms out. You may have to rotate and move the device back and forth until the top portion of the pigtail is resting on the shank of the hook. This is the proper engagement on the hook.
6. Once engaged, bring the line and the device together making sure the mono is tight and parallel with the hooking device.
7. Communicate with the leader person so you know when to give slack and when to pull taut to prevent injury. Give a thrust downward until the hook disengages, then gently pull the dehooker upwards, with the hook holding the line taut so the hook is not too loose and does not reengage.

How to use a short-handled pigtail dehooker:

1. The dehooking person should hold the mono in the left hand, and the dehooker in the right holding the PVC pipe towards you up against the handle.
2. Place the dehooker on the line (perpendicular / at a 90-degree angle) with the opening of the pigtail facing up.
3. Pull the device toward you as you would pull back on a bow and arrow, until you engage the line.
4. Turn the dehooker a 1/4-turn clockwise, putting the mono in the center of the curl.
5. Release the PVC and slide the dehooking device down the mono, holding until it engages the shank of the hook and bottoms out. You may have to rotate and move the device back and forth until the top portion of the pigtail is resting on the shank of the hook. Drop the PVC pipe down. This is the proper engagement on the hook
6. Once engaged, bring the line and the device together making sure the mono is tight and parallel with the hooking device.
7. Give a thrust downward until the hook disengages, then pull up the dehooker holding the PVC down. Hold the line taut so the hook is not loose and can't possibly reengage.

Refer to the laminated placards handed out during dehooking training for a step-by-step diagram demonstrating the instructions above.

What type of scenarios might I encounter if the vessel fishing gear interacts with a turtle?

- (A) Entangled but not hooked
- (B) Hooked but not entangled
- (C) Hooked and entangled

The “inverted V” technique: Used when it is difficult to engage the line closest to the hook with the dehooker. With the gaff, carefully engage the line closest to the hook. The line should be pulled upward with the gaff, so that the monofilament line forms an “inverted V.” The dehooker person can then engage the line and continue with the steps for using a long-handled dehooker.



***SPECIAL NOTE* Live leatherback sea turtles should not be placed onto their backs!**

Release of the turtle once the hook has been removed:

1. The turtle must be placed in a secure and shaded location. If the turtle appears dead or comatose follow the resuscitation protocol on the following pages.
2. The turtle should be covered with wet towels, occasionally spraying the animal with a deck hose to keep it moist. Be careful not to spray its head and nostrils.
3. When the turtle is ready to return to sea, make sure there is no fishing gear in the water and the vessel is stopped. Place the propeller in neutral.

Resuscitation and Care

It is the vessel owner/operator's responsibility to ensure the following actions are performed but the observer should provide assistance when requested. All turtles that appear dead or comatose (unconscious) should be brought on board to attempt to revive the animal, when practical. Do not assume a turtle is dead based on a few minutes of observation. The following resuscitation techniques must be implemented:



1. The turtle should be placed on its bottom shell (plastron) so that the turtle is right side up and elevate its hind quarters at least 6 inches (15.2 cm) for a period of at least 4, but not more than 24 hours, keeping the turtle wet and well shaded. The amount of the elevation depends on the size of the turtle; greater elevations are needed for larger turtles. It is also recommended to periodically rock the turtle gently left to right and right to left by holding the outer edges of the shell (carapace) and lifting one side about three (3) inches (7.6 cm), then alternate to the other side. Gently touch the eye and pinch the tail (reflex test) at least once every 3 hours to see if there is a response.



2. Sea turtles being resuscitated must be shaded and kept damp or moist. Under no circumstances should sea turtles be placed into a container holding water. A water-soaked towel placed over the head, carapace, and flippers is the most effective method of keeping a turtle moist. Do not cover its nostrils.



NOTE: Never leave a Leatherback sea turtle upside down. Hardshell turtles may be flipped over for short periods of time for measurements, sample collection or tagging. Avoid leaving turtles upside down for extended periods of time. When upside down, the internal organs press on the turtle's lungs making it harder for them to breathe

3. Sea turtles that revive and become active must be released from the area of the boat that is closest to the water and away from fishing gear. Sea turtles that fail to respond to the initial and 2nd reflex tests (at least 3 hours later), AND fail to move after at least 4 hours (up to 24, if possible), must be retained for scientific research.

Observers are to request from the vessel personnel that **any dead sea turtles** encountered during the cruise be **retained** after processing for return to Honolulu. This includes dead turtles that may be encountered “free floating” and which are not necessarily attached to any gear. Very large sea turtles, *i.e.*, adult Leatherbacks, may present a problem with handling and storage on board the vessel until the end of the cruise. Dead turtles that are too large to bring aboard or store in the vessel’s hold space may be released only after ALL samples, measurements (if possible), and photographs are taken.

Once a sea turtle is confirmed dead and will be brought back to port the observer should:

1. Leave any entangled line or hook in place. Leave the free end about 2 feet long.
2. Do not apply flipper tags **but** leave any tags present in place.
3. Collect 2 skin biopsies and all other measurements.
4. Take photographs of gear location, injuries, and identifying characteristics showing dorsal, ventral, and frontal views.
5. Complete a Sea Turtle Biological Data form.
6. Complete a Sketch form.
7. Call PIROP following the current reporting instructions.
8. Record the turtle on the Specimen Log form.
9. Double wrap it with a specimen tag inside and out. Store it, frozen or buried in ice until the turtle is secured by NMFS or the observer contractor after a trip finishes.

Instructions for Applying Metal Flipper Tags To Sea Turtles

Special Conditions

All tags shall be cleaned (to remove oil residue) and disinfected before being used. First, wash the tag with soap and rinse thoroughly. Next, rinse the tag with disinfectant. Applicators must be cleaned (and disinfected when appropriate) between animals.

1. Remove a tag from the strip and record its alphanumeric number. Be careful not to bend the tag from its original shape. Peel back only enough tape to remove 1 or 2 tags at a time. If more tape is removed, the tags may fall off or become damaged.
2. With the piercing side of the tag up, place your index finger tip inside the bend of the tag. The piercing side of the tag has the numbers stamped into it (**see Figures 1 and 2**).
3. Hold the tag applicator pliers in the other hand, making sure the handle with the paint mark (or label) is up. Using your index finger, pull the tag straight back into the open jaws of the applicator pliers. A firm pull will be needed to completely seat the tag into its correct position. Take care not to squeeze the applicator handles before you are ready to apply the tag. If the handles are squeezed partway and then released, the bent tag will fall out and will not function properly (**see Figure 3**).
4. Locate the correct site where the tag will be applied on the trailing edge (rear) of the front flipper . Ask for assistance holding the turtle still. Make sure to position the tag so there is some overhang after it is attached to the flipper (**see Figures 4 and 5**).
5. Apply the tag by squeezing the applicator handles firmly. The tag point will pierce the flipper and lock into place through the other tag end. The piercing tip must be bent over completely to lock the tag. The handles of the applicator must be squeezed together very firmly at the final point in order to fully bend the point down.
6. Repeat the procedure in the same place on the other front flipper. All turtles should be double-tagged. Try to use consecutive numbers on the same turtle whenever possible. If a tag is ruined, record the number of the ruined tag, and use another tag. If the recommended tagging site cannot be used, find another site on the rear edge of the front flipper.
7. For each tag applied fill out all the tag information on a Tag Event form and describe any difficulties encountered while trying to apply the tags.
8. Photograph location of applied tags

*Adapted from instructions by George H. Balazs
Marine Turtle Research Program, NMFS Pacific Islands Fisheries Science Center
Honolulu, Hawaii*

Figure 1: Holding a flipper tag in correct orientation to load into applicator. Note that the number side of the tag is up.

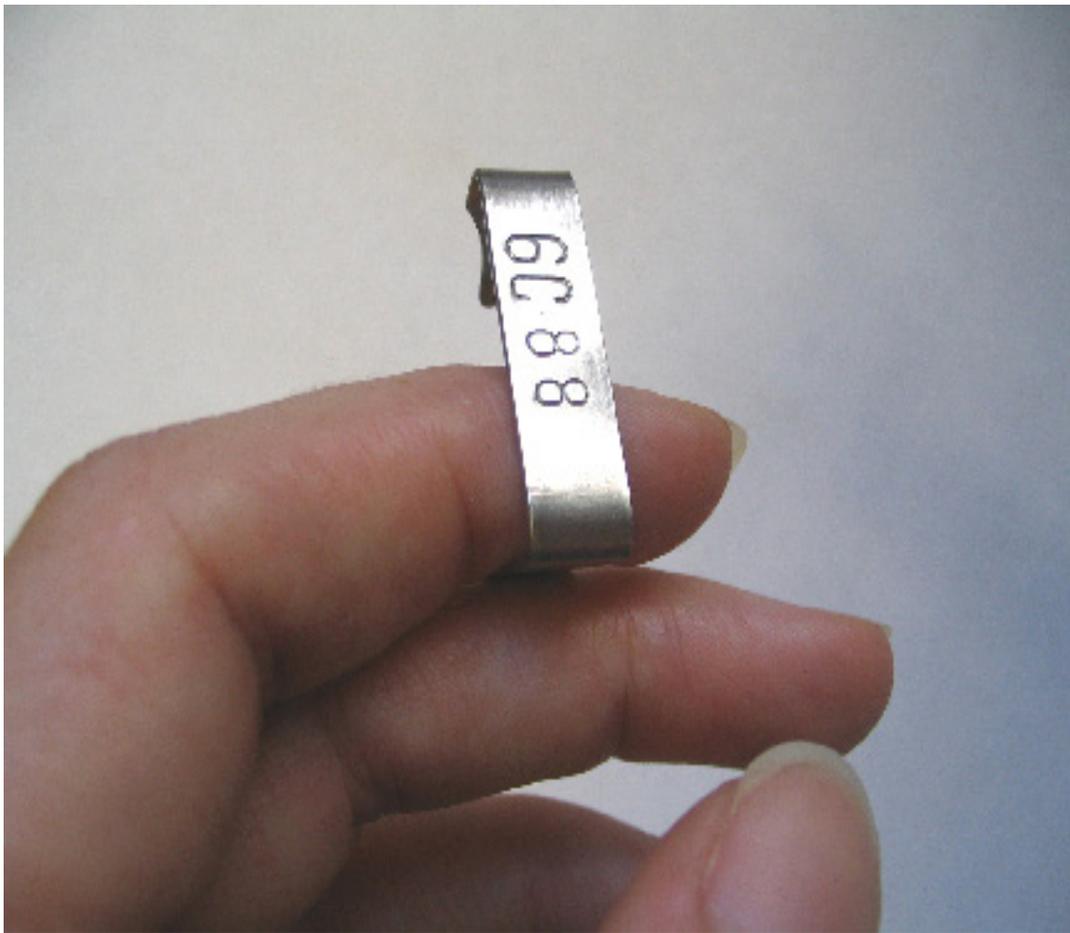




Figure 2: Loading a flipper tag into tag applicator. The arrow indicates which handle should be up.



Figure 3: A fully seated tag in the tag applicator pliers.



Figure 4: Arrow indicating the preferred location for flipper tag replacement. The next preferred location is between the two large scales to the right of the arrow.



Figure 5: Applying flipper tag to a front flipper of a green sea turtle. Note the slight gap between the angle of the tag and the edge of the flipper.



Figure 6: A properly applied flipper tag.

Protocol For Collecting Sea Turtle Skin Biopsies

Category A: Sampling a live sea turtle brought aboard the vessel

1. Turtles are always to be protected from temperature extremes of heat and cold, and kept moist during sampling. Turtles should be sampled in as clean an area as possible to minimize contamination and further injury to the turtle. The area surrounding the turtle should be clear of materials that could be accidentally ingested.
2. Stabilize the turtle by turning it over on its back (plastron up). This must NEVER be done with live Leatherback sea turtles. If available, a second person should provide assistance.
3. Using a disposable alcohol/Betadine swab, clean the skin region between the plastron and the base of the hind flippers (inguinal region). The skin in this area (ventral side at the base of the hind flippers) is normally soft and smooth and devoid of hard or enlarged keratinized scales and is the preferred area to biopsy. However, if for some reason it is not possible to sample this region, skin in the ventral pectoral area, at the base of the front flippers, may be used
4. Carefully remove a new biopsy punch (Acu-Punch® brand) from its sealed wrapper. Exercise care in handling as the circular cutting end of this instrument is very sharp. Use caution by holding the cutting edge away from you and other persons at all times.
5. Hold the plastic handle of the biopsy punch (this is the handheld biopsy punch) using your thumb and index finger. Place the circular cutting end on the cleaned smooth skin at the base of a hind flipper and rotate the punch while pressing down with moderate force. A circular cut will rapidly be made through the skin. Continue to rotate and press down to about 5 mm depth, or until the blade reaches maximum penetration. For samples taken from small turtles (< 25-35 cm carapace length), cutting to a depth of only 2-3 mm, or about half the length of the steel blade, will be sufficient.
6. Withdraw the biopsy punch from the skin by lifting it straight out. Use clean forceps to grasp and remove the thin circular plug of skin resulting from the cut made with the biopsy punch. The plug of skin may momentarily adhere to the underlying tissue, but will easily detach when lifted away.
7. Immediately place the plug of skin in a designated container (Whirlpak™) containing purified granular salt (NaCl). Shake the container for several seconds after placing the skin sample inside, to make sure the sample is covered by the salt. Using another disposable alcohol/Betadine swab, clean around and inside the region of the turtle where the skin plug was taken. Label the container with the specimen number, date, the turtle's flipper tag number, and/or any other unique identifying information available for the turtle.
8. Using the same biopsy punch, obtain a second disk of skin from the turtle, but from the other hind flipper region. This should be accomplished by repeating the procedures listed in steps 1-6. Place the second plug of skin in the same container (Whirl-pak™). Again, using another disposable alcohol/Betadine swab, clean around and inside the region of the turtle where the skin plug was taken. Store the labelled container in a secure location reserved for valuable scientific specimens
9. When both skin samples have been obtained, immediately return the biopsy punch to its protective wrapper and mark the package as "USED." Return it to the PIRO Observer Program for proper disposal. Additional new biopsy punches have been supplied to each observer; therefore, the same punch should not be used to obtain skin samples from another turtle. The forceps used to grasp the skin plug must always be thoroughly cleaned of any adhering tissue and rinsed with 90% alcohol after each turtle is sampled.

10. The live turtle should be released in an appropriate and safe manner after all the pertinent data have been collected and the turtle has been tagged. No other special treatment of the biopsy site is necessary prior to release. Slight bleeding may occur, but this will cease shortly after the turtle is returned to the ocean.

Category B: Sampling a dead sea turtle brought aboard a vessel

1. Follow the same protocol as described above for a living turtle (Category A, Steps 1-8).
2. Be certain that the turtle is in fact dead prior to freezing it for transport to NMFS. This means that the turtle has been on deck for a MINIMUM of 4 hrs, and a reflex test has been administered at least every 3 hours. A comatose, but live sea turtle, may in some cases exhibit absolutely no movement or signs of life. In other cases, an unconscious sea turtle may show some evidence of eyelid or tail movement when touched. **Note:** Make sure the turtle is in the shade to minimize additional stress, and drying the turtle out. A turtle that shows no signs of life, and no response to reflex tests, after at least 4 hours, during resuscitation, may be safely considered as dead.

Category C: Sampling a large sea turtle dead or alive in the water alongside the vessel that has been hooked or entangled

1. The sampling gear consists of a 10-ft pole with a threaded adapter securely fixed to one end. The threads have silicone grease on them and are fitted with a protective rubber sheath that can be easily removed. Each pole comes with a biopsy corer. This is a small stainless steel cutting tool with prongs extending from the inner surface to entrap the tissue once coring has occurred. Each corer is stored in a 2-cc plastic cryovial and should be on your person, or within arms reach whenever working on deck. The bag also contains a vial of liquid salt (NaCl) solution.
2. When a large turtle is hauled in alongside a vessel and is available to sample, the corer should be threaded to the adapter. This should be an effortless act since the corer gets threaded and checked for issues prior to each trip. A forceful jab should be made to ensure full penetration by the corer, and will often require a twisting motion to engage the cutting edge of the corer. Suitable sampling sites include anywhere on the flippers, shoulder region, pectoral, and pelvic regions. The 1-cm depth of the corer is such that no permanent damage will result if a strike to the carapace is made. This is why it is imperative that you do not use the marine mammal corer to collect turtle specimens; it cuts to a greater depth. For leatherbacks, the somewhat soft nature of the carapace will allow sampling of tissue that will be entirely suitable for DNA analysis. Do not target the carapace, but if a tissue core is taken from this area, the sample can be successfully used to extract DNA.
3. The corer should be unscrewed once the pole is brought back on deck and it is checked to ensure a sample is within it. Care should be taken not to strike a crewmember while swinging the 10-ft pole aboard. Once unscrewed, the entire corer with tissue inside should be placed into the vial containing the salt solution and properly labeled. Do not attempt to remove the tissue from the corer. Only one sample can be collected with each corer.

Sea Turtle Biological Data Form

General Instructions

Complete a Sea Turtle Biological Data form for every sea turtle caught, including entangled individuals, or that you collect specimens from. If a sea turtle is observed caught, but is not landed, complete as much of the form as possible. For unboarded turtles, you should complete at a minimum, the following elements:

1. Header information on the form
2. Capture information block
3. Release information block

Data Elements

Trip Number: The unique 6-digit number assigned by the Operations Coordinator. In the first two blocks, record LL for longline. After the second block, enter the 4-digit sequential number.

Set No.: Record the set number from the Catch Event Log form.

Species Code: Record the 3- digit code for the species of turtle captured from the Species Code List.

Associated Log Forms (Photo? Specimen? Sketch? Tag?): Place a check mark or X in the box to indicate which additional log forms contain data associated with this turtle. If you mark a log form box, make sure to complete the information on the indicated log.

Catch Form Page Number: Record the page number from the appropriate Catch Event Log form.

Catch Form Line Number: Record the line number from the Catch Event Log form that contains information on the capture of this particular sea turtle.

Capture Block

Date/Time: The date and time the turtle was caught. Use the standard date format DDMMYYYY (example: 24 JUL 2007) and 24-hour format.

Latitude: Record the position of capture in degrees and minutes of latitude of the vessel at the time the animal was landed. Record N/S in the last blank to indicate which hemisphere.

Longitude: Record the position of capture in degrees and minutes of longitude of the vessel at the time the animal was landed. Record E/W in the last blank to indicate which hemisphere.

Boarded: Place the appropriately corresponding code to indicate how or if the turtle was brought on board the vessel.

Tags Present? Record a Y, N, or U (unknown) to indicate whether tags were present on the sea turtle at the time of capture.

Release Block

Date/Time: The date and time the turtle was released. Use the standard date format (example: 24 JUL 2007) and the 24-hour format.

Latitude: Record the position of release in degrees and minutes of latitude of the vessel at the time the animal was released. Record N or S in the last blank to indicate which hemisphere.

Longitude: Record the position of release in degrees and minutes of longitude of the vessel at the time the animal was released. Record E or W in the last blank to indicate which hemisphere.

Note: Sometimes an animal may be observed caught and then quickly released from the gear during hauling operations. In such cases, the Position of Capture and the Position of Release can be the same. Make sure the Time of Capture and Time of Release are different.

Disposition Code: Record the code corresponding to the fate of the turtle. In the Comments section on the back, record specific notes about any damage to the turtle. Describe the behavior of the turtle when released.

Note: If the initial condition of the turtle changes, then the final condition should be recorded. Record detailed notes of the change.

Disposition Code List

Released Injured [03]: The turtle was injured as a result of fishing operations, or by vessel personnel. "Injured" applies to animals removed from the gear with obvious physical injury or gear attached. Turtles that are hooked are considered injured. Turtles that are entangled and landed should also be considered injured.

Died [04]: The turtle died due to injuries incurred during fishing operations .

Tags Removed? Put a check mark or X in the box to indicate if tag(s) were removed from the turtle. Tags should only be removed if they are unreadable or in danger of falling off. Salvage any tags you remove for return to port.

Tags Applied? Put a check mark or X in the box to indicate if tags were applied to the turtle. Make sure to fill out a Tag Event form for each tag applied (flipper or PSAT) to the turtle.

Hooking/Entanglement Block

Hooked? Entangled? Answer each question with a Y, N, or U. A turtle can be both hooked and entangled.

Hook/Entanglement Location: Select a code that indicates which part of the turtle the line was hooked and/or entangled on. If more than one part is hooked or entangled, use the code indicating the part that had the most or more severe connection. Photograph the hook/entangled area if possible and describe in the Comments section. Refer to the end of this chapter for pictures and definitions of these codes.

Gear Removal: Choose the code that best indicates how the animal was removed from the longline gear. If no gear is removed, leave this blank.

Remaining Gear: Select the letter code indicating what type of fishing gear, if any, remains on the turtle. On the lines below, describe what type and amount (length) of gear was left on the turtle. If the turtle is dead, photograph the remaining gear before wrapping the turtle up for storage.

Morphology Block

Answer these four questions with a Y, N, or U.

Skin Covered Carapace? Write Y if the carapace is covered by a thick rubbery skin. Write N if the carapace is covered with hard, bony scutes.

Overlapping Scutes? Y if there are overlapping scutes on the dorsal surface; N if not.

Inframarginal Scutes with Pores? Y if the inframarginal scutes have pores; N if not.

One Pair Prefrontal Scales? Y if the turtle has *only* one pair of prefrontal scales. If there is more than one pair, enter an N in the box.

Carapace Scute Counts

No. of Left Costal Scutes: Count the number of costal (= lateral) scutes on the left side of the carapace and record the number. Refer to the diagrams on your sea turtle ID handouts.

No. of Right Costal Scutes: Count the number of costal scutes on the right side of the carapace and record the number. Refer to the diagrams on your sea turtle ID handouts.

No. of Vertebral Scutes: Count the number of vertebral (= central) scutes in the midline of the carapace and record the number. Refer to the diagrams on your sea turtle ID handouts.

No. of Inframarginal Scutes: Count the number of scutes on either side of the plastron. If the number of inframarginal scutes on each side differs, enter the higher number in the box and record details in the Comments section.

Dorsal Coloration: Select the code that describes the general color of the carapace: Orange/Red, Grayish, or Other. If Other, please describe.

Measurements Block

Take measurements in centimeters to the nearest 0.5 cm using a tape measurement for curved measurements and a meter stick (calipers) for the straight measurements. Try to remove any epibiota that affects any of these measurements. Record the details on the back of the form.

Carapace Length (curved): Record the distance between the front edge of the nuchal scute (the scute in the middle of the front edge of the carapace) and the rear of the carapace, following the curvature of the dorsal centerline. If there is a notch between the two posterior marginal scutes, measure the distance to the rear most point of the scutes. For turtles with a keel running down the center of the carapace (leatherbacks, juvenile olive ridleys, and loggerheads), measure to one side of the median keel, not on top of it.

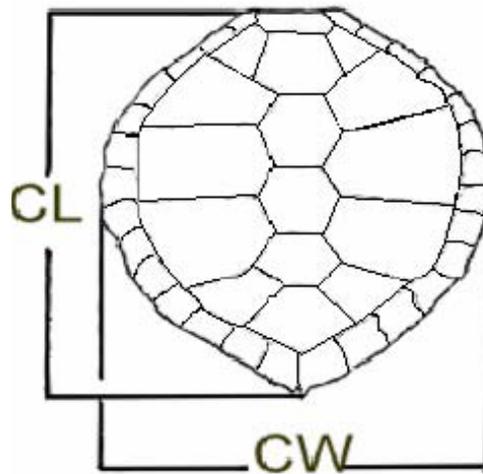
Carapace Width (curved): Record the maximum distance between the lateral edges of the carapace, measure over the curvature of the shell.

Plastron Length (straight): Record the maximum straight-line distance from the anterior margin (front tip of the plastron) of the intergular scute to the posterior margin (rear tip of the plastron) of the post-anal scute. Use the 2 m calipers for this data element (DO NOT USE the tape measure). On leatherback turtles, you will have to feel for the anterior and posterior edge, through it's skin. **DO NOT COLLECT THIS MEASUREMENT ON LIVE LEATHERBACKS.**

Tail Length: Measure and record the distance between the rear most point of the plastron and the tip of the tail. Use a tape measure for this data element.

Carapace Length (straight): Measure and record the distance between the center of the nuchal scute and the rear edge of the carapace. If there is a notch between the two posterior marginal scutes, measure the distance to the rear most point of the scutes. Use the 2 m calipers for this data element. For turtles not measured, approximate this length in feet and record in the comments section.

Carapace Width (straight): Measure and record the maximum distance between the lateral edges of the carapace. Use the 2 m calipers for this data element. Sketch the dorsal and ventral views to illustrate lesions or injuries.



Points to measure for sea turtle carapace lengths.

CL = Carapace Length

CW = Carapace Width

Light Device

Complete these elements only if devices were used on this set, and the device type has been indicated on the Gear Configuration form

Color Code: Record the code that best indicates the color of the light emitted by the device.

Note: Code 8 (Mixed) should only be used if there are 2 different colors on adjacent branchlines, but not the line with the turtle.

Proximity Code: Select the code that shows how far away the next light device is from the branchline the turtle was hooked or entangled on.

Comments Block

Comments: Describe the entire event from the time the turtle was sighted until it was released or until you determined that it was dead. Make sure to include details on how the turtle was brought on board the boat if it was landed and how it was cared for once on deck. Describe dehooking procedures if the animal was alive and you removed or attempted to remove the gear. Describe resuscitation techniques used. Describe any problems encountered with any procedures and any assistance that you required. Approximate length would also be recorded here.

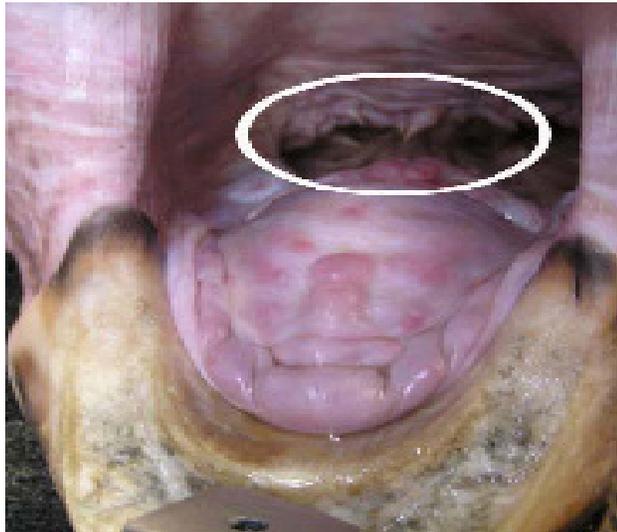
Injuries Description: Describe any injuries caused by the turtle being hooked or entangled or further injuries caused by trying to remove the hook. Describe whether or not the line/wire leader left any marks on any soft parts of the turtle. Note whether or not there was any blood at the point of hooking or entanglement. Be sure to include any injuries on your sketch form as well. For turtles that have bitten a hook be sure to describe the location as precisely as possible, *i.e.* esophagus, glottis, etc. Refer to the guide below to help describe hooking locations

Identifying Characteristics: List at least 5 identifying characteristics of the turtle captured.

Hooking/Entanglement Codes

01. Ingested - inside the esophagus, the entrance marked by the presence of papillae.

Esophagus



03. Front flipper - hooked or entangled on either front flipper.

04. Body/shell- hooked or entangled around the carapace or plastron, not including the other coded regions of the body.

05. Unknown. Unable to determine hooking/entanglement location.

06. Tail - hooked or entangled on the tail itself.

07. Rear flipper - hooked or entangled on either rear flipper.

10. Upper beak - portion of beak located inside of the mouth (hard keratinized rhamphotheca- hardshell turtles only).

11. Lower beak - hard keratinized portion of beak (lower jaw) located inside of mouth.

12. Side of mouth - The area of the jaws with soft tissue over bone that does not include the beak parts, or the tongue/glottis. The jaw joint/ hinge will be encompassed in this code.

13. Tongue/glottis - located on the floor of the mouth, extends to the entry of the esophagus.

14. Head/Neck - externally hooked/entangled on the head or neck region.

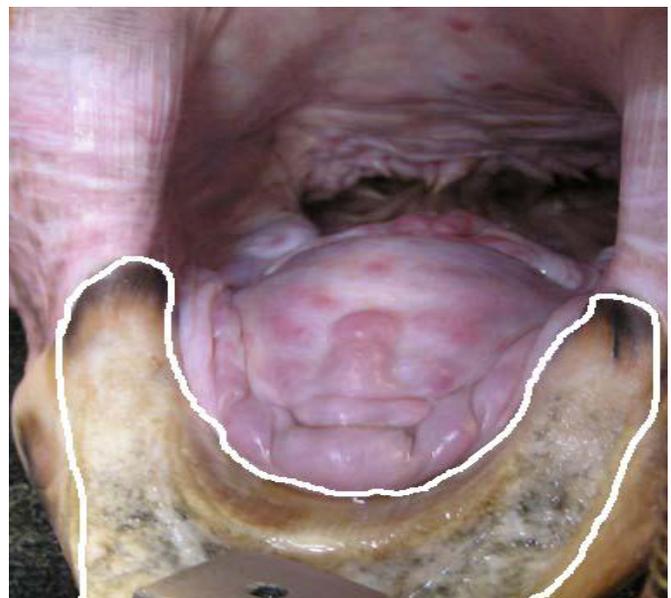
15. Roof of mouth - soft tissue are extending from the upper beak to the esophagus.

16. Mouth unknown - turtle was hooked in mouth, but exact location not determined (common when turtles are not boarded).

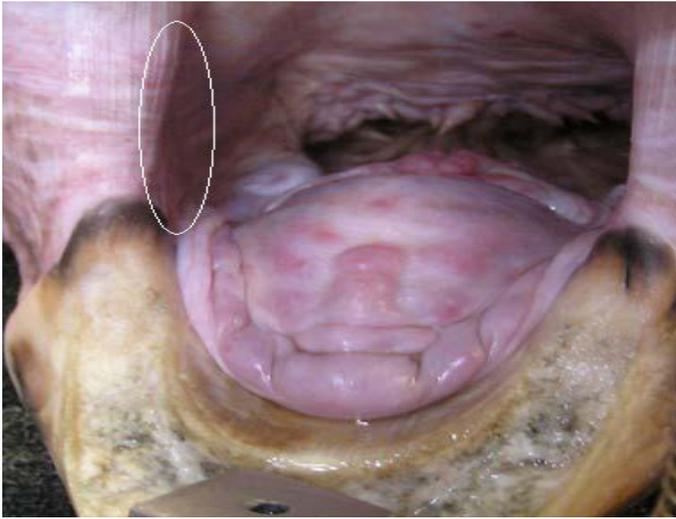
20. Other - use this code to describe a location not otherwise coded.



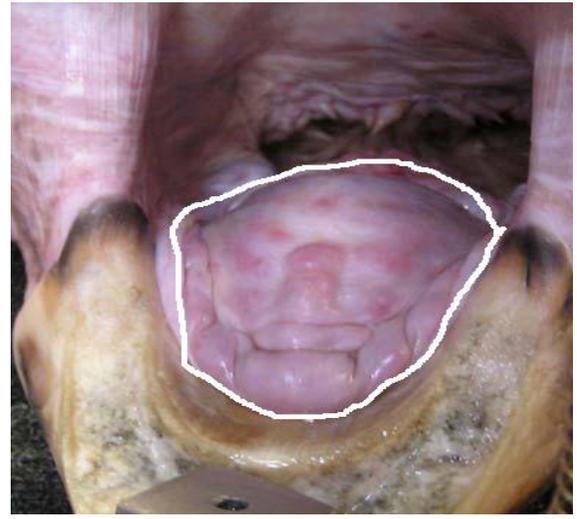
10. Upper beak



11. Lower beak



12. Side of mouth



13. Tongue/glottis



15. Roof of mouth

Instructions For Reporting Sea Turtle Interactions

All sea turtle interactions should be reported as soon as possible. The report should be phoned in by calling (808) 366-2221 using your issued satellite phone. All interactions will receive a confirmation. If you do not receive a verbal or text confirmation, call again. When reporting sea turtle interactions, be to report the following information:

If you wish to make additional comments or ask questions, please do so after reading off the list of reporting items below.

- Line 1. Trip number (also give observer & vessel names)
- Line 2. Trip type
- Line 3. Set number
- Line 4. Date and time of the interaction
- Line 5. Species
- Line 6. Disposition
- Line 7. Position of the interaction, Lat/Lon (or sighting for STAL)
- Line 8. Hooked or Entangled
- Line 9. Location of hook, or line if entangled
- Line 10. If Brought on board, *i.e.* Boarded Y/N
- Line 11. Amount and type of remaining gear
- Line 12. Number of hooks per float
- Line 13. Float line length
- Line 14. Float number
- Line 15. Hook number
- Line 16. Hook type and size
- Line 17. Number of lightsticks used on the set
- Line 18. Carapace length-Use straight length for AL if not brought on board.
- Line 19. Photo or video, if taken
- Line 20. Sample Y/N and type, if collected.

Write the information down before making the call.

When leaving a message or making a verbal report, please refer to the line number of each item. Follow the order. Speak the line number, the subject or type of information, and then the information.

for example "..., Line 13 float line length..., Line 15, hook number..., Line 17, No. of lightsticks..."

If you don't have data for an item on the list say "No Data". For example if you couldn't to tell if a turtle was hooked or entangled, say "Line 8 hooked or entangled No Data".

In some cases, a report will initiate immediate actions and notification of other offices. It is critical that the information called in is correct the first time it is reported.

Please include descriptive details about the hooking, such as how the hook was removed or injuries to the turtle. Also include any collaboration or difficulty you encounter while working with the vessel crew to process the turtle. If reporting a STAL sighting, make it clear if you got photos or video of the sighting.

If you wish to make additional comments or ask questions, please do so after reading off the list of reporting items.

**DOC/NOAA Fisheries
Pacific Islands Region
Online Observer Program
Sea Turtle Biological Data Form**

Trip No. LL4672
Set No. 02

Species Code 505

504 Loggerhead Sea Turtle
502 Green Sea Turtle
506 Leatherback Sea Turtle
503 Hawksbill Sea Turtle
505 Olive Ridley Sea Turtle
500 Unid. Hard Shell Sea Turtle
501 Unidentified Sea Turtle

Photo?
Specimen?
Sketch?
Tag?
Comment? (Enter comments on back of this form.)

Associated Form Code LL
Associated Form Page No. 04
Associated Form Line No. 09

Capture

Date/Time Day Month Year Hour Minute
20 NOV 2016 02 36

Latitude Deg. Decimal Min. N/S
14 54.3 N

Longitude Deg. Decimal Min. E/W
164 43.4 W

Boarded 01

01 Boarded w/ Dipnet
02 Boarded w/o Dipnet
03 Not Boarded

Tags Present? N Y Yes
N No
U Unk.

Release

Date/Time Day Month Year Hour Minute Disposition Code
 20 04

Latitude Deg. Decimal Min. N/S

Longitude Deg. Decimal Min. E/W

Tags Removed?
Tags Applied?
03 Releas. injured
04 Died

Hooking/Entanglement

Hooked? Y Y Yes
N No
U Unknown

Entangled? N

Hook Location 03

01 Ingested (in esophagus) 10 Upper beak
03 Front Flipper 11 Lower beak
04 Body/Shell 12 Side of mouth
05 Unknown 13 Tongue/Glottis
06 Tail 14 Head/Neck
07 Rear Flipper 15 Roof of mouth
20 Other 16 Mouth unknown

Entangle Location

Gear Removal 06

00 Unknown
02 Fell from gear while in water.
03 Fell from gear once out of water.
05 Removal req. cutting gear/animal
06 Removal with no cutting.
12 Dehooker
99 Other

Remaining Gear X X None
H Hook
L Line
B Both Hook and Line

Describe hook or line and length left on animal:

Morphology

Skin Covered Carapace? N (N implies carapace is covered w/ scutes.)

Overlapping Scutes? N Y Yes
N No
U Unknown

Inframarginal scutes with pores? Y

One pair of prefrontal scales? N (N implies more than one pair.)

Carapace Scute Counts (Enter the no. of scutes in the boxes.)

No. of Left Lateral Scutes 5

No. of Right Lateral Scutes 5

No. of Vertebral Scutes 5

No. of Inframarginal Scutes 4

Dorsal Coloration 03

01 Orange/Red
02 Grayish
03 Other, give color below

Other dorsal color: grayish green

Measurements

Round to the nearest half cm.

Carapace Length (curved) 061.0 cm

Carapace Width (curved) 068.0 cm

Plastron Length (straight) 043.0 cm

Tail Length 08.0 cm

Carapace Length (straight) 055.0 cm

Carapace Width (straight) 053.0 cm

Light Device

Complete only if light devices were used and the light device type has been indicated on the gear configuration form.

Color Code

01 Blue 06 Yellow 11 Red
02 Green 07 Magenta 12 Orange
03 Black 08 Mixed 13 Silver/Metal
04 Pink 09 Other
05 White 10 Clear

Proximity Code 0

00 On this branch line
01 Light is 1 branch line away
02 Light is 2 branch lines away
03 Light is 3 branch lines away
04 None in vicinity

Fig. 11.1. Seaturtle Biological Data Form example

Associated Form Code

Associated Form Page No.

Associated Form Line No.

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

Trip No.

Set No.

Sea Turtle Biological Data Form Comments

Comments:

Animal was brought up to the boat dead, boarded with dipnet and processed as a specimen.

Injuries Description:

Was hooked at the base of left front flipper, no other predation damage observed.

Identifying Characteristics:

Olive green and gray in color, bell shaped shell, 5 lateral scutes, 4 intramarginal scutes with pores

Chapter 12 Seabird Biological Data Form

Introduction

The Seabird Biological Data form is used for recording data from seabirds incidentally caught during longline fishing operations. These data will be used to determine the number, species, and condition of seabirds interacting with the longline fishery in the Central Pacific. These data are critical to the development of conservation and recovery strategies.

Remember:

Specimen collection and life history work are prioritized so if an activity must be curtailed, the most important data and specimens have the highest collection priority.

The priorities of data and sample collection are as follows:

1. Record sea turtle identifying characteristics, morphometric measurements, and tag data. Retain dead sea turtles after processing.
2. Record marine mammal interactions and collect samples.
3. Record seabird identifying characteristics and tag data. Retain all dead seabirds if they have a band (leave leg bands in place on bird) or if it is a dead short-tailed albatross. If it is a dead bird without bands refer to current collection protocols in your Circular Updates. a
4. Collect and record fish measurements.

General Instructions

Complete a Seabird Biological Data form for every seabird caught (including entangled individuals) or that specimens are collected from. If a seabird is observed caught, but is not landed, complete as much of the form as possible. For unlanded seabirds you should complete at a minimum the following data elements: (1) header information on the form; (2) capture information block; (3) release information block. If you are not sure of what to record in any element, leave the data field blank and describe the situation with notes. **Take photographs of all seabirds that are caught.**

Data Elements

Trip No.: The unique 6-digit number assigned by the Operations Coordinator. In the first two blocks, record LL for longline. After the second block, enter the 4-digit sequential number.

Set No.: Record the set number from the Catch Event Log form.

Species Code: Record in the code box the 3-letter code from the Species Code List which corresponds to the species of seabird.

Check Boxes: Place a check mark or X in the boxes for each type of additional documentation or information (**Photo? Specimen? Sketch? Tag?**) that was collected from this species.

Catch Form Page No: Record the page number from the appropriate Catch Event Log form.

Catch Form Line No: Record the line number from the Catch Event Log form that contains information on the capture of this particular seabird.

Capture Block

Date/Time: Record the date and time the bird was observed to be caught, using the DD MMM YYYY format (Ex: 19 NOV 2007); and the 24-hour format.

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was observed to be caught. Record N/S in the last blank to indicate which hemisphere.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the animal was observed to be caught. Record E/W in the last blank to indicate which hemisphere.

Landed: Place a check mark or X in the box to indicate whether or not the bird was landed. Landed means the seabird was brought onboard the vessel. Leaving this box blank means that the bird was not brought onboard the vessel. Describe the landing of the animal in the Comments section.

Tags Present? Enter Y, N, or U, as appropriate, in this box. Write tag number(s) in the Comments section, and fill out a Tag Event Log form.

Release Block

Date/Time: Record the date and time the bird was released, using the DD MMM YYYY format (Ex: 19 NOV 2007); and the 24-hour format.

Latitude: Record the position of release in degrees and minutes of latitude of the vessel at the time the animal was released. Record N or S in the last blank to indicate which hemisphere.

Longitude: Record the position of release degrees and minutes of longitude of the vessel at the time the animal was released. Record E or W in the last blank to indicate which hemisphere.

Note: Sometimes an animal may be observed caught and then quickly released from the gear during the hauling operations. In such cases, the position of capture and position of release can be the same. Make sure that the time of capture and time of release are different.

Disposition Code

Record the code corresponding to the fate of the bird. In the Comments section, record specific notes about any injury to the bird. If the initial condition of the bird changes, then the final condition should be recorded. Record detailed notes of the change. Birds kept as specimens do not get release positions or times, only dispositions.

Released Injured [03]: The bird was released injured as a result of fishing operations, or by vessel personnel. "Injured" is an animal removed from the gear with obvious physical injury or with gear attached. A seabird that is hooked is considered injured. A seabird that was entangled and landed should be considered injured.

Died [04]: The bird died due to injuries incurred during fishing operations

Other/Unknown [07]: The final fate of the bird involved is unknown, or its condition after leaving the gear or deck was unobserved.

Hooking/Entanglement Block

Hooked? Entangled? Answer Y, N, or U for each element. Each box should be filled in independently of each other. A single bird will have two Y answers if it was both hooked and entangled.

Hook Location: Select the code that indicates which part of the bird was hooked. Photograph the hooked area if possible, and describe in the Comments section on the back of the form.

Entangle Location: Select the code that indicates which part of the bird was entangled. Photograph the entangled area if possible, and describe in the Comments section on the back of the form.

How Gear Removed: Choose the code that best indicates how the animal and gear were separated from each other. If no gear was removed, leave this blank.

Remaining Gear: Select the letter code indicating what type of fishing gear, if any, was not removed from the bird. In the box below, describe what the type and amount (length) of gear was left on the bird. If the bird is dead, photograph the remaining gear attached to the bird before wrapping it up for storage, and try to keep the gear attached to the bird whenever possible (hook and leader is fine)

Morphology Block

Bill Color, Mantle Color, and Head Color: Enter the appropriate code for each of these items.

Check Box: If the tip of the bill is a different color than the rest of the bill, write an X or check mark in the box.

Light Device Block

Complete these elements only if light devices were used on this set, and the device type has been indicated on the gear configuration form

Color: Record the code that best indicates the color of the light emitted by the device. Code 8 (Mixed) should only be used if there are 2 different colors on adjacent branchlines, but not the line with the bird.

Proximity: Select the code that shows how far away the light device is from the branchline the bird was on.

Comments Block

Comments: Describe the entire event from the time the bird was sighted until it was released or until you determined that it was dead. Make sure to include details on how the bird was brought on board the boat if it was landed and how it was cared for once on deck. Describe any problems encountered with any procedures and any assistance that you required. If you released the bird, was it retained for a period to recuperate? Also, describe the animal's condition at the time of release.

Injuries Description: Describe any injuries caused by the bird being hooked or entangled or further injuries caused by trying to remove the hook. Describe whether or not the line/wire leader left any marks on the bird. Note whether or not there was any blood at the point of hook-ing or entanglement.

Identifying Characteristics: List at least 3 identifying characteristics of the bird captured

**DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program
Seabird Biological Data Form**

Trip No. **LL2784**

Set No. **06**

Species Code **681**

Most common species:
682 Laysan Albatross
681 Black-Footed Albatross

Photo?
Specimen?
Sketch?
Tag?
Comment? (Enter comments on back of this form.)

Associated Form Code **CL**
Associated Form Page No. **01**
Associated Form Line No. **04**

Capture

Date/Time Day Month Year Hour Minute
22 APR 2016 08 47

Latitude Deg. Decimal Min. N/S
26 39.2 N

Longitude Deg. Decimal Min. E/W
160 25.4 W

Landed?
Tags Present? **Y** Y Yes N No U Unk.

Release

Date/Time Day Month Year Hour Minute Disposition
20 **04**

Latitude Deg. Decimal Min. N/S
Longitude Deg. Decimal Min. E/W

03 Relsd. injured
04 Died

Hooking/Entanglement

Hooked? **Y** Y Yes N No U Unknown
Entangled? **N**

Hook Location **01**
Entangle Location **0**

How Gear Removed **06**

Remaining Gear X None H Hook L Line B Both Hook and Line

01 Ingested (in esophagus)
02 Head/Beak
03 Wing
04 Body
05 Unknown
06 Tail
07 Leg/Foot

00 Unknown
02 Fell from gear, while in water
03 Fell from gear, once out of water
05 Removal req. cutting gear/animal
06 Removal with no cutting
99 Other
12 Dehooker

Morphology

Bill Color **01**
Mantle Color **01**
Head Color **01**

01 Dark gray-black
02 Buff-cream/pink-gray
03 Bright pink

01 Dark gray-black
02 Solid brown
03 White/light back

01 Dark gray
02 White with dark lores
03 White

Tip of bill is a different color from the rest of the bill.

Light Device

Complete only if light devices were used and the light device type has been indicated on the gear configuration form.

Color **00**

01 Blue 06 Yellow 11 Red
02 Green 07 Magenta 12 Orange
03 Black 08 Mixed 13 Silver/Meta
04 Pink 09 Other
05 White 10 Clear

Proximity **00**

00 On this branch line
01 Light is 1 branch line away
02 Light is 2 branch lines away
03 Light is 3 branch lines away
04 None in vicinity

Describe hook or line and length left on animal:

Fig. 12.1 Seabird Biological Data Form example.

Associated Form Code

C	L
---	---

Associated Form Page No.

0	1
---	---

Associated Form Line No.

0	4
---	---

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

Trip No.

L	L	2	7	8	4
---	---	---	---	---	---

Set No.

0	6
---	---

Seabird Biological Data Form Comments

Comments:

Bird was landed dead and processed as a specimen.

Injuries Description:

Hook was partially ingested but was torn back to the base of the bill.

Identifying Characteristics:

Large sized bird, white patch around the base of tail, white ring at the base of tubular bill, all dark gray black coloration, black webbed feet.

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Chapter 13 Marine Mammal Biological Data Form

Introduction

The Marine Mammal Biological Data Form is used to record the biological data from any cetaceans (whales & dolphins) and pinnipeds (seals) involved in interactions with pelagic longline fishing gear. The information obtained is used to develop baseline and management data on marine mammal species. These data can be used to ascertain the what, if any, are the impacts of pelagic longline fishing on marine mammal populations. The data can also be used to estimate age at sexual maturity, birth rates, feeding habits, life span, and sex ratios. Positive species identification is critical, and carries potentially serious management implications.

General Instructions

Complete a Marine Mammal Biological Data form for every marine mammal interaction (hooked and/or entangled) or that specimens are collected from. A sketch form is required to accompany all Biological Data Forms. Sketch the features you saw and used to identify the animal on the Sketch form, as well as any gear the animal may have interacted with. The Biological Data form is not to be used for sightings.

It is important to note that vessel operators are required to supervise marine mammal handling and release during interactions.

Call the PIROP Reporting Hotline as soon as possible. 808-366-2221. If you do not receive confirmation of your report by text or phone, call again during business hours. All reported interactions will receive a confirmation. Do not return any boarded marine mammals without speaking to someone at NMFS first (use the 24hr contact numbers if need be). You may be advised on additional sampling protocol. Please have the required Marine Mammal Interaction Report ready when you call.

Marine Mammal Interaction Report

- | | | |
|------------------------------|---------------------------|--|
| 1. Trip number | 9. ID char's | 17. Videos/photos: Y/N |
| 2. Trip Type | 10. Hooked/entangled | 18. Sample collected: Y/N |
| 3. Set # | 11. Hook Location | 19. Branchline length & diameter |
| 4. Date/ time of interaction | 12. How interaction ended | Write down the information BEFORE making your report. Sending correct information the first time is important. |
| 5. Length of interaction | 13. Gear remaining | |
| 6. Position, Lat/Lon | 14. Hook # | |
| 7. Species | 15. Hook type | |
| 8. Disposition | 16. Hooks/float | |

During marine mammal interactions, the observer's duties are (in order of importance):

1. Confirm positive identification- Your most important duty is to identify the species, preferably with video, so keep your camera on deck and in an easily accessible location (not in your bucket). **Shoot video** as soon as you recognize that there is a marine mammal on the line, and continue shooting video until you are confident in the ID or confident that you have captured enough of the animal on video that it could be identified later (i.e., during debriefing). If the animal is too far from the vessel for you to see it clearly you are required to notify the captain of what you need to make the ID. For example; "I need the animal closer so I can ID it". Be certain you state what assistance you need from the vessel to complete your duty. The vessel crew will work to release the animal with as little harm and gear remaining as possible. This does not preempt your need to identify the animal. Observer duties require you to see and identify all animals that are hooked or entangled, as long as there are no prevailing safety concerns. In most cases you may be able to ID the species while the captain and crew are attempting to release the animal. You will have to cooperate and coordinate with the vessel to obtain species ID. Do not wait until an interaction occurs to discuss coordinating your needs with the vessel crew.

2. Allow the vessel to attempt to release the animal. It is the vessel's top priority to release the animal immediately with as little harm and with as little gear remaining as possible. While the captain and crew are responding to the animal, continue to observe the interaction. Pay attention to details such as the injury, location of hooking/entanglement on the animal's body, and the animal's behavior. If requested by the vessel, you may assist in the handling/release of the animal, but be sure you document any assistance you provide.

3. Collect a skin biopsy- Proceed to this step, ONLY if the vessel is unable to release the animal easily, and must bring it alongside to disentangle/remove gear. Do not request that the animal be brought alongside the vessel

for the sole purpose of obtaining a specimen. The welfare of the animal has a higher priority than a specimen. If the animal is brought alongside the vessel, get your biopsy corer and pole and be ready to use them as quickly as possible to try and minimize how long the animal is detained by the gear, and the crew's efforts. After you confirm you have a specimen, secure the corer, notify the vessel, then if time remains film the disentanglement and release of the animal. Some captains will prefer for you to wait until they give the signal that it is safe to attempt your specimen collection so be sure to keep open communications through the entire process. Some vessels may have enough crew that someone could be using the NMFS camera to film your attempts to collect a specimen, but you would need to coordinate these efforts as well.

4. Record interaction data as timely and accurately as possible. Don't wait to do this later. Complete your data requirements while they are fresh in your mind. Be sure to record how you coordinated your efforts with the vessel during the handling and release including any assistance you provided to the vessel. Greater detail for comments can be filled in later. Record what you need because you will now be calling in a report.

CALL NMFS!!!

Cetacean Skin Biopsy Collection Protocol

Remember, this should only occur if attempts to release the animal require that it be brought alongside the vessel for gear removal. **NOTE: Do Not Collect A Samples From Seals or Sealions.**

Equipment for your sampling kit are:

- 1 - stainless steel coring tips (to be mounted on the pole)
- 2 - plastic vials, some containing a preservative solution.
- 3 - sample labels
- 4 - strips of Parafilm®
- 5 - Sharpie® permanent marker
- 6 - pencil

Preservative - Marine mammal tissue should be stored in ethanol. Samples that are too large for specimen vials should be double bagged, tagged and frozen.

Methods - When a caught marine mammal comes up, communicate and coordinate with the vessel to safely get the animal close enough to remove the gear and obtain a biopsy sample. If the animal is agitated and vigorously swimming around, it may be difficult to get the animal within range for sample collection. *If there is a significant risk of injury to the crew, the animal, or yourself, do not attempt to collect the sample.* This is especially true in the case of larger whales. Use your best judgement and remember, while each sample is valuable to researchers, **SAFETY COMES FIRST ALWAYS! Wear gloves to prevent transmission of disease, and infection and never process marine mammal tissue without gloves on.**

Use your best judgement as to when during the disentanglement/dehooking process to take your sample. For example, you may have ample opportunity to gather a sample from a dead or seriously entangled animal. However, an animal that is just hooked may be very lively, and your opportunities will be limited. You should keep your sampling equipment readily available to you. Make sure that your sampling pole is not tied down during fishing operations and can be retrieved at a moment's notice. Keep your Marine Mammal Sampling Kit on deck with you, preferably in the top of your bucket, for easy access, and the biopsy corer on your person.

Sample Collection - Attach the stainless steel coring tip to your sampling pole. Thrust the coring tip into the dorsal surface of the animal *away from the blow hole* to collect a skin sample. Check your corer after each attempt to verify that a specimen was actually collected. This may require more than one attempt. If the animal is very large, you can take the sample from the back, side, belly, or tail stock. Skin samples for genetic analyses can be collected from anywhere on the body of the cetacean. *Avoid trying to sample from the dorsal fin, pectoral flippers, or fluke and DO NOT SAMPLE FROM THE HEAD AREA.* These regions are hard and it is difficult to cut the skin. The following diagram illustrates the best areas to collect your sample from and what areas to avoid.



 Preferred Sampling area  Avoid  Secondary sampling area

Once you have collected the tissue sample, unscrew the tip from the pole, and place the sample in the vial containing the preservative/fixative solution. If you are re-using your marine mammal core, it is acceptable to clean the corer with alcohol and collect other specimens.

Sample preservation -Use the preferred sampling preservative described in your marine mammal kit. If you have no more preservative and a freezer is available, place the sample in an empty vial and proceed with steps 1, 2, and 4 below. If a freezer is not available, or the freezer on board fails, put the collected sample in one of the vials containing preservative/fixative and follow steps 1 through 4 below. Already frozen specimens too large to fit in vials can be stored in the ice hold. All large samples must be double bagged with a specimen tag inside and on the outside of the bags as well.

Labeling the sample:

1 - On the sample labels (i.e., small pieces of bond paper), use a **pencil** to record the specimen number, species, and date collected. Insert the label into the vial with the sample.

2 - Label each vial (cap and side of the vial) with the specimen number and species name using the enclosed Sharpie® permanent marker.

3 - Tighten the cap securely, and wrap a strip of Parafilm® around the cap and the top of the vial. Stretch the Parafilm® as you wrap. This will prevent leaking of the sample while in transport.

4 - Complete a Marine Mammal Biological Data form with your specimen number, species identification (detail characteristics used to make the ID), date collected, and position information. A sketch and photo showing the entanglement and any obvious wounds are also required.

Photographing boarded marine mammals

For marine mammals that are boarded (dead only) and afford you more time to work with the animal, be sure you take photographs focusing on the following subjects:

1. Injury-with gear attached if possible
2. Head
3. Dorsal fin - size shape and relative location on body; try to obtain a clear perpendicular shot of the fin for use in photo-ID research
4. Any patterns or markings
5. Overall image - you may have to overlap photos to accomplish this.

Disentangling Cetaceans from Longline Fishing Gear

Caution: *Marine mammal disentanglement is a very dangerous operation, and should be undertaken only with the utmost regard to human safety. If it can't be done safely, don't do it! It is the vessel's responsibility to handle and release marine mammals.*

Observers should not help or direct disentanglement/dehooking of marine mammals unless asked.*

Observers should video the process and provide assistance, only if requested by the vessel. Vessel operators are required to supervise the handling and release. If you provided any assistance with the handling or release of a protected species, you should document it in your documentation notebook.

Never enter the water to disentangle or dehook a marine mammal. Lines wrapped around the body or any body part are more dangerous to the animal than any trailing line(s).

Do not tie or attach any lines or equipment fixed to the vessel or any person, to any entangling gear attached to or trailing off the animal.

Data Elements

Trip Number - The unique six-digit number assigned to you by the Operations Coordinator. In the first two blocks, record LL for longline. After the second block, enter the four digit sequential number.

Set Number - Record the set number from the Catch Event Log, if applicable.

Associated Form Code - Record the appropriate two letter form code from the bottom right corner of the form. For example, the Catch Log form code is CL.

Associated Form Page Number - Record the page number from the associated form.

Associated Form Line Number - Record the line number from the associated form that contains information on the interaction or capture of this particular marine mammal.

Capture Information Block

Date of Capture - The date the marine mammal came up. Use the standard date format (e.g. 24 JUL 2009)

Time of Capture - Record the time the marine mammal came up. Use the 24-hour format.

Position of Capture – If the position of capture is not able to be recorded when the interaction occurs, please comment when the coordinates were recorded. Sometimes an animal may be observed caught and then quickly released from the gear during hauling operations. In such cases, the positions of Capture and Release can be the same. Just make sure the recorded times of Capture and Release are different, by at least one minute, and noted in the comments.

Latitude - Record the degrees and minutes of latitude of the vessel at the time the interaction occurred. Record N/S in the last blank.

Longitude - Record the degrees and minutes of longitude of the vessel at the time the interaction occurred. Record E/W in the last blank.

Landed - Place a check mark or X in the box to indicate that the marine mammal was landed. Landed means the animal was brought on board the vessel. Leave blank if the animal was not landed. Describe the landing of the animal in the Comments section.

Species Code - Record the appropriate 3-digit code from the species code list found on the form or in the manual.

Tags Present - Record a Y, N or U to indicate whether tags were present on the marine mammal at the time of capture.

Release Condition - Record the code corresponding to the fate of the marine mammal. In the Injuries Description section on the back, record specific notes about any damage to the marine mammal. Describe the behavior of the animal when it was released.

Note: If the initial condition of the marine mammal changes, then the final condition should be recorded and record complete notes of the change.

Capture Behavior Block

If the animal is alive, check the most appropriate boxes that describe the behavior of the animal during the interaction. Describe significant events such as changes in behavior in as much detail as possible

Form Comments

In an effort to manage protected species and their interaction with regional fisheries, a list of Observer specific questions was developed to clearly describe these events. By answering these questions with as much detail as possible, you will be allowing managers and scientists to better understand the impact of these interactions. If you run out of room on this form, use an additional Marine Mammal Biological Data form. Answer each question in their appropriate comments section, with your narratives including answers to the following questions. Please be as detailed as possible, and keep in mind that unnecessary facts can be deleted in the office if not needed, so include everything that you believe to be pertinent.

Comments

1. *Duration*-how long was the observed part of the interaction? Did you observe the entire interaction? How long did it take to pull the animal along-side the vessel, and how long was it handled there?
2. *Distance*- How far was the animal from the vessel when 1st sighted? Was the animal primarily at the surface? If not, approximately how many times did you see the animal surface?
3. *Hook location*- If hooking location is not clear, detail its likely locations. What prevented you from seeing the hook location?
4. *End*-How did the interaction end? Did the line break? Was it cut? Where was it cut?
5. *DNA*-Did you attempt to collect a sample?
6. *Other MM*-Were there other marine mammals in the area during the interaction? What kind? How many? What were they doing?
7. *Depredation*- Did you notice any MM damage on catch or bait during the haul?

Gear Comments - Describe in detail any boxes you checked on the front of the form.

1. *Line break*-Did you measure the remaining branchline after it broke/was cut, to determine how much was left on the animal, or did you estimate it?
2. *Hook condition*- Could you verify the hook type/size associated with this interaction? Did the hook straighten or break during this interaction?
3. *Dehooking*- Was an attempt made to dehook the animal? With what equipment?
4. *Haul Gear*- did you notice any broken gear or straightened hooks on this haul?
5. *Branchline diameter*- include the diameter of the branchline involved in the interaction. Record diameters for all the lines involved.

Injuries Description

1. *Line Wrap*- If entangled, could you see line wrapped around or restricting movement in the entanglement location? How many wraps of line were entangled around the animal? Were there line wraps around the animal after release? Was the line wrapped tightly or loosely? After release, how much line, in addition to any wraps, was trailing?
2. *Handling*- describe any injuries the animal sustained from the handling and release of the animal.
3. *Bleeding*- Was there any evidence of bleeding? Where and how much?

Identifying Characteristics - List as many diagnostic characteristics as you could see including;

1. *Color*- Dark, light? Gray, brown, black? Fading color? More than one color?
2. *Shape*- Was the animal long and skinny? Short and fat? Did it resemble a passenger ship fender or a torpedo? What was the shape of its head? Did it have a beak?
3. *Pattern*- Did you see any patterns. Marks or shapes on the animal? Cape, mask, spots, stripes, etc?
4. *Dorsal fin* What was the size and shape of the fin? What was the relative location of the fin
5. *Other IDs*- If the ID is uncertain what do think are the best choices for possible species? IF YOU ARE CERTAIN OF THE ID, DO NOT ANSWER THIS QUESTION.

Release Code List

Injured [03] - The marine mammal was injured as a result of fishing operations, or by vessel personnel. "Injured" applies to animals removed from the gear with physical injury or with gear attached. Marine mammals that are hooked and/or entangled are at least considered injured.

Dead [04] - The marine mammal died due to injuries incurred during fishing operations

Photo, Specimen and Sketch check boxes - Place a check mark or X in the box to indicate which additional log forms contains data associated with this marine mammal. If you mark a log form box, make sure to complete the information on the indicated log. If you catch a marine mammal at the very minimum you should have a sketch and as many comments as possible. Sketch the features you saw and used to identify this animal on the Sketch Log. Also, try and sketch how any gear was attached to the animal. This can be very helpful in later injury determinations.

Hooking / Entanglement Block

Hook Type Code -If the animal is hooked, or is hooked and entangled, record the appropriate code for the hook size involved in the interaction, if known. If the animal is entangled but not hooked, leave blank. Use code 06 when hook type is unknown and the vessel employs more than one hook type. Do not assume the hook involved in the interaction is the same as the hooks you sampled for the Gear Configuration form. Unless you see the hook involved, do not assume what it's size or type is.

Hook Size Code -If the animal is hooked, or is hooked and entangled, record the appropriate code for the hook size involved in the interaction, if known. If the animal is entangled but not hooked, leave blank. Use code 06 when hook size is unknown and vessel employs more than one hook type.

Hook Diameter-Measure the round wire diameter of the actual hook involved in the interaction. Do not assume it is the same type/size as the hooks you recorded on your Gear Configuration form.

Hooked/Entangled - Answer each question with a Y and or N. A marine mammal can be both hooked and entangled.

Hook/Entanglement Location - Identify how and where the gear is attached to the animal and check all location boxes that apply. If you answer U for both Hook and Entangled then do not check any location boxes. Video/ photograph the hook and/or entangled area if possible, and describe the details in the *Comments* section. If you check Other, describe the location on the back of the form.

Gear Block

Gear Attached After Release - Check all the boxes that apply among the choices. If you check branch line, determine the number of attached branch lines and estimate the total length (in feet or meters) of material attached in the comments. If you check main line or float line, estimate the total length of main line or float line (in feet or meters) material attached in the comments. Describe the configuration of how gear was attached in the comments (e.g. main line wrapped around tail 3-4 times then trailing for an additional 3 meters). Additionally list all the codes checked in the box at the bottom of this section. Leave this blank for retained animals.

Measurements Block

Total Length - If the marine mammal is landed, use your calipers to measure the total length of the animal in cm. For cetaceans, this is done by measuring the distance from the tip of the snout to the deepest part of the notch in the fluke (this is considered fork length in fish).

Approximate Length - If measurement cannot be obtained record the approximate total length of the marine mammal in either feet or meters and record the code of the measurement unit used in the appropriate box.

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

Trip No. **LL1784**
Set No. **05**

Marine Mammal Biological Data Form

Capture

Date/Time Day Month Year Hour Minute
17 MAY 2016 23 01

Latitude Deg. Decimal Min. N/S
23 52.4 N

Longitude Deg. Decimal Min. E/W
143 50.6 W

Species Code **742**

Associated Form Code **CL**

- 742 False Killer Whale
- 746 Risso's Dolphin
- 743 Short-Finned Pilot Whale
- 731 Bottlenose Dolphin
- 700 Unidentified Cetacean

Associated Form Page No. **01**

Associated Form Line No. **14**

Boarded?

Tags Present?

Y= Yes
N= No
U= Unknown

Release Condition **03**

03 Injured
04 Dead

Photo?
Specimen?
Sketch?

Hooking/Entanglement

Hook Type

07

- 06 Other
- 08 Offset Round Circle
- 09 Offset Flat Circle

Hook Size

Hook Diam. (mm)

Hooked?

Entangled?

Location (check all that apply) Location (check all that apply)

- | | Code | |
|---|------|--|
| Mouth <input type="checkbox"/> | MO | Mouth <input type="checkbox"/> |
| Lip <input type="checkbox"/> | LP | Lip <input type="checkbox"/> |
| Head <input type="checkbox"/> | HD | Head <input type="checkbox"/> |
| Body <input type="checkbox"/> | BO | Body <input type="checkbox"/> |
| Pectoral Fin <input type="checkbox"/> | PF | Pectoral Fin <input type="checkbox"/> |
| Dorsal Fin <input type="checkbox"/> | DF | Dorsal Fin <input type="checkbox"/> |
| Fluke <input type="checkbox"/> | FK | Fluke <input type="checkbox"/> |
| Internal/Ingested <input type="checkbox"/> | IN | Internal/Ingested <input type="checkbox"/> |
| Unknown <input checked="" type="checkbox"/> | UK | Unknown <input type="checkbox"/> |
| Other <input type="checkbox"/> | OT | Other <input type="checkbox"/> |
- (describe on back) (describe on back)

Gear

Gear Attached After Release

- | Code | | |
|------|-------------|--|
| NO | None | <input type="checkbox"/> |
| HK | Hook | <input checked="" type="checkbox"/> |
| WL | Wire leader | <input checked="" type="checkbox"/> If ✓'d, provide length. |
| MN | Mono leader | <input checked="" type="checkbox"/> If ✓'d, provide length. |
| WT | Weight | <input checked="" type="checkbox"/> If ✓'d, provide size & numbers. |
| BL | Branch line | <input checked="" type="checkbox"/> If ✓'d, provide numbers & lengths. |
| FO | Float line | <input type="checkbox"/> If ✓'d, provide numbers & lengths. |
| FT | Floats | <input type="checkbox"/> If ✓'d, provide numbers. |
| ML | Main line | <input type="checkbox"/> If ✓'d, provide length. |
| OT | Other | <input type="checkbox"/> If ✓'d, provide description. |

Provide requested details about anything ✓'d above on reverse side under Gear Comments.

Measurements

Total Length cm

OR

Approximate Length **09**

F F= feet
M= meters

Capture Behavior

- | | |
|---|------------|
| <input checked="" type="checkbox"/> Struggling? | Code
SR |
| <input type="checkbox"/> Calm? | CA |
| <input type="checkbox"/> Vocalizing? | VO |

Fig. 13.1. Marine Mammal Biological Data Form example.

Associated Form Code

C	L
---	---

Associated Form Page No.

0	1
---	---

Associated Form Line No.

1	4
---	---

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

Trip No.

L	L	1	7	8	4
---	---	---	---	---	---

Set No.

0	5
---	---

Marine Mammal Biological Data Form Comments

Comments: (Include: 1. Duration, 2. Distance, 3. Hook Location, 4. End, 5. DNA Attempt, 6. Other MM, 7. Predation) . Refer to manual for guidance!

Mammal came up on a tangle breaching, and straggling. The Captain tried to maneuver the vessel to give some slack, which took about 5 minutes but as soon as the line tightened. The branchline broke and it swam away. The mammal came close to the vessel within 20 feet, hook location was not clear, could not take a sample.

There were no other marine mammals during that haul but predation occurred.

Gear Comments: (Include: 1. Line Break, 2. Hook Condition, 3. Dehooking, 4. Haul Gear Condition, 5. Diameter). Refer to manual for guidance!

Hook type and size unknown 0.4 m of wire leader, 45g weight and about 4 feet of monofilament was left on the animal. I couldn't tell which hook size or type was on the animal since the vessel used two sizes and types of hooks.

Injuries Description: (Include: 1. Line Wrap, 2. Handling, 3. Bleeding). Refer to manual for guidance!

Injuries unknown, couldn't tell. This vessel has less working deck lights.

Identifying Characteristics: (Include: 1. Color, 2. Shape, 3. Pattern, 4. Dorsal Fin, 5. Possible ID's). Refer to manual for guidance!

Small, falcate dorsal fin, located far back from head, torpedo shaped body, all dark black in coloration.

Chapter 14 Specimen Log

Introduction

The Specimen Log is a record of all species and samples collected by an observer during a trip. List the species sequentially by set date. Refer to current Circular Updates to see required specimens to sample other than protected species. The header of the form contains the Trip number and Trip Specimen Log page number. Photograph all sampled animals except Lancetfish.

Data Elements

Date - Enter the date the specimen was collected. This is usually the same as the set haul back date or check the camera's date stamp. Use the DD MMM YYYY format.

This Page Number - Use the page number that appears at the top of this form, starting with 01 for Specimen Log form 1, 02 for Specimen Log form 2, etc. It is acceptable to draw a line down here.

This Line Number - Use a new line for every new specimen type that is collected. For example, if you collect a whole carcass and DNA biopsies from the same animal, one line would contain information with the Whole Animal and the next line would contain the information with the DNA plug as the specimen type.

Set Number - Enter a 2-digit number indicating the set that the specimen was collected from. If a specimen was collected while the vessel was not engaged in fishing operations, leave blank and describe the situation with notes.

Association (Form Type, Page Number, Line Number) - List the form code that links the specimen to the form that contains the information about that particular specimen.

Specimen Type Code - Refer to the code chart on the left margin of the form. Enter the single-letter code (W, D or Z) that indicates the type of specimen that was collected. Each specimen type should be recorded on it's own line, even if they are collected from the same animal. The Z code encompasses anything that is not defined by another code. A marine mammal head (if directed to collect one) would be an example of the Z code. If the specimen is a request from a circular update, refer to the circular for the appropriate code.

Specimen Type Name- There may be more than one specimen type for a single animal so it is important to state exactly what was sampled. Depending on the Circular it could be a skin biopsy, muscle tissue, liver, gonad, a fin clip, the head, or the whole animal.

Preservation Method- Depending on the Circular, samples may need to be stored whole in the freezer, in a small vial of ethanol, or in a plastic container of Glyo-Fixx. After the Species Name, state the preservation method in parenthesis.

Collection Purpose - Explain the reason the specimen was collected. The two most common reasons are Protocol or Circular #. If there is an unusual reason for collecting the specimen, explain with notes in the Comments section of the form.

Specimen Numbering System

Each sample or specimen collected, from an animal that was caught, will have a unique 12 character specimen ID number assigned to it. The specimen ID number is composed (in order) of the Trip Number, Set Number, Catch Log Form Page Number, and Catch Log Form Line Number, *combined*. Specimens collected from animals not recorded on the Catch Event Log only get a trip number plus a sequential letter, starting with A. The letters should be continuous in a single trip. Label each sample and record the information on the Specimen Log form. Use leading zeros! Always double check each specimen label with the Specimen Log to ensure they match.

When filling out a specimen tag, always include the following

- Specimen number
- Species common English name & (Species code)
- Specimen Type Name
- In what type of fixative/preservative the sample was stored (Frozen, ethanol, etc.)

Specimens stored in vials or bags should include labels INSIDE and OUTSIDE. Sometimes the outside label is ripped or damaged. Labels inserted into vials must be written in pencil because ink or marker may be soluble in the preservatives and dissolve off the label! Make sure that ALL specimens are double labeled to avoid situations where the specimen cannot be identified!!!

Example Specimen Tags

1. A whole dead Loggerhead Sea Turtle from Trip LL5017. Set 15, Catch Event Log page 04, line 07. The specimen number for Example 1 is LL5017 15 04 07

LL5017 15 04 07

Loggerhead Sea Turtle (504)

Whole (frozen)

2. Dead free-floating Humpback Whale with a DNA biopsy taken on LL5017. Boat bumped into it during hauling operations.

LL5017 A
Humpback Whale (755)
DNA biopsy, still in corer (ethanol)

DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program

Trip No. L L 0 7 1 1

Specimen Log Page No. 0 1

Specimen Log

Date dd/mmm/yyyy	This Page No.	This Line No.	Set Number	Association			Specimen Type Code	Species Name (code), Specimen Type Name, Preservation Method	Collection Purpose
				Form Type	Page No.	Line No.			
18/ FEB/2016	7	1	7	LL	02	11	D	Silky Shark (413), muscle tissue, ethanol	112B
		2							
		3							
		4							
		5							
		6							
		7							
		8							
		9							
		10							
		11							
		12							
		13							
		14							
		15							
		16							
		17							
		18							
		19							
		20							

Fig. 14.1. Specimen Log example.

Specimen Type Code and Name

W Whole Animal

D DNA plug

Z Other

Chapter 15 Tag Event Log

The Tag Event form is a record of data on every tag recovered or deployed during a trip for all species. The recovery of tagged animals is rare; thus, the information from a recovery is very important to researchers and resource managers in several agencies.

Fill out the header information with the appropriate data. *Fill out a separate form for each tag.*

Photograph all tags applied or recovered.

Data Elements

Tag Event Block

Species Code - Enter the tagged species 3-digit species code from the Species Code List (Chapter 20).

Tag Event Type - Select AP for Tag Applied, RC for Tag Recaptured, or RM for Tag Removed*.

- * Describe the reason for removal in the Comments section of the form. Note: Only remove tags from animals if they are in danger of falling off or are unreadable. If the vessel does not have enough freezer space and a seabird cannot be retained, it is okay to remove the leg bands and collect them. A tag form should still be completed for removed tags.

1 - If an animal is captured and it already has tags on it, leave them in place. This is considered a “re-captured tag”. *Fill out a Tag Event form for each tag recovered, and another one for each of the tags that you place on the animal.*

2 - If a banded, dead albatross is encountered and it is salvaged (brought on board and saved) during longline fishing operations, leave the bands in place on the bird’s legs.

Tag Number - Fill in the boxes with the ID numbers/code on the tag. Left justify this number. *Make sure the sequence matches what is on the tag.* Include all zeros, spaces, and dashes! Different tags may have different mixes of letters and numbers; for example, E-770 is not the same as E770.

Tag Type - Select the code from the reference table that indicates the type of tag encountered (01 Spaghetti, 02 Archival, 03 Leg band, 04 Flipper, 05 PSAT). If you are unsure of the type of tag, draw a picture and take a photograph of the tag against a white or neutral-colored background.

Tag Location - Select the code for where the tag was attached to the animal’s body.

Tag Material - Enter the code for the material the tag is constructed of: plastic (01) or metal (02). Metal (Inconel®) is commonly used for sea turtle flipper tags. Some tags routinely placed on fish or sharks are made of wire with a plastic sheath; **record** these tags as made of plastic.

Tag Color - Select the code for the color of the tag. If the tag looks faded, record the color of the tag as it **appears now**, not what you think it may have been. Many tagging programs maintain a set of originals and a set that has been exposed to the environment. A tag that was originally red can fade to a pinkish color, but not be the same color “pink” as a tag that was originally pink. Also note any secondary colors. e.g., black with white lettering.

Comments - Describe any details not covered by the other data fields. Tag condition, the tag site, condition of the animal after tag application, or anything else related could be very useful. **If another tag is applied to this animal, list that tag number and location here.**

Tag Contact Information - Write any address, phone number, or other contact information found on the tag here. If there is no contact information, write “no contact information”. If the tag is lost or returned to sea on an animal that is still alive, the tag contact information is vital.

This page intentionally left blank.

Chapter 16 Photographs and Photo Log

Photographs

PIROP issues cameras to observers. Use them for pictures **and video** of sea turtles, birds, fish, and marine mammal **sightings and interactions**. **Additionally, document** unusual gear types, **any rare events, unidentified items, or enforcement concerns**. Compose photographs so that the vessel identity and the crew remain anonymous. Photograph specimens on deck at close range **and use appropriate lighting or your camera's flash as necessary, avoid photographing animals in poor lighting or direct sunlight whenever possible**. When using the flash or at night, patting the specimen dry first may improve picture quality, as water can create additional shine that can reduce the photo's quality. Avoid using personal cameras.

In order to verify the identification of fish, always take a photograph of each new species seen (in addition to completing an ID form). Use "Macro" setting to capture a close-up of specific ID characteristics (finlets, lateral lines, etc.). If the animal is too large to fit in one frame, take a shot of the head with the front of the body, and another of the rear half of the body.

The following subject views are helpful in identifying animals:

1. Left side view (showing dorsal fin if fish, shark, or marine mammal)
2. Dorsal view
3. Ventral view
4. Top of head, close-up (Macro setting)
5. Bottom of head, close-up (Macro setting)
6. Tail flukes, top and bottom
7. Any ID characteristics, close-up (Macro setting)
8. Hold camera perpendicular to subject

For **protected species and specimens (as directed)**, it is useful to place a label near the subject to help identify it. Include the specimen number and species name in large block letters on a piece of paper; if this is not possible then immediately preceding that photograph compose a picture that contains the appropriate label only. **You do not need to do both**.

Insert an Object in the Photo Frame to Provide Scale

Use a yard/meter stick, tool, measuring tape, or pencil/pen/coin for close-up shots. Line, lumber, or deck hoses are poor choices for providing scale because it is often hard to determine their dimensions from the picture. Check the photos box on the Catch Event Log form and make sure to record the subject on the Photo Log form.

Marine Mammal Concerns

Positive marine mammal identification is critical and carries serious management implications.

During a marine mammal interaction, obtaining positive video or image evidence for identification has priority over any other data collection. In other words, get the pictures first! Video is better than still images. Shoot video as the animal approaches the vessel.

Digital Cameras

The care and maintenance of these cameras are your responsibility. Bring the camera in on your first day of debriefing; it's part of your data. Rinse and soak water-resistant cameras at the end of each day.

Basics

Multiple cameras are in use by the PIROP, so be sure to check your camera's instructions for operating details. Remove the battery from the camera and charge it! The light is red when charging, green when fully charged. Turn the camera on and verify the photography mode. Aim the camera, use zoom if needed, and lightly press the shutter button halfway to focus then all the way down to take the picture. There will be a delay; do not move the camera until you see the picture on the display. Review your picture and repeat if needed. Before using your camera, ensure the time date stamp is set correctly. This is best done at the gear shack during your gear inspections.

Continuous Shooting

Ideal for protected species sightings. Takes multiple pictures of fast moving objects. Press shutter button halfway to lock focus, then hold completely down. Shooting will stop when shutter button is displayed. Some cameras have faster settings than others, use the fastest setting.

Movie Mode

Ideal for marine mammal sightings. Change shooting mode dial to "Movie camera" icon. Videos get recorded on separate lines from photos (even of the same subject.) Keep in mind this option can use a lot of memory if you take several videos.

Turtles: Gear attached, injuries, ventral, dorsal, frontal views, any tags. Videos are best when animal is approaching or leaving vessel.

Marine mammals: Gear attached, injuries, head, dorsal fin, any patterns/markings, any tags. Videos are requested when animal is approaching or leaving vessel. (this may be difficult, so plan ahead).
Seabirds: Gear attached, injuries, all tags, head, other ID characteristics. Some seabirds are difficult to identify in the field. Videos of birds in flight are helpful in these cases, but are of limited use at long distances.

Rays: Mobula, manta, and any ray with a white ventral side.

Special notes for photographing billfish (or other large or long fish): *Take a photo of the head, showing the dorsal fin held erect. Take a photo of the caudal peduncle, showing the insertion points of the second dorsal and second anal fins. Often, billfish are too large to fit in a single photo, so photograph the entire body of the fish by taking one shot of the front half and a second of the rear half of the body.*

Data Elements

The Photo Log is a record of photos taken by an observer during the cruise. It is used to match the photos to the data during debriefing. All photos will be reviewed by the observers and debriefers together. A separate Photo Log form should be filled out for each trip. *One line should contain all the photos of a single subject.* State the number of pictures in the description.

Important: Fill out the Photo Log after each subject photographed. This can help avoid very time consuming corrections during debriefing. Videos and photos of the same subject get recorded on separate lines.

Enter the appropriate page header information (**Trip No., This Photo Page No.**).

Date - Enter the date the photo was taken, DD MMM YYYY.

Set No. - Enter a 2-digit number indicating the set that the subject was captured on (e.g., 01 for Set 1).

Association (Form Type, Page No., Line No.):

Form Type - Enter the 2-letter code from the Form Types list on the left edge of the form

Page No. and Line No. - Enter the page and line number of the form that refers to the subject of the photo.

Frame Number - Leave the frame number blank; this will be filled in during debriefing.

Photo Caption/Short Description - Write a few key words, specimen name, or short sentence that briefly describes the photos (e.g., Roudi's escolar; Laysan albatross - bill-hooked, also note in parentheses how many photos were taken of the subject).

Long Description - On the back of the form is more space for each line if it is needed. Write the line number you are continuing in the left Line column, then continue as needed in the space provided.

Fig. 16.1. Photo Requirements:

The following list is required for ID, mortality, compliance, and biological records.

Required photos:	Required for 1st encounter of trip	Recommended photos
All Sea Turtle Interactions	MM damaged tunas (1st of set)	Any non-typical gear configs.
All Marine Mammal Interactions	Bignose shark	Black gemfish
All Seabird Interactions	Cigarfishes	Crestfish
All Hammerhead Sharks	Cookie cutter shark	Fanfishes
Photographs required for first time species	Cutlassfishes (i.e. Razorback Scabbardfish)	Kawakawa
Photograph rare or unusual species	Galapagos shark	Marine Debris
Photographs for specimens except for lancetfish.	Jacks	Puffer other
Photos of all hook types	Louvar	Rainbow Runner
Tunas less than 60 cm.	Mackerels	Roudi's Escolar
All dead and biopsied sharks for shark project	Oceanic White-tip Shark	Swallowers
Unidentified Species	Pelagic Thresher Sharks	Tori line
Enforcement Issues/Concerns	Ribbonfish, Scalloped	Yellowtail
MM-damaged non-tuna species	Ribbonfish, Tapertail	Other seabird measures
Sea Turtle, Marine Mammal, STAL sightings	Salmon Shark	
UN damaged catch	Sandbar shark	
Foreign Fishing Vessels	Scabbardfish	
Black marlins	Silky shark	
Bluefin tuna	Tiger shark	
Common thresher sharks		
Great White Shark		
Longfin mako shark		
Mantas & Mobulas		
Megamouth		
Sand tiger shark		

16-4

Chapter 17 Sketch Form/Identification Form

The Sketch Form is provided as a place for observers to draw sketches of protected species for ID purposes, protected species interactions, gear configurations, and enforcement issues. This form should not be confused with the Identification Forms which are only used for the first time occurrence of a species.

You need to complete a Sketch Form for **every** protected species that is hooked and/or entangled. Sea turtle, marine mammal, and Short-tailed albatross sighted must also be sketched on this form. Try to make your sketch before looking at species identification manuals. This may influence your memory of what you actually observed. Simply draw the characteristics you observe. Try to illustrate at least 5 ID characteristics. **Be sure to only draw characteristics that were observed.** Be sure to include any attached gear, and draw scenes when appropriate e.g.: dolphins bow riding near the boat. **DO NOT trace animals from your species identification manuals; sketch what you observed!**

Sketch Form

Complete the boxes for **Trip No.**, and **Date**.

Association Form Code: Use the 2-letter code for the associated form that the sketch pertains to.

Page Number and Line Number: Fill in the page number and line number of the form that contains the information the sketch pertains to.

Sketch Caption/Short Description: Write a short sentence or key words describing the subject of the sketch. Once scanned, this will be used as the title of the image. For example: yellowfin tuna - DP damage; MARPOL violation; false killer whale LL interaction, etc.

Long Description: Use this area to describe characteristics that you are trying to portray in your sketch. The description of the event does not go here; that needs to be completed on the back of your (sea turtle, seabird, or marine mammal) Biological Data form. The Long Description block continues on the back of the Sketch Form. Include remaining gear and damage to the animal in your description as well as in the sketch.

Identification Form

The Identification Forms are provided to assist identification with detailed drawings for first time encounters of fish. The forms include: Miscellaneous Fish, Sharks, Bil fish, and tuna. These forms are to be filled out for the purposes of identification, and should be used to support details of species that are photographed. Each first time sighting of a fish species should be recorded on one of these forms. Once each species of billfish and tuna is completed, the forms will no longer be needed; however, you should always keep some Shark and Miscellaneous Fish forms on hand. Answer the pertinent form questions, and draw the animal based on the animal you observed, not what is in an ID guide. The animal you see may have some unusual characteristic for it's species. Any fish sketched on these forms should also be photographed. **Do not check the sketch box on the Catch Event Log when completing an Identification form**

IDENTIFICATION FORM
Miscellaneous Fish

Observer # _____

Date _____

Trip # _____

Set/ page / line# _____

Species common name _____

Species code _____

Describe the following characteristics:

Color(body & fins) and patterns:
Body Shape:
Dorsal fin & tail

Pelvic fins present? _____

Anal fins present? _____

Adipose fin present? _____

Photos taken? _____

Finlets present? _____

Number of finlets (dorsal/anal) ____/____

Sketch this fish. Indicate colors, patterns and ID characteristics. Draw the fish you see.

Fig. 17.2. Fish identification Form example.

Chapter 18 Satellite Phones and Radio

Reporting Instructions

Introduction

Satellite Phones (Sat Phones) are issued to all observers. These phones are to be used for **EMERGENCIES** or for **Work Related Duties Only**. Cases of unauthorized use (personal or frivolous) of Sat Phones will be investigated by the observer program and corrective and/or punitive measures may be taken. It is forbidden to remove the installed Sat phone SIM card and replace it with a personal SIM card. Sat phones are the property of the United States Government and provided for WORK RELATED DUTIES ONLY or for emergencies. Sat phones may be used by observers to contact family and close relationships during emergencies.

Use the vessel's Single Sideband Radio (SSB) in the event of Sat Phone failure and follow SSB reporting protocols.

Using the Single Side Band (SSB) Radio to Communicate

The two most likely scenarios that would require the use of the SSB are: (1) Emergencies and (2) Communicating important data in the event that your Sat Phone has failed. You may use a SSB radio to communicate with an observer on another vessel, but keep in mind that others can listen to your conversation. Keep your discussions clean, do not discuss vessel positions, catch or the activities of your vessel.

Emergency Radio Distress Procedures

If you need to use the SSB or VHF for an emergency, adhere to the following procedures: (1) if the SSB has a small red button that automatically switches the radio to the emergency broadcasting frequency and transmits an alarm signal: use it. (2) if the SSB does not have an automatic emergency switch you must manually switch the frequency to 4125 MHz or to Channel 16 on VHF radios. Send a distress message by following the steps below.

Make Sure the Radio Is ON!

- 1. For DSC Radios: Lift Cover and Press Button for 5 seconds, then release. Go to #4 For Non-DSC**
- 2. Radios: Turn VHF to CH16, SSB to 4125.**
- 3. Press and Hold Transmit Button**
- 4. Clearly Say "MAYDAY, MAYDAY, MAYDAY"**
- 5. Say "This is the (vessel name 3 times) (and radio call sign)"**
- 6. - Say the location of vessel. (lat/long coordinates are best).**
 - Nature Of Emergency**
 - No. of People On Board**
 - Vessel Description (color, length, position of pilot house, type of vessel)**
- 7. - Release Transmit Button**
- 8. - Wait 30sec - If No Response Repeat Mayday Call**

Note: the USCG may ask what lifesaving equipment and supplies are on board.

Weather Monitoring

In the operation area around Hawaii, the National Weather Radio makes severe weather bulletins on the following stations:

<u>Location</u>	<u>Frequency</u>
Kaua'i	162.400Mhz
O'ahu/Southpoint	16.550Mhz

Preparing the Radio Report for Transmission

The PIRO Observer Program maintains a SSB radio base station in Honolulu, HI. The base station call letters are **KWL 48**. Two channels are monitored daily Monday through Friday, except holidays. The following schedule is for Hawaii Standard Time:

<u>Channel Frequency</u>	<u>Time Schedule</u>
Channel 8A (8,294.0 MHz)	0800 to 0900 hours
Channel 12A (12,353.0 MHz)	0900 to 1630 hours

To initiate a call using the ship's SSB, ask permission of the captain. Some vessel operators may prefer to call in for the observer. This is acceptable but you should be standing by to ensure its accuracy, and in case there are questions or messages.

To hail the Honolulu Port Field Station, speak clearly:

K-W-L 48, K-W-L 48, K-W-L 48, Honolulu, this is (vessel name, vessel name, vessel name) - (vessel call sign, ie: WCX 777)

If there is a lot of static on the channel, say “**Kilo-Whiskey-Lima**” instead of the letters “KWL” when hailing the Observer Program in Honolulu. Be sure to allow at least one minute between attempts and be careful not to “step on” (talk over) other users on the frequency. Federal Communication Commission monitoring stations listen for infractions and issue citations for abuses which include: monopolizing airwaves, profanity and broadcasting copyrighted material to name a few. Using standard procedure words, such as “over”, “roger”, and “out” is good operating practice.

After hailing, be alert to hear: (name of the vessel spoken three times) and the call sign followed by: “This is K-W-L 48, K-W-L 48, K-W-L 48, Honolulu”. After this contact is established, identify yourself (your first name is sufficient) and ask if the base station is ready to receive your data.

DO NOT GIVE OUT CATCH INFORMATION OR SAY THE POSITION OF THE VESSEL WHEN MAKING A RADIO REPORT TO THE HONOLULU PORT FIELD STATION OR WHEN TALKING TO ANYONE ELSE ON THE RADIO.

If you cannot get through after 3 attempts, try at a later time or on another frequency. If you are unable to establish contact, broadcast your radio report, line by line anyway. Occasionally we are able to hear observers even if they are unable to hear us. If another boat can hear you, attempt a relay.

Note: If for any reason it is not possible to contact the Hawaii Observer Program directly and you have URGENT information to report (and your sat phone is not working), the observer should request that the radio report be relayed through a nearby fishing vessel (or via another observer) or by fax when feasible. Remember, any instance of intimidation, harassment or interference is to be reported to the captain as soon as possible and documented in your Documentation Notebook.

USE SPECIES CODES WHEN SPEAKING ON THE RADIO ABOUT PROTECTED SPECIES INTERACTIONS, SIGHTINGS OR SAMPLES.

Using the Satellite Phone to Communicate

Usage

You must call the observer program from the gear shack (using your sat phone) and give your Sat Phone number, the name of your vessel, and the date of your departure. Phone the office at (808) 725-5107 and leave a message. Do not call anyone's personal cell phone, use their work phone number.

Dialing

To unlock the phone for use, the PIN is 1111. To dial out, dial: 00 + 1 + area code + phone number

Retrieving Messages

Check the phone daily for messages by looking in the display for a mail envelope icon. To aid in message recovery, turn your Sat Phone on, dial 1-2-3-4-5 and hit send. It can take 15 minutes or more for a message to show up on your phone. Another way to retrieve text messages is to attempt to call your sat phone voicemail. Once the phone links up with the satellites, any waiting text messages should be transmitted to your phone within 15 minutes.

To view a text message, simply press OK when you see the envelope icon. For voicemail, refer to the phone manual to retrieve but be aware that we have had limited success in sending/receiving voicemails and therefore prefer text. Ensure you delete your text messages for each trip.

Situations to use your Satellite Phone and who to call:

- (1) In the event of an emergency CALL THE UNITED STATES COAST GUARD (USCG) SEARCH AND RESCUE FIRST!! at 808-535-3333. Most phones have the USCG programmed into memory; to dial USCG turn the phone on and hold down #1 on the keypad. After speaking with USCG please call your Port Coordinator & Kevin Busscher. If you can't reach anyone, leave a message on the Observer Information Hotline.
- (2) Before leaving the gear shack, call TechSea with your trip information using only your Sat phone. This is a requirement. Ensure that your phone has the correct pre-programmed speed dial numbers already in it. The list of speed dial numbers is in your electronics bag on a laminated card.
- (3) If you have health issues that are not serious, call Josee Vincent or one of the Port Coordinators. If you have an emergency situation CALL the COAST GUARD SEARCH & RESCUE. DO NOT CALL your employer or the Observer Program. Follow to the instructions you are given by the C.G. then call your employer.
- (4) In the case of a Sea Turtle, Marine Mammal, or Short-Tailed Albatross interaction, use your sat phone to call the **Reporting Hotline at 808-366-2221** after referring to current protocols at the end of the Sea turtle or Marine mammal chapters. If you do not get an answer on the Report Hotline call Jamie Marchetti's office line at 725-5108. Leave messages if there is no answer, but call back daily until you are able to talk with someone directly. This is very important for the above listed protected species.
- (5) For general questions call Kevin Busscher. For Enforcement issues call Rich Kupfer or Josh Lee. For protected species issues call Jamie Marchetti. For Safety issues call the USCG.
- (6) Do not make personal calls to friends or family except in the case of emergencies. These calls should be logged in your documentation notebook.

If you have questions about your duties or collection protocols, look it up in your manual first. If you are still unsure about what to do, then call the Observer Program.

Do not call us to report a bird interaction or any animal sighting (unless it is a Short-Tailed Albatross). Do not call us for news or sports updates.

(7) Vessel masters may use your satellite phone only to contact NMFS on official business, or for reporting emergencies.

If your call is after office hours, or on weekends, leave a message. Be sure to check your sat phone for messages in response. The office will likely respond via text but may use voicemail.

REFERENCE SECTION:

Standard Phonetic Alphabet:

A	ALPHA	N	NOVEMBER
B	BRAVO	O	OSCAR
C	CHARLIE	P	PAPA
D	DELTA	Q	QUEBEC
E	ECHO	R	ROMEO
F	FOXTROT	S	SIERRA
G	GOLF	T	TANGO
H	HOTEL	U	UNIFORM
I	INDIA	V	VICTOR
J	JULIETTE	W	WHISKEY
K	KILO	X	X-RAY
L	LIMA	Y	YANKEE
M	MIKE	Z	ZULU

OFFICE PHONE NUMBERS:

USCG Search & Rescue (808) 535-3333 or Speed Dial #1 (PRESS and hold 1)

John Kelly	(808) 725-5100	Cell (808) 382-0485	Home (808) 230-2027
Kevin Busscher	(808) 725-5102	Cell (808) 542-3032	
Joe Arceneaux	(808) 725-5104	Cell (808) 366-2233	
Eric Forney	(808) 725-5103		
Lynn Rassel	(808) 725-5107		
Jamie Marchetti	(808) 725-5108		
Morgan Miller	(808) 725-5116		
Rich Kupfer	(808) 725-5105		
Josh Lee	(808) 725-5114	Cell (808) 221-8170	
John Peschon	(808) 725-5111		
Sara VanGent	(808) 725-5109		
Jim McDonough	(808) 725-5106		

REPORTING HOTLINE: Observers should call (808) 366-2221 to report the following:

- **Sea Turtle interactions**
- **Marine Mammal interactions**
- **Short-Tailed Albatross sightings/interactions.**

Please use the list on page 10-24 to compile the information for your report.

INFORMATION HOTLINE: If the Shallow-set fishery gets close to catching either the Loggerhead or Leatherback sea turtle quotas, you will receive specific instructions about when to call and which number to call for updates & status information on the Shallow-set fishery.

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CHAPTER 19 SAFETY

Dangerous Occupation

Commercial fishing is one of the most hazardous occupations in the United States with a fatality rate 39 times higher than the national average (CDC/NIOSH 2014). Observers are regularly exposed to the same dangers as industry personnel and suffer the same injuries and illnesses recorded in all monitored fisheries. While minimum observer safety training requirements have been standardized nationally, safety practices and policies are governed by USCG regulations (46 CFR §28.), the Magnuson-Stevens Act, and program specific requirements.

Safety and **Integrity** are the essential watchwords for observer conduct and performance. It is not uncommon for crew members to view observers as examples for stewardship and conduct. Observers can increase their own safety, while demonstrating NMFS' commitment to industry safety, by adhering to program and agency safety policies. NMFS provides training, equipment, and multi-agency support networks to improve the safety of observers while attempting to minimize the risks that are inherent to commercial fishing. Observers are an active part of that safety effort and are representatives of NMFS' safety goals while on board.

Safety Requirements

Training- All PIROP observers are required to receive a minimum of 25 hours of standardized topics and safety skills training. Observers must successfully demonstrate mastery of required safety skills in order to remain "safety certified" to observe in any NMFS fishery observer program. Active observers are required to take safety refresher training at least once every 3 years. The same standard applies to the safety instructors that teach observer safety. Observers are required to have current First Aid and CPR certifications in order to be deployed on a vessel.

Vessel Requirements- All commercial vessels are required to meet the minimum safety standards for carrying an observer prior to an observer boarding that vessel, and those safety standards must be maintained for the duration of the observer's deployment (refer to regulatory language 50 CFR §600.746 on pg.22-6). It is PIROP policy that an observer will not deploy on a vessel with safety equipment, or inspections that expires in the same month. So if you are boarding a vessel on September 10th and their flares expire on September 30th, the flares must be replaced before the observer can deploy on that vessel. In addition to minimum requirements for observers, the USCG requires vessels to conduct safety orientations for each new person aboard, including observers. The completion of the Placement Checklist meets the safety orientation requirement.

Program Safety Policies- Observers are required to comply with the same USCG and WCPFC safety regulations that fishing vessels are required to comply with. Observer's safety is the number one priority with the PIROP and we have developed our rules and recommendations to help reduce risk to observers while at sea. They are as follows:

1. Observers are required to verify the status of their issued safety equipment before departing on each trip.
2. Observers are required to wear an auto-inflating PFD and boots or other close-toed protective footwear whenever on deck during fishing operations, and encouraged to attach your PLB to your PFD.
3. It is recommended that observers wear safety eyewear while out on deck to help protect your eyes in the case of a mainline break or weights flying back at the vessel after a line break.
4. It is recommended that observers do not go out on the deck alone, especially in rough weather. If you feel that you must go out on deck by yourself make be sure to tell someone you are going outon deck and bring your PLB at a minimum.
5. If the weather becomes too hazardous to be out on deck during the haul, you should first stop collecting measurements and samples and move to a safer spot on the deck where you can record what is caught. If it is still too hazardous to be out on the deck, you should move inside to where you can still observe what is coming up. If you are unable to collect data due to safety concerns

briefly note the situation on the corresponding form and describe it more fully in your documentation notebook.

Safety always comes first. Unsafe conduct by an observer may be grounds for dismissal.

Placement Checklist

Vessels are required to be inspected for compliance with minimum safety standards prior to each observer deployment. This inspection is conducted by a port coordinator, the vessel operator and the observer, or in some cases only by the observer and vessel operator. The inspection is recorded on the Placement Checklist and observers are not allowed to deploy on a vessel if the checklist is not completed or if a vessel fails to meet the minimum requirements listed on the checklist. This checklist is for vessel gear only and observer equipment should not be counted on this form. The list is color coded to identify inspection items that can prevent an observer from boarding a vessel. Any deficiency discovered on an item that is shaded grey does not meet the requirements for carrying an observer, and must be corrected before the observer can board for a fishing trip.

Data Elements

While the instructions for the majority of the data fields are self-evident, this section will focus on instructions for completing the data fields for items that can prevent an observer from deploying, often referred to as “No-Go” items. All deficiencies with required items should be recorded in the comments section and the port coordinator/NMFS must be notified. The vessel operator must also be notified of deficiencies and given an opportunity to correct them before an observer can deploy on that vessel.

Number of Bunks – Record the number of bunks on the vessel. If there are not enough bunks for everyone aboard plus the observer, note this in the comments section. If the vessel has bunks, one must be provided for the observer even if this means displacing a crewmember. Not having an observer designated bunk is a No-Go situation.

Reasonable Privacy – While being a regulatory requirement, assessing whether a reasonable level of privacy exists or not can be subjective. What one person considers a reasonable amount of privacy for the conditions, another may not. Any concerns about privacy should be discussed with the port coordinator and the vessel operator. Insufficient reasonable privacy may be grounds for an observer to not deploy on a vessel. In many instances, a sheet blocking off the observer’s bunk is considered reasonable privacy aboard many fishing vessels.

Number of crew – Record the total number of people aboard the vessel excluding the observer. This number is not a No-Go item directly, but is essential in determining if other items meet minimum standards, such as life raft capacity, floatation devices, and number of bunks.

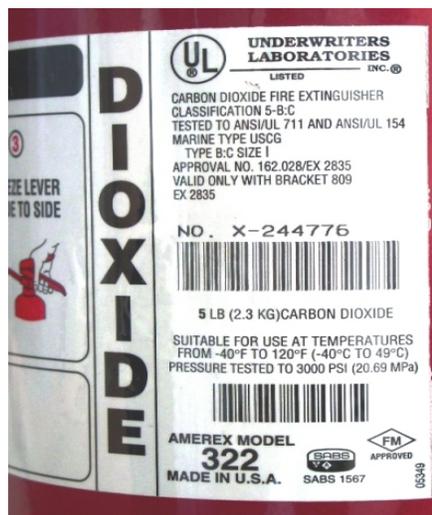
Distress Signals – Record the earliest expiration date for each of the 3 types of pyrotechnic devices. For example, if two hand flares expire 9/30/16 and 4 expire 7/31/19 you will record 2 x 9/30/16. The number required for each type is listed next to the device and any quantity less than that is a No-Go and should be listed in the comments section. If the vessel has the minimum number of required signals (and they are not expired) and they also have an additional number of flare that are expired, the expired flares must be separated from the active flare and marked as “Training Only”. This would be noted in the comments section as well.

of Charged Fire Extinguisher – Extinguishers should be counted and verified as valid as you are walking through the vessel. Do this by recording tally marks for each extinguisher then write and circle the total. If an extinguisher is not valid (meets all requirement criteria) do not record it in the tally or the total and list it only in the comments section. There are minimum numbers of

extinguishers required depending upon the size and construction of the vessel. If the vessel does not have enough extinguishers, an observer must not deploy on the vessel.

Current Inspection- Every fire extinguisher aboard must have an inspection sticker that less than one year old. Annual servicing is required for all extinguisher and they receive a new service tag at that time. If the tag has come off the vessel may produce documentation verifying that the extinguisher has been serviced in the past year. In addition to an annual service, extinguishers are required to be visually inspected monthly. This involves verifying there is a current annual service record, checking to see that any pressure gauges present are in the green portion of the dial, it is mounted properly and accessible, and it is not compromised by too much corrosion. This monthly inspection requirement is usually performed by the vessel personnel, but the observer Placement inspection also meets that criteria. Place a “Y” if the criteria are met, “N” if not.

Approval (USCG, Marine, Proper Bracket) – USCG regulations also require that vessel fire extinguishers be of the correct size, type and approved for use. The size, rating, type, approvals, and bracket requirements can be found on the label of each extinguisher.



Portable Fire extinguisher label

of Correctly Installed Ring Buoys – Tally all the ring life buoys (RLB) aboard that are properly installed and circle the total. A buoy should not be counted if it is unserviceable or not correctly installed. Correctly installed RLBs must be in a float free configuration (not tied down) with at least one ring equipped with a throwing line. The number of rings required varies by length of vessel.

Number of PFDs – Tally all personal flotation devices (PFD) that are aboard and circle the total. A PFD is required for each person aboard. All PFDs must be rated for offshore use and USCG or IMO/SOLAS approved.

Number of Immersion Suits – Tally all the immersion suits aboard and circle the total regardless of where the vessel is fishing. Immersion suits are required for each person aboard vessels operating above 32°N. All vessels leaving from, or going to, ports in California must have immersion suits. Immersion suits meet the USCG requirements for flotation devices in all waters, but PFD's do not meet the requirement for immersion suits in cold water. In warm waters, a mix of PFDs and immersion suits is acceptable, but cold waters require immersion suits.

Emergency Procedures Posted - Vessels must have completed emergency instructions, often referred to as a “Station Bill”, posted in an area easily accessible to the crew. New crew and observers are required to review these instructions with the vessel operator as part of the safety

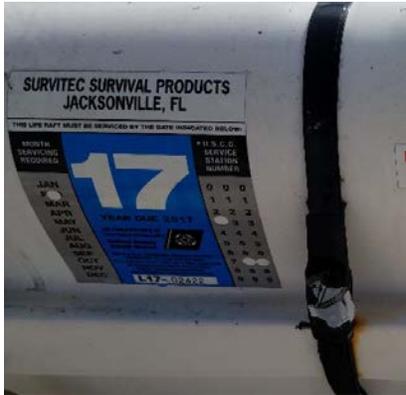
orientation. When an observer is not listed on the station bill, ask the captain about your specific duties for each emergency type.

Survival Craft - Life rafts (survival craft) are required to be serviced annually, with the exception of life rafts with manufacture dates less than 2 years old.

Number of Persons – There must be room in the life raft for every person aboard the vessel including the observer. Sometimes two rafts must be employed to accommodate everyone aboard. When 2 rafts are used, they must both meet all the checklist criteria.

Manufacture Date – Recorded the date the raft was manufactured. This date may be on a metal plate attached to the raft, or on a sticker. If the manufacture date is within two years, no additional service sticker is required. After two years, an annual service sticker is required.

Inspection Exp. – Record the expiration date listed on the USCG inspection (service) sticker affixed to the raft. This sticker is attached by authorized service centers each time a raft completes an annual service. Stickers are marked with month and year only and are valid for the entire month indicated.



Life raft service sticker

Hydrostat Exp. – Record the date scratched off of the hydrostatic release label; this is the expiration date. If no date is marked on the release itself, the vessel may either provide documentation of when the device was installed, or mark the earliest expiration date on the device.



Hydrostatic release expiration sticker

Correct Installation - Correctly installed life rafts must all be in a float free configuration (not tied down) in a cradle that is permanently affixed to the vessel. Rafts should be located in an open area, usually on upper decks, where they can float free if the vessel sinks. The hydrostatic release must be securely attached to the cradle by the black ring and the life raft painter line must be attached to the weak link on the release. The painter line must not be wrapped around anything or be hindered from pulling directly on the weak link, preventing the raft from breaking free when a vessel sinks. Stickers showing correct installation can often be found attached to the life raft.



Correctly installed Hydrostatic release

Emergency Position Indicating Radio Beacon (EPIRB)- Are required for all commercial fishing vessels PIROP observers deploy on. These emergency beacons are designed to automatically deploy and transmit a distress signal, or be manually activated when conditions permit. Observers are provided with a NMFS issued EPIRB, as well as a Personal Locator Beacon (PLB) with their gear, but these beacons do not meet the vessels requirement for this equipment. EPIRBs are typically mounted in a weather resistant case that has a hydrostatic release inside allowing the case to open, and the beacon to float free. These cases often have expiration stickers affixed to their exterior which will not be recorded on this form. Expiration dates must be verified on the individual devices inside the case. You must obtain the vessels permission before opening the EPIRB case, or have them open it for you.

Battery Test P/F- The USCG requires vessels to manually test EPIRBs once a month, and the placement inspection counts towards this requirement. You should always ask the vessel to test their EPIRB during your inspection, or get the captain's permission to test it in their presence. Carefully read the testing instructions and test the EPIRB. If it passes the test, circle "P". If it fails, test it again. If it fails a second time, circle "F" and note this as a deficiency.

Battery Exp. – A sticker indicating the battery expiration month and year will be on the unit itself. The battery is valid until the end of the month indicated.

Hydrostatic date – The hydrostatic release for the EPIRB housing is inside the case located behind or above the EPIRB. Verify and record the date. Be careful not to misalign or break the release unit's post when putting the case cover back on. If you are not sure how to reinstall the EPIRB case cover, let the captain do it.

Correct installation – Check "Y" or "N" if the beacon and its protective case are mounted in a location that will allow the EPIRB case to open and let the beacon float free of the vessel. Beacons must also be registered to the vessel they are on. Check the registration decal affixed to the beacon that the name matches the vessel name. The registration date is not a No-Go situation because expired registrations still maintain emergency contact information. If no registration sticker is present the vessel must provide documentation of registration, or register online. Spring loaded handles on EPIRB cases that do not spring back into position when released do not meet correct installation criteria.



Beacon registration and battery expiration stickers

USCG Inspection Exp. – No PIROP observer is allowed to deploy on a vessel without a current USCG Commercial Fishing Vessel Safety Exam decal (CFVSE), or documentation in the event the decal is destroyed. The CFVSE decals will be located on a wheelhouse window. The sticker will be marked with the date that it expires and must have a rating for > 100 NM.

Commercial Fishing Vessel Safety EXAMINATION

VESSEL			EXPIRES												
<input checked="" type="checkbox"/> Documented	<input type="checkbox"/> Undocumented		2014	<input type="checkbox"/>											
OPERATIONS		2015	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Cold Water	<input type="checkbox"/> Warm Waters	2016	<input checked="" type="checkbox"/>												
<input type="checkbox"/> Inside Boundary Line	<input checked="" type="checkbox"/> Beyond Boundary Line	2017	<input type="checkbox"/>												
FROM COASTLINE		<table border="1" style="font-size: small;"> <tr><td>JAN</td><td>JUL</td></tr> <tr><td>FEB</td><td>AUG</td></tr> <tr><td>MAR</td><td>SEP</td></tr> <tr><td>APR</td><td>OCT</td></tr> <tr><td>MAY</td><td>NOV</td></tr> <tr><td>JUN</td><td><input checked="" type="checkbox"/></td></tr> </table>		JAN	JUL	FEB	AUG	MAR	SEP	APR	OCT	MAY	NOV	JUN	<input checked="" type="checkbox"/>
JAN	JUL														
FEB	AUG														
MAR	SEP														
APR	OCT														
MAY	NOV														
JUN	<input checked="" type="checkbox"/>														
<input type="checkbox"/> < 3 NM	THIS VESSEL MEETS ALL USCG COMMERCIAL FISHING INDUSTRY VESSEL REGULATIONS FOR OPERATING AREAS AS MARKED	NO. _____													
<input type="checkbox"/> < 12 NM		CG-5587A (Rev. 6/08)													
<input type="checkbox"/> < 20 NM		U.S. Department of Homeland Security													
<input type="checkbox"/> < 50 NM															
<input type="checkbox"/> > 50 NM															
<input checked="" type="checkbox"/> > 100 NM															

USCG CFVSE decal

Reporting Safety Issues

Emergency situations should be reported directly to the USCG via satellite phone, radio, emergency beacon, DSC distress button, or combinations of those methods depending on the situation. Refer to chapter 17 for emergency communication procedures and the PIROP Emergency Notification Plan. Other safety situations that are not immediate emergencies should be reported to the PIROP. You may encounter a “close call” (*i.e.*, an accident that almost happened) or a specific safety concern during your cruise assignment. Documentation of close calls is very important. Make sure to notify PIROP and describe any incidents, including near misses, during the post-cruise debriefing process. Reports should include a description of the problem, the attempted solutions, and the final resolution. Thorough documentation of the incident (what, where, when, and any fixes) can provide valuable information for improving safety training, policies, and mitigating risk to observers.

Equipment

Observer safety equipment must comply with the same regulatory requirements as all vessel safety equipment. This means that each observer must ensure their issued safety equipment is properly marked, registered, current, and serviceable. Proper markings include ownership identification on flotation devices that say “NMFS/PIRO OBSERVER”, and battery, servicing, and registration expiration dates. If expiration dates are not present, the device is not valid. Service dates include Immersion suits and PFD annual inspections, GPIRB and PLB battery and registration dates, and Strobe battery expirations. For more details on safety equipment servicing, please refer to pg 19-5



PLB registration and battery expiration stickers

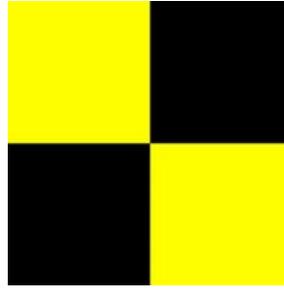
Vessel Safety Drills

Vessels are required to conduct and log monthly drills; Fire, Flooding, Man-Over-Board and Abandon Ship. If your vessel conducts these drills while at sea, **observers are required to participate. Participation does not mean direct or supervise.** Information on your role during vessel drills should be discussed with the vessel master during the placement meeting. Vessel drills must be conducted by a USCG certified drill instructor to comply with the requirement. If questions about drills conducted at-sea do arise, please contact the PIROP offices in Honolulu, Hawaii.

Safety Reference

Vessels displaying the *Vessel Under Quarantine Flag* should not be boarded. In addition, personnel should not disembark without authorization from the Honolulu Harbor Master, US Customs and Border Protection

(CBP), the USCG, or the Center for Disease Control (CDC). The flag is flown from a ship that is either arriving in port with known serious health problems or that has been placed under quarantine by the local port authorities. In our region tuberculosis, MRSA and SARS have been identified health risks.



Yellow Jack- Vessel Under Quarantine

Changing trends with foreign crew working aboard Hawaii based longline vessels have resulted in an increased number of cases where the quarantine flag has been employed. Any foreign crew entering the US from high seas/international ports or vessels, that are exhibiting an illness, must be reported prior to arriving in port and the vessel must be quarantined until the situation has been assessed. This flag will be removed once the vessel is cleared by medical personnel. NMFS personnel and contractors should not board any vessel displaying this flag.

QUICK REFERENCE

Abbreviated Guide To Navigation Rules Of the Road

Based on the *Navigation Rules International – Inland* (Commandant Instruction M16672.2D, 1999)

DEFINITIONS (From Rule 3)

Vessel Engaged in Fishing – Any vessel fishing with nets, lines, trawls or other fishing apparatus that restricts maneuverability, and excluding vessels fishing with trolling lines or other fishing apparatus that does not restrict maneuverability

Vessel Not Under Command – A vessel unable to keep out of the way of other vessels because an exceptional circumstance is hindering its maneuverability (steering failure, engine breakdown, etc.)

Vessel Restricted In Its Ability To Maneuver – A vessel unable to keep out of the way of other vessels because the nature of its work is hindering its ability to maneuver (buoy tender picking up a buoy, vessel transferring persons, provisions or cargo while underway, etc.)

Underway – A vessel not at anchor, aground or made fast to the shore

Give-Way Vessel – A vessel that must change course or speed to avoid a collision with a stand-on vessel

Stand-On Vessel – A vessel that must maintain course and speed except to avoid collision with another vessel

LOOKOUT (From Rule 5)

Every vessel shall at all times maintain a proper lookout.

SAFE SPEED (From Rule 6)

All vessels must proceed at a safe speed at all times.

You must go slow enough to prevent a collision no matter what the conditions.

DETERMINING RISK OF COLLISION (From Rule 7)

Every vessel must use all available means appropriate, including lookout (eyes and ears), radar and radio, to determine if a risk of collision exists.

Steady bearing and decreasing range indicate a risk of collision.

ACTION TO AVOID COLLISION (From Rule 8)

Action to avoid collision should be taken well in advance of any potential meeting. Any course or speed change should be great enough to be obvious to any approaching vessel. Avoid a succession of small alterations of course.

NARROW CHANNELS (From Rule 9)

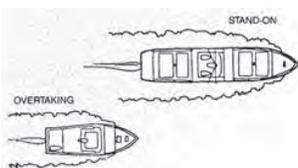
A vessel engaged in fishing shall not impede the passage of any vessel navigating in a narrow channel or fairway.

TRAFFIC SEPARATION SCHEMES (From Rule 10)

A vessel engaged in fishing shall not impede the passage of any vessel following a traffic lane.

OVERTAKING ANOTHER VESSEL

(From Rules 13 and 17)



A vessel that is being overtaken shall keep its course and speed.

RESPONSIBILITIES BETWEEN VESSELS

(From Rules 13, 18)

To determine which vessel must give-way in an approach situation, it is essential to know the hierarchy established by the Rules:

- 1st – Vessel not under command **or** vessel restricted in its ability to maneuver
- 3rd – Any vessel being overtaken
- 4th – Vessel engaged in fishing
- 5th – Vessel under sail
- 6th – Power-driven vessel

MEETING ANOTHER VESSEL HEAD-ON

(From Rules 14)

When two power-driven vessels meet on reciprocal (head-on) or nearly reciprocal courses so as to involve the risk of collision, both shall alter course to starboard so that they pass port-to-port (except as provided by Rules 9, 10 and 18)

CROSSING SITUATION (From Rules 15 and 17)

When two power-driven vessels are crossing so as to involve the risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and avoid crossing ahead of the other vessel.

ACTION BY THE GIVE-WAY VESSEL

(From Rule 16)

Every vessel in sight of another and required to give way to another vessel shall, so far as possible, take early and substantial action to give way.

ACTION BY THE STAND-ON VESSEL

(From Rule 17)

When one of two vessels is required to give way, the other vessel (the stand-on vessel) shall maintain its course and speed.

QUICK REFERENCE

Abbreviated Guide To Navigation Rules Of the Road

Based on the *Navigation Rules International – Inland* (Commandant Instruction M16672.2D, 1999)

CONDUCT OF VESSELS IN RESTRICTED VISIBILITY *(From Rule 19)*

If you hear a fog signal forward of your beam, or if you detect by radar another vessel forward of your beam, take avoiding action in ample time. Unless you are overtaking, avoid if at all possible altering your course to port; whenever possible alter course to starboard. Also, adjust to a safe speed for prevailing circumstances and conditions of visibility. This includes, if necessary, taking all way off your vessel (see Rules 2, 6 and 19).

Sound Signals In Restricted Visibility

(From Rule 35 – apply to both International and Inland waters) Signal intervals are not more than 2 minutes unless otherwise noted

–	Power-driven making way
– –	Power-driven underway but stopped, making no way
– ••	Vessel not under command, vessel restricted in ability to maneuver, vessel constrained by draft, sailing vessel, vessel engaged in fishing, or vessel engaged in towing or pushing
– •••	Vessel being towed or last vessel of tow, if manned
Rapid ringing of bell for 5 seconds every minute	Anchored
• – •	Anchored (optional signal)
Rapid ringing of bell for 5 seconds followed by sounding of gong every minute	Anchored over 100 meters
Three strokes of bell immediately before and after an “Anchored” bell signal	Aground
••••	Pilot vessel engaged in pilotage duty

Note: Dash “–” is a 4 - 6 second or prolonged blast.
Dot “•” is a 1 second or short blast.

Warning and Maneuvering Signals

(From Rule 34 – apply to International and Inland waters with differences noted) Short blast signals are only sounded in sight of the other vessel, not in restricted visibility.

•	International: I am altering course to starboard Inland: I intend to leave you on my port side
••	International: I am altering course to port Inland: I intend to leave you on my starboard side
•••	I am operating astern propulsion
••••	Danger signal
–	Bend signal

This guide provides only an overview of navigation rules of the road. In no instance in this publication has a complete rule from *Navigation Rules International – Inland* been reprinted.

Rule numbers cited refer to the rules from which information was extracted. This guide is not intended as a substitute for the actual *Navigation Rules International – Inland* (Commandant Instruction M16672.2D)

This publication was created by the Commercial Fishing Vessel Industry Safety Advisory Committee with the cooperation of the U.S. Coast Guard, the Alaska Marine Safety Education Association, the North Pacific Fishing Vessel Owners Association Vessel Safety Program and Crawford Nautical School.

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Chapter 20 Equipment List and Maintenance Tips

In addition to personal items, each observer will be issued NMFS Observer gear that is managed for NMFS by the Observer provider contractor. Observers

Bucket - Try to get a 6 or 7-gallon bucket; it allows more room for gear.

- Make sure the top fits securel .
- Store inside a covered area when not in use.
- Clearly print your name on specimen tags with a Sharpie® and attach it with a zip tie to the bucket handle. Doing so makes it easy for you and the Port Coordinator to find your bucket in the gear shack.
- It's a good idea to invest in bungee cords to secure the bucket.
- Put a towel, rag, or other absorbent material in the bottom to absorb residual moisture and condensation. This will also help prevent the bolt cutters and flipper tagging pliers from rusting so badl .

Foulweather Gear - Try it on *before* going to sea to ensure proper fit.

- Label or mark it so you can distinguish your gear from the crew's.
- Wash and scrub your foulweather gear after each trip.
- It is *not* recommended that you wear shorts underneath your foul weather gear (it can cause skin rash).

Boots - Label or mark them to distinguish from the crew's boots.

- To dry, store them near the engine room hatch after a haul.
- For comfort, invest in insoles.

Hard Hat - Protects head from mainline and other flying objects when line parts unexpectedly .

Hand counter/clickers - Recommend having four, keeping two as backups.

- Attach clickers to your rain gear. You'll know where they are at all times and they cannot decide to "jump overboard."
- If clickers are metal, treat them with WD-40 periodically.
- Test the clickers periodically to ensure that they advance properly, i.e., one number at a time.
- Keep them dry and away from saltwater; they rust easily.

Large plastic bags - Ideal for larger specimens such as swordfish rats, sharks, and albatross.

Small plastic bags - Great for smaller specimens and for storing gear, keeping it together and dry.

Rubber bands - Very versatile, great to use to secure specimens in large or small bags.

Labels - **Good idea to keep them with the rubber bands and plastic bags and are most legible when writ-ten on with a Sharpie®. When a pencil is used, by the time the specimen reaches the lab, pencil descriptions are faded and not clear to the end user.**

Pencils - Recommend having (4) four if possible, keeping two in clipboard, and two in bucket. Pencils can be sharpened with a knife. It also good to bring extra erasers. Make sure to use pencil on specimen labels that are placed inside solution. Ink from markers or pens will dissolve in the fixative, making the label useless.

Zip Ties - Great to use to attach labels to specimen itself and to the bag the specimen is wrapped in.

Measuring Tape - Needed for curved carapace measurement on turtle and claspers on shark.

Flashlight - Useful for emergencies. If flashlight becomes moist from seawater, remove batteries, rinse with freshwater and dry.

Thermometer (infrared) - Can be fragile; handle with care and keep secure and dry in plastic bag inside bucket BUT be sure the trigger is not activated so the batteries do not run dry. For accurate readings, use a damp paper towel to clean the infrared lens.

Duct/Fiber Tape - Don't leave port without it! Works wonders in many ways, especially in safeguarding bunk from curious, hungry, roaches.

Gloves - Helps keep hands protected and warmer.

Vernier Calipers - Keep dry and away from salt spray, wash clean with fresh water.

Personal Marker Light - It's a good idea to attach it to your foulweather gear. If you should ever fall overboard, this light may save your life.

Binoculars - Handle with care; be careful not to drop them on the deck!

- Best to keep out of direct sunlight.
- Rinse salt spray off by placing lens under lightly running water, wipe dry.
- Recommend using strap at all times.

Thermarest - Great for bunks with no mattress and generally more hygienic than those with a mattress.

Turtle Biopsy and Tagging Kit - Inventory kit before each trip! You should find a biopsy corer device, alcohol swab, biopsy punch, forceps, marking pen, Whirl-paks of NaCl, vials of NaCl, tags, and a tag applicator (do not remove tag applicator from protective baggy until use).

- To prevent rusting of materials, it's wise to check the kits for dampness; Tupperware® is not always watertight.

Biopsy Pole - Keep accessible, not secured on top of vessel.

- Before you leave the gear shack, make sure the plug screws onto the pole evenly.
- All poles will have a plastic protective covering but if missing, wrap the threaded end with duct tape when not in use to protect it from rust.
- Do not leave the biopsy plug on the pole or store pole with the weight on the threaded end.

Turtle net - Keep accessible and out of direct sunlight if possible.

Marine Mammal Kit - Inventory kit before each trip! You should find a biopsy core device, preservative/fixative, marking pen, pencil, and gloves.

Shark Kit - Inventory kit before each trip! You should find scalpels and preservatives/fixatives [could be DMSO (dimethyl sulfoxide), 95% EtOH (ethanol), or NaCl (salt)].

Clipboard - Great for keeping data sheets and field guides together and dry. Recommend lying clipboard face down when not in use, in bucket, or anywhere else out of strong winds to keep your data sheets from possibly flying away, or use a rubber band to secure data sheets onto clipboard. May be helpful to tape a list of common species codes in a way that it is waterproof; great for quick reference.

Sleeping Bag - Excellent to use as a buffer between you and the boat's mattress and thick enough for boats that blast the AC.

Poncho Liner - Lightweight cover and works well as a buffer too.

Bolt Cutters - As an alternative for using the dehooking device, bolt cutters may be used to cut the barb off a hook in a turtle that is landed (lube and place nose of cutters into protective baggie after use to prevent rusting).

Water Filter - Before first use, brush the filter surface. When storing the filter after use, remove hose from water source and pump and let dry. Remove filter cartridge from pump and shake out water; air dry if possible.

Lobster Phyllosoma Kit - Until needed, keep in duffel bag inside boat.

- Place lobster larvae onto cardboard and label each specimen with a tag indicating date, location coordinates, trip number, and your name. Keep specimen in the freezer.

Reference Books - Best to store where they will remain dry and accessible. Waterproof placards can be kept in bucket or clipboard for easy access. If you keep them in your bucket, you **MUST** keep the non-waterproof books in the issued protective plastic bags! We have already lost countless books due to carelessness. Books are \$40-\$100 each and you are responsible for them!

Calipers, 2m - Keep in secure area and out of the way of crew.

- Do not store in gaff holders because the numbers will rub off.

- If bent by sun or water damage, wet calipers and place under hook box to straighten.

- **Note: The 2 meter calipers may need adjustment and calibration periodically. Calibrate by comparing with the fiber tape measure and tighten the locking screws on the stationary caliper jaw.**

Marine First Aid Kit - Each observer will be assigned a first aid kit to be returned to contractor upon completion of contract. Whole kit may be taken out to sea or broken down, selecting certain items to be stored in zip lock bags. *Please keep a list in your kit of what has been taken and used so it may be replaced.*

Electronics Bag-

The electronics bag is a special item that contains most of the high cost pieces of electronic equipment that observers are assigned. The observer is responsible for keeping positive accountability of this bag and its contents. **The bag must NEVER be left on any vessel when the observer is not aboard.** This bag will normally accompany a single observer for the duration of a contract, so familiarity with the operation of contents should be easily maintained. Never leave the care of this bag to someone else; it is your responsibility until the debriefing process begins

The contents of an Observer electronics bag will include (at minimum):

Digital camera-NMFS has a stock of different camera models that are in service. Become familiar with the operation and functions of the assigned camera. The camera operator's manual will be included in the electronics bag.

Digital camera waterproof housing- These are only issued with cameras that are not waterproof.

Disposable camera- Is only intended as a back-up in the event the digital camera fails.

Personal Locator Beacon- The PLB is a smaller, GPS enabled, version of an EPIRB that every ship is required to carry. The reduced size of this unit allows it to be easily attached to an inflatable PFD and be worn on deck at all times. A manual is provided for this unit.

GPS (with waterproof sleeve)- Is for use on deck when duties prevent leaving the deck to collect information in the wheelhouse. E.g.: helping the vessel deal with a marine mammal interaction. A manual is provided for this unit.

Satellite Phone (with waterproof sleeve) - The phone comes with a leather holster and one of two types of charger. This phone must be in direct line of the sky to connect with a satellite. More detailed instruction on the phones use can be found in Ch. 17.

LED headlight- It's an LED headlight that can fit on your head for hands free operations while on deck, or any low light level situation.

Calculator- For adding it all up.

Laminated card with important phone numbers for use at sea.

It is critical that anything missing or malfunctioning gets reported immediately during your debriefing interview, and again to a port coordinator. **It is your responsibility to make sure your gear is complete, and in good working order before deploying on a vessel.** Verify all serial numbers with port coordinator before each trip. The information you collect is too important to be missed due to faulty equipment. To help prepare for a deployment, the following page has a simple checklist of things to do while at the gear shack preparing for a vessel placement.

The following page has a simplified checklist that will aid you in the maintenance of your equipment before each trip. Refer to this list while checking over your gear prior to a vessel placement, it's far better to find a fixable mistake at the gear shack than out at sea on the deck of a fishing vessel, or in a LIFERAF .

Pre-trip Gear Shack Check List

Immersion Suit

- Check that the strobe light works and the battery is current.
- Operate zipper and wax if necessary.
- Any green on teeth should be removed.
- Smell suit inside and out for fuel or mold smell.
- Ensure suit is marked with "NMFS OBSERVER"
- Inspect suit for yellowed/torn reflective tape
- Inspect seams for holes or missing glue
- Inflate pillow, and check for leaks
- Look for tears or oil stains

GPIRB/PLB

- Test PLB and GPIRB before each trip.
- Examine antenna on GPIRB for cracks and test performance.
- Keep GPIRB with suit and store where it is easily accessible.
- Verify that the registration and batteries are not expired

Life Jacket - *Wear at all times while working on deck!*

- Ensure it is marked with "NMFS OBSERVER"
- Inspection date is current
- Verify that arming mechanism is green
- Annually inflate and squeeze to check for leaks
- Annually check expiration dates of dissolving tab
- Read instructions on new auto-inflate style! If it auto-inflates accidentally, the unit will only be able to manually inflated by mouth until serviced. -
- Ensure strobe and lightsticks are not expired

Digital camera

- Make sure camera works
- Make sure time/date stamp is correct

Satellite Phone

- Make sure satellite phone works
- Check that speed dial numbers are correct (numbers are on laminated card)
- Clear all text messages
- Call NMFS using the satellite phone, then place another call to the port coordinator

Biopsy Pole

- Test fit corer

Sampling kits

- Confirm contents of each kit (see individual kit lists above)

First-aid Kit

- Any used or expired items must be replaced

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Chapter 21 Species Code List

COMMON NAME	SCIENTIFIC NAME	CODE
Fishes 100 – 317		
Unidentified or other Identified Fish		
Fish, Unidentified	Gnathastomata	100
Fish, Other Identified	Osteichthys	101
Alepisauridae-Lancetfis		
Lancetfish, Longnose	<i>Alepisaurus ferox</i>	121
Balistidae-Triggerfishe		
Triggerfish, Rough (Pelagic)	<i>Canthidermis maculata</i>	151
Triggerfish, Unid.	Balistidae	150
Bramidae-Pomfrets		
Pomfret, Sickle	<i>Taractichthys steindachneri</i>	185
Pomfret, Lustrous	<i>Eumegistus illustris</i>	186
Pomfret, Dagger	<i>Taractes rubescens</i>	187
Pomfret, Rough	<i>Taractes asper</i>	188
Pomfret, Brama	<i>Brama</i> spp.	189
Fanfishes	Bramidae	195
Pomfret, Unidentified	Bramidae	180
Carangidae-Jacks		
Rainbow Runner	<i>Elagatis bipinnulatus</i>	177
Yellowtail	<i>Seriola lalandi</i>	178
Jack, Unspecified Amberjack	<i>Seriola</i> spp.	174
Jack, Cottonmouth	<i>Uraspis secunda</i>	168
Chiasmodontidae- Swallowers		
241		
Coryphaenidae-Dolphinfishe		
Dolphinfish	<i>Coryphaena hippurus</i>	218
Dolphinfish, Pompano	<i>Coryphaena equiselis</i>	219
Echeneidae-Remoras		
Remora or Suckerfish	Echeneidae	199
Gempylidae-Snake Mackerels		
Escolar, Longfin	<i>Scombrolabrax heterolepsis</i>	196
Escolar, Roudi	<i>Promethichthys prometheus</i>	197
Escolar	<i>Lepidocybium flavobrunneum</i>	191
Oilfish	<i>Ruvettus pretiosus</i>	192
Snake Mackerel	<i>Gempylus serpens</i>	193
Gemfish, Black	<i>Nesiarchus nasutus</i>	194
Snake mackerel, Other	Gempylidae	190
Istiophoridae-Billfishes		
Shortbill spearfish	<i>Tetrapturus angustirostris</i>	303

Blue marlin	<i>Makaira nigricans</i>	305
Striped marlin	<i>Kajikia audax</i>	302
Sailfish	<i>Istiophorus platypterus</i>	304
Black marlin	<i>Istiompax indica</i>	311
Billfish, Unidentified	<i>Billfishes</i>	300
Lampridae-Opah		
Opah	<i>Lampris guttatus</i>	144
Lophotidae-Crestfishe		
Crestfishes	<i>Lophotus spp.</i>	145
Louvaridae-Louvar		
Louvar	<i>Luvarus imperialis</i>	251
Molidae-Molas or Ocean sunfishe		
Mola, Common	<i>Mola mola</i>	315
Mola, Sharptail	<i>Masturus lanceolatus</i>	316
Mola, Slender	<i>Ranzania laevis</i>	317
Nomeidae- Cigarfishes (AKA- Driftfishe		
Cigarfishes	<i>Cubiceps spp.</i>	233
Omosudidae-Hammerjaw		
Hammerjaw	<i>Omosudis lowii</i>	238
Regalecidae-Oarfis		
Oarfish	<i>Regalecus glesne</i>	146
Scombridae-Mackerels, Tunas & Seerfishe		
Tuna, Bigeye	<i>Thunnus obesus</i>	211
Tuna, Skipjack	<i>Katsuwonus pelamis</i>	212
Tuna, Albacore	<i>Thunnus alalunga</i>	215
Tuna, Bluefin (N. Pacific)	<i>Thunnus orientalis</i>	214
Kawakawa	<i>Euthynnus affini</i>	213
Tuna, Yellowfin	<i>Thunnus albacares</i>	216
Tuna, Unidentified	Tunas (tribe: Thunnini)	210
Wahoo	<i>Acanthocybium solandri</i>	221
Mackerel (incl.Chubs)	Mackerel spp.	224
Sphyraenidae-Barracudas		
Barracuda, Great	<i>Sphyraena barracuda</i>	263
Tetrodontidae-Pufferfishe		
Puffer, Pelagic(Oceanic)	<i>Lagocephalus ssp.</i>	261

Puffer, Other	Tetraodontidae spp.	260
Trachipteridae-Ribbonfishe		
Ribbonfish, Scalloped	<i>Zu cristatus</i>	147
Ribbonfish, Tapertail	<i>Trachipterus fukuzakii</i>	148
King-of-the-Salmon	<i>Trachipterus altivelis</i>	149
Trichiuridae-Cutlassfishes & Scabbardfish		
Razorback Scabbardfish	<i>Assurger anzac</i>	232
Scabbardfish, Other	Trichiuridae spp.	230
Xiphiidae-Swordfish		
Swordfish	<i>Xiphias gladius</i>	301
Sharks 400 – 442		
Alopiidae-Thresher sharks		
Shark, Bigeye thresher	<i>Alopias superciliosus</i>	424
Shark, Common thresher	<i>Alopias vulpiinus</i>	425
Shark, Pelagic thresher	<i>Alopias pelagicus</i>	426
Shark, Unidentified thresher	<i>Alopias</i> spp.	420
Dalatiidae – Kitefin shark		
Shark, Cookie Cutter	<i>Isistius brasiliensis</i>	437
Carcharinidae-Requiem sharks		
Shark, Bignose	<i>Carcharhinus altimus</i>	404
Shark, Blacktip	<i>Carcharhinus limbatus</i>	406
Shark, Blue	<i>Prionace glauca</i>	418
Shark, Galapagos	<i>Carcharhinus galapagensis</i>	407
Shark, Oceanic Whitetip	<i>Carcharhinus longimanus</i>	419
Shark, Sandbar	<i>Carcharhinus plumbeus</i>	405
Shark, Silky	<i>Carcharhinus falciformis</i>	413
Shark, Tiger	<i>Galeocerdo cuvier</i>	415
Lamnidae-Mackerel sharks		
Shark, Great White	<i>Carcharodon carcharius</i>	431
Shark, Shortfin mako	<i>Isurus oxyrinchus</i>	432
Shark, Longfin mako	<i>Isurus paucus</i>	433
Shark, Salmon	<i>Lamna ditropis</i>	434
Unid. mako	<i>Isurus</i> spp.	430
Megachasmidae-Megamouth shark		
Shark, Megamouth	<i>Megachasma pelagios</i>	442
Odontaspidae-Sand tiger shark		
Shark, Bigeye Sand Tiger	<i>Odontaspis noronhai</i>	439

Pseudocarcharinidae-Crocodile shark		
Shark, Crocodile	<i>Pseudocarcharias kamoharai</i>	438
Rhinodontidae-Whale shark		
Shark, Whale	<i>Rhincodon typus</i>	441
Sphyrnidae-Hammerhead sharks		
Shark, Scalloped Hammerhead	<i>Sphyrna lewini</i>	422
Shark, Smooth Hammerhead	<i>Sphyrna zygaena</i>	423
Shark, Unidentified Hammerhead	<i>Sphyrna</i> spp.	421
Squalidae-Dogfishe		
Dogfish, Velvet	<i>Zameus squamulosus</i>	436
Unidentified Shark		
Shark, Unidentified	Chondrichthyes	400
Shark, Other Identified	Chondrichthyes	401
Rays 450 – 459		
Dasyatidae-Stingrays		
Stingray, Pelagic	<i>Pteroplatytrygon violacea</i>	457
Mobulidae-Manta & Mobulas		
Manta Ray, Giant	<i>Manta birostris</i>	455
Mobula (Devil ray)	<i>Mobula</i> spp.	454
Manta/Mobula ray	Mobulidae	453
Unidentified Ray		
Ray, Other	Order: Rajiformes	450
Sea Turtles 500 – 506		
Chelonidae-Hard shelled sea turtles		
Turtle, Green	<i>Chelonia mydas</i>	502
Turtle, Hawksbill	<i>Eretmochelys imbricata</i>	503
Turtle, Loggerhead	<i>Caretta caretta</i>	504
Turtle, Olive Ridley	<i>Lepidochelys olivacea</i>	505
Turtle, Unid. Hard Shell	Chelonidae	500
Turtle, Unidentified	Testudines (order)	501
Dermochelyidae-Leatherback sea turtles:		
Turtle, Leatherback	<i>Dermochelys coriacea</i>	506

Birds 600 – 683

Diomedidae-Albatrosses

Albatross, Black-footed	<i>Phoebastria nigripes</i>	681
Albatross, Laysan	<i>Phoebastria immutabilis</i>	682
Albatross, Short-tailed	<i>Phoebastria albatrus</i>	683
Albatross, Unidentified	<i>Phoebastria</i> spp.	680

Fregatidae-Frigate birds

Frigatebird, Unidentified	<i>Fregata</i> spp.	610
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Laridae-Gulls & Terns

Noddy, Black/Brown	<i>Anous</i> spp.	628
Noddy, Blue-Gray	<i>Procelsterna</i> spp.	624
Tern, Other	Use this code with comments	601
Kittiwake, Black legged	<i>Larus tridactyla</i>	629
Gull, Other	Laridae	621

Hydrobatidae-Storm petrels

Storm Petrel, Other	Hydrobatidae	630
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Phaethontidae-Tropicbirds

Tropicbird, unspecified	<i>Phaethon</i> spp.	640
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Procellariidae-Gadfly & Diving petrels

Petrel, Unspecified	<i>Pterodroma</i> spp.	674
Shearwater, Unidentified	<i>Puffinus</i> spp.	670

Petrel, Hawaiian.....PHOTO REQUIRED

Shearwater, Newell's.....PHOTO REQUIRED

Stercorariidae- Jaegers (Skuas)

Jaeger, Unidentified	<i>Stercorarius</i> spp	650
Jaeger, Other Identified	<i>Stercorarius</i> spp.	651

Sulidae-Boobies & Gannets

Booby, Brown	<i>Sula leucogaster</i>	662
Booby, Masked	<i>Sula dactylatra</i>	663
Booby, Red-footed	<i>Sula sula</i>	664
Booby, Other	<i>Sula</i> spp.	660

Unidentified and Other Identified Bird

Bird, Unidentified	Aves	600
Bird, Other Identified	Aves	601

Cetaceans 700 – 767

Balaenopteridae - Rorquals

Whale, Blue	<i>Balaenoptera musculus</i>	756
Whale, Bryde's	<i>Balaenoptera edeni</i>	757
Whale, Fin	<i>Balaenoptera physalus</i>	754
Whale, Humpback	<i>Megaptera novaeangliae</i>	755
Whale, Minke	<i>Balaenoptera acutorostrata</i>	758
Whale, Sei	<i>Balaenoptera borealis</i>	759

Eschrichtiidae-Gray whale

Whale, Gray	<i>Eschrichtius robustus</i>	767
Whale, Unidentified Large		750

Physeteridae - Sperm whales

Whale, Sperm	<i>Physeter macrocephalus</i>	725
Whale, Unidentified Kogi	<i>Kogia</i> spp.	720

Ziphiidae - Beaked whales

Whale, Baird's beaked	<i>Berardius bairdii</i>	712
Whale, Cuvier's beaked	<i>Ziphius cavirostris</i>	713
Whale, Ginko-toothed beaked	<i>Mesoplodon ginkodens</i>	717
Whale, Blainville's Beaked	<i>Mesoplodon densirostris</i>	716
Whale, Unidentified Beaked	<i>Ziphiidae</i> spp.	710

Delphinidae - Dolphins

Whale, False Killer	<i>Pseudorca crassidens</i>	742
Whale, Pygmy Killer	<i>Feresa attenuata</i>	745
Whale, Short-finned Pilot	<i>Globicephala macrorhynchus</i>	743
Whale, Melon-headed	<i>Peponocephala electra</i>	744
Whale, Killer (Orca)	<i>Orcinus orca</i>	747
Dolphin, Risso's	<i>Grampus griseus</i>	746
Dolphin, Bottlenose	<i>Tursiops truncatus</i>	731
Dolphin, Common	<i>Delphinus</i> spp.	737
Dolphin, Fraser's	<i>Lagenodelphis hosei</i>	736
Dolphin, Rough-toothed	<i>Steno bredanensis</i>	733
Dolphin, Spinner	<i>Stenella longirostris</i>	732
Dolphin, Spotted	<i>Stenella attenuata</i>	734
Dolphin, Striped	<i>Stenella coeruleoalba</i>	735
Dolphin, Pac. Whitesided	<i>Lagenorhynchus obliquidens</i>	762

Other

Cetacean, Unidentified	Cetacea	700
Cetacean, Other Identified		

Pinnipeds 900-912

Phocidae- Seals and Sea Lions

Seal, Hawaiian Monk	<i>Monachus schauinslandi</i>	902
Seal, Unidentified	Phocidae spp.	910
Sealion/Fur seal, Other	Otariidae spp.	911

Pinniped, Unid.	Pinnipedia	900
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Special notes for using the Unidentified and Other species codes.

Other- Use this code for animals within a group that are either unidentified (when no Unidentified code exists), or are identifiable but have no assigned code. *i.e., When you see a Bonapart's Gull use code 621 for "Gull Unidentified" or a Torpedo ray use code 450 for "Ray, Unidentified."*

Unidentified- Use this code when the animal cannot be identified to its required levels. Some animals are only identified to the family or genus level while most are identified to the species level. *i.e., when you see some kind of dolphin but don't know if it's a Bottlenose or a Striped dolphin use code 700 . "Unidentified Whale, Dolphin or Porpoise".*

Special Codes are assigned to some species within larger groups but can only be entered by office staff. Use of these codes are limited to special circumstances and cannot be approved without photo or video evidence. Some species with special codes include:

- | | |
|--|-----------------------------|
| -Red-tailed and White-tailed tropicbirds | -Dwarf & Pygmy Sperm whales |
| -Great and Lesser Frigatebirds | -CA and Stellar's sealions |
| -Wedge-tailed & Newell's shearwaters | -Guadalupe fur seal |
| -Pomarine jaeger (Skua) | -Northern fur seal |
| -Sooty, Gray-backed, and White terns | -N. Elephant seal |
| -Blue-gray, Brown, and Black noddy | -N. Right whale dolphin |
| -Longman's beaked whale | -Harbor porpoise |
| -any Mesoplodont beaked whale | -Dall's porpoise |

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Chapter 22 Appendices

The Appendices include the following:

- **Conversions and Formulas**
- **Fahrenheit – Celsius Conversion Chart**
- **List of Relevant Statutes Regarding Data Collection by NMFS**
- **List of Acronyms**
- **e- CFR Part 600.746- Observer Health and Safety Regulations**
- **e-CFR Part 665.808- Conditions for At-Sea Observer Coverage in the Western Pacific Pelagic Fisheries**
- **e-CFR Part 300.215- Observers WCPFC Regulations**
- **16 U.S.C. 1875 (1)(P)- Removal of Shark Fins**
- **Marine Debris Encounter Form**
- **Foreign Fishing Vessels**

Conversions and Formulas

The following conversions and formulas may be useful during a cruise. If you are uncertain of any conversions, record the data in the units available near the appropriate data field. The units may then be converted once you arrive on shore at the end of the cruise. Refer to the instructions in the field manual to confirm the correct unit for the data element in question.

Length/Depth:

1 fathom (fm) = 6 feet (ft.) = 1.82 meters (m)

Example: $45 \text{ fm} \times (1.82 \text{ m/fm}) = 81.9 \text{ m}$

1 millimeter (mm) = .01 centimeter (cm) = .001 m

Examples: $221 \text{ mm} = 2.21 \text{ cm} = 0.221 \text{ m}$

$3.42 \text{ m} = 342 \text{ cm} = 3420 \text{ mm}$

1 inch (in.) = 2.54 cm = .0254 m

Example: $3.5 \text{ in} \times (2.54 \text{ cm/in}) = 8.89 \text{ cm}$

Speed/Distance:

1 nautical mile = 1.1508 statute miles (mi.) = 6086 ft

1 nautical mile per hour = 1 knot (kt.)

Example: $12 \text{ kt} \times 1.1508 \text{ mi/kt} = 13.8096 \text{ mph}$

1 yard = 0.91 m or 1 m = 1.09 yards

Example: $50 \text{ yds} \times (0.91 \text{ m/yd}) = 45.5 \text{ m}$

1 degree of latitude \approx 60 nm

Longitude varies from 60nm - 0nm with increasing latitude

Weight:

1 T (ton) = 2000lbs - also called a *short ton*

1 mT (metric ton or tonne) = 2204.6 lbs

1 lb = 0.0004536 mT

1 mT = 1.1023 T

Fahrenheit to Celsius Conversions

Deg F	Deg C
0	-17.8
1	-17.2
2	-16.7
3	-16.1
4	-15.5
5	-15
6	-14.4
7	-13.9
8	-13.3
9	-12.8
10	-12.2
11	-11.7
12	-11.1
13	-10.5
14	-10
15	-9.4
16	-8.9
17	-8.3
18	-7.8
19	-7.2
20	-6.7

Deg F	Deg C
21	-6.1
22	-5.6
23	-5
24	-4.4
25	-3.9
26	-3.3
27	-2.8
28	-2.2
29	-1.7
30	-1.1
31	-0.6
32	0
33	0.6
34	1.1
35	1.7
36	2.2
37	2.8
38	3.3
39	3.9
40	4.4
41	5

Deg F	Deg C
42	5.6
43	6.1
44	6.7
45	7.2
46	7.8
47	8.3
48	8.9
49	9.4
50	10
51	10.5
52	11.1
53	11.7
54	12.2
55	12.8
56	13.3
57	13.9
58	14.4
59	15
60	15.5
61	16.1
62	16.7

Deg F	Deg C
63	17.2
64	17.8
65	18.3
66	18.9
67	19.4
68	20
69	20.5
70	21.1
71	21.6
72	22.2
73	22.8
74	23.3
75	23.9
76	24.4
77	25
78	25.5
79	26.1
80	26.6
81	27.2
82	27.8
83	28.3

Deg F	Deg C
84	28.9
85	29.4
86	30
87	30.5
88	31.1
89	31.6
90	32.2
91	32.7
92	33.3
93	33.9
94	34.4
95	35
96	35.5
97	36.1
98	36.6
99	37.2
100	37.7
101	38.3
102	38.9
103	39.4
104	40

Temperature:

To get degrees Fahrenheit,

$$\begin{aligned} \text{Fahrenheit (F)} &= (\text{C} \times 9/5) + 32 \\ &= (\text{C} \times 1.8) + 32 \end{aligned}$$

Example: 17 C = ??? F

- a. $(17 \times 1.8) + 32 = \text{F}$
- b. $(30.6) + 32 = \text{F}$
- c. $62.6 = \text{F}$

Solution: 17 C = 62.6 F

To get degrees Celsius,

$$\begin{aligned} \text{Celsius (C)} &= (\text{F} - 32) \times 5/9 \\ &= (\text{F} - 32) \times 0.555 \end{aligned}$$

Example: 81 F = ??? (C)

- a. $(81 \text{ F} - 32) \times 0.555 = \text{C}$
- b. $(49) \times 0.555 = \text{C}$
- c. $27.195 = \text{C}$

Solution: 81 F = 27.195 C

Relevant Statutes Regarding Data Collection by NMFS

NMFS is authorized to collect biological, economic, social, and other data under the following statutes, among others:

- a. Agricultural Marketing Act of 1946, 7 U.S.C. 1621-1627**
- b. Agricultural Trade Development and Assistance Act of 1954, 7 U.S.C. 1704**
- c. Anadromous Fish Conservation Act, 16 U.S.C. 757-757f**
- d. Atlantic Coast Fish Study for Development and Protection of Fish Resources, 1950, 16 U.S.C. 760a**
- e. Atlantic Tunas Convention Act of 1975, 16 U.S.C. 971-971I**
- f. Eastern Pacific Tuna Licensing Act of 1984, 16 U.S.C. 972-972h**
- g. Endangered Species Act, 16 U.S.C. 1531-1543**
- h. Farrington Act of 1947, 16 U.S.C. 758-758d**
- i. Fish and Wildlife Act of 1956, 16 U.S.C. 742(a) et seq**
- j. Fish and Wildlife Coordination Act of 1934, 16 U.S.C. 661-666c**
- k. Fishery Market New Service Act of 1937, 50 Stat. 296**
- l. Fur Seal Act, 16 U.S.C. 1151-1175**
- m. Interjurisdictional Fisheries Act of 1986, 16 U.S.C. 4101 et seq**
- n. Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801 et seq**
- o. Marine Mammal Protection Act, 16 U.S.C. 1361 et seq**
- p. Marine Migratory Gamefish Act of 1959, 16 U.S.C. 160e**
- q. South Pacific Tuna Act of 1988, 16 U.S.C. 973-973n**
- r. Tuna Conventions Act of 1950, 16 U.S.C. 951-961**

LIST OF ACRONYMS

Environmental/ Management

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
ESA	Endangered Species Act of 1973
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
FMP	Fishery Management Plan
FEP	Fishery Ecosystem Plan
WCPFC	Western Central Pacific Fisheries Commissio

Longline Observer Program

PIRO	Pacific Islands Regional Office
PIROP	Pacific Islands Regional Observer Program
OC	Operations Coordinator
ASOP	American Samoa Observer Program
PIFSC	Pacific Islands Fishery Science Cente
HLO	Hawaii Longline Observer Program NMFS
OLE	Office of Law Enforcement NMFS Office of
GC	General Counse

Electronic Code of Federal Regulations (e-CFR)

Title 50: Wildlife and Fisheries

PART 600—MAGNUSON-STEVENSON 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 safety*. An observer will not be deployed on, or stay aboard, a vessel that is inadequate for observer deployment as described in paragraph (c) of this section.

(c) *Vessel inadequate for observer deployment*. A vessel is inadequate for observer deployment if it:

(1) Does not comply with the applicable regulations regarding observer accommodations (see 50 CFR parts 229, 285, 300, 600, 622, 635, 648, 660, and 679), or

(2) Has not passed a USCG Commercial Fishing Vessel Safety Examination, or for vessels less than 26 ft (8 m) in length, has not passed an alternate safety equipment examination, as described in paragraph (g) of this section.

(d) *Display or show proof*. A vessel that has passed a USCG Commercial Fishing Vessel Safety Examination must display or show proof of a valid USCG Commercial Fishing Vessel Safety Examination decal that certifies compliance with regulations found in 33 CFR Chapter 1 and 46 CFR Chapter 1, and which was issued within the last 2 years or at a time interval consistent with current USCG regulations or policy.

(1) In situations of mitigating circumstances, which may prevent a vessel from displaying a valid safety decal (broken window, etc.), NMFS, the observer, or NMFS' designated observer provider may accept the following associated documentation as proof of the missing safety decal described in paragraph (d) of this section:

(i) A certificate of compliance issued pursuant to 46 CFR 28.710

(ii) A certificate of inspection pursuant to 46 U.S.C. 33 1; or

(iii) For vessels not required to obtain the documents identified in (d)(1)(i) and (d)(1)(ii) of this section, a dockside examination report form indicating the decal number and date and place of issue.

(e) *Visual inspection*. Upon request by an observer, a NMFS employee, or a designated observer provider, a vessel owner or operator must provide correct information concerning any item relating to any safety or accommodation requirement prescribed by law or regulation, in a manner and according to a timeframe as directed by NMFS. A vessel owner or operator must also allow an observer, a NMFS employee, or a designated observer provider to visually examine any such item.

(f) *Vessel safety check*. Prior to the initial deployment, the vessel owner or operator or the owner or operator's designee must accompany the observer in a walk through the vessel's major spaces to ensure that no obviously hazardous conditions exist. This action may be a part of the vessel safety orientation to be provided by the vessel to the observer as required by 46 CFR 28.270. The vessel owner or operator or the owner or operator's designee must also accompany the observer in checking the following major items as required by applicable USCG regulations:

- (1) Personal flotation devices/ immersion suits
 - (2) Ring buoys;
 - (3) Distress signals;
 - (4) Fire extinguishing equipment;
 - (5) Emergency position indicating radio beacon (EPIRB), when required, shall be registered to the vessel at its documented homeport;
 - (6) Survival craft, when required, with sufficient capacity to accommodate the total number of persons, including the observer(s), that will embark on the voyage; and
 - (7) Other fishery-area and vessel specific items required by the USC
- (g) *Alternate safety equipment examination* . If a vessel is under 26 ft (8 m) in length, and in a remote location, and NMFS has determined that the USCG cannot provide a USCG Commercial Fishing Vessel Safety Examination due to unavailability of inspectors or to unavailability of transportation to or from an inspection station, the vessel will be adequate for observer deployment if it passes an alternate safety equipment examination conducted by a NMFS certified observe , observer provider, or a NMFS observer program employee, using a checklist of USCG safety requirements for commercial fishing vessels under 26 ft (8 m) in length. Passage of the alternative examination will only be effective for the single trip selected for observer coverage.
- (h) *Duration* . The vessel owner or operator is required to comply with the requirements of this section when the vessel owner or operator is notified orally or in writing by an observe , a NMFS employee, or a designated observer provider, that his or her vessel has been selected to carry an observer. The requirements of this section continue to apply through the time of the observer's boarding, at all times the observer is aboard, and at the time the observer disembarks from the vessel at the end of the observed trip.
- (i) *Effect of inadequate status* . A vessel that would otherwise be required to carry an observer, but is inadequate for the purposes of carrying an observer, as described in paragraph (c) of this section, and for allowing operation of normal observer functions, is prohibited from fishing without observer coverage.

Last updated: July 28, 2015

Subpart F—Western Pacific Pelagic Fisheries

§ 665.808 Conditions for at-sea observer coverage.

- (a) NMFS shall advise the permit holder or the designated agent of any observer requirement at least 24 hours (not including weekends and Federal holidays) before any trip for which NMFS received timely notice in compliance with these regulations.
- (b) The “Notice Prior to Fishing Trip” requirements in this subpart commit the permit holder to the representations in the notice. The notice can be modified by the permit holder or designated agent because of changed circumstance, if the Regional Administrator is promptly provided a modification to the notice that complies with the notice requirements. The notice will also be considered modified if the Regional Administrator and the permit holder or designated agent agrees to placement changes.
- (c) When NMFS notifies the permit holder or designated agent of the obligation to carry an observer in response to a notification under this subpart, or as a condition of an EF issued under §665.17, the vessel may not engage in the fishery without taking the observe .
- (d) A NMFS observer shall arrive at the observer’s assigned vessel 30 minutes before the time designated for departure in the notice or the notice as modified, and will wait 1 hour for departure
- (e) A permit holder must accommodate a NMFS observer assigned under these regulations. The Regional Administrator’s office, and not the observe , will address any concerns raised over accommodations.
- (f) The permit holder, vessel operator, and crew must cooperate with the observer in the performance of the observer’s duties, including:
- (1) Allowing for the embarking and debarking of the observer.
 - (2) Allowing the observer access to all areas of the vessel necessary to conduct observer duties.
 - (3) Allowing the observer access to communications equipment and navigation equipment as necessary to perform observer duties.
 - (4) Allowing the observer access to VMS units to verify operation, obtain data, and use the communication capabilities of the units for official purposes
 - (5) Providing accurate vessel locations by latitude and longitude or loran coordinates, upon request by the observer.
 - (6) Providing sea turtle, marine mammal, or seabird specimens as requested.
 - (7) Notifying the observer in a timely fashion when commercial fishing operations are to begin and end
- (g) The permit holder, operator, and crew must comply with other terms and conditions to ensure the effective deployment and use of observers that the Regional Administrator imposes by written notice.

(h) The permit holder must ensure that assigned observers are provided living quarters comparable to crew members and are provided the same meals, snacks, and amenities as are normally provided to other vessel personnel. A mattress or futon on the floor or a cot is not acceptable if a regular bunk is provided to any crew member, unless other arrangements are approved in advance by the Regional Administrator.

(i) Reimbursement requirements are as follows:

(1) Upon observer verification of vessel accommodations and the number of assigned days on board, NMFS will reimburse vessel owners a reasonable amount for observer subsistence as determined by the Regional Administrator.

(2) If requested and properly documented, NMFS will reimburse the vessel owner for the following:

(i) Communications charges incurred by the observer.

(ii) Lost fishing time arising from a seriously injured or seriously ill observer, provided that notification of the nature of the emergency is transmitted to the Observer Program, NMFS (see address for PIRO Regional Administrator) at the earliest practical time. NMFS will reimburse the owner only for those days during which the vessel is unable to fish as a direct result of helping the NMFS employee who is seriously injured or seriously ill. Lost fishing time is based on time traveling to and from the fishing grounds and any documented out-of-pocket expenses for medical services. Payment will be based on the current target fish market prices and that vessel's average target fish catch retained per day at sea for the previous 2 years, but shall not exceed \$5,000 per day or \$20,000 per claim. Detailed billing with receipts and supporting records are required for allowable communication and lost fishing time claims. The claim must be completed in ink, showing the claimant's printed name, address, vessel name, observer name, trip dates, days observer was on board, an explanation of the charges, and claimant's dated signature with a statement verifying the claim to be true and correct. Requested reimbursement claims must be submitted to the Fisheries Observer Branch, Pacific Islands Region, NMFS. NMFS will not process reimbursement invoices and documentation submitted more than 120 days after the occurrence.

(j) If a vessel normally has cabins for crew members, female observers on a vessel with an all-male crew must be accommodated either in a single person cabin or, if NMFS concludes that adequate privacy can be ensured by installing a curtain or other temporary divider, in a two-person shared cabin. If the vessel normally does not have cabins for crew members, alternative accommodations must be approved by NMFS. If a cabin assigned to a female observer does not have its own toilet and shower facilities that can be provided for the exclusive use of the observer, or if no cabin is assigned, then arrangements for sharing common facilities must be established and approved in advance by NMFS.

Last updated: April 16, 2014.

WCPFC Related Regulations

Title 50: Wildlife and Fisheries

Part 300- International Fisheries and Regulations

Subpart O—Western and Central Pacific Fisheries for Highly Migratory Species

§ 300.215 Observers.

(a) Applicability. This section applies to any fishing vessel of the United States with a WCPFC Area Endorsement or for which a WCPFC Area Endorsement is required.

(b) Notifications. [Reserved]

(c) Accommodating observers. All fishing vessels subject to this section must carry, when directed to do so by NMFS, a WCPFC observer on fishing trips during which the vessel at any time enters or is within the Convention Area. The operator and each member of the crew of the fishing vessel shall act in accordance with this paragraph with respect to any WCPFC observer.

(1) The operator and crew shall allow and assist WCPFC observers to:

(i) Embark at a place and time determined by NMFS or otherwise agreed to by NMFS and the vessel operator;

(ii) Have access to and use of all facilities and equipment on board as necessary to conduct observer duties, including, but not limited to: full access to the bridge, the fish on board, and areas which may be used to hold, process, weigh and store fish; full access to the vessel's records, including its logs and documentation, for the purpose of inspection and copying; access to, and use of, navigational equipment, charts and radios; and access to other information relating to fishing

(iii) Remove samples;

(iv) Disembark at a place and time determined by NMFS or otherwise agreed to by NMFS and the vessel operator; and

(v) Carry out all duties safely.

(2) The operator shall provide the WCPFC observer, while on board the vessel, with food, accommodation and medical facilities of a reasonable standard equivalent to those normally available to an officer on board the vessel, at no expense to the WCPFC observer.

(3) The operator and crew shall not assault, obstruct, resist, delay, refuse boarding to, intimidate, harass or interfere with WCPFC observers in the performance of their duties, or attempt to do any of the same.

(d) Related observer requirements. Observers deployed by NMFS pursuant to regulations issued under other statutory authorities on vessels used for commercial fishing for HMS in the Convention Area will be deemed by NMFS to have been deployed pursuant to this section.

§ 300.217 Vessel identification

(a) General. (1) A fishing vessel must be marked in accordance with the requirements of this section in order for a WCPFC Area Endorsement to be issued for the fishing vessel

(2) Any fishing vessel of the United States with a WCPFC Area Endorsement or for which a WCPFC Area Endorsement is required shall be marked for identification purposes in accordance with this section, and all parts of such markings shall be clear, distinct, uncovered, and unobstructed.

(3) Any boat, skiff, or other watercraft carried on board the fishing vessel shall be marked with the same identification markings as required under this section for the fishing vessel and shall be marked in accordance with this section.

(b) Marking. (1) Vessels shall be marked in accordance with the identification requirements of §300.14(b)(2), and if an IRCS has not been assigned to the vessel, then the Federal, State, or other documentation number used in lieu of the IRCS must be preceded by the characters “USA” and a hyphen (that is, “USA-”).

(2) With the exception of the vessel’s name and hailing port, the marking required in this section shall be the only vessel identification mark consisting of letters and numbers to be displayed on the hull and superstructure

Removal of Shark Fins

No fins may be removed from any shark encountered during a fishing trip. The US Code supersedes any CFRs pertaining to shark fins in commercial fisheries. Please note the citation of US Code for your reference below:

16 USC 1857(1)(P):

"It is unlawful for any person (i) to remove any of the fins of a shark (including the tail) at sea; (ii) to have custody, control or possession of any such fin aboard a fishing vessel unless it is naturally attached to the corresponding carcass; (iii) to transfer any such from one vessel to another vessel at sea, or to receive any such fin in such transfer, without the fin naturally attached to the corresponding carcass; or (iv) to land any such fin that is not naturally attached to the corresponding carcass, or to land any shark carcass without such fins naturally attached."

In accordance with national fishery management policies, the NMFS/PIROP is collecting data on the disposition of fins for all shark species that are kept during an observed fishing trip. For every shark that is retained, observers are directed to record a brief comment about the fate of all the fins that are on each shark. Examples of the desired type of comments would be:

"Dorsal, both pectoral, and upper lobe of caudal fin removed" *"No fins removed"*
"Fins cut 2/3 of the way off, and then folded back"

Please do not give guidance to fisherman on the course of action they take in regards to sharks. Feel free to show them the cited US law above, and let them know that "It is against federal law to remove fins from sharks." If anyone has further questions about this situation, you are authorized and encouraged to allow vessel operators to use your satellite phone to contact the NMFS Observer office for clarification.

Marine Debris Encounter Form

The PIRO Program is helping the National Ocean Service's (NOS) Marine Debris Program better understand the impact of pelagic marine debris within the longline fishery.

The primary objective of this project is to gain a better understanding of the impact of marine debris, specifically discarded fishing gear in the Hawaii based longline fisheries. This will be an important part of meeting the requirements of the Marine Debris Research, Prevention, and Reduction Act of 2006.

The marine debris report is for observers to use to record the details of observed instances of marine debris caught or entangled on longline vessels, their fishing gear, or animals. Observers should fill it out when there has been an incident of debris entangled on the vessel, fishing gear, or when they observe animals interacting with marine debris. Ex: a shark w/a bait strap around neck, net wrapped around mainline or on a hook, marine debris tangled in propeller

Observers should also use the form to record noteworthy sightings of free floating marine debris. Ex: a FAD sighting, a car, an abandoned vessel, a large aggregation of net/rope/debris aka derelict fishing gear Note the time and location of the incident, include a detailed description of the Incident Type, Debris Type, and Biota Type and take a photo. If the crew had to dive down and remove debris from the propeller, state how much time was lost.

This information is being used to help determine the economic cost of marine debris impacts to fisheries. These questions are not to be asked of any captain or crew. Data should be collected by observation only. The completed reports will be turned in with the other observer data forms. A copy will be maintained with the trip folder. The originals will be given to the NOS Marine Debris Office. Observers will not have to keypunch the information into the LODS database.

Foreign Fishing Vessels

The USCG Living Marine Resources (LMR) Law Enforcement Division provides an active enforcement presence within and outside of the U.S. EEZ to ensure compliance with U.S. fishery management plans and international agreements in an effort to conserve marine resources. To assist in this endeavor, the United States Coast Guard, Sector Honolulu has requested information from the Observer Program regarding foreign fishing vessels.

The USCG is well aware of the limitations of an observer to be able to identify a vessel as a foreign fishing vessel due to the distance between vessels and the unfamiliarity with foreign vessels. However, any information documenting the sighting of a foreign fishing vessel, or interaction with foreign fishing gear, would be valuable.

Pictures of foreign fishing vessels and foreign fishing aides have been provided for your reference. **If you do sight a vessel of foreign origin or if your captain informs you there is a foreign vessel in the area, take photos if possible and please collect the following information in your Documentation Notebook:**

1. Date and time of sighting
2. GPS position
3. Vessel Name and/or Call sign. A homeport is useful too.
4. Vessel Type, if you can determine.
5. # of crew (estimate)
6. Fishing style (e.g. longline, purse seine)
7. Activity (fishing or underway?)
8. Other additional details; like color, any visible dents, scrapes, broken lights/masts/antennas

Chapter 23 Manual Changes

