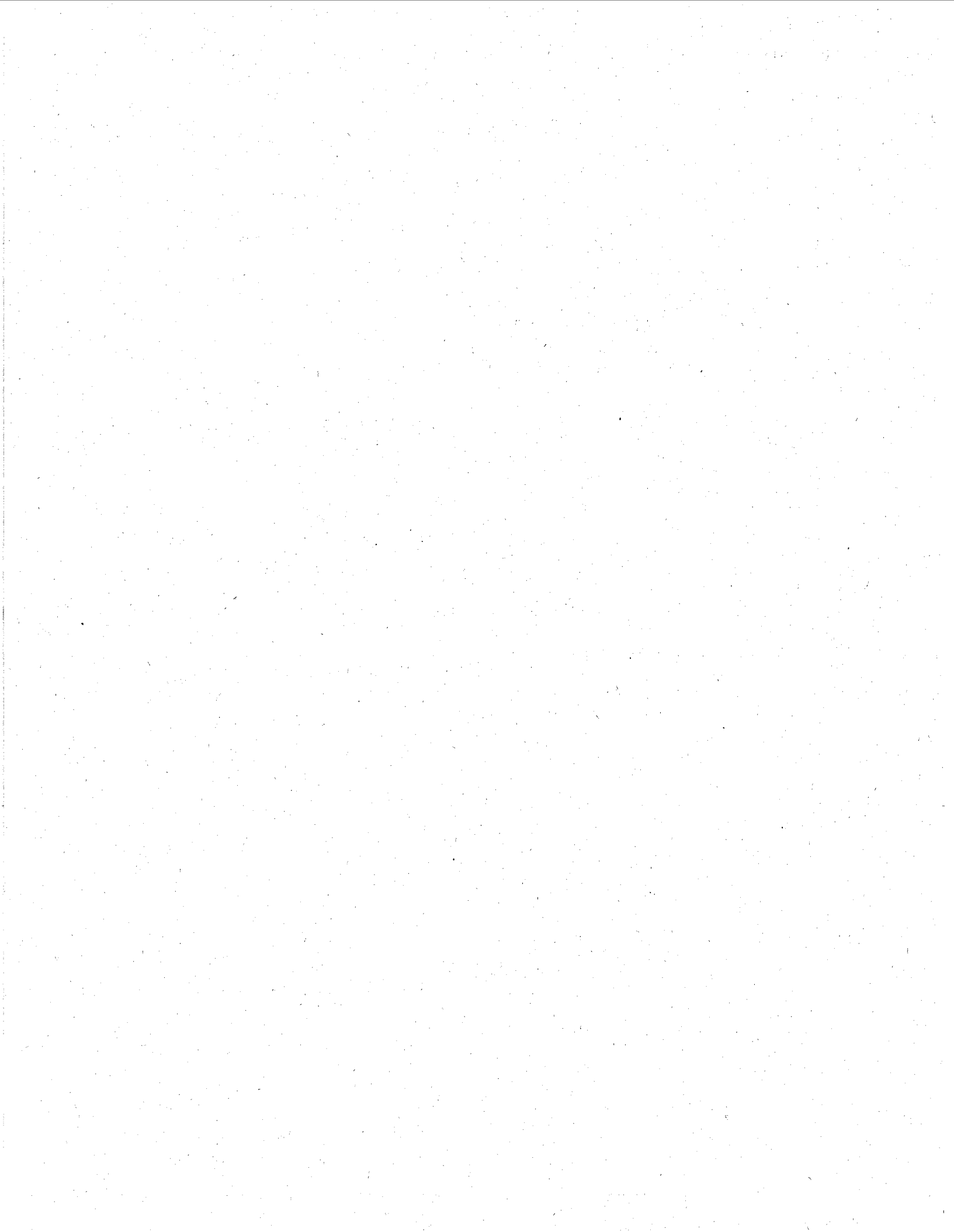


**Observer Program Manual**  
For Sampling Of  
**Central Bering Sea Pollock Fisheries**

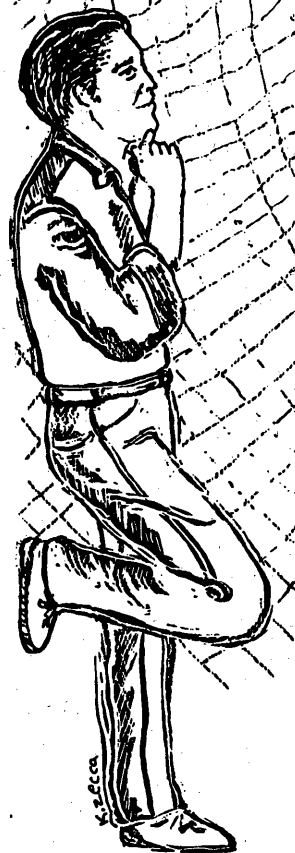
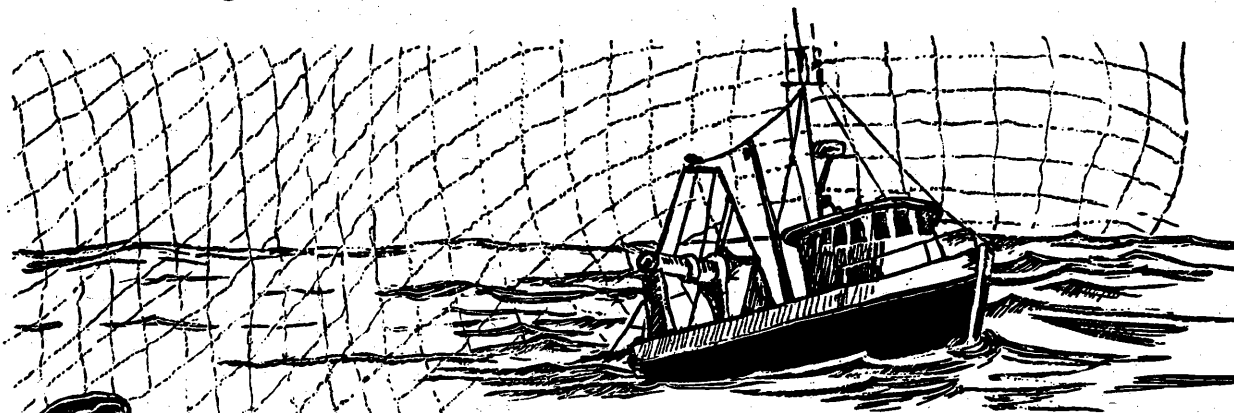
**March 1997**

**Prepared by**

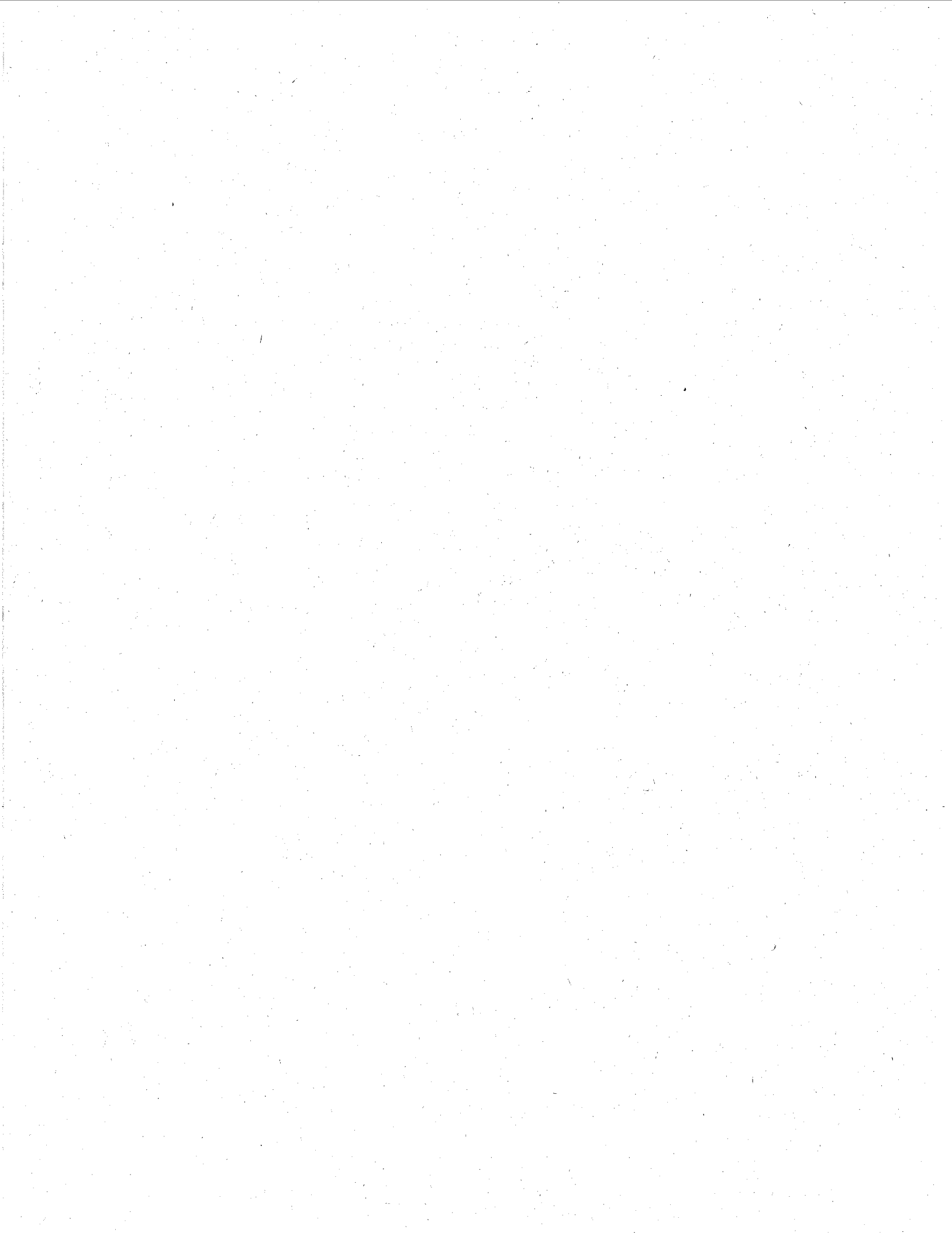
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National Marine Fisheries Service  
7600 Sand Point Way NE  
Seattle, WA 98115-0070**



## Central Bering Sea Observer Manual Preface



This manual has been prepared to assist you in your duties as an observer aboard fishing vessels operating in the Central Bering Sea pollock fishery. In addition to training sessions, this manual should adequately prepare you for your observer experience. It must be remembered however, that conditions can change and that no set of instructions can ever be complete. It is therefore the responsibility of the observer to evaluate each situation on the vessel before deciding on a course of action. Study the manual carefully, refer to it often and consider ways in which it may be improved as a guide for future observers.



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## **ROLE OF THE OBSERVER IN THE CENTRAL BERING SEA POLLOCK FISHERY**

The international area of the Bering Sea has an important fishery resource. In order to maintain the resource, biological information must be collected from the region. Biological observers will be placed on board vessels fishing in this area to collect the information needed to assess the resource.

The primary objectives of the observers are to record fishing effort, obtain daily catch rates, determine species composition of the catches, determine the incidental takes of salmon and marine mammals, and to gather data on pollock sizes and ages. The estimates of catch rates obtained by the observers may be compared with data reported by vessels to enable scientists to estimate total daily landings of pollock.

Data collected by observers will be used in helping to assess the status of the pollock stock, estimating the bycatch rates of species other than pollock, and investigating population interrelationships.

Data obtained by the observers on catch size and species composition will give fishery scientists an idea of the catch per unit effort of pollock, an important factor in determining the status of the stock. Length frequencies and otolith collections are also vital in determining the condition of the fishery resource, and hence, of determining how much is available to be caught without causing fishery deterioration. Mathematical models used to assess the pollock population are dependent upon a measure of the current age composition of the commercial catch. Without these data and models, the ability of fishery scientists to determine the condition of the pollock stock would be diminished.

Data obtained by observers should be useful in studying particular fisheries questions, such as the stock relationships between pollock caught in the Central Bering Sea and those caught in the Eastern or Western Bering Sea. In addition to planned uses, there are many other uses of data which are not always anticipated.

Because scientists depend on the data obtained by observers in order to assess the impact of fisheries upon the stocks, the necessity for accuracy in data collections, accurate determinations of species, and complete fulfillment of the sampling plan cannot be over stressed. Data forms must be carefully completed and checked. Sample forms in this manual serve as guidelines.

This manual, along with the training sessions, should adequately prepare you for an observer trip. Because of the variations in fish handling by different ships, observers may be confronted with sampling problems not fully covered in the training sessions. You will need to adapt the sampling methods covered in this manual and in your training to the situation experienced aboard your ship.

## **Observer Duties and Priorities**

Primarily, the observer's duties and priorities consist of collecting catch information, determining catch weight estimates, sampling for species composition of the catch, and collecting biological data on pollock. A list of the observer's main duties is given below.

1. Record daily fishing effort and catch weight information. This manual contains instructions describing methods of obtaining these estimates and how your estimates of catch should be used.
2. Record species, and numbers and other biological information of incidentally caught marine mammals and salmon.
3. Determine the species composition of the catch according to instructions in this manual.
4. Obtain biological data and samples from pollock as directed. This may include length frequencies, sexes, otoliths for determining age, stomach content samples, or other information as requested.
5. Prepare a final report for the vessel which includes all information that is pertinent.

## **Confidentiality of Observer Data**

Fishermen are concerned that information you are collecting can be obtained by anyone who may be interested in finding out where they caught fish. If this is brought up to you, reassure them that the information you are collecting is handled under strict rules of confidentiality and that you (the observer) are bound by the confidentiality rules as well. If you are asked by vessel personnel about another vessel you were on, explain that just as you can't talk about this vessel after you get off it, so you can't tell them about a previously observed vessel.



Observers must know that all data collected are the property of their government. No observer can retain or copy any data or reports following their return unless granted express permission from their government.

## **Standards of Observer Conduct**

Observers are expected to conduct themselves in a manner which will reflect favorably upon the observer program. This means acting in an honest, professional manner in all situations. Observers should try to abide by these basic standards of conduct:

1. Observers must diligently perform their assigned duties.
2. Observers must accurately record their sampling data, write reports, and report honestly on the fishing activities of their observed vessel.
3. Observers must keep all collected data and observations made on board the vessel confidential.
4. Observers must refrain from engaging in any activities that would reflect negatively on their image as professional scientists, on other observers, or on the observer program as a whole.

## **Special Caution on Deportment**

1. When conflicts or sampling problems occur which affect your attempts to get unbiased samples of the catch (pre-sorting of fish for example), you can usually work it out by talking with the crewmen, factory foreman or fishing master. If this doesn't help, talk to the captain and ask him to help you but don't be demanding in your attitude. Present a case which shows you have thought about both sides. Listen and consider their objections. Negotiate compromises as long as they don't interfere with your ability to get good data. If talking fails, try to get the best data possible anyway, and make notes on the problems to discuss when you return home.
2. Maintain a friendly but professional demeanor to vessel personnel. Your behavior should be governed by remembering that you are highly visible. Before acting in any given situation, be mindful of the sensitivity of your position. Tactful, mature handling of

problems is expected. Remember, you are on the job 24 hours per day.

3. Observers should never accept gifts as this may appear to compromise your impartiality. You may not accept payment for any work you perform for the vessel during your employment as an observer.
4. As an observer you should abide by the rules and regulations relating to conduct on your host vessel. Do not accept or transport any item violating laws relating to endangered or protected species.
5. Once you are aboard your sampling ship, avoid making visits to other vessels. Sometimes other ships, tenders, or catcher boats may tie up to your vessel. Consider going aboard only if your transfer there and back can be made under safe conditions and if your work performance is not affected. Do not make social visits to other vessels if they are not tied up to your vessel. Do not stay away from your vessel overnight.

**\* Most Important \***

Consider *safety first* in everything you do!

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# TRAINING, EQUIPMENT, AND FIRST DAYS ABOARD

## The Training Period

Training will consist of learning how to identify the species of fish expected to be found in the Central Bering Sea pollock fishery, explanations of the sampling procedures, and information on safety and living conditions at sea. The following outline lists some of the activities covered during the training period. The outline is not necessarily complete and the items are not necessarily given in the order that they will be presented.

### Observer Training Topics

- Observer sampling duties - emphasis on terminology, visual orientation and safety on board.
- Seasickness, medical advice, living accommodations, clothing and other items to bring.
- Hardships, deportment, and conduct.
- Duties: objectives and priorities, workload.
- Species Identification: a general review of identification terminology of various Bering Sea species.
- General instructions on data forms.
- Obtaining haul information: Haul Summary Form.
- Estimation of catch size - by the observer and by the ship.
- Catch Composition Sampling: determining a sample weight.
- Data entry on Species Composition Form.
- Methods for unbiased sampling.
- Classroom practice of sampling methods and data entry.
- Classroom practice of haul weight estimation.
- Collecting biological information from salmon in samples: weights and lengths, sex, and scale sampling.
- Collecting data on tagged fish.
- Length frequency sampling, Length Frequency Form.
- Otolith and scale sampling, Biological Sample Form.
- Fish dissection and otolith removal: lab practice.
- Discussion on hypothermia, medical emergencies at sea, fire control and sea survival.
- Recording information on marine mammals as incidental take.
- Species identification of salmonids and lab practice review
- Species identification exam.
- Gear issue: familiarization and care of equipment, gear check-out and calibration of scales.
- Final Exam.



- Observer's logbook entries, methods of documentation.
- Preparation for first day aboard.

## Observer Clothing and Equipment

Observers will be supplied with the equipment necessary for the collection of biological data at sea. The observer is responsible for the transport and return of the sampling gear issued. The observer must make an effort not to lose and to prevent theft of the gear issued to him.

Observers will provide their own personal clothing, warm work clothes for wearing under rain gear, toilet articles including a towel, and other items of a personal nature. The vessel upon which the observer is to be stationed will be expected to provide adequate quarters and meals. It is expected that the vessel captain will allow the observer an adequate and safe space in which to carry out the sampling duties.

### Suggested Sampling Equipment:

The following are lists of the clothing and equipment necessary to perform 60 - 90 days of sampling.

Observer sampling manual	scale envelopes
pencils and pens	otolith containers
eraser	alcohol for preserving otoliths
calculator	plastic bags
sampling baskets	clipboard
rope for hanging scale and securing baskets	plastic sheets for recording data
cleaning powder for baskets and equipment	data forms
lubricating oil for scales	binder for holding data forms
50 kg scale	forceps
5 kg scale	knife
2 kg scale	scalpel
large hooks for hanging scales	whet stone
fish gaff	rain pants and jacket
measuring tape, 30 meter or 50 meter	rubber gloves
measuring tape, 2 meter	rubber boots
sponges for cleaning equipment	lifevest and hard hat
	Immersion suit

**Personal Items Supplied by Observer**

The following is a recommended list of personal clothing. The amount and type of heavy clothing depends on personal preference. Weather in the Bering Sea is generally cold and storms are common.

**Work clothes--minimum number and type**

Shirts, wool - 2 (1 light, 1 heavy)

Shirts, cotton - 2

Shirts, cotton sweat - 1

T-shirts - 3

Trousers, wool work - 1

Trousers, cotton - 2

Wool knit cap

Slippers or sandals

Handkerchiefs, large - 3

Underwear, long-thermal - 2 pairs

Underwear - 5 pairs

Socks, wool work - 2 pairs

Socks, cotton - 5 pairs

Jacket, medium wool or synthetic - 1

**Other items or articles**

Towel, medium cotton - 2

Pillowcase - 1

Toilet articles

Duffel bag - sturdy, medium size, old or inexpensive - 1

Small day pack or knapsack - 1

If corrective lenses are used for eyesight -  
a spare pair

**Optional/Recommended Items**

Felt/wool boot insoles (not liners) - 2 pair

Needle and thread, safety pins, and duct  
tape for repairs

Camera and film

Watch and alarm clock

Medication for seasickness

Athlete's foot cream

Vitamins

Hand cream

Books and magazines

Water bottle - to keep drinking water in  
your cabin

**Vessel Data Forms for 3 months:**

Haul Summary Form 20

Species Composition Form 150

Species Description Forms 20

Length Frequency Form 45

Biological Sample Form 30

Gear Diagrams 3

**Preparation and Care of Sampling Equipment**

Protect your gear from loss overboard and from theft. Do not leave gear items such as baskets and scales on the weather deck unless there is no alternative and they are well secured. Stow all sampling gear when you are finished using it and inform the skipper and crew not to borrow or use your equipment without your permission.

Keep all paper products and small, loose equipment (pencils, pens, thumb tacks, scissors, counters, etc.) protected from moisture throughout your trip.

*Most important:* Every day before use, weighing scales must be checked over. Keep them cleaned and oiled. Adjusting screws must be kept coated with grease. The scales have steel springs inside which will rust - oil must be squirted up inside the scales.

Tape measures, calipers, and thumb counters must also be cleaned (and oiled if necessary) each day when used. (Be careful to keep oil away from plastic data forms, since pencil marks tend to wipe off a slick surface).

Calibrate your scales when you get them. Then prepare a known weight by selecting items which may be easily assembled later. (i.e. a basket, wheels, and books). List the items weighed and their total weight. This known weight may then be used later to check your scale adjustment or to check the accuracy of shipboard scales.

Prior to using your baskets or other containers for weighing, weigh the empty containers so you will know how much to subtract from each weight figure to reflect the weight of the contents only.

Accurate weights are sometimes hard to obtain when the ship is rolling. When possible, secure the top of the scale directly to a fixed structure, such as a ceiling brace. If the top of the scale has to be attached to the ceiling by a length of rope, use three ropes attached to widely separated points on the ceiling to minimize the swing of the scale. Keeping the length of the ropes to the basket short also helps. Scales located close to the center of the ship tend to swing less. If a shipboard scale is available for your use, you should use it, but check it for accuracy first.

## **Arrival Aboard Ship**

Observers must be aware that fishing schedules are often changed by weather, mishap, break-down or fishing success and these events often change observer schedules.

Vessel conditions vary widely depending on the ship type and size, company and skipper's policies, and the fishing success. "Conditions" include cleanliness and upkeep, safety, comfort of quarters, quality of food, general attitude, and good personnel management. Observers

must be flexible as only a few generalities on what to expect can be made. Personal quarters are usually small. The most personal luggage one should ever carry on is a duffle bag.

Your work on board your fishing vessel will be very different than the work of the rest of the crew. In order for you to be able to do your job with the fewest problems, there are some guidelines which have been developed from experience. Show respect to others and it will be returned to you. One way to accomplish this is to make a conscious effort to remain clean and neat. Clean up after yourself and help where you can, as you will need their help in return. Do your best to maintain a good attitude. Adaptable observers with a good attitude are apt to receive more consideration than those who criticize and make demands.

## **Illness and Accidents Aboard**

Seasickness often hampers observers at the beginning of a cruise, but give it time - most of the effects of seasickness disappear after a few days. Indigestible stomach contents, unpleasant fumes or cooking smells, and anticipatory fear will trigger seasickness. The symptoms are nausea, headache, drowsiness, and depression. This is normal, it is just difficult to live with. Remember, no one ever dies of seasickness, but weakness and dehydration can be dangerous. You must make yourself drink water or some non-acidic juice, not coffee, tea or alcohol, and try to eat some mild food such as rice or bread to keep up your strength. Take some seasickness medication along even if you don't plan on using it.

These actions may help you overcome seasickness and adapt to your vessel:

- Try not to think about seasickness, put it out of your mind, force yourself to think of other things.
- Practice releasing the tension in your muscles; as soon as you begin to feel apprehensive try and relax.
- Avoid unpleasant smells (especially tobacco, damp clothing, and vomit). Stay away from the galley
- Below deck: lie down, keep your eyes closed.
- In the saloon: fix your eyes on a freely suspended object.
- Seek out cool, fresh air and take calm, deep breaths.
- Where possible, keep away from enclosed spaces, go out on deck.

- Reduce the amplitude of the motion stimuli: keep amidships or astern, avoid the forward end of the ship.
- Try not to sit and let yourself be rocked passively back and forth with the motion of the boat.
- When standing, avoid leaning against anything, stand erect and make active compensatory movements to keep your balance.
- Try to move your head as little as possible.
- Focus on the horizon; watch the swell and anticipate the movement of the waves
- Participate in the normal duties on board.
- At all events see a job through to the end, do not give up on it.

Determine that you will persevere through the mental and physical discomfort due to seasickness, do not dwell on fear. It is simply a matter of adjustment. If severe discomfort persists for more than five days let the captain know. He may not be able to help you, but he will be aware of your condition in case your health gets much worse.

## **Safety Aboard Vessels**

Fishing vessels have many potentially dangerous areas. The observer must always be alert and should take care to avoid injury. The following points must be adhered to while on the vessel:

1. The first day aboard, note where the lifeboats, life preservers, and other safety devices are kept. Memorize the exit route from your cabin, the factory, the galley, and other locations where you spend a lot of time.
2. During your first talk with the captain, ask him to explain to you what to do in the event of a major emergency such as a fire aboard the ship, a serious collision with another vessel, or other conditions which might require abandoning the ship.
3. Be cautious whenever wading through fish since fish spines can penetrate rubber boots and cause painful wounds to the feet.
4. Clothing with loose strings or tabs should be avoided, as they might become caught in the equipment or conveyor belts.
5. Don't run aboard ships, particularly up stairwells. Slipping, tripping, and falling are the most common sources of observer injury. These accidents often happen when an observer is in a



