INTERVIEWER MANUAL

FOR MRFSS INTERCEPT SAMPLING

MARINE RECREATIONAL FISHERIES STATISTICS SURVEY

9

A Cooperative Program of:
California Department of Fish & Game
Oregon Department of Fish & Wildlife
Washington Department of Fish & Wildlife
Pacific States Marine Fisheries Commission
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1. INTRODUCTION

The procedures and methodology for this survey were developed under contract to the National Marine Fisheries Service (NMFS). The survey commenced in 1979 on the Pacific Coast and has been conducted most years since that time. This manual provides an explanation of the principles of the survey as well as detailed instructions regarding the intercept interviews. This survey is the core survey of the current RecFIN (Recreational Fisheries Information Network) program. RecFIN integrates state and federally funded sampling programs for marine recreational fisheries with a goal of providing for a single RecFIN database where this information can be accessed by fisheries managers and interested parties.

This manual is designed for the Pacific Coast portion of the nationwide Marine Recreational Fisheries Statistics Survey (MRFSS) funded jointly by NMFS and the state fishery agencies. Fishing habits and practices vary from state to state and among fishing sites and fishing *modes (see Section 4).* Though it is difficult to anticipate every problem, a thorough reading of this guide coupled with training will enable an interviewer to handle most interviewing situations. Any questions or problems not covered by this manual should be directed to your MRFSS supervisor.

1.1 MRFSS Abstract

The National Marine Fisheries Service has been collecting data on commercially caught fish for many years. A limited amount of data has also been collected on recreational fishing. State fishery agencies also collect commercial fisheries landings data as well as recreational fisheries information. The recreational fisheries information varies from year to year in scope and magnitude and usually involves a portion of a particular fishery or a certain mode of fishing only. The Magnuson-Stevens Fishery Conservation and Management Act (MFCMA) of 1976 as amended in 1996 made it necessary to greatly expand and improve the information on recreational fishing in U.S. territorial waters.

NMFS hired a private contractor in 1976 to develop a system for collecting information on recreational fishing in the U.S. A number of studies were undertaken to compare ways of getting the needed information. At the conclusion of the study it was recommended that a data collection procedure be used that combined a telephone survey of households with an on-site intercept survey. This methodology was adopted and became the Marine Recreational Fisheries Statistics Survey in 1979.

1.2 Background

The National Marine Fisheries Service (NOAA Fisheries) has a requirement by law for conducting a survey of marine recreational anglers to gather information on (1) catch, participation, and effort in marine recreational fishing; and (2) selected demographic characteristics.

Until recent years it was thought that commercial fisheries took the greater part of the total marine fishery catch in the territorial seas of the United States. However, most species of fish in estuarine and inshore areas, as well as in open waters, are harvested jointly by recreational and commercial anglers. Recent data indicate that catches by the marine recreational fishery are a significant portion of the total landings of many marine species. The need for commercial catch statistics has been satisfied in the past with routinely collected catch and effort data primarily from landing receipts and dockside sampling for most commercial fisheries. Comparable data for marine recreational fisheries have become available only since 1979. Added management responsibilities imposed by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MFCMA - Public Law 94-265) as amended in 1996, have made it necessary to collect data on the marine recreational fishery catch.

Catch and effort statistics are fundamental for assessing the influence of fishing on any stock of fish. The quantities taken, the fishing effort, and the seasonal and geographical distribution of the catch and effort are required for the development of rational management policies and plans. Accurate and up-to-date catch statistics, collected over the range of species with associated biological studies, provide conservation agencies with the information necessary to manage fishery resources. These data are essential for state conservation agencies, recreational fishing industries, NOAA Fisheries, the regional fishery management councils, and others responsible for or interested in the management and productivity of marine fisheries. The allocation of many fishery resources depends on the results of these surveys.

NOAA Fisheries is charged with administering a program of research and services relating to the ocean and inland waters of the United States (Title 16, Chapter 9, U.S. Code). Collecting statistics on marine recreational fisheries is authorized by:

1) Section 5 (a) (4) of the Fish and Wildlife Act of 1956, which provides for the collection and dissemination of statistics on commercial and sport fishing;

2) Migratory Game Fish Study Act of 1 959 (Title 16, Chapter 9A, U.S. Code), which provides for continuing study of migratory marine fishes, including the effects of fishing on the species;

3) Sections 303 and 304(e) of the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MFCMA) as amended in 1996, Public Law 94-265, which require the collection of statistics for fishery conservation and management.

1.3 History

Comprehensive collection of catch statistics on marine recreational fisheries has been attempted only in recent years, largely because collecting such statistics is difficult and expensive. Recreational anglers fishing from boats, piers, jetties, docks and the open beach are dispersed along the coast. They fish day or night, anytime throughout the year. The few coastal states collecting catch statistics use a variety of methods, but usually cover only a part of the state or selected segments of a fishery. NOAA Fisheries conducted Salt Water Angling Surveys (SWAS) through the Bureau of the Census in 1960, 1965, and 1970. These surveys were supplements to the Bureau of Sport Fisheries and Wildlife's National Survey of Hunting and Fishing. Prior to 1979 the SWAS were the only surveys that collected marine recreational catch and participation statistics by species for the entire United States.

The data collected in the SWAS were inadequate to satisfy the information requirements on recreational harvests of finfish, however. They did not provide sufficient information on areas of capture which is necessary for effective management of fishery stocks. More importantly, there were substantial response errors associated with the one year recall period required of anglers. Respondents were unable to correctly remember information requested on their fishing activity for a full year. In addition, data collected every five years were insufficient because of rapid changes in the recreational harvest. More detailed and reliable catch, participation, and economic statistics were needed on marine recreational fishing to provide comprehensive estimates of the domestic harvest of finfish and shellfish in U.S. waters. Information would be used for evaluating future demands on the fish stocks and for planning recreational facilities for anglers.

Regional surveys were conducted by NOAA Fisheries in the northeastern coastal states in 1974 and the South Atlantic and Gulf of Mexico states in 1975. The data collection approach involved a multi-stage sampling procedure. A basic assumption of the regional surveys was that the target population of recreational fishing households could be considered as a subset of the households with telephones. Random-digit-dialing methods were used to produce a sample frame of residential households with recreational fishing experience during the previous 12 months. A stratified (by population and distance from shore) random sample of these households was mailed a questionnaire that requested detailed information on marine fishing activity during the previous 12 months. Numerous procedural weaknesses such as a low response rate to the initial screening phase and a very low response rate to the mailed questionnaire (approximately 25 percent) were identified.

Subsequently, a new methodology was initiated during the late 1970's and pre-tested on the Pacific coast. Several data collection approaches were compared, and one was chosen as the most cost-effective. The result was the current survey design, a complemented surveys approach involving a combined household telephone and on-site intercept survey. A random-digit-dialing household telephone survey is used to obtain participation and effort (number of fishing trips) data, and information on the proportion of fishing households in each county of the survey area. An on-site intercept survey (creel survey) is used to obtain information on catch (number and weight) by species and area of fishing. The intercept survey also supplies information on the number of anglers, the number of anglers with and without phones, the number of anglers by state and county of residence, the length of fishing trips, disposition of catch, and other data of interest to fishery managers.

The complemented survey methodology was further tested on the Pacific Coast to ensure that (1) information used in developing the Pacific coast sample frame was available for other parts of the country, and (2) the approach was appropriate in areas with different geographic and demographic characteristics. The Pacific Coast study was completed in January 1978.

Full scale implementation of the MRFSS began in 1979 and has been conducted in the following areas and years:

- Atlantic and Gulf Coasts 1979-
- Pacific coast Mid 1979-1989, 1993-
- Western Pacific area 1979-1981
- Caribbean area 1979-1981

1.4 General Survey Design

As stated above, the MRFSS consists of two independent surveys: a telephone survey of households and an intercept survey of angler trips. The Intercept Survey is needed in addition to the Telephone Survey because certain data cannot be reliably collected over the telephone in a cost-effective manner. Data from the Telephone Survey of Households and the Intercept Survey are combined to provide an estimate of the total catch of marine recreational anglers. Total catch is reported by species and area both by quantity and weight. The MRFSS also provides an estimate of the number of marine recreational anglers in the U.S.

1.5 Telephone Survey

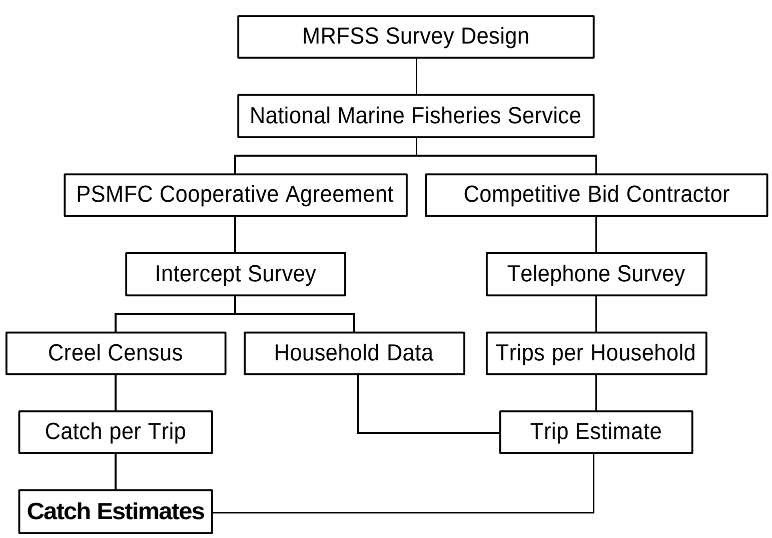
The telephone survey is designed to identify the number of anglers that go saltwater sportfishing and how many trips they took in each mode of fishing (pier, jetty, beach, private boat, charter boat, etc.) over a specified period. Data obtained from the Telephone Survey of Households are used to estimate the total number of marine recreational fishing trips taken by residents of coastal areas. This survey is generally limited to households in counties that are within 25 miles of the coastline because the majority of the recreational fishing trips are taken by persons living in households in those counties. Development studies determined that a two-month period was the best time frame for anglers to remember their fishing activity with reliable accuracy. Therefore, the telephone survey is done every two months throughout the year. Estimates are made by means of the telephone survey of fishing effort (total trips/2-month period) by mode of fishing.

1.6 Intercept Survey

The intercept survey is designed to intercept anglers at the fishing site at the completion of their fishing trips. The average catch per angler by species and catch type for each particular mode and area of fishing is then determined. This information is then multiplied by the total estimated number of trips by fishing mode, area and wave from the telephone survey to compute the catch estimates by catch type, species, mode, area and wave.

A number of factors are employed to refine these estimates. One of the factors taken into account are that anglers that may not reside in the telephone survey area, and thus are not included in the trip estimates. Because of this need to refine the estimates, a number of questions are asked in both surveys that allow for corrections to be made. These include such questions as the angler's state and county of residence and whether the angler has a telephone. These questions are very important to the total survey. They provide important statistics such as: the percentage of anglers that cannot be contacted in the telephone survey, the percentage of effort that comes from out-of-state, and whether avid anglers catch more fish than anglers who fish infrequently.

1.7 Basic MRFSS Structure



2. PERSONNEL ROLES AND RESPONSIBILITIES

2.1 The Interviewer

The intercept interviewer plays a vital role in this project since the key to accurate data is high-quality interviewing. Though interviewers will be hired partly for their skills in fish taxonomy, these are not the only skills required of a successful interviewer. A good interviewer is one who can approach strangers with little reluctance, who can diplomatically handle touchy situations, who can follow procedures and complete forms with almost compulsive exactitude, and who can identify fish accurately at the species level. The intercept interview itself involves both a face-to-face interview and a creel census, and a unique set of skills is required for each. The interviewer is also called a "sampler" since the general conduct of the survey is to sample

The specific tasks of an intercept interviewer are many. He/she will be expected to:

- be knowledgeable about the MRFSS goals, procedures and data uses
- meet site assignments and use good judgment in selecting alternate sites
- be able to identify all common fish
- use a key to identify uncommon fish
- have all necessary equipment and forms available
- keep equipment in proper working order (e.g., scales oiled and calibrated)
- conduct interviews in a professional manner and to wear appropriate attire that is neat and clean
- accurately complete and submit all forms in a timely fashion

2.2 The Supervisor

Supervisors will oversee the recruiting, training and quality control of field interviewers as well as maintenance of the Site Register in their subregions. The supervisor in each area will conduct hiring and training of interviewers. Interviewers should call their supervisor if they have procedural questions, questions about a fish or a site, etc.

Supervisors conduct occasional "quality control" visits with each interviewer. During the quality control visits, the supervisor will observe work done by the interviewer and may provide feedback on interviewing at that time or later.

Supervisors will also review all forms submitted by the interviewer for accuracy and neatness. High quality readable data is our primary goal. The supervisor may also conduct validation telephone calls to intercepted anglers to verify sampling procedures and/or accuracy of data recorded on the form.

The supervisor should receive forms from the sampler each week for evaluation, tally and forwarding to PSMFC for data entry. The tally of interviews by mode is required frequently so that the number of assignments issued can be adjusted to meet the interview goals.

The supervisor also produces and maintains the "subregion specific procedures" addendum to this manual and produces the sampling assignments among other administrative duties in support of MRFSS sampling.

2.3 Safety

2.3.1 Attire

Shoes must be closed-toe. Do not wear thongs or sandals on warm days. This is not only a safety issue, but also a matter of professionalism. Shoes should have rubber soles to that you have a secure footing regardless of where you should find yourself (on jetties, climbing into boats etc.)

Hats will help prevent the sun from taking its toll. Protect yourself against sunburn and heat exposure. It also helps glare from the sun which can tire you out and or lead to a headache. It helps to keep your hair out of your face and therefore minimize the potential for accidents that can result from you inability to see clearly.

Sun Screen is highly recommended to protect yourself from sun burn as well as reduce the risk of some skin cancers.

Sunglasses will help protect your eyes from UV radiation. Out of courtesy, do not wear sunglasses while speaking to anglers.

2.3.2. Handling Fish

2.3.2.1 California Scorpionfish

This very pretty fish has a serious toxin in its dorsal, anal and pectoral fin spines. At a minimum this is very painful, but can also be life-threatening for some people. These fish should only be handled with the utmost care. Pliers are good to use so that there is minimal chance of being stuck by one of the spines. On many charter/party boats, the deckhand will break off the spines with pliers while holding the fish over the side before bringing it aboard. Do not be deceived by some very small specimens as they are all very dangerous. Most susceptible are people who develop allergies.

Remedies:

1) For a serious situation get to the nearest emergency room, since anaphylactic shock can occur from this toxin, especially if you have an allergic reaction to it.

2) For a minor situation, soak the injured body part in water that's as hot as can be tolerated (the hotter the better), or apply meat tenderizer (not "Accent",

which is only a flavoring). Tenderizers that contain Papaya enzyme are good as the toxin is a protein and papaya enzyme or other tenderizers that break down protein will help.

2.3.2.2 Rockfish (Sebastes spp.)

All 67 species are hazardous. Most if not all species of rockfish have some toxin in their spines. Use care when handling these fish. If a spine does happen to break the skin, and the pain is more than minor, hear or meat tenderizer will usually take care of it. While these are not near as dangerous as California Scorpionfish, you should watch for reactions, especially on subsequent injuries as you can develop a reaction to this toxin if you are injured a number of times.

2.3.2.3 Other Species of Concern

White Seabass has many sharp teeth. Steer clear of the mouth when handling.

Lingcod has sharp teeth and sharp gill rakers. NEVER pick up this species by inserting you hand into the gill cover. Instead, pick up the fish by inserting thumb and forefinger into the eye sockets, and using the other hand to lift the fish by the tail.

Ratfish are a rarely seen species, since most people who catch them throw them back. If by chance you should need to handle a specimen, use care to avoid the very large venomous spine in front of its dorsal fin. The toxin is a protein, so again heat or meat tenderizer can probably be used to relieve the pain.

Electric Ray can be dangerous. Do NOT touch the disk part of this species! The name is self-explanatory. While you won't suffer permanent damage, the shock can by very strong and painful.

Skates have dangerous tail spines since they are very sharp.

Stingrays have a venomous stinger at the base of the tail. Again, heat or meat tenderizer can usually minimize the pain.

2.3.3. Lifting Fish

Lifting individual large fish and heavy bags of fish needs to be approached with proper lifting procedures to avoid back strain. (Insert lifting techniques)

2.3.4. Safety at the Fishing Site

- Know the locations of pay phones. Updated information about this can be found in you site descriptions. Have a list of emergency phone numbers available to you. Be aware that if a pay phone does not show its phone number on it, no one can call you back.

- If you are working at a launch ramp, develop a roving eye for moving vehicles. A sampler kneeling on the pavement while measuring fish can easily be overlooked by someone towing a trailer.

- Pay attention to the people in the vicinity, and watch for suspicious activity. If the situation becomes dangerous, be prepared to leave the site.

- Approach restrooms with caution. Public restrooms are notorious for suspicious activity.

- Make acquaintances with the local Harbor Patrol or Police Department Local enforcement officers have certain areas they patrol, so you will tend to see the same people at the same sites.

- If you are working on a party or charter boat, beware of inexperienced anglers that don't pay attention when overhead casting. The same is true of jetties and piers. Sinkers, hooks and jigs can all be very dangerous when flying through the air.

- Use care when climbing into someone's boat (after being invited, or after asking permission only), since the boat or trailer may not be stable, or the footholds and/or handholds may be slippery.

- Think twice before reaching into a bucket or other container filled with unknown fish. There may be a toxic species or two.

- Use caution when walking on rocks or cliffs at beach and bank sites. Uneven terrain can cause you to slip and fall, or twist and ankle if you're not careful. Also assess the wave activity before walking on a jetty. These areas frequently get hit by high surf at certain intervals, sometimes with little warning.

2.3.5. Report Accidents

Document all accidents when they happen. This includes notifying your supervisor so that an accident report can be filled out. Complications may occur from what appears to be a minor accident. Workmen's Compensation will cover costs of medical treatments for on the job injuries and they need to be reported when they happen. If you do not report at the time of the accident some details necessary may not be remembered.

If you seek medical treatment for a work-related injury, be sure to let your doctor know this. As soon as possible, contact your supervisor for information regarding workmen's compensation and be sure to assist the supervisor in filing a timely accident report.

3. ASSIGNMENT PROCEDURES

3.1 Sampling Goals

The MRFSS is structured around two-month periods called "waves". January and February are Wave 1, March and April are Wave 2, etc. The Pacific Coast region is subdivided into four subregions; California is split north and south at the San Luis Obispo/Santa Barbara county border, The states of Oregon and Washington form their own subregions.

3.1.1 Subregion Goals

Each subregion gets sampling goals (number of complete interviews) for all waves at the beginning of the sampling year. These goals are set by fishing mode (beach, pier, boat, etc.) according to the magnitude and variability of fishing effort (number of angler trips) determined in the phone survey and by local information. The goals are be further allocated between months for purposes of making sampling assignments.

3.1.2 Assignment Goals

The sampler's daily goal is to obtain as many interviews as possible in a reasonable amount of time (usually 8 hours). Sampling of anglers should be spread through a period of time which covers the peak period of angler activity for an assignment. Samplers should not necessarily do all of their interviewing in as little time as possible at busy sites. The sampling of anglers and their catch should be representative of the anglers fishing at the particular assigned site and mode. Samplers should not normally exceed 30 "good" interviews per assignment. A good interview is one where all of the "key" questions have been answered (*status 1 and 2 interviews, see item-by-item instructions*). Samplers may exceed the normal 30 "good" interviews if instructed to do so by their supervisor. Samplers may be given more than one assignment per day.

3.2 Site Assignments

Site assignments are drawn from a computer program by your supervisor. This program takes into account the anticipated fishing effort by month, mode of fishing, site and kind of day (weekend/holiday or weekday) in the sampling subregion. This fishing effort or "pressure" information is used by the site selection software to assign sites randomly but in proportion to the fishing pressure in your subregion. Fishing pressures are updated or modified as necessary prior to each months assignment draw by your supervisor.

The site selection program generates a number of sampling assignments for each mode of fishing for each month. The supervisor utilizes historical productivity data on average interviews per assignment to determine the numbers of assignments required (quota). This should allow for completion of our interview goals for each mode of fishing each month. These are projected pressures however and a number of factors may affect the actual number of anglers that may be present at your assigned site in the target mode. Because of this we do have procedures for using alternate sites for the assignment, sampling in other fishing modes present at the site or moving to a second assignment when fishing effort is low. Please be familiar with the rules for these procedures presented in this manual (Section 3.3) or discuss it with your supervisor if you do not understand them. <u>Following these procedures is necessary to maintain the statistical validity of our sample of angler trips</u>.

3.2.1 Assignment Draw

All fishing sites within a state and county are assigned a unique three digit code number. County and site code numbers will be given to you with the site assignments for a month of sampling. The correct county and site code numbers should appear on the weekly report and all intercept forms obtained during sampling. Your supervisor will provide you maps and directions to the sites for which you will be responsible. If you are unable to work on the date of an assignment contact your supervisor or follow the instructions your supervisor has provided in this case.

SITE SAMPLING ASSIGNMENT DRAW #1 FOR WASHINGTON - JAN 1997

OBS	KOD	DOW	MONAME	DAY	YEAR	SUBREG	STATE	CNTY	SITE	MODE	DROP_SEQ
1	we	Sat	Jan	4	1997	3	53	29	331	mm	17
2	wd	Fri	Jan	3	1997	3	53	33	515	pr	24
3	wd	Wed	Jan	22	1997	3	53	33	503	pr	6
4	we	Sun	Jan	26	1997	3	53	33	515	pr	25
5	wd	Fri	Jan	3	1997	3	53	35	516	bb	27
6	we	Sat	Jan	11	1997	3	53	35	516	bb	19
7	wd	Tue	Jan	14	1997	3	53	35	516	bb	12

3.3 Sampling at Alternate Sites & Modes

<u>Primary Assignment</u> The assignment given you for each particular day specifies a mode and site to be sampled. Every effort should be made to sample at that site and in that mode to obtain the maximum number of 30 good interviews. You must always examine the assigned site first. If effort is low or absent at the assigned site and mode there are procedures you should follow.

The general guideline is: if it is estimated that less than <u>one interview per hour</u> in the assigned mode will be obtained at the assigned site, you may do one of the alternate options below. Use your own judgement to decide if conditions warrant alternate options. If so, is not necessary to remain on-site to see if effort develops. For launch ramps, the absence of any trailers would indicate that there is no need to wait, because if no boats are out, obviously none will be coming in.

<u>Alternate Options:</u>

1. You may use up to <u>two</u> alternate sites in addition to the primary assigned site to attempt to obtain interviews in the <u>assigned mode</u>. These alternate sites should be the next two <u>adjacent sites that contain the mode</u> of your primary assignment. You may also use two alternate sites when it is not feasible to get 30 good interviews at the assigned site and mode.

2. You may sample in modes other than the assigned mode if they exist at the assigned site. Do not sample in other modes if you are having success in the assigned mode (unless your supervisor

has directed you to get interviews in a non-assigned mode). Sampling in other modes at alternate sites should be avoided unless given specific instructions to do so prior to the assignment.

3. If it is estimated that less than one interview per hour will be obtained from the assigned site <u>and</u> the two alternate sites after 2 hours then you may terminate the assignment. If you have been given a second assignment by your supervisor, you may begin working on it after terminating your first assignment. The second assignment would have a new primary site and possibly different mode assigned. All the above rules and alternate options 1"a second assignment.

In choosing between these three options, you will want to consider such things as: progress toward the wave goals, tide, ocean conditions, hours worked in the week, time of day and travel time. You should make this decision with efficiency of time and resources in mind as well as expected interviews that may be obtained at the other sites based on the above factors.

The priority you should use for modes and sites during sampling from highest to lowest follows:

1. Sampling at the assigned site in the assigned mode
2. Sampling in the assigned mode at alternate sites
3. Sampling at the assigned site in other modes
4. Sampling at alternate sites in other modes

Once alternate sites have been utilized you may return to any of the previously visited sites during an assignment while attempting to get 30 good interviews.

3.4 Two Assignments in One Day

Occasionally an interviewer will be given two assignments on the same day. The interviewer should use his/her best judgment to determine which assignment should be worked first <u>based on angler activity</u>. Your supervisor may determine which assignment is to be worked first. Once that determination is made, the interviewer must work that assignment before the second assignment is attempted. In other words, before beginning the second assignment, the interviewer must either obtain 30 “good” interviews in the target mode or visit the maximum of three sites to determine that one interview per hour in the target mode is no longer possible on the first assignment.

If time permits after the first assignment is worked, the second assignment can be attempted to obtain an additional 30 “good” interviews in the assigned mode. If the second assignment happens to be in the same mode as the first assignment, the interviewer should <u>not sample any of the sites used on the first assignment</u>. If alternate sites are needed during the second assignment, different alternate site(s) should be selected. If the second assignment is in a different mode than the first assignment, then it is permissible to use the same sites as alternates if those are the next nearest with the assigned mode. The assignment number (1 or 2) should be recorded on the Weekly Report for each site sampled.

If it is not possible to work both assignments on the same day, the interviewer should follow the instructions of their supervisor to reschedule the un-worked assignment. Generally this means going to the assigned site on the next available working day of the same kind of day of the week (weekend or weekday). You should record the un-worked assignment in your Weekly Report as reassigned.

3.5 Getting Started

Upon arrival at privately-owned operations and closely supervised public operations, you should check in with managers or persons in charge. For both permission and to be courteous, the interviewer should introduce him/herself and explain just what it is he/she will be doing. Interviewer ID cards will be provided to each interviewer by PSMFC or the state agency. These will serve to substantiate the legitimacy of the survey and to increase cooperation. Should a person in charge so desire, they may contact PSMFC at (503) 650-5400. Although most of you will be hired as PSMFC employees, interviewers will be viewed as representatives of the state government. Interviewers should say they are conducting a survey for the state coordinated by the Pacific States Marine Fisheries Commission (PSMFC) or the state depending on your employer.

3.6 Equipment & Supplies

In order to carry out the interviewing tasks, each interviewer should have the following equipment and supplies:

1. Site information: map or directions to the site, site codes and alternate sites.
2. Clipboard
3. Pencils
4. Measuring board
5. Tape Measure
6. 25 lb. scale
7. 4 lb. scale
8. Plastic baggies for weighing small fish
9. For night intercepting (when assigned), a flashlight
10. Intercept Forms (50 or more per day)
11. Current Weekly Report form
12. Several copies of the Privacy Act Statement
13. ID card
14. Rag for wiping hands
15. Interviewing reference materials: Training Manual
16. Field guide/keys appropriate to your area for fish ID.
17. Other administrative forms and supplies
18. Tide book
19. Fishing regulations
20. Binoculars
21. VHF radio (Oregon) or cellular phone (where available)
22. Extra set of car keys
23. Watch

24. MRFSS/RecFIN brochures
25. Defensive spray (as desired and legal)

An interviewer should never take less than 30 forms to a site. In the heavier fishing seasons, 50 may not be enough with second assignments. The interviewer should always plan ahead. Make arrangements to get more forms well in advance of running out or getting low.

4 ON-SITE PROCEDURES

Your assignments are selected with one of four major fishing modes in mind (MM, BB, PC or PR, see below); however, some sites will allow for the intercept of anglers in more than one of the major modes. Your sampling should be primarily directed in your assigned mode. However, when fishing is slow in the assigned mode, you may sample in other modes at the site in accordance with instruction provided by your supervisor and this manual.

Time of arrival at a site is essential to determine potential for obtaining one interview per hour at slower sites. To be efficient an assignment should include the time of peak fishing activity in the assigned mode. During the first two hours of on-site time the interviewer must determine whether he/she will be able to obtain at least one interview per on-site hour in the assigned mode. In these two hours, the interviewer should be able to visit his/her assigned site and two alternate sites. For example, if anglers typically use a shore fishing site at high tide only, then that should be the time of day for sampling. At some sites most anglers return to boat launching and mooring areas in mid- to late afternoon, so this may generally be the best time to sample these sites. For fisheries with catch limits, anglers who readily limit out may finish early in the day while other anglers may take longer. Anglers who are having a lot of success in less restricted fisheries may also fish longer. At busy sites assignments may be conducted at different times of the day or sampling may be spread out over a longer period of time to reduce potential biases of time of day on fishing.

While it varies for each interviewer and each angler being interviewed, an interview and creel inspection require approximately ten minutes. At busy sites you should roughly determine the number of interviews that can be conducted, and then systematically sample from the total number of anglers. For example, if four interviews can be conducted in the time anglers will be present and their are 20 anglers, every fifth angler should be interviewed. Under no conditions should the interviewer just approach the more friendly anglers or sample at a fish cleaning station (successful anglers). The sample should be “random” (see section 6.5) and accurately represent angler activity and catch rates in the assigned mode on the date of your assignment.

The on-site procedures differ for each mode of fishing encountered. Due to regional differences in language, some definitions are also necessary. The following subsections describe the procedures and definitions for the more typical modes.

4.1 Random Selection

Surveys like this one require sampling of anglers and their catch in a “random” manner in an attempt to represent what is happening overall. Many systematic procedures have been developed for you to use to get close to a true “random” sample. Without any way to truly randomize sampler activity you must use the methods described here to get a “representative” sampling of anglers and fish.

4.1.1 Fish Sub-sampling

The procedures for weighing and measuring are fully explained in section 6.7. However, some emphasis should be given to random selection. Whenever you have more than 10 of a species, before weighing and measuring, you should use one of the following procedures: (1) The interviewer should line up the fish according to size, calculate the sampling fraction, *n* (e.g. every third fish), and then weigh and measure every *n*th fish. Select the starting fish at random and alternate the direction from the either largest or smallest end; (2) If there are too many fish to line up, or if the surroundings make that impossible, you should reach into the container and “randomly” select ten fish. At no time should you try to pick out the "average" fish -- that is not “random” selection.

4.1.2 Angler Sub-sampling

At busy sites, you will not be able to interview every eligible angler. As much as possible, systematic selection should hold for anglers as well. You should make every effort to insure that you are not picking just the friendlier looking angler, the anglers who have catch, men as opposed to women, adults as opposed to children, etc., etc. Every eligible angler is just that -- eligible. They must be selected randomly by taking every *n*th angler when you are sub-sampling. Select a starting angler at random. Tally the number of anglers you skipped for recording on the last interview of the assignment (see item 32 “eligible anglers not interviewed” in the item by item instructions).

4.1.2.1 Angler Groups

Groups of anglers may be family members or friends who fished together. In most cases you will not interview all members of the group unless <u>you are interviewing everyone</u> who completes their fishing at that site. Otherwise the member or members of the group that end up being the "*nth*" angler are the only ones interviewed in the group. You should not interview only the anglers with catch while sub-sampling groups.

If the group has a "mixed" catch, from which the angler that you interview cannot extract his own fish, you then record all of the group catch on this angler’s form and indicate <u>only the number of anglers that contributed</u> to the catch. You don't necessarily interview the other anglers who contributed to the catch. You should not interview the other anglers in the group under this subsampling every *nth* angler scenario, unless the group is large enough that someone else in the group is the next *nth* angler. We are attempting to sample individual anglers not clusters of anglers.

A special type of sub-sampling “by boat” is allowed to occur while sampling at busy Private rental boat sites (see section 4.5.1).

4.2 Man Made Structures (MM)

- *Pier* A structure built out over the water and supported by pillars.

- *Jetty* A kind of wall, usually made out of rocks, built out in the water to restrain currents or protect a harbor entrance. There must be water on both sides, otherwise it is a bank.

- *Bridge* A bridge over a waterway.

- *Dock* Floating platform with land access used primarily for boat moorage, loading, or fishing

- *Other Structures* There may be other man-made structures that can serve as a platform for anglers.

<u>Man Made Structures</u> You should set up at a point of access to the pier, jetty, or bridge. The station should be such that you can see and easily approach all anglers leaving the site. Do not set up at a cleaning station as this will bias the survey towards successful anglers. If anglers are actively engaged in fishing, you can canvass the pier or jetty to determine the number and duration of the trips and plan your activities. You might mention that you can identify their fish for them and provide a length and weight as well as information about the survey.

4.3 Beaches & Banks (BB)

- *Beach* The ocean shore made up of sand or pebbles. Usually washed by high tide waters.

- *Bank* The slope of elevated land adjoining the ocean or bay. Can be rock or an overhanging cliff, and may be reinforced by materials placed there by humans.

<u>Beaches and Banks</u> When a beach or bank site is assigned, you will typically have to cover a rather extensive stretch of the coast. If there is a predominant point of egress from the site (for example, a central parking facility), you should take up a position at that location so you can intercept a majority of the anglers. If no such point exists, you should position yourself such that the

majority of the anglers are within sight and easily accessible. Close observation of the fishing activity is required, since you must be alert to those anglers leaving the site.

A preliminary canvass to determine the number and location of anglers on-site and a rough approximation of the duration of their trips is a useful tactic. With this information the interviewer is able to maximize intercept coverage by planning his/her movements around those of the respondents. The preliminary canvass can also be used to inform the anglers about the study and gain consent to conduct the interview. A terminating canvass near the end of the sampling time to identify and interview anglers who have completed 50% or more of their trip is also appropriate.

4.3.1 Incomplete trips

Sampling in beach/bank mode allows you to interview anglers with incomplete trips. Anglers must be 50% or more complete with their trip by time fished and planned additional time fishing. Incomplete trips are allowed in this mode because anglers may be spread over a large area with multiple access points making it difficult to station yourself at a single point. Incomplete trips are adjusted based on the catch rates for the time fished to account for additional fishing time. <u>Incomplete trips should not comprise more than 50% of the interviews in an assignment.</u>

4.4 Party/Charter boats (PC)

- *Party boat* A boat on which fishing space and privilege are provided for a fee. The vessel is operated by a licensed skipper (guide) and crew. In some parts of the country party boats are also called headboats or Commercial Passenger Fishing Vessels (CPFV).

- *Charter boat* A party boat operating under charter for a specified price, time, etc. Charters are usually closed parties, as opposed to the open status of all-day and half-day party boats. <u>The terms “charter boat” and “party boat” can be used interchangeably in different parts of the Pacific coast</u>.

<u>Party/Charter boats</u> You may call ahead of time to determine the availability of boats for sampling. You may use alternate sites if sampling cannot be conducted at the assigned site. In this case, you must still list the assigned site as the first site visited on the weekly report.

When sampling charter boats watch out for the following:

- Exclude ride-alongs, crew or passengers who did not fish (an angler count from the skipper or deckhand might include these, as they may be paying customers).

- Include fish hooked, landed or caught by the skipper and/or deckhands and given to and kept by the customers. However, the skipper and/or deckhands cannot be interviewed.
- Check to see if there are "boat fish" (i.e., those in the crew's container). some of these may be fish caught by anglers and kept by the crew. Count eligible angler caught boat-fish as type 2 catch with disposition coded as "gave away" (do not measure any of the boat-fish). Type 2 catch may have to be distributed evenly across all anglers if they are not tracked. Fish caught and kept by the crew are excluded.
- Group catches of rockfish or other species on trips for a large species such as halibut or some other "trophy fish": all the fish must be listed as a group catch, including the "trophy fish". Anglers can usually identify his or her own "trophy fish" but cannot separate the rest of their catch.
- Fish filleted at sea count as type 2 fish since fillets cannot be identified, enumerated and measured. In Oregon this is not a problem since the fish must be landed whole.
- Interfering with the filleting process: try not to hold up the filleters or the customers. This is not appreciated!
- Anglers without catch may be intercepted first when sampling dockside since they will not be waiting for their fish to be unloaded. Include a representative sample of unsuccessful anglers to prevent inflating the average catch per angler.
- Do not record fish to be released as type 3 records. Don't measure or weigh type 2 fish.

4.4.1 Dockside Sampling

In Oregon and Washington, where the catch is filleted on the dock after the party/charter boat returns, you will interview the anglers on the dock as they come off the boat or are having their fish filleted. This is the preferred option, where it exists and there is time for this procedure. For large boats angler sub-sampling may be required.

4.4.2 On-Board Sampling

Interviews with party boat anglers may need to be conducted on the boats themselves if we are getting incomplete data dockside. Prior to boarding, you should inform the party boat operator about the survey. The operator must allow you free boarding privileges, if not, inform your supervisor and attempt to board some other boat. If possible, reservations should be made in advance of the trip since party boats are often full. Most places do require reservations. Since you are an unpaid passenger and most boats have a legal capacity you may be unable to board at the time of the trip if the boat is full of paying passengers.

Once on board, you should introduce yourself and the survey to the boat captain. Never ride a boat without the cooperation of the captain. Good rapport with the captain will often result in increasing the cooperation of the party boat patrons. You should begin canvassing introductions as soon as the boat leaves the dock.

It is permissible to conduct partial interviews up through the catch questions and track each angler and their catch by their name and/or bag number. The examination of kept catch (type 3) should begin as soon as the anglers have finished fishing. Occasionally a few anglers will quit early, but most anglers will continue fishing until the captain begins the return trip. Under optimum circumstances all anglers on the boat will be interviewed. However, some form of sub-sampling may be necessary if the boat holds a large number of anglers or if the time required for travel back to the dock is minimal.

Boats that assign numbers to anglers and keep their fish in numbered gunny sacks provide an ideal way to sample because the catch and angler are tied together by this number, and you can keep track of their catch. In these instances, the basic questions can be filled out on the ride out, and catch examined as it occurs, or as the bags are piled up for delivery, filleting, etc. Remember to watch for thrown back and discarded fish, as these are type 2 fish. Be sure to finish up the interview as to time fished, etc., at the end.

The interview time should be recorded at the end of the interview when riding PC boats.

4.5 Private/Rental Boats (PR)

- *Private Boat* A boat belonging to an individual.

- *Rental Boat* A boat that is rented. No crew is provided; the individual takes it out him/herself.

<u>Private/Rental Boats</u> Since large differences are found in boat landings and/or docking facilities, on-site procedures for obtaining interviews with these anglers will vary. For some sites, anglers might be interviewed while they are waiting for a boat hoist. For others, anglers might be interviewed while they are cleaning their boat at a dock. For still others, anglers might be interviewed in a parking lot while they are tying down their boats. The interviewer will have to use discretion in determining the best approach at a particular site based on procedures for trailering the boat after fishing. Wherever there is a wait for their turn is generally the best spot to sample.

Ideally, all boat anglers will be interviewed at a site. However, time pressures and the number of anglers or boats using a site may be such that sub-sampling procedures may be needed. See section *4.1 Random Selection* for general instructions on sub-sampling busy sites. If you do sub-sample, attempt to maintain a representative sample of anglers and boats for the day for each site.

4.5.1 Sub-sampling Boats

Circumstances such as congested boat ramps, numerous refusals, etc. at some busy sites prevent you from properly conducting a sub-sample of every Nth angler from all boats. In these cases it is permissible to switch to a non-biased method of sampling every Nth boat. While sub-sampling boats the sampler should attempt to interview all anglers in selected boats, including unsuccessful anglers. Keep in mind that our guideline for sampling is not to exceed 30 interviews in the assigned mode on the same day. Your sub-sample should be paced and take into account the potential for biases in size of vessel, number of anglers per boat, range of boat and time of day to properly represent activity at the site for the day.

5. INTRODUCTION TO THE INTERVIEW

There are basically two kinds of introductions: the general "canvassing" introduction and the more formal introduction and Privacy Act statement.

5.1 Canvassing Introduction

At some sites it is possible to build rapport with the people fishing prior to conducting any interviews. Anglers who have had the opportunity to meet the interviewer and discuss the survey tend to be much more cooperative when asked for an interview at the completion of their fishing trip. The canvassing introduction should be very informal. The conversation might begin with "Catch anything?" or "How's the fishing?" You should make it known that the survey is in no way connected with the enforcement of fishing regulations and the interview is voluntary.

5.2 Screening Introduction (Eligibility)

The purpose of the screening introduction is to introduce the survey and determine whether an angler is eligible. It will also determine the kind of trip form which should be completed (See Short Form Section 7.4). On the Pacific Coast we normally sample only finfishing trips, but sometimes we may sample other types of trips such as shellfish. Your supervisor will provide this information for you.

An eligible angler is one who:

- has been fishing in <u>saltwater</u> (downstream of any saltwater cutoff)
- has been actively fishing for or caught <u>finfish</u> (or other species in some years)
- is a <u>recreational</u> angler (not commercial angler or crew-member)
- has <u>completed</u> his/her fishing trip in the <u>assigned mode</u> of fishing for the day (*except for beach and bank anglers who must be at least half done*)

An angler does **not** have to have caught fish to be eligible for an interview.

Anglers who are still fishing, but have completed fishing in a different mode are eligible for an interview in that mode. Completed fishing means they will not be fishing again in that mode today.

5.3 The Privacy Act

As soon as you establish the eligibility of the angler, you should launch right into the Privacy Act statement. An abbreviated statement is found at the top of the laminated Intercept Questionnaire used for the interview. All surveys conducted by the federal government are regulated by the Privacy Act of 1974. This act stipulates that each person who is interviewed must be informed of the following: the auspices under which the survey is being conducted, whether their participation is voluntary or mandatory, what will happen to them if they choose not to participate, and how the information will be used.

The Privacy Act requires that this information be available to each survey respondent in written form. For this reason, you will have and should keep available several copies of the longer Privacy Act Statement. If the angler is interested, the interviewer should provide a copy of this statement and discuss it if necessary. Most anglers will be satisfied with the abbreviated statement which appears on the Intercept Questionnaire. It must be stressed that participation in this survey is voluntary. While anglers are used to having their creels inspected by persons who enforce regulations, they should never get the impression that the survey is mandatory.

5.3.1 Privacy Act Statement

Information collected in the Marine Recreational Fishery Statistics Survey is authorized under the Fish and Wildlife Act of 1956, the Migratory Marine Fish Act of 1959, and the Fishery Conservation and Management Act of 1976. This information will be used in assessing the influence of fishing on any fish stock and in determining future recreational fishing needs.

All information collected will be combined with information provided by other recreational fishermen and used only for statistical purposes. Any information which would permit identification of the individual will be held in the strictest confidence and will be used only by persons engaged in and for the purposes of the survey.

Participation in this survey is voluntary and there are no penalties for refusing to answer any question. However, your cooperation in obtaining this much needed information is extremely important in order to insure the completeness and accuracy of the statistical results.

5. THE INTERCEPT INTERVIEW

Included in this subsection are some of the more general issues regarding the intercept interview. The basic design of the questionnaire, forms for the interview and the clipboard provided are to facilitate your interview process. They should be used properly.

You will be given a laminated copy of the questionnaire used in the intercept survey. The questions for the interview are written out, in full, for a purpose. The interviewer should try to word each question as it is written. In order to have meaningful comparative data, each angler must be responding to a standardized stimulus. Methodological studies have shown that even slight changes in wording, for example "should" versus "could," drastically influence item response. Some of the questions offer more probing phrases than you would actually use in asking the question based on the particular circumstance. For example, the question concerning mode of fishing. We don't want to give a bad impression by asking fishing mode options of an angler that is obviously fishing from a pier. Use your good judgment on these questions or ask your supervisor. Remember however, the portion of the question that is asked should be worded as printed on your questionnaire sheet.

With the Introduction and Privacy Act Statement you can be a little more free with the wording. The phrases used and the level of detail provided must be such that they can be understood by the particular angler being interviewed. For example, "you don't have to answer if you don't want to" is more appropriate with a child than any discussion of the Privacy Act of 1974.

There will be times during the day when you will have little to do. This time can be used to advance fill most the boxed identifying information on forms which will later be used. To prevent waste, you should not advance fill too many. This time can also be used to review and edit completed forms.

Each interviewer is to assign a unique interview number (Item 4) to each interview form, beginning with “01” and running consecutively through all forms completed for that assignment, even if there was a change in sites or change from long form to short form. If you undertake a second assignment, you commence numbering the second assignment forms from “01” again.

6.1 Intercept Form

Please realize that every question on the intercept form has a specific purpose. Although the "key questions" (marked with an asterisk - *) must be answered for the data to be used in the statistical programs to compute catch, the other questions also provide vital information relating to correction factors and refinement of the catch estimates.

Your training session with your supervisor will address the form and how to fill it out. The yellow sections of this manual - "Item-by-Item Instructions" provides detailed and specific instructions on how to code each question.

The intercept form is composed of seven subsections shown as tabs on the coding form:

The first section, the “box”, is administrative and consists of information about the sampling site and interview date. Within this section the information in questions 1-4 form the “ID-code” of the interview and must be unique for each angler interview.

The questions from the box to the catch questions are called the “demographic” questions and characterize the angler’s effort area, target species, avidity and residence data.

The catch questions or “creel census” portion of the interview are separated into two catch types:

Type 2 records are fish unavailable for identification and are reported by the angler. These fish are mainly discarded fish (except for fillets).

Type 3 records are fish examined by the sampler which may be measured and weighed. These fish are mainly to be eaten (except for bait).

Additional sections or “add-on” questions, usually economic, may be included on the form from time to time. A instructional supplement to this manual will be provided in those cases.

6.2 Use of 8 and 9 codes

Eight's (8..8) are generally reserved for "not applicable" or "not used" in a particular field. Nines with an eight at the end (9..8) are used for items coded as "don't know" or "unknown" and nines (9..9) are used for items refused by the angler or data you cannot obtain (such as weights). Check the specific instructions for particular intercept items relating to these codes as some exceptions exist.

6.3 Using more than one Form per interview

More space than the forms allow may be needed for recording both unavailable catch (Item 26a - type 2) and available catch (Item 26c - type 3). If this is the case, use the back of a second form to continue recording the catch. Items 1-9 on the front of the second form should be filled out in case it gets separated from the first form. Also fill the “page # of #” (opposite Item 1). These two sheets should be stapled together when you return to the office.

6.4 State Fishery Sampling

We have a modified interviews which we call a "state fisheries" interview where some items may not be recorded. This is taken to complement, but not duplicate, sampling programs undertaken by state fishery agencies. State programs mainly sample specific fisheries, such as salmon, for quota management and/or tag recovery. Your supervisor will give you specific instructions for such sampling in certain modes, areas and waves. In these cases the "state fishery" interview may ask only questions up to a defined point or skip sections of the interview. This provides us with comparable target species, demographic and avidity data for anglers whose fishing mode or target fishery is sampled by the state. Catch and effort data (as well as incidental species caught) are provided to PSMFC by the state sampling program.

6.6 Use of County and Species codes

State and county codes for the coastal states have been provided to you. If you encounter an angler from a state or country for which you do not know the code, your supervisor will add it when it is edited. Codes for all 50 states and foreign countries have been provided to your supervisor. If the angler does not know his county of residence but can give a city instead, you should write the city on the county line of the form and check the city box. It will be looked up and coded to county.

Ten-digit finfish codes have been provided to you and are sorted three ways: numerically, alphabetically by scientific name, and alphabetically by common name. These lists include all species found on the Pacific coast, so any code you need will be on these lists. These codes are used for both the species targeted on the trip and for the catch records. You should be familiar with the species of fish targeted and caught in your state or area of work. To facilitate some of the more complicated identifications, your supervisor will provide some training. **If you are having trouble, ask your supervisor.** You will be provided with a field guide and keys for Pacific coast species as well as agency keys where available for the more common fish.

6.6.1 Unidentified Reported Fish

With regard to fish unavailable for identification, the interviewer should help the angler come up with an accurate species name or group. If the angler is able to identify the available catch accurately, you may be able to code the unavailable catch all the way to species level. You should be familiar with the fish caught in your area that are commonly used for bait, thrown back etc. You should mark these species in your field guide, so that when the angler doesn't know the species of his unavailable catch, you can show him pictures. **The bottom line, however, is “never code the catch beyond a taxonomic** . This may mean only coding it to family or genus, or sometimes one of the other general terms for which we have codes, like "bottomfish”.

6.6.2 Unidentified Examined Fish

With regard to fish available for identification, the interviewer should record the species name and code. You should be familiar with the fish caught in your area that are commonly confused with each other and be able to key them out. Never code the catch beyond a taxonomic level you feel confident with. This may mean only coding it to family or genus, or sometimes one of the other general terms for which we have codes, like "bottomfish”. Never code a fish you examined as a type 2 record unless the angler is still fishing and is returning catch to the ocean (this is only possible for incomplete beach/bank trips). If the fish is very unusual then try and collect a specimen for your supervisor.

6.7 The Creel Census

Interviewers must measure up to 10 fish of each available species unless refused by the angler. If an angler has caught more than 10 of a particular species, then 10 must be selected at **random** for measurement. Missing measurements should be explained on the interview form. *The priority for measurements is lengths then weights*. Weights can be missed if time does not allow, however an effort should be made to weigh uncommon fish at all times. Missing weights can be calculated from length-weight regressions and be substituted for actual weights in some circumstances.

6.7.1 Sub-Sampling Procedure

On occasions when an angler has more than 10 fish of the same species available for inspection, a sub-sample of 10 fish must be selected for weight and length measurements. Ideally, the interviewer would line up the fish from largest to smallest, divide the total number by 10, and select every ***n***th fish for length and weight measurement. The sampler should alternate between starting with the largest and smallest fish from sub-sample to sub-sample. For example, if there are 20 fish of one species, the interviewer could line them up by size and select every second fish from one end.

If, due to time and space limitations, it is impossible to line up the fish, the interviewer should blindly reach into the container and randomly select the 10 fish to be weighed and measured. At no time should the interviewer visually select 10 fish of 'average' size to weigh and measure - this is not random selection! **NEVER** weigh only the largest or smallest fish; this creates an obvious size bias.

6.7.2 Fork Length Measurement

Length measurements should be given priority over weight measurements when time is restricted. Fish lengths must be taken using a measuring board and recorded to the nearest millimeter. The length measured is fork length. The measuring board is labeled in centimeters. Remember to multiply the centimeter reading by 10 before adding the number of smaller markings past the label. For example, a fish that measures to the third line past 23 would be

233 millimeters, not 26 millimeters. Interviewers should never round lengths and weights to the nearest centimeter or half centimeter. Rounding fish measurements will introduce a “digit bias”.

All interviewers will also carry a tape measure to be used only on specimens that exceed the length of the measuring board. To use the tape measure, interviewers should lay the tape measure down on a hard surface and place the fish on top of the tape measure. At no time should an interviewer hold the tape measure above a fish. This might result in the tape measure's bending to the contour of the fish's body giving a longer measurement.

Fish must be laid flat with mouth closed. Keep head and tail in a straight line where possible. The tail fin may need to be spread flat to allow for accurate identification of the fork or longest point.

6.7.2.1 Use of the Standard Measuring Board

1. Place the measuring board on hard level surface. You will need both hands free.

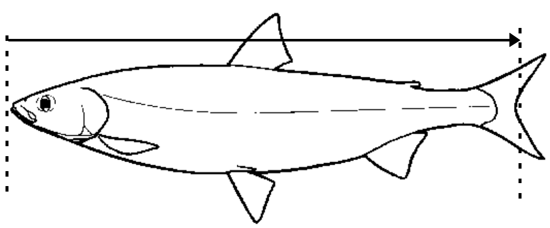
2. Place the fish with the anterior most portion of the head (nose) flush on the bracket end of the board and centered over the metric scale.

3. Keeping the nose of the fish against the bracket, press the caudal fin down to the surface of the board.

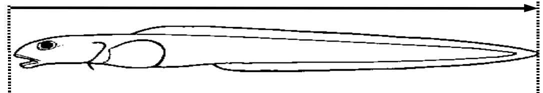
4. Read the length to the nearest millimeter at the fork of the caudal fin or as described below.

6.7.2.2 Measuring Various Types of Fish

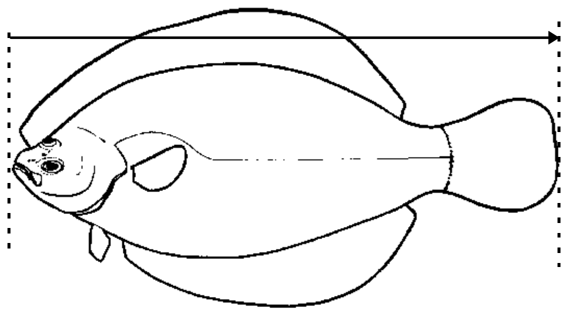
1. Most species are measured from the most anterior tip of the longest jaw (mouth closed) or end of snout, which ever is terminal, to the posterior tip of the tail at its center line. This procedure is the same whether the tail forks in (e.g., mackerels) or protrudes out (e.g., flounders).



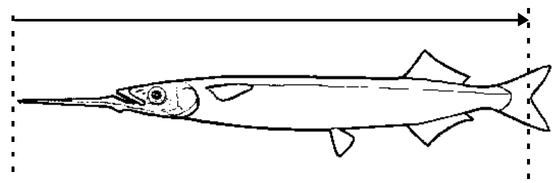
Salmonids - Salmonidae



Eelpouts - Zoarcidae

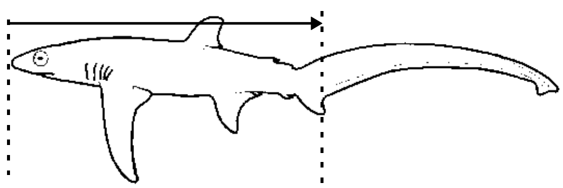


Lefteye flounders - Bothidae

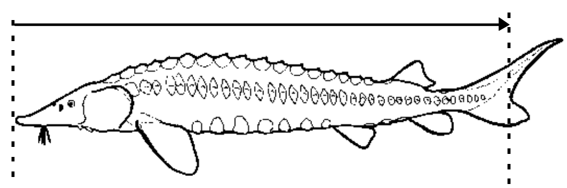


Halfbeaks - Hemiramphidae

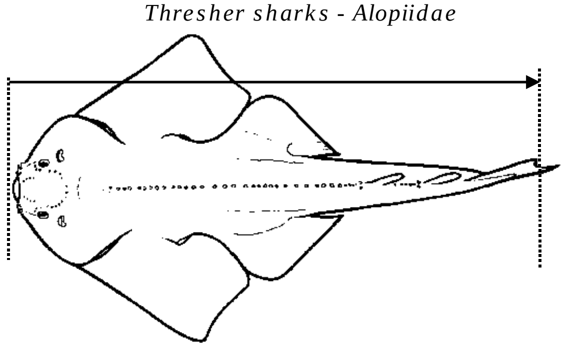
2) Sharks and Sturgeons are measured from the tip of the snout to the center of the fork of the tail. For sharks without a fork, measure the shortest distance to the ventral lobe of the tail *(see nurse shark below).*



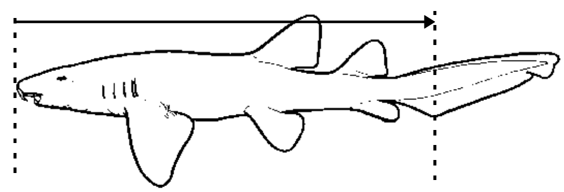
Thresher sharks - Alopiidae



Sturgeons - Acipenseridae

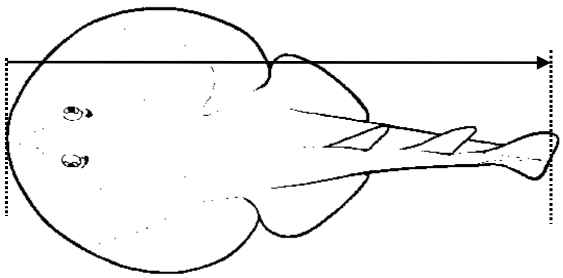


Angel sharks - Squatinidae

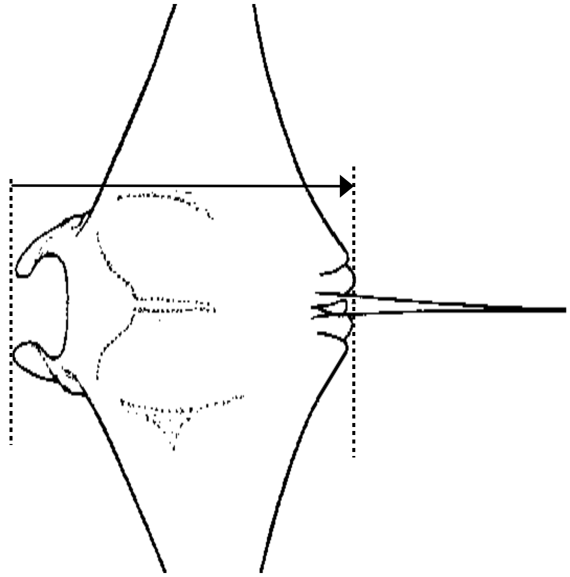


Nurse sharks - Ginglymostomatida

3) Skates and Rays are measured from the tip of the snout to posterior end of the pelvic fins. Do not include the claspers. When a caudal fin is present, the fish is measured to the caudal fin.

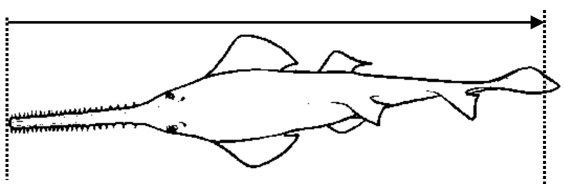


Electric Rays - Torpedinidae

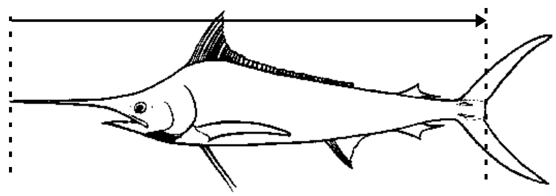


Manta Rays - Mobulinae

1) Billfish and Swordfish are measured from the tip of the bill to the center of the fork of the tail.



Sawfishes - Pristidae



Billfishes - Xiphiidae

6.7.3 Weight Measurement

Fish weights are to be recorded to the nearest hundredth of a kilogram. Scales must be calibrated before each assignment. Two scales are provided to each interviewer. The scales may vary in manufacture or capacity by subregion, but are usually adjustable brass spring scales in 25 pound and 4 pound capacities. The large 25 lb. scale is labeled in pounds and kilograms and is accurate to tenths of a kilogram. The small 4 lb. scale is labeled in pounds and kilograms and is accurate to 5 hundredths of a kilogram (.05 kg or 50 grams). It is permissible to collect weights for bled fish. The weight of blood falls within the variability of stomach contents.

6.7.3.1 Baggy Technique

Occasionally, an interviewer may come across fish that do not register on the small scale. If several fish of the species have been caught, the interviewer should place 10 of these fish in a plastic bag, taking care that no water accumulates inside. Weigh the entire bag and record the aggregate weight with the first measured fish to the nearest 0.01 kg. Write the words “pool wgts” in the row under the weight column and record the remaining lengths in mm and weights with “0” kg. If fewer than 10 fish of a small species are present, then you must record an aggreate weight for all the fish present (matching the number of fish column). It is <u>required</u> that you record lengths for each fish included in the aggrate weight, an aggreate weight for the first fish and and "0" weight for the remaining fish using this technique.

6.7.4 Dealing with Fillets

Since we don't like to have fish above the species level (i.e. family or genus) reported as type 3 records (although it is not forbidden) we would prefer unidentified fish fillets to be in the type 2 records.

Rarely, the fillets will actually be identified. For example, three fish worth of P. halibut fillets with skin attached you examine and count from a P. halibut charter trip would be type 3 records. But most of the time, a bag of fillets will be some unidentified taxon such as unidentified rockfish, tuna, bottomfish, etc., and be coded as type 2 records.

You may count the fillets if the anglers don't know how many fish worth of fillets they have. If you cannot identify the species, then they are still type 2 unidentified fish even though you counted them.

If the <u>anglers are in a group</u> with a bag of unidentifiable fillets, then treat the bag of fillets as part of their type 2 fish. Ask about numbers of any fish that are not here, i.e. thrown back, etc. Then ask about and/or include the numbers fish that are in the bag of fillets at that time. Ask if the fish in the bag of fillets are to be eaten. They usually will be.

If the anglers cannot divide among themselves (or report to you some separate number) the fish in the bag of fillets OR they simply don't know how many fish are in the bag of fillets, then count the fillets and divide them by the number of contributors. For each person you interview (not necessarily all the contributors) add the result of division to any other (not in the bag of fillets) type 2 fish the angler reports.

Procedure for processing <u>group catch</u> fillets into records:

<u>*Number of fillets identified to the species level?*</u>

- **Ye**s -> Code as type 3 group catch.
- **No** -> Type 2 fish! <u>*Can the anglers report the number of fish per angler?*</u>
  - **Yes** -> Record reported numbers of unidentified fish for each angler.
  - **No** -> Divide unidentified fish evenly by number of contributors.

7. INTERVIEW PROBLEMS AND SOLUTIONS

A number of problems may arise during the course of the data collection effort. Some of the more common ones and ways of handling them are described below. Others or specific problems will be handled by your supervisor or may be found in the Addendum for your sampling subregion.

7.1 Rain/Bad Weather

In general, the rule to be followed is that, if people fish, interviewing should take place. Each interviewer will be assigned to a specific site and mode on a specific date. If, on the day scheduled for interviewing, the weather is obviously so bad that no one could be expected to fish, you should follow the instructions provided for such situations by your supervisor which may include getting the date reassigned. In general, lack of effort at a particular site entails moving to the next adjacent site (alternate) that has the assigned mode of fishing. You may also sample in another mode at the assigned or alternate sites if it exists. If the assignment is completely washed out you can move to a second assignment that may be at a location and in a mode where effort is ongoing. The final option is to do other duties assigned by your supervisor such as edit forms, etc.

7.2 Unsafe Site

The first activity you should undertake at any site is to size up the situation and make sure that it appears safe. If activity at the site or a person or person(s) seem unusual, use wisdom and caution about sampling and/or leaving the site. Rough weather or conditions that make jetty rocks hazardous need to be considered. No interview is worth an injury or attack. **Your safety is our primary concern and is much more important than interviewing any angler**. We have had very few problems with attacks, but they have occurred. In all cases to date they were not serious and were caused as a result of anger at fishing regulations. You should be aware of this potential when interviewing.

7.3 Refused Entry to Site

In some cases you may be refused entry to a fishing site or access to a party/charter boat by an owner or boat captain. If, after explaining the project, admittance cannot be obtained, you should proceed to the next alternate site where sampling in your assigned mode can be undertaken, or move to a second assignment. Your supervisor should be notified about your refused entry/access.

7.4 No Anglers

If you go to a site as scheduled and no anglers are observed (or boat launchings or trailers at boat sites) in the assigned mode, you may go to two alternate sites with effort in the assigned mode. If no effort in the assigned mode is found at the primary site and two alternate sites after two hours and you don't expect at least one interview per hour from the three sites in the assigned mode then terminate the assignment. Sampling may also be undertaken in other modes at the assigned site and the two alternates if it exists and time allows.

7.5 Tournaments

A tournament is defined as a fishing contest for which participants have to register and compete for the largest fish, most number of species etc. Informal 'pools', such as those arranged on party boats, are not considered tournaments. Tournaments are **not** included in this survey. If an assigned or alternate site turns out to be the official station for a tournament, the interviewer should not interview at the site. The tournament site does not count, so an additional alternate site may be visited in the assignment. On the Weekly Report for that day, the interviewer should record the site visit with no interviews and comment that a tournament was taking place at the site.

7.6 Illegal Activity & Law Enforcement

The purpose of the sampling work in the MRFSS is to collect an independent and unbiased sample of the fishing activity. Any behavior which would systematically exclude illegal take from the sample would create a bias in the sample. It is not the duty of the sampler to enforce the laws. However, the sampler should inform the angler of size or limit violations if it appears the angler is unaware of the violation. Some statement such as, *"Did you know you have two undersized barracuda?. The minimum size is 28 inches. I'm doing biological sampling, but if a warden were to come by, you might get a ticket."* Obvious violations of limit or size regulations or other illegal activity should be reported to your supervisor after your assignment and so they can notify law enforcement. In this way the game wardens can pay a visit to the site(s) where you saw violations occurring and issue citations when appropriate. This removes you from that process, as our function is biological sampling. You should not be confrontational to anglers condoning or engaged in illegal take. An educational approach should be used with regard to informing anglers about the regulations if they appear ignorant of the violation. With regard to illegal activity on party /charter boats, care should be taken not to disturb a good working relationship with captains and crew. Report illegal activity in the comments area of your weekly report. Your supervisor will take care of it.

If a law enforcement official is present at the site, introduce yourself and explain what you are doing. If the official interrupts an interview, stand by out of the way until the official concludes the inspection. Complete the interview if possible and include illegal catch, if any. Code any unexamined confiscated catch as type 2 records with the disposition "some other purpose", and code any confiscated examined catch in the same way. Report the encounter in your weekly report and on the affected form.

8. FORM EDITING PROCEDURES AND TIPS

8.1 General Tips

- Check for empty boxes and for codes and code sequences that are impossible. Be sure to check empty boxes for items you may have wanted to look up later, such as county of residence.

- It's OK (and sometimes very helpful) to leave your field notes on the forms - this is not a problem during data entry.

- Rewriting is called for when the form become illegible due to lots of fish slime and scales.

- Put your forms in the order that the interviews were done (assignment number, date, interview number and time).

- Make sure the intercept forms and the weekly report form information matches and all unusual conditions are marked on the form or noted in your comments for your supervisor.

- Entries should be right justified within the boxes for the entry. Questions left completely blank will be coded with 9's (refused).

- Entries should be padded with leading zeros. If a fish measures to 123 mm then the entry for four coding boxes should be "0123". An exception for the ten digit target species is allowed where one of the single digit codes (0-4) are used right justified.

- Multiple entries under "identified catch - type 3" with duplicate common names, species codes, number of fish and disposition may be indicated with downward pointing arrows into the last entry for each column of data. In this case, only the first row would have all boxes filled out. The remaining fish of that species would have only the length and weight boxes filled in.

You are encouraged to edit and correct your forms during slack time while sampling or at the end of the day while your memory is fresh and again prior to giving them to your supervisor. The time spent in editing is just as important as time spent interviewing anglers. Errors found later require more time and money to fix!

8.2 Specific Editing Checks

(These notes address some of the most common errors found on the forms.)
Q#'s based on 1997 intercept form

Q.#1. All forms from one assignment must have the same assignment number.

Q.#3. All forms from one assignment must have same and accurate date.

Q.#4. All forms from one assignment must have unique and sequential interview numbers, beginning with 01.

Q.#5. All forms from one day must have different hours.

Q.'s #7-8. Site codes must agree with the county code. It's very easy to slip up and use the wrong county code, usually the one where you spend the most time. There can be more than one site used during an assignment.

Q.#15. Gears other than rod and reel may be so uncommon that the "01" may get used without thinking. Be sure that you are not coding from memory.

Q.#16. Round to nearest half hour. Wet gear hours minimum entry = 00.5, maximum entry = 24.0.

Q.#17. This is for BB mode only. Additional hours in other than BB mode will cause the interview to be unusable since the angler is not eligible. For BB anglers check that the angler has the same or less additional hours than already fished (50% rule)

Q.#19. Must be less than or equal to #18. Days fished in the last 2 months is included in the last 12 months.

Q.#25. Check gender against the first name at #38.

Q.#26a. Type 2 records coded to species level are questionable if the angler has none of those fish in his bag. Make a notation on these. Be sure that all these fish belong only to this angler since we are not grouping type 2 catch.

Q.#26c. Look for missing and wrong fish codes and check all the lengths and weights (you should be able to pick out odd ones - was the fish really that heavy or did you write down the wrong length?).

Q.#26a & 26c. Make sure that disposition codes are appropriate for the type of record: type 2 or 3. Fish that were <u>measured and weighed</u> *and then* t<u>hrown back alive</u> must be **coded as type 2 records** with disposition 1 or 2. Line out the length and weight in the type 3's but leave legible so that they may be used as a reference,

Q.#26b. Catch question on the front must be a "1", "2" or "4" if there are any type 3 fish recorded on the back.

Q.'s #28 & 30. Forms that are "tied" together by group catch or same boat party must have the same mode and water fished. If group catch anglers fished in different waters then code the area for the majority of the contributors effort. If the angler effort of the group is evenly split by area then code for the majority of the catch.

9 FAQ - FREQUENTLY ASKED QUESTIONS

Q. What is the definition of an angler trip?

Angler fishing in one major mode in one waking day, as opposed to calendar day. Anglers fishing past midnight into the morning would be considered one trip. For anglers who fish more than 24 hours without sleep, only consider the most recent 24 hour period as the trip. For anglers who fished for consecutive days, each waking day is a separate "trip" and consider only the most recent "trip" or angler fishing day. If the angler fished in more than one mode, consider only the most recent fished mode. If the multi-mode angler cannot separate the catch by mode then do not interview that angler.

Q. What is the definition of major mode?

One of the four main modes: MM, BB, PC and PR, used to select assignments and estimate trips in the MRFSS. This is known statistically as a "collapsed mode" since it may include multiple modes. For example MM is composed of:

- pier and dock
- jetty and breakwater
- bridge and causeway
- other structure;

while PR is composed of just "private and rental boats" since we do not have separate modes for private boats and rental boats.

Q. When do I change the assignment number (item 1)?

You may have more than one assignment for the day. But you will usually have just one. You will be given the assignment by your supervisor as to the mode and site you are to sample. If no anglers are present at the assigned site you can go to two adjacent (alternate) sites with the assigned mode present to sample. Alternate sites (and modes) are still under the one original assignment. Do not change the assignment number because you are sampling at "alternate" sites and/or modes. During busy times of the year you may have more than one assignment for the day. If you do, be sure and switch assignment numbers when you move to the next assignment (and second assigned site and mode) for that day. Remember to start re-numbering interviews from 01 for any new assignment you switch to for that day.

Q. How do I code the area (item 11) when the angler's fish come from one area and the angler spent most of their effort in another?

Enter the proper code as to the type of water (ocean, bay, etc.) where the majority of fishing time took place. Code the location for the majority of the fishing effort not the majority of the catch. Be aware that the angler may not have fished in the current area for the majority of the day. The angler may also have catch from a different area. Unfortunately, this is a shortcoming of the MRFSS design

Q. Is there a limit to the number of incomplete BB trips I can collect interviews from?

Incomplete trip interviews are only permitted for beach/bank anglers where, because of multiple access areas to the fishing site, you are having trouble intercepting anglers at the completion of their trip before they leave the site. The following rules apply for incomplete beach/bank interviews: 1) Do not conduct more than 50% of your interviews as incomplete trips and 2) The angler must have completed <u>at least half</u> of his anticipated fishing time before you can do an incomplete trip interview.

Q. Do we ever call an angler about their field **interview?**

Yes, we call anglers about their interviews. The MRFSS has a ten percent validation rate in most areas of the United States. A random sampling of one out of ten interviewed anglers is called to determine how the interview went. Higher or lower calling rates may be used, depending on observations of the interviewer, the condititon of their forms or statistical analysis of the data on the forms. Interviews collected by newly hired samplers, sampler interviews with below average response rates or interviews with mis-matched demographic data are all subject to increasing rates of validation. Validation telephone calls may be conducted by your supervisor, your supervising agency, PSMFC, NMFS or their telephone data collection contractors.