

2013 CRFS SAMPLER MANUAL

CALIFORNIA RECREATIONAL FISHERIES SURVEY



A Cooperative Program of:
California Department of Fish and Wildlife
Pacific States Marine Fisheries Commission
NOAA Fisheries
Sport Fish Restoration Act



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INTRODUCTION TO CRFS

The California Recreational Fisheries Survey (CRFS) Sampler Manual provides an explanation of the principles and goal of CRFS, detailed instructions regarding sampling procedures and the coding of all forms. First, this manual provides general information that is applicable to all the survey methods, followed by information specific to each type of fishing mode, and instructions for coding each specific CRFS form.

For a digital copy of the manual in Adobe Acrobat, download at:
<ftp://ftp.wildlife.ca.gov/CRFS>
Please direct corrections and comments to your Field Lead.

Many techniques are used to collect data for the diverse types of recreational fisheries in California. Though it is difficult to anticipate every problem, a thorough reading of this manual coupled with training will enable a Sampler to handle most sampling situations. Any questions or problems not covered by this manual should be directed to your CRFS Field Lead.

CRFS Overview

CRFS was implemented in January 2004 to provide catch and effort estimates for marine recreational finfish fisheries. It is a collaborative effort between the California Department of Fish and Wildlife and the Pacific States Marine Fisheries Commission (PSMFC), and is funded by state and federal sources. **The goal of the CRFS is to produce, in a timely manner, marine recreational fishery data needed for sustainable management of California's marine resources.** Meeting the data needs for species that are currently under active management is a high priority.

CRFS is part of the Recreational Fisheries Information Network (RecFIN). RecFIN integrates state and federally funded sampling programs for marine recreational fisheries from Washington, Idaho, Oregon, and California with the goal of providing for a single database where the information can be accessed by fisheries managers and interested parties.

Fishery Background

The National Oceanic and Atmospheric Administration (NOAA) Fisheries and CDFW have legal requirements for conducting surveys of marine recreational anglers to gather information on (1) catch, participation, and effort in marine recreational fishing; and (2) selected demographic characteristics.

Economically important marine species of fish are harvested by recreational anglers in estuaries and bays, inshore areas, as well as open waters. Many important species of fish are harvested jointly by recreational and commercial sectors. Marine recreational catch is a significant portion of the total landings of many marine species in California.

Catch and effort statistics are fundamental for assessing the influence of fishing on a fish stock. The amount of fish taken, fishing effort and their seasonal and geographical distribution are required for the development of informed management measures, policies and plans. Accurate and up-to-date catch statistics, collected for a wide range of species with associated biological studies, provide management agencies with the information necessary to effectively protect, enhance, and maintain fishery resources. These data are essential for state conservation agencies, recreational fishing industries, NOAA Fisheries, the regional fishery management councils, CDFW, and others responsible for or interested in the management and productivity of marine fisheries. The allocation of 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 1959 (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. Magnuson-Stevens Fishery Conservation and Management Reauthorization Act, 2007 (Public Law 109-479), requires the collection of statistics for fishery conservation and management.

CDFW must collect sport fish catch information to meet the conservation and management policies for California's marine living resources. The authority to collect this information is specified in the California Fish and Game Code (FGC) and California Code of Regulations, Title 14.

Recreational Survey History

The collection of marine recreational fisheries statistics is more complex and expensive compared to commercial fisheries. Recreational anglers fishing from boats, piers, jetties, docks and beaches are widely and irregularly dispersed along the coast. Fishing habits and practices vary among fishing sites and fishing modes. A fishing mode is defined as the method of access to fisheries. The major modes are man-made structure fishing (MM), beach and bank fishing (BB), party and charter boat fishing (PC) and private and rental boat fishing (PR). Sample data collection differs among the fishing modes.



Marine Recreational Fisheries Statistics Survey (MRFSS)

The Marine Recreational Fisheries Statistics Survey (MRFSS), which operated from 1979 to 2003 in California, used complementary (dependent on each other) surveys for effort and catch estimation. A random-digit-dialing (RDD) household telephone survey was 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 survey to intercept anglers (intercept or catch survey) was used to obtain information on catch (number and weight) by species and area of fishing. The intercept survey also supplied information on the number of anglers, whether they had 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.

In January, 2004, the California Recreational Fisheries Survey (CRFS) was implemented, which built off of the MRFSS program and was adjusted to incorporate necessary sampling changes to provide more reliable recreational fisheries data on a quicker time scale.

CDFW Ocean Salmon Project

The Ocean Salmon Project (OSP) estimates recreational and commercial catch, effort and coded wire tag (CWT) estimates for California's ocean salmon fisheries. CWT estimates identify the contribution of specific runs of salmon to the ocean fishery, a key component of salmon management. The OSP conducted a private boat survey from 1962 to 2003. The CRFS primary private boat survey (PR1) now collects recreational data for OSP. The CRFS PR1 survey is designed to maintain the continuity of the historical OSP private boat estimates. It samples 20-25% of days for daily boat effort and catch to make estimates. CRFS Samplers are also in charge of collecting Commercial Passenger Fishing Vessel (CPFV) ocean salmon data during the recreational salmon season statewide.

General CRFS Survey Design

CRFS is a multi-part survey to estimate the total catch and fishing effort of marine recreational anglers in California. Field sampling is conducted at over 500 publicly-accessible sites during daylight hours to gather catch and effort data. A telephone survey of licensed anglers is conducted to gather data on effort when field observations of effort are not feasible, such as fishing at night and fishing from boats that return to private marinas. The data gathered from field sampling, the telephone survey of licensed anglers, sport fishing license sales, and the mandatory CPFV logs are combined to estimate catch and effort. The following table shows the surveys that are used for each mode of fishing, access type (public or private), and period of the day (daytime or nighttime).

Surveys used in the California Recreational Fisheries Survey (CRFS) to collect data on fishing effort (Effort) and catch (fish caught and kept and fish caught and released) rates (catch per unit effort, CPUE).

Mode	Estimate	Public Access (publicly-accessible sites covered by the field surveys)		Private Access (sites not accessible to the general public and not covered by the field surveys)	
		Day ☼	Night ☾	Day ☼	Night ☾
1° Sites Private & Rental Boats	Effort	Field Survey	Under-coverage adjustment ¹	Under-coverage adjustment ¹	Under-coverage adjustment ¹
	CPUE	Field Survey	Use estimate from day	Use estimate from day	Use estimate from day
2° Sites Private & Rental Boats	Effort	Field Survey	Under-coverage adjustment ¹	Under-coverage adjustment ¹	Under-coverage adjustment ¹
	CPUE	Field Survey	Use estimate from day	Use estimate from day	Use estimate from day
CPFV	Effort	CPFV logs and Field Checks ²	CPFV logs and Field Checks ²	Not Applicable	Not Applicable
	CPUE	Field Survey (onboard & dockside)	Field Survey (onboard & dockside)		
Man-made Structures	Effort	Field Survey	NO ESTIMATE	NO ESTIMATE	NO ESTIMATE
	CPUE	Field Survey			
Beaches & Banks	Effort	Telephone Survey ALDTS ³	Telephone Survey ALDTS ³	Telephone Survey ALDTS ³	Telephone Survey ALDTS ³
	CPUE	Field Survey	Use estimate from day	Use estimate from day	Use estimate from day

1. Under-coverage adjustment using estimates from the Angler License Directory Telephone Survey (ALDTS) and the field access point surveys.
2. Operators of Commercial Passenger Fishing Vessels (CPFVs) are required as a condition of their license to submit logs for each fishing trip. The CPFV logs and a field survey to estimate compliance are used to estimate CPFV effort.
3. Angler License Directory Telephone Survey (ALDTS)

Geographic Divisions

California has been divided into six districts for CRFS. The district boundaries generally coincide with county boundaries. The counties in each district are listed below.

1. **South District** - Los Angeles, Orange, and San Diego counties.
2. **Channel District** - Santa Barbara and Ventura counties.
3. **Central District** - Santa Cruz, Monterey, and San Luis Obispo counties.
4. **San Francisco District** - Marin, San Francisco, San Mateo, and Sonoma counties on the Pacific coast and the seven counties surrounding San Francisco and San Pablo Bays: Alameda, Contra Costa, Solano, Sonoma, Marin, San Francisco, and San Mateo counties.
5. **Wine District** - Mendocino county and the Shelter Cove section of Humboldt county (to 40°10').
6. **Redwood District** – Humboldt county (from 40°10' north) and Del Norte county.

California Recreational Fisheries Survey Districts



CRFS Catch and Effort Structure

Total catch estimates can most easily be understood by this simple model:

total angler trips X mean catch per trip = total catch.

Mean catch per trip is also known as catch per unit of effort (CPUE). Since catch and effort are separate quantities, the surveys can be described as having separate collections for effort and catch.

The two major means of data collection are by on-site and off-site methods. Field surveys use Samplers to collect data on-site while the telephone survey collects data off-site. On-site data is more reliable because it is not as subject to angler memory recall. On-site methods are used to collect all of the catch data and some of the effort data while off-site methods are used to collect effort data only.

CRFS field surveys collect catch and effort data at publicly accessible sites during daylight hours. The telephone survey is used to collect effort data for beach and bank fishing, night fishing and private access fishing that might otherwise go unaccounted for.

Although all fishing modes are sampled, CRFS puts more emphasis on fishing from boats, where the majority of managed fish species are caught, than other modes. The private and rental boat (PR) mode fishery is the largest in the state in terms of total catch. The PR fishery is also seasonally and geographically irregular. PR sampling is composed of two separate surveys, based on whether a site generally has high effort or lower effort. The intensive primary PR survey (PR1) is an all day census (complete accounting) of an important fishery at one of the higher effort sites. The low-level secondary PR survey (PR2) is a sample of a cluster of lower effort sites on a day (Sampler roving among sites).

Angler License Database System (ALDS) Telephone Survey

The ALDS telephone survey is designed to identify the number of anglers that go saltwater sport fishing and how many trips they took in each mode of fishing (man-made structure, beach and bank, private/rental boat, CPFV,) over a specified period. Data obtained from the ALDS telephone survey are used to estimate the total number of marine recreational fishing trips taken by license holders. The survey operates on a monthly basis.

CRFS Intercept Surveys

CRFS has five major angler surveys based mainly on fishing mode. The intercept surveys are designed to intercept anglers on-site at the completion of their fishing trips (i.e. fishing day).

Man-Made (MM) Structure Angler Survey

The MM survey samples angler effort and catch at public structures such as piers, docks, wharfs, and jetties during daylight hours. Man-made sites are grouped into clusters. Sites are clustered by geographical proximity. All sites within the cluster are sampled on the sample day. Anglers are interviewed during or at the conclusion of their trips. Each cluster is sampled three times a month, ideally twice on a weekend day and once on a weekday.

Beach and Bank (BB) Angler Survey

The primary goal of the BB survey is to collect catch rate data. Effort data is collected using the angler license survey. The field portion of the survey is a roving access point survey at publicly accessible beaches and banks during daylight hours. Sites are typically clustered by geographical proximity to one another. All sites are sampled on the assignment day. Anglers are interviewed during or at the conclusion of their trips. Each cluster is sampled once a month, randomly on a weekend day or a weekday.

Party and Charter Boat (PC) Angler Survey

The PC boat survey samples Commercial Passenger Fishing Vessels (CPFV) using either an onboard observer survey or dockside interviews for catch rate and discards. CDFW CPFV Logbook data and field checks are used for effort estimates.

Primary Private Boat (PR1) Survey

Primary launch ramps are those where the majority of the managed species are landed, in any particular month. The survey samples effort and catch for boats using these sites. The primary goal is to estimate total fishing boat effort for the whole day.

The secondary goal is to estimate catch and discards per boat. In Northern California (i.e. North of Point Conception), during salmon season, this is a primary goal in order to count marked salmon and collect coded wire tags.

Secondary Private Boat (PR2) Survey

Secondary launch ramps are those that land the minority catch of actively managed species in any particular month. The survey samples effort and catch for boats using these sites. The primary goal is to estimate effort and the secondary goal is to estimate catch and discard rates.

Surveys Coordinated with CRFS

Ocean Salmon Project (OSP) CPFV Survey

CRFS/OSP Samplers must observe a minimum of 20% of the CPFV salmon catch and effort dockside at ports north of Point Conception. Data collected includes number of anglers, salmon landed, salmon released, salmon ad-

clipped, tagged heads recovered and salmon lost to pinnipeds by species. CRFS Samplers coordinate with OSP Samplers at the docks for data collection.

OSP Coordination

During salmon season, a primary goal for the CRFS surveys includes identifying adipose fin-clipped salmon for length measurement and head removal to recover the coded wire tag (CWT). Samplers in salmon fishery areas will receive specialized annual training from OSP prior to the recreational salmon opener.

OSP processes the salmon sample data and salmon heads for tag recovery. OSP produces biweekly catch and effort estimates and CWT contribution rates for salmon fishery management. OSP focuses primarily on the major salmon ports and works with CRFS to implement effective tag recovery and accurate salmon counts.

CDFW CPFV Logbooks

CPFV operators are required to submit logbooks for each fishing trip. For each logbook entry, the vessel operator provides information on effort (number of anglers and number of hours fished) and take (type and number of fish caught). Logbooks are submitted monthly to CDFW. CRFS uses the CPFV effort data collected by Samplers and logbook records to estimate PC effort.

ROLES AND RESPONSIBILITIES

The Supervisor

The Supervisor oversees the field program and ensures the program goals and sampling needs are met, and works with other Supervisors to ensure proper and consistent sampling protocols are followed. Additional responsibilities include: personnel issues, time sheets and travel expense claims (TECs).

The Lead

Leads oversee the training and quality control of field Samplers, including Fish and Wildlife Technicians and Scientific Aids. Leads check/review the sample data, maintain the site lists and sample selections, and create the sampling schedules in their District(s). Leads review timesheets and TECs from field Samplers, schedule staff meetings as needed, recruit and interview new Samplers, and maintain/inventory all CRFS field gear. Leads will conduct “quality control” visits, also called field checks, with each Sampler. During these visits, the Lead will observe the work performed by the Sampler and provide feedback at that time or later.

Your Lead is your primary resource for training and problem solving. Samplers should call their Lead if they have procedural questions, such as questions about a species or a site. If you are not sure of a protocol in the field, make a mistake, need forms, etc., contact the Lead via work or cell phone. When in doubt, don't guess, call! If you need to come into the office to discuss forms or sampling, try to notify the Lead ahead of time. This will help prepare for your visit.

The Lead is also the person whom anglers may contact concerning CRFS procedures and sampling issues (see public outreach section below). For media contacts, Leads should also be notified.

The Fish and Wildlife Technician

Fish and Wildlife Technicians are permanent staff that have many responsibilities of Scientific Aids and Leads. In addition to field sampling, they help train Scientific Aids, perform field checks, review the sample data, and maintain sampling gear. Additionally, they perform necessary office tasks such as scanning forms, entering data, and mailing datasheets to their final destination.

The Field Sampler

The field Sampler, either a Fish and Wildlife Technician or a Scientific Aid, plays a vital role in this project since the key to accurate data is high-quality interviewing. Though Samplers are hired partly for their skills in fish taxonomy, these are not the only skills required of a successful Sampler. A good Sampler

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 identify fish accurately at the species level. The CRFS interview involves both a face-to-face interview and a catch census. A unique set of skills is required for each.

Field Samplers are expected to:

- be knowledgeable about the CRFS program goals and data uses
- complete sampling assignments as scheduled
- be able to identify all common fish species
- use a key to identify uncommon fish species
- 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
- wear appropriate attire that is neat and clean
- accurately complete and submit all forms in a timely fashion
- work on commercial passenger fishing vessels at sea
- follow the procedures in this manual
- be knowledgeable about ocean sport fishing regulations
- be able to lift 50 pounds
- have a working automobile
- have good communication with Lead(s) and other field Samplers
- be adaptable to changes in procedures, protocols, forms, and sampling schedules

Avid anglers may be approached several times per year by representatives conducting CRFS Interviews. Angler cooperation is critical to the success of the survey. Samplers will encourage anglers to take the time to participate and thank them when they do. Every fishing trip may have different target species, locations, gear, etc. Therefore, it is necessary to have anglers provide data on each trip even if they have participated in the survey before. Anglers may also be telephoned to be asked about their trips in the past one to two months. Samplers should also encourage angler cooperation with telephone surveys of recreational fisheries.

By each Wednesday, the Sampler will have all data from assignments scheduled on the previous Monday-Sunday to the Lead, in the office. Timely, high-quality, legible data is our primary goal.

Professional Conduct

Address members of the public with courtesy and respect. Be polite and professional; for example, always ask permission to board a boat or handle fish. Be aware of your body and verbal language usage. Refrain from words that could be construed as vulgar. You are the public face for CDFW. Your behavior serves to substantiate the legitimacy of the survey and increase angler cooperation.

Always introduce yourself to the landing personnel and crew, and ask permission to board party and charter boats. Do not engage in "deckhand"

duties (helping anglers land fish, tying on hooks, etc.) while sampling onboard. Our insurance does not cover activities outside of your job description as a CRFS Sampler.

Gifts of fish and any other types of gifts (such as free trips, clothing, etc.) are not to be accepted. CDFW has a rule against gifted fish because of potential conflicts of interest. A primary reason for not accepting fish is due to the CPFV boat limit regulation. We do not want the Sampler to end up in a situation where enforcement finds they are either contributing to or helping the over-limit boat come down to the limit. This action may also make it appear as if you are an agent of the vessel and that you "look the other way" when violations occur on the boat. **Only yelloweye rockfish may be collected in the field (see Species Sampling).**

Smoking is allowed in the field. However, you may not smoke in view of the public. If you do smoke, do it in your car, away from the dock and anglers and cover your CDFW patches. Never interview anglers while smoking or throw your cigarette butts on the ground or in the water. It is against government policy to smoke in a state vehicle.

Attire

Samplers are expected to look professional. Samplers on assignment will wear the CDFW polo shirt. Pants can be jeans or long shorts (for warm weather). No sweats, tight fitting clothes, cut-offs or clothes with holes/tears. Do not wear attire with other logos (advertising logos, etc.) except on shoes. The public may be confused about who you are affiliated with if you display logos other than the Department shield while on assignment. Wear your uniform hat and jacket for protection from the elements as needed. No dangling jewelry. Samplers with long hair should tie it back. Do not wear the uniform when you are not working.

CRFS ID Badge is to be on your person the entire time you are on assignment. Do not use your Sampler ID card for any other purpose. Samplers will be viewed as representatives of the state of California. Samplers should say they are conducting a survey for the State, sponsored by NOAA Fisheries and CDFW.

Shoes must be closed-toe. Do not wear 'flip-flops' or sandals. This is not only a safety issue, but also a matter of professionalism. Shoes should have rubber soles so you will have secure footing regardless of where you should find yourself sampling (e.g. on jetties, climbing into boats).

Hats will help prevent the sun from taking its toll and help identify you as a Sampler. 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 your inability to see clearly.

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

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

Gloves will protect your hands while handling slippery wet fish.

Reimbursable Expenses

The only expenses incurred during normal working hours that are typically reimbursable are: parking fees, tolls, mileage, meals and per diem (if applicable) and postage for mailing datasheets to your Lead. ALL other expenses must be pre-approved by the Supervisor.

Meals purchased while on assignment may be reimbursable. Typically, meals may only be covered if the Sampler works over 24 hrs. Boat meal purchases while onboard a PC trip are encouraged, as it is a friendly gesture and a way of supporting the galley. As explained in your bargaining unit contract, CDFW will only reimburse the Sampler up to \$6 for trips that begin at or before 6AM. This means that boat meals (breakfast) can only be claimed and reimbursed for morning trips and **if the distance traveled to the landing is 50 miles or greater one-way**. Lunch and daily incidentals are not reimbursed on trips that are less than 24 hrs in duration. Dinner may be claimed if the Sampler travels over 50 miles one-way that day AND returns to headquarters after 7PM. For more information, please visit <http://www.calhr.ca.gov/>. After selecting Bargaining Contracts, you will find your information under Memorandum of Understanding, Unit 11.

Parking situations should be exempt from charge with the CDFW parking placard, or other Supervisor-issued permits. However, there might be times when a parking lot has automated gated access. If payment is required at a parking lot, retain the original receipt and it can be reimbursed through a TEC. ALWAYS be in uniform when arriving on site, and NEVER use your placard or permits while not on assignment. Even with your parking placard, never park and leave your car unattended in a loading zone (white, yellow, or green zones), a no-parking zone (red zone) or a handicap space (blue zone).

Mileage reimbursement will be provided and is intended to cover the cost of gas plus general wear and tear on the Sampler's personal vehicle. This mileage does not require documentation (e.g., gas receipts) but only includes that mileage generated while going to, from, and between assigned sites. The current rate can be found on the U.S. General Services Administration's website: <http://www.gsa.gov/>.

Postage for mailing the original datasheets to the office is reimbursable if the office is beyond a reasonable distance for drop-off. Keep in mind that the previous week's data will still be expected in the office by the following

Wednesday. This only applies to normal mail and any expedited mail services (e.g., express, overnight service) are not reimbursable.

Other Expenses that aid in the safety and/or effectiveness of sampling may be reimbursable, but must always be approved by your Lead and/or Supervisor prior to purchase.

Working with Others

While sampling, you will use your interpersonal communication skills to gain access to paid access sites, board and sample boats, etc. You will work with other CRFS Samplers, other agency staff, and law enforcement, as well with the public, including anglers and the curious.

Managed Sites

Upon arrival at privately-owned operations and closely supervised public operations, you should check in with managers or persons in charge. To be courteous, the Sampler should introduce themselves, ask for permission to conduct interviews, and explain the survey.

Other Samplers at the Site:

When you arrive at your assignment site and you observe another project's Sampler working, introduce yourself to the other Sampler, and notify your Lead. Your Lead will determine whether you should sample cooperatively with the other Sampler, or move to an alternate site if possible. If a CRFS Sampler arrives or is at the site when you arrive, consult your schedule and notify your Lead if anything is amiss.

Other agency field programs

Other projects may request your help in collecting field information. If you are approached in the field to do this, refer the person to your Lead.

CDFW Officers (Previously Called Wardens)

Often Wildlife Officers will be present at your site. Sometimes they will be undercover agents and you may interview one without your knowledge. If a Wildlife Officer asks you if you have seen any illegal activity, you should tell them what you know but ask them to be discreet with the information. If the officer asks to see your data, inform them that you have been instructed to refer such requests to your Lead. According to the Privacy Act Statement, the information we obtain is confidential, and we do not want to jeopardize our presence at any site or party boat operation. If a Wildlife Officer approaches while interviewing, let them proceed with their investigation. Stand back during the investigation.

If possible, complete the interview with an investigated angler, and include confiscated catch, if any. Report the encounter in your Assignment Summary Form and on the affected form.

Fishery Violations

Your primary responsibility as a CRFS Sampler is to collect recreational fishery data. You are not a Wildlife Officer, nor are you to allow or encourage the public to think you are.

Discussion of Regulations

While in the field you may have people ask you questions about fishing regulations. You are responsible for knowing the basics, such as which species have size and possession limits, and the requirements for having a fishing license. If you do not know the answer to a regulation question, never guess. You should offer the person a copy of the current sport fishing regulation booklet, and show them where to find the answer, but never interpret regulations for the angler. Refer the angler to a CDFW office so they may speak directly to a Wildlife Officer.

Illegal Activity

Do not give the impression to anyone that you are a Wildlife Officer. Do not get involved with fishing regulation enforcement in the field. However, you may educate the anglers as to regulations. If you observe illegal fishing activities, pass the information along to your Lead. Distribute CalTIP business cards to concerned anglers who have witnessed illegal activity.

When you encounter an angler with a violation, e.g., a short fish, or over-limit, you should explain the violation and educate the angler after you have measured the catch. Obvious violations of bag limit, size regulations, and other illegal activity should be reported to your Lead after your assignment. The Lead will take the appropriate action in regards to contacting enforcement. In this way, the Wildlife Officers 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.

With regard to illegal activity on party and charter boats, care should be taken not to disturb a good working relationship with captains and crew. Report any illegal activity in the comments area of your Assignment Summary Form. Notify your Lead.

Sampling Illegal Activity

The purpose of the sampling work in the CRFS 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.

There may be occasions where an angler has kept a protected or prohibited species, such as a giant sea bass, yelloweye rockfish or cowcod. Try to collect all retained yelloweye, but do not collect any other species. Notify your Lead immediately (same day phone call, email) if any yelloweye or cowcod are encountered (e.g., observed or unobserved AND in your data). A primary goal

of yours is to obtain length and weight data for prohibited species. If possible, take a photograph of the species. Under no circumstances should you engage in any sort of discussion or behavior that the angler may interpret as threatening enforcement action. If you are unsure of how to proceed in any situation, contact your Lead immediately.

Educating the Angler

It is not the duty of the Sampler to enforce fishing regulations or laws. 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.

The Sampler should inform the angler of size or bag limit violations if it appears the angler is unaware of the violation. Use a 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 Wildlife Officer were to come by, you might get a ticket."* Usually, it is easier to obtain biological data on this catch if the angler is informed after you have concluded the interview.

Public Outreach

CRFS Samplers are seen by the public as the most visible and convenient way in which to contact fisheries regulators. You are a very visible person at any fishing site, especially while in uniform and fully equipped. While you are observing the fisheries, you are being observed and judged by the public. Your actions and conversations reflect on CDFW and state government in general. Do not do anything that would be judged as poor behavior or a waste of time. Remember that you are a public employee and the public is the source of your income.

Speaking with the Public

If you are being asked questions in the field that you don't know how to answer, don't guess, and suggest to the angler they contact CDFW or your Lead. Let your Lead know what questions you are getting, so they can share answers to those questions.

If you are approached by a reporter in the field, you should provide your Lead's contact information, and inform your Lead. Most information (survey design, what you see, cooperation, etc) needs to be answered by either the Lead or someone else in CDFW.

All information on the data forms (including individual fishing locations) is private and is not to be shared with anyone outside of CRFS. Data is collected under the guidelines of the Privacy Act, see Angler Form section.

Handling Complaints

Sometimes members of the public have stories of how they were mistreated by a Wildlife Officer, or other complaints regarding CDFW policies, regulations, etc. Pass this information on to your Lead. It is important to not take sides. We are biologists, not policy makers. You may suggest to the individual that they contact CDFW with their concerns and/or write a letter to the California Fish and Game Commission.

The Sampler should be aware of the current regulations; however the Sampler is not required to know the complex reasons why the regulations are as such. Suffice it to say that the fisheries managers are doing all they can to provide fishing opportunity while allowing fish populations to be healthy for future generations. There is tremendous pressure on managers to allow angling and to justify every restriction.

The Sampler may facilitate the outreach process by informing the angler that there is a process, explaining the limited role of the Sampler, providing contact information, explaining a regulation or offering printed materials. Often the Sampler will not have time to get into a conversation and should politely explain that they are very busy with data collection right now.

Q. How do I reassure impatient or disgruntled anglers?

A. The Sampler can say; "Every angler who takes the time to participate gets us all closer to the truth." or "I'm sampling here now to collect the most accurate information I can."

Printed Materials

Listed are a number of printed materials available to the Sampler to hand out to anglers. Often a handout will be an incentive for anglers to participate. Be sure to have copies of the current regulations and handouts. You may be asked to supply businesses with printed information.

Fisheries Management in a Nutshell – Explains the shared resource and the specific kinds of data analysis that are used to manage the fishery; two sheets, double sided, folded in half. Highlights:

- Fish are a common property resource
- Fishery managers are directed by elected officials
- The Magnuson Act requires fishery management plans
- Legislation directs and organizes managers and officials
- Management conservation prevents overfishing
- Conservation is usually required for optimum yield
- Conservation is controlled by regulations
- Optimum yield is determined by stock assessment
- Stock assessment is based on catch, effort and biology
- Catch and effort are estimated from the fishery
- Fishery biology is studied within the fishery
- Growth, age and death of fish populations are studied
- Allowable harvest may be allocated among fishing groups

- Fishing groups give advice to managers and officials
- Steps anglers can take to get involved

Who is Responsible for Managing our Marine Fish? – Explains who is involved in the management process and lists contacts; one sheet, double sided, folded in half. Highlights:

- Who are the agencies involved?
- Who will listen to me?
- How do I contact these fishery management agencies?

CDFW Ocean Fishing Regulations – Printed booklet, half letter size, double sided.

Bring That Rockfish Down – Printed brochure through SeaGrant explains barotraumas and how to release rockfish properly

Canary/Vermilion/Yelloweye Flier – Printed color flier with illustrations of canary, vermilion, and yelloweye rockfishes. Also lists key characteristic for species identification.

California Fishing Passport – Printed booklet, half letter size, double sided.

CDFW Marine Region Card – Business card with basic Marine Region contact information and web site address.

CDFW CalTIP – Business card with contact information for CalTIP; telephone number for anonymous reporting of violations.

RecFIN Card – Business card with basic contact information and web site address.

Electronic Materials

Printed materials are available in electronic form on the CDFW (<http://www.wildlife.ca.gov/Fishing/>) and RecFIN (www.recfin.org) sites on the internet.

A number of other interesting resources are available on these web sites, including fish identification, access to the data, estimates, contact information, links to other agencies, and the ability to provide public feedback to the Councils.

Your Safety

Your safety is more important than data collection. Do not endanger yourself; stay aware, use common sense and be prepared. Above all, notify your Lead immediately if you have been hurt so the proper paperwork may be started; a Worker's Compensation claim may be required. Your Lead will provide you with a list of contact numbers for non-emergency local law enforcement.

Driving to the Site

During winter months it is often necessary to travel in the dark, during bad weather or poor visibility. Aside from the obvious potential danger from driving in congested traffic or poor conditions, Samplers should also be alert to animals or people crossing the roadway, as well as other objects in the roadway. Watch out for icy patches, rockslides and spills on the pavement. Decreased reaction time due to limited visibility should be taken into account and Samplers should be prepared in case of a sudden need to stop. Proper maintenance of your vehicle is your responsibility. Carry appropriate items when sampling at remote sites (i.e., water, food, etc.).

Safety at the 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 is abnormal 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.**

If the situation is hostile or unsafe, leave. Dial 911 in emergencies.

1. Know the locations of pay phones or carry a cell phone if you have one. Updated information about this can be found in your 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.
2. 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.
3. Pay attention to the people in the vicinity, and watch for suspicious activity. If the situation becomes dangerous, be prepared to leave the site.
4. Be aware of suspicious activity. Approach restrooms with caution. Use caution when walking a path through bushes or near other hiding places. Wait in the parking lot for anglers, if possible. Keep your car doors locked.
5. Make acquaintances with the local Harbor Patrol or Police Departments. Local enforcement officers have certain areas they patrol, so you will tend to see the same people at the same sites.
6. If you are working on a PC boat, jetty or pier, beware of inexperienced anglers who don't pay attention when overhead casting. Sinkers, hooks and jigs can all be very dangerous when flying through the air.

7. Use care when climbing into a 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.
8. Think twice and don gloves before reaching into a bucket, live well, or other container filled with unknown fish.
9. Use caution when walking on rocks or cliffs at beach and bank sites. Uneven terrain can cause you to slip and fall, or twist an 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.
10. Park in areas away from trailers. It is all too common for cars to be struck by trailers when backing down to the ramp.

Criminal Activity

Because you will be spending so much time in the field you will run into an extreme variety of situations. Occasionally these situations may involve criminal activity. Our protocol regarding confidentiality does not pertain to criminal acts. If you witness a crime you should call 911 immediately. Be prepared to describe a person or make of vehicle. If possible, record the vehicle's license plate and/or CF vessel ID number. If you need to leave the site to safely make the call, do so.

If at any time you are unsure of how to handle a situation, contact your Lead. Notify your Lead as soon as possible about any situation that caused you to call 911. This is important since another Sampler may be assigned to work at the same site soon.

Uncooperative and Abusive Anglers

Some anglers will not want to be intercepted for one reason or another. Don't take it personally; it is their right to refuse. Be polite, and try your best to get them to change their mind. If an angler refuses, you may cite regulation changes based on CRFS data that have increased fishing opportunity in your area.

Some anglers may be hostile toward you. You should be aware of this potential when interviewing. If this should occur, stop the interview process and walk away. If you are personally threatened either verbally or with physical harm, LEAVE IMMEDIATELY. We have had very few problems with attacks, but they have occurred. All cases to date were not serious and, in most cases, were caused as a result of anger at fishing regulations. When you are safe; record all appropriate information, i.e. date, time, physical descriptions and what happened to report it accurately. If you are threatened with harm or are harmed in any way, CALL 911 first. Contact your Lead as soon as possible and report all the details. Though these situations are extremely rare, always ask yourself if the scene is safe before proceeding.

Report Accidents

Document all accidents in detail when they happen. Notify your Lead immediately following the accident. Complications may occur from what appears to be a minor accident. Worker's Compensation will cover costs of medical treatments for on the job injuries and they need to be reported when they happen. Contact your Supervisor for more information on Workmen's Compensation claims. If you seek medical treatment for a work-related injury, be sure to let your doctor know the accident was work related.

Safety on CPFV Boats

Samplers should be prepared for bad weather and rough surface conditions when sampling on board vessels. The weather can be vastly different out on the ocean than at the dock and it is better to shed clothing than to wish you had dressed warmer or had packed rain gear.

Crowded, slippery, rocking, sometimes frozen walkways leading onto the boats are a hazard. Always be aware of these situations before attempting to board the boat. Once aboard, familiarize yourself as to where life jackets and rafts are located.

Out on the ocean, swells, spray and chop can make footing difficult. Samplers should keep an eye on incoming swells as much as possible to avoid being surprised by unexpectedly large waves. Keeping within grasp of something to hold onto or sitting down while observing are strategies that make sampling safer. Be cautious of leaning against deck railings, especially at the deck gate since the railings may be weak or the gate may not be secure.

On rocking boats there is potential danger from swinging hooks and weights on fishing rods. Keep a safe distance from fishing action whenever possible and be alert to situations where these problems may occur.

Handling fish should be done in an area with enough space to work comfortably without having to worry about other people or objects unexpectedly entering that space. Keep in mind that the area where the fish are laid out becomes slippery. Kneepads may be worn while measuring the fish.

Lifting Fish

Lifting individual large fish and heavy bags of fish needs to be approached with proper lifting procedures to avoid back strain. Safe lifting is a function of the weight lifted and the lifting technique used. Here are some guidelines for safe lifting that will help you avoid a back injury.

1. Plan your lift! Know how much the load weighs and where you are going to take it!
2. Tighten your stomach muscles while lifting.
3. Lift using your leg muscles, not your back muscles.
4. Do not twist. Move your feet.

5. Try to maintain the natural curve of your spine.
6. Try to store loads between knee and shoulder level, so lifting will be easier.
7. Try to balance the contents of any load evenly.
8. If possible, use handles and grips.
9. If a load is heavy or awkward, use a mechanical aid, ask for help, or break the load down into smaller and lighter loads.
10. Keep the load close to your body. This will significantly reduce the force on your back.
11. Maintain good balance by keeping your feet shoulder width apart.
12. Do not jerk the load up. Lift smoothly.
13. Remember that lowering is preferable to lifting, pulling is preferable to carrying, and pushing is preferable to pulling.
14. Stay in good physical condition.

Handling Fish

You should be aware that many fish pose a hazard and that precaution should be taken when handling them. Please take care not to drop fish—use two hands to lift and carry large fish whenever possible. Remember, these fish are bound for someone's dinner table; treat them with respect, and don't lose them.

Rockfish (Sebastes spp.)

Most, if not all, 67 species of rockfish have some toxin in their spines, so use care when handling them. If a spine breaks your skin and the pain is more than minor, damp heat or meat tenderizer will usually take care of the problem. While rockfish are not nearly as dangerous as California scorpionfish, you should watch for reactions, especially if there are subsequent injuries because people can develop a reaction to the rockfish toxin if they are injured a number of times.



California Scorpionfish

This pretty fish has a serious toxin in its dorsal, anal and pelvic fin spines. At a minimum, a poke from a spine is very painful, but it can also be life-threatening for some people. These fish should only be handled with the utmost care. Pliers are good to use rather than hands so that there is minimal chance of being stuck by one of the spines. On many PC 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; small specimens can be just as dangerous.



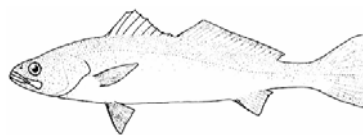
Remedies:

- 1) For a serious situation, get to the nearest emergency room because anaphylactic shock can occur from the toxin.
- 2) For a minor situation, soak the injured body part in water that is 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 because the toxin is a protein, and papaya enzymes (and other tenderizers) break down protein.

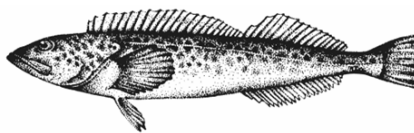
White Seabass

This fish has many sharp teeth, so steer clear of the mouth when handling.



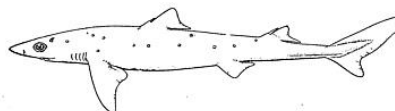
Lingcod

Lingcod have large, sharp teeth and sharp gill rakers. NEVER pick up this fish by inserting your hand under the gill cover. Instead, pick up the fish by inserting the thumb and forefinger of one hand into the eye sockets and use the other hand to lift the fish by the tail.



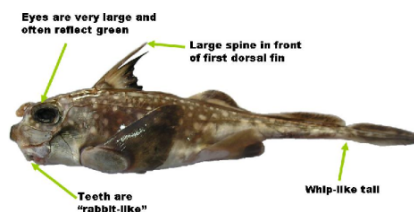
Spiny Dogfish

Dogfish should be handled with care, as the large spines at the leading edge of each dorsal fin are venomous and can inflict painful wounds.



Ratfish

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



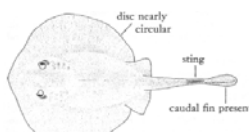
Skates and Rays



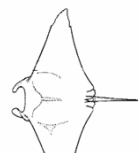
electric ray



skate



stingray



batray

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

Skates have sharp tail spines that can be dangerous.

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

Sharks can be dangerous, even when they appear to be dead. There are many reports of anglers being bitten by a shark lying on the deck that was thought to have been dead for hours. Use caution when measuring these fish.

Handling Wild Birds

During the course of this job, one will occasionally run across anglers who have gotten their fishing lines involved with wild birds. This is a most unfortunate event for anglers, but can be dangerous or fatal to the bird, depending on the circumstances. While birds are inherently fragile due to the wings and lightweight skeleton, they can be dangerous nonetheless. These situations are best dealt with by the PC crew or local wildlife or bird rescue organizations.

Pinnipeds

Occasionally while in the field, you will encounter beached or stranded pinnipeds (California sea lions, harbor seals, elephant seals, etc.). You may notice these animals yourself, or they may be brought to your attention by an individual concerned with the animal's welfare.

Pinnipeds (California sea lions, harbor seals, elephant seals, etc.) are wild animals and should be given a wide berth—beached/stranded individuals may be injured or sick, and may be more prone to defend themselves against a well-wisher's attempts to help them. Under no circumstances are Samplers to attempt to assist or rescue a stranded pinniped—this falls outside the scope of the Sampler's job duties, and may put the Sampler at risk of serious injury. If a Sampler comes upon a stranded pinniped, contact the local wildlife care center/marine mammal rescue center. Your Lead will provide you with the appropriate contact information.

Pinnipeds frequently interact with anglers aboard CPFVs—taking hooked fish from an angler's line, stealing bait, or becoming entangled in an angler's line. If a pinniped is hooked or becomes entangled in monofilament while you are sampling aboard a CPFV, do not attempt to assist the animal—this is the crew's job. Attempting to free a hooked or entangled pinniped could result in injury to the Sampler. While pinnipeds are protected under the federal Marine Mammal Protection Act (MMPA), NOAA Fisheries has authorized several methods to deter pinnipeds from interfering with fishing operations—see CPFV SURVEY PROCEDURES.

General On-site Problems

A number of problems may arise during the course of your data collection effort. Some of the more common instances and ways of handling them are described below. Specific problems will be directed to your Lead. If you have a serious problem while conducting an assignment, let the Lead know the same day. Email or phone message is fine. Examples of problems include: illness,

broken/lost/stolen equipment, no effort at PC sites (rescheduling), major events, site closures, emergencies, etc.

Rain/Bad Weather

In general, the rule to be followed is that, if people can fish, sampling should take place. Each Sampler will be assigned to a specific assignment for a specific date. If, on the day scheduled for sampling, 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 Lead and this manual.

In some cases, lack of effort at a particular site entails moving to the next site in a cluster of sites. In other cases the assignment will be completed early if there is zero effort. In other cases you will have a second assignment that may be at a location and in a fishing mode where effort is ongoing or be provided with another work activity. The next option is to do other duties assigned by your Lead such as edit forms, answer emails, etc.

Refused Entry to Site

In some cases you may be refused entry to a fishing site. If, after explaining the project, admittance cannot be obtained, you should proceed with alternative site selection procedures for the assigned mode, move to a second assignment or reassign the assignment. Your Lead must be notified about your refused entry/access. If you are refused access to a CPFV, notify your Lead immediately, and refer to the CPFV Refusals section of this manual.

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 PC boats, are not considered tournaments. Tournaments are included in this survey. If a site turns out to be the official station for a tournament, the Sampler will be able to indicate this by coding the forms properly.

Parking

Parking can be difficult at some of the sites, especially during the busy summer months. Use your good judgment about parking in a non-recognized parking space. Your Lead has included notes about special situations regarding parking in your site descriptions. Your Lead may provide you with a CDFW placard on your dashboard to identify your vehicle. This should be displayed when parking at a site. The placard may prevent ticketing. Please attempt to park legally. While you may sometimes need to park in a space reserved for boat trailers, or in a loading zone (as a last resort), NEVER park in a handicapped, fire hydrant, tow-away or red zone. CDFW does not pay parking tickets or towing. If you need to pay for parking, get a receipt and list on your expense claim.

When parking your car at a launch ramp, be sure you give the anglers enough room to circle with their vehicles and trailers.

Pay Parking Lots

Many access points to beach areas have pay parking lots. When the parking lot has an attendant, Samplers can almost always obtain free entrance, provided they are in uniform and have their CDFW placard with them on the dashboard. If the parking lot does not have an attendant, you may need to pay to gain entrance. Occasionally, law enforcement or city workers may be able to let you into the parking lot without paying. If you do have to pay to get in to the parking lot, you will most likely get a receipt, which needs to be submitted when you send in your travel claim. If you don't receive a receipt, make a note of this on your travel claim (e.g., "Receipt not available"). Remember it is always in the best interest of the program if you can find an alternative (free) place to park your car.

Parking Tickets

Occasionally, you may be the unlucky recipient of a parking ticket while sampling. If you get a parking ticket, contact your Lead as soon as possible, and he or she will attempt to dispute it with enforcement. You may not have to pay the ticket if you parked in a pre-arranged area. This, however, is not guaranteed. CDFW does not pay parking tickets or for towing.

Equipment & Supplies

At the beginning of employment, a vast array of gear will be issued to the Sampler. An itemized list of all gear will be signed by both the Lead and Sampler at the time of check-out and check-in. Since the value of this gear can exceed \$1000, it is important that all gear is returned upon the end of employment. Careful documentation will also ensure that Samplers aren't charged for gear that they weren't issued in the first place.

Do not wait until the last minute to notify your Lead when you are short on forms or equipment. Give them a call or email as soon as you notice you need something. It may take time to get to you in the mail; they may need to make more copies or order replacements first.

Due to the rigorous nature of CRFS data collection, it is expected that normal wearing of gear will occur and may require periodic replacement (of scales, for example). Gear damaged during normal work duties will be replaced free of charge to the Sampler, once the damaged unit is returned to the Lead. Gear that is damaged or lost outside of normal working duties, or due to Sampler negligence, may result in reduction in hours or termination. Sampler negligence includes leaving the measuring board on a pier, backing over it with your vehicle or leaving a scale on a CPFV.

All items must be returned clean and ready to be used again at the end of employment.

Supply List

1. Site information: map or directions to the site, site codes and alternate sites.
2. Schedule of assignments and site clusters
3. Forms for assigned mode(s)
4. Assignment Summary Forms
5. Clipboard & Pencils
6. Measuring board & insert
7. tape measure
8. 25, 12.5, 6, & 1 kg. scales
9. GPS receiver and extra batteries
10. CRFS Block/Box maps
11. Several copies of the Privacy Act Statement
12. CRFS ID Badge
13. Sampler Manual and interviewing reference materials
14. Field guide/keys appropriate to your area for fish ID.
15. Other administrative forms and supplies
16. Current fishing regulation booklets
17. Binoculars
18. CRFS/RecFIN brochure
19. Bucket and liner

Region-Specific Supplies

19. Salmon
 - a. Cutting board
 - b. Bags and collection tags for heads
 - c. Fillet knife
 - d. Rolling cooler
20. White seabass
 - a. Hand-held scanner with holster
 - b. Hand tally counter
 - c. Bags and collection tags for heads
 - d. Fillet knife
21. Lobster or Crab
 - a. Caliper
 - b. Latex grip gloves
 - c. Tongs

When sampling, you must have your fish ID books/sheets, measuring board, CRFS maps, and all scales with you at all times. You must also have your manual with you; it is acceptable to have it in your car. If you are lacking these elements when a field check is performed, you may be sent home and the assignment rescheduled.

The Sampler should always plan ahead and have a sufficient number of forms on hand. For MMPR2 assignments, a Sampler should never take less than 50 Angler forms. In the heavier fishing seasons, 100 may not be enough with

second assignments. Make arrangements to get more forms well in advance of getting low or running out.

Coding Forms

All forms should be completed on site. Do not leave the site with the intention of filling them out later. Complete the forms while your memory is fresh.

<i>Form</i>	<i>Survey Mode</i>	<i>Data</i>
Assignment Summary Form	ALL, except PCS	Effort & Form counts
Angler Form	MM BB PR2	Catch and Effort
Onboard Angler	PCO	Angler info
Onboard Catch/Discard	PCO	Catch
Onboard Location	PCO	Catch and location
PC Dockside – Salmon	PCS	Catch and Effort
PC Dockside – Non-Salmon	PCN	Catch and Effort
PC Effort Check	ALL	Effort
PR1 Form	PR1	Catch and Effort

Editing and Mailing forms

All forms will be reviewed for quality by the Sampler before passing them on to the Lead. Always check the manual first for issues; you are responsible for following the correct procedures form-by-form and item-by-item.

The Lead will review the forms a second time before passing them on to data entry. Do not wait until the data is turned in to find out if you made a good editing choice or not. Your Lead or their assistant can also help you with your field questions, questions on the forms, and supply needs.

The data entry team will review the forms a third time before distribution to entry technicians for entry into computer files. Since each step takes time, it is very important the forms keep moving through the system; therefore editing is an ongoing task for the Sampler. The entry and initial processing programs prevent further detectable errors from getting into the database. Errors found on the forms at data entry are logged and reported to you and your Lead and compared with performance standards among all Samplers. Poor quality editing will result in remedial action by your Lead.

Editing

Almost all of your editing should be done in the field. Write above, don't write over or erase; your changes should still be legible.

If possible, editing should be spaced throughout the day, with minimal editing later on. Editing in this manner is not only cost effective, but also reduces the chance for errors, since you will be editing while the events of the day are still fresh in your mind. If for some reason you are unable to edit your paperwork the same day, you should take the forms with you the next sampling day, and edit during slack time. Under no circumstances should you “save up” all your editing until the last minute.

If it is necessary for you to finish your editing at home, your Lead expects you to make reasonable claims on your Assignment Summary Form regarding your editing time. While you shouldn't be claiming 1 or 2 hours of editing time per sampling day, you shouldn't necessarily be claiming zero time either.

Time spent editing is just as important as time spent collecting data. Errors or omissions found after forms are submitted require extra time to investigate and are often difficult to remedy. They also aggravate your Lead, data entry personnel, and the data analyst, and may imply carelessness and lack of effort on the part of the Sampler.

Before mailing, make sure you have edited your forms completely. The forms should all be in order by date, assignment number, and form number. Make sure that all 0's, 8's, and 9's have been entered where appropriate, and that all state and/or county codes are filled in.

Mailing

All forms should be mailed to your Lead on Monday, or Tuesday if Monday is a holiday. Leads will check the postmark date to see if data is mailed timely. This is especially critical during the last week of the month. The forms must be edited and re-mailed to Data Entry by the Lead by the end of the week. Do not hold up forms for questions; instead, write a note on a Post-it and mail them in. Leave messages on the voicemail if need be, explaining the problems. Mail forms in a strong manila envelope. Do not fold forms. Tape the envelope. Mail forms by USPS first class post. Do not mail your forms low class or book rate. Include the receipt with your TEC.

Place your Assignment Summary Form on top of the corresponding data sheets, and keep all the forms together, sorted by assignment date. Do not separate the forms by site (by turning alternate sites forms upside down), since this slows down your Lead's editing procedure. For the end of the month, it is critical that these forms be mailed to your Lead as soon as you are finished with them so that the data can be processed into monthly files for analysis and catch estimation.

Before mailing please make sure to:

1. Edit forms for legibility and accuracy
2. Put in order by date, assignment number, form number, page number
3. Take off paper clips, rubber bands
4. Tape the package closed
5. Check that you have your Lead's correct address
6. Ensure there is enough postage on the package for delivery

General Coding and Editing Tips

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 Lead. The time spent in editing is just as

important as time spent interviewing anglers. Errors found later require more time and money to fix!

1. All forms, counts and boat records must have a unique time, which must be sequential.
2. Make notes on the form to explain unusual situations.
3. If there is a group catch on the angler form: the form with the fish (the catch leader's form) can be before, between or after the other angler's forms (catch follower's forms).
4. If the angler you've interviewed has provided you with their city of residence and neither of you knows the county or zip, leave it blank. Fill it in later when you have time to look it up or your Lead can determine the correct county and enter it. Don't guess and enter a wrong code!
5. 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.
6. It's OK (and sometimes very helpful) to leave your field notes on the forms - this is not a problem during data entry.
7. Rewriting or transcribing is called for when the form becomes illegible due to poor writing or lots of fish slime and scales. Transcribing the data to a new form is okay, but please retain the original form when submitting the data to your Lead. Do not use white-out or erase the original.
8. Put your forms in the order that the interviews were done.
9. Make sure the angler forms and the Assignment Summary Form information matches (date, site etc.) the forms used to sample.
10. On the Angler Form: Entries should be right justified within the boxes for the entry. Key questions left inappropriately blank will result in 'refused' status.
11. On the back of the Angler Form: Multiple entries on the angler form 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.

Specific Editing Checks

Specific editing checks address some of the most common errors found on most forms during Lead editing and data entry editing. You will need to become familiar with the forms before fully understanding these items.

1. All forms from one assignment must have the same assignment number and assignment ID.
2. All forms from one assignment must have same and accurate date.
3. All angler forms or PR1 boats from one day must have a different time.
4. 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.
5. Gear other than rod and reel may be so uncommon that the "1" or 'H' may get used without thinking. Be sure that you are not coding from memory.
6. Reported fish coded to species level for groups like rockfish (that are hard to identify) are questionable, especially if the angler has none of those fish in his bag. Make a notation on these.
7. Look for missing and incorrect fish codes and check all the lengths and weights. You should be able to pick out odd ones, like fish under 100 mm or weights over 10 kg. Leave notes on the form explaining the situation.
8. Do not erase records if there is room to rewrite them. Line out records but leave legible so that they may be used as a reference for your rewrite or change. Transcription errors may occur.

Assignment Checks by Form Type

1. (ASF) Each of the sites visited correctly matches the sites and order in the site list, that all the active sites were sampled, and that the correct target mode was sampled for each site.
2. (ASF) The appropriate disposition codes are used for cluster roving, low effort, rescheduled, etc. Also make sure that each rescheduled assignment has two ASFs; one for the originally scheduled day, and one for the day of completion.
3. (ASF) Pressure and stop count (as coded) match or are within 10% of predicted pressure and stop count. If not, do not change your observed numbers, but note in the comments.
4. (ASF) Hours on site agree with the Start and Stop times.
5. (ASF) Make sure that the PC site assigned on the schedule is listed on the ASF (if a different site is actually sampled, that is).
6. (ASF) Make sure total effort fields are left blank for PC and PR1 modes; they should not be left blank for clusters. Make sure that for clusters the total effort fields coded appropriately (N or /) if no data.

7. (ASF) PR1: Check that off-site arrival and departure times are present (if appropriate) and that off-site pressure makes sense when compared to the off-site start and stop times coded on Page 1 of the PR1.
8. (PC Onboard Location) Make sure the header information is completely filled out and matches all other PC forms of an assignment. OSP Port Codes are never left blank! Check that the GFMT is correct (or does not conflict) with the stop location coordinates. FType must agree with the coordinates given (i.e., two different sets of coordinates can't be an anchored stop). Make sure that the fish counts are clear and legible for entry staff, and that each field with a tally mark also has a sum total recorded.
9. (PC Onboard Angler) The Catch Recorded column must be filled out for each angler interviewed. Remember: "DK" means that the interview is unusable. Verify that no refusals or language barriers have received a sample #.
10. (ANG Form) MMPR2: All appropriate x-effort boxes are filled in for the site sampled and that the interview times do not conflict with the arrival, start, stop and departure times for that site.
11. (ANG Form) PR2: All boat follower interviews have appropriate coding for B1 and L1 (depending on whether fishing location was asked of boat leader). (ANG) F4 and F5 are coded appropriately for boat lead and boat follower interviews.
12. (ANG Form) Type 3 weights are coded to second decimal.
13. (ANG Form) Check that type 2 fish are not being grouped.
14. (ANG Form) Check that interviews with missing or refused data are status 2 (and vice versa).
15. (ANG Form) Check that E4 (additional shore mode hours) and B3 (trailer in count area?) are coded correctly, depending on type of form (such as kayak).
16. (ANG Form) Check that depths are not separated by a dash in L5 and locations are coded correctly for entry. Make sure L6 is not blank.
17. (PR1) Check that off-site start and stop counts and/or off-site missed boats are appropriately present or not present depending on the PR1 site sampled.
18. (PR1) Check that missed boats are coded on each boat row. NOT on rows with just catch and bio data.
19. (PR1) Check that all pages are present and numbered correctly.
20. (PR1) Check that there are no missing gears and that catch location coordinates are coded in the correct format.

21. (PR1) Check that all fish of a species are listed consecutively (if more than 5 measurements) and, if not, that there is clear indication of where the rest of the measurements are so that they can be "entered" consecutively.
22. (PR1) Make sure fish sex is in correct position (after length). Do not circle fish sex code

SAMPLING ASSIGNMENT MANAGEMENT

Sampling assignments are selected with one of the target survey modes in mind (MMPR2, BB, PC, or PR1). Your sampling should be directed in the assigned mode; however, when fishing is slow in the assigned mode, you may sample in other modes (PC and BB only) at the site under instruction from your Lead and this manual. In general, sampling is conducted all day, but time spent sampling may vary based on the type of assignment and the amount of effort at your site(s). The fairly complex structure of the sampling assignments among modes of fishing is primarily due to differences in the surveys. Some procedures are there to minimize potential biases and optimize sampling costs.

Survey	Assignment Description
MMPR2	Sample a cluster of MM and/or secondary PR fishing sites for counts of boats and anglers and angler catch. At some sites, both modes may be present
BB	Sample a cluster of beach and bank fishing sites for angler catch.
PC	Sample one or more party and charter boats at one or more sites dockside. For onboard sampling, one boat is generally sampled that day.
PR1	Sample one primary PR site for effort and catch for the day.

Be aware that fishing effort may change for several reasons, such as weather, increasing winds, tides (especially in bays), and for fisheries with catch limits, where anglers may limit out and finish early when fishing is good. When effort is low it may seem that you are not being productive; however, sampling is used to determine numbers of anglers (effort), including when effort is low or absent.

Site Assignments

All fishing sites within a state and county are assigned a unique site code. County and site code numbers, or OSP port codes, will be given to you with the site assignments for the month of sampling. The correct county and site codes should appear on the Assignment Summary Form and sample forms obtained during sampling. This list may change monthly. If you notice fishing at an unlisted site, notify your Lead.

Example Site List

DISTRICT	MONTH	CNTY	NAME	SITE	AMODE	CLUS	SUBSITE	TMODE	ACTIVE
1	OCT	73	Fiesta Island	9	BB	SDG2			
1	OCT	37	Marina Del Rey Launch Ramp	10	MMPR2	LOS6	B	PR2	NO
1	OCT	37	Marina Del Rey Jetties	10	MMPR2	LOS6	D	MM	
1	OCT	37	Marina Del Rey Sportfishing	10	PC				
1	OCT	37	Marina Del Rey Launch Ramp	10	PR1				
1	OCT	37	Santa Monica Pier	12	MMPR2	LOS8	B	MM	
1	OCT	37	Long Beach Sportfishing	13	PC				
1	OCT	37	22nd Street Sportfishing	14	PC				

Your Lead will provide you with a list of sites and maps with directions to the sites for which you will be responsible. If you are unable to work on the date of

an assignment, contact your Lead immediately or follow the instructions your Lead has provided in this case. Each assignment is also provided with a unique assignment ID code (ASSN ID#) for tracking purposes.

Assignment Selection

Your assignments are determined by systematic or random selection of fishing sites, or days by mode within the geographic districts. Selection will be based on historical fishing effort patterns for PC mode and on systematic sampling of sites or clusters of sites for the other fishing modes. Each site has an estimate of past effort (fishing pressure) for each mode based on Sampler data collection of angler and boat counts. Use of average historical effort for future sampling can take into account the anticipated changes in fishing effort for each month based on regulations, etc. and kind of day (KOD) which is either weekends & holidays or weekdays (Monday-Friday).

Major CRFS Sample Units and Sizes

Survey Mode	Sample Unit	Intercept Sample Rate
PC	Boats	<5% and varies by month
PR1	Site-Days	20% or 6-8 days per month
MMPR2	Cluster-Days	10% or 3 days per month fixed
BB	Clusters	<3% or < 1 day per month

The Lead generates a number of sampling assignments for each major mode of fishing for each month to make the schedule. The Lead may utilize historical productivity data such as average interviews per assignment or current budget status to adjust the number of assignments desired. Your Lead maintains or accesses the effort information supplied on the Assignment Summary Form. Also, periodic site visits, word of mouth, and "fish reports" from the newspaper, CPFV logbooks and internet may be used. Because some sites are clustered and chosen based on effort, it's very important that the counts and pressure information supplied on your Assignment Summary Form is accurate.

Assignment Duration

There are several factors that 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 (discussed below) for using alternate sites in some fishing modes, sampling in other fishing modes present at the site or moving to a second assignment when fishing effort is low.

It is important to notify your Lead about changing conditions at the sites that may affect fishing pressure, such as construction, special events or washed out roads. Fluctuations in angling pressure at one site may also cause changes at adjacent sites. Please be familiar with the rules for these on-site procedures presented in this manual or discuss it with your Lead if you do not understand them. Following these procedures is necessary to maintain the statistical validity of our sample.

The assigned mode will determine how the site or sites are sampled, which forms to use, and also how much time you will be working. There are specific instructions for each survey mode for handing the site assignments, rescheduling and on-site procedures.

Assigned Mode	Minimum Sample Time	Sample Time Duration Guideline	Additional Instructions
PC	Duration of trip 2 hours dockside sampling	Sample anglers onboard or dockside from CPFV	Single site sample if onboard. Multiple boats/sites may be sampled if Sampler assigned to dockside PC assignment
PR1	2 hours unless effort is expected to develop	Arrive before 1st boat returns, leave after last boat returns or the sun sets	Single site sample, no roving
MMPR2 cluster	1 hour per site if anglers present 2 hours per cluster	1 angler interview per hour	Multiple site sample, all sites in cluster must be sampled in the order assigned. Sampler may return to any site(s) after all sites have been sampled at least once in the assigned order
BB cluster	1 hour per site if anglers present 2 hours per cluster	1 angler interview per hour	Multiple site sample, all sites in cluster must be sampled. Sampler may return to any site(s) after all sites have been sampled at least once

Sample Selection

Sampling of days is uniform across the month by week and day type with random day selection within weeks. Sampling is spread out systematically over the weeks in the month to insure that sampling assignments taken throughout the month will be temporally consistent and cover changing effort. Weekends and holidays are sampled separately from weekdays at different sample rates.

Assignment Goals

The Sampler's daily goal is to obtain as many intercepts for effort and catch as possible in a reasonable amount of time in the assigned mode. Samplers may be given more than one assignment per day for low angler effort clusters.

Assignment Schedules

Sampler schedules are produced for an entire month at a time. Your Lead will work with you to schedule your assignments. You will receive your assignment schedule from your Lead approximately one week before the 1st of the following month. Sample assignments are produced in a tabular format, but may be copied into a calendar format. The columns in the table will be

described by your Lead and describe the fishing mode(s), date and locations(s) where you will sample.

The Sampler will be responsible for deciding the best time of day to sample (except for PR1 sampling, where the goal is to arrive on site before the first boat returns, and depart after the last boat returns, or sunset, whichever comes first). It is important to maintain variability when sampling and not fall into a predictable pattern of sampling at the same time of day. While you generally need to be sampling during the peak fishing hours, it is also important to sample earlier or later in the day. This type of sampling will minimize time of day bias in the data you collect. If we determine that randomness in sampling times is not being maintained, specific sample times will be assigned.

Example Assignment Schedule

District	DOW	KOD	Mon	Day	Year	Cnty	Site	Mode	AssnID
4	MON	WD	Nov	1	2013	1	BER	PR1	1104001
4	MON	WD	Nov	1	2013	75	SFO2K	MMPR2	1104002
4	WED	WD	Nov	3	2013	81	PR1	PR1	1104003
4	THR	WD	Nov	4	2013	81	400	PC	1104004
4	THR	WD	Nov	4	2013	81	SFO1D	MMPR2	1104005
4	FRI	WD	Nov	5	2013	41	SAU	PR1	1104006
4	FRI	WD	Nov	5	2013	75	SFO3	BB	1104007
4	FRI	WD	Nov	5	2013	1	SFO5A	MMPR2	1104008
4	SAT	WE	Nov	6	2013	41	400	PC	1104009

Rescheduling/Cancellation

You may not reschedule or cancel an assignment without Lead or Supervisor approval. There is more flexibility in the PC and BB assignments than in the PR1 and MMPR2, with the PR1 being the most restrictive, especially in salmon fisheries. If you cannot make a day, you are ill, or have an emergency, contact your Lead or Supervisor immediately.

It is crucial for statistical methods that Samplers try to complete all assignments as scheduled. If you miss an assignment, it needs to be rescheduled. To do this, the Lead may move weekday assignments to the next nearest week day and weekend assignments to another weekend or holiday if an open date is available. We cannot carry over missed assignments from one month to another, but the week can be changed. If you miss an assignment, notify your Lead. You will code it on an ASF as reassigned (2). You may not cancel an assignment without permission from your Lead or Supervisor.

Exceptions for not rescheduling a weekend assignment to another weekend day are:

1. There are no weekend days left; the Sampler has a full schedule for the rest of the month.
2. All boats full the weekend of the assignment and there are no open weekends left in the month (contact your Lead).

In these cases, which usually occur near the end of the month, the Lead may move the weekend assignment to either a Friday or Monday, or the nearest weekday to the original assignment.

Sampling Anglers in Modes Other than Assigned Mode

You may also sample anglers in PC mode while sampling another mode. Do not sample anglers in the PC mode if you are having success in the assigned mode (unless your Lead has directed you to get interviews in that mode during that assignment).

PC anglers may be sampled at any time and are not given a special fishery code. Use the the Dockside forms for the PC mode. Do not waste time sampling PC anglers if there are anglers in your assigned mode to be interviewed.

Second Assignment

If you have been given a second assignment by your Lead, you may begin working on it after terminating your first assignment. The second assignment would have a new primary site or cluster and possibly different mode assigned. If it is not possible to work both assignments on the same day, the Sampler should follow the instructions of their Lead to reschedule the un-worked assignment. You should record the un-worked assignment using an Assignment Summary Form to show it as reassigned.

If Only a Few Anglers Present (BB and MM Clusters only)

The general cluster sampling guideline is: if it is estimated that less than one interview per hour in the assigned mode will be obtained at the assigned site, you may do one of the alternate options below. Use your own judgment to decide if conditions warrant alternate options. If so, it is not necessary to remain on-site to see if effort develops.

If you have been assigned a BB or MM cluster, you may canvass the other sites in the cluster for up to 2 hours in search of anglers in the assigned mode. You may return to previously visited sites after all sites in the cluster have been visited. You may perform an incomplete interview for MM and BB anglers who are at least 50% done. If, when you return to the site, the same angler is there, you may update the interview.

The Sampler should canvass anglers as to how long they intend to fish before moving to the next site. Interview those anglers who are 50% complete with their trip. Return to the site, if possible, if anglers are still present when you depart to go to the next site in the cluster. Samplers should continue to rove from site to site in the cluster until the day's fishing activity has ceased or the

Sampler has worked to the limit of work hours. Exceptions would be an unsafe site, darkness, or extreme weather conditions.

If No Anglers Present

After determining there are no anglers at the assigned site, go to the next nearest site in the cluster or the nearest PC site. If no anglers are present at the next site, go to the next nearest site. You may go to unlimited PC sites in PC mode only. In BB mode, you are limited to the sites in the assigned BB cluster. You may cross county lines to do this. Do not cross CRFS District boundaries. You have two hours to visit these other sites to search for anglers or to see if fishing develops. If no anglers are found in the assigned mode in the first two hours of sampling, end the assignment. Your Lead will advise you if you should reassign this assignment or if another assignment is available. While waiting for effort to develop or anglers to complete their trip at your assigned mode and site, you may sample in another mode (PC or BB only) if the other mode exists at the site.

Pressure Checks

Occasionally you may have a “site check” or “pressure check” as an assignment on your schedule. This type of assignment is for good weather only. Your Lead will usually assign only one mode to check, which you will record on your Assignment Summary Form as disposition “0” (pressure check), and you should check as many sites as possible on the date of the assignment. This is also an opportune time for you to verify and/or elaborate on directions to and status of the sites. Use a separate Assignment Summary Form for the pressure check, since you will be checking numerous sites. You should record pressures for each site, along with the time of the visit, as well as any comments on the Assignment Summary Form, such as weather, species noted, fishing rumors, etc.

Adding / Removing sites

Occasionally, sites need to be added or deleted from the site list. New launch ramps are constructed, or new PC boat landings open for business. Boat landings can also shut down their businesses from lack of customers or boats, or due to change of ownership. Regardless of whether these site changes are temporary or permanent, do not assume your Lead is aware of them. It is your responsibility to notify your Lead of these changes as soon as you are aware of them, through personal communication, via e-mail or the Assignment Summary Form.

Maps / Descriptions

Current site descriptions and maps are provided by your Lead. These descriptions not only give specific instructions on how to get to the site, but also include site boundaries (if any), the facilities available at the site, and any phone numbers or addresses you may need, such as party boat landing information. Notify your Lead if you discover information for a site is incorrect.

BB Assignments

BB sites are grouped into clusters. Each cluster is sampled once during the month. Each sample day represents 30 days. The assignment given to you for each particular day specifies a cluster of sites to be sampled. You will be provided with a cluster list of sites to use. When you are assigned a BB cluster, you must visit all sites in that cluster. Begin your sample day by randomly selecting a subsite, if one has not already been selected for you, in the cluster. Keep in mind that there may only be one reasonable order of sites to visit to minimize driving time. Every effort should be made to sample every site in the cluster to obtain the maximum number of angler intercepts.

BB Sampling Scheduling

BB clusters will be sampled one day per month, with 2/3rds of all the District's BB clusters to be sampled on weekend days and 1/3 to be sampled on weekdays. Effort is expected to be different for these kinds of days and will be sampled separately. Expect more sampling on weekends and holidays than on weekdays due to higher angler effort. Rescheduling these assignments is not desirable to the survey. The Sampler is to contact the Lead to complete this task. Reassigned sample days will respect separation of the kinds of days (KOD).

Two BB Assignments in One Day

Occasionally a Sampler will be given two BB assignments on the same day. The Sampler should ask their Lead which assignment to work first. Once that determination is made, the Sampler must work that assignment before the second assignment is attempted. In other words, before beginning the second assignment, the Sampler must visit all of the sites in the first cluster assigned before starting the second assignment.

PC Assignments

PCs are, in general, single site samples. They may be completed onboard or dockside. Your Lead will assign you the location of the sample. Expect more sampling on weekends and holidays than on weekdays due to higher angler effort. Rescheduling these assignments is not desirable to the survey. The Sampler is to contact their Lead to complete this task. Reassigned sample days will respect separation of the KOD.

PC Sampling Scheduling

PC assignments are selected proportional to angler effort by site and the number needed is determined by past productivity of sampling (numbers of anglers interviewed per assignment). Sampling will be on weekends and weekdays throughout the month based on past angler effort. If effort is low or absent at the assigned site, then follow the alternate PC site procedures in the next section.

Scheduling PC Trips

Your Lead will provide you with a list of charter boats and landing sites with contact information. You will call ahead of time to determine the availability of PC boats for sampling onboard or dockside. 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 Assignment Summary Form. For PC dockside assignments, you may use as many PC sites in addition to the primary assigned site to attempt to obtain interviews in the assigned mode for PC.

About two days before your assignment, call the assigned site landing(s) and ask if any charter or open party boats are going out on your assigned date. If they are, tell them you are the CDFW CRFS fisheries observer. If possible, going to the office is easier than calling and you can talk to them more easily and have a better chance of getting on the boat. You may need to contact the landing closer to the trip departure to determine the number of angler reservations and how many are required to send the trip out. Keep in mind that many landings receive 'walk-up' anglers right before departure that don't make reservations. Since you may be contacting a number of different people at different times, you may want to keep a contact log with numbers, names, dates, times, and messages you may have left so that you don't duplicate or omit contact efforts.

It is important to remember that different boats from the same landing may fish different methods or different locations. If you have the option, make an effort to sample boats that are infrequently sampled, and always inquire about chartered (not open-party) trips, as these trips are just as important as open-party. Your Lead may assign certain trip types, either by trip duration or target species. If the assigned trip is unavailable to sample for some reason (i.e., not enough passengers, vessel dry docked), then refer to the following PC sampling hierarchy:

1. Assigned trip type at the assigned landing
2. Different trip type at the assigned landing
3. Assigned trip type at the nearest alternate landing
4. Different trip type at nearest alternate landing
5. Repeat steps 3 and 4, if necessary

Contact your Lead for instructions when assignments and boat scheduling is unsuccessful and assignments are not getting completed in a timely manner. If a trip is going to go out and you suspect you will not obtain at least one interview per hour (i.e., 4 anglers on a 6-hour trip), contact your Lead before sampling. Your Lead may reassign an assignment to a specific site, boat or trip type in an attempt to represent the fisheries in your area with a limited number of assignments.

Two PC Assignments in One Day

Occasionally a Sampler may be given two PC assignments on the same day. The Sampler should ask their Supervisor which assignment to work first. Once that determination is made, the Sampler must work that assignment before the second assignment is attempted. In other words, before beginning the second assignment, the Sampler must visit the PC site of the first assignment before starting the second assignment.

Special PC Assignment Summary and PC Effort Check Instructions

1. The Assignment Summary Form (ASF) will be coded for each SITE scheduled and visited.
2. The PC Effort Check (PEC) form will be coded for each BOAT scheduling attempt that provides information about a date and trip (or no trip).
3. An assignment scheduling attempt or vessel check record can only be recorded if information is obtained about the site effort or vessel effort. Information is obtained from phone calls, on-site visits and published information. Nothing will be recorded if no contact is made or information is collected, i.e. unreturned messages and unanswered phone calls.
4. If you later determine that the site or boat did not have any PC effort when you had been provided contrary information, modify the ASF and PEC forms to show the change in effort at the site for that date.
5. If instructed to sample a specific boat or trip type, record only one ASF record when the assignment is complete or canceled (assignment disposition = 1, 6).
6. Record attempted/unsuccessful sampling attempts when the original assignment could not be completed as scheduled (i.e. the boat is full, canceled, etc.; assignment disposition = 2).

PC Scheduling Questions and Answers

- Q. I keep calling the booking office and there is no answer. How do I code the forms?
- A. Code nothing; you have no contact and no information. You can either: show up on the morning of the assigned PC assignment and try to get on the boat, or reschedule the assignment. Contact your Lead in this instance.
- Q. I call around and no boats are going out at the assigned or alternate sites on that date. What do I do?
- A. You code the assigned sites and alternates on your Assignment Summary Form (ASF) for the assigned date with a reschedule. Inform your Lead of when you plan to reschedule.
- Q. I leave messages but they don't call back. Do I code a refusal?

- A. Code nothing; you have no contact and no information. You can either: show up on the morning of the assigned PC assignment and try to get on the boat, or reschedule the assignment. Contact your Lead in this instance.
- Q. I'm told that no boats are going out, but later find that was a deliberate lie.
- A. Code a refusal for that date and boat(s) on the ASF Report this to your Lead or Supervisor. Inform your Lead of when you plan to reschedule.
- Q. I'm told earlier that no boats are going out, but later find that a boat went out because the weather was nice.
- A. You didn't anticipate that? Code the boats activity on your PEC for the trip date. Contact your Lead to reschedule.
- Q. I'm told that no boats are going out. Do I code an attempt?
- A. Code this on your ASF and your PEC. Contact your Lead to reschedule.
- Q. I'm told by the office that no boats went out, but later find that one went out and the captain would have let me ride. Do I code a refusal?
- A. Yes, code the refusal. Remember to always note "who" did the refusing on the ASF. Also include your comments in the follow-up email to your Lead. Contact your Lead to reschedule.
- Q. I'm told the boat will go out if there are enough passengers. Should I use an alternate boat or site? How would I code this?
- A. You will have to re-contact the boat either by phone or go there on the assigned date. You should be ready to use an alternate boat or site if the boat does not go or is full to coast guard capacity. Code nothing yet. Coding of the ASF and PEC will depend on what the outcome is; follow the guidelines above.
- Q. The office refused to talk to me. What do I do?
- A. Code a refusal on your ASF and contact an alternate boat or site. Contact your Lead with the refusal details and reschedule the assignment.
- Q. The office schedules me on a boat, but the captain refuses me. I ride one of the other boats at that site. Do I code a refusal?
- A. Yes, code the boats for that site and date on your PEC. Indicate who refused on which boat and detail the event to your Lead and reschedule the assignment.
- Q. I call and schedule to ride a boat three days before the trip. The trip is completed on the assigned date. Do I code the date of the phone call?
- A. No, just code the assignment as complete on the assignment date.
- Q. I call and schedule to ride a boat at the assigned site on a later date than the assigned date. Do I code a reassignment?
- A. If you had scheduled that site and date previously or were calling back after calling alternates for that date, you would. However, if this was your first scheduling attempt for this assignment, you must have been instructed to

sample a specific site or boat by your Lead. You would NOT record a reassignment if that were the case since normal sampling procedures were not followed. Normally, you would contact alternate boats or sites and record those attempts before rescheduling.

Procedures for PC Refusals

When a Sampler is refused by the CPFV landing or vessel skipper/owner, the Sampler will notify their Lead of the refusal immediately and document the details of the refusal (e.g., who, when, how refused). The Field Lead will handle the situation. The importance of documenting PC refusals cannot be stressed enough.

MM and PR2 Assignments

MM and PR2 assignments sample clusters of sites each month and use a roving survey method. The data from this survey and the telephone survey of licensed anglers (ALD for night and private access fishing) is used in the effort and catch estimations for the CRFS program. Sample assignments will be for clusters of sites. All of the MMPR2 sites are public access sites. The number of sites in a cluster will vary. The number of sites or if they are active may depend on the season and/or their geographic proximity to one another.

MMPR2 Sampling Scheduling

Clusters will be sampled three days per month, two weekend days and one weekday. Effort is expected to be different for these kinds of days and will be sampled separately. Expect more sampling on weekends and holidays than on weekdays due to higher angler effort. Rescheduling of these assignments is not desirable to the survey. The Sampler is to contact their Lead to complete this task. Reassigned sample days will respect separation of the kinds of days (KOD). There must always be at least one weekend (WE) and one weekday (WD) day in each cluster for a month.

Site Lists and the Target Mode

MM and PR2 cluster assignments are generated for a particular cluster of sites. Your Lead will supply you with a site list containing the cluster arrangement for each month. The site list is clearly marked with the month and year. The site list changes and is unique by month. Use the site list that matches the month of the sample selection.

The cluster list identifies the sub-sites in each MMPR2 cluster. Your MMPR2 assignment will identify the cluster and the starting sub-site, i.e. cluster site SFO1 starting at sub-site A. Or you may be provided with a specific subsite visit order, i.e. 'C, B, A'.

The cluster list also identifies the target mode for each sub-site. The target mode determines which modes you will be targeting (MM, PR2 or both, MMPR2) for the month. It may also identify other modes which may be sampled opportunistically (sampling outside of the target mode). Do not cover a

target mode which is not assigned or omit a target mode; it may be impossible to complete or the data may be incomplete.

Example MMPR2 Clusters from Site List

AMODE	CLUS	SUBSITE	TMODE	CNTY	SITE	NAME
MMPR2	SFO10	A	PR2	81	103	Redwood City Ramp
MMPR2	SFO10	C	MMPR2	81	102	Coyote Ramp
MMPR2	SFO10	B	MM	81	307	Redwood City Pier
MMPR2	SFO10	D	MM	81	312	Woolley Pier
MMPR2	SFO11	A	PR2	1	104	San Leandro Ramp
MMPR2	SFO11	B	MM	1	312	Dumbarton Pier

No Anglers Present at MMPR2 Cluster

Never reschedule a MMPR2 assignment due to lack of anglers. Assignments that determine effort for the cluster day is zero are included in the calculation of mean daily effort for the month. Do not leave an MMPR2 assignment before visiting each site in the cluster so effort levels for each site can be determined. When the effort is zero, the Sampler will code the ASF start/stop counts appropriately.

Opportunistic PC Sampling During Clusters

It is possible to sample PC boats during MMPR2 sampling or PC boats during BB sampling. You may encounter PC boats at large piers or at launch ramps. However, you may not leave the site or miss any of target mode effort during opportunistic PC sampling.

PR1 Assignments

The PR1 survey samples single sites about six to nine days per month using an entire daylight day for sampling. The data from this survey will be used by OSP for bi-weekly salmon estimates and by CRFS for calculation of monthly effort and catch estimates for other species. This is a critical survey for the program as it covers the most important marine recreational fisheries in the state.

PR1 Sampling Scheduling

Ramp sites will be sampled on a number of days per month by kind of day. The two kinds of days are weekends/holidays and weekdays. Effort is expected to be different for these kinds of days. Expect different sampling rates between weekends/holidays and weekdays. Rescheduling of PR1 days, if allowed, will respect separation of the kinds of days.

The Lead will schedule the random selection of days for each month in advance. Once scheduled, the Sampler shall not change the sample dates without Lead or Supervisor approval. Zero effort days are included in computation of the effort, but do not require that a Sampler stay at the site all

day to be complete (see Assignment Duration). Samplers should expect an erratic schedule as PR1 sites can open or close, dependent on the fisheries.

Multiple Samplers on One Assignment

At PR1 sites, you may be working alone or with another Sampler assigned to work with you on the assignment. One of you may be designated the 'Lead Sampler' for the assignment. You may be scheduled to arrive at the same time or at the different times. Sometimes your Lead will designate an A.M. Sampler and a P.M. Sampler. Your sampling time may overlap or be in separate shifts. At times, a third Sampler or your Lead will also be assisting in data collection. There are procedures for coding the forms with multiple Samplers.

It is important to coordinate with your co-workers in designation of tasks and collection of specific data. The purpose is to avoid duplication of data, such as interviewing the same boat twice or performing duplicate counts, and ensuring that as few boats are missed as possible. You will work efficiently to coordinate your tasks once a second Sampler arrives on-site. The second Sampler should always notify the already present Sampler of their arrival and be prepared to work any sub-task.

Opportunistic PC Sampling During PR1s

It is possible to sample PC anglers during PR1 sampling. You may encounter trailered PC boats at PR1 launch sites; however, you may not leave the PR1 site or miss any PR1 effort during opportunistic PC sampling.

Completion of Incorrect Assignments

Occasionally Samplers will sample the wrong site(s), or omit a site in a cluster. This may be caused by using a site list from the wrong month. In these cases your Lead should be informed immediately for a solution. Do not discard any data you may have collected.

GENERAL ON-SITE PROCEDURES

Depending on the situation, an interview and catch inspection usually requires approximately five to ten minutes to complete. All attempts should be made to interview every angler at a site. At busy sites, especially when you are sampling alone, it may not be possible to interview every angler. In a situation like this, it is important to record how many anglers (or boats) were missed. Under no conditions should the Sampler just approach the friendly anglers, anglers with important catch, or sample at a fish cleaning station. The sample of anglers should, without bias, accurately represent angler activity and catch rates of all species in the assigned mode on the date of your assignment.

The on-site procedures differ somewhat for each mode of fishing sampled and local site conditions and structure. Due to regional differences in terms, such as fish slang names, some local definitions may also be necessary. Your Lead can supply you with a list of local definitions.

No Anglers

Your management of the assignment differs somewhat by survey when you arrive on-site and discover that fishing effort is zero at the assigned site.

No Anglers in PC Mode

If you go to your assigned PC site as scheduled and no anglers are observed, refer to *Scheduling PC Trips* in the Sampling Assignment Management section, unless your Lead has given you specific landings to sample as an alternate. If no effort in the assigned mode is found at the primary site and alternate sites, contact your Lead to determine the assignment's final disposition.

No Anglers in BB Mode

If you go to the first BB in the cluster as scheduled, search all access points and no anglers are observed, you should go to the next site in the cluster. If no effort in the assigned mode is found at any of the sites after two hours, and/or you don't expect at least one interview per hour from the anglers onsite, terminate the assignment.

No Anglers in PR1 Mode

If you are given a PR1 assignment and no anglers are present (no trailers) and after 2 hours no effort develops or is expected to develop, the assignment might be considered complete. When you arrive onsite, if the PR1 is deemed unfishable due to weather or an obstacle is preventing the launch of skiffs, you may leave the site. Always notify your lead if you leave an assignment early.

No Anglers in MMPR2 Mode

If you are assigned a MMPR2 assignment and no anglers are present at the first sub-site you may move to the next site (and so on) until effort is found. If

no effort was found at all sub-sites after 2 hours, the assignment might be considered complete. However, if the two hours were up before the time of expected peak activity, the Sampler should spend an additional 2 hours (for a maximum of four hours) waiting for effort to develop at the most likely sub-site in the cluster. If no effort in the assigned mode is found at any of the sites after two hours, and/or you don't expect at least one interview per hour from the angler(s) onsite, terminate the assignment. If no effort seems likely and you complete the assignment with no anglers counted, the cluster will receive zero effort for that day. Each MMPR2 assignment represents 10 days of the month for that cluster in the estimates.

Finishing a MMPR2 Assignment Early

You may continue to move around the sites in a MMPR2 site cluster while interviewing at least 1 angler per hour. If possible, perform pressure checks and vessel checks at the nearby site(s) as well as at sites between your cluster sites and your route to or from home or office. Try not to waste your travel time if you have completed the assignment early and will be driving past a number of sites. For those assignments expected to have low productivity, your Lead may instruct you to perform other tasks during or after the assignment, such as editing forms in the office, checking on new fishing sites, etc.

Canvassing

It is possible to build rapport with the anglers prior to conducting any interviews and determine how long they will be fishing. Anglers who have had the opportunity to meet the Sampler and discuss the survey will tend to be more cooperative when asked for an interview at the completion of their fishing trip. The canvassing 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.

Screening for Eligibility

The purpose of the screening is to introduce the survey and determine whether an angler is eligible. In California CRFS primarily samples only fin-fishing trips; however, we sample lobster trips and *Cancer* crab trips (Dungeness crab or rock crabs) when possible. Crab and lobster trips are considered a "special fishery". It is possible other trips types may be sampled and your Supervisor will provide this information for you should this occur.

An eligible angler is one who:

- has been fishing (gear in the water) in saltwater (downstream of any saltwater cutoff)
- has been actively fishing for or caught finfish, lobster or *Cancer* crabs (or other species in some years)
- is a recreational angler (not commercial angler)

- has completed his/her fishing trip in the assigned mode of fishing for the day (*except shore (MM and BB) anglers who must be at least half done*)

Screening Divers

In addition to the hook and line anglers, consider all divers. If divers carry a spear gun with them, they can be interviewed as 'anglers'. If they speared a fish or intended to spear a fish (but none were seen) they are considered eligible anglers.

Divers taking or intending to take lobster or *Cancer* crabs by hand are also eligible and sampled as a "special fishery".

Divers entering the water from shore or using a flotation device to 'kick out' with fins from shore to fish are considered either BB or MM anglers. Divers who enter the water from a boat or other craft are considered PR anglers. This includes kayaks, paddleboards and pontoon boats with 'oars'.

Probing for Multiple Trips

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

Q. The Sampler encounters a family boat from a campground that takes out wife and two children to fish, they all fish, one child gets sick and the father drops off the wife and sick child at the dock and picks up the uncle and goes back out to fish. They come back and drop off the second child and go out again to fish. They come back from lunch and rest. Later that afternoon, the father and uncle go out and fish again. How many forms do you fill out?
A. One for each complete angler's trip, which would be a maximum of five anglers.

Ask; "Is this the only place that you have fished today?" If they say they fished somewhere else earlier in the day, ask if it was in/on another beach (pier, pr, etc.) If yes, and in the same mode, add the total hours fished in both places.

Saltwater Cutoff Points

This is a marine survey and it is necessary to establish saltwater cutoff points at some locations. It is possible to interview in the tidal portion of a river. It will be mandatory to screen anglers to see if their fishing was done above or below these points.

If any of their fishing was done below these points, they become eligible anglers. If all of their fishing was done above these points, they are ineligible for the interview. If you are recording catch, only record the catch caught below these points. Some areas where anglers in freshwater need to be probed for saltwater fishing are where US 101 or US 1 (Pacific Coast Highway) crosses estuaries and near rivers entering San Francisco Bay.

Be sure and screen any boats that may have fished near these areas to see where their fishing was done. They may not be eligible for the survey.

County	River	Saltwater Cutoff Point
Del Norte	Smith River	1/4 way between mouth and US 101
	Klamath	1/4 way between mouth and US 101
Humboldt	Mad River	1/4 way between mouth and US 101
	Eel River	Upper end Cockrobin Island
	Redwood Creek	1/4 way between mouth and US 101
Mendocino	Ten Mile River	Old dock, 100 yds. up from US 101
	Noyo River	End of Dolphin Cove Marina
	Big River	Mid - 2nd turn upstream
	Albion River	Upper dock
	Navarro River	Highway 1 Bridge
Sonoma	Petaluma River	Highway 37 Bridge
	Coastal Rivers	Highway 1 bridges
Napa	Napa River	Highway 37 Bridge
Solano	Sacramento River	Carquinez Bridge
Contra Costa	Sacramento River	Carquinez Bridge
San Mateo	Coastal Rivers	Highway 1 bridges
Districts: Central Channel South	Coastal Rivers	Pacific Coast Highway bridges

Occasionally you might interview an angler who states he has been fishing in "brackish" water. If the location cannot be determined, ask, "If you had to pick either salt or fresh water, what would you pick for most of your fishing today?" If he chooses fresh water, you should stop the interview as he becomes an ineligible angler. Occasionally an angler will report saltwater fishing at a freshwater location, in this case complete the interview and write a comment on the form.

Definition of an Angler Trip

For purposes of an angler interview, an angler trip is one 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 you will sample only the most recent "trip" or angler fishing day. If the angler fished in more than one mode, you may consider only

the most recent fished mode. If the multi-mode anglers cannot separate the catch by mode, do not interview that angler.

“Random” Selection

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

Catch or Fishing Location

The Location procedures gather information about the location of catch (or effort) of fishing of boats. Location of fishing is a necessary component of determining “essential fish habitat” as defined in the Sustainable Fisheries Act of 1996 (SFA; amended Magnuson-Stevens Fishery Conservation and Management Act). The information is also being used by researchers to study areas where species of interest are being caught or not being caught for purposes of protection or angler access refugia.

Latitude and Longitude

The Equator has been designated as 0° (zero degrees) **latitude** and the north and south poles are 90°. Greenwich England was arbitrarily set as 0° (zero degrees) **longitude**. Any geographic location on Earth can be pinpointed on a map using the latitude-longitude grid system. The accuracy of the degree grid is increased by the use of minute and second subdivisions of which there are 60 of each. A degree is about 60 nautical miles, a minute is about 1 nautical mile and a second is about 100 feet. Closer to the poles, longitude lines narrow and the grid is not as square. In California, we can assume square grids for this study.

One-Minute Grid

In this project, we will be working mainly at the minute level resolution (about a square nautical mile) for locations on maps. One minute grid maps have been developed for this purpose. Reference lines and numbers will be labeled on the map for angler reference.

Angler Use of Maps

One of the more difficult aspects of this study is allowing the angler to use maps to identify their fishing locations. Anglers may not be able to provide their location for many reasons. Anglers may be...

- unaware of their location while fishing
- unwilling to spend any time determining a location

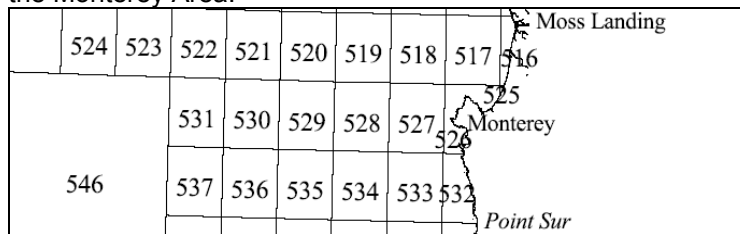
- unable to read maps or charts or
- unwilling to divulge a favorite fishing spot

The Sampler will need to attempt to overcome these problems by providing the angler the best information needed for fishing site location. They must become familiar with local, on-the-water and on-the-map landmarks and fishing location names to assist the angler in locating their fishing area. The Sampler must be convincing and credible while explaining the importance of gathering this data. Any or all of these skills may be called into action by the Sampler while sampling anglers on a boat.

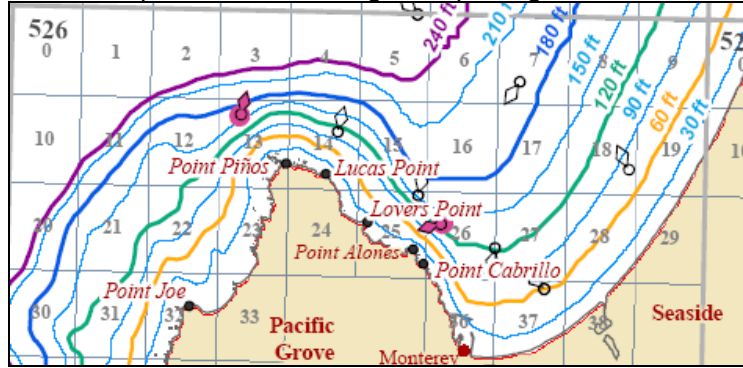
CDFW Block and Box (microblock)

The CRFS format for mapping coordinates is the block-box system which uses pre-defined numbers to indicate a location within one nautical mile. Each block is 10 by 10 nautical miles with 100 boxes numbered 0-99 within each block. One box is approximately one square mile. Three digits are required for the block (BBB) and two digits for the box (bb). So each pre-defined box can be expressed with the BBB-bb format. Multiple boxes in a block can be expressed by adding more box codes; BBB-bb-bb. Inland marine waters have boxes numbered with three digits (bbb) starting at 100. Each box will be converted to latitude and longitude coordinates in the database. If all that is provided is the block (BBB) the coordinate will be the middle of the block with a size of 100 square miles, which is not very precise.

CDFW Fisheries Chart showing the 100 square mile CDFW blocks for the Monterey Area.



Example Block-Box map; the box West of Pt. Pinos is described as 526-13. Depth contours aid angler map navigation.



Location Gathering Guidelines

Gathering location information differs primarily by type of boat sampling and fishing mode;

PR boats or anglers have two methods:

PR1 – Catch location by species or location of fishing effort. Entire boats only, but each species can have a different location.

PR2 – Fishing effort location (with catch flagged) for entire trip. This is for individual anglers or groups of anglers with group catch.

PC dockside - Fishing location where most of the fish were caught, or most of the effort if no catch.

PC onboard sampling – Starting and ending fishing locations with time stamps and observations of catch kept and returned.

The best person on the boat to contact dockside about fishing locations will be the “pilot” of the vessel, also called the captain or skipper. Although everyone on a particular boat typically fishes at each location, this is not necessarily so. In addition, the pilot may not be aware of where the majority of the catch was taken or where individual anglers got their majority catches. This presents a major problem on more populated boats fishing a variety of locations.

Q. What do I say when an angler does not want to provide a location?

A. Explain that if they don't participate, fishery managers will be uncertain how to protect the resource while providing for sport fishing. So it is just as likely this area would be closed to provide fishing opportunities elsewhere if they don't have your data.

Definitions of Location

A location can be described as a single “point” or as a ‘box’ in this study. Location is always described to the nearest minute of latitude and longitude and is seen as one minute squares on a map with a point in the center where

the east and west "minute" lines cross. A minute square is a large area of approximately a square mile.

Another way to think of a location is to draw a circle around an area where the diameter of the circle has meaning. For example, a circle one-mile in diameter may best describe a location where 50% or more of an anglers catch was caught. You can think of "best describe" as being the diameter at which the angler estimates with 95% confidence will include the majority of the catch. Where center the circle falls on the "grid" will determine the location coordinate and the size of the circle will determine the accuracy, i.e. "grid size".

Accuracy of Location Grid

Recording of a location can be seen as a tradeoff between getting an exact location for a fishing spot and including the majority of the catch. A less precise location covering a larger area may be used to encompass the majority of fished locations to form a "location cluster" that may exclude "unproductive" (minority of catch) fishing sites from a particular trip. However, on an individual basis you may discover that one or more anglers on the boat recalls a specific location for the majority of their catch, so, given adequate time, individual anglers should be given the opportunity to provide 'catch' locations in the PR2 survey. Coding all the anglers on a boat to a broad area does not provide much for our analysis.

22	23	24	25	26
32	33	34	35	36
42	43	44	45	46
52	53	54	55	56
62	63	64	65	66

The "Grid Size" Item

The grid size is used as a way to indicate the extent or size in minutes of a location. If an angler fishes over an area more than one minute in diameter a grid size should be used. The grid size is the diameter around a box and is recorded in minutes. A grid size of "3" represents 3 minutes (3 nautical miles) in diameter or a 3-minute by 3-minute area or 9-square minutes around the location (see example). The location is the center box. A 3 mile area around box 44 would be coded as 44+3.

Location of Group Catch

When boat anglers have inseparable catch, we have the potential problem of having different individual angler locations for the same group of fish. This is not really a problem since the aggregate of the locations can also describe the extent of the area of catch. If only one location is used for the group, it should be a large enough area to include the catch locations for each member of the catch group. In this case, group consensus for the catch location would be an efficient goal. For the angler form, code the location on the first boat angler form and code the boat followers as 'same as first boat angler'.

Fishing Site Names

There is a possibility of being caught in the trap of pre-defining open water fishing areas by asking anglers to decide between areas shown on a map or given a choice of names, such as “did you fish at Mulligan’s Hill today?”. This is not proper data collection. The intent of this study is not to confirm pre-conceived fishing locations, but to statistically formulate fishing areas from individually acquired locations fished. Many previously ‘known’ fishing locations become “fished out” and may shift in location and extent along with fish availability. We want to be able to study this when it happens.

Use of Code Lists

Code lists are at the end of this manual. Your Supervisor may provide you with an addendum which will list more common codes for your area, as well as lists of your District’s sample sites.

Angler Residence Codes

Residence codes are provided at the end of this manual. You will record zip codes or the county of residence for California anglers, state of residence for out-of-state anglers and country for foreign anglers. If the angler does not know his zip code or county of residence but can give a city instead, you should get their city and either you or your lead can look up the zip code or county later. Zip codes may be left blank too.

Site Codes

County and site numeric codes for the sites will be provided to you with your sampling schedules. Normally a site in California is expressed with two numbers, one for the county and one for the site, as in CNTY-SITE, for example 111-100. This coding system is numeric and the county codes are independent of the angler residence county codes. Additionally, PR1 sites have a unique three letter port code.

Species Codes

Fish codes have been provided to you and are sorted three ways: by code, common name, and by AFS common name. These lists include all finfish species found on the Pacific coast. All codes should be listed, if not contact your Lead. These codes are used for both the species targeted on the trip and for the catch records. The codes for the more common species are 5 letters and the rarer species have a three digit numeric code. Be familiar with the species of fish targeted and caught in your District(s). To facilitate some of the more complicated identifications, your Lead will provide training and a list of local common species. 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.

The Catch Census

In addition to the comprehensive list at the end of this manual, your Lead will provide you with a species list of locally caught common recreational species. It is your responsibility to know and identify these more common species by sight. Studying the identification guides combined with experience in the field should make you knowledgeable in a short time. Learn the CRFS priority species.

Identification of Difficult Species

All fish that are present at the site for the Sampler to look at should be identified to the species level, if possible. They should be recorded using American Fisheries Society Common Names or approved shorthand versions of those names. Samplers should never code a fish to the species level that they are not absolutely sure of the identification or record an angler slang name.

You are issued two field guides: Miller and Lea's Guide to the Coastal Marine Fishes of California Fish Bulletin #157 and Peterson's Guide to Pacific Coast Fishes. Miller and Lea should be used as your first source of information and should be with you at all times in the field. You never can tell when you are going to run into a rare fish. Other field guides are available. Often your Lead will have these books. Contact them to inquire about a copy. Your Lead should also have access to a fish photograph database; contact them to view these images.

CRFS Priority Species

When sampling fish during busy periods, you may need to sub-sample locations, lengths, and weights. Sub-sampling fish should always be done at the species level. Never sub-sample within a species based on a particular length or weight (e.g., sampling big or small individual fish). The table below shows the top priorities for sampling. The most important fish to measure are non-retention species (i.e., fish that are illegal to retain) with harvest limits and all salmon with a clipped adipose fin. The next priority is species with harvest limits.

It is important to obtain lengths and weights of rockfish, especially species that are uncommon, such as non-retention species. Rockfish harvest limits are set in metric tons and to get the best estimates we need lengths and weights. Salmon are managed by number of fish, and managers only need the lengths of salmon with clipped adipose fins.

Remember, you should try to get lengths and weights of all fish (except salmon), but when sub-sampling is required, the following species categories should be measured/weighed first:

HIGHEST PRIORITY	
Non-retention Species with Harvest Limits and Adipose Fin Clipped Salmon	
bronzespotted rockfish	cowcod
canary rockfish	yelloweye rockfish
Ad-clipped salmon (both Chinook (king) and Coho (silver))(length only)	
HIGH PRIORITY	
Species with Harvest Limits	
cabezon	black, black and yellow, blue, bocaccio, brown, copper, calico, China, gopher, grass, kelp, olive, quillback, treefish, widow, yellowtail rockfish
California sheephead	
California scorpionfish	
greenlings (<i>Hexagrammos</i> spp)	
lingcod	
Pacific halibut	

Rare Specimen Collection / Photography

If you encounter a fish you cannot positively identify, attempt to key it out. This may not be possible due to time. If the angler is in a hurry, list the field marks on that angler's form. With your camera, take a picture of the fish using these guidelines:

1. Have the head of the fish pointing to the left.
2. Get as close as your camera will allow.
3. Have something in the photo to provide a scale. Your measuring board will do.
4. Spread out the fins as much as possible.
5. Photograph the fish out of the direct sun.
6. Take two or three photos just in case.

Saltwater Fish Size Records

If you encounter a fish that seems unusually large, compare its measurements with the saltwater angling or diving records, see weight records in the OTHER CODES section of this manual. Be sure of the fish species before telling the angler they have a record. Be aware of the maximum lengths of species as listed in your copy of *Guide to the Coastal Marine Fishes of California*, and take pictures of fish that exceed these lengths. Fish over the maximum size will be flagged in the database; without photographic proof, the record will be discarded from the database.

Measurement Data Collection

Lengths

After determining the catch for the boat, the Sampler will measure as much of the catch as possible. It is important to the CRFS program to measure fish that are under management, especially species of concern. Lengths are used to predict weights and to examine length classes.

Weights

If there is time, the Sampler will also weigh as much of the catch as possible. Weigh unusual fish species and species of concern first. Weights can be calculated from the fish with just a length measurement. Weights are used to help with length to weight prediction, estimate mean weight and total metric tons.

Fish Sub-Sampling Procedure

There may be times when the level of activity at a site is too high to sample the lengths and weights of fish on every incoming boat or every fish on one boat. The Sampler should attempt a random or systematic sample of fish in this case.

Samplers may measure up to 10 fish of each available species. If an angler, or inseparable catch angler group, has caught more than 10 of a particular species, 10 must be selected for measurement (see below). Missing measurements should be explained on the forms. *The priority for measurements is **lengths before weights***. Weights can be missed if time does not allow; however, weigh uncommon/prohibited fish at all times. Missing weights can be calculated from length-weight regressions and be substituted for actual weights in some circumstances.

The Sampler should either randomly or systematically sample the fish. **NEVER MEASURE OR WEIGH JUST THE BIG ONES!** Whenever the sample has more fish than will be measured, you should use one of the following procedures:

- (1) The Sampler should take out all the fish from the angler's 'bag' and line them up according to size. Calculate the sampling fraction, n (e.g. every third fish), and weigh and measure every n th fish. Select the starting fish at random.
- (2) If there are too many fish to systematically sample in the given time frame, or if the surroundings make it very difficult to sample using the above method, you should reach into the container and "randomly" select ten fish. At no time should you try to pick out the "average" fish or the largest and smallest fish -- that is not "random" selection.

Fork Length Measurement

The Sampler shall measure fish to the fork of the caudal fin for all species with such morphology. For those without a fork, please refer to the "Measuring Various Types of Fish" section. Fish fork lengths must be taken using the measuring board and recorded to the nearest millimeter. The measuring board is labeled in centimeters but tick marked in millimeters. 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. Samplers should never round lengths and weights to the nearest centimeter or half centimeter. Rounding fish measurements will introduce a "digit bias" and will be seen in the data. **Do not measure fillets.** 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 its natural position to allow for accurate identification of the fork or longest point. NEVER weigh only the largest or smallest fish; this creates an obvious size bias.

Use of the Measuring Board

A measuring board must be used unless a fish exceeds the length of the board. Length measurements should never be rounded because doing so would introduce a digit bias.



To use the measuring board:

1. Place the measuring board on a hard, level surface.
2. Straighten the fish as much as possible if rigor mortis has set in.
3. Place the fish with the nose flush against the bracket end of the board and with the body centered over the measuring board.
4. Close the fish's mouth.
5. Keeping the nose of the fish against the bracket, press the tail down to the surface of the board. The fin may need to be spread flat to identify the fork. Read the length at the fork of the tail to the nearest millimeter.



All Samplers will also carry a tape measure to be used ONLY on specimens that exceed the length of the measuring board.

To use a tape measure:

1. Pull some slack in the tape
2. Lay the tape on a hard surface.
3. Place the fish on top of the tape (see example below). The tape must not be on top of the fish as this will result in an exaggerated or inaccurate measurement as the tape bends to the contour of the fish's body.
4. Read the length at the fork of the tail to the nearest millimeter.
5. Clean the tape measure before it is used again.



Alternate way to measure large fish:

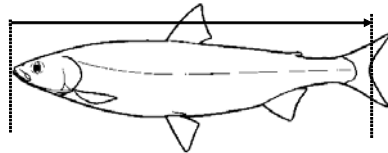
1. Place the measuring board on a hard, level surface.

2. Straighten the fish as much as possible.
3. Place the fish with the nose flush against the bracket end of the board and close the fish's mouth.
4. Use the tape measure to measure the length of the fish that spills over the end of the board.
5. Make sure to line up the tape's beginning with where the board ends.



Measuring Various Types of Fish

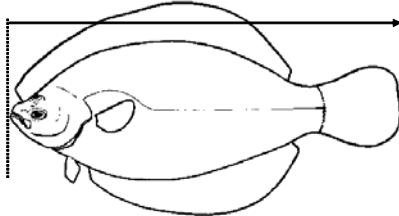
1. Most species are measured from the most anterior tip of the longest jaw (mouth closed) or end of snout, whichever is terminal, to the posterior tip of the tail at its center line. This procedure is the same whether the tail forks in (e.g., mackerels) or protrudes out (e.g., flounders).



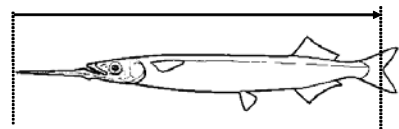
Salmonids - Salmonidae



Eelpouts - Zoarcidae

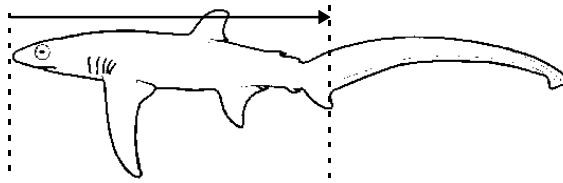


Left eye flounders - Bothidae

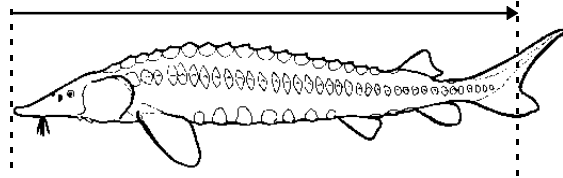


Halfbeaks - Hemiramphidae

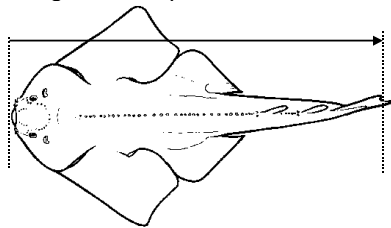
2. Sharks and Sturgeons are measured from the tip of the snout to the center of the fork of the tail. For sharks without a fork, measure the shortest distance to the ventral lobe of the tail (*see nurse shark below*).



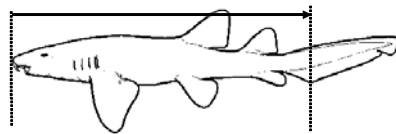
Thresher sharks - Alopiidae



Sturgeons - Acipenseridae

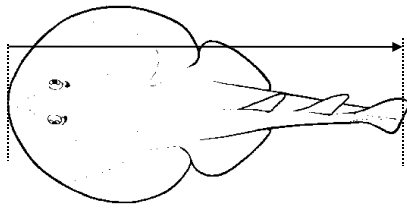


Angel sharks – Squatinidae

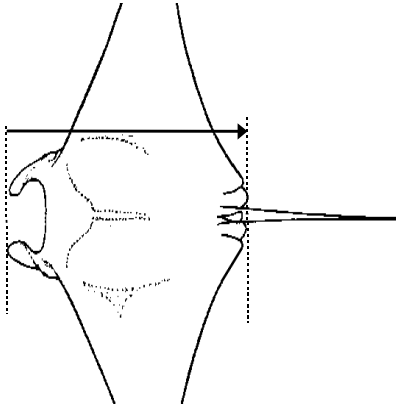


Nurse sharks - Ginglymostomatida

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.

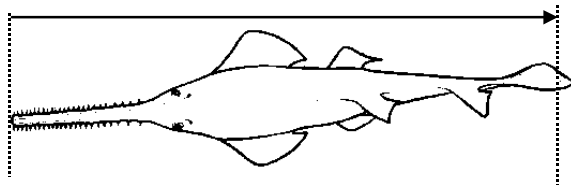


Electric Rays - Torpedinidae

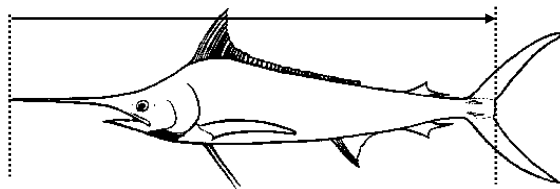


Manta Rays - Mobulinae

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



Sawfishes – Pristidae



Billfishes - Xiphiidae

Weight Measurement

Fish weights are to be recorded to the nearest hundredth of a kilogram (0.01 kg). The hundredths place may be zero unless weighing small fish with the 1000-gram hanging scale or with a platform balance on a non-moving surface. Calibrate your scales weekly. At least three scales are provided to each Sampler. The scales may vary in manufacture or capacity by area, but are usually adjustable brass spring scales in 25 kg, 12.5 kg, 5 kg, and 1 kg capacities. The 25 kg scale is labeled in pounds and kilograms and displays measurements in .25 kg increments. The 12.5 kg scale is labeled in pounds and kilograms and is accurate to tenths of a kilogram. The smaller 5 kg scale is labeled in pounds and kilograms and is accurate to tenths of a kilogram (.05 kg or 50 grams). The 1 kg scale is accurate to 1 hundredths of a kilogram (.01 kg or 10 grams).

You are expected to use the most accurate scale for each fish weighed. Do not record a fish weight that exceeds the capacity of the scale. Do not weigh a less than one kilogram fish on a scale with a larger capacity than your one kilogram scale. It is permissible to collect weights for bled fish. The weight of blood falls within the variability of stomach contents. Do not weigh gilled, gutted or de-headed fish. Do not weigh salmonids.

Sub-Sampling Weights

There may be times when the level of activity at a site is too high to sample the weights of measured fish on every boat. If there will be more fish lengths than weights to be taken, the Sampler should attempt a random or systematic sample of fish weights. Do not weigh only the larger, smaller or fatter fish in the catch.

Scale Care

After the scale has been exposed to salt water and and/or fish slime,

1. Rinse the scale in fresh water in the field if possible
2. At home, wash the scale in hot soapy water.
3. Rinse the scale in hot clean water to get the metal hot to speed drying.
4. Shake the excess water from the scale.
5. Place the scale in a warm dry place like the sun, a warm oven, or under a blow dryer.
6. When dry, spray with WD-40 (the WD stands for Water Displacing).

Scale Adjustment

Here are a few items of known approximate weight you can use to check the accuracy of your scales:

- 25 kg scale: 0.39 kg
- 1 Liter of Water = 1.0 kg
- 1 gallon plastic jug of water: 3.9 kg

Calibrate your scales at least monthly; more often during busy times. If the calibration knob seizes, notify your Lead for replacement. Your Lead has calibration weights you can use to check your scales.

Tiny Fish Baggy Technique

Occasionally, a Sampler may come across tiny fish that do not register on the small scale. This system is also very useful when there are dozens of small fish. The Sampler should place 10 of these fish (total catch is greater than 10), or all the fish (total catch is less than 10) in a plastic bag, taking care that no water accumulates inside. Weigh the entire bag and record the total weight with the first measured fish to the nearest 0.01 kg. Write the words "pool wgt's" in the row under the weight column, record the lengths of all fish in the baggy and write weights of "0" kg for the other lengths.

It is required that you record:

1. **Lengths** for all the fish in the baggy,
2. **Total weight** with the first fish length, and
3. **Zero weights** for the remaining fish in the baggy.

PR1 Form with pool weights

SPECIES code	KEPT		RELS		SPECIES LOC or effort if no catch Block-box Lat / Lon	DEPTH BOTTOM (ft)	Fork length / carapace size (mm), sex (M/F/T)				
	obs	alive total	(w/ID)				Weight (decimal kg) or (tag #)				
	unobs	dead	seal take				1	2	3	4	5
DABPA	skr 30	alive 0	(0)		526-17-18	120	181	193	211	197	195
	unskr 0	dead 0	real				0.7	0	0	0	0
POOL WGTS	skr	alive	()				200	205	192	197	173
	unskr	dead	real				0	0	0	0	0

Angler Form with pool weights

TYPE 3 AVAILABLE EXAMINED CATCH											
<input checked="" type="checkbox"/> GROUP Catch											
	*Species	* No. of Fish				Fork Len. (mm)		Weight (kg)		D	L
1	Sanddab	POOL	D	A	B	P	A	0	3	0	
2		WGTS						1	8	1	
3								1	9	3	
4								2	1	1	
5								1	9	7	
6								1	9	5	
7								2	0	0	
8								2	0	5	
9								1	9	2	
10								1	9	7	
								1	7	3	

Filletted Fish

Since we do not like to have fish above the species level (i.e. family or genus) reported as observed catch we would prefer unidentified fish fillets to be in the kept unobserved records. Never record unidentified rockfish fillets as observed, even if you have enumerated them and identified the genus. The only time you would record observed rockfish fillets are when they have been recorded to the species level.

Rarely, the fillets will actually be identified. For example, three fish worth of vermillion rockfish fillets with skin attached you examine and count from a charter trip would be considered observed catch. 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 kept unobserved.

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, they are still considered kept unobserved fish even though you counted them.

Group Catch Fillets

If the anglers are in a group with a bag of unidentifiable fillets, treat the bag of fillets as part of their kept unobserved fish. Ask about numbers of any fish that are not here, i.e. thrown back, etc., ask about and/or include the numbers of fish that are in the bag of fillets at that time. Ask if the fish in the bag of fillets are to be eaten.

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, 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) kept unobserved fish the angler reports.

Procedure for processing group catch fillets into records:

Number of fillets identified to the species level?

Yes -> Code as observed group catch.

No -> Kept unobserved fish!

Can the anglers report the number of fish per angler?

Yes -> Record reported numbers of unidentified fish for each angler.

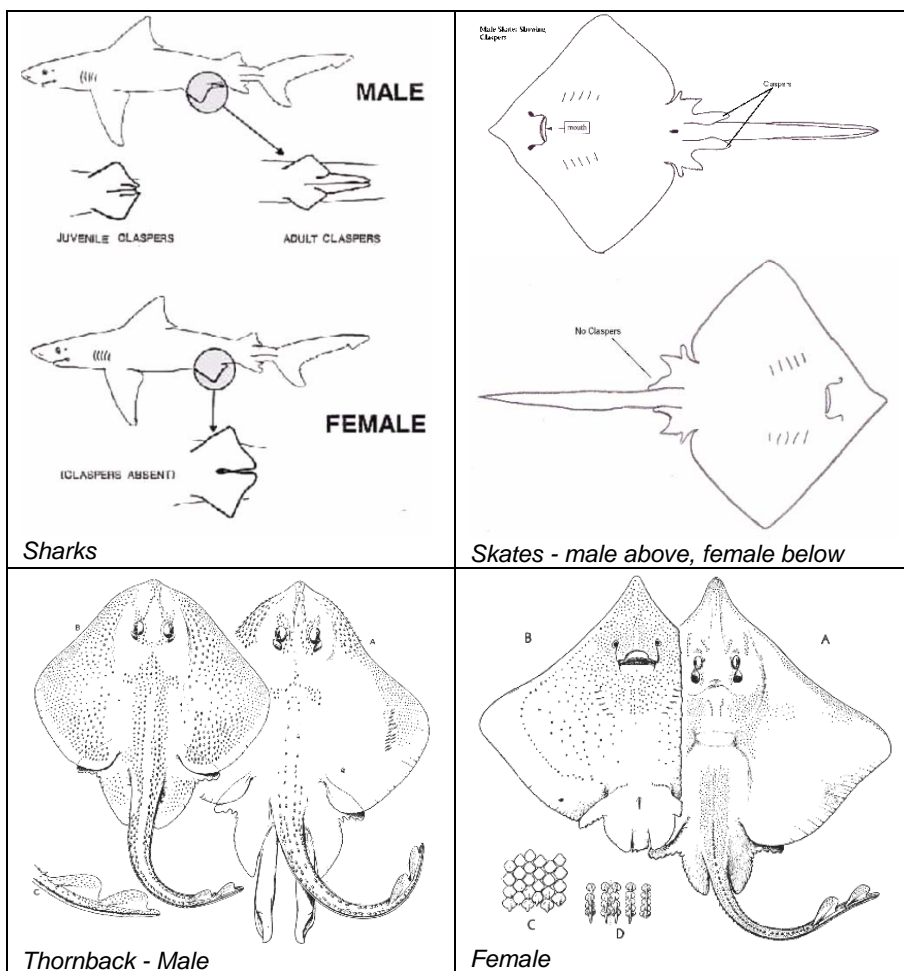
No -> Divide unidentified fish evenly by number of contributors.

Gender Determination of Select Species

The gender of fishes should be recorded on the data form whenever possible. This information should be considered a bonus, and should in no way interfere with your ability to get length and weight data. The codes for fish gender are: M=Male, F=Female, T=Transitional. Transitional California sheephead may be coded with 'T'.

Some species of fish can be sexed using external characteristics; for other species, gender may be determined when the fish is being filleted (for party or charter boat mode which requires dissection of the gut), or by using season-specific external characteristics. Obviously, if a fish is releasing live young or eggs, it's a female; the presence of white milt indicates that it's a male.

The sex of **elasmobranchs** can always be determined from external characters because male fish have a pair of mixopterygia (intromittent organs, claspers) which are visible from an early stage of development on the inside edge of the pelvic fins (see below). The females do not have mixopterygia.



Adult **lingcod** can be sexed externally: males have a distinct papilla just forward of the anus (see below). Cabezon may also be sexed in this manner.



Lingcod sexing; female left, male right

California sheephead can be sexed externally by color. Sheephead are protogynous hermaphrodites, meaning they are born female and become male later in their development. They change color as they age and change from female to male. There are four life stages: juvenile, female, transitional and male. Juveniles are bright orange-red with black spots on the fins and caudal peduncle. They frequently have a white strip along their sides from head to tail.



Figure 12 – Juvenile Sheephead

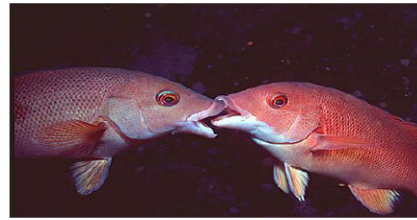


Figure 13 – Female Sheephead



Figure 14 – Transitional Sheephead

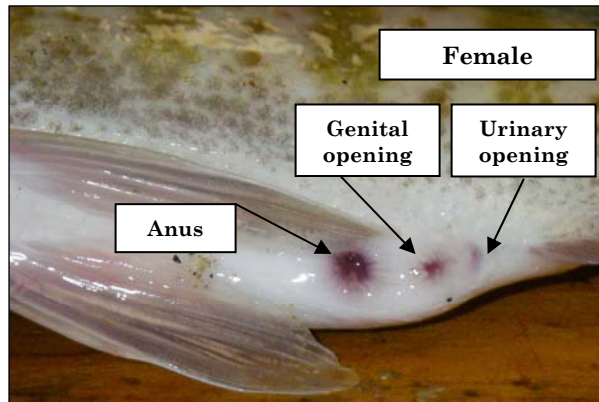


Figure 15 – Male Sheephead

We code the females, transitionals and males. Females are a faded rose to brownish red with a white chin. Transitionals are a dusky rose to a deeper reddish-orange with darkening of the anterior and posterior thirds of the body. Those areas may appear light brownish or grayish in color. The chin remains white. Male fish are dark brown or black on the first and last third. The central third is a deep orange to red. The chin is white.

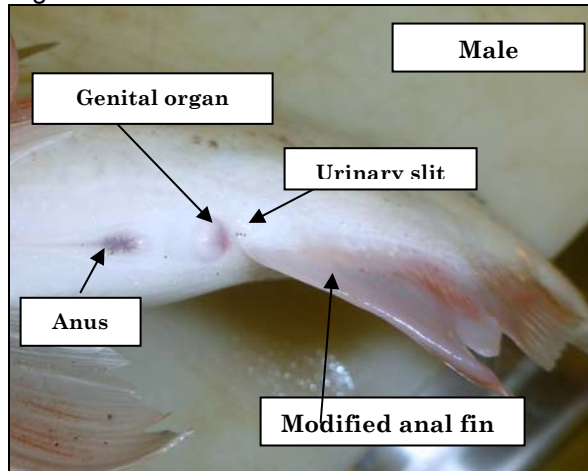
Surfperch of the family Embiotocidae which includes species such as barred, redbtail, walleye, calico, and silver surfperch, can be sexed externally by noting the number of openings between the anal and pelvic fins: males show two while females show three. To clarify, males have three openings; however, the genital and urinary openings appear as slits and the genital opening is obscured. Only two openings are visible on males.

Ventral view: female barred surfperch.

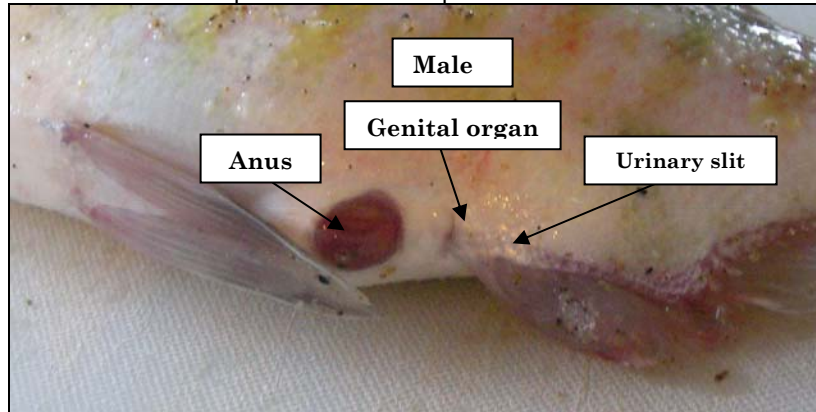


Pictured above and below are ventral views of a female barred, male redbtail, and male barred surfperch, respectively. The anal, genital, and urinary openings appear as purplish "spots" in the female barred surfperch shown above. Male surfperch possess a genital organ and modified anal fin ray as shown below.

Ventral view: ripening male redbtail surfperch, exhibiting bulbous genital organ and modified anal fin.



Ventral view: a non-ripe male barred surfperch



Male barred surfperch taken during the non-mating season genital organs are not bulbous as shown above.

Other species that you may occasionally hear or read that have gender determination may be without scientific basis. Do not record gender for any species not discussed here without checking with your Lead.

Angler-Reported Species Names

Anglers may use slang names for fish rather than American Fisheries Society (AFS) names. Be aware of slang names in your area and do not use slang

names on the forms. See *Other Codes* section for a complete list of common slang names.

Unidentified Reported Fish

With regard to fish unavailable for identification, the Sampler 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. If the angler has available catch, you may be able to use it as a reference in determining what was discarded (e.g., ask, "How many of this type of fish were thrown back?"). **The bottom line, however, is "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". Be persistent with anglers that have unavailable rockfish catch that is kept. Use your best effort to gain access to the catch for species identification.

Unidentified Examined Fish

With regard to fish available for identification, the Sampler should record the species name and code, especially for rockfish. 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. However, 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, take a picture for your Lead.

Coding Released Fish as Dead or Alive

The Sampler may determine if returns are alive or dead. Fish that are not moving in the water are considered dead. Fish that are alive but are obviously not going to survive (due to severe wounds or inability to swim down) may also be coded as dead. Severe wounds include gill bleeding.

For *Sebastes spp.*, and other species with air bladders brought up from deep water, there may be obvious signs of barotrauma (expanding gas) such as a protruding esophagus and eyes. High buoyancy may prevent the fish from swimming down from the surface. If the fish is unable to swim down in a few seconds, consider it dead. Fish returned to depth using descending devices are considered alive. Record the bottom depth when possible.

CRFS Protocol for Dealing with Suspect Data

In the Field

Kept/Unobserved Catch and Reported Catch:

An angler reports an unusual/suspect catch (either kept unobserved, released alive or released dead) to a CRFS Sampler. Some clues that might help the Sampler to recognize that the catch is unusual or suspect:

1. Reported species is out of documented range
2. Reported species is unlikely to be taken in the mode in which the angler is currently fishing
3. Reported species is unlikely to have been caught in the location the angler claims (bay vs. open ocean)
4. Reported species is unlikely to be taken at the depth the angler reported fishing
5. Reported species is unlikely to be taken using the fishing gear the angler reported fishing with
6. Angler incorrectly identifies kept observed catch
7. Novice angler gives clues that he/she is new to fishing and may not be familiar with local species
8. Angler reports catch numbers that seem unrealistic

When the Sampler realizes that the species the angler is reporting may be suspect, the following steps should be taken:

1. Identify the angler that encountered the suspect fish.
2. Use the available fish identification materials to confirm the species with the angler. Show the angler what characteristics are used to identify the reported species. Use the fish identification materials to point out to the angler species with which the reported species may be commonly confused, the key characteristics used to distinguish between the species, and ask if the angler noted any of these key characters
3. Do your best to ascertain the angler's fish identification skills – is he/she able to correctly identify the kept observed catch? Is the angler a novice or do they fish frequently in the local area?
4. For a species reportedly taken at an unusual depth, ask the angler how confident he/she is that the depth reported is accurate. Was a depth finder used at this location? Was the suspect fish caught in the same location/depth as any kept species?
5. Ask the angler to quantify how certain he/she is in his/her identification of the reported species – e.g. 100% certain, less than 50% certain, etc. Record this information on the data form and ASF.
6. If the angler is less than 50% certain, consider speaking with other anglers in the group who may be more knowledgeable
7. Circle the suspect catch on the data sheet

8. Note on the ASF that the Sampler collected what may be suspect data so that the data editor knows to look for it
9. On a busy day it's possible that following these steps to verify suspect data could result in missing boats/anglers. Do not miss boats during salmon season. When it's not salmon season, as guidance, it's suggested that Samplers spend more time verifying suspect reports of overfished quota-managed species such as RFYFY and RFCOW than verifying suspect reports of other species. Do not miss boats unless you are dealing with an overfished species of concern.

Kept/Observed Species of Concern and Unusual/Difficult to Identify Species:

1. Take a photo of all kept/observed RFYFY and RFCOW (unless the Sampler is able to collect the RFYFY, then no photo is needed)
2. Email/deliver photo to the CRFS Lead at the earliest opportunity
3. If unable to take a photo, note the characteristics that were used to identify the fish as an RFYFY or RFCOW on the data sheet
4. Circle the RFYFY or RFCOW on the data sheet, and make a note on the ASF that species of concern were observed
5. Follow the steps above for unusual species (out of range, oversize, uncommon in the sport catch) and fish that the Sampler is unable to identify
6. Follow step 9 above with regard to missing boats

Data Editing

When the data editor comes across a data sheet with suspect catch, he/she should take the following steps:

1. Review the steps the Sampler took to verify the accuracy of the suspect catch
2. Determine if the Sampler missed any steps in the verification process or if there is anything else the Sampler could have done to verify the identification
3. Contact the Sampler by phone as soon as possible after the suspect catch comes to the attention of the data editor and confirm all of the information detailed in the notes, and inquire if there is any additional information that the Sampler may not have had the time to note or did not think worth noting at the time
4. The data editor will take notes from this conversation with the Sampler and append them to the data sheet containing the suspect catch
5. Using his/her fish identification skills, knowledge of the species and the fishery, the data editor will work with the CRFS Lead (if the data editor is not the Lead) to form an opinion as to the accuracy of the suspect data and make notes as to whether the suspect data should be retained or not, providing justification as to why they believe the

data should be retained or not. These notes will be appended to the data sheet containing the suspect catch

6. The data editor and the Lead will notify the CRFS Supervisor and the CRFS Senior Specialist about suspect data involving RFYEY or RFCOW and provide all of the information and notes pertaining to the suspect data
7. For routine changes to suspect data, those not involving RFYEY or RFCOW, the data editor will complete the Data Editor's Field Data Change Log and maintain on file
8. When data entry receives a form where routine data have been changed, any questions as to why the changes were made can be directed to the data editor, who will refer to the Data Editor's Field Data Change Log

Form Selection

Your selection of forms differs across assigned fishing modes. While assigned a particular mode of fishing the coding of forms may be affected. For example, some interviews in other than the assigned mode need special treatment. An outline is presented here; however, you will need to learn about each form's specifics in their respective procedures.

Assignment	Form	Sample	Treatment
BB	Angler	BB	No X-effort
		PC	Not used
		MM, PR	Not used
	Assignment Summary Form	ALL	No Arv/Dep counts
	CPFV Onboard Forms	PC onboard only	Not used
	Non-salmon CPFV Dockside	PC	Not used
	Boat	PR1 only	Not used
	Pressure Effort Check	PC	Normal

Assignment	Form	Sample	Treatment
MMPR2	Angler	BB	Not used
		PC	Not used
		MM, PR	X- effort required
	Assignment Summary Form	ALL	Arv/Dep counts required
	CPFV Onboard Forms	PC onboard only	Not used
	Non-salmon CPFV Dockside	PC	Not used
	OSP Salmon Dockside Form	PC	Not used
	Boat	PR1 only	Not used
	Pressure Effort Check	PC	Normal

Assignment	Form	Sample	Treatment
PC Onboard	Angler	BB	Not used
		MM, PR	Not used
	Non-Salmon PC Dockside	PC	Not used
	OSP Salmon Dockside Form	PC	Dockside opportunistic
	Assignment Summary Form	ALL	No Arv/Dep counts
	CPFV Onboard Angler	PC only	Required onboard
	CPFV Onboard Catch/Discard	PC only	Required onboard
	CPFV Onboard Location	PC only	Required onboard
	Boat	PR1 only	Not used
	Pressure Effort Check	PC	Normal and record this trip

Assignment	Form	Sample	Treatment
PC Dockside (Non-Salmon)	Angler	BB	Not used
		MM, PR	Not used
	Non-Salmon PC Dockside	PC	Normal
	OSP Salmon Dockside Form	PC	Dockside opportunistic
	Assignment Summary Form	ALL	No Arv/Dep counts
	CPFV Onboard Forms	PC onboard only	Not used
	Boat	PR1 only	Not used
	Pressure Effort Check	PC	Normal and record this trip

Assignment	Form	Sample	Treatment
PC Dockside (OSP Salmon Dockside)	Angler	BB	Not used
		MM, PR	Not used
	OSP Salmon Dockside Form	PC	Normal
	Non-Salmon PC Dockside	PC	Opportunistic
	Assignment Summary Form	ALL	No Arv/Dep counts
	CPFV Onboard forms	PC onboard only	Not used
	Boat	PR1 only	Not used
	Pressure Effort Check	PC	Normal and record this trip

Assignment	Form	Sample	Treatment
PR1	Angler	BB	Not used
		MM	Not used
	Assignment Summary Form	ALL	No Arv/Dep counts
	CPFV Onboard forms	PC only	Not used
	Non-Salmon PC Dockside	PC	Dockside opportunistic
	OSP Salmon Dockside Form	PC	Dockside opportunistic
	Boat	PR1	Normal
	Pressure Effort Check	PC	Normal, get PC returns

THE ASSIGNMENT SUMMARY FORM (ASF)

The ASF is used as a cover sheet to track CRFS assignments. The ASF is a summary page that precedes all data sheets used on that particular CRFS assignment. The ASF moves with the data sheets through delivery, editing, scanning, and data entry. ASFs are used by the Lead Person to monitor time on site, travel time, assignment disposition, effort levels, and to make sure Samplers conducted the correct assignment, cluster and order.

An ASF must be submitted for each CRFS Assignment that has an ASSN ID, regardless of the assignment's disposition (including reassigned and canceled), even if the Sampler never went out to sample. The ASF is MANDATORY and will serve as a record of what happened to every issued assignment. Every site visited is logged on the ASF, even if no anglers are interviewed. The ASF is also used to record vital stop/start counts of anglers and boats used to estimate fishing effort for cluster assignments. Of note, ASFs are not needed for dockside salmon PC samples during salmon season (these assignments do NOT have ASSN IDs.

Assignment Summary Form (ASF) Layout

The ASF is structured into three general areas: header, site rows, and footer. The header is for recording information about the CRFS assignment as a whole, including the number of hours the Sampler put into the assignment. The majority of the form is structured into site rows, where specific information is recorded about each site. The footer is used to record a daily summary of PR1 data.

ASF Header

The header section is required to track the assignment ID, who worked, and the fishing mode and cluster (if appropriate). Each assignment record is identified in the database with the assignment number, Sampler ID, date and Assignment ID. The header section is also used to report the Sampler's hours and mileage, assignment disposition, and general comments about weather, effort and catch, and/or any other details that may have influenced fishing or sampling.

Assn #		CRFS ASSIGNMENT SUMMARY FORM						V3_03/29/12	
SAMPLER NAME		SAMPLER ID	DATE	ASSN ID	ASSN MODE	CLUSTER	HOURS		
1 Schaaf-DaSilva		207	20120407	043004	BB	CEN4	1		
COMMENT	Weather/Effort/Catch:		0.0hr = 58-3 mins		1	ASSN DISP	7.0		
	Sunny with slight NW breeze at 5 knots. Tide low at 0800. Fog belt that burned off at 1200.		0.1hr = 4-9 mins		3.5	MILEAGE	0.5		
	Low effort in general, 5 anglers total, 3 interviewed		0.2hr = 10-15 mins				8.5		
	Catch slow but anglers did have Barred SP		0.3hr = 16-21 mins						
			0.4hr = 22-27 mins						
		0.5hr = 28-33 mins							
		0.6hr = 34-39 mins							
		0.7hr = 40-45 mins							
		0.8hr = 46-51 mins							
		0.9hr = 52-57 mins							

Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled

0.0hr = 58-03 mins
 0.1hr = 04-09 mins
 0.2hr = 10-15 mins
 0.3 hr = 16-21 mins
 0.4hr = 22-27 mins
 0.5hr = 28-33 mins
 0.6hr = 34-39 mins
 0.7hr = 40-45 mins
 0.8hr = 46-51 mins
 0.9hr = 52-57 mins

Hours – For each CRFS assignment, record sampling, travel, and edit hours to the nearest tenth (0.1) hour. You can use the chart in the comment area to convert from minutes. Sampling time is time spent onsite working (i.e. time between arrival and departure). Traveling between access points at the same site would be considered sampling time, even if you are driving. Travel time is time spent driving from headquarters to sites and returning to headquarters at the end of the day. Travel time includes time spent traveling between sites. Edit time is time spent editing data outside of the assignment. Normally, CRFS Samplers would edit data during slow periods onsite, but if this is not possible, at-home editing time should be reported here. PC Effort Checks may be included in travel time or edit time but NOT sampling time.

ASF Site Rows

This area is used to report and describe each site visit during an assignment. ASFs for cluster assignments will have quite a few site rows filled out, since the Sampler is roving among multiple sites. Generally, for PR1 and PC modes, only one site will be listed because the Sampler will be at that same site for the entire working day.

☐ Edited. By: _____

SITE NAME / COMMENT		TIME				STATUS		STATUS		STATUS		STATUS		STATUS		STATUS		STATUS	
		CNTY	ARRV	MM	SS	START	STOP	STATUS 1-2	STATUS 0	STATUS 1	STATUS 2	STATUS 3	STATUS 4	STATUS 5	STATUS 6	STATUS 7	STATUS 8	STATUS 9	
1																			

ASF Site Rows - Location and Time Items

This section is used to identify the site(s) visited, how much of the Sampler's time was spent at each site, the reason for leaving the site(s), and when active sampling started and stopped. Make sure the site name matches exactly what is on the current monthly Site List. For assignments which are reassigned or canceled, record the site name, county and site code, and disposition (the reason why it was reassigned or canceled).

SITE NAME / COMMENT		TIME			
1		CNTY		ARRV	
		SITE		STRT	
		DISPO		STOP	
		HRS		DEPR	

ASF Site Rows - MMPR2 Cluster Items

MMPR2 CLUS ONLY		
	START COUNT	STOP COUNT
MM		
BB	<input checked="" type="checkbox"/> -EFFORT	
PC	<input type="checkbox"/> MM	<input checked="" type="checkbox"/> PR2
PR	5	1

This section is for recording MMPR2 start and stop counts. For MM mode this would be number of anglers and for PR2 mode it would be number of trailers. These counts are used to estimate the mean hourly effort. Only record the angler and/or trailer count(s) for the target mode(s) (TMODE) by site. The MM and PR2 check boxes must agree with the sampled site's TMODE. TMODE by site is specified on the current monthly Site List. Only record whole numbers of anglers and/or trailers (zeros okay). Do not count PWC (jet skis, etc.) or sailboat trailers, rooftop carriers or trailers that are being stored or not attached to a vehicle. Leave this section blank for BB, PC and PR1 modes.

ASF Site Rows - Angler Form Counts

This is a form tally section for cluster assignments. Leave this section blank for PC and PR1 modes. Record the number of good interviews (i.e. Status 1-2 Angler Forms) and/or the number of Effort-change Only Forms (i.e. Status Zero Angler Forms) and/or special fishery code Angler Forms obtained by site. Only record positive whole numbers here. **Do not report zeros** for sites where you did not have any of these types of Angler Form interviews; just leave blank. Special fishery code forms include crab-only interviews (D), tournament interviews (T), lobster interviews (L), and bonus (B) interviews. Note: although "C" is listed here for crew interviews, "C" is no longer a valid special fishery code for clusters.

ANG FORM COUNTS			
Status 1-2	STATUS 0	SPECIAL FISHERY CODES	
		B	C
1	1		

ASF Site Rows - Total Effort

TOTAL		
ESTIMATED ANGLERS	EST FSHN BOATS	
12		MM
/		BB
		PR
20	10	PR2

This section is for recording an estimate of the total number of fishing boats and/or anglers on CLUSTERS ONLY. Leave this section blank for PC and PR1 modes. The data are used in determining the sample rate for representative sampling. The Sampler will estimate the number of anglers and boats at the site by mode between start time and stop time. This provides an estimate of "fishing pressure" at this site so the effort distribution can be monitored and compared with the sampling distribution. It is not required that this estimate be calculated exactly; it may be off from predicted values by as much as 10% due to missed counts and other circumstances. **All the boxes under Total Effort must be filled in for MMPR2 and BB assignments.**

MM: The total estimated anglers value is the initial start count plus any anglers who started fishing while the Sampler was monitoring X-effort.

TOT Est MM Anglers = MM Start count + MM anglers started

Thus, the MM stop count (obtained by counting the number of anglers remaining at the MM site after the stop time is recorded) is the total number of MM anglers minus the number of good interviews minus skipped anglers minus refusals minus language barriers.

MM Stop Count = TOT Est MM Anglers – good interviews – skipped MM anglers – MM refusals – MM language barriers

ESTIMATED ANGLERS =

SUM of “Eligible” anglers skipped and missed+

SUM of “Status 1, 2 forms” (minus incompletes) +

SUM of “Bad angler” (refusals, etc.) counts on forms +

SUM of “Anglers remaining” at the site when you left (eligible when done fishing, includes incompletes)

For PR mode, anglers still fishing can be calculated by the number of trailers in the parking lot *multiplied* by the average number of anglers per boat observed for that site and sampling period. The average number of anglers per boat is the number of anglers divided by the number of boats. If you don’t have any experience with an average number at the site, use “2” anglers per fishing boat. You may attempt to account for ineligible boats which include non-fishing boats, shellfish-only boats and boats fishing in freshwater or not in U.S. waters, etc. It may be possible to exclude sailboats and jet skis due to the type of trailers they use. An approximation is allowed.

PR2: The total estimated boats value is the initial start trailer count plus any fishing boats that launched while the Sampler was monitoring X-effort. Estimate two anglers per fishing boat, unless the actual number of anglers fishing on each boat is known.

TOT Est Fishing Boats = PR2 Start Count + launched fishing boats

TOT Est PR2 anglers = total number of anglers from each boat sampled + 2(PR2 Stop Count)

Thus, the PR2 stop count is the total number of boats minus the number of sampled fishing boats minus NF boats minus missed boats minus refused boats.

PR2 Stop Count = TOT Boats – sampled fishing boats – missed boats – refused boats

An accurate estimation is possible when a full accounting of boats and anglers is used with the following formulae:

Sampled anglers / screened boats = Anglers per boat
 Unsampling boats X Anglers per boat = Unsampling anglers
 Sampled Anglers + Unsampling anglers = Estimated anglers

Do not leave any Total Effort boxes blank for clusters (code #, "N" or "/"):

- If the fishing mode is not possible at the site record **"N"**. Consult the current monthly Site List or the CRFS Wiki Site.
- If the mode is possible at the site, but no anglers were present, record **"0"**.
- If the mode is possible but you were unable to get the total, record **"F"**.

Q. What is the difference between total anglers or total boats and start and stop counts?
A. The start and stop counts are instantaneous counts at a specific time, while the total anglers or total boats are the number for the entire time you were on-site. So, total anglers include people who have left the site since your start count. If no one leaves the site while you are there, total anglers is the same as a start and stop count.

The footer of the ASF consists of PR1 totals and is used to monitor sampling and catch for weekly estimation. The footer is to be filled out for PR1 assignments only, with the sum of the page totals from each PR1 Form. If you are in District 2-6 during the salmon season, you will normally be required to report these PR1 totals to your Lead on your Excel weekly report every Monday by 10:00 AM.

[illegible]

ASF Item by Item Instructions

The Assignment Summary Form (ASF) is used to monitor the sampling assignments, both completed and reassigned or canceled.

FIELD	INSTRUCTIONS	CODES AND FORMATS
HEADER		
Assn #	The assignment number will be "1" unless you are issued more than one assignment in a day.	1=first assignment 2=second assignment
Q. When do I change the assignment number (item 1)? A. You may have more than one assignment for the day but you will usually have just one. The first assignment will be "1", the second assignment will be "2". Remember to start re-numbering interviews from 01 for any new assignment you switch to for that day.		
Sampler Name	Print your full name. Do not sign.	Krista Bramson
Sampler ID	Enter your personal 3-digit CRFS Sampler ID code.	100 to 399 Example: Jayna DaSilva = 207
Date	Enter the assignment date	YYYYMMDD Example: 20120407 for April 7, 2012
Assn ID	Enter the 6 digit assignment ID. Each CRFS assignment is given a unique identification number. The number should be used on its issued date and every time the assignment is attempted or if it is canceled.	011001 to 126999. The first two fields are the month (e.g. 04= April). The third field is the CRFS District (i.e. 2 = Channel). The final three fields are the unique ASSN number from 001-999 generated from the MS Access Draw Program.
Comment	Summarize and describe your day's activities in the space provided. Include weather conditions such as sea state, cloud cover, wind, precipitation, tides. Report on unusual events, angler activities, and species targets. Describe re-assignments, missed and canceled assignments. Include descriptions of effort levels and catch, especially rare species. Report the names of whom you worked with or any field checks performed. List any salmon headtags used	"The beaches were empty due to NW gale force winds." "Assignment reassigned because of engine problems" "Went home early because of doctor appointment" "Effort was high but catch avg. 4 RF each; a few ling also landed" "Worked with Rachel Reed (217) and had a field check by Ashok Sadrozinski" "Used headtag series 50000-06" "Unable to obtain weights due to rough conditions" "Was working with Sampler Joe Smith today."
Assn Mode	Enter the assigned mode. The assigned mode will appear on your Sampler Schedule.	PR1= Primary private / rental boat sites. MMPR2= Manmade structures & secondary private and

FIELD	INSTRUCTIONS	CODES AND FORMATS
		rental boat sites. BB= Beaches and banks. PC= Party and charter boats (for PC non-salmon docksides and PC onboards)
Cluster	For MMPR2 and BB record the cluster site code. The cluster code is the county or district alpha-code with a number suffix. For PR1 and PC modes use the port code.	San Diego 1 = SDG1 Central 1 = CEN1
Assn Dispo	Report the number code for the assignment disposition. The codes are defined under the "COMMENT" box. The assignment disposition is 1, 2 or 6. For Dispositions other than "1" the Sampler must record the conditions or reasons in the comments section. Note: There is another disposition below for each site (site disposition). Do not get the two disposition types confused. For assignments which are reassigned or canceled, record the site name, and county and site codes on the first ASF Site Row.	1=Complete: When you "complete" the assignment and it is done. 2= Reassigned: When the assignment needs to be moved or rescheduled. Examples: You missed the PC boat and there are no eligible alternates; personal reasons approved by your Lead; the site is closed to fishing; no boats going out due to weather or low effort; you get sick or injured during the assignment; the situation is unsafe or unhealthy 6= Cancelled: When your Lead notifies you that the assignment cannot be rescheduled before the end of the month.
<p>Q. What if I have a PC onboard assignment and learn that no boats are going out at the assigned or alternate sites due to bad weather?</p> <p>A. Enter "2" (reassigned) for assignment disposition. Describe the situation under "comment". Work with your Lead to try to reschedule the assn for later in the month.</p>		
Mileage	Compute the Miles you drove to the nearest whole mile for the day. This will help the Sampler fill out a Travel Expense Claim (TEC) for the month. For Samplers using a State car, do not record mileage (leave blank).	Miles, to the nearest whole number. Example: 12
<p>Q. Do I include miles driven from my house?</p> <p>A. Miles are from 'headquarters' to the site(s) and back. Your headquarters are usually the closest CDFW Office, but may be your home.</p>		
Travel Hours	Enter the time spent traveling from your "headquarters" to and from the sampling sites, as well as between sites. Do not include any travel time,	Decimal hours to tenth hours. You may include PC effort Checks in edit time. Examples: 6.5 for six hours and

FIELD	INSTRUCTIONS	CODES AND FORMATS
	which is considered non-payable commute miles, i.e. travel between your home and your 'headquarters'.	30 minutes. 0.2 for 10 minutes 1.0 for one hour
<p>Q. What is an <u>alternate site</u>?</p> <p>A. An alternate site is a site other than the assigned site, used only for PC mode. For Example, Randy's Sportfishing is an appropriate alternate site to Chris's Sportfishing in Monterey County.</p>		
Sampling Hours	Enter the hours spent sampling that day. Sampling hours must add up to the sum of the "HRS" for each site. Time spent driving between access points within a site is included here. Use the conversion chart provided in the COMMENT area of the form.	Decimal hours to nearest tenth hours. Example: 8:05 am to 10:40 am = 2 hrs 35 min., = 2.6 hours
<p>Q. What's the difference between a site and an access point?</p> <p>A. A site is a designated area where angling takes place. An access point is within a site where anglers have access to fishing. A site may have one or more access points. For example, a boat ramp may be designated as a site and have only one access point, the ramp. A long stretch of beach, on the other hand, may be designated as a single site, but within the site are various parking areas, each an access point.</p>		
Edit Hours	Extra hours spent editing forms at home or office. You are expected to edit your forms during slack time between interviews; however, occasions may arise when you require more time to edit forms.	Decimal hours to nearest tenth hours You may include PC effort Checks in edit time.
<p>Q. Do I include editing time between interviews here?</p> <p>A. No, you are expected to edit your forms during slack time between interviews, which is counted as sampling time. However, sometimes you may end an assignment with some forms left unedited and need time to complete editing. These forms may be edited at home or office later in the day and claimed as "edit time".</p>		
<p>Q. Should I include weekly tasks, like going to the post office, emails/phone calls copy store, filling in Excel weekly reports, etc. on the ASF?</p> <p>A. Only hours related to that actual assignment for CRFS are included.</p>		
<p>Q. Can I record hours not related to CRFS?</p> <p>A. No. You are not authorized to claim any hours not related to CRFS without prior approval from your Supervisor.</p>		
<p>Q. What if my Lead/Supervisor assigns work unrelated to CRFS that is funded from another source?</p> <p>A. Hours spent working on other CDFW projects should be tracked by the Scientific Aid and that other project and would not be reported on CRFS Forms.</p>		
Total Hours	Sum of travel, sample, and	Decimal hours to nearest tenth

FIELD	INSTRUCTIONS	CODES AND FORMATS
	edit hours on the day of the assignment	hours
SITE ROWS		
Site Name	Name of this site as listed on your current Site List. The Site Name and Site Code must match.	"Santa Cruz Marina Launch Ramp"
Site Comment	Record comments regarding: unusual circumstances at this site, effort levels, missed anglers or boats, language barriers, catch	"Boat angler was in a kayak " "Missed one BB angler"
CNTY = County	Record the 3-digit county code	1=Alameda 111=Ventura Leading zeroes are not required.
Site	Record the numeric site code corresponding to the site name. Make sure it makes sense with the County code.	"104" = Moss Landing Launch Ramp
<p>Q. What if an angler fished someplace else from shore, do I add another site visit?</p> <p>A. Code the site where fishing occurred. Hours sampling for that site can be zero and disposition will be 5=other.</p>		
Dispo = Site Disposition	<p>The site disposition is recorded for each site sampled and indicates the status of the effort there and the reason for leaving the site. The lowest valid disposition code should be used. Site disposition is recorded just prior to departure from the site. The site disposition code needs to be 0, 1, 4, 5, or 7.</p> <p>If you drive by a site without stopping because there is no effort, use the same start and end time, and enter "0" for hours on site. For MMPR2 assignments code the times one minute apart.</p>	<p>Use the lowest valid code:</p> <p>0= Pressure Check: You have performed a trailer/angler count only (i.e. drive-bys)</p> <p>1= Complete/Done</p> <p>4= Low Effort (PC only): There are no anglers. The assn will need to be rescheduled; work with your Lead on this.</p> <p>5= Other: Examples: Time spent at site (outside of assigned cluster) interviewing anglers; you can't ride the boat for whatever reason (not allowed by captain, PC had motor problems, poor weather).</p> <ul style="list-style-type: none"> • 7= Roving (Clusters): you are sampling a cluster of sites and you are moving between sites as scheduled.
<p>Q. What if there are no anglers because of wind?</p> <p>A. Code the site disposition as 5 (other) and write a comment about the wind.</p> <p>Q. What if the PC boat broke down and I went to an alternate site?</p> <p>A. Code the site disposition as 5 (other) and write a comment about the problem.</p>		
Hours	Enter the total amount of time spent at the site (time between arrival and departure times). Do <u>not</u> include time traveling to or	Record to nearest tenth hours: "1.2" Leading zeros are helpful for data entry. Example the first site was sampled from 08:01 to 13:40

FIELD	INSTRUCTIONS	CODES AND FORMATS
	from the site. Include time spent driving between access points or waiting for boats or anglers as sampling time.	(1340-0801 = 0539 = 5.6hrs.)
Q. What if I drive by without stopping because of zero effort? A. record your visit time with different arrival, start, stop and departure times (one minute apart) and record HRS on Site as zero.		
ARRV =Arrival	Time in 2400 format when you physically arrived at the site.	24 hour format: "0701" = 7:01am
STRT =Start	<u>MMPR2 only.</u> Time in 2400 format when you started monitoring x-effort for MMPR2 sampling.	"0710" = 7:10am <u>Note: that ":" is not used.</u>
Q. Can I record the start, stop and interview times with the same time stamp? A. No, unique times are desired for all events, including interview times.		
STOP	<u>MMPR2 only.</u> Time in 2400 format when you stopped monitoring x-effort for MMPR2 sampling.	"1355" = 1:55pm
Q. What if I stop MM x-effort and then get some incomplete MM interviews? A. Code the interview times between the stop time and the departure time. It is expected that incomplete interviews would be conducted at this time.		
DEPR =Departure	Time in 2400 format when you physically departed the site.	"2359" = 11:59pm
MM Start Count	The count of MM anglers at the start time (when the site mode includes MM x-effort).	1= One MM angler onsite. 0= Zero MM anglers onsite. <blank> = not applicable
MM Stop Count	The count of MM anglers at the stop time (when the site mode includes MM x-effort).	2 = Two MM anglers on site. 0= Zero MM anglers onsite. <blank> = not applicable
Q. What if there are x-effort events after the stop count when I am doing incomplete MM interviews; for instance language barriers or anglers who started fishing? A. Do not record any x-effort after the 'stop' count if you remain onsite.		
PR2 Start Count	The count of PR2 trailers at the start time (when the site mode includes PR2 x-effort).	1 = One PR2 trailer onsite. 0= Zero PR2 trailers onsite. <blank> = not applicable
Q. Are rental boats included in the counts? A. Yes, if the rental boats are part of the site, count empty slips (ask the rental agent) as boats out fishing. Q. Do I adjust the PR2 start count to account for boats without trailers? A. No, that is accounted for on the Angler Form by the question; "Trailer in count area?"		
PR2 Stop Count	The count of PR2 trailers at the stop time (when the site mode includes PR2 x-effort).	2= Two PR2 trailers on site. <blank>= not applicable
Q. Do I count the personal watercraft (PWC) trailers? A. No, do not count personal watercraft trailers, roof top racks, stored trailers or truck bed boat carriers. Just count regular trailers. Q. What do I code for PR2 counts when I am on a MMPR2 assignment and sampling at a site with MM as the TMODE?		

FIELD	INSTRUCTIONS	CODES AND FORMATS
A. Leave it blank since PR2 is not-applicable. Do not code 'zero'.		
Status 1-2	This is a summary of your successful "good" interviews. This is the count of status 1 and 2 Angler Forms, including all incomplete (half done) angler interviews for MM and BB modes. You should leave boxes blank if they are zero. This includes opportunistic BB interviews that are <u>not</u> special fishery forms.	1= One good angler form. If no Angler Forms collected, leave it blank. Blank='0'
Q. Do I include the special fishery Angler Forms here? A. No, they all go under special fishery codes. Q. What do I do if I interview a complete angler after my stop count? A. If it is within 1 minute of the stop count time, move the stop count to 1 minute after the interview and recount total anglers on site, record the interview in the appropriate status 1 -2 column.		
Status 0	This is the number of status zero (i.e. Effort-Change Only) Angler Forms. Exclude all Special Fishery Angler forms.	1=One status zero Form Blank='0' Note: You can have a maximum of 4 status zero forms per hour, based on the 15 minute rule.
Q. Do I add counts of 'bad anglers' here? A. No. There are no counts of 'bad anglers' on the ASF; they can go on status zero forms or in the X-effort of "good" interviews. Q. What is a status zero form? A. A status zero form is a form used to report changes in effort or 'bad anglers' (refusals & language barrier) when no angler interviews (in that mode) are present with a time stamp falling within 15 minutes.		
Special Fishery Codes	Record all status 1 and 2 Special Fishery Code forms. Special Fishery Codes are used to denote angler forms that have a special circumstance. Code the letter code of the special fishery at the top of the blank column if it is not a "B" form (bonus). Note: "C" for Crew is no longer a valid SFC and is now blocked out from use.	T = Angler forms from tournament participants. L = Lobster only trip D = Dungeness and rock crab only trips
Q. What if there's a fishing tournament happening at a site? A. If a site turns out to be the official station for a tournament, you should interview at the site and code them with Special Fishery 'T'.		
Estimated Anglers CLUSTERS ONLY	Record the total number of anglers for the time you were there by mode. The sum of: 1) Eligible anglers not interviewed (skipped or	Do not leave blank: 1 = One angler N = Anglers fishing in that mode <u>not possible</u> . 0 = No anglers were present in

FIELD	INSTRUCTIONS	CODES AND FORMATS
	missed) 2) Anglers interviewed 3) Uninterviewed anglers remaining at the site when you leave. An approximation is acceptable.	that mode / = Forgot or unable to check number of anglers in that <u>valid</u> fishing mode
<p>Q. How can I calculate the number of PR2 anglers that are still out fishing?</p> <p>A. You can use an average number of anglers per boat from previous days or, if you have no experience with an average number of anglers per boat at the site, use two anglers per fishing boat—but do not include non-fishing boats, crabbing boats, freshwater boats, boats fishing outside of U.S. waters, etc.</p>		
Estimated Boats	Record the total number of 'fishing' boats for the time you were there. Also estimate the number of remaining boats represented by 'fishing' trailers at the site.	2 = two fishing boats N = PR2 boats <u>not possible</u> . 0 = No boats were present in that mode / = Forgot or unable to check number of boats
FOOTER - PR1 TOTALS		
# Ref	Total number of PR1 fishing boats that refused the CRFS survey on all PR1 pages.	Sum of '# Refuse' from each PR1 page
Total Boats	Total number of boats on all PR1 pages; included fishing and NF boats (But not missed boats or refusals).	Sum of 'Total Boats' from each PR1 page
Boats Salmon	Total number of boats sampled that were targeting and/or catching salmon on all PR1 pages	Sum of 'Salmon Boats' from each PR1 page 0= no salmon boats
Angs Salmon	Total number of anglers sampled from boats targeting and/or catching salmon on all PR1 pages	Sum of 'Salmon Angs' from each PR1 page
Kept Kings	Total number of Chinook salmon 'observed kept' and 'unobserved kept' from sampled boats targeting or catching salmon on all PR1 pages	Sum of 'Kept Kings' from each PR1 page
Rels Kings	Total number of Chinook salmon 'released dead + alive' from sampled boats targeting or catching salmon on all PR1 pages	Sum of 'Rels Kings' from each PR1 page
Kept Coho	Total number of Coho salmon 'observed kept' and 'unobserved kept' from sampled boats targeting or catching salmon on all PR1 pages	Sum of 'Kept Coho' from each PR1 page
Rels Coho	'released dead + alive' from sampled boats targeting or	Sum of 'Rels Coho' from each PR1 page

FIELD	INSTRUCTIONS	CODES AND FORMATS
	catching salmon on all PR1 pages	
# Head Tags	Total number of salmon head tags issued (including NRS tags) on all PR1 pages.	Sum of '# Head tags' from each PR1 page
# Seal Take	Total number of salmon lost to seals or sea lions on all PR1 pages. Do not include other species taken by pinnipeds	Sum of '# Seal Take' from each PR1 page
Kept Yelloweye	Total number of yelloweye rockfish 'observed kept' and 'unobserved kept' from sampled boats on all PR1 pages	Sum of 'Kept Yelloweye' from each PR1 page
Rels Yelloweye	Total number of yelloweye rockfish 'released dead + alive' from sampled boats on all PR1 pages	Sum of 'Rels Yelloweye' from each PR1 page
Kept Cowcod	Total number of cowcod 'observed kept' and 'unobserved kept' from sampled boats on all PR1 pages	Sum of 'Kept Cowcod' from each PR1 page
Rels Cowcod	Total number of cowcod 'released dead + alive' from sampled boats on all PR1 pages	Sum of 'Rels Cowcod' from each PR1 page
On Missed	The total number of onsite missed boats on all PR1 pages	Sum of 'On Missed' from each PR1 page
Off Missed	The total number 'offsite missed boats' returning to the PR1's offsite area (usually a harbor slip or alternate launch ramp) on all PR1 pages	Sum of 'Off Missed' from each PR1 page

ASF Coding Tips

The following coding tips and examples address the most common types of errors on the Assignment Summary Form. The most common errors fall into; 1) items left blank or not blank inappropriately, 2) mathematical errors and 3) incorrect assignment procedures followed.

Specific Editing Checks

1. Status Zero forms are entered solely for the purpose of reporting changes in effort or 'bad angler' (e.g. language barriers and refusals) counts (with the 15 minute rule, see MMPR2 methods).
2. BB and MMPR2 assignments are disposition 7 = 'roving' until the last site visit, which is 1 = 'complete'.
3. Check the 'x-effort' column checkboxes MM and/or PR2 based on the target mode(s) (TMODE) assigned at the site. The TMODE for each site in the cluster is listed in the Site List for the current month. Only the listed TMODE will have effort (x-effort) monitored and interviews conducted during sampling.
4. Do not track x-effort for BB assignments.
5. The Total Effort (estimated boats and anglers) section must be coded for clusters. Leave blank for PR1 and PC modes.
6. When a specific mode is sampled during a cluster assignment, the Total Effort section for that mode must have a number and not a "/" or "N".
7. The mathematics for ASF hours should be calculated twice to insure the total sampling time is correct. Use a calculator if needed.

Examples of Assignment Summary Form

MMPR2

ASSN #		CRFS ASSIGNMENT SUMMARY FORM										V3_03/29/12																																																																																																																																																																																																																																																																																																																																																																																									
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One status zero form, 5 interviews</td> <td>DISPO</td> <td>7</td> <td>STOP</td> <td>1000</td> <td>PC</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>HRS</td> <td>2.0</td> <td>DEPR</td> <td>1015</td> <td>PR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="4">2</td> <td>Coast Guard Jetty</td> <td>CNTY</td> <td>53</td> <td>ARRV</td> <td>1021</td> <td>MM</td> <td>10</td> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>SITE</td> <td>102</td> <td>STRT</td> <td>1022</td> <td>BB</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3 people Started fishing. Got 3 interviews, others not 1/2 done</td> <td>DISPO</td> <td>7</td> <td>STOP</td> <td>1131</td> <td>PC</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>HRS</td> <td>1.2</td> <td>DEPR</td> <td>1135</td> <td>PR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="4">3</td> <td>Coast guard Jetty Ramp</td> <td>CNTY</td> <td>53</td> <td>ARRV</td> <td>1136</td> <td>MM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>SITE</td> <td>102</td> <td>STRT</td> <td>1137</td> <td>BB</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>13 Trailers, 1 launched. 2 were NCOM, 1 missed. 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One MM started, then one started, 2 int. in MM mode</td> <td>DISPO</td> <td>1</td> <td>STOP</td> <td>1620</td> <td>PC</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>HRS</td> <td>1.4</td> <td>DEPR</td> <td>1621</td> <td>PR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="4">5</td> <td></td> <td>CNTY</td> <td></td> <td>ARRV</td> <td></td> <td>MM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>SITE</td> <td></td> <td>STRT</td> <td></td> <td>BB</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>DISPO</td> <td></td> <td>STOP</td> <td></td> <td>PC</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>HRS</td> <td></td> <td>DEPR</td> <td></td> <td>PR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="4">6</td> <td></td> <td>CNTY</td> <td></td> <td>ARRV</td> <td></td> <td>MM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>SITE</td> <td></td> <td>STRT</td> <td></td> <td>BB</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>DISPO</td> <td></td> <td>STOP</td> <td></td> <td>PC</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>HRS</td> <td></td> <td>DEPR</td> <td></td> <td>PR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="12"> <table border="1"> <thead> <tr> <th># Ref</th> <th>Total Boats</th> <th>Boats</th> <th>Angs</th> <th>Kept</th> <th>Rels</th> <th>Kept</th> <th>Rels</th> <th># Head</th> <th># Seal</th> <th>Kept</th> <th>Rels</th> <th>Kept</th> <th>Rels</th> <th>On</th> <th>Off</th> <th>PR1 only</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> </td> </tr> </tbody> </table> <p>Site dispositions: 0=Pressure check, 4=Low Effort, 5=Other(comment), 7=Roving (MM, BB or PR2). 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One MM started, then one started, 2 int. in MM mode	DISPO	1	STOP	1620	PC									HRS	1.4	DEPR	1621	PR								5		CNTY		ARRV		MM									SITE		STRT		BB									DISPO		STOP		PC									HRS		DEPR		PR								6		CNTY		ARRV		MM									SITE		STRT		BB									DISPO		STOP		PC									HRS		DEPR		PR								<table border="1"> <thead> <tr> <th># Ref</th> <th>Total Boats</th> <th>Boats</th> <th>Angs</th> <th>Kept</th> <th>Rels</th> <th>Kept</th> <th>Rels</th> <th># Head</th> <th># Seal</th> <th>Kept</th> <th>Rels</th> <th>Kept</th> <th>Rels</th> <th>On</th> <th>Off</th> <th>PR1 only</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>												# Ref	Total Boats	Boats	Angs	Kept	Rels	Kept	Rels	# Head	# Seal	Kept	Rels	Kept	Rels	On	Off	PR1 only																	
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Asn #		CRFS ASSIGNMENT SUMMARY FORM										V3_03/29/12							
SAMPLER NAME		sampler ID		DATE		ASSN ID		ASSN MODE		CLUSTER		HOURS							
1		Joe McCoil		221		2013 04 03		113071		PR1		MOR							
COMMENT Weather/Effort/Catch: Overcast, cool day, mild winds, 60 deg in AM, mid-70s by PM. Moderate effort. Catch of SALCK, mackerel, one kingfish. One refusal and the last boat left out was a NFFCOM. Rock N. Sampler (207) worked with me and we have separate paperwork. I used my salmon head tags. One seal take. No cohos.												0.5		Travel					
												1		ASSN DISP		8.8		SAMPLING	
												25		MILEAGE		0.1		EDIT	
												9.4		TOTAL		TOTAL			
CLUSTERS ONLY																			
<input type="checkbox"/> Edited. By: _____		MMPR2 CLUS ONLY		START COUNT		STOP COUNT		Status 1-2		STATUS 0		ANG FORM COUNTS		ESTIMATED ANGLERS		EST. FSHN BOATS			
												B C							
SITE NAME / COMMENT		TIME		CNTY		ARRV		MM		BB		EFFORT		PR		PR2			
																		PR	
1		Morro Bay Launch Ramp		79		0805		MM		BB		EFFORT		PR		PR2			
																		20 Trailers appear to have launched	
2		SITE		STRT		BB		EFFORT		PR		PR2							
														3		DISPO		STOP	
4		HRS		DEPR		PR		PR		PR2		PR2							
														5		CNTY		ARRV	
6		SITE		STRT		BB		EFFORT		PR		PR2							
														7		DISPO		STOP	
8		HRS		DEPR		PR		PR		PR2		PR2							
														9		CNTY		ARRV	
10		SITE		STRT		BB		EFFORT		PR		PR2							
														11		DISPO		STOP	
12		HRS		DEPR		PR		PR		PR2		PR2							
														13		CNTY		ARRV	
14		SITE		STRT		BB		EFFORT		PR		PR2							
														15		DISPO		STOP	
16		HRS		DEPR		PR		PR											

PR1 – Non-Salmon Season

ASSN #		CRFS ASSIGNMENT SUMMARY FORM										V3_03/29/12			
SAMPLER NAME		sampler ID		DATE		ASSN ID		ASSN MODE		CLUSTER		HOURS			
1		Joe McCool		221		2013 11 03		113069		PR1		MOS			
COMMENT		Weather/Effort/Catch: Sunny, warm day. Low winds, 60 degrees in AM, mid-60s by PM. Low-Moderate effort. Catch of RFGEN, TNAAB, one HALCA. Some late launchers and the last boat out was an overnight luna boat. I left because it was getting dark. No additional sampler, I worked alone.		0.0hr = 58-3 mins 0.1hr = 4-3 mins 0.2hr = 10-15 mins 0.3hr = 16-21 mins 0.4hr = 22-27 mins 0.5hr = 28-33 mins 0.6hr = 34-39 mins 0.7hr = 40-45 mins 0.8hr = 46-51 mins 0.9hr = 52-57 mins		1		ASSN DISP		8.8		TRAVEL			
						25		MILEAGE		0.1		EDIT			
										9.4		TOTAL			
CLUSTERS ONLY															
Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled															
<input type="checkbox"/> Edited By: _____															
SITE NAME / COMMENT		TIME		MMPR2		CLUS ONLY		ANG FORM COUNTS		TOTAL					
				START COUNT		STOP COUNT		Status 1-2		STATUS 0		ESTIMATED ANGLERS EST. FSHN BOATS			
1 Woodward Boat Ramp		CNTY	53	ARRV	0800	MM							MM		
6 Trailers appear to have launched		SITE	105	STRT		BB	<input checked="" type="checkbox"/> EFFORT						BB		
		DISPO	0	STOP		PC	<input type="checkbox"/> MM <input type="checkbox"/> PR						PC		
		HRS	0	DEPR	0802	PR							PR2		
2 Moss Landing Launch Ramp		CNTY	53	ARRV	0809	MM							MM		
12 trailers in parking lot		SITE	104	STRT		BB	<input checked="" type="checkbox"/> EFFORT						BB		
		DISPO	1	STOP		PC	<input type="checkbox"/> MM <input type="checkbox"/> PR						PC		
		HRS	8.8	DEPR	1700	PR							PR2		
3 Woodward Boat Ramp		CNTY	53	ARRV	1701	MM							MM		
1 trailer left on site		SITE	105	STRT		BB	<input checked="" type="checkbox"/> EFFORT						BB		
		DISPO	0	STOP		PC	<input type="checkbox"/> MM <input type="checkbox"/> PR						PC		
		HRS	0	DEPR	1702	PR							PR2		
4		CNTY		ARRV		MM							MM		
		SITE		STRT		BB	<input checked="" type="checkbox"/> EFFORT						BB		
		DISPO		STOP		PC	<input type="checkbox"/> MM <input type="checkbox"/> PR						PC		
		HRS		DEPR		PR							PR2		
5		CNTY		ARRV		MM							MM		
		SITE		STRT		BB	<input checked="" type="checkbox"/> EFFORT						BB		
		DISPO		STOP		PC	<input type="checkbox"/> MM <input type="checkbox"/> PR						PC		
		HRS		DEPR		PR							PR2		
6		CNTY		ARRV		MM							MM		
		SITE		STRT		BB	<input checked="" type="checkbox"/> EFFORT						BB		
		DISPO		STOP		PC	<input type="checkbox"/> MM <input type="checkbox"/> PR						PC		
		HRS		DEPR		PR							PR2		
0 15 0 0 0 0 0 0 0 0 0 0 0 0 7		PR1 only													
# Ref	Total Boats	Boats	Angs	Kept	Rels	Kept	Rels	# Head	# Seal	Kept	Rels	Kept	Rels	On	Off
		Salmon		Kings		Coho		Tags		Take		Yelloweye		Cowcod	Missed
Site dispositions: 0=Pressure check, 4=Low Effort, 5=Other(comment), 7=Roving (MM, BB or PR2). Total Effort: *F=Mode present but total not determined *N=Mode not possible at site. Status 1&2 are good angler forms, status 0 are effort-change only angler forms, B=bonus D=crab T=tournament, L=lobster															

PCO - Completed

Assn #		CRFS ASSIGNMENT SUMMARY FORM										V3_03/29/12	
SAMPLER NAME		sampler ID		DATE		ASSN ID		ASSN MODE		CLUSTER		HOURS	
1		Joe McCool		221		2012 11 31		113034		PCO		AVI	
COMMENT		Weather/Effort/Catch: Clear, wind @ 15 knots. Big ocean swells. Good effort 29 anglers. Catch is: LNGCD, RFGEN, SCCAB, GRNKP Some Canaries also released. No DD used on this trip A few people were seasick										TRAVEL 9 SAMPLING 1 EDIT 11 TOTAL	
		0.0hr = 58-3 mins 0.1hr = 4-9 mins 0.2hr = 10-15 mins 0.3hr = 16-21 mins 0.4hr = 22-27 mins 0.5hr = 28-33 mins 0.6hr = 34-39 mins 0.7hr = 40-45 mins 0.8hr = 46-51 mins 0.9hr = 52-57 mins											
		Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled <input type="checkbox"/> Edited. By:											
		CLUSTERS ONLY MMPR2 CLUS ONLY START COUNT STOP COUNT STATUS 1-2 STATUS 0 SPECIAL FISHERY CODES T = tournament D = crab-only L = lobster											
		SITE NAME / COMMENT TIME CNTY ARRIV MM SITE STRT BB DISPO STOP FC MM PR HRS DEPR PR											
1		Patriots Landing 79 0520 MM 101 STRT BB 1 STOP FC MM PR 9.0 DEPR 1421 PR										ANG FORM COUNTS B C ESTIMATED ANGLERS EST FSHN BOATS MM BB FC PR2	
2		CNTY ARRIV MM SITE STRT BB DISPO STOP FC MM PR HRS DEPR PR										ANG FORM COUNTS B C ESTIMATED ANGLERS EST FSHN BOATS MM BB FC PR2	
3		CNTY ARRIV MM SITE STRT BB DISPO STOP FC MM PR HRS DEPR PR										ANG FORM COUNTS B C ESTIMATED ANGLERS EST FSHN BOATS MM BB FC PR2	
4		CNTY ARRIV MM SITE STRT BB DISPO STOP FC MM PR HRS DEPR PR										ANG FORM COUNTS B C ESTIMATED ANGLERS EST FSHN BOATS MM BB FC PR2	
5		CNTY ARRIV MM SITE STRT BB DISPO STOP FC MM PR HRS DEPR PR										ANG FORM COUNTS B C ESTIMATED ANGLERS EST FSHN BOATS MM BB FC PR2	
6		CNTY ARRIV MM SITE STRT BB DISPO STOP FC MM PR HRS DEPR PR										ANG FORM COUNTS B C ESTIMATED ANGLERS EST FSHN BOATS MM BB FC PR2	
		# Ref Total Boats Salmon Kings Kept Rels Kept Rels # Head Tags # Seal Take Kept Rels Kept Rels Kept Rels On Missed Off										PR1 only	

Site dispositions: 0=Pressure check, 4=Low Effort, 5=Other(comment), 7=Roving (MM, BB or PR2). Total Effort: "P"=Mode present but total not determined
 "N"=Mode not possible at site. Status 1&2 are good angler forms, status 0 are effort-change only angler forms, B=bonus D=crab T=tournament L=lobster

PCO – Rescheduled/Reassigned

Assn #		CRFS ASSIGNMENT SUMMARY FORM										V3_03/29/12																																																																																																																																																																																																																																																																																																																																																					
SAMPLER NAME		sampler ID		DATE		ASSN ID		ASSN MODE		CLUSTER		HOURS																																																																																																																																																																																																																																																																																																																																																					
1		Joe McCool		221		2013 11 15		113053		PCO		MOH																																																																																																																																																																																																																																																																																																																																																					
COMMENT	Weather/Effort/Catch: Rainy, cold, 52 degrees, lots of White Caps.																																																																																																																																																																																																																																																																																																																																																																
	No boats going out at either landing due to weather. Rescheduled to 11/22/2013 at Chris's Sportfishing per landing's info and Lead's approval.																																																																																																																																																																																																																																																																																																																																																																
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	<div> <div>2</div> <div>25</div> </div> <div> <div>ASSN DISP</div> <div>MILEAGE</div> </div> <div> <div>0.3</div> <div>0</div> <div>0.8</div> </div> <div> <div>SAMPLING</div> <div>EDIT</div> <div>TOTAL</div> </div>																																																																																																																																																																																																																																																																																																																																																																
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Site dispositions: 0=Pressure check, 4=Low Effort, 5=Other(comment), 7=Roving (MM, BB or PR2). **Total Effort:** *F=Mode present but total not determined
 *N=Mode not possible at site. **Status 1&2** are good angler forms, **status 0** are effort-change only angler forms, B=bonus D=crab T=tournament, L=lobster

ASSN #	SAMPLER NAME	sampler ID	DATE	ASSN ID	ASSN MODE	CLUSTER	HOURS									
1	Joe McCool	221	2012 09 01	93032	PCN	MOH	0.9 TRAVEL									
COMMENT	Weather/Effort/Catch: Clear, wind @ 10 knots. med ocean swells. Low effort 12 anglers. Catch is: Halibut and sanddabs, one rock sole and some RFGEN. Some smaller dabs released. No DD used Flatfish on Monterey Bay trip.				0.0hr = 58-3 mins 0.1hr = 4-9 mins 0.2hr = 10-15 mins 0.3hr = 16-21 mins 0.4hr = 22-27 mins 0.5hr = 28-33 mins 0.6hr = 34-39 mins 0.7hr = 40-45 mins 0.8hr = 46-51 mins 0.9hr = 52-57 mins	1 24	ASSN DISP MILEAGE	2.0 1.0 11.0	SAMPLING EDIT TOTAL							
Assignment dispositions: 1=Complete, 2=Reassigned, 6=Canceled																
<input type="checkbox"/> Edited By: _____		MMPR2 CLUS ONLY		ANG FORM COUNTS		TOTAL EST BOATS										
		START COUNT	STOP COUNT	Status 1-2	STATUS 0											
				SPECIAL FISHERY CODES D = crab-only L=lobster												
SITE NAME / COMMENT		TIME														
1	Randy's Sportfishing		CNTY	53	ARRV	1214	MM									
	Out of 12 anglers, interviewed 5 anglers		SITE	402	STRT		BB	<input checked="" type="checkbox"/> EFFORT								
			DISPO	1	STOP		FC	<input type="checkbox"/> MM <input type="checkbox"/> PR								
			HRS	2.0	DEPR	1411	PR									
2			CNTY		ARRV		MM									
			SITE		STRT		BB	<input checked="" type="checkbox"/> EFFORT								
			DISPO		STOP		FC	<input type="checkbox"/> MM <input type="checkbox"/> PR								
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3			CNTY		ARRV		MM									
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		Salmon		Kings		Coho				Yelloweye		Comcod		Missed		

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THE WEEKLY REPORT

CRFS provides fishery managers with weekly reports that summarize catch and effort data for species that require close monitoring to ensure harvest guidelines are not exceeded. District Leads also use weekly reports to track Sampler activity and make sure they complete the correct assignments during the sample week. Leads use the Weekly Report to track Sampler hours and check that Samplers' timesheets match what is reported. The Weekly Report consists of a list of every assignment the Sampler worked or was scheduled to work, and quantitative catch and effort data, and a qualitative description of weather, catch and effort for each assignment.

Due Dates:

All CRFS Samplers are to submit Weekly Reports to their District Lead by **10:00 AM each Monday throughout the year**. The report covers **ALL** assignments worked during the previous Monday through Sunday sampling week. The report also includes assignments that were scheduled but for whatever reason were missed. Sick, vacation, and holiday hours should also be reported in the Weekly.

Assignments included in the Weekly Report:

MODE code	Mode Description
PR1	primary private rentals (skiffs)
PCO	PC-CPFV onboard sampling
PCS	PC-CPFV salmon dockside sampling
PCN	PC-CPFV nonsalmon dockside sampling
PEC	PC-CPFV effort checks
MM	man-made structures
PR2	secondary private rentals (skiffs)
MMPR2	combo MMPR2 sampling
BB	beach-bank
COM	commercial sampling (OSP staff only)
Non-Sampling Mode Codes	
DAT	data-entry work in CDFW office
OFC	all other work in CDFW office
TRV	Travel time to and from sample site
SIC	Sick hours claimed on timesheet
HOL	Holiday hours claimed on timesheet
VAC	Vacation hours claimed on timesheet
OSP Staff Only Modes	
CWT	process/read ocean CWTs in SR lab
SCA	mount/image/read scales in SR lab
FRH	sampling at Feather River Hatchery
NFH	sampling at Nimbus Fish Hatchery
MOK	sampling at Mokelumne Hatchery
CVH	process/read/enter/transport Central Valley heads

PR1

For the PR1 mode, the Weekly Report data are transcribed from the footer of the Assignment Summary Form (ASF). The Sampler sums the page totals from all of his/her PR1 forms onto the footer of the ASF. The ASF footer totals align with the fields of the Excel Weekly Report.

PC

Party/Charter mode includes three types of assignments: PCO, PCS, and PCN. PCO is for onboard CPFV sampling. These assignments have an ASSN ID and are usually rockfish trips. PCS are salmon dockside assignments which do NOT have an ASSN ID. PCN are nonsalmon dockside assignments which either have an ASSN ID or are conducted opportunistically. All of these PC assignments should be included in the Weekly Report.

PEC

Party/Charter effort checks (PECs) are not true CRFS assignments in that they do not have an ASSN ID. They are done; 1) weekly during salmon season by the port lead Sampler or 2) as needed during the month usually in conjunction with another CRFS assignment. PECs are important for validating CPFV logbooks and should be reported on the Weekly Report.

MMPR2

These are clusters that include man-made and secondary private/rental boat sites. These types of assignments should be reported on the Weekly Report.

BB

These are clusters that include beaches and bank sites. These types of assignments should be reported on the Weekly Report.

General Instructions**Excel Spreadsheet – Instructions for Completing the Weekly Report**

Samplers are to report their activities, and catch and effort data using the MS Excel spreadsheet template provided by their Lead. At the beginning of the season, your District Lead will provide you with the MS Excel spreadsheet template that should not be altered. It is important that the order of the MS Excel columns be retained so that the data will align and merge among all Sampler assignments.

Samplers must complete and send the Weekly Report to their Lead via email every Monday morning:

1. Save the Excel file to your computer
2. Locate the Template tab (orange tab)
3. At the top of the Template fill out the green fields with your information.

4. Your last name and Sampler number will autofill in columns A, B, AG, and AH when you add data to the mode field (do not enter any data in grey columns - A, B, AG, and AH columns).
5. Fill out the rest of the spreadsheet with all of your activities for the week (Mon-Sun), including field and office work and “absent” hours such as vacation, sick, and holiday. Use the Sampler-Example (blue tab), Field Name Definitions (green tab), and Mode & Port Codes (yellow tab) as guidance for filling out the report correctly. Non-applicable fields should be left blank. For days with multiple modes sampled, use multiple rows and split up the time accordingly.
6. Once you have entered all your information for that week, make a copy of the sheet and save the new file in the appropriate format: *mmddyy_WeeklyReport_D#_Lastname.xls*.
7. Email this excel file with a brief description of the weather, catch and effort for the week in the body of the email to your Lead. Each sample week will have its own single spreadsheet. Each week use the template not an “old” weekly from past weeks.

In the email sent to your Lead with the Weekly Report as an attachment, include basic weather and qualitative angler information for the week. For example; “*Weather was great all week but salmon fishing was poor. A lot of anglers switched to bottomfishing and caught mostly RFBLK but one RFYEY was released. A few small salmon were kept*”. It is also valuable to indicate who you worked with and whose tags were used (if any).

Some items on the Weekly Report are only applicable to salmon trips; those column labels on the Template tab are color-coded in orange. These fields include (leave these fields blank for assignments and/or regions that do not apply):

- Salmon boats
- Salmon anglers
- Kings kept
- Kings released
- Coho kept
- Coho released
- Number of headtags used
- Seal Take
- Commercial pounds landed (OSP only)



Some items on the Weekly Report are only applicable to groundfish species of concern (yelloweye rockfish and cowcod); those column labels on the Template tab are color-coded in yellow. These fields include (leave these fields blank for assignments and/or regions that do not apply):

- Yelloweye rockfish kept
- Yelloweye rockfish released



- Cowcod kept
- Cowcod released
- Species of head collected (= yelloweye)
- Number of RFYFY headtags used
- RFYFY head tag number(s)
- Other pertinent notes: Comments about Descending device usage, depth the fish was taken, associated catch species.

General Guidelines for the Spreadsheet:

1. Do not insert or reorder the columns
2. Do not leave blank rows between data rows and column headers
3. Non-applicable items are left blank
4. Applicable counts of zero are not left blank
5. Only report data you collected. If another Sampler worked with you and also collected data, he/she should report that data on their own Weekly Report.

Weekly Report Item by Item Instructions

The Weekly Report is used to track assignments weekly and to review timesheets.

FIELD	INSTRUCTIONS	CODES AND FORMATS
Header		
Week beginning Monday	Monday date in which sample week began	Column AG will autofill when mode data is added Example: 6/4/2013
Sampler LAST NAME	Enter your last name in CAPS	Fill out in header only: Column A will autofill when mode data is added. Example: LUCAS
Samp ID	CRFS or OSP 3-digit assigned Sampler number	Fill out in header only: (column B will autofill when mode data is added) Example: 232
District #	Enter the CRFS District where a majority of the sampling occurred.	1 = South 2 = Channel 3 = Central 4 = San Francisco 5 = Wine 6 = Redwood
LEAD	Enter the last name of the assigned CRFS Lead	Column AH will autofill when mode data is added. Example: DASILVA
Daily Data		
Assn ID	Enter the 6-digit CRFS Assignment ID number.	Leave blank for PCS, COM, PEC, and all non-field work Example: 063071
Date mm/dd	Enter the date that sampling occurred. Do not alter the date	Example: 10/12

FIELD	INSTRUCTIONS	CODES AND FORMATS
	format. REQUIRED FOR EACH ROW OF DATA.	
OSP Port or Cluster	Enter the 3-letter alpha OSP port code for PC-type assignments and PR1 assignments. Enter the cluster designation for BB, MM and PR2.	Example: MOS for Moss Landing Example: SFO10 for San Francisco MMPR2 cluster Leave blank for all non-field work
MODE	Enter the valid sampling mode for the sampled assignment. Do not leave blank; REQUIRED FOR EACH ROW OF DATA. Enter the non-sampling mode codes for data entry, office work, and other non-field assignments or "absent" hours such as sick, vacation, and holiday. REQUIRED FOR EACH ROW OF DATA	PR1 = primary private rentals PCS = PC-CPFV salmon dockside PCN = PC-CPFV non-salmon dockside PCO = PC-CPFV onboard PEC = PC-CPFV effort check MM = man-made structures PR2 = secondary private rentals MMPR2 = combo of MM and PR2 BB = beach and bank OFC = all other office work TRV = travel hours DAT = data entry SIC = sick hours HOL = holiday hours VAC = vacation hours CWT = coded wire tag processing SCA = scale lab work FRH = Feather River Hatchery NFH = Nimbus Fish Hatchery MOK = Mokelumne Hatchery CVH = Central Valley heads ALL Modes.
Sample Time	Enter the 4-digit military time for:	
Start	When sampling started; REQUIRED FOR EACH ROW OF DATA.	Use military time (0000-2400) without colon (;). Use the leading zero for times before 1000 (10 o'clock AM)
End	When sampling ended; REQUIRED FOR EACH ROW OF DATA.	
Covered Mileage	Enter the nearest whole number mile driven in personal vehicle for that particular assignment	Example: 25 Leave blank if a state car was used
# Refs	Enter the total number of boats where angler(s) refused to be sampled	PR1 only <blank> if non-applicable
Total Boats	Enter total number of boats (not counting refusals or missed boats)	PR1 only <blank> if non-applicable
Salmon	Enter the total number of salmon	PCS, PR1 and COM only

FIELD	INSTRUCTIONS	CODES AND FORMATS
Boats	boats that were targeting and/or caught salmon. For PR1 this is the sum of the page totals.	<blank> if non-applicable
Salmon Angls	Enter the total number of anglers who targeted and/or caught salmon. For PR1 this is the sum of the page totals.	PCS, PR1 and COM only <blank> if non-applicable
Kings Kept	Enter the sum of king salmon kept For PR1 this is the sum of the page totals.	PCS and PR1 only 0 = No kings kept # = Number of kings kept <blank> if non-applicable
Kings Rels	Enter the sum of king salmon released. For PR1 this is the sum of the page totals.	PCS, PR1 and COM only 0 = No kings released # = Number of kings released <blank> if non-applicable
Coho Kept	Enter the sum of coho salmon kept. For PR1 this is the sum of the page totals.	PCS, PR1 and COM only 0 = No Coho kept # = Number of Coho kept <blank> if non-applicable
Coho Rels	Enter the sum of coho salmon released For PR1 this is the sum of the page totals.	PCS, PR1 and COM only 0 = No Coho released # = Number of Coho released <blank> if non-applicable
# Head Tags	This is the count of all salmon headtags used on the assignment. For PR1 this is the sum of the page totals.	ALL sampling modes 0 = No head tags used # = Number of head tags used <blank> if non-applicable
# Seal Take	Enter the sum of the number of salmon taken by pinnipeds. For PR1 this is the sum of the page totals.	PCS, PR1 and COM only 0 = No sea lion take # = Number of sea lion take <blank> if non-applicable
COM Lbs	total number of commercial salmon pounds sampled	COM only. OSP Samplers only <blank> if non-applicable
RFYEW Kept	Enter the sum of yelloweye rockfish kept. For PR1 this is the sum of the page totals.	ALL sampling modes 0 = No RFYEW observed # = Number kept <blank> if non-applicable
Q. Why do the groundfish total methods differ from the salmon total methods?		
A. Salmon and Groundfish managers use different catch projection models.		
RFYEW Rels	Enter the sum of yelloweye rockfish released. For PR1 this is the sum of the page totals.	ALL sampling modes 0 = No RFYEW released # = Number released <blank> if non-applicable
RFCOW Kept	Enter the sum of cowcod kept. For PR1 this is the sum of the page totals.	ALL sampling modes 0 = No RFCOW kept # = Number kept <blank> if non-applicable
RFCOW Rels	Enter the sum of cowcod released. For PR1 this is the sum of the page totals.	ALL sampling modes 0 = No RFCOW released # = Number released

FIELD	INSTRUCTIONS	CODES AND FORMATS
		<blank> if non-applicable
Missd Boats On	This is the sum of the onsite MISSED BOATS for the PR1 assignment.	PR1 only 0 = No missed onsite boats # = Number of missed boats onsite <blank> if non-applicable
Missd Boats Off	This is the sum of the OFFSITE MISSED BOATS for the PR1 assignment.	PR1 only 0 = No missed offsite boats # = Number of missed boats offsite <blank> if non-applicable
Trailer Counts: Off Start	This is the OFFSITE START trailer count for the PR1 assignment.	PR1 only # = number of trailers at offsite start Count 0 = No offsite trailers at start count <blank> if non-applicable
Trailer Counts: On Stop	This is the ONSITE STOP trailer count for the PR1 assignment.	PR1 only # = Number of trailers in the Onsite area as the end of the day 0 = No trailers left onsite at end of day <blank> if non-applicable
Other SPP Headtags: SPP	Enter the species code for heads taken from non-salmon species	ALL sampling modes <blank> if non-applicable Example: SBWHT
Other SPP Headtags: #used	Enter the total number of non-salmon head tags used	ALL sampling modes # = Number of other spp. head tag used 0 = No head tags used from other spp. <blank> if non-applicable
Other SPP Headtags: HT#	Enter the head tag number(s) used for non-salmon species	ALL sampling modes ##### = the head tag number used for other spp. 0 = No other spp. head tags used <blank> if non-applicable
Weather and other pertinent notes	Enter notes about weather, other Samplers, training, CPFV activity, other Sampler headtags on your data sheets, etc. ; REQUIRED FOR EACH ROW OF DATA.	ALL modes Please be concise - max 75 characters allowed in database

Weekly Report Coding Tips

The following coding tips and examples address the most common types of errors on the Weekly Report. The most common errors fall into; 1) fields left blank or not blank inappropriately, 2) transcription errors from ASFs to the Weekly Report and 3) incorrect coding.

1. Make sure you do not include data from other Samplers on your Weekly Report
2. Do not fill in trailer count items if you were not in charge of tallying those for the PR1 assignment
3. Fill out yelloweye rockfish and cowcod counts for PCO, PCN, and cluster assignments
4. Salmon items are only needed for PR1 and PCS assignments (clusters only need salmon info when heads are collected at the PR2).
5. EVERY row on the Weekly report needs: Sampler name and number, MODE, date, sample times, and comments filled in.
6. Use the "Example" tab in the Excel file for information on how to code each assignment mode on the Weekly Report.
7. If both PCS and PCN data are recorded on the same date a line will be necessary for each one.
8. Use the "Mode and Port Code" tab in the Excel file for a list of Mode codes, PR1 sites, and PC sites.

Example of Weekly Report

CRFS-OSP Weekly Summary Spreadsheet 2013										Week Beginning Monday: 7/22/2013				Sampler LAST NAME:					
Sampler		Assn	Date	OSP Port or Cluster	MOCE	Sample Time		Covered	#	Total	Salmon		Kings		Coho		#	#	COM
LAST NAME	ID	ID	month			Start	End	Mileage	refs	Boats	Boats	Angls	Kept	Rel	Kept	Rel	Head Tags	Seal Take	Lbs
HARKINK	248		7/22		TRV	1100	1145	34											
HARKINK	248		7/22	BER	PCS	1145	1440				5	83	120	1	0	6	30	19	
HARKINK	248		7/22	EME	PEC	1441	1520	4											
HARKINK	248		7/22		TRV	1521	1615	34											
HARKINK	248		7/23		SIC	0830	1630												
HARKINK	248		7/24		TRV	0800	0830	12											
HARKINK	248	074065	7/24	BOD	PR1	0830	1405		2	29	23	42	50	0	1	37	13	2	
HARKINK	248		7/24		TRV	1406	1440	12											
HARKINK	248		7/25		TRV	0745	0829	10											
HARKINK	248		7/25		OFC	0830	1000												
HARKINK	248		7/25		DAT	1001	1400												
HARKINK	248		7/25		CWT	1400	1630												
HARKINK	248		7/25		TRV	1631	1725	10											
HARKINK	248		7/26		TRV	0400	0430	26											
HARKINK	248	074033	7/26	SNF	PCO	0430	1415												
HARKINK	248		7/26		TRV	1416	1500	26											
HARKINK	248		7/27		TRV	0815	0845	12											
HARKINK	248	074032	7/27	SF06	MMPR2	0845	1325	15									2		
HARKINK	248		7/27		TRV	1325	1400	12											
HARKINK	248		7/28		TRV	0930	1015	34											
HARKINK	248	074002	7/28	SF02	BB	1015	1420	21									0		
HARKINK	248		7/28		TRV	1420	1505	34											

HARKINK		Sampler ID 248				District # 4		LEAD: LUCAS						
RFYEV		RFCOW		Missed		Trailer Counts		Other SPP Headtags			Weather & other pertinent notes		Monday	DFG
Kept	Rel.	Kept	Rel.	On	Off	Off Start	On Stop	Spp	# used	HT #	(poor weather, no CFFV activity, avg price)	Date	Lead	
											Drove from home to BER	7/22/2013	LUCAS	
											Missed 3 salmon CFFVs; returned at same time	7/22/2013	LUCAS	
											Mileage from driving between BER & EME	7/22/2013	LUCAS	
											Drove from EME to home	7/22/2013	LUCAS	
											Out sick, used 8 hours sick leave	7/22/2013	LUCAS	
											Drove from home to PRI	7/22/2013	LUCAS	
1	2	1	0	1	13	16		RFYEV	1	20111	First sampler, worked with Smith, she has stop	7/22/2013	LUCAS	
											Drove from PRI to home	7/22/2013	LUCAS	
												7/22/2013	LUCAS	
											Delivered salmon heads to office, restocked gear	7/22/2013	LUCAS	
											Entered PRI data	7/22/2013	LUCAS	
											Cut 150 heads	7/22/2013	LUCAS	
												7/22/2013	LUCAS	
											Drove from home to SNF	7/22/2013	LUCAS	
0	0	0	0					0	0	0	PCO out of San Fran. Boat was full, 34 passed	7/22/2013	LUCAS	
											Drove from SNF to home	7/22/2013	LUCAS	
											Drove from home to SF02	7/22/2013	LUCAS	
1	0	0	0					RFYEV	1	20112	Low bite, good effort, very strong wind	7/22/2013	LUCAS	
											Drove from SF02 to home	7/22/2013	LUCAS	
											Drove from home to BER	7/23/2012	LUCAS	
0	0	0	0					0	0	0	Assisted, all data on J.Fernandez sheets	7/23/2012	LUCAS	
											Drove from BER to home	7/23/2012	LUCAS	

SPECIES SAMPLING PROCEDURES

Specific procedures have been developed for sampling salmon and white seabass for coded wire tags. Additional procedures have also been developed for sampling a few invertebrates; crab, lobster and squid, that are important in the recreational fishery.

Salmon Head Sampling

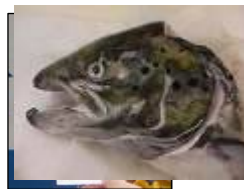


All salmon examined during sampling must be checked for adipose fin clips. The adipose fin clip indicates the presence of a coded wire tag (CWT) in the salmon head. Approximately 25% of hatchery released salmon are tagged. Check to see if the salmon is missing its adipose fin. If so, explain to the angler that you need to collect the head for fishery management purposes. You have legal authority to do so according to Fish and Game Code Section 8226 (see below). Attach the headtag to the salmon head, measure the fish, record the headtag number and length in millimeters on the data sheet and then remove the head. Place each tagged head in its' own small clear zipper bag. It is important to follow this order. Store the head in a cool location until you can get the head into a freezer. Record the date, port, and sampling mode where each headtag was collected or issued on the Headtag Inventory Report Form. You will never need to weigh a salmon, even an adipose fin-clipped fish – salmon management is based on numbers of fish, not on weight.

If you cannot remove a head for some reason, attempt to attach the headtag to the fish and get the species and length. Record this information on your data sheet (i.e. headtag number and length) and put NRS (Non-Recovered Species) next to the headtag number. Record NRS and the species name on the back of the corresponding headtag and on the Headtag Inventory Report Form. If you are unable to attach the headtag to the head, record the headtag number and NRS on the datasheet and Headtag Inventory Report Form, place the headtag in its own small zipper bag and store it with the rest of your collected salmon heads. This information is important in tabulating the contribution rates of tagged fish to the year's catch.

Q. What if the salmon is confiscated by a Wildlife Officer?

A. Ad-clipped salmon that are confiscated should still have the headtag attached and length information collected. Record the head as an NRS. The attached tag will be a reminder that they are to be returned to the head lab. Collect the name and contact information of the Wildlife Officer. Enforcement personnel will be contacted to remind them that OSP needs the confiscated head.



Legal Authority

If an angler refuses to relinquish the head of a salmon inform them of the state law. Section 8226 of the Fish and Game Code:

Recovery of Coded-wire Tag from Salmon Head

Notwithstanding any measurement requirements under this code, and to implement the Department's salmon tagging program, any person in possession of a salmon with a missing adipose fin, the small, fleshy fin on the back of the fish between the back fin and the tail, shall, upon request by an authorized agent or employee of the Department, immediately relinquish the head of the salmon to the State, at no charge, for recovery of any coded-wire tag. The head may be removed by the fish owner, or, if removed by the official Department representative, the head shall be removed in a manner to minimize loss of salmon flesh and the salmon shall immediately be returned to the rightful owner (emphasis added).

Salmon Equipment

1. Bucket
2. "Bucketeer" pocket system (aka Bucket Buddy)
3. Knife and sheath
4. Cutting Board
5. Small clear zipper baggies (for each head/headtag)
6. Large clear bag and inventory tags
7. Headtags
8. Headtag Inventory Reports
9. Courtesy Tags and Cards
10. Courtesy Headtag Inventory Reports



Tagging the Head

A uniquely numbered headtag is issued for each adipose fin-clipped salmon observed while sampling. The individual heads are placed in small clear zipper bags which are stored in large clear plastic bags with an inventory tag attached. All uncollected heads from adipose fin-clipped salmon are assigned a head tag that is placed in a clear zipper bag with NRS marked on the headtag, the data sheet and headtag inventory report. Non-clear trash bags will not be allowed as they can easily be confused with trash.

Store the head in a clear plastic zip lock bag and freeze as soon as possible. If freezing is not immediately available keep the heads in a cool place to slow the decomposition process. The headtag number must be clearly visible from outside the clear zipper bag. The zipper bag allows the lab to separate the frozen heads without damaging or tearing the headtag.

Removing the Head

1. Securely attach a head tag to the lower jaw of an adipose fin clipped salmon.

2. Lay the fish with the head on the cutting board portion of the measuring board and record the fork length.
3. Slide your knife under the gill plate and cut straight forward or at a 45 degree angle, until you are approximately 1 inch behind the eyes.
4. Flip the fish over to the other side and repeat the cut until it meets the end of the other cut. You may have to angle the knife perpendicular to the ground to meet the other cut.
5. Once the two cuts have met, the head should come off cleanly.

Tag the head before cutting!



Tagging, cutting and bagging the adipose fin clipped salmon head.

Make sure the cut exposes the least amount of meat possible and remove any gills or extra flesh attached to the head. Please keep your board and knife clean as you are dealing with fish that someone will be eating. If an angler prefers to cut the head off themselves, let them do it, however they must use their own knife.

Q. What if an angler refuses to relinquish the head?

A. Explain the angler's obligation to relinquish the head under FGC 8226. If the angler still refuses. Assign a headtag to the fish and get the species and length if possible. Record this information and "NRS" (Non-Recovered Species) on your data sheet. Record "NRS" and salmon species on the back of the corresponding headtag. Also, record the date, port and 'NRS' next to the corresponding headtag number on the Headtag Inventory Report. Place the headtag in a clear zip lock bag. Document the vessel's CF number and the license plate number of tow vehicle on your ASF and notify your Lead promptly.

Procedures for Tracking and Inventorying Salmon Heads



Each headtag is recorded on a Headtag Inventory Report form. Do not wait to fill out the form until just before it is due. Fill out the form at the end of each sample day in order to accurately keep track of which headtags are used on each particular sample day. Each Monday a copy of the form will be sent to the Santa Rosa CDFW office. Once all tags for the particular form have been used, send the original form to the Santa Rosa CDFW office.

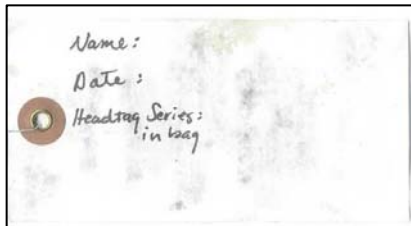


2005 CRFS HEADTAG REPORT							
(Use headtags in NUMERICAL order)				SERIES#: 75200 - 75299			
NAME: Tim Greenling				PORT:			
Headtag#	MM / DD / YY	Port	Mode	Headtag#	MM / DD / YY	Port	Mode
75200	/ /			75250	/ /		
75201	/ /			75251	/ /		
75202	/ /			75252	/ /		
75203	/ /			75253	/ /		

Port codes:	CRC = Crescent City	SHC = Shelter Cove	BOD = Bodega Bay	SCR = Santa Cruz
	TRN = Trinidad	FTB = Fort Bragg	SAU = Sausalito	MOS = Moss Landing
	EUR = Eureka		BER = Berkeley/Emeryville	MOH = Monterey
			SNF = San Francisco	MOR = Morro Bay
			PR1 = Princeton	AVI = Avila

Mode Codes: PR1, PR2, PC, MM, & BB

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Inventory Tags

Inventory tags are used for labeling and storage of bags of heads as they make their way to the Santa Rosa Office. Each large bag of heads must be inventoried and should contain a

consecutive series of head tags. Record your name, date and headtag series contained in the bag on the inventory tag and attach this tag to each large bag prior to storage and delivery to the lab. Each bag's inventory will be confirmed by Santa Rosa Laboratory staff and compared to headtag numbers recorded on sample forms. It is very important to keep you heads in order!

Courtesy Cards

Courtesy cards are given to salmon anglers who are interested in learning about their fish. After the fish heads are processed for the season, OSP will

Thank you for cooperating with CDFG's ocean fisheries monitoring programs. The missing adipose fin on your salmon indicates it contains a small (<1mm) coded-wire tag that salmon biologists will use to determine pertinent fishery information such as salmon stock distribution & ocean harvest rates. If you would like information about your tagged salmon (brood year, run, stock, hatchery, release date) please e-mail the Ocean Salmon Project at:

OSP@dfg.ca.gov

In the subject line, please write:

OSP Headtag # _____


Please include your name and the date/port where your salmon was sampled in your email message. Salmon info will be emailed to you early next year. Any questions please call (707) 576-2882

send anglers who requested it, information such as: brood, run, stock, hatchery where it was released, release date, and more. The cards are 3x5 cardstock and usually a bright color. The middle of the card has a space where the Sampler writes in the headtag number of the particular tagged fish the angler wants to know about.

Multiple headtags listed for the same angler are okay. Courtesy cards can act as a positive outreach tool for salmon anglers, so Samplers are encouraged to hand out courtesy cards to anglers with tagged salmon.

Courtesy Head Tags

If an angler approaches you with a tagged salmon from outside your sample,


Courtesy
PLEASE SAVE THIS HEAD!
NO 05413

It contains a microscopic coded wire tag. The coded information on this tag will assist us in evaluating our salmon fisheries.
The head will be picked up by a Fish and Game employee.
Thank you!
California Department of Fish and Game
Headwaters Fisheries Branch--(707) 445-6493
619 Second Street, Eureka, CA 95501

Species: K S P
Binary code:

you may collect the head and assign it a courtesy headtag. The information from this fish will be provided to the angler for their benefit; information from this fish will not be used in calculating estimates or in management. Attach a courtesy headtag to the salmon and process the head as usual. Fill out a courtesy card and hand it to the angler and remind them to follow the instructions on the card so they can receive the CWT information at the end of the year.

Important Salmon Goals to Remember

1. All salmon must be counted and observed for absence of the adipose fin. All heads from adipose fin-clipped fish must be retrieved.
2. Any vessel that had any effort or catch for salmon should be noted as "a salmon boat" even if they did not target salmon.
3. Every boat targeting salmon needs to be asked if they had any salmon released and identified to species where possible
4. Every boat needs to be checked for salmon catch, effort and adipose fin-clipped fish.

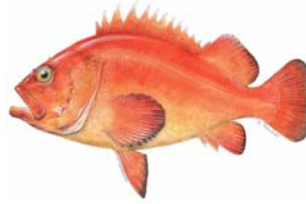
5. The heads should be frozen as soon as possible and delivered to the appropriate storage facility. Their ultimate destination is the Santa Rosa head lab.

Salmon Head Drop Off Protocol

Salmon heads collected by field staff should be taken to one of the Drop-Off Locations listed below (North to South). Contact the office prior to head delivery to confirm office hours. For other arrangements, contact your Lead who will coordinate a meeting time and place to drop the heads off.

Ports	Drop Off Location	Contact Name And Phone #
Crescent City, Trinidad, Eureka, Shelter Cove	CDFW – Eureka 619 2nd Street Eureka, CA 95501	Ed Roberts (707) 441-5757
Fort Bragg	CDFW - Fort Bragg 32330 N. Harbor Way Fort Bragg, CA 95437	Ed Roberts (707) 441-5757
Bodega Bay, Sausalito	CDFW – Santa Rosa 5355 SkyLane Blvd, Suite B Santa Rosa, CA 95403	James Phillips (707) 576-2375
Berkeley, Emeryville	Berkeley Marina 201 University Ave. Dock K-900, Shed F24	Harbor Master (510) 981- 6740
San Francisco, Princeton (Half Moon Bay)	CDFW - Belmont 350 Harbor Blvd Belmont, CA 94002	Scot Lucas (650) 631-6759
Santa Cruz, Moss Landing, Monterey	CDFW – Monterey 20 Lower Ragsdale Dr Monterey, CA 93940	Jayna Schaaf-DaSilva (831) 649-7196
Morro Bay, Port San Luis	CDFW – Morro Bay 213 Beach St Morro Bay, CA 93442	Jayna Schaaf-DaSilva (831) 649-7196
Santa Barbara, Oxnard, Ventura	CDFW – Santa Barbara 1933 Cliff Dr. #9 Santa Barbara, CA 93109	Tamarind Harman (805) 564-1471

Yelloweye Rockfish - Special Protocols for Collecting Data and Specimens



Summary

- Collect length, weight and catch location data on all yelloweye rockfish and other prohibited species that you sample.
- Attempt to collect the head or carcass (to get otoliths also called ear bones) of all landed (i.e. brought ashore) dead yelloweye rockfish. Staff from the Groundfish Project will remove the otoliths in the lab. You may acquire the whole fish.
- *Do NOT* collect heads or carcasses of any prohibited species (e.g., cowcod and yelloweye rockfish) while on a PC trip.
- You *do NOT* have any legal authority to require anglers to provide you with yelloweye rockfish heads or to allow you to cut the fish. Angler cooperation is voluntary.
- Be sensitive to the fact that retention of yelloweye rockfish is prohibited and the angler may be worried that you are collecting evidence. Let them know that identification of rockfish can be difficult.

Background

The information collected by CRFS will be used in stock assessments of yelloweye rockfish. The assessments include data from California, Oregon and Washington. Yelloweye rockfish growth rates may be higher in California waters than in cooler northerly waters. If the growth rates are higher in California and data from fish caught in California are not available, then the assessment may underestimate the productivity of the stock, the rate at which it can be expected to recover and the amount of catch that can be allowed. The data CRFS Samplers are able to collect will improve the accuracy of the growth curve and improve future stock assessments.

Sampling and Legal Authority

Samplers *do NOT* have any legal authority to collect yelloweye rockfish heads or cut the fish. **Angler cooperation is voluntary. Samplers must ask the angler for permission to take the head and cut the fish's abdomen.**

Be sensitive to the fact that this is a prohibited species and the angler may be worried that you are collecting evidence. Assure the angler that your interest is in collecting biological information and that the data they provide is confidential. **Do NOT ask for name and telephone number of the angler if yelloweye rockfish is present in the catch.**

The angler cannot avoid a citation by allowing you to sample and/or collect the fish head. If a Wildlife Officer is present, the angler may be cited. If an enforcement officer is present, follow the guidelines in the CRFS Sampler Manual for working with enforcement.

Collection Priorities

During salmon season do not miss boats to collect the heads/carcasses and biological and location data from yelloweye rockfish. Remember, **location data are very important**. Southern California Samplers should note fish caught in Mexican waters.

Biological Data Priorities (in order of importance):

1. Length
2. Weight
3. Whole fish (to get otoliths), or at least the head or carcass: **ONLY** collect the whole fish, head or carcass from **landed-dead fish**; **do NOT** take fish caught while you are onboard a PC trip.



Equipment

- Bucket
- Knife and sheath
- Cutting Board
- Small clear zipper baggies (one bag per tagged head)
- Large clear bag [Do not use opaque bags, because they can easily be confused with trash]
- Yelloweye Rockfish Headtags. Each Sampler will be provided with numbered tags labeled RFYEY. Only use these tags for yelloweye rockfish, and **use the tags in sequential order**.

Procedures

The procedures are similar to those for adipose fin-clipped salmon.

1. Measure fork length.
2. Weigh the fish (if you have time to both measure and weigh).
3. Ask for permission to take the whole fish, or cut the head off if they prefer you take only the head.

Let the angler know that he/she has landed a yelloweye rockfish and it is illegal to retain yelloweye rockfish. Assure the angler that rockfish identification is difficult, and offer to show him/her how to identify yelloweye rockfish. Explain to the angler that the Department can learn more about the yelloweye rockfish

population *if* they would allow you to examine the fish and take the whole fish or head. Notes: (1) The head contains ear bones (otoliths) that we can use to determine the fish's age. Knowing the age of the fish will help us learn how fast yelloweye rockfish grow. If an angler prefers to cut the head off themselves, let them do it; however do NOT let them use your knife. Since it is difficult to fillet the fish without the head attached, the angler may wish to fillet the fish on site and bring you the carcass. This is okay; tag the fish before the angler leaves to fillet the fish.

4. Remove the Head. Measure and weigh the fish *before* removing the head. Tag the head before cutting. Firmly attach a tag to the fish's lower jaw. Lay the fish with the head on the cutting board portion on the measuring board or on a cutting board. Slide your knife under the gill plate and cut straight forward or at a 45 degree angle, until you are approximately 1 inch behind the eyes. Flip the fish over to the other side and repeat the cut until it meets the end of the other cut. You may have to angle the knife perpendicular to the ground to meet the other cut. Once the two cuts have met, the head should come off cleanly. NOTES: Make sure the cut exposes the least amount of meat possible and remove any gills or extra flesh attached to the head. Please keep your board and knife clean as you are dealing with fish that someone will be eating.
5. Place the head in a zipper bag with the tag number visible from outside (for easy identification). Store in a cool place and freeze as soon as possible.
6. Write the tag number on the data sheet and circle the number.
 - PR1 Form: write the tag number to the right of the length measurement.
 - Angler Form: write the tag number to the right of the sex field.

Example PR1 Form

CATCH					BIO DATA						
SPECIES code	KEPT		RELS		SPECIES LOC or effort if no catch Block-box Lat / Lon	DEPTH BOTTOM (ft)	Fork length / carapace size (mm), sex (M/F/T)				
	obs	unobs	alive total (w/DD)	dead seal take			Weight (decimal kg) or (tag #)				
							1	2	3	4	5
RFYFY	abr 1		alive 0	()	539-20-30	240	435	20012			
	unabr 0		dead 0	total			1.87				

Example Angler Form

TYPE 3 AVAILABLE EXAMINED CATCH											
GROUP Catch		Species	No. of Fish	Fork Len. (mm)	Weight (kg)	D	L	Sex	Fish #		
<input checked="" type="checkbox"/>		Yelloweye rockfish	RFYFY	1	435	1.87	3			33331	

7. Weekly Reports

- Fill out a row on the weekly report with the assignment where yelloweye rockfish were encountered.
- Enter the number of RFYFY kept and released for that particular assignment (yellow columns).
- In the far right yellow columns of the Weekly Report, enter the species code for yelloweye rockfish (RFYFY), the number of heads collected, and the tag #s used (see example below). If no tags are used enter zero (0).
- In the notes column, please describe any important anecdotal information like, if the anglers knew the area, if they were proficient anglers, other species of fish that were caught with the yelloweye rockfish, the reported fishing depth, if the Sampler believed the angler's fish ID skills, etc.
- Add a note on the Weekly Report email narrative when you deliver tagged yelloweye rockfish heads or carcasses to a "designated drop-off location".

8. Deliver head to designated CDFW office. Bring heads to one of the following CDFW offices: Eureka, Fort Bragg, Santa Rosa, Belmont, Monterey, San Luis Obispo, Santa Barbara, Los Alamitos and San Diego.

NOTES:

- Do not put salmon heads and yelloweye rockfish heads in the same bag.
- Any head that you bring to a CDFW office should be noted in your Weekly Report email narrative.

White Seabass Sampling



In southern California, you will be sampling white seabass for presence of a coded wire tag (CWT). The Ocean Resources Enhancement and Hatchery Program (OREHP), a Department sponsored program, is raising white

seabass and releasing juvenile fish into the wild. Prior to release, each fish is tagged with a small (1.1 mm long by 0.25 mm diameter) CWT at the posterior edge of the left eye. The tag is not visible.

Ocean Resources Enhancement and Hatchery Program (OREHP)

The purpose of the OREHP is to investigate the feasibility of enhancing marine fish species whose populations have substantially decreased over time through the introduction of hatchery produced fish. Legislation created the Ocean Enhancement Validation to fund this program in 1983. This validation is required by all recreational anglers fishing south of Point Arguello. White seabass was chosen because of the large decline in catch between the 1950s and 1980s, with annual sport fishing returns in California dropping from over 55,000 fish to less than 3,500 fish during this period.

Since 2001, OREHP has released over 100,000 juvenile white seabass (8–12 in TL) annually into the waters off southern California. Prior to 2001, releases averaged 25,000 annually. Many of these fish have reached legal size (28 in. or 711 mm TL), and are now able to be caught by the recreational fishery. To assess the feasibility of using hatchery fish to enhance marine fish populations, it is critical to scan and recover tagged adult white seabass.

Scanning for a Coded Wire Tag (CWT)

Only scan fish that are going to be kept by the angler. First ask the angler if they left the hook in the fish's mouth. The presence of a hook can cause a false reading. Then turn on the hand-held scanner and check to see that it is working by passing it over a piece of metal. You should hear a beep to indicate it is working. Holding the fish up in front of you and away from any metal (i.e., measuring board, vehicle, debris in the ground, etc.), rub the scanner over the left side of the fish's head, focusing on the area under the eye and the cheek muscle. If no beep is heard, turn the fish over and scan the other side of the head.

If the scanner beeps, indicating presence of a CWT, inform the angler that you would like to remove the head, because you believe it is a tagged hatchery-raised white seabass. Measure the fish, record the length and the count on the coding form, fill out a head tag form and then remove the head.

Unlike salmon, you *do not* have legal authority to take the head. If an angler does not want to give up their fish head, inform them of the OREHP by giving them a flyer. If it's an issue of wanting the otoliths (stones), we can provide them with a replacement set. Be sure to write down the angler's name and address so that we can send them a replacement set of otoliths.

White Seabass Equipment

1. Hand-held scanner with holster
2. Hand tally counter
3. Knife and sheath
4. Large zipper bags to store heads
5. Ice chest with blue ice (when available)
6. CRFS White Seabass Head Collection Tags

To ensure that the hand-held scanner is not lost or stolen, we require that Samplers wear a belt with the hand-held scanner in its holster hanging from the belt. The hand tally counter must be attached to the scanner's strap.

Removing the Head

1. Lay the fish on a flat surface.
2. Slide the knife under the gill plate and cut straight forward or at a 45 degree angle, until you are approximately 1 inch behind the eyes.
3. Flip the fish over to the other side and repeat the cut until it meets the end of the other cut. You may have to angle the knife perpendicular to the ground to meet the other cut.
4. Once the two cuts have met, the head should come off cleanly.
5. Place a completed head tag form in the Ziploc bag with the head and place it a cool place.

Make sure the cut exposes the least amount of meat possible and remove any gills or extra flesh attached to the head. Please keep your knife and board clean as you are dealing with fish that someone will be eating. If an angler prefers to cut the head off themselves, let them do it.

Q. What if the angler refuses to relinquish the head?

A. Record the length and note on the form that the head was scanned but not recovered using the count and the scan status code 'P'.

White Seabass Head Drop-Off Protocol

If at all possible, you should drop off the white seabass head(s) at the end of each day at one of the locations listed below. You can also call (877) 728-3972 to find the nearest location to drop off a white seabass head. If you cannot drop off the head that day, freeze the head until you can drop it off. Contact the business prior to delivery to confirm office hours.

Ports	SBWHT Drop Off Location	Phone
Santa Barbara	CDFW – Santa Barbara 1233 Cliff Drive, Suite 9	(805) 568-1231 (805) 568-1221
	Sea Landing 301 W. Cabrillo Blvd.	(805) 963-3564
Ventura/Oxnard	Eric's Tackle 2127 E. Thompson, Ventura	(805) 648-5665
	Captain Hook's Sportfishing 3600 Oxnard Blvd., Oxnard	(805) 382-6233
	Channel Islands Sportfishing Center 3900 Pelican Way, Oxnard	(805) 985-8511
Marina del Rey	In Seine Bait Company 13800 Bora Bora Way	Larry (310) 574-4443
	Marina del Rey Sportfishing 13795 Fiji Way	(310) 822-3625
	Purfield's Pro Tackle 12512 W. Washington Blvd.	(310) 397-6171
Redondo Beach	Redondo Beach Boat Hoist 181 N Harbor Drive	(310) 374-3481
San Pedro	22nd Street Landing 141 W 22 nd Street	(310) 832-8304
	LA Harbor Sportfishing Ports 'O Call Village	(310) 547-9916
Long Beach	Long Beach Sportfishing 555 Pico Avenue, Berth 55	(562) 432-8993
	Pierpoint Landing 200 Aquarium Way	(562) 983-9300
Catalina Island	Avalon Fish Market At the end of the pier	(310) 510-0197
	Two Harbors Harbor Patrol Office On the pier	(310) 510-4253
Los Alamitos/ Huntington Beach	CDFW – Los Alamitos 4665 Lampson Ave, Ste C, Los Alamitos	(562) 342-7111 (562) 342-7100
	Pacific Edge Bait and Tackle 5042 Edinger Ave, Huntington Beach	(714) 840-4262
	Mako Matt's Marine 6411 Edinger Ave, Huntington Beach	(714) 893-7743
Newport Beach/Irvine	Angler's Center 419 Old Newport Rd, Newport Beach	(949) 642-6662
	Davey's Locker 400 Main Street, Newport Beach	(949) 673-1434
	Newport Landing Sportfishing 309 Palm Street, Newport Beach	(949) 675-0550
	United Anglers of Southern CA 17391 Murphy Avenue, Suite A, Irvine	(949) 863-9447
Dana Point	Dana Wharf Sportfishing 34675 Golden Lantern Street	(949) 496-5794
	Hogan's Bait & Tackle 34320 Pacific Coast Highway #G	(949) 493-3528
Oceanside/ Carlsbad/ Solana Beach	Helgren's Sportfishing 315 Harbor Drive South, Oceanside	(760) 722-2133
	Leon Raymond Hubbard Jr. Hatchery	(760) 434-9501

Ports	SBWHT Drop Off Location	Phone
	4200 Garfield Street, Carlsbad	
	Blue Water Tackle 124 Lomas Santa Fe Drive #207, Solana Beach	(858) 350-8505
San Diego	Hubbs-Sea World Research Institute 2595 Ingraham Street	(619) 227-3870
	CDFW – San Diego 3883 Ruffin Road	(858) 467-4201

White Seabass Head Sampling Instructions

1. Scan the head for the presence of a coded wire tag
2. Measure the fork length of the white seabass
3. Use the hand tally counter at **PR1** sites to keep track of the number of white seabass scanned. This will give you the WSB Scan# during the assignment starting with '01'.
4. Do not weigh the white seabass
5. Use the weight field to code the scan number and status. The code is a three-digit sequence where the first 2 digits are the fish number (01, 02, 03, etc) and the third digit is a scan status alpha code. If the fish is not scanned, leave weight field blank.

Scan Status Alpha Codes

H = positive scan, head taken by Sampler

N = negative scan

P = positive scan, no head taken

On the **Angler** form, use the first two boxes in the weight field to indicate the fish scan number and the third box to indicate the scan status. Note this is left-justified.

On the **PR1** form, in the weight field write the three digit code for each scanned fish.

6. Remove the head.

Head Tag Instructions

1. Write the assignment ID in the ASSN ID fields
2. Write the 2-digit numerical fish number of the scanned fish
3. Place the completed tag in the zipper bag with the head. Place the tag with the writing facing outward for easy identification. Store in a cool place.

PR1 Form with White Seabass Coding

EFFORT										CATCH									
SAMPLE # (or R or B)	HOURS Total	DAYS FISHED		TARGET 1 st	AREA	GEAR	SPECIES code	REPT			RELS			SPECIES LOC or effort if no catch Block-box Lat / Lon	DEPTH BOTTOM (ft)	Fork length			Weight (kg) or (tag #)
		trip	12 mo					obs	alive	total	(w/DO)	unobs	dead			seal	take	1	
3	3	N	12	SBWHT	N	H	SBWHT	2	0	0	0	719-96-75	40	749	806				
1235	0	91762	2	SBKLP	N	H	SBWHT	0	0	0	0		100	01N	02N				
4	5	N	53	YELTL	N	H	SBWHT	2	0	0	0	719-75	38	926	1028	877			
1310	0	92921	2	SBWHT	N	H	SBWHT	0	0	0	0			03H	04P				

Fish head was scanned, negative

Fish head was not scanned

Fish scan #03 scanned positive and the head was collected (H)

Fish scan #04 scanned positive but the head was not collected (P)

White seabass Head Tag

CRFS White Seabass Head Tag

1

2

3

4

5

6

0

3

ASSN ID

WSB Scan #

Angler Form with White Seabass Coding

CREEL SURVEY RECORDS									
TYPE 2 REPORTED OR UNAVAILABLE CATCH (ONLY FOR THE ANGLER ON THIS FORM)									
Common Name	*Species	*No. of Fish			*Dispo.	Location			
1									1
2									2
3									3
4									4
5									
6									

Fish scan #01 scanned negative (N)

TYPE 3 AVAILABLE EXAMINED CATCH									
<input type="checkbox"/> GROUP Catch	*Species	*No. of Fish	Fork Len. (mm)	Weight	L	Fish			
1	Kelp Bass	SBKLP	001	0376	00.7				1
2	Barracuda	BARPA	003	0805	02.7				2
3			↓	0749	02.6				3
4			↓	0836	03.2				4
5	White Seabass	SBWHT	002	0829	01.1				5
6			↓	1066	02.4				6
7									
8									

Fish scan #02 scanned positive and head collected (H)

Invertebrate Creel Sampling

- In general, finfish sampling has a higher priority than invertebrate sampling and a Sampler should never miss finfish anglers to obtain interviews from invertebrate only anglers.



Crab Sampling

The primary goal of the CRFS Sampler is to collect data on finfish trips. However, when and where possible, and without jeopardizing finfish data collection, catch and effort data for anglers targeting crabs of the *Cancer* genus will be collected. Dungeness crab (*Metacarcinus magister*) has priority order over the other *Cancer* species.

When anglers target both finfish and crab, the Sampler will first and foremost collect the finfish data. Do not miss a finfish boat in order to sample a crab boat. When time allows, Samplers will collect crab data as described in the following sections.

Anglers/boats that target crab only will be sampled via the same procedures as a CRFS boat (PR1) or a valid PC, MM, PR2 angler. The Sampler will gather all required data elements with respect to mode and form.

SAMPLING PRIORITIES:

- 1) Finfish
- 2) Dungeness crab (*Metacarcinus magister*):
 - a. effort
 - b. catch: retained and released
 - c. size
 - d. sex
- 3) Rock crab (*Cancer species*)
 - a. effort
 - b. catch: retained and released
 - c. size
 - d. sex

The codes for *Cancer* spp. crabs are:

CRBDG	Dungeness Crab (<i>Metacarcinus magister</i>)
CRBRR	Red Rock Crab (<i>Cancer productus</i>)
CRBBR	'Brown' Rock Crab (<i>Cancer antennarius</i>)
CRBYR	Yellow Rock Crab (<i>Cancer anthonyi</i>)
CRBGR	Slender/Graceful Rock Crab (<i>Cancer gracilis</i>)
CRBGN	Cancer genus (includes above)

For species identification, please see:

http://www.nwrc.usgs.gov/wdb/pub/species_profiles/82_11-117.pdf

http://www.wildlife.ca.gov/marine/dungeness_crab.asp
http://www.dfw.state.or.us/mrp/shellfish/crab/Crab_ID.asp

PR1 Form Crab Coding

The target boxes are primarily for finfish. If the targets are crab and finfish, write the targets in the order that the angler gives them (e.g., if the angler says crab is the primary target, write the appropriate crab code in the primary space and the finfish target in the secondary space). If the boat targeted crab only, then, as with finfish, only the first target (i.e. top, box) would need to be coded.

If only crabs are targeted, the boat still receives a CRFS boat number. Collect all CRFS boat data elements for the interview (county, gear, depth, location, etc) as you would a finfish sample. The only difference is that for all interview questions; replace "fish" with "crab". Except, when asking the avidity question, continue to ask: "Not counting today how many days have you fin-fished in California in the last 12 months, not counting today?" Treat the crab only boats the same way you would a finfish targeting boat for your page.

Angler Form Crab Coding

The target boxes are primarily for finfish. If the targets are crab and finfish, write the targets in the order that the angler gives them (e.g., if the angler says crab is the primary target, write appropriate crab code in the primary space and the finfish target in the secondary space). If the target is crab only, the appropriate crab code is coded in both the primary and secondary targets. If they the angler only identifies one target crab species the 2nd target should be CRABS. If crab is the only target but there was incidental take of finfish, then the secondary target should be finfish (UNIFH).

Record a "D" in the special fishery code box for crab only trips

Anglers who are targeting crab only and refuse the survey are not recorded as initial refusals.

Although crab only anglers don't get counted in the Start/Stop/Estimated Anglers totals on the ASF form, X-Effort change is tallied on crab interview Angler Forms.

Crab Gear Codes

The following codes are to be used for both the Angler and PR1 form when anglers targeting crab are interviewed. The target codes are.

Pn = Pots

Fn = Flat ring/hoop Nets

n = number of hoops/nets/pots used

E = Snare (rod and reel device)

C = Hand while SCUBA diving (with tanks)

N = Hand while diving with no tanks

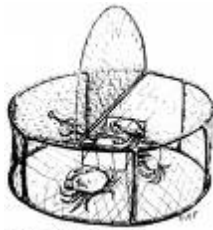
1 = Hook & Line

The number of pots/nets employed to catch the crab will be recorded. The number of pots/nets used follows the gear code (e.g., 3 pots = P3). For PR1, crab-only trips may contain two recorded gears (e.g., P3 for first gear, and F2 for second gear). For finfish/crab trips, and all crab trips on the Angler form, only record the crab gear used for the majority of the time.

Wet Gear Hours

For anglers who have both finfished and crabbed in MM, PR1/PR2, BB or PC mode, record the total wet gear hours for the fin-fishing period.

For crab only MM, PR2 and BB anglers, ask the angler(s) for total soak time of the crabbing gear, up to 24 hours maximum. If crabbing time was greater than 24 hours, put 24 hours as the wet gear hours crabbed. On PC Onboard trips, all of the pots pulled will be considered to be on one drift. The start time will be when the first pot is pulled and the end time is when the last pot is pulled. For crab only PR1 anglers, all trips will be coded as one day fishing, even if pots were soaked overnight or for multiple days.



PC Special Instructions

During crab season, many PC vessels will run crab-combo trips. These trips will fish part of the day and pull crab pots after the fishing is complete. Crab pots are heavy, bulky, and awkward. Stay out of the way of the deckhand when they are pulling the pots. **DO NOT ASSIST THE DECKHAND WITH THE CRAB PULLEY.**

Observing Onboard Crab Trips

Crab pots may have been set out the day of the trip or may have 'soaked' overnight. There will be multiple pots set in a string. Record the locations of the first and last pots of the string in the Start and End locations on the PC Onboard Location form. Record the other data elements as described in the PC section of this manual. Record the crab catch as you would for fish: i.e. Species, #kept, #released, etc. It is important to remember though, that finfish still has priority and it is more important to get fish measurements than to tally crab, if fish are being filleted while pots are being pulled. You can always just get a start location and at the end of the day get total kept/released numbers of crab from the crew.

Special note: Observed anglers will be the number of anglers who kept any crab. Code the fishing type (Ftyp) as 3 = Anchored.

In many cases, the crab caught will be distributed to the anglers after the last pot has been pulled or just prior to docking. The crabs will be divided amongst the passengers and randomly distributed. Crabs will be kept in a centralized holding bin(s).

PC Onboard and PC Dockside Forms Crab Coding

PC crab trips sampled onboard and dockside will treat all kept and released crab as 'boat fish'. Totals for the whole boat will be collected and recorded. **Please see specific PC Onboard Catch and Discard form and Non-Salmon PC Dockside form sections for descriptions and examples of how to code crab catch on PC related assignments.**

Crab Creel Data

Crab biological and creel data consists of the following elements, with these priorities in mind: These elements are recorded AFTER all finfish data has been captured.

- Count of retained/released
- Carapace width
- Sex

Crab Released

Record how many crabs were caught and released intentionally, e.g. not legal size, didn't want, etc. Make sure to record any intentional crab releases on crab only trips.

Handling and Measuring Crabs

Measure each crab's carapace width to the nearest mm using your calipers. Place each tip of the caliper directly in front of the most prominent lateral spine.

Dungeness crabs:

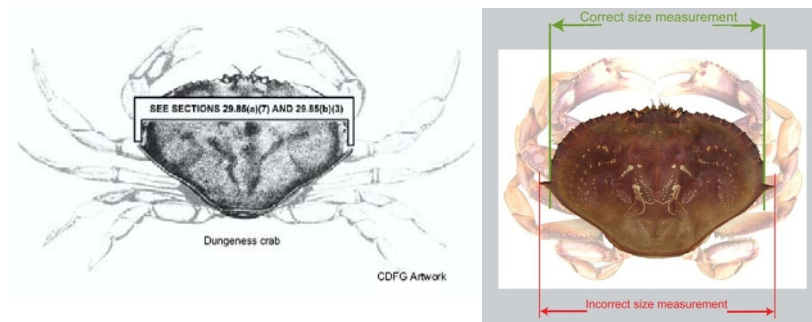
Measure the body from edge of shell to edge of shell directly in front of and excluding the points (lateral spines).

Rock crabs: Crabs are measured at the widest point of the carapace.

(Refer to the CDFW Ocean Sport Fishing regulations booklet, Section 29.85).

Crabs are usually not landed dead and can be quite lively. Take care to not have any part of your hand near the claws of all crabs in proximity, especially those beneath the crab you're grabbing! The crab will pinch you if possible. The best way to handle a crab is to grab the last set (posterior most) of legs at the point nearest to carapace and squeeze them together. This will give you a 'lever' to hold the crab, keep your fingers out of harm's way, and allow you to take measurements safely. Do not squeeze too tight or the legs may detach.

If the crabs are too 'lively' to measure, just obtain a count of the total crab by species.



www.dfw.state.or.us/mrp/shellfish/crab/large_images/crab-measure_ODFW_650.jpg

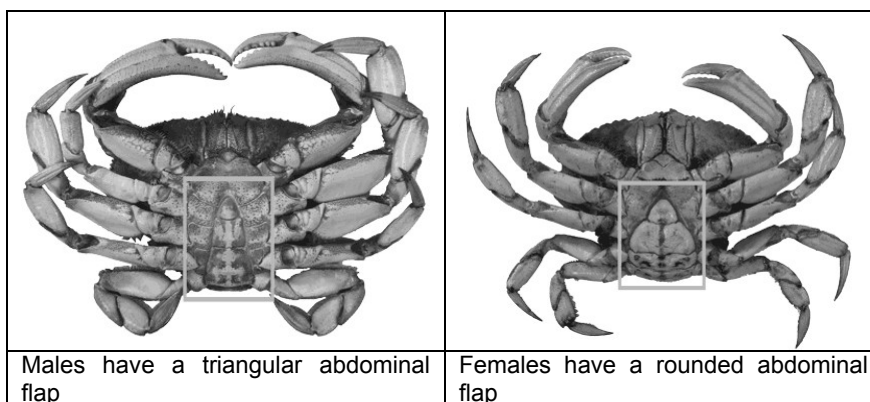
Always wear gloves when handling crabs. **Keep your fingers away from the chelipeds (claws).**

Crab Sex

As with other species, do not record a sex without a length first.

PR1 form - record sex as 'M' or 'F' as part of length, i.e. 156F for a 156 mm female.

Angler form - record the sex of the crab as 'M' or 'F' in the Fish Sex column for Type 3 fish.



Photos: www.dfw.state.or.us/mrp/shellfish/crab/Crab_ID.as

Rock Crab Identification

Red Rock Crab: Carapace widest at 8th anterolateral tooth. NO spots on abdomen, with some hair on legs, short antennae.

Brown Rock Crab: Carapace widest at 8th anterolateral tooth. DISTINCT Red/purple spots on abdomen, with very hairy legs, long antennae

Yellow Rock Crab: Carapace widest at 9th anterolateral tooth. Pale yellow, no hair, with purple 'wash' on legs, ventral yellow to white

Slender/Graceful Rock Crab: Carapace widest at 9th anterolateral tooth. Looks like a miniature Dungeness Crab EXCEPT no spines on claws

Squid Sampling



The primary goal of the CRFS Sampler is to collect data on finfish trips. However, when and where possible, and without jeopardizing finfish data collection, jumbo squid (*Dosidicus gigas*), aka 'Humboldt Squid' data will be collected from anglers who also targeted finfish and/or have finfish bycatch. Those anglers who targeted jumbo squid and have no fish bycatch, retained or released, are not to be interviewed and mode specific form coding will be followed.

For anglers who targeted finfish and jumbo squid, the Sampler will first and foremost collect fish data. Then, if time allows, Samplers should collect the following data by this prioritized list:

- Count of retained and released
- Mantle Length (no weights)

PR1 Form Squid Coding

The target boxes are primarily for finfish, if the angler targeted one finfish group and squid, then the finfish target would be listed as the primary target and jumbo squid as the secondary target. The target code is SQUID. If the angler targeted two finfish groups, then jumbo squid would not be coded as one of the two targets.

Angler Form Squid Coding

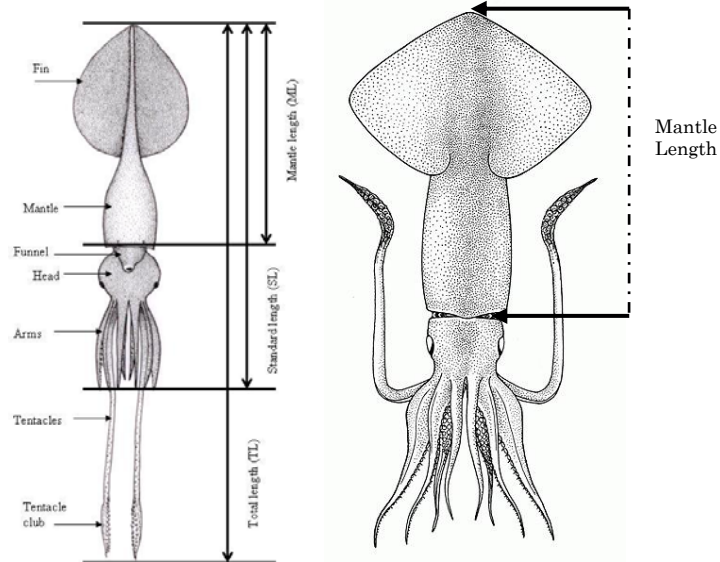
The target boxes are primarily for finfish. If the angler targeted one finfish group and squid, then the finfish target would be listed as the primary target and jumbo squid as the secondary target. If the angler targeted two finfish groups, then squid would not be coded as one of the two targets.

For anglers who targeted only jumbo squid and had no finfish bycatch, either retained or released, the boat will be coded as a non-fishing boat in X-Effort item D.

Jumbo Squid Measurements

Jumbo squid measurements are of the mantle length from mantle tip to mantle margin. The main body mass of the squid is enclosed in the mantle, which has two swimming fins along each side. The mantle tip is anterior to the swimming fins and the mantle margin is located anterior to the head. See the following squid drawings on how to measure.

- Center the squid on the measuring board insert.
- Place the tip of the mantle flush against the bracket edge of the measuring board.
- Record the length, to the nearest millimeter, at the posterior edge



<http://www.tonmo.com/science/public/giantsquidfacts.php>

<http://www.fao.org>

Lobster Sampling



The primary goal of the CRFS Sampler is to collect data on finfish trips. However, when and where possible, and without jeopardizing finfish data collection, spiny lobster (*Panulirus interruptus*) biological data will be collected during lobster season.

For anglers who target both finfish and spiny lobster, the Sampler will first and foremost collect fish data. When time allows, Samplers are to collect spiny lobster data as described in the following sections.

For anglers who only target spiny lobster, and when there is time (i.e. not missing a finfish boat), the angler/boat will be sampled the same as a CRFS boat (PR1) or a valid PR2 angler. The Sampler will gather all required data elements with respect to mode and form.

PR1 Form Lobster Coding

The code for spiny lobster is LOBSP. The target boxes are primarily for finfish. If the targets are lobster and finfish, write the targets in the order that the angler gives them (e.g., if the angler says lobster is the primary target, write LOBSP in the primary space and the finfish target in the secondary space). If the boat targeted lobster only, then as with finfish, only the first target, i.e. top, box would need to be coded.

On a spiny lobster/finfish combination CRFS boat (anglers targeted both groups) record only the anglers who fished for finfish during the trip. Do not record the lobster-only anglers for these trips. For a trip that targeted only lobster but caught fin-fish incidentally (fin-fish by-catch), the boat is a CRFS boat but code the number of lobster anglers.

Boats that are lobster only trips still get a sample number and LOBSP is put in the primary target box.

Angler Form Lobster Coding

The target boxes are primarily for finfish. If the targets are lobster and finfish, write the targets in the order that the angler gives them (e.g., if the angler says lobster is the primary target, write LOBSP in the primary space and the finfish target in the secondary space). If the target is spiny lobster only, then LOBSP is coded in both the primary and secondary targets. If lobster is the only target but there was incidental take of finfish (bycatch), then the secondary target should be finfish (UNIFH).

Record an "L" in the special fishery code box for lobster-only trips (no fin-fish bycatch)

Anglers who are targeting spiny lobster only and refuse the survey are not recorded as initial refusals.

Lobster Gear Codes

The following codes are to be used for both the Angler and PR1 form when anglers targeting spiny lobster are interviewed. These target codes are specific and limited to the target of spiny lobster.

Fn = flat hoop net,
Rn = rigid, or "modified" hoop net
n = number of hoop nets used
C = hand while SCUBA diving with tanks
D = free Diving with no use of air tanks.

If hoop nets are used (gear codes F or R) then the number of nets employed will be recorded as well. The number of nets used follows the gear code (e.g., 3 flat hoop nets = F3). For PR1, lobster-only trips may contain two recorded gears (e.g., F3 for first gear, and R2 for second gear). For finfish/lobster trips,

and all lobster trips on the Angler form, only record the lobster gear that was used for the majority of the time (e.g., F3 + R2 = F3 on the angler form).

Spiny Lobster Creel Data

Spiny lobster biological and creel data consists of the following elements, with the sampling priorities in mind: (AFTER all finfish data has been captured):

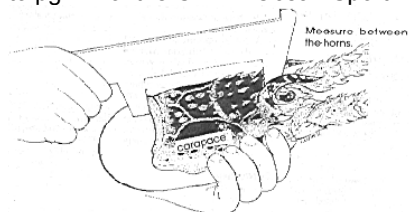
- Count of retained/released
- Length
- Sex

Lobster Released

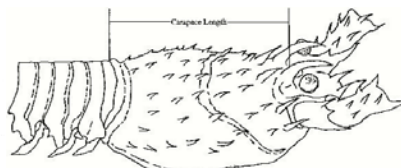
The Sampler will record how many lobsters were captured and released intentionally, e.g. not legal size, didn't want, etc. Make sure to record any intentional spiny lobster releases on lobster only trips.

Lobster Carapace Length

Measure each lobster's carapace length to the nearest mm using your calipers. To measure, place the inside edge of the caliper tine on the rear edge of the eye socket and the inside edge of other tine on the rear edge of the body shell. Measure the carapace, in a straight line, along the midline of the back. (Refer to pg. 71 of the CDFW Ocean Sport Fishing regulations booklet).



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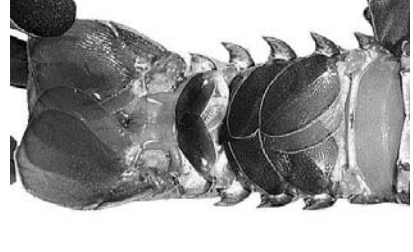
<http://ecfr.gpoaccess.gov/>

Always wear gloves when handling spiny lobsters. Keep your fingers away from the mandibles (mouthparts).

Lobster Sex

PR1 form - record sex as 'M' or 'F' as part of length, i.e. 96F for a 96 mm female.

Angler form - record the sex of the lobster as 'M' or 'F' in the Fish Sex column for Type 3 fish.

	
<p>Males have small pairs of pleopods on the ventral side of the tail and have a single pointed claw on their last pair of walking legs.</p>	<p>Females have large pairs of pleopods (or flaps) on the ventral side of the tail and have dual claws on their last pair of walking legs</p>
<p>Q. If I cannot record the length of a lobster, should I record the sex? A. No, sex data without length data is unusable.</p>	

ANGLER FORM SURVEY PROCEDURES (CLUSTERS)

This section describes mode-specific procedures for surveys using the Angler Form. The Angler Form is used for both shore based modes: including man-made structures (MM) and beaches and banks (BB) in addition to one type of boat based mode: secondary launch ramps (PR2). The Angler Form samples catch per trip in most target modes, but also samples MM effort in angler hours per site and PR2 effort in angler trips per boat hour per site. BB mode is sampled only for catch as effort is derived from telephone surveys.

BB Sampling

The primary goal for BB sampling is to sample Catch per Unit of Effort (CPUE). CPUE is determined by counting numbers of fish species observed (landings) and asking about catch not observed (releases and other un-landed fish) for each angler. Catch estimates will be calculated for all BB sites in each district for each month. Estimated mean catch per angler will be calculated and multiplied by total effort from the ALD telephone survey to estimate total catch. Other data relevant to the angler effort and catch, such as location, trip type and fish measurements will be recorded.

Currently beaches are not separate from banks in the data collection, here are their definitions:

- *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.

The beach and bank mode of fishing is sampled at a relatively low rate. You will sample multiple sites in a cluster, which may be in a predefined order. You will interview individual anglers with the Angler Form. You may perform pressure checks at intervening sites with the Assignment Summary Form. You may also perform CPFV checks at intervening PC sites using the PC Effort Check Form (PEC).

Sampling BB Sites

Sampling will normally take place during an 8-hour work day during daylight hours. Beach and bank sites are grouped into clusters. When a BB site cluster is assigned, you will typically have to cover an extensive stretch of the coast. If there is a predominant point of egress from each individual 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. At crowded beaches, 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 at a site and a rough approximation of the duration of their trips is a useful tactic. With this information the Sampler is able to maximize intercept coverage by planning his/her movements around those of the anglers. Anglers may fish during incoming tides, however do not introduce bias into the survey by only interviewing anglers during that period. The preliminary canvass can also be used to inform the anglers about the study and gain consent to conduct the interview.

Incomplete BB trips

Sampling in BB mode allows you to interview anglers with incomplete trips. Anglers must be 50% or more complete with their trip according to time fished and planned additional time fishing. For example an angler who has fished for 2 hours and plans on fishing for 2 more hours would be eligible to survey (50% of the fishing is complete). An angler who has fished for 1 hour and plans on fishing for 2 additional hours would not be eligible to survey (only 33% of the fishing time is complete). If an angler is unsure of how many additional hours they are going to fish then they are not eligible to survey. 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. Incomplete trips should not comprise more than 50% of the interviews for the entire assignment.

Near the end of the sampling time, identify and interview anglers who have completed 50% or more of their trip. These anglers are eligible for an interview. If it is early in the morning, check to see how many hours they will fish. Then, if possible, return to the site to obtain a complete interview of these incomplete trips.

MM Sampling

Man-made structure anglers are sampled using a roving survey in a cluster of sites. The survey samples MM angler effort and catch at public structures such as piers, docks and jetties during daylight hours. Specific data elements for documenting angler counts and changes in effort (x-effort) while on-site are included on the Assignment Summary Form and the Angler Form.

This survey is similar to the PR2 survey. It has nearly identical site selection and site sampling methods. The unit of effort is the angler rather than the boat, so differences occur with the effort counts (angler counts) and form instructions. A cluster of sites may have a mix of MM and PR2 sites.

Man-Made Structures Defined

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

MM Effort Data

The primary goal is to estimate effort in angler hours for each MM site in a cluster of sites. This is done by performing angler counts at the sites and intercepting anglers and recording their fishing time. The effort estimate in angler trips is the product of angler hours per day and angler trips per hour. Angler counts (start and stop counts) are recorded on the Assignment Summary Form while changes in effort observed while on-site are recorded on the Angler Form (x-effort).

MM Catch Data

The secondary goal is to estimate catch rates for MM anglers. Catch is determined by counting numbers of fish species observed (landings) and asking about catch not observed (releases and other un-landed fish). Catch estimates are calculated for each cluster and month along with the effort estimates. Catch for incomplete fishing trips is adjusted based on additional fishing hours reported by MM anglers.

Sampling MM Sites

Sampling will normally take place during an 8 hour work day during daylight hours. MM sites are grouped into clusters. Each cluster will be sampled three times a month. The order of the sites in a cluster is pre-selected systematically or at random. The cluster of sites must be visited at different times of the day during the three visits per month. The sample will represent fishing between sunrise and sunset, so diverse sample times are needed. The order in which the sites in the cluster are visited will vary, depending on your assigned cluster site order.

The Sampler will record start and stop angler counts at each of the MM sites in the cluster. During interviewing and while waiting to intercept anglers, the Sampler will track arriving and departing anglers (x-effort). This allows counts between the start and stop time to be estimated rather than counting the anglers again while sampling.

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 using 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 and no changes in effort are occurring, you might canvass the pier or jetty to determine the duration of trips and plan your stop time. You might mention that you can identify their fish for them and provide a length and weight as well as information about the survey.

Sampling MM Anglers

Samplers will attempt to interview all anglers completing their fishing at each MM site during a cluster site assignment. There is no limit to the number of interviews which may be conducted. Samplers should attempt to get interviews from each site within the cluster where angling is occurring. Incomplete MM trip interviews are allowed after the stop time.

Incomplete MM Trips

Since you have to monitor changes in angler effort from a point of access at busy sites, you may not have an opportunity to move away from your position to canvass anglers until after the stop count. The time to interview anglers who are still fishing is after the stop count. Incomplete angler trips must be 50% or more done, by wet gear hours. Also incomplete trip interviews cannot compose more than 50% of all interviews for your cluster of sites (50/50 rule for the assignment).

MM Effort Data Collection

The Assignment Summary Form is used to record the start and stop angler counts. The Angler Form is used to record changes in effort (x-effort) between the angler counts while on site. Changes to record while on site are anglers missed or skipped while they are leaving and anglers who arrive and start fishing. These effort changes are recorded on the current angler form while

interviewing. If not interviewing, changes are recorded on the next blank angler form or the previous form (see detailed x-effort instructions below).

MM Start Count

Begin the count at the far end of the MM structure and count as you return to the origin. Try not to double count or miss anglers behind obstructions. Often times it is difficult to determine the number of anglers when there are multiple fishing rods so use your best judgment. The origin is where you can see all people leaving the structure. The start time is recorded when you finish the start count.

MM Stop Count

Begin the count at the origin and work toward the far end of the MM structure. Try not to double count or miss anglers behind obstructions. The stop time will be recorded at the start of the stop count.

PR2 Sampling

The PR2 angler survey samples secondary launch ramps and hoist sites in clusters. The survey is used to estimate total effort and catch for clusters (groups) of secondary ramps by month using a roving access point method. Secondary launch ramps are those that land the minority of the catch of species of concern in any particular month. The survey counts trailers and samples boats returning to these ramps for effort and catch. Specific data elements for documenting trailer counts and changes in effort (x-effort) while on site are included on the Assignment Summary Form and the Angler Form.

PR2 Effort Data

The primary goal is to estimate effort in angler trips per site for a day. This is done by counting trailers at the secondary ramp sites and intercepting boats and recording their activity, as either fishing or non-fishing. Angler trips will be the product of trailer hours per day and angler trips per trailer hour (see full angler trip definition in the General On-site Procedures section).

PR2 Catch Data

The secondary goal is to estimate catch. Catch is determined by counting numbers of fish species observed (landings) and asking about catch not observed (releases and other un-landed fish). Catch estimates are calculated for each cluster and month.

Sampling PR2 Sites

Sampling will take place within an 8 hour work day during daylight hours. Each PR2 site in the cluster must be visited during the day to assess effort levels. The Sampler will record boat trailer counts twice at each of the PR2 sites in the cluster. Start and stop sampling trailer counts are recorded after arrival and before leaving. During boat sampling the Sampler will track outgoing and incoming boats (x-effort). This is so that trailer counts between the start and

stop times can be estimated rather than by counting the trailers again. For launch ramps, the absence of any trailers would normally indicate that there is no need to wait for a long period, because if no boats are out, obviously none will be coming in.

At PR2 sites, wait until the boat is not going to be in the way of other boaters or creating a safety hazard. Try not to interfere with the anglers while busy cleaning the motors. Avoid exclusively interviewing boat owners as opposed to passengers, since owners may bias the sample toward higher activity levels. Passengers may say, "Ask Joe, it's his boat, he goes out a lot". They might say, "You don't want to talk to me, I was just here for the day". Reassure the passengers that their information is just as important as the boat owner's. If you are not very busy with interviewing at the PR2 launch ramp it is acceptable to sample BB (using an Angler Form) and PC anglers opportunistically (using a PC Dockside Form) at an adjacent beach or partyboat operation.

Varying the sampling hours is especially important when sampling in PR2 mode. The sample is going to represent all times between sunrise and sunset, so we need diverse on-site time periods.

Sampling PR2 Boats and Anglers

Samplers will attempt to intercept all boats returning at each PR2 cluster site during the assignment. There is no limit to the number of angler interviews which may be conducted. Samplers should attempt to get interviews from each PR2 site in the cluster where effort is present. Samplers may return to a site in the cluster only after all the other sites in the cluster have been visited.

PR Sampling Etiquette

Here are a few points to keep in mind when sampling in PR mode at a launch ramp:

- Always ask permission before you board a boat, preferably from the owner of the boat
- Be careful climbing into and out of a boat, whether trailered or tied up dockside; ask the skipper how best to board the boat
- When climbing up onto or down from a trailered boat, have someone hand you your gear, and hand it back down to them when you are done. Do not attempt to climb with your hands full of sampling gear
- Be aware of your surroundings onboard. Be careful not to step on rods or other boat gear
- Ask the skipper where they would like to have you measure the fish
- Do your best to keep the fish slime in the fish box – do not dirty up the boat any more than you have to
- Clean up any mess that you may make – wipe up slime and blood
- Do your best to avoid letting your gear (measuring board, scales, clipboard) scratch the finish of the boat
- Make sure you have all of your gear when you leave the boat

Remember that private boats are private property, and in many cases represent a significant financial investment to the owner. Treat the boats of anglers that you sample as you would want someone to treat your boat – with respect.

PR2 Boat level sampling

If you are interviewing a fishing boat with multiple anglers and the PR2 site is very busy, you may interview the group of anglers as if they had inseparable group catch (see Random Selection Angler Group instructions). This is permissible and is faster than separate interviews when a large number of boats would otherwise be missed. However, detail is lost on the catch per angler so use this sparingly. In this exceptional case you may include all anglers who fished as contributors to the type 3 (observed) catch, including those with no catch. However, you still cannot group type 2 (unobserved kept or released) catch. Therefore, the best procedure is to sum the type 2 catch and then divide by the number of anglers and record the average type 2 catch per angler on the PR2 boat trip angler form. It's a good idea to make a side note on the Angler Form when you do this.

PR2 Effort Data Recording

The Assignment Summary Form is used to record start and stop trailer counts. The Angler Form is used to record changes in effort (x-effort) between the start and stop times. Changes to record while on site are boats launching, non-fishing boats returning and boats missed. All boats are included in the x-effort except those without trailers. These effort changes are recorded on the current angler form while interviewing. If not interviewing, changes are recorded on the next blank angler form or the previous form (see detailed x-effort instructions below).

Kayaks, personal watercraft (PWC), and other craft that were not launched from a 'boat' trailer are not included in the PR2 x-effort. However, when these "no-trailer" boats contain anglers the Sampler will be coding question B3 "PR trailer in count area" such that an adjustment is made to the estimate of anglers per trailer. Three questions on the Angler Form in the section for Boats are required for accurate PR2 effort estimation:

B3. PR trailer in "count area"

This is a "yes" if the fishing boat's trailer was in the launch ramp parking facility where it could be counted by a field person. It is a "no" if the trailer was parked away from the launch facility due to lack of trailer space, etc. or the boat was launched without a trailer. The count area is a reasonable area where the trailers may park. Your Supervisor will notify you if you are to count boat trailers outside of the parking lot or nearby street. For example, you may (or may not) be asked to count trailers in a nearby campground. It is not necessary to count every possible trailer that used the site.

B4. Boat departure time

If the angler reports that the boat departed on a prior day the departure date must be recorded at B5.

B5. Departure Date

Record a date of departure if the boat left on a previous date.

PR2 Catch Data Recording

All craft returning from a fishing trip may be intercepted for angler interviews. This includes kayaks, PWCs and other non-trailer craft if they carry an 'eligible PR angler'. All boats should be screened for anglers and also for private or party/charter status. Sometimes small skiffs are really CPFV trips and would be interviewed as opportunistic PC anglers using the PC Dockside Form.

MMPR2 X-Effort Coding

The Sampler will keep track of "changes in effort" (x-effort) in MM and PR2 assigned modes. All x-effort is recorded on Angler Forms. If x-effort counts are made on a blank Angler Form and the Sampler does not get any more interviews, the form should still have an interview number, but the status will be zero (non-angler form). Fill out #1-10 and # of initial refusals, # language barriers, # of key refusals boxes to complete the status 0 form with the counts. If there was a complete interview 15 or fewer minutes earlier, the x-effort counts may be put on the previous interview (see detailed discussion of 15 minute rule below). Status 0 forms are added to the 'Status 0 / NF Boats' count on the Assignment Summary Form.

MM X-Effort Between Interviews

These counts include all the MM anglers that could be included in the angler count. Exclude shellfish-only anglers. X-effort boxes are left blank after the stop count. These counts go on the header of the angler form at A and B:

MMPR2	0	1	A. MM Anglers skipped	*	0	2	B. MM Anglers that started fishing

Angler Form, Header MM X-Effort Items

A. MM Anglers skipped - The Sampler will keep a count of anglers who complete fishing and are not interviewed. This would occur during periods when the Sampler is busy with other tasks.

B. MM Anglers who started fishing - The Sampler will keep a count of anglers who arrive and start fishing. This count can usually be made by counting people who enter a MM structure carrying fishing gear.

PR2 X-Effort Between Interviews

These counts include all the types of boats, both fishing and non-fishing, that could be included in the trailer count. This is the number of **boats**, not number of people. Exclude deflated inflatable boats, car-top, and pickup truck boats with no trailer usage. PWCs are not included in these counts. The Sampler does not have to determine if the tallied trailer was in the count area or not. X-effort boxes are left blank after the stop count. These counts go on the header of the angler form at C, D and E:

01	C. # PR2 Boats TR Launched	02	D.* Non- Fishing TR	00	E.* Missed TR	X-Effort
Since last PR2 boat		Since last PR2 boat		Since last PR2 boat		

Angler Form, Header PR2 X-Effort Items

C. # PR boats launched from a trailer - The Sampler will keep a count of all boats launched from a trailer (or hoist if appropriate).

D. Non-fishing boats returned to a trailer - The Sampler will keep a count of all non-fishing boats coming in and put on a trailer or otherwise "docked" at the site using a ramp or hoist.

E. PR boats missed on a trailer - The Sampler will keep a count of all boats coming in that were not intercepted for any interviews. The activity of these boats, fishing or non-fishing, does not have to be determined. This would occur during periods when the Sampler is busy with other tasks.

Status Zero / 15 Minute Rule Instructions

X-effort as well as 'bad anglers' encountered (refusals, language barriers, and key refusals) should be time stamped by using an interview within 15 minutes of its observation.

If there is an interview before the x-effort within 15 minutes, it may be recorded on the previous interview. If more than 15 minutes has elapsed since the last interview, x-effort may be recorded on the next interview. If there is no next interview or the next interview is more than 15 minutes later, a status zero form should be produced and the time recorded as the time the x-effort event occurred. The time of the x-effort event is important. There is no need to generate a status zero interview if there is an angler interview within 15 minutes of the x-effort or if no x-effort occurs.

A good strategy is to record the x-effort on a blank form with the time if the event is more than 15 minutes after the previous interview. If no angler is interviewed within 15 minutes, the Sampler can complete the form as status zero. If an angler is interviewed within 15 minutes after the x-effort, the x-effort stays on that angler's form and the time is changed to the time of the angler interview.

Any x-effort taking place within 15 minutes (multiple x-effort counts) of a time

stamp (before or after) may be included on one form. The window for adding up x-effort may not exceed 30 minutes. When recording only x-effort at a site due to a lack of anglers, status zero forms should be a maximum of 30 minutes apart. Thus a Sampler observing many non-fishing boats returning over a number of hours with no anglers interviewed will have a status zero from rate of two forms per hour. If there is no x-effort, no status zero forms are required.

X-Effort Coding Tips

1. Your cluster list will determine if a site has just one target mode or both MM and PR2 applicable for x-effort and interviewing at a specific site in the cluster.
2. You may perform pressure checks at other sites and for other modes while sampling MMR2 assignments, leave x-effort target mode and arrival and stop counts for those sites blank on the ASF.
3. X-effort is not 'required' on the boat leader's form. X-effort may be coded on the other angler's forms when applicable for the target mode.
4. If there is a change in x-effort but no anglers after 15 minutes (on which you can record the change), record on the next blank form and code it as status zero.
5. If there is a change in x-effort but no more new angler forms (on which you can record the effort change) but there was a previous angler 15 minutes or less ago, record x-effort on the previous form, rather than create a status zero interview.
6. If the Sampler observes x-effort after the stop count, do not record any x-effort or make a status zero form.
7. If you are refused by some, but not all, of the anglers from a PR2 boat, code the total number of refusals on the form of an angler you interview from the boat.
8. If all the anglers on a PR2 boat refuse, do not code it as a missed boat. Rather, code the appropriate refusal box on either a status zero or complete PR2 angler form with the number of refusals being the number of anglers on that boat. If you are unable to determine the actual number of anglers, you may estimate or use the average number of anglers from interviewed boats that day.

THE ANGLER FORM

Included in this section are some of the more general issues regarding the Angler Form and 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.

Your training sessions with your Lead in the office and in the field will address the form and how to fill it out. The sections of this manual titled "Item-by-Item Instructions" provide detailed and specific instructions on how to code each question.

Questionnaire Usage

You will be given a laminated copy of the **questionnaire** used with the Angler Form. The questions for the interview are written out, in full, for a purpose. The Sampler 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 Lead. Remember, however, the portion of the question that is asked should be worded as printed on your questionnaire sheet.

Angler Form Layout

The angler form is divided into ten logical areas of data collection, eight on the front for fishing effort and angler demographics and two in the back for catch reported and examined. Additional sections or "add-on" questions, usually economic, may be included on the form from time to time. An instructional supplement to this manual will be provided in those cases.

Header Items

The top margin of the form contains prompts for screening eligibility, the Privacy Act, code for special fishery angler or form, and numbers of pages when additional sheets are needed for large catches on additional sheets.

Introducing the Angler to the Survey

There are basically two kinds of introductions: the general "canvassing" introduction to locate eligible anglers and the more formal introduction and Privacy Act statement. With the Introduction and Privacy Act statement you can be a little freer 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.

Screening for Angler Eligibility

An eligible angler is one who has finished sport (not commercial) fishing for fin-fish, Dungeness/rock crabs, spiny lobster or has caught a fin-fish (by-catch in shellfish fishing) in saltwater (not fresh) in the designated mode for the day. It can also be a shore angler who is still fishing as long as he has completed at least half of his trip (beach/bank or man-made structure fishing) in hours for the day. All fin-fish anglers including children —whether they have or have not caught anything—are potentially eligible.

Q. What if the angler was interviewed yesterday and is reluctant to be interviewed again?

A. Explain to the angler that we need to interview him again in order to properly represent his participation in the fishery. For our sample to be representative of all trips made, we want to interview avid anglers more often than occasional anglers.

Q. What if a boat angler spent part of her trip in freshwater and part of her trip in saltwater?

A. If the majority of time was spent below the saltwater cutoff, the angler is eligible to be interviewed. The Sampler would collect information (wet gear hours, catch, etc.) only for the saltwater portion of the trip.

The Privacy Act

As soon as you establish the eligibility of the angler, you could launch right into the Privacy Act statement. An abbreviated statement is found at the top of the laminated Angler Form Questionnaire used for the interview. All surveys conducted using federal funds 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 Sampler 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 Angler Questionnaire. It must be stressed that participation in this survey is voluntary. While anglers are used to having their catches inspected by persons who enforce regulations, they should never get the impression that the survey is mandatory.

Privacy Act Statement

Information collected in the CRFS 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.

Key Questions ()*

Please realize that every question on the Angler 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.

Use of Blank Boxes and 9 codes

Blank boxes 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. The Sampler forgetting to ask and language barrier issues are the same as refused. Check the specific instructions for particular intercept items relating to these codes as some exceptions exist.

Multiple Forms per Angler (Page _ of _)

More space than the forms allow may be needed for recording both unavailable catch (type 2) and available catch (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.

If an angler has fished in two modes, you may fill out two forms, one for each mode fished, provided he/she has finished fishing in both modes.

If the angler used more than one type of gear, the Sampler should code the gear that was used (in the water) the greatest amount of time. Spear guns or pole spears are coded 8 for "Spear". If they fished with both spear and hook and line, probe to see how many hours they fished with each gear and where they used them.

1. If different gears and different modes, you may make two interviews for each angler.
2. If different gears and same mode, then make one interview and code the gear used most of the trip.

Special Fishery Sampling

We have a modified interview which we call a "special fishery" interview where some items may not be recorded. This is taken to complement, but not duplicate, other sampling programs undertaken by CDFW. Other CDFW programs mainly sample specific fisheries, such as white seabass, for quota management and/or tag recovery. Your Lead will give you specific instructions for such sampling in certain modes, areas and waves. In these cases the "special 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 other CDFW programs.

PC or BB anglers sampled while you are in a different mode are considered opportunistic and are used for their catch rate data. Opportunistic sampling of the PC mode should be done with the PC Dockside Form. Opportunistic sampling of the BB mode should be done with the Angler Form.

Intercept Items

The first section, the "intercept box", is administrative and consists of

*	1. Assignment No.				2. * Sampler	Intercept	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.	
*				3. Month/Day				
*				4. Interview #				
*				5. Time interview started (24 Hr:Min)				
*				-	7. Cnty-Site Code			
	8. Site Name First interview at site							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.
*	9. Mode: 1=Pier/Dock, 2=Jetty/Breakwater, 3=Bridge/Causeway, 4=Other Structure, 5=Beach/Bank, 6=Party Boat (per head), 7=Charter Boat (group paid), 8=Private/Rental boat							
*	10. Status: 0=Non-angler 1=Complete 2=Non-key ref.							
	# of Initial Refusals		# Language Barriers		# of Key Refusals	< These must be in the mode of fishing above.		

Effort Items

The effort items assign the majority fishing time to a water area and gear.

*		E1. Fishing Effort Area: Ocean (or open bay), River, Bay or harbor, S.F. Bay, Mexico	Effort
		E2. Gear 1=Hook & line 2=Dip net 3=Cast net 8=Spear 9=Hand	
*		E3. Wet Gear hours fishing in <u>above mode</u> ?	
*		E4. SHORE trip add'l hours. 0=Complete Trip must be 1/2 done. 50% of all interviews must be "complete".	

Anglers may fish in more than one area and use more than one gear, but we will be assigning the area and gear that was the majority of the trip in hours fished. The majority effort area and gear included hours yet to be fished for shore modes.

Boat Items

The boat items code anglers into boat groups, collect effort levels and areas specific to boats, and identify party and charter boats. Effort levels include total boat water hours and if the boat had a trailer for trailer hours. Effort areas for boats include distance from any shore including specific islands.

*		B1. Interview # of first boat angler. (B2-B11 - First Boat Angler ONLY)	Boats	
*		B2. # Anglers in boat		B3. *PR Trailer 0=no 1=yes in Count Area? K=kayak
*		B4. Departure Time? if prior day record date >>		B5. * Deprt. Date
*		B6. Distance 1-<=3 mi. Code if island -> from any shore? 2-more than 3 mi.		B7. <=3 mi. CA Island
		B8. CPFV Boat Permit Number		
		B9. CPFV Boat Name:		

Location Items

	L1. BOATS: Asked Fishing Location? (1=Yes, 0=NO, 3=Same as First).	Location
	L2. Location(s)	
	L5. Bottom Depth(s) [feet]	
	L6. Depthfinder used?	
	L3. Format: 1-Degrees' minutes' grid size 2-State site code# 8-IDK 9-RE 3-Degrees' mins' secs" 4-Decimal degrees" 5-CDFG Block-Box <grid size> B, B-b, B-b-b, B-b-b-b, B-b-g	
	L4. Angler gave location using: <input type="checkbox"/> Chart <input type="checkbox"/> GPS/Loran <input type="checkbox"/> Site name Fishing Site Name (Record code(s) at L2):	
	L7. All catch from this location? 1=yes, 0=no, then ✓ fish from Location on back. 8=no catch	

The location items code boat on-the-water locations of catch (or effort if no catch). Catch locations include bottom depth, method of location, and which catch was caught there, when known. The catch location can be independent of the effort area, which allows us to get the fishing location and depth for important species, such as managed rockfish.

Target Items

1									
2									

The target species gather information on the type of fishery the angler was in. The "shorthand" codes such

as 0 = anything, 1 = bottomfish, F = same as first boat angler can be used to save time.

Catch Items

The catch items gather information about the angler's catch; both landed, released, or otherwise unavailable. The catch items also allow grouping of catch for anglers who share bags.

*F1. PRIMARY AND SECONDARY TARGET SPECIES: 0=Anything 1=Bottomfish 2=Sharks 3=Surface 4=Tuna F = same as First boat angler									
*	F2. Reported or unavailable catch (for this angler only)?		*	F3. Examined and available catch? If yes, code F4-5 >>		ON THIS FORM		ON OTHER FORM	
						*F4. # of contributors		*F5. Interview ###	

Angler Items

The questions at the bottom box labeled "Angler" are called demographic questions and characterize how avid the angler is, what zip code they live in, type of license. In some instances the Sampler will collect additional contact information for a NMFS economic survey. These data are used to make economic analysis and to complete estimates of total angler trips and total numbers of anglers.

* A1. RESIDENCE? CA County, State, Country(don't know, get city)	A6-7. Not counting today, how many days have you gone saltwater sport fin-fishing in CALIFORNIA...	
	<input type="checkbox"/> DK <input checked="" type="checkbox"/>	
A2. Zip code?	A6... in last 12 Months?	A7... in last 2 Months?
* A3. License Type: 0=None, 1=Annual (res., non-res., life, free, reduced fee), 3=Daily, record days		
NMFS ECONOMIC SURVEY: Name, Address, e-mail, telephone (R=refusal)		
A4. Daily License # Days		
Codes: 0=No 1=Yes 99...8 = Don't know (DK) <blank> = Not Applicable 99...9 = Refused (RE) Correct Number Format: 123456789		

Reported Catch Items

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

TYPE 2 REPORTED OR UNAVAILABLE CATCH (ONLY FOR THE ANGLER ON THIS FORM)

Common Name		*Species				* No. of Fish						*Disc	Locatit
1													1
2													2

Examined Catch Items

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

TYPE 3 AVAILABLE EXAMINED CATCH

☐ GROUP Catch

		*Species				* No. of Fish		Fork Len. (mm)		Weight (kg)		D	L	S
1														1
2														2

Angler Form Item by Item Instructions

The Angler Form is to be used when a fin-fish angler is intercepted at a fishing site. The screening questionnaire at the top of the form determines whether or not the angler is eligible to be interviewed. A form should be started for every eligible angler with whom the Sampler attempts to conduct an interview.

*Key Question. Key questions must be answered for an interview to be useable. Key questions are indicated below and on the form with an asterisk.

FIELD	INSTRUCTIONS	CODES AND FORMATS
INTRODUCTION		
Hello, my name is _____ and I represent CDFW. We are interviewing marine recreational anglers for the California Recreational Fisheries Survey. May I ask you a few questions? PRIVACY ACT STATEMENT: This study is being conducted in accordance with the Privacy Act of 1974. You are not required to answer any question that you consider to be an invasion of your privacy.		
SCREENING		
Have you completed a saltwater sport fin-fishing trip today?		
Screen	IF shore fishing determine if 50% or more complete	Yes: go to next No: ineligible Refused: code a refusal in the STATUS row.
HEADER		
Special Fishery Code	This box is used in some subregions, areas and modes where we may use different procedures. You will be notified and given instructions about specialized state fisheries in your area.	T= Tournament. Anglers in a fishing competition. Not in PC fishing mode. P= Boat trip launched from a private access site. L= Lobster only trip D=Crab only trip
Page __ of __	When more space is needed for fish records on the back, staple additional sheets.	Sheet number of total stapled sheets.
X-Effort		
*A. MM anglers skipped	The number of MM anglers not sampled who completed fishing and left the site while you were monitoring effort. Required for site cluster modes 'MM' and 'MMPR2'	#= anglers skipped since last interview <blank>=Not applicable
Q. Do I code MM anglers who refused as missed? A. No, those get coded in the # of initial refusals box.		
*B. MM anglers who started fishing	The number of MM anglers who arrived and started fishing while you were monitoring effort. Required for site cluster modes 'MM' and 'MMPR2'	#= anglers started fishing since last interview <blank>=Not applicable
*C. Trailered PR2 boats launched	The number of PR2 fishing boats that launched while you were	#= fishing boats launched since last interview

FIELD	INSTRUCTIONS	CODES AND FORMATS
	monitoring effort. Required for site cluster modes 'PR2' and 'MMPR2'	<blank>=Not applicable
<p>Q. Do rental boats get included here?</p> <p>A. Yes, include the number of rental boat launches and returns if they are part of the site.</p>		
*D. Non-fishing trailered PR2 boats returned	The number of PR2 non-fishing boats that returned to the ramp while you were monitoring effort. Required for site cluster modes 'PR2' and 'MMPR2'	#= NON-fishing boats returned since last interview <blank>=Not applicable
*E. Missed trailered boats returned	The number of PR2 boats you missed that returned to the ramp while you were monitoring effort. Required for site cluster modes 'PR2' and 'MMPR2'.	#= boats missed since last interview <blank>=Not applicable
<p>Q. Can I code PR2 x-effort on an MM interview?</p> <p>A. You can keep track of x-effort of both modes on the same form so long as both modes are being sampled simultaneously at the site. For example, we can sample boat hoist anglers and pier anglers simultaneously at the same site (cluster site mode=MMPR2 at a pier with a boat hoist). In this case, MM and PR x-effort for the site can be monitored on the forms even if the x-effort is MM and the form is a PR2 interview (and vice-versa).</p>		
INTERCEPT BOX		
*1. Assignment Number	Enter the assignment number given to you by your Supervisor All forms from one assignment ID must have the same assignment number.	1, 2...The number of the assignment the Sampler has sampled in the day
*2. Sampler	Enter your personal 3-digit ID code.	400= "Sally Sampler"
*3. Month/Day	Enter the month and the date of the interview. Format = MMDD.	Example: May 1 = 0501
*4. Interview Number	Each Sampler is to assign a unique interview number (Item 4) to each angler form, beginning with "1" and running consecutively through all forms completed for that assignment, even if there was a change in sites. If you undertake a second assignment, you commence numbering the second assignment forms from "01" again.	1-999 Right justified Leading zeros not required.
<p>Q. Do we start over in numbering interview # on Angler Forms at each new site visited in a cluster? Or just keep adding to the running total?</p> <p>A. A running total. All interviews run in consecutive order by time of day during an assignment. You only start over at interview '1' when you do a new assignment with a new assignment ID.</p>		
*5. Time of Interview	Enter the time you started conducting the interview. Each interview time will be unique. Use military time to designate the hour.	Example: 4:30 p.m. = 1630

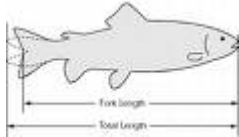
FIELD	INSTRUCTIONS	CODES AND FORMATS
*7a. County Code	Enter the 3-digit numeric county code for the county in which the interview took place. It is easy to slip up and use the wrong county code, e.g. the county where the Sampler spends the majority of his/her time sampling.	001=Alameda 111=Ventura See site list
NOTE: Be careful when crossing county lines, since there is a tendency to use the code for the county you work the most often.		
*7b. Site Code	Enter the 3-digit site code for the site at which the interviews took place. The site code must agree with the county code.	NNN 408="Waldo Pier" See your site code list provided by your Lead
NOTE: Remember to use the correct site code as you go to an alternate site. Site codes have been provided for you in the site descriptions.		
8. Site name	For the first interview at the site please record the name of the site as it appears in your site list for this month.	Example: "Waldo Pier" <blank>=subsequent interview at this site.
Were you fishing only from...?		
*9. Mode	Enter the code that best describes where the angler fished (for the majority of his/her time spent fishing). If the angler has completed fishing for the day in a different mode, a separate interview for that mode may be conducted.	1 = Pier, Dock 2 = Jetty, Breakwater 3 = Bridge, Causeway 4 = Other man-made Structure (specify) 5 = Beach or Bank 8 = Private or Rental boat
Q. What is the mode if a CPFV says they are on a private trip? A. If there were no paying passengers then the mode is 8= 'Private'.		
10. Status	Completeness with respect to key questions () on this form. Complete this field at the end of the interview to designate the status.	0= non-angler or ineligible angler form 1 = Interview complete 2 = Non-key item missing
Q. When do I make a status zero form? A. Create a status zero form when x-effort occurs and no more anglers are interviewed at the site or when there are problems with refusals or language problems and there are no further interviews at the site. Q. What is a bad angler? A. A 'bad angler' is an angler who completed fishing and refused to participate, refused a key item on the angler form or was unable to be interviewed due to a language barrier while sampling with the angler form. Each type is tallied on the angler form. Q. Does an angler "don't know" response to a key item cause a refusal? A. No, in general, only "refused" (or you forgot to ask) affects status.		
# of Initial Refusals box	Anglers who refused the interview from the start (initial refusals) since last interview	N=Number of initial refusals Do not leave blank
Q. What if an angler refuses, but later agrees to be interviewed after their buddies get interviewed? A. Subtract one from the Refused box and create a new interview.		

FIELD	INSTRUCTIONS	CODES AND FORMATS
<p>Q. What if the head of a family refuses, are all family members refusals? A. Yes, if the head of the family is speaking for all and none disagree.</p>		
# Language Barriers box	Anglers who were unable to be interviewed due to communication problems (language barrier) since last interview	N= Language barrier prevented interviews Do not leave blank
<p>Q. What if an angler gets coded this way because they were speaking a foreign language, but I later overhear them speaking English? A. Some anglers will 'soft refuse' of the interview this way. It is an initial refusal. Subtract one from the Language box and add one to the Refused box.</p>		
# of Key refusal box	Anglers who agreed to be interviewed, but refused a key item (mid-interview item refusal) since last interview	N = Refused a key item (marked with a *) Do not leave blank 0=no key refusals
<p>Q. What if I have a 'good' form and later realize a key item is missing? A. You will have to discard the form and code a key refusal on the next interview by adding one to 'Key refusal'. You should renumber the subsequent form interview numbers.</p>		
EFFORT BOX		
Was most of your <mode> fishing time in the ocean, river or bay?		
*E1. Fishing Effort Area	Enter the code for the area where most of the fishing time was spent. Be aware that the angler may not have fished in the current area (i.e. the area in which he is intercepted) for the majority of the day.	O = Ocean (or open bay) R = River If river or bay, ask: What (river/bay) was that? Probe to determine correct area. Be aware of freshwater cutoffs. B = Bay or harbor (other than San Francisco) S = S.F. Bay and estuaries M = Mexico
<p>Q. How do I code the area when the angler tells you that he or she fished half inside (bay) and half outside (ocean)? A. Code the location for the majority of the fishing time (wet gear) not the majority of the catch. For an effort tie, ask for the area where most of the fish were caught. Note: Santa Monica and Monterey Bay are open bays and are therefore coded as Ocean.</p>		
Have you been <mode> fishing here today, primarily with a hook and line?		
E2. Gear	Enter the code for the gear type that was used by the angler for the majority of time spent fishing.	1 = Yes, Hook & line If no, ask; What type of gear have you been using? 2 = Dip net 3 = Cast net 8 = Spear/spear gun 9 = Hand LOB/CRAB: Flat# = Flat ring/hoop Nets (#= number of hoops/nets/used) Rigid # = Rigid ring/hoop nets (# = number of

FIELD	INSTRUCTIONS	CODES AND FORMATS
		hoops/nets used) C = hand while SCUBA diving with tanks N = hand while diving with No use of air tanks.
NOTE: Code "Hawaiian sling" and "bow and arrow" as 8=spear and code "hoop net" as 3=cast if it is thrown.		
How many hours have you spent < mode> fishing with your gear IN THE WATER today?		
*E3. Wet Gear Hours	Enter the amount of time angler actually spent fishing with his/her gear in the water for this angler trip (see 'angler trip' definition in the GENERAL ON-SITE PROCEDURES section.) SHORE MODE NOTE: If remaining hours is more than the fished hours, the angler is not yet eligible, terminate interview. See ASF for tenth hour to minutes conversion table. PC: For trolling time, see the CPFV SURVEY section for procedure.	HH.H decimal hours to nearest tenth hour leading zeros required. 4-9 minutes=00.1 hours Examples: 1 hr 3 min = 01.0 1 hr 57 min = 01.9 1 hr 58 min = 02.0
How many more hours in < mode> fishing will you have your gear IN THE WATER today?		
*E4. Shore Additional Hours	For SHORE anglers who are not finished fishing. Record the amount of time the angler intends to continue fishing. Round-off this time to the nearest tenth of an hour. See ASF for tenth hour to minutes conversion table. Leave blank for PR/PC anglers	<blank>= PC/PR2 angler HH.H decimal hours to nearest tenth hour leading zeros required. Examples: 2 hr 0 min = 02.0 2 hr 15 min = 02.3 2 hr 45 min = 03.8
Q. Is there a limit to the number of incomplete shore anglers? A. The following 50/50 rule applies for incomplete shore interviews: 1) Do not conduct more than 50% of your interviews as incomplete trips and 2) The angler must have completed at least half of his anticipated fishing time before you can do an incomplete trip interview. Q. On cluster assignments does the 50/50 rule apply for each new site visited? A. No, the rule applies to the entire assignment by mode of fishing.		
FISH BOX		
Were you fishing for any particular kinds of fish today?		
*F1. Primary and Secondary Target Species	Record the common name of the primary and secondary species the angler says s/he was attempting to catch. If the target species was "nothing" or "anything", and probing for more detail is unsuccessful, code the species with a single left-justified "0". If the angler was fishing for a general fish group (listed at right),	No=Anything Yes: What kind of fish were you primarily and secondarily fishing for? See "Appendix A: Species Codes" for the 5-letter alpha species codes and three digit codes. Use these codes for general large fish groups:

FIELD	INSTRUCTIONS	CODES AND FORMATS
	use the appropriate single-digit code. Common name entered should be the one on the species code list, <u>not an angler nickname</u> .	0 = Anything/nothing 1 = Bottom fish 2 = Sharks 3 = Surface fish 4 = Tuna (not mackerel)
<p>Q. What if the angler just reports a target of "fish" or "whatever?"</p> <p>A. Probe to get a more specific target. If still no luck, ask if the majority of fishing time was spent on the surface (code=3), or bottom (code=1) and record the target zone. If you are unable to get a target zone and the angler has catch, record the most probable target zone as the 2nd target and record "anything" as the 1st. For example, if the angler has halibut catch, the 1st target should be "anything" and the 2nd should be "bottom fish." If these steps are unsuccessful at determining a more specific target, then "anything" may be recorded as the 1st target.</p> <p>NOTE: Record the species the angler says they were attempting to catch. If anglers will tell you what they caught you should ask if that was what they were intending to catch. Primary and secondary targets must be different, UNLESS, targets are "0", CRAB, or LOBSP.</p> <p>Q. What do I code for primarily targeting shellfish and they caught a fin-fish?</p> <p>A. Code the gear is used to capture the finfish, for example, 8=spear and switch the targets so that finfish is primary and shellfish is secondary.</p> <p>Did you catch any fish while you were < mode> fishing that are not here for me to look at?</p>		
*F2. Reported or Unavailable Catch	Type 2 catch for this angler only on back, for this 'angler trip.' Record whether or not the angler reported unavailable catch that he landed himself.	<p>1 = Yes 0 = No</p> <p>No: Probe: any thrown back or used for bait? Yes: Complete Type 2 records by asking; SPECIES: What type of fish did you catch? NUMBER: How many did you land? DISPOSITION: What did you do with them? Refused: Terminate and code STATUS=key refusal</p>
<p>Q. What if the anglers tell me what they landed when I ask about unavailable catch?</p> <p>A. Try to keep your questions in order even when anglers anticipate your questions. When interviewing an angler group sometimes one person will try to answer for everyone or everyone will answer at once. It is recommended that you politely interrupt them and explain what you are asking, rather than attempting to record data out of order.</p> <p>Q. Can I group type 2 catch?</p> <p>A. No. However, you may use a 'group average' for the type 2 catch where the type 2 fish may be evenly distributed to individual anglers.</p> <p>Did you catch any fish while you were <specify mode and area> fishing today that I might be able to look at?</p>		
*F3. Examined and Available Catch	Type 3 records on back of this form, for this 'angler trip.' Record whether or not the angler landed catch that is available for examination and the	<p>1 = Yes 0 = No</p> <p>Yes: Complete Type 3 by</p>

FIELD	INSTRUCTIONS	CODES AND FORMATS
	disposition of the catch. The Sampler must count and identify these fish himself. If that is not possible, the fish are recorded as Type 2 (unavailable) catch.	asking; DISPOSITION: What do you plan to do with the majority of these fish? Refused: Terminate and code STATUS=key refusal
How many anglers including you have their catch here?		
*F4. On This Form # of contributors	If the angler's Type 3 fish are recorded on the back of this form, record the number of anglers who have their catch here. Please don't include anyone who did not catch anything (they get their own form).	If this item is not applicable, leave it blank
<p>Q. What if there are three anglers with group catch and a fourth angler who caught nothing, do they all get counted?</p> <p>A. No, do not include that angler here. They can all get their own interviews with one being a group catch form. However, if you do not have time to interview all four anglers, it is more accurate to include the angler with no catch in the catch group. When this happens, remember not to group type 2 catch, it is only for one angler.</p> <p>Q. Anglers can usually identify his or her own 'trophy fish' but cannot separate the rest of their catch. What if the anglers don't know who caught the 'spare fish'?</p> <p>A. Group catches of other species on trips for a prime target species such as halibut or some other 'trophy fish'. All the fish must be listed as a group catch, including the 'trophy fish' and 'spare fish'.</p>		
*F5. On Other Form interview ###	If the angler's Type 3 fish are recorded on the back of another angler's form, record the interview number where the fish are recorded.	Example: 002 = second interview (must have leading zeros) If this item is not applicable, leave it blank
BACK OF FORM		
*Species	Write the fish name on the line and fill in the 5-letter species code. The fish name must match the code. In coding Type 2 and 3 records, the main difference between the two is type 2 fish can't be examined for species, counted or (normally) measured.	"Black Rockfish RFBK" See species codes in the back of this manual.
<p>Q. What if someone refuses to show me their fish, is that a refusal?</p> <p>A. If an angler tells you they caught something but refuses to show it to you, they've still reported their catch so it would be considered type 2. Since the fish "were" reported, as opposed to refused, this would still be considered a good interview. However, if a person not only refuses to "show" you their catch but also refuses to tell you what they caught, it would be considered that they refused the key item "number of type 2 fish".</p>		
Type 3 Records		
*Number of Type 3 Fish	Enter the total number of fish for each species. Each species can have only one number of fish. These are fish that were actually	#=number of fish Example: 1=one fish Arrows can show duplicate

FIELD	INSTRUCTIONS	CODES AND FORMATS
	examined and enumerated (were able to verify). In this case, we want to know the total count (of a species) that was actually observed by the Sampler. Although there may be more than one disposition for that particular species, we only want the "majority" disposition (if one was used for bait, two were thrown back dead and five were eaten, code that species as disposition 3).	numbers
<p>Q. What if someone has a huge number of bait fish (50+)?</p> <p>A. If you encounter a large number of fish and you don't have time to count every one, you or the angler may estimate the count. However, since it's an estimate, you must list the catch as type 2. You can still measure a random sample of 10 fish in this case. List the 10 measured fish in type 3, and the rest of the estimated catch as type 2. You should randomly choose 10 of the fish to sample by doing a blind grab (or systematic sample) from the angler's bucket or sack.</p>		
Length	Measure up to 10 fish of each available species. If there are more than 10 individuals of a species, the 10 fish selected for measuring must be representative of the whole sample. If no lengths or weights are taken, only 1 line is required for the species and interview status is not affected.	Measure fork lengths (millimeters) Leading blanks are acceptable, as in _310 mm 
<p>Q. What if an angler throws back a fish <u>alive</u> that I just measured?</p> <p>A. Change the disposition. However, if it is thrown back alive (after measuring), the fish should never be listed as or included with type 3 records. List these as Type 2 records and disregard the measurements.</p>		
Weight	Weigh fish if time allows with priority order given to rare and management species. Do not EVER weigh salmon (tagged or not).	Measure weight in kilograms. Right justify with zeros if necessary, as in _9.10 kg. Leading blanks are acceptable.
*Type 3 Disposition	If there is more than one disposition for a single species, code for the majority. There can only be one disposition per species (in contrast to Type 2 records).	3 = Plan to eat 4 = Using for bait 5 = Plan to give away 6 = Plan to throw away 7 = Some other purpose (specify) 8 = Don't Know 9 = Refused
<p>NOTE: You should also get in the habit of probing for answers to this question, since anglers typically forget about different species. For example, if the angler tells you he or she threw back 5 mackerel, ask if they used any for bait, or gave some away. When done with one species, always ask if they caught anything else they threw back, etc.</p>		

FIELD	INSTRUCTIONS	CODES AND FORMATS
Fish Sex	Record the sex for species specified by your Supervisor.	M = Male F = Female T = Transitional sheephead <blank> = unknown
Type 2 Records		
*Number of Type 2 Fish	Enter the total number of fish for each species and disposition. These are fish that are unavailable for identification or enumeration. Each record is listed by "disposition" (in other words, we want to know how many of a species were thrown back, or kept, or given away, etc).	1= one black rockfish filleted to eat 2= two black rockfish thrown back alive.
*Type 2 Disposition	If there is more than one disposition for a single species, you may split the number of fish by species for each disposition. Note that some Type 2 dispositions are not available to use for Type 3 catch.	1 = Thrown back alive 3 = Plan to eat (fillets) 4 = Using for bait 5 = Gave away 6 = Thrown away dead 7 = Some other purpose (specify)
BOATS BOX		
*B1. Interview # of first boat angler	Record the interview number of the first angler interviewed on this boat. If this is the first angler of the boat record the value in Q4. "Interview #" and fill in the rest of the boats section. If this is not the first angler record the value in Q4 from the first angler's form and skip the rest of this box.	3 = third form of assign. leading zeros not required First boat angler: Record the interview number on this form and fill in B2-B12. Next boat angler: Record interview number of the FIRST boat angler and skip B2-B9. Shore: <blank> (skip B2-B12)
<i>Note: The remaining boats box questions are for the first boat angler.</i> How many people fished on your boat today?		
*B2. # of anglers in boat	Number of anglers in this boat who fished. <i>NOTE: For PC mode this question is asked of the captain or crew).</i>	NN=Eligible anglers 3= three anglers fished in the boat
Is your boat trailer in the main parking area?		
*B3. PR2 trailer in count area	(PR only) Determine if the boat had a countable trailer. This question refers to the area(s) covered by the trailer count. You may need to probe to explain the 'main parking area' and determine if the boat was parked there.	0 = No 1 = Yes K = Kayak <blank> = PC boat
Q. What if the boat trailer was not in the count, should I change the count? A. No, do not change the count. Q. What if the boat did not have a trailer, like from a car top rack, should I be counting those in the counts? A. No, do not count roof racks, PWC trailers, kayak racks or any other non-trailer		

FIELD	INSTRUCTIONS	CODES AND FORMATS
devices in the counts. This question is all that is needed for PR2 counts.		
When did you launch your boat?		
*B4. Departure time	Determine time boat launched. If this is refused or unknown, terminate interview.	2400 format 1325 = 1:25pm Time launched today: 0000 to 2359 (skip B4) Not today: Go to B4 Don't know: 9998 (key refusal) Refused: 9999 (key refusal)
Q. Is it possible to omit this or use wet gear hours to estimate it? A. No, this is a key question. Boat hours directly impacts the effort estimates for PR2. Fishing time is less than trip time, so using wet gear hours will underestimate effort and catch. Trailer hours are multiplied by the mean of boat hours.		
What day was that?		
*B5. Departure date	If boat did not launch today, record departure date. If this is refused or unknown, terminate interview (key refusal). If same day, leave blank.	MMDD format 0704 = July 4 th Leading zeros required <blank> = same day Month and day: 0101 to 1231 Don't know: 9998 (key refusal) Refused: 9999 (key refusal)
Was most of your fishing three miles or less from land or more than three miles?		
*B6. Distance from any Shore	If the fishing was conducted from a boat on the ocean, indicate how far the boat was from shore. Shore includes island shores. If the boat was inland, this is not applicable.	1 = Less than 3 miles 2 = More than 3 miles, skip B7 <blank> = inland waters(N/A)
NOTE: Shore means any shore, not just the mainland, so if the angler fished one of the islands the question should be answered with respect to the distance from the island that was fished. For all other modes this question should be left blank for not applicable.		
Were you fishing within 3 miles of an island?		
B7. California Island	If the boat was within 3 miles of an island, code the island number.	Island code = 01-10 1=Coronado 2=San Clemente 3=Catalina 4=Santa Barbara 5=San Nicolas 6=Anacapa 7=Santa Cruz 8=Santa Rosa 9=San Miguel

FIELD	INSTRUCTIONS	CODES AND FORMATS
		10=Farallon
LOCATION BOX		
L1. Asked Fishing Location	You attempt to get the location of catch or fishing. If this box is coded "0" or "3", leave all remaining boxes in this outlined boat location section blank.	<blank>=shore angler 0=No (too busy) 1=Yes, complete L2-L7 3=Same as leader skip L2-L7 (leader form must have a location code)
<p>Q. This can take a lot of time, can I skip this question?</p> <p>A. On assignments with high effort "pulse" activity the Sampler may skip this series of questions during the "pulse"; i.e. most anglers are completing their trips at the same time, reducing the chance of completing the assignment with enough good interviews.</p> <p>Q. What if the angler wants to know why we are asking this?</p> <p>A. Explain that we are getting harvest locations so fishery managers can analyze fishing areas. The data will contribute to the biological knowledge of the fishes. Individual trip locations will not be reported to the public. Do not use explanations that include words and phrases like "reef protection", "harvest restrictions" or "area closures" which can cause a non-response bias. The wording has been carefully crafted to reduce the chances of a refusal.</p> <p>What was the location of the majority of your <catch or fishing>?</p> <p>NOTE: The PRIORITY for the location is for the <1> type 3 fish, <2> type 2 fish, or <3> majority of fishing time.</p>		
L2. Location	This is based on the best available information for the location (for this 'angler trip') as communicated to the Sampler by the angler. Code these boxes when attempting to get a location from the angler (north latitude and west longitude or block-box). Use decimal point to show decimal degrees if minutes or seconds not provided.	Location provided: Code boxes Unknown: Leave Blank code L3 = '8', (skip TO L5, Ask depth) Refused: Leave Blank, code L3 = '9', (skip TO L5, Ask depth)
<p>Q. Do I code where the majority of the time was spent fishing?</p> <p>A. Only if they have NO catch since this may be different than where the catch was located.</p> <p>Q. What if the angler asks if returned fish are included?</p> <p>A. Tell them we want the location for the fish they have here (type 3 fish). If the angler has no fish here, ask the angler for the location of any fish they can report under type 2. If the angler did not catch any fish, get the location of fishing.</p> <p>Q. What if they fished in a huge area while trolling?</p> <p>A. Code the block without a box number or, if not on a block map, code the grid size up to 10 minutes. If over 10 minutes, code the location format as 8=Don't know</p>		
L3. Location Format	Code the location boxes using one of the predefined formats specified. Record location to best available precision using either map with coordinates, or reported latitude and longitude coordinates (GPS). <u>Do not</u> code two blocks together as in BBB-BBB. Only one block per	1=Degrees minutes (optional "grid") 2=Agency site code 3=Degrees, minutes & seconds (GPS) 4=Decimal degrees (GPS) 5=CDFW Block and box 8=Don't know (get depth) 9=Refused (get depth)

FIELD	INSTRUCTIONS	CODES AND FORMATS
	<p>entry cell is allowed.</p> <p><u>Do not</u> code two boxes together with a grid as in BBB-bb-bb+g. A grid can only be with a single box.</p> <p>Do not enter a box-grid more than 9 miles across, blocks are 10 miles.</p> <p>See "The Grid Size Item" in General Onsite Procedures.</p> <p>Just one box and a grid or Three 2-digit boxes or Two 3-digit boxes (inland)</p>	<p>D=degrees, M=minutes, S=seconds, G=grid size, B=block, b=box, N=site #</p> <p>Degrees, min + <grid>: (DDMM / DDMM+GG or DDMMMM / DDMMMM)</p> <p>Site code: (NNNN)</p> <p>Degrees, min, sec: (DDMMSS / DDMMSS)</p> <p>Decimal degrees: (DD.DDDD / DD.DDDD)</p> <p>Block – box +grid: BBB- bb <+g> or no grid: BBB- bb-bb-bb or inland BBB- bbb-bbb</p>
<p>Q. The angler can't read the map, now what?</p> <p>A. If you attempt to get the location, but discover after one minute of working at it that due to communication problems it will take too much time and cause you to miss other anglers you intended to interview, you may code 8=Don't know and exit the box leaving the remaining questions blank.</p> <p>Q. What if the angler has a secret spot?</p> <p>A. If you attempt to get the location and after explaining the importance and confidentiality of the location information the angler refuses to comply with your request, code Asked Location 1="Yes" and code Location Format 9=Refused and exit the box leaving the remaining questions blank.</p> <p>Q. What if the angler gives me loran coordinates or decimal minutes?</p> <p>A. If location is not in a normal format, you may put the coordinates in the margin, but they will need to be converted to another format by your Supervisor.</p>		
L4. ANGLER GAVE LOCATION USING: How was location determined?		
Map	Angler pointed at a map	Check box
GPS	Angler reported coordinates	Check box
Site name	Angler provided a location name	Check box, record site name in space provided below and code L2 and L3
<p>Q. What location do I record when the angler just gives a place name?</p> <p>A. You must verify the location by showing the angler a map since the name may be misunderstood and they fished somewhere else. You must record a location in L2...</p>		
What was the bottom depth in feet at that location?		
L5. Bottom depth	Record the bottom depth in feet reported by the angler. This is not the fishing depth of the gear. The bottom depth can be checked with maps if depth contours or soundings are printed on the map. This item is can be used to estimate mortality by depth for	<p>NNNN=depth in feet <blank>=Don't know or Refused, skip to L7</p> <p>100 meters = 328 feet. 1 fathom = 6 feet.</p>

FIELD	INSTRUCTIONS	CODES AND FORMATS
	released bottomfish.	
Did you use a depth finder at that location?		
L6. Depth finder	Angler had used a depth finder to monitor bottom depth while fishing at the location of catch	0=No depth finder 1=depth finder used <blank> = no depth
Were all of your fish caught at that location / depth?		
L7. All catch from location	<p>Ask angler if all of the catch was harvested at the location specified. If only some of the harvest was caught at the location, you must ask about the location of catch for each species in the type 2 and each fish in the type 3 records.</p> <p>If the angler cannot tell you which fish were caught at the location, change the response to 1=don't know and leave all fish record location boxes blank.</p>	<p>0=No, Not all catch from this location 1=Yes, All catch from location 8=No Catch Refused or Don't know are coded as '1'.</p> <p>(IF coded as '1' leave all the fish record location check boxes blank) No: ASK; Can you tell me which fish were caught at that location?</p> <p>FISH RECORDS: Check location boxes for species where majority of fish were caught at that location.</p>
<p>Q. What if only some of the type 2 fish were from the location?</p> <p>A. The angler must be able to report ALL the reported (type 2 fish) by species, just like the disposition, by the majority of the fish.</p>		
Type 2 Locs	The angler must tell you which species (majority) were caught here to use the type 2 location check boxes on the back of the form. Do not attempt to split records by number of harvested fish at location.	Check box for species if majority caught at this location.
<p>Q. What if the angler can't tell which species where caught here?</p> <p>A. If the angler cannot determine which fish were caught at this location (or refuses to say), then leave all the location check boxes blank for the type 2 (AND TYPE 3) records for all species.</p>		
Type 3 Locs	Check the check boxes for the fish that were caught at the harvest location. Note: It may be helpful to ask which fish were not caught at the harvest location.	Check the location check boxes for each fish caught at that location.
<p>Q. What if only some of the type 3 fish were from the location?</p> <p>A. Check applicable boxes. However; when more type 3 fish of a species were counted than measured, then leave all the location boxes blank (both type 2 and type 3).</p>		
ANGLER BOX		
What is your county of residence?		
*A1. Residence County or State	Enter the 3-letter CRFS county code in which the angler resides. If the angler does not know their	For out of state, code postal code of state. Foreign country, code

FIELD	INSTRUCTIONS	CODES AND FORMATS
	county, enter the name of their city in the space provided. Check the "city" box. If out of state, enter the 2-letter postal code for the state in which the angler resides. If the angler resides outside of the U.S., enter the appropriate 3-letter country code.	country code. If California county unknown, ask "What city or town do you live in?" ORA = Orange county AZ = Arizona CA = CA county unknown FIE=Ireland <blank>=Don't know or refused See the geographic codes in the back of the manual.
What is the ZIP Code of your residence?		
A2. Residence ZIP Code	Enter the angler's 5-digit ZIP code. If the angler does not know their ZIP code, enter the name of their city and street in the space provided.	If zip unknown, ask "What city or town do you live in?" Use these single digit left justified codes for exceptions: 8 = Unknown or Not applicable 9 = Refused
What type of California fishing license are you using today, annual or daily?		
A3. License type	Record the type of California license this angler possesses for this trip. Under age anglers may have a license	0=No License 1=Annual or Lifetime 2=Daily (ask A4.) <blank>=Don't know or refused to say
Q. Are valid Mexican licenses or Oregon fishing licenses considered? A. No, probe for a California license type, if none, code 0=no license.		
How many days?		
A4. Daily Days	For daily licenses, enter the number of fishing days the license was issued as.	Example: 10 = 10 day license
Not counting today, within the past 12 months, how many days have you gone 'salt water sport fin-fishing' in California, or from a boat launched in California?		
A6. Days Saltwater Sportfished in Last 12 Months	<u>Not counting today</u> , enter the number of days the angler says s/he went saltwater sport fishing for finfish in this California during the last 12 months. Maximum number would be 364 days if the angler fished every day. Angler may need some help estimating his/her trips.	1-364 days 998 = Don't know 999 = refused to say
Q. Are fishing trips into Mexican waters included?		

FIELD	INSTRUCTIONS	CODES AND FORMATS
A. Yes, if the angler boarded the boat in the U.S. Q. How do I code this when the angler give an average number of trips? A. If the angler says he or she averages twice a week, reiterate this by asking if 103 sounds correct.		
Not counting today, how many days within the past 2 months?		
A7. Days Saltwater Sportfished in Last 2 Months	<u>Not counting today</u> , enter the number of days the angler says s/he went saltwater sport fishing for finfish in California during the last 2 months. Maximum number would be 61 days. Cannot be more than A6 above. If this is an invertebrate-only trip, the avidity question applies to invertebrate-only trips in the past 2 months.	1-61 days 98 = Don't know 99 = refused to say
Q. What if the angler gives me a number that is greater than the total trips in 12 months? A. Ask it again to be certain the angler understands the different time periods. If you are still unable to get a usable answer skip it and code it as a status 2 interview.		

Common Errors

The following general tips and examples for the angler form address the most common error situations. The most common problems mainly fall into; 1) leaving data fields blank or not blank inappropriately, 2) coding values incorrectly, and 3) logic errors among items or forms.

Specific Editing Checks

1. Items F2 and F3 must be coded with a "1=yes", if there are those types of fish recorded on the back.
2. Additional "boat mode" hours on the angler form will cause the interview to be unusable since the angler is not eligible. For "shore mode" anglers, check that the angler has the same or less additional hours than already fished (50% rule)
3. The days saltwater sportfished in the last 2 months must be less than or equal to days fished in the last 12 months.
4. Make sure that disposition codes are appropriate for the type of record: type 2 or 3 on the angler form.
5. Make sure x-effort items are complete for sampling at sites where the target mode includes MM or PR2. Conversely, all BB interviews leave x-effort blank.
6. Refusals and language barrier angler counts must appear only on forms that are of the same mode.

7. Incomplete MM angler trips (angler still fishing) are conducted only after the stop count of MM anglers.
8. Interview times are all unique and cannot be equal to the arrival, start, stop or departure counts (on the ASF).
9. For shore mode anglers (MM and BB), the 'boats' and 'location' areas (items "B" and "L") are left blank. Conversely, they are always coded with something for boat mode anglers.
10. Anglers on the same boat always have the same "boat leader" interview number coded in item B1.
11. If angler's catch is on other form, the interview number containing the catch must be coded in item F5.
12. BB and PC opportunistic interviews may be obtained during MM and PR2 cluster sampling; PC opportunistic interviews should be done on the PC Dockside Form and BB opportunistic interviews should be done on the Angler Form.
13. Do not record rockfish fillets as Type 3 fish unless they have been identified to species level.

Leave Blank Coding

The angler form is structured into boxes of data so that some may be left blank depending on which survey is being used. Below is a list of common situations for which you will leave boxes blank followed by an example form showing all of the potentially blank boxes.

BB INTERVIEWS:

- A thru E (top of form) blank
- B1 thru B9 blank
- L1 thru L7 blank.

PR2 INTERVIEWS:

- A thru B (top of form) complete unless MM mode not sampled concurrently.
- C thru E (top of form) complete unless PR2 mode not sampled concurrently...

PR2 BOAT LEADER

- B1 thru B7 complete
- L1 thru L7 complete

PR2 BOAT FOLLOWER

- B1 Boat Leader's interview number
- B2 thru B9: blank.
- L1 =3 (same as leader) or =0 (not asked)
- L2 thru L7 blank

TYPE 2 AND 3 CODING (and discard form)

- Location or fish sex; blank = not applicable
- Species, number of fish or disposition; blank = same as above

Examples of Angler Forms

Angler Form- BB

X-Effort (as well as Boat and Location Sections) should be left blank.

1) Screen for eligibility. Completed saltwater sportfishing trip in US waters for finfish, crabs or lobster
2) Read Privacy Act: Participation in this survey is voluntary. The survey is being conducted in accordance with the Privacy Act.

* = Key item (needed for estimations). The interview is not valid if response to any key item is missing

(V2, 12/14/2010)

SPECIAL FISHERY CODE
B=Bonus MM or PR2, C=CPFV Crew, T=Tournament, P=PR Private Access, L=Lobster only, D=Crab only

Fig # of #

A. MM Anglers skipped * B. MM Anglers that started fishing * C. # PR2 Boats D. * Non-Fishing TR E. * Missed TR

1 Assignment No * 187 2 Sampler

3 2 4 3 Month/Day

4 Interview #

1 4 0 5 Time interview started (24 H-Min)

1 3 - 2 0 6 7 Only-Site Code

8 Site Name

5 9 Mode: 1=First Dock, 2=Jetty/Breakwater, 3=Bridge/Causeway, 4=Other Structure, 5=Beach/Bank, 6=Party, 7=Charter Boat (group paid), 8=Private Boat

10 Status: 0=Effort change only form, 1=Complete, 2=

0 # of Initial Refusals 0 # of Language Barriers 1 # of Key Refusals

5 E1 Fishing Effort Area: Ocean (for open bay), River, Bay or harbor, SF Bay, Mexico

1 E2 Gear: 1=Hook & line, 2=Dip net, 3=Cast net, 4=Other, 5=Crab, 6=Crab, 7=Crab, 8=Crab, 9=Crab

2 5 E3 Wet Gear: 1=Yes, 2=No, 3=No

5 SHORE trip add'l hours. 0=Complete

1 S A L C K Chinook Salmon

2 S T B A S Striped Bass

F = Same as first boat angler 0 = Anything 1 = Boatfish

0 F2 Reported or unavailable catch (for this angler only)? 0 F3 Examined catch? If yes, code F45 >>

C O N A1 RESIDENCE? CA County, State, Country (don't know, get day)

9 4 5 4 7 A2 Zip code?

1 A3 License Type: 0=None, 1=Annual (ad-res, non-res, lifetime, free, reduced fee), 2=Daily, record days

A4 Daily License # Days

A6-7 Not counting today, how many day have you gone saltwater sport fin-fishing in CALIFORNIA... 10 A6...in last 12 Months? 5 A7...in last 2 Months?

Codes: 0=No 1=Yes 99..8 = Don't know (DK) <blank> = Not Applicable 99..9 = Refused (RE) Correct Number Format: 123456789

50/50 RULE: Up to 50% of all BB interviews obtained during an assignment may be from incomplete trips (angler is done fishing).

Angler Form- MM

Cluster Site Mode shown in example: MMPR2

Example shows site with both MM and PR2 modes present.

X-effort must be provided (in all applicable modes) for all "complete" MM or PR2 interviews.

ANGLER FORM - CRFS 2011 (V2, 12/14/2010)

1) Screen for eligibility. Completed saltwater
2) Read Privacy Act: Participation in this survey
* = Key item (needed for estimations). The

Please Note: If PR2 mode is "not" present, LEAVE ITEMS C, D, and E BLANK. Do not put zeros.

SPECIAL FISHERY CODE B-Bonus MM or PR2, C-CPV Crew, T-Tournament, P-PR Private Access, L-Lobster, D-Grab only	
A. MM Anglers skipped 05	B. MM Anglers that started fishing 00
C. # PR2 Boats TR Launched 01	D. # Non-Fishing TR 00
E. # Missed TR 00	

1 Assignment No. **187** 2 Sampler **428** 3 Month/Day **2** 4 Interview # **1547** 5 Time interview started (24 Hr:Min) **73 - 302** 7. City-Site Code

8. Site Name
First interview at site

9. Mode: **1** 10. Status: **1** 11. Language Barriers **1** 12. # of Key Refusals **0**

E1. Fishing Effort Area: Ocean (or open bay), River, Bay or harbor, S.F. Bay, Mexico
E2. Gear: 1-Hook & line 2-Dip net 3-Cast net 4-Spear 5-Hand Lob/Clab **1** 6-Flat **1** 7-Rigid **1** 8-Pots **1** 9-Grate **1** 10-Scuba **1** 11-Free diving (if used)

E3. Wet Gear hours fishing in above mode? **17** E4. SHORE trip add'l hours. **0** = Complete
Trip must be 12 done. 0/Not all interviews must be "complete".

13. M A C P A Pacific Mackerel
2. 0 None (anything)

F = Same as first boat angler. 0 = Anything 1 = Other fish

* F2. Reported or unavailable catch (for this angler only)? **1** F3. Examined catch? **1** If yes, code F4-5 >>
In/yes, 0=No In/yes, 0=No

A1. RESIDENCE? CA County, State, Country (don't know, get dry) **S D G** A2. Zip code? **92024** A3. License Type: **0** 1-Home, 2-Annual (incl res., non-res., lifetime, free, reduced fee), 3-Daily, record days
A4. Daily License # Days

A6-7. Not counting today, how many day have you gone saltwater sport fin-fishing in CALIFORNIA...
A6. in last 12 Months? **1** A7. in last 2 Months? **0**

L4. Angler gave location using: ☐ Chart ☐ GPS/Loran ☐ Site name
Fishing Site Name (Record code(s) at L2)

L7. All catch from this location? 1=Yes 0=No, then ✓ fish from Location on back. 0=No catch

ON THIS FORM **1** *F4. # of contributors **1** ON OTHER FORM **1** *F5. Interview ###

Codes: 0=No 1=Yes 99..9 = Don't know (DK) <blank> = Not Applicable 99...9 = Refused (RE) Correct Number Format: 123456789

Angler Form- (MM Incomplete Angler)

ANGLER FORM - CRES 2011 (V2, 12/14/2010)

1) Score
2) Read
* = Key

Stop count has been done and stop time has been recorded on the ASF. Leave all X-Effort BLANK.

SPECIAL FISHERY CODE
B=Boat MM or PR2, C=CPFV Crew, T=Tournament, P=PR Private Access, L=Local only, 0=Crab only

MM/PR2 **A. MM Anglers skipped** **B. MM Anglers that started fishing** **C. # PR2 Boats** **D. * Non-Fishing TR** **E. * Missed TR**

1 Assignment No **187** **2** Sampler **3** Month/Day **428** **4** Interview # **1** **5** Time interview started (24 Hr:Min) **1047** **7** Cnty-Site Code **73-302**

8 Site Name **9** Mode **1** **2** Status: 0=Effort change only form, 1=... **0** # of Initial Refusals **0** # of Language Barriers **0** # of Key Refusals

E1. Fishing Effort **0** Bay or harbor, **1** E2. Gear: 1=Hook Lob/Crab, 2=Flat R (# used) **17** **5** E3. Wet Gear hours fishing in above mode? **5** SHORE trip add'l hours: 0=Complete Trip must be 1/2 done, 50% of all interviews must be "complete".

1 M A C P A Pacific Mackerel **2** 0 None (anything)

F2. Reported or unavailable catch (for this angler only)? **1** Yes, 0=No **F3. Examined catch? If yes, code F4-5 >>** **1** Yes, 0=No

S D G **9 2 0 2 4** **A1. RESIDENCE?** CA County, State, Country (don't know, get city) **A2. Zip code?** **9 9 9** **A6. ...in last 12 Months?** **9 9** **A7. ...in last 12 Months?** **9 9**

A3. License Type: 0=None, 1=Annual (incl. res., non-res., life time, free, reduced fee), 3=Daily, record days **0 1** **A4. Daily License # Days**

A6-7. Not counting today, how many days have you gone saltwater sport fishing in CALIFORNIA...

Codes: 0=No 1=Yes 99...8 = Don't know (DK) <blank> = Not Applicable 99...9 = Refused (RE) **Correct Number Format: 123456789**

Angler Form- Status Zero Form

ANGLER FORM - CRFS 2011

(V2, 12/14/2010)

- 1) Screen for eligibility: Completed saltwater sportfishing trip in US waters for finfish, crabs or lobster
 - 2) Read Privacy Act: Participation in this survey is voluntary. The survey is being conducted in accordance with the Privacy Act.
- * = Key item (needed for estimations). The interview is not valid if response to any key item is missing.

SPECIAL FISHERY CODE B=Bonus MM or PR2, C=CPV Crew, T=Tournament, P=PR Private Access, L=Lobster only, O=Crab only		Pg#	of#
MM/PR2	00	A MM Anglers skipped	* 00
B	00	MM Anglers that started fishing	* 05
C	05	PR2 Boats TR Launched	03
D	03	* Non-Fishing TR	00
E	00	* Missed TR	
1. Assignment No. * 187		2. Sampler	
3. Month/Day * 824		4. Interview # * 5	
5. Time interview started (24 Hr/Min) * 1500		6. Only-Site Code * 41 - 102	
B. Site Name First interview at site		B1. Interview # of first boat angler (B2-B11 - First Boat Angler ONLY)	
9. Mode: 8 1=After Dark, 2=Jelly/Breastwater, 3=Drift net, 4=Other Structure, 5=Beach/Back, 6=Party Boat (per fish), 7=Charter Boat (group/public/Private/Rental boat)		B3. *PR Trailer in Court Area? 1=Yes, 0=No, K=kayak	
10. Status: 2 0=First range-only form, 1=Complete, 2=Non-key refusal		B5. * Deprt. Date	
3. # of Language Barriers		B7. <3 mi. CA Island	
E1. Fishing Effort Area: Ocean (or open bay), River, Bay or harbor, S.F. Bay, Mexico		CPFV - DFG Boat Number	
E2. Gear: 1=Hook & line, 2=Dip net, 3=Cast net, 4=Spear, 5=Hand Lob/Crab, 6=Fat, 7=Rigid, 8=Pub, 9=Share, C=Suba, N=Free diving (if used)		0=No, 3=Same as First	
E3. Wet Gear hours fishing in above mode?		L5. Bottom Depth(s) (feet)	
E4. SHORE trip add'l hours. 0=Complete Trip must be 1/2 done. 60% of all interviews must be "complete".		L6. Depthfinder used?	
F2. Reported or unavailable catch (for this angler only)? 1=Yes, 0=No		L7. All catch from this location? 1=Yes, 0=No, then ✓ fish from Location on back, 8=No catch	
A1. RESIDENCE? CA County, State, Country (don't know, get city)		A6-7. Not counting today, how many day have you gone saltwater sport fin fishing in CALIFORNIA...	
A2. Zip code? 1=Refused, 2=OK (get city)		A6. ...in last 12 Months?	
A3. License Type: 0=None, 1=Annual (incl. res., non-res., lifetime, free, reduced fee), 3=Daily, record days		A7. ...in last 2 Months?	
A4. Daily License # Days			

Codes: 0=No 1=Yes 99...8=Don't know (DK) <blank>=Not Applicable 99...9=Refused (RE) Correct Number Format: 123456789

On this status zero form, an entire boat refused, but was not missed, because the 3 anglers onboard refused to be interviewed

178

Example shows a site where target modes are both MM and PR2

Please note: Although MM mode is shown as being targeted on this interview, some sites have a target of PR2 only. In those cases, leave items A and B blank.

If fishing from a kayak, code B3 as "K"

PR2

sh, crabs or lobster produced in accordance

= Key item needed for estimators. The interview is not valid if response to any key item is missing.

SPECIAL FISHERY CODE A=Bonus MM or PR2, C=CPV Crew, T=Tournament, P=PR Private Access, L=Lobster only, D=Crab only																				
MM/PR2	0	1	A	MM Anglers skipped	0	4	B	MM Anglers that started fishing	0	0	C	PR2 Boats TR Launched	0	1	D	* Non-Fishing TR	0	0	E	Messed TR
	Shut out interview																			
1 Assignment No		1		8		7		2 Sampler				3		B1. Interview # of first boat angler: (B2-B11 - First Boat Angler ONLY)						
3 Month/Day		8		2		4		3 Month/Day				2		B2. # Anglers in boat		1		B3. *PR Trailer in Count Area? 1=Yes, 0=No, K=kayak		
4 Interview #		3		4		Interview #						9		0		B4. Departure Time? [prior day record date >]		B5. * Depart Date		
5 Time interview started (24 H-Min)		1		3		2		7				1		B5. Distance from any shore? 1-<3 m. Code Island-> 2-more than 3 m				B7. <3 mi. CA Island		
6 Only Site Code		4		1		0		2												
8. Site Name Ref interview at site:										B9. CPV Boat Name:										
8 Mode										1 L1 BOATS Asked										
10 Stages: 0=Blank change only form, 1=Complete, 2=Non-key refusal										414-51-61-71										
1 Initial Refusal										L2 Locality										
0 Language										100										
0 Key Refusal										150										
< These must be in the mode of										L5 Bottom Depth [feet]										
E1. Fishing Effort Bay or harbor										1										
E2. Reported or unavailable catch (for this angler only)? 1=Yes, 0=No										L6 Depth used?										
3										0										
E4. SHORE trip add'l hours. 0=Complete Trip must be 1 to 10 hrs. 50% of all interviews must be "complete".										L7. All catch from this location? 1=Yes, 0=No, then ✓ fish from Location on back 0=no catch										
F Same as first boat angler 0 = anything 1 = Both/both										Check all that apply <input checked="" type="checkbox"/> Chart <input type="checkbox"/> GPS/Loran <input type="checkbox"/> Site name										
F2. Reported or unavailable catch (for this angler only)? 1=Yes, 0=No										L4. Angler gave location using <input checked="" type="checkbox"/> Fishing Site Name (Record code(s) at L2) Tomas Point										
S A L C K Chinese Salmon										L7. All catch from this location? 1=Yes, 0=No, then ✓ fish from Location on back 0=no catch										
0 None (anything)										ON THIS FORM *F4 # of contributors										
F3. Examined catch? 1=Yes, 0=No										ON OTHER FORM *F5 Interview ###										
S O L A1 RESIDENCE? CA County, State, Country(don't know, get city)										AG-7. Not counting today, how many days have you gone saltwater sport fin-fishing in CALIFORNIA...										
9 4 5 9 1 A2 Zip code?										5 A6...in last 12 Months?										
1 A3 License Type: 0=None, 1=Annual (indies, non-res, lifetime, free, reduced fee), 3-Daily, record days										0 A7...in last 2 Months?										
A4 Daily License # Days																				

Codes: 0-No 1=Yes 99..8 = Don't know (DK) <blank> = Not Applicable 99..9 = Refused (FE) Correct Number Form at 123456789

PR2 Boat Follower

These changes in activity must have occurred 15 minutes prior to or 15 minutes after the time of this interview. Any change outside of 15 minutes would go on a separate "status zero" form.

00		A. MM Anglers skipped		01		B. MM Anglers that started fishing		02		C. # PR2 Boats TR Launched		00		D. Non-Fishing TR		01		E. Missed TR	
1		Assignment No		187		2. Sample		3		B1. Interview # of first boat angler (B2-B11 - First Boat Angler ONLY)									
824		3. Month/Day		4		4. Interview #		B2. # Anglers in boat		B3. *PR Trailer in Count Area? 1=Yes, 0=No, N=No yak				B5. *Depnt. Date					
1340		5. Time interview started (Hr:Min)		41		102		7. Cnt. Site Code		B6. Distance from any shore? 1-<=3 m. Code #Island-> 2-more than 3 m.		B7. <=3 mi. CA Island		B8. CPFV - DFG Boat Number					
8		Site Name						8. Site Name		B9. CPFV Boat Name									
8		Mode						9. Mode		1. Pier/Dock, 2. Jetty/Breakwater, 3. Bridge/Causeway, 4. Other Structure, 5. Beach/Marina, 6. Party Boat (per head), 7. Charter Boat (group paid), 8. Private/Rental boat									
2		Status						10. Status		0-Effort change-only form, 1-Complete, 2-Non-key refusal									
0		# of Initial Refusals		0		1		# of Key Refusals		< These must be in the code of fish above									
0		E1. Fishing Bay or h						E2. Gear		1		30							
		E3. SHORE trip add'l hours. 0=Complete						E4. SHORE trip add'l hours. 0=Complete		Trip must be 1/2 done. 60% of all interviews must be "Complete"									
F		Fishing Site Name (Record code(s) at L2)						L1. BOATS: Asked Fishing Location? 1=Yes, 0=No, 2=Same as First											
F		L2. Location(s)						L3. Bottom Depth(s) [feet]											
		L4. Angler gave location using: Chart GPS/Loran Site name						L5. Depthfinder used?											
		L6. All catch from this location? 1=Yes, 0=No, then ✓ fish from Location on back. 8=No catch						L7. All catch from this location? 1=Yes, 0=No, then ✓ fish from Location on back. 8=No catch											
F		F2. Reported or unavailable catch (for this angler only)? 1=Yes, 0=No		1		F3. Examined catch? If yes, code F4-5 >>		ON THIS FORM		*F4. # of contributors		003		ON OTHER FORM		*F5. Interview ###			
SOL		A1. RESIDENCE? CA County, State						Group catch on other form											
94		A2. Zip code?						A3. L		0=No		5		A6. ...in last 12 Months?					
3		A4. L						A5. L		0=No		99		A7. ...in last 2 Months?					
01		A8. L						A9. L		0=No									

Codes: 0=No 1=Yes 99..8 = Don't know (DK) <blank> = Not Applicable 99..9 = Refused (RE) Correct Number Form at: 123456789

180

Special Fishery Code "D" indicates that this boat targeted crab ONLY

Code finfish x-effort on crab-only forms as you would code it normally

Missed crab-only boats are tallied as NF boats in box D. Also record boats that are returning from setting gear here

1 Screen for eligibility
2 Read Privacy Act
* = Key tag (needed)

1 SPECIAL FISHERY
B Bonus M/M of

1 A. MM Anglers skipped
B. MM Anglers that started fishing

1 C. # PR2 Boats TR Launched
D. # Non-Fishing TR
E. Missed TR

1 F. Assignment No
3. Month/Day
4. Interview #
5. Time interval
6. City-State Code
7. City-State Code

1 8. Site Name
Crescent City Harbor

1 9. Mode
1=After Dark, 2=Jelly Breakwater, 3=Bridge Causeway, 4=City Pier, 5=Deep Bay, 6=Harbor Boat (on head), 7=Charter Boat (group paid), 8=Private/Resident boat

1 10. Status
1=First change only form, 2=Complete, 3=Non-key refusal

1 11. # of boats
12. Language Barriers
13. Key Refusals

1 14. Fishing Effort Area
1=Bay or harbor, 2=Open Bay, 3=River, 4=Gear, 5=Hook & Line, 6=2-Dip, 7=Other, 8=Other, 9=Other, 10=Other, 11=Other, 12=Other, 13=Other, 14=Other, 15=Other, 16=Other, 17=Other, 18=Other, 19=Other, 20=Other, 21=Other, 22=Other, 23=Other, 24=Other, 25=Other, 26=Other, 27=Other, 28=Other, 29=Other, 30=Other, 31=Other, 32=Other, 33=Other, 34=Other, 35=Other, 36=Other, 37=Other, 38=Other, 39=Other, 40=Other, 41=Other, 42=Other, 43=Other, 44=Other, 45=Other, 46=Other, 47=Other, 48=Other, 49=Other, 50=Other, 51=Other, 52=Other, 53=Other, 54=Other, 55=Other, 56=Other, 57=Other, 58=Other, 59=Other, 60=Other, 61=Other, 62=Other, 63=Other, 64=Other, 65=Other, 66=Other, 67=Other, 68=Other, 69=Other, 70=Other, 71=Other, 72=Other, 73=Other, 74=Other, 75=Other, 76=Other, 77=Other, 78=Other, 79=Other, 80=Other, 81=Other, 82=Other, 83=Other, 84=Other, 85=Other, 86=Other, 87=Other, 88=Other, 89=Other, 90=Other, 91=Other, 92=Other, 93=Other, 94=Other, 95=Other, 96=Other, 97=Other, 98=Other, 99=Other, 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Angler Form- Type 2 and 3

CREEL SURVEY RECORDS

TYPE 2 & 3

TYPE 2 REPORTED OR UNAVAILABLE CATCH (ONLY FOR THE ANGLER ON THIS FORM)

	Common Name	*Species	*No. of Fish	*Dispo.	Location
1	Blue Rockfish	R F B L U	0 2 5	}	1
2	Blue Rockfish	R F B L U	0 1 5		5
3	Lingcod	L N G C D	0 0 3		6

Type 2 fish are listed per "disposition", and represent "only" those fish caught by the angler who's name is on the front of the form.

TYPE 3 AVAILABLE EXAMINED CATCH

☒ GROUP Catch

	*Species	*No. of Fish	Fork Len. (mm)	Weight (kg)	D	L	Fish Sex
1	Surf Smelt	S M S U R	2 9	1 7 0	3 2	3	
2			1 5 5				
3			1 4 1				
4			1 5 0				
5			1 3 2				
6			1 4 0				
7			1 5 0				
8			1 4 0				
9			1 4 5				
10			1 5 2				
11							

An example of pool weights. A sample of 10 fish are weighed together and then each of those fish is measured. The combined weight (of the 10 fish) is coded after the 1st measurement. The following 9 weight fields can be left blank. Note: Please write "pool weight" so that there is no question this is the weight of 10 fish and not 1.

TYPE 3 AVAILABLE EXAMINED CATCH

☐ GROUP Catch

	*Species	*No. of Fish	Fork Len. (mm)	Weight (kg)	D	L	Fish Sex
1	Kelp Greenling	G R N K P	0 0 4	0 2 3 3	0 0 1 7	3	F
2				0 2 4 9	0 0 2 0	3	F
3				0 2 2 6	0 0 1 5	3	M
4				0 2 3 7	0 0 1 9	3	F

F = Female M = Male
T = Transitional (SHEEPHEAD, etc.)

TYPE 3 AVAILABLE EXAMINED CATCH

☐ GROUP Catch

	*Species	*No. of Fish	Fork Len. (mm)	Weight (kg)	D	L	Fish Sex
1	Kelp Greenling	G R N K P	0 0 4	0 2 3 3	0 0 1 7	3	✓ F
2				0 2 4 9	0 0 2 0	3	✓ F
3				0 2 2 6	0 0 1 5	3	M
4				0 2 3 7	0 0 1 9	3	F
5							
6							
7							

If L7 is coded as "0" (no), then put a check mark next to those fish that "were" caught at the location. If fish not caught at location, leave box blank.

Angler Form- Type 3

CREEL SURVEY RECORDS

TYPE 3

TYPE 2 REPORTED OR UNAVAILABLE CATCH (ONLY FOR THE ANGLER ON THIS FORM)

Common Name	*Species	*No. of Fish	*Dispo.	Location
1				
2				
3				
4				
5				
6				

In this example, 8 SCRCA were observed, but only 5 were measured.

6 total BARPA observed.

TYPE 3 AVAILABLE EXAMINED CATCH

☒ GROUP Catch

	*Species	*No. of Fish	Fork Len. (mm)	Weight (kg)	D	L	Fish Sex
1	Pacific Barracuda	6	769	2.00	3		1
2			813	2.45	↓		2
3	California Scorpionfish	8	255	.36	5		3
4			256	.34	↓		4
5	Pacific Barracuda	6	775	2.35	3		5
6			755	2.20	↓		6
7			780	2.35	↓		7
8	California Scorpionfish	8	319	.57	5		8
9	Pacific Barracuda	6	785	2.15	3		9
10	California Scorpionfish	8	291	.51	5		10
11			295	.50	↓		11
12							12
13							13
14							14
15							15
16							16

Majority of BARPA were eaten (disposition 3) while a majority of SCRCA were given away (disposition 5).

ANGLER FORM SCRIPT

Angler Form Questionnaire The question wording has been structured to capture the required information for this survey in an efficient and thorough manner.

2013 Angler Questionnaire – California CRFS v20071013

Note: * indicates key item for good interview.

INTRODUCTION: **Hello, my name is _____ and I represent CDFW. We are interviewing marine recreational anglers for the California Recreational Fisheries Survey. May I ask you a few questions?**

PRIVACY ACT STATEMENT: This study is being conducted in accordance with the Privacy Act of 1974. You are not required to answer any question that you consider to be an invasion of your privacy.

SCREENING: **Have you completed a saltwater sport fin-fishing trip today?**

(IF shore fishing then determine if 50% or more complete)

Yes: _____ go to next

No: _____ ineligible

Refused: _____ code an initial refusal under in appropriate refusal box.

SPECIAL FISHERY CODE: Specialized fisheries procedures.

Crew: _____ C (Crew member who sport fished)

Tournament: _____ T (Anglers is in a fishing competition. Not PC mode)

Lobster only: _____ L (Anglers fishing only for lobster)

Crab Only: _____ D (Anglers fishing only for crab)

X-EFFORT SECTION

*A. MM ANGLERS SKIPPED: MM mode anglers not interviewed in MM target mode since last interview or arrival on site. Include anglers you skipped due to high effort. If none were missed, code 0 (zero). **If not MM mode leave blank**

*B. MM ANGLERS WHO STARTED FISHING: MM Anglers who began to fish in MM target mode since last interview or arrival on site. If no anglers started fishing, then code 0 (zero). **If not MM mode leave blank**

*C. PR BOATS LAUNCHED: PR boats launched since last boat or arrival on site. If no boats launched, code 0 (zero). **If not PR2 mode leave blank.**

*D. PR NON-FISHING: non-fishing PR boats returned since last boat or arrival on site. If no non-fishing boats returned, code 0 (zero). **If not PR2 mode leave blank.**

*E. PR MISSED: un-sampled PR boats returned since last boat or arrival on site. If no returns missed, code zero. **If not PR2 mode leave blank**

INTERCEPT SECTION - Note: * indicates key item for good interview.

- *1. ASSIGNMENT #: Code 1 unless second assignment of the day.
- *2. SAMPLER ID: Code your three digit Sampler code.
- *3. MONTH DAY: Code today's date.
- *4. INTERVIEW NUMBER: Code the sequence of interviews. **1-999 right justified**
- *5. TIME: Code the time interview started.
- *7. COUNTY-SITE: Code the numeric county and site codes for location.
8. SITE NAME: Write the name of the site matching the site code (for the first interview on site).
- *9. MODE: **Would you say you were fishing from...?**
 Pier, dock:_____ 1
 Jetty, breakwater:_____ 2
 Bridge, causeway:_____ 3
 Other man-made:_____ 4
 Beach or bank:_____ 5
 Private or rental boat:_____ 8
- *10. STATUS:
 Questionnaire complete:— 1 X-effort or Bad angler:_____ 0
 Refused non-key items:— 2 (15 minute rule)
 REFUSALS: Record the number of initial refusals since last interview.
 LANGUAGE: Record the number of anglers skipped due to language.
 KEY REFUALS: Number of anglers skipped due to key items refused.

EFFORT SECTION

- *E1. EFFORT AREA: **Was most of your fishing time today in the ocean, river or bay?**
 Open water (open bay):— O
 Mexico:_____ M
 If river or bay, ask: **What (river/bay) was that?** Probe to determine correct area. Be aware of freshwater cutoffs.
 San Francisco Bay:_____ S
 Other Bay / Harbor:_____ B
 River:_____ R
- E2. GEAR: **Have you been fishing here today, primarily with a hook and line?**
 Yes:_____ 1
 If no, ask; **what type of gear have you been using?**
 Dip net, A-frame net:_____ 2 Lobster/Crab Gears **How many...?**

Cast net:_____ 3	Flat hoop:_____ Fn
Gill net:_____ 4	Rigid hoop:_____ Rn
Spear / spear gun:_____ 8	sCuba diving:_____ C
Hand:_____ 9	No tanks diving:_____ N
	Pots/Ring Net:_____ Pn
	SnarE:_____ E

n = number of hoops/nets/pots used

*E3. WET GEAR HOURS: **How many hours have you spent < mode> fishing with your gear IN THE WATER today?**

Hours:_____ NN.N, Tenth hours.

*E4. SHORE ADDITIONAL HOURS: **How many more hours do you expect to fish with your gear in the water today?**

Boat mode:_____ *leave blank*

Complete SHORE trip:_____ 0

Hours:_____ NN.N, Tenth hours.

NOTE: If remaining hours is more than the fished hours, the angler is not yet eligible, terminate interview.

FISH SECTION

F1. TARGETS: **Were you fishing for any particular kinds of fish today?**

No:_____ 0=anything

Yes:_____ **What kind was primary, secondary?**

Code 5 letter code or 3 digit code. Exception: Last digit may be coded

1=bottomfish

2=sharks

3=surface fish

4=tunas (not mackerel)

F=same as first boat angler (boats only)

*F2. UNAVAILABLE CATCH (type 2):

Did you catch any fish while you were <specify mode> fishing that are not here for me to look at?

Refused:_____ Terminate and code STATUS=Key refused.

No:_____ 0 **any thrown back or used for bait?**

Yes:_____ 1 Complete Type 2 records by asking;

SPECIES: **What type of fish did you catch?**

NUMBER: **How many did you land?**

DISPOSITION: **What did you do with them?**

*F3. AVAILABLE CATCH: (Type 3):

Did you catch any fish while you were <specify mode and area> fishing today that I might be able to look at?

Refused:_____ Terminate and code STATUS=Key refused.

No:_____ 0

Yes: _____ 1 Complete Type 3 by asking;
DISPOSITION: **What do you plan to do with the majority of these fish?**

*F4. ON THIS FORM: **How many anglers including you have their catch here?**

Please don't include anyone who did not catch anything (they get their own form). Only count those people who have their catch here. **On other form leave blank**

Refused: _____ Terminate and code STATUS=Key refused.

NN: _____ Number of contributors to type 3 catch.

*F5. ON OTHER FORM: Record the interview number of angler with this angler's available (group) catch. **On this form leave blank**

BOATS SECTION

*B1. FIRST BOAT INTERVIEW #: Record the interview number of the first angler from the boat.

First angler: _____ Re-record interview number (found in Q4)

Next angler: _____ Record interview number of the FIRST boat angler and skip B2-B12.

Shore: _____ **Leave blank** (skip B2-B12)

Note: The remaining B questions are for the first boat angler.

*B2. ANGLERS IN BOAT: **How many people fished on your boat today?**

Code number of anglers who fished (For PC mode this question is asked of the captain or crew).

*B3. PR TRAILER IN COUNT AREA: (PR only; **Non PR leave blank**). **Is your boat trailer in the main parking lot?** (This question refers to the area(s) covered by the trailer count.).

No: _____ 0 (Trailer was not in the count or no trailer)

Yes: _____ 1

*B4. DEPARTURE TIME: **When did you launch your boat?**

Time launched today: _____ 0000 to 2359 (skip B4)

Not today: _____ Go to B4

Don't know: _____ 9998 (status=5)

Refused: _____ 9999 (status=5)

*B5. DEPARTURE DATE: **What day was that?**

Today: _____ **Leave blank**

Month and day: _____ 0101 to 1231 (MMDD format)

Don't know: _____ 9998 (status=5)

Refused: _____ 9999 (status=5)

*B6. DISTANCE FROM SHORE: **Was most of your fishing three miles or less from land or more than three miles?**

Three miles or less: _____ 1
More than three miles: _____ 2 (skip B7)
Inland: _____ **Leave blank** (skip B7)

B7: CALIFORNIA ISLAND: **Were you fishing within 3 miles of an island?** If within 3 miles of an island, record the island.

No: _____ **Leave blank**
Yes: _____ Code island number 1 to 10

LOCATION SECTION

L1: ASKED FISHING LOCATION: Criteria for not obtaining location: The Sampler may choose not to ask this series of questions during a "pulse" in anglers in order to complete the assignment with "enough" interviews.

Yes: _____ 1
No: _____ 0 (skip L2-L7)
Same as leader: _____ 3 (skip L2-L7)
Shore mode: _____ **Leave blank**

L2. LOCATION: **What was the location of the majority of your <catch or fishing>?** <PRIORITY> the location for the <1> type 3 fish, <2> type 2 fish, or <3> majority of fishing time.

Location provided: _____ Code boxes
Unknown: _____ **Leave Blank** L3 = '8', (skip TO L5, **Ask depth**)
Refused: _____ **Leave Blank** L3 = '9', (skip TO L5, **Ask depth**)

L3. LOCATION FORMAT: GIS Format used at L2 or the location is:

D=degrees, M=minutes, S=seconds, G=grid size, B=block, b=box, N=site #
Degrees, min + <grid>: _____ 1 (DDMM-DDMM+GG DDMMMM-DDMMMM)
Site code: _____ 2 (NNNN)
Degrees, min, sec: _____ 3 (DDMMSS-DDMMSS)
Decimal degrees: _____ 4 (DD.DDDD-DD.DDDD)
Block – box <+ grid>: _____ BBB-bb <+g>
Unknown: _____ 8 (skip to L5, **Ask depth**)
Refused: _____ 9 (skip to L5, **Ask depth**)

L4. ANGLER GAVE LOCATION USING: How was location determined?

CHECK BOXES (check all that apply) Yes: Check box, No: Box blank. The angler...

1. Pointed at a chart,
2. Read a GPS/Loran,
3. Gave a location name and found on chart (record site name in space provided).

L5. BOTTOM DEPTH: **What was the bottom depth in feet at that location?**

Depth in feet: _____ FFFF
Don't Know or Refused: _____ **Leave Blank** (skip to L7)

L6. DEPTHEFINDER USED: **Did you use a depth finder at that location?**

Yes: _____ 1

No: _____ 0

No depth: _____ **Leave Blank**

L7. ALL CATCH FROM THIS LOCATION: **Were all of your fish caught at that location / depth?**

Yes: _____ 1

No Catch: _____ 8

Refused: _____ 9

(If 1, 8 or 9 leave all the fish record location check boxes blank)

No: _____ 0 - **Can you tell me which fish were caught at that location?**

FISH RECORDS: Check location boxes for species where majority of fish were caught at that location. (TYPE 3: If more fish than records, leave type 3 location boxes blank)

ANGLER SECTION

*A1. RESIDENCE: **What is your county of residence?** Out of state: code state postal code. Foreign country: code country code. If county unknown, ask **"What city or town do you live in?"**

California County: _____ (three letter code)

US State: _____ (two letter code)

Foreign Country: _____ F__ (three letter code)

Refused to say: _____ 999

Don't know: _____ 998

A2. ZIP CODE: **What is the ZIP Code of your residence?** (If zip unknown, ask **"What city or town do you live in?"**)

Zip code: _____ (5 digits)

Don't know: _____ 8

Refused to say: _____ 9

*A3. **What type of California fishing license are you using today, annual or daily?** (Under age anglers may have a license)

No License: _____ 0

Annual: _____ 1

Daily: _____ 3 (ask A4. How many days?)

Don't know: _____ 8

Refused to say: _____ 9

A4. DAILY LICENSE NUMBER OF DAYS: **How many days does your license allow?**

Not applicable: _____ **Leave Blank**

A6. DAYS SALTWATER SPORTFISHED: LAST 12 MO: **Not counting today, within the past 12 months, how many days have you gone 'salt water sport fin-fishing' in California, or from a boat launched in California?**

Don't know: _____ 998
Refused to say: _____ 999

A7. DAYS SALTWATER SPORTFISHED: LAST 2 MO: **Not counting today, how many days within the past two months have you gone salt water sport fin-fishing in California, or from a boat launched in California?**
(Cannot be more than in last 12 months)
Don't know: _____ 98
Refused to say: _____ 99

PR1 SURVEY PROCEDURES

This survey samples catch and effort by site-day at primary private-rental sites (PR1). Primary private-rental sites are launch ramps, boat hoists, slings, or rental facilities that land the majority of the species of concern in any particular month. The survey samples boats utilizing these sites for effort and catch.

Introduction

The PR1 survey estimates total effort and catch for each individual primary site and month. The data from this survey, the secondary roving survey (PR2) and the telephone survey of licensed anglers (ALD for night and private access fishing) is used to make total private and rental boat (PR) effort and catch estimates for the CRFS program. See the CRFS program document for details on this and the other PR surveys.

Effort Data

The primary goal is to estimate total effort for the day. This is done by counting trailers and returning boats. For each boat we must determine the primary activity. If the boat is fishing, we determine the target fish species and the number of anglers per boat. The monthly random sample selects 20% or more of the days each month for each launch ramp. Effort is expanded to account for weekend (and holidays) and weekday days not sampled (the remaining 80%). The effort estimate is in boat (and angler) trips by target fishery group.

Observe Landed Salmon

A concurrent primary goal of PR1 sampling is to observe all landed salmon during the open season for adipose fin-clipped fish and head removal for Coded Wire Tag (CWT) recovery. CWT recoveries are important because they enable managers to 1) track fishery harvest rates, 2) manage fisheries by time and area to target abundant stocks while minimizing the impact on stocks of special concern and, 3) calculate hatchery/natural contributions to the fishery. This means the Sampler must work hard to minimize missed boats; ideally, the Sampler should not miss any boats during salmon season.

Catch Data

The secondary goal is to estimate catch per boat. Catch per boat is determined by counting numbers of each fish species landed and catch not landed (returns and other un-landed fish). Catch per boat is averaged for the ramp and month. Estimated total catch is the product of estimated effort and mean catch per boat.

Location of Catch data

The third goal is to collect data on the location and depth of catch. These data are determined by showing the boat operators maps of the area and asking them to point out specific locations and depths of their fishing. The data is used

to summarize the catch estimates in depth ranges and geographic areas. The data can also be viewed in a GIS for trends in catch. This information is required to manage the fisheries by depth and geographic area.

Measurement Data

The fourth goal is to sample lengths of landed catch. Lengths will be used to calculate a predicted weight and to examine the size distribution of the landings. Mean weight is used to estimate total catch in metric tons. Metric ton estimates are used to evaluate catch quotas and rebuilding status of distressed species. Note: do not measure non-adipose fin-clipped salmon; only ad-clipped fish need to be measured, prior to head removal.

Sample Selection

Sampling of days is uniform across the month by week with random day selection within weeks. Weekends and holidays are sampled separately from weekdays at different sample rates. Sampling assignments are drawn one to two weeks before the first of the month. During ocean salmon season, CDFW's Ocean Salmon Project (OSP) draws the PR1 assignments for those districts with salmon effort. OSP's draw is stratified by weekend/weekday and by half-month periods.

Scheduling of Days

The Lead will schedule the random selection of days for each month in advance. Rescheduling of sample days is strongly discouraged and may be done only with the Lead's consent. Sampling is spread out over the weeks in the month to ensure that sampling assignments are temporally consistent and cover changing effort. Ramp sites are sampled on a number of days per month by kind of day. The two kinds of days are weekends-holidays and weekdays. Effort is expected to be different for these kinds of days. The Sampler should expect more sampling on weekends and holidays than on weekdays.

Sampling the Boats

Primary sites will be sampled for effort and catch during daylight hours. The Sampler will arrive early enough to sample the first boat returning to the site and depart after the last boat returns, the sun sets, or the departure time your Lead set for you is reached. When more than one Sampler is assigned a PR1 assignment Samplers will stagger their arrivals so that a Sampler is present when the first boat returns to the ramp, and a Sampler is present when the last boat returns to the ramp or sunset. Sampling of boats will be conducted at a single site. While on a PR1 assignment Samplers will not rove to alternate sites because of low effort. A starting trailer count will be conducted upon arrival of the first Sampler. All boats returning to the site during sampling hours will be sampled. A second trailer count will be conducted upon departure of the last Sampler. Occasionally, a PR1 site may have no effort, due to weather, construction, etc. The Sampler should stay on site for two hours to see if effort

develops. The Sampler should contact their Lead if they are unsure about leaving the site. A site-day with no effort is a valid complete assignment.

Definition of PR1 Boat Types

- *Fishing Boat* - A boat, either private or rented, upon which fishing (finfish or invertebrates) occurred.
- *Non-Fishing (NF) Boat* - There are three types of NF boats: NFCOM (commercial finfish or invertebrate fishing), NFPC6 (Commercial Passenger Fishing Vessels, a.k.a. party/charter boats, including 6-pack boats) and NFOTH (all other non-fishing boats, including sailing, whale watching, burials at sea, cruises, enforcement, research, etc.)

Q. What if I see a PC (party or charter) boat returning to the PR1 ramp?

A. Code the boat as an NFPC6 boat on the PR1 form. If the boat was targeting salmon, sample the boat using the CRFS-OSP SALMON CPFV DOCKSIDE form. If it was targeting anything besides salmon, sample the boat using the CRFS PC (CPFV) DOCKSIDE form.

Sub-sampling Boats

Since the goal of PR1 sampling is to determine the activity of every boat returning to the ramp, sub-sampling boats is not an option. Staffing levels at PR1 assignments have been increased to minimize missed boats; there should always be at least two Samplers scheduled to work a PR1 assignment. Samplers should work hard and work together to avoid missing boats.

Effort Data Collection

The primary goal is to determine the activity, i.e. effort, of every boat returning to the site. A specific set of data must be collected for every boat that returns to the PR1 site. For every boat intercepted, record the time, number of anglers, and the primary target(s) (species or activity). For non-fishing (NF) boats (recreational or commercial activity type), record the specific non fishing activity for the primary target. See the NF codes listed above.

Boats targeting invertebrates (scallops, crab, lobster, squid, abalone etc) are sampled as well, just like finfish boats, regardless of whether or not they had finfish bycatch. See General On-Site Procedures chapter on shellfish sampling for more information on the lobster and crab trips.

On-Site Missed Boats

If you miss a boat completely while sampling other boats it is an onsite missed boat'. Missed boats do not have a time, target or number of anglers recorded. Missed boats are tallied with the current boat the Sampler is interviewing at the time in the left-most missed boats column on the PR1 form. Page totals for missed boats are tallied at the bottom of each PR1 page, and assignment totals for missed boats are tallied at the bottom of the ASF.

Off-Site Missed Boats

During salmon season in Northern California, you may be asked to count sport fishing boats going past the PR1 site into a marina or harbor/mooring as “off-site missed boats”. Trailer counts may also be made off-site and coded on the ASF. Do not include boats returning to alternate sites as missed boats unless instructed to do so. Specifics are given for each port below.

Ramp Site	Missed Boats Monitored	Off-Site Trailer Count Site for Arrival and Departure
FTB Fort Bragg - Noyo	Dolphin Isle	South Harbor District LR
FLD Fields Landing	King Salmon	
PRI Princeton	Princeton	
BER Berkeley	Berkeley	Emeryville LR
MOS Moss Landing Ramp	North/South MOS Harbor	Woodward Launch Ramp
MOH Monterey Marina Launch Ramp	Monterey Marina	
BOD Bodega	Bodega Marinas	Doran LR
SCR Santa Cruz Marina Launch Ramp	Upper Harbor (-1 if return)	

Off-Site Recording procedures

Off-Site arrival and departure counts at alternate trailer count sites are recorded on the PR1 Form in the upper right boxes on page 1. Boats observed going to the off-site location are tallied in the right most missed boats column with the current boat the Sampler is interviewing at the time. Page totals for off-site missed boats are tallied at the bottom of each PR1 page, and assignment totals for off-site missed boats are tallied at the bottom of the ASF.

Specific Off-Site Count Instructions

Fort Bragg: A trailer count of the South Harbor District parking lot must be taken before and after sampling. Recreational fishing boats that pass the Noyo River Launch Ramp on their way to Dolphin Isle Marina are counted as off-site missed boats.

Fields Landing: Recreational fishing boats that are seen going into the King Salmon marina are to be counted as off-site missed boats.

Princeton: Recreational fishing boats that are seen going into the marina are to be counted as off-site missed boats.

Berkeley: A trailer count should be made at the Emeryville launch ramp before and after sampling the Berkeley launch ramp. Recreational fishing boats that go by the boat ramp into the marina are counted as off-site missed boats.

Bodega: A trailer count is made at the Doran launch ramp before and after sampling the Bodega launch ramp. Recreational fishing boats that go by the launch ramp are counted as off-site missed boats.

Santa Cruz Marina Launch Ramp: Recreational fishing boats are counted as off-site missed if they pass the launch ramp and head to the upper harbor. Boats interviewed at the launch ramp are asked if they went toward the upper harbor prior to landing. Boats answering yes are adjusted with a (-1) in the count.

Moss Landing Launch Ramp: A trailer count is made at the Woodward Ramp before and after sampling. Recreational fishing boats that head towards Moss Landing Marina are counted as off-site missed boats.

Catch Data Collection

All private boats that have completed a fishing trip should be sampled for catch. Catch includes landings and reports of discards or other catch that was not landed. The Sampler may have to interview all anglers on the boat to determine total catch since anglers may not be aware of each other's returned catch or landings. This determination may need to be done before the driver leaves to get the trailer.

Q. What if too many salmon boats are coming in for me to key out all rockfish species and also take heads, can I code all the rockfish to genus?

A. No, you are to avoid coding observed kept rockfish to the genus level. Work with the other CRFS and OSP Samplers present to avoid missing boats while still identifying retained catch to the species level. It may be necessary to drop the collection of weights and lengths from landed catch to avoid missing boats.

Measurement Data Collection

Lengths and Weights

After determining the catch for the boat, the Sampler will measure and weigh as much of the catch as possible. It is important to the CRFS program to measure fish that are under management, especially the species of concern. A prioritized list of species to preferentially sample will be provided to you (see Priority Species). Lengths are used to predict weights and to examine length classes. Do not weigh any salmon species, and only take lengths of adipose fin-clipped salmon.

Sub-sampling Lengths and Weights

There may be times when the level of activity at a site is too high to sample the lengths and weights of fish on every incoming boat or every fish on one boat. The Sampler should attempt a random or systematic sample of fish in this case. Refer to the section General Onsite Procedures: Catch Measurement

Location Data Collection

The Sampler will attempt to determine the location of catch, or the location of the boat's fishing effort if there is no catch. Maps are provided to assist the angler in determining the depth and location of catch. Locations may be for all of the catch or individual species. For trips with large areas of trolling for non-

bottomfish species, a general area will be used (such as the block). Catch area is used to manage fisheries by geographic boundaries.

Sub-sampling Locations

There may be times when the level of activity at a site is too high to sample the locations of all catch on every boat. In these cases, the Sampler should attempt a random or systematic sample of more specific locations for bottom-fishing boats. This allows some boats to give a single more general location (block) to save time. Boats targeting surface fishes (tuna, salmon, seabass, etc.) may be coded with the general area (block) when time is short. The Sampler will not gather more specific locations of only the larger or smaller catch rates. It is important to get depth for trips with catch of non-retention species.

Q. What if a salmon boat comes in with a few canary rockfish, do I code the salmon effort or the bottomfish part of the trip when I'm in a hurry?

A. No, you do not code the trip effort, you code the catch. It is more important to code the location for the rockfish catch. Code the salmon to the general block only if there is salmon catch.

Minimum CRFS Sample

A CRFS sample is defined as a boat which has been sampled for both effort and catch. Catch locations (by species) and length measurements are not required to code a CRFS sample. The following data elements are the minimum requirements for a useable CRFS interview:

- Anglers who fished, unlicensed anglers and days fished
- Target
- Gear
- Area fished
- Catch numbers by species

At busy times, it may be necessary to conduct a "short" CRFS interview. The minimum items for this interview are listed above. Fish measurements may be omitted but fish counts may not. The coding form has been designed to allow this flexibility. Never code rockfish to the genus level to save time.

Opportunistic PC Sampling

It is expected that if you encounter any CPFV trips that targeted salmon at the launch ramp where you are conducting a PR1 assignment, you will sample the boat opportunistically using the CRFS-OSP SALMON CPFV DOCKSIDE form. If you encounter any CPFV trips that targeting something other than salmon at the launch ramp where you are conducting a PR1 assignment, you will sample the boat opportunistically using the CRFS PC (CPFV) DOCKSIDE FORM. It is not permissible to leave a PR1 site to interview at other sites.

THE PR1 FORM

The PR1 Form collects total boat effort for the day by counting trailers and returning boats. Each boat is screened as fishing or non-fishing. For fishing boats we determine target fish species and anglers per boat. In Northern California during salmon season, the form will also count all retained and released salmon as well as record salmon head tag numbers. For boats with catch, all of the fish will be counted by species along with location and depth. When time allows, detailed catch locations will be recorded and fish will be measured and weighed.

Questionnaire Usage

You will be given a laminated copy of the **questionnaire** used with the PR1 Form. The questions for the interview are written out, in full, for a purpose. The Sampler 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.

Introduction to the PR1 Boat Interview

The Sampler has some basic tasks while sampling boats which are generally done in this order:

1. Count boat trailers upon arrival
2. Monitor all boat return times (including missed boats, refused boats, and NF boats)
3. Determine if the boat is fishing or not
4. Determine the total number of anglers and of those, the number of unlicensed
5. Determine zip code of one random angler
6. Determine total days fished on trip
7. Determine if night fishing occurred
8. Determine the 12 month avidity for one random angler
9. Determine the target species and gear (or non-fishing activity)
10. Determine the primary area fished for the fishing target(s)
11. Determine if any catch, discards or marine mammal losses
12. Determine how many of each rockfish species a descending-device was used for release
13. Count catch by species (mandatory for salmon species)
14. Determine the location and depth of the catch, or effort if no catch
15. Record length measurements and weights (if time) of the catch
16. Depending upon region: collect salmon and/or white sea bass heads
17. Count all boat trailers at departure

Before you Sample

Check your equipment and forms before you head out to the site in the morning. Be aware of the weather forecast. In Northern California during salmon season, be sure you have the additional salmon equipment and tags. In Southern California, make sure to have your white seabass wand with you if you have been issued one. Double check the date, site, port and assignment ID. Record site information, your name, and ID code on the first PR1 form and on the Assignment Summary Form (ASF). Arrive on site early enough to sample the first boat returning to the site if possible.

Arrival on Site

When you arrive at the ramp, count the number of trailers in the parking lot and any adjacent streets or parking lots (consult your site description book to determine the count area for each site). Then determine the resources you will need while sampling, such as numbers of forms and supplies. Record your arrival time on the ASF and the arrival trailer count in the arrival count box on the first PR1 Form. Call your Lead if you think you will need help from additional Samplers in order to not miss any boats.

Sampler Location

There are differences among PR1 sites. On-site positioning procedures for obtaining interviews with boats will vary slightly by site. For example, boats might be interviewed while they are waiting for a boat hoist, while they are cleaning their boat at the wash down station, at the dock, or at the ramp. The Sampler will have to use discretion in determining the best approach at a particular site. In general, the best spot to sample is where the boats are waiting for their turn to exit the ramp. If boat traffic is heavy, do not conduct interviews on the dock or ramp, as this may choke the launching lanes and cause boats to have to wait for you to finish interviewing another boat before they can access the ramp, which may result in unhappy anglers.

Two Samplers on One Assignment

In some cases, your Lead will schedule two (or more) Samplers to work at a PR1 site due to the high number of boats returning to the site or the length of the day. Samplers may work shifts that overlap. The Lead may assign the Samplers different duties during overlap: e.g., one sampling effort (watching all boat activity) and one sampling catch (sampling CRFS boat catch). A common sampling strategy is one Sampler will arrive first and work until the second Sampler arrives, generally just prior to peak activity. Both Samplers then work the peak period together until activity drops off and the first Sampler departs. The second Sampler then works until all or nearly all of the activity is done for the day. Your Lead will advise you as to which methodology to use based on the situation. Coordinate on-site arrival times with the other Samplers scheduled to work the assignment.

Avoiding Duplication and Sharing Counts

It is very important that Samplers don't duplicate or omit any data while working together and when submitting the forms and summaries. Each Sampler edits and submits a separate set of forms. The assignment ID is the same for both Samplers. This is done so merging of the forms and renumbering of boats is not necessary. Be sure to record the last names and Sampler # of the other Samplers working the assignment with you at the top of the first PR1 page, and circle Y or N if they have data or not. Each Sampler numbers his/her boats separately, so there may be two or more boat #1 for the assignment. Each Sampler gives each boat their own unique time stamp – two boats may arrive at the same time, sampled by two different Samplers, and may have the exact same time stamp. The arrival count will be performed by the first arriving Sampler, while the departure count will be performed by the Sampler who leaves the site last. These two counts will be on different form sets and specific to the Sampler for the assignment. Each Sampler will have their own separate PR1 boat, angler, missed boats, salmon data, etc. totals on their PR1 Forms and Assignment Summary Forms. These totals will be additive after data entry to compute accurate grand totals for the assignment with multiple Samplers. The data will be merged together in the database. Please code the forms properly and keep adequate notes on what was done.

Trailer Counts

Trailer counts are made when the first Sampler arrives and when the last Sampler leaves. Counts of "trailers" include traditional boat trailers and sailboat trailers. Personal watercraft (PWC) trailers, car top boat carriers, boats loaded into the beds of trucks, non-trailer inflatable boats, and kayak and canoe carriers are excluded.

Adjusting the PR1 Arrival and Departure Counts

Boats may be disassembled, put into pick-up beds, put on car top carriers, put on off-site trailers, or be a small craft like a canoe or kayak. These are boats which were not included in the initial or final trailer count. If a sampled boat should have been in the "trailer" count, but was not because of the above, you may add to the trailer count on the first page of the PR1 assignment. Final trailer counts are used to adjust effort estimates and initial counts are used to evaluate effort distribution by time of day.

Salmon Off-Site Counts

In Northern California, during salmon season, you may be asked to record trailer counts for an alternate site. This data is recorded on the PR1 form in the off-site start and stop trailer count boxes. These will be summed and transferred to your Assignment Summary Form as PR counts (number of boats and anglers) pressure for another site (see figure below). If the "count area" (ramp parking lot) is full and you notice trailers (that are active at the site) are parked on the street or outside the normal "count area", include those trailers in your on-site trailer count, **not** in the off-site count.

Page <u>1</u> of <u>4</u> Other Samplers: Name & # (w/data)		Time Start <u>0805</u> Stop <u>1625</u>		Trailer Counts onsite <u>15</u> offsite <u>2</u>				
Sampler Last Name <u>Alfaro</u>		<u>Blanchard (240)</u> (Y <input checked="" type="checkbox"/> N) (Y <input type="checkbox"/> N)		Missed BT				
BIO DATA								
SPECIES LOC <i>or effort if no catch</i>		DEPTH BOTTOM						
Block-box Lat / Lon (ft)		Fork length / carapace size (mm), sex (M/F/T) Weight (decimal kg) or (tag #)						
		1	2	3	4	5	onsite	offsite
263-37-38		200	645	719	12345	12346	0	1

When a boat arrives at the ramp, a new record is normally created with the time of arrival. During very busy times, a boat may arrive and will not get a record because the Sampler(s) are busy with other boats. This boat will be tallied on an existing record row as an on-site missed boat in the on-site missed boat column. A missed boat may be either a non-fishing boat (NF) or a fishing boat. The count of missed boats is used to estimate a number of additional fishing boats. It is expected that missed boats will have the same proportion of NF to fishing boats as the boats sampled. This assumption is a potential source of bias. For example, if all of your missed boats are fishing boats, but half the boats you actually sampled were NF boats, then the estimate of fishing boats you missed will be underestimated by 50% because your missed boats were not representative of the boats you sampled. Therefore, missed boats should be a systematic or representative selection of all boats, not just fishing boats or boats that look like a lot of work to sample. Every effort should be made to avoid missing boats. Ideally, there should be no missed boats. With two or more Samplers working each PR1 assignment, it is possible to sample each and every boat that uses the ramp the day of the assignment.

Determination of Boat Type

Each boat record must have a time and be coded into a category based on activity. Ask a passenger on the boat as to its activity for the day. There are, essentially, two types of boats in the PR1 survey: Fishing and Non-fishing (NF), since CPFVs are coded as NFPC6. A fishing boat in the PR1 mode is a recreational boat that attempts (puts a line in the water) to catch fish. A CPFV is not a valid fishing boat in the PR1 mode since it takes paying passengers and is considered a commercial boat.

Non-Fishing (NF) Boat Types

There are 3 NF codes currently being used:

1. NFCOM – a commercial fishing boat targeting finfish or invertebrates (note: occasionally you may encounter a commercial fishing boat that is fishing recreationally that day – the boat would be sampled just like any other PR boat)
2. NFPC6 – Commercial Passenger Fishing Vessels, a.k.a. party/charter boats, vessels that are permitted to take paying passengers fishing. This includes smaller, trailerable “6-pack” boats. You may have to inquire with the operator to determine if the boat was a regular PR boat or was fishing as a CPFV
3. NFOTH – all other non-fishing boats fall into this category. This includes boats that intended to fish but for whatever reason had no wet-gear time, cruises, sailboats that did not fish, bird watching, whale watching, burials at sea, enforcement boats, research boats, etc.

Q. If a boat has not yet returned, but we know the activity of the boat is Non-fishing or fishing, can we account for that somehow?
A. No. The Sampler should remain on site to sample the returning boats.

CPFV Boats

Commercial Passenger Fishing Vessels (CPFV) are coded as NFPC6 on the PR1 form. If you encounter a six-pack or smaller CPFV, the boat is coded as NF in the PR1 survey. You may sample the CPFV using the appropriate dockside sampling form.

Boat Types

A Sample boat is a boat that fished (gear in the water) for finfish or invertebrates or a NF boat. Catch is not necessary. For fishing boats you will collect the minimum data needed for a CRFS boat, otherwise it is coded as a missed boat. The minimum data are number of anglers, days fished, targets, area fished, gear used, all catch species and numbers of fish kept and released. It is not necessary to have a secondary target species if the boat was only after one species or after anything (UNIFH). If the boat intended to fish but did not put gear in the water it is coded as NFOTH.

Refused Boats

If a boat refuses to be interviewed, do your best to change their mind. Some anglers on the boat may be more receptive to you than others. Try to get as many questions answered as possible. Items that are necessary include catch,

targets, area, gear, days fished, and number of anglers. Zip code, avidity, and location and depth are not necessary for a “valid” sample boat, however these items *are* important. If you cannot get all of the necessary questions answered, you will have to mark the boat as a refusal. Code an “R” in the sample boat field. Refusals do not get a sample number, just an “R”. Refused boats are not tallied into the total boats on the PR1 page totals.

Getting Anglers and Days Fished

Once you determine the boat is an eligible CRFS boat, determine the angler effort on the boat. Some of the passengers may not be anglers. Determine the number of anglers who actually fished. Next you will determine the number who fished without a license. The number of unlicensed anglers will always be equal to or less than the total number of anglers on the boat. It is best to determine this indirectly by asking what type of fishing license the anglers used today. Often times, the anglers will want to show you their licenses—you do not need to see their licenses to code them as licensed anglers. The number of unlicensed anglers is used to adjust effort from the licensed angler telephone survey. The final item required to estimate effort on the boat is the number of days fished. Usually this will be one day; however, some boats, especially in Southern California, may have taken multi-day trips. Check the “N” box if the boat fished at night (after dark the night before until dawn of the current day). If only night fishing occurred, check the “N” box and record 0 days fished.

One of the anglers will need to provide a zip code. This is the zip code of the permanent residence of the angler, not temporary lodging. If the angler is from a foreign country, the field is left blank. The zip code is used primarily to make traditional MRFSS estimates from the survey of coastal US households, but also used to help quantify the economic role of sport fishing. The angler asked should be a systematic representative sample, not biased by boat ownership, fishing skill, age, gender, etc.

Determination of Catch

The Sampler will determine if any fish were caught by the boat. Each fishing boat will be a complete census for finfish catch. The term “catch” includes kept and released fish. Catch includes landed fish **AND** fish purposely released (shakers), thrown back dead or alive, given away, taken by marine mammals, used for bait, filleted or eaten. Anglers may report that they have no fish on the boat. However; a boat may still have catch if they caught and released a fish or lost a fish to a marine mammal. Be sure to inquire about any fish that were caught and then used for bait.

Examining Catch

The Sampler will examine all landed fish for each CRFS boat to determine the species and numbers of fish. Salmon catch has an additional special set of procedures. These procedures are discussed in the next section. If the boat refuses to have the landed catch examined, all catch are coded as unavailable catch, and the methods are discussed below. The Sampler may identify fillets

with skin patches, being careful not to double count fish; however, don't insist on examining fish that have been filleted – these fillets are someone's dinner, and we don't want to get their food dirty. Ask the anglers before attempting to examine fillets. It is more important to count and identify rockfish to the species level than to get lengths and weights from those fish.

Q. What if the ramp is busy and I don't have time to count each rockfish species. Can I just code rockfish genus?

A. No, you must code numbers to species. The only time you should be using the RFGEN code for examined catch is when you are unable to identify a rockfish to the species level. In this situation, carefully describe the fish in your notes, or better yet, take a picture of the fish, and your Lead will help you to identify the fish. There should be at least one other Sampler there to help you avoid missing boats; if you are unable to keep up with the boats as they come in, stop collecting weights and lengths.

Salmon Head Recovery

Each recreational fishing boat with salmon will have all salmon examined for a clipped adipose fin (tag). California Fish and Game Code Section 8226 requires anglers to show their salmon catch to Department representatives, and to relinquish the heads of all adipose fin-clipped fish to the state at no charge. If you encounter difficult anglers who are unwilling to show you their fish or give up the heads of any ad-clipped fish, do your best to explain to them the importance of CWT recovery for salmon management. If they are still uncooperative, calmly and professionally inform them of their obligation under



the law, and show them the FGC excerpt provided to you by your Lead. If they are still unwilling, terminate the interview and collect identifying numbers from the boat, trailer and tow vehicle and submit with a brief summary of what happened to your Lead. Most anglers are cooperative, and relinquish the heads of their ad-clipped fish with no problems.

When you encounter an ad-clipped fish, immediately apply a head tag to the fish and record the number and circle it in the weight section of the PR1 form. Measure the fork length to the nearest millimeter. Remove the head of the fish using the knife and cutting board provided to you in the manner in which you were trained by your Lead, taking as little flesh with the head as possible; remove the gills if they came away with the head. Wrap the tag around the head so that the numbers are visible, and place the tagged head in a zip lock bag provided to you. A head tag will be 'issued' to all fin-clipped salmon, even if the head is not recovered. A non-recovered head will be coded with 'NRS' on the datasheet, Headtag Inventory Report and on the Headtag itself. Heads removed from adipose-clipped fish are wired with a pre-numbered tag to be

retained in a freezer for periodic pickup by OSP. Heads are thawed and the CWT is extracted which identifies the particular stock of fish. Keep heads frozen to prevent spoiling. See the catch sampling section of this document for complete details.

Unavailable Catch and Marine Mammal Losses (Seal Take)

In addition to any fish the Sampler sees, each CRFS boat will be polled for any fish caught that are not available for examination. These are usually fish that have been thrown back, given away, used for bait, filleted, eaten or taken by marine mammals. Unavailable fish are reported by the entire group of anglers on the boat. The anglers are asked to separately report any unavailable fish in four categories; landed, released alive, released dead and seal take. If no fish are observed or reported in the category, a zero should be recorded.

Unobserved kept fish that are not thrown back, but otherwise not available for examination, will be separately recorded on the PR1 form. Unobserved fish include fish given away, used for bait, filleted or eaten. Landed fish that the angler refuses to show to the Sampler are included as “unobserved kept”. These fish are counted separately from fish which the Sampler personally examines and counts (observed kept). Be persistent with anglers that have unavailable rockfish catch. Use your best effort to gain access to the catch for species identification.

Released alive fish is the total number of fish by species that were released alive in swimming condition. Released alive total includes fish landed and subsequently released, those that are purposely shaken off the hook boatside, and any rockfish that are released using a descending device. The Sampler and anglers are not to judge the likelihood of survival of a swimming fish. Fish that ‘got away’ are not considered purposely released and are not included as released alive. It is important to the CRFS program to differentiate between reported and observed fish counts. Estimates of total harvest are summarized separately for the Sampler examined kept and angler reported catches.

Released alive with descending device (DD) includes the total number of rockfish by species that were released alive using a descending device. Rockfish brought up from depth suffer from barotrauma from gas expansion as a result of decreasing pressure. Stomachs protruding from mouths, eyes popped out of their orbits, and “crystallized” corneas are all symptoms of barotraumas. Use of a descending device to send rockfish back down to depth can greatly reduce release mortality. A descending device can be a professionally fabricated store-bought lip-gripping contraption; it can be a line tied to the bend of a hook with a heavy lead sinker tied to the eye of the hook; or it can be an inverted, weighted milk crate with a rope tied to the bottom (now the top) – anything used to send a fish back to depth can be considered a descending device. Released alive with descending device is coded only for rockfish species. Released alive with descending device is a subset of released alive total; released alive with descending device \leq released alive total.

Released dead includes fish landed or purposely shaken off the lines which are returned to the water in dead condition. Fish that are technically alive but are obviously not going to survive (due to severe wounding or inability to swim down) may be coded as dead. The Samplers and anglers are to judge that the non-swimming fish is dead or will be shortly. The survival of all fish returned is determined by application of mortality rates. These rates are determined by scientific studies of hooking and depth based mortality. However, CRFS may decide to use different capture mortality rates or compare computed mortality with observed mortality.

Seal take are fish that were known to have been taken by any pinniped (seals, sea lions or other marine mammal). **Seal take should only be determined for salmon.** Anglers must be certain and have seen the marine mammal take the fish from the line. The Sampler should inquire further those anglers who say 'I think' or 'maybe' a fish was lost to a pinniped. Samplers should not include fish that naturally escaped or was naturally caught and eaten by a pinniped.

Catch Location

All CRFS boats are sampled for the fishing location and depth. For boats with catch, a fishing location will be recorded. Location and depth range may be recorded for all catch together or by species when determined and time allows. For boats with no catch, location and depth range for the majority of fishing effort is recorded. The majority of effort is defined as where most of their time was spent with gear in the water. Depth is used to put the catch estimates into depth zones and compare with locations. It is also used to help estimate mortality rates for some groundfish.

Q. If they don't have any catch, can I just leave the catch location blank?
A. No, you must code a location. In this case, code to the major area fished (where effort mostly occurred).

Measuring Catch

For each CRFS boat with catch, the Sampler should sample the catch for lengths and weights. The first priority is to measure priority species and, in Northern California, adipose fin-clipped salmon. You do not need to measure non-clipped salmon. A secondary priority is to weigh important species. Time allowing, all fish may be measured and weighed. The fish may be sexed using external characteristics. Please see the Catch Census section for complete details and a list of priority species. Lengths are used to predict weights and to examine length classes and stocks. Weights are used to calculate more precise metric ton estimates and are used with the length to estimate fish condition.

Boat Interview Priorities

Samplers should be aware that some of the data is required while sub-sampled data may be high priority or low priority.

Required Counts

Count boat trailers upon arrival
Count all boat trailers at departure
Count all boats missed

Required Boat Records

Monitor all intercepted boat return times
Determine if the boat is fishing or not
Determine the target species and gear (or non-fishing activity)

Required CRFS Data

Determine if any catch (including discards)
Determine the location and depth of catch (or effort if no catch)
Count catch by species (do not group examined catch into genus)
Examine salmon for adipose fin-clips
Determine the marine mammal losses

Sub-sampled CRFS Data (Priority Order)

1. Record length measurements of priority species
2. Record length measurements of other species
3. Record weights of priority species
4. Determine the location and depth of each species
5. Record weights of other species

PR1 Form Layout

To speed the process of sampling at busy launch ramps the PR1 Form has a reduced number of items to code and limited questions for the angler. Boat data are recorded in rows with items for each boat in columns. Each boat row has two sub-rows to record two observations for each item in some columns. Boat data may span multiple rows and sub-rows as needed to code additional species, fish counts, catch locations and fish measurements. Fish records for a boat may also be continued on the next page. The back of the same sheet may be the next 'page'.

The form is subdivided into four sections; the header row (sample day), individual boat data (effort), individual fish data (catch) and sub-total/totals (effort summary). New forms may be double sided to save paper.

Header Row Items

The header row records data for the sample day. The header includes the assignment number, date, site information, Sampler name and ID, additional Samplers present at the site, and trailer counts. All of these items are required.

CRFS PR1 FORM		V12.12/08/12		Page ____ of ____		Trailer Counts			
ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name	Time	onsite	offsite
							(Y/N) Start		
							(Y/N) Stop		

Individual Boat Items

Individual boat data include boat sample number, time, total anglers, unlicensed anglers, days fished, zip code, night fishing check box, 12 month avidity, target species (primary and secondary), water area and gear (for each target). Any missed boats, either on-site or off-site, are tallied on the same row as boat effort items.

EFFORT						Missed Bt	
Sample #	ANGS Total	DAYS fished		TARGET 1 st	AREA	GEAR	
Time	(unlic)	Zip Code		TARGET 2 nd			
		N <input type="checkbox"/>	12mos				
A	()		Zip				

onsite	offsite

Individual Fish Data

Individual fish data recorded include the location, depth, species*, number landed examined (kept obs)*, number landed unavailable (kept unobs)* number released alive*, number of fish released dead*, number lost to seals*, lengths, weights and head tag numbers. The items with '*' are required for a complete CRFS sample.

CATCH				BIO DATA						
SPECIES	KEPT	RELS		SPECIES LOC or effort if no catch Block-box Lat / Lon	DEPTH BOTTOM (ft)	Fork length / carapace size (mm), sex (M/F/I)				
	obs	alive total	(w/DD)			Weight (decimal kg) or (tag #)				
	code	unobs	dead			seal take	1	2	3	4
	skr	alive	()							
	unskr	dead	dead							

Total Items

At the bottom of each page, count the number of refusals, total boats (includes fishing and non-fishing), boats targeting salmon or with salmon catch, anglers targeting salmon or with salmon catch, the number of king salmon kept and released (a.k.a. Chinook salmon, SALCK), the number of coho salmon kept and released (a.k.a. silver salmon, SALCO), the number of head tags used, the number of fish lost to pinnipeds, the number of yelloweye rockfish (RFYFY) kept and released, the number of cowcod (RFCOW) kept and released, and the number of on-site and off-site missed boats, and record the numbers in the appropriate boxes. The summary of effort from each page is used to quickly record and sum the samples for all pages in an assignment and further sum effort by region before all the data are key entered. The salmon and overfished rockfish totals facilitate timely OSP (Ocean Salmon Project) and Groundfish

#	Total	Boats	Angs	Kept	Reis	Kept	Reis	# Head	# Seal	Kept	Reis	Kept	Reis	On	O#				
Refuse	Boats	Salmon	Kings	Coho	Tags	Take	Yellow eye	Cow cod	Missed										

You will be provided with a laminated copy of the PR1 questionnaire. The question wording has been structured to capture the required information for this survey in an efficient and thorough manner. You will be screening, introducing the survey and providing the Privacy Act in the same way as with the Angler Form as described in that Chapter. After screening for fishing and non-fishing boats you will introduce the survey to boats you will sample for catch by saying:

You will state the Privacy Act saying, **This study is being conducted in accordance with the Privacy Act of 1974. You are not required to answer any question that you consider to be an invasion of your privacy.** It is important that you use the wording of questions as stated in the PR1 Script since slight changes in wording can result in different responses.

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Field Name	Instructions	Coding Examples and Formats
Date	Enter the date of the assignment on all pages.	Use the MM/DD/YY format. Example: 01/01/13 = January 1, 2013
CNTY	Enter the 3 digit numeric county code on the first page only.	Example: 037= Los Angeles County
SITE	Enter the 3 digit numeric site code on the first page only.	Example: 105 = Dave's Launch Ramp
OSP port	Enter the 3 letter alpha code used by the Ocean Salmon Project for this port on all pages.	Example: FTB = Fort Bragg
Sampler #	Enter your 3 digit Sampler identification number on all pages.	3 digit numeric code = 132
Sampler Last Name	Write out your last name completely on all pages.	
Other Samplers: Name & #	Write out last name and Sampler # for other Samplers working on this assignment. Circle Y (yes) or N (no) to indicate if the Sampler has a separate set of data to submit. First page only.	Example: Smith 132 Y(circled)
Trailer Counts: START and STOP	Upon arrival the first sampler will enter the total number of boat trailers in the established trailer count area for that site on the first page only for onsite and offsite (if applicable) under "start". At the end of the last sampler's sample day, enter the total number of boat trailers on site upon your departure under "stop". First page only.	NOTE: When conducting trailer counts, it is important to include all effort for the site. If the "count area" (ramp parking lot) is full and you notice trailers (that are active at the site) are parked on the street or offsite, it is important to include that effort in your counts. Do not count personal watercraft trailers, sailboat trailers, kayak trailers or

Field Name	Instructions	Coding Examples and Formats
		rooftop carriers
Onsite	Onsite refers to effort (trailer count) occurring within your assigned site.	
Offsite	In Northern California during salmon season you may be asked to record trailer counts at alternate sites. Counts of trailers are for traditional boat trailers only. Sailboat trailers, car top boat carriers and personal watercraft (PWC) trailers are excluded.	
	EFFORT	
Sample # [or R or B]	<p>Record a sample number in consecutive order (starting with 1) for every boat intercepted (except refusals and language barriers).</p> <p>Flag special trip types using letter codes (see right column).</p>	<p>KAYAK: write a "K" after the sample number</p> <p>TOURNAMENT: write a "T" after the sample number</p> <p>REFUSALS and LANGUAGE BARRIERS: do NOT issue sample number. Record an "R" or "B" in the Sample # box. Do not list a target. Do not record as a missed boat.</p> <p>INVERTEBRATE –ONLY: for ALL invert only trips record only the sample number (no flag needed).</p> <p>NON-FISHING: Record a sample number in the box.</p>
Time	Enter a time stamp for every boat that is intercepted. This includes NF boats, refusals and language barriers.	<p>Use 24 hour format.</p> <p>Example: 5:00 PM = 1700 hours.</p>

Field Name	Instructions	Coding Examples and Formats
*ANGS total	Enter the total number of anglers on the boat regardless of license status (licensed anglers+ unlicensed anglers). Code zero for NF boats.	0= no fishing on this trip 3= three anglers fished total Refused: code the Sample # box with "R" and terminate the interview
*ANGS (unlic)	Enter the number of anglers out of the total anglers fishing who do NOT have a current CA fishing license of any type.	0= all anglers were licensed Refused: code the Sample # box with "R" and terminate the interview Note: unlicensed is a subset of total anglers, therefore unlicensed ≤ total anglers
*DAYS fished (left column)= trip effort	Enter the total number of days the boat fished on this trip. This is recorded as the number of daylight fishing days for the boat without returning to port. Some boats launched from ramps will have the capability to fish multiple days. Boats that engaged in any night fishing (non-daylight) will be identified by checking the "N" box. If only night fishing occurred, record 0 days fished.	Example: fishing during daylight hours the evening of one day and the morning of the next day = 2 days of fishing effort. Refused: code the Sample # box with "R" and terminate the interview

Field Name	Instructions	Coding Examples and Formats
DAYS fished (right column) = 12 month avidity	Select a random angler on the boat and ask how many saltwater fishing days he/she has fished within the last 12 months that occurred in/departed from California. Use a random method of selection to avoid bias (do not always pick the boat operator).	52 days = fishing 1 day/wk over the last 12 months Refused = R Don't know = DK Sampler too busy = TB Sampler didn't ask = DA
Zip Code	Select a random angler on the boat and request the zip code of their residence. Use a random method of selection to avoid bias (do not always pick the boat operator). May be the same angler that answered the 12 month avidity question.	Example: 90210 = Beverly Hills Refused = R Don't know = DK Don't know = record name of city of residence Sampler too busy = TB Sampler didn't ask = DA Foreign country = 3 letter country code e.g. Ireland = FIE
*Target Primary= the main target/activity for the trip Secondary= the secondary target/activity for the trip	Each boat not missed will be screened to determine the primary and secondary activity/target, including fishing and non-fishing activity. Activities/targets will be coded using 5 letter alpha codes. Targets may be determined by asking the angler(s) "what was the number one and number two fish you were fishing for". Anglers who don't have specific targets after probing will be recorded as UNIFH.	Examples: HALCA= targeting California halibut UNIFH= targeting anything ABALO= targeting abalone Non-Fishing Codes: NFCOM=commercial fishing trip (non CPFV) NFPC6= CPFV trip *Do NOT record CPFV trips as a PR1; record the NF code then sample using a PC dockside form NFOTH= Any other boating activity, including maintenance, enforcement, research, sailing, etc. Refused: code the Sample # box with "R" and terminate the

Field Name	Instructions	Coding Examples and Formats
		interview
*AREA	<p>Record the water area code where the majority of fishing effort (fishing time) occurred for each primary and secondary target.</p> <p>Note that the AREA of effort and SPECIES location can differ for the same target.</p>	<p>N=(< 3 mi) O=(> 3 mi) B= enclosed bay R= river M=Mexico Island Codes: F=Farrallones 1 =Coronados 2 San Clemente 3=Santa Catalina 4=Santa Barbara 5= San Nicolas 6=Anacapa 7=Santa Cruz 8=Santa Rosa 9=San Miguel</p> <p>Refused: code the Sample # box with "R" and terminate the interview</p>
*GEAR	<p>Enter single letter code for the fishing gear used by the boat for the target.</p> <p>Gear is left blank for NF trips or blank secondary targets. There are two special gears for salmon fishing.</p> <p>The gear should be determined and recorded for each primary and secondary target identified.</p>	<p>H= Hook and Line S= Spear T= Troll M= Mooch (salmon only) B = Both M and T (salmon only) N = Bait Net <u>Invert Only</u> P_n= Pot and # F_n= Flat hoop net and # R_n= Rigid hoop net and # E= Snare C= SCUBA diving D= Free diving</p> <p>Refused: code the Sample # box with "R" and terminate the interview.</p>
	CATCH	
*SPECIES	Enter the alpha code for each species or taxon of all fish examined or reported by the boat.	No catch: write "no catch" in the SPECIES box and enter zeros in KEPT obs and unobs, RELS alive total and dead.

Field Name	Instructions	Coding Examples and Formats
	Additional rows are used for boats with multiple species catch.	Refused: code the Sample # box with "R" and terminate the interview
KEPT obs (observed)	<p>Enter the number of fish by species examined for this boat.</p> <p>If no fish of a species are examined, record a zero.</p> <p>Sampler will identify and count each species retained by the boat.</p>	<p>Only fish that the Sampler is able to see and count are recorded here. May include fillets that can be counted and identified</p> <p>If the boat refuses both KEPT obs and KEPT unobs, then code Sample # box with "R" and terminate the interview</p>
*KEPT unobs (unobserved)	<p>Enter the number of fish by species reported by the boat that the Sampler was not able to see and identify or count</p> <p>If no fish of a species are reported as landed but unavailable to examine, record a zero.</p> <p>Probe for catch that may not be remembered, such as bait species.</p>	<p>This includes fish used for bait, thrown away as trash, given away, and fillets that are not identifiable or countable. This also includes fish that the Sampler is able to see, but for whatever reason, is not able to count.</p> <p>If the boat refuses both KEPT obs and KEPT unobs, then code Sample # box with "R" and terminate the interview</p>
*RELS alive total	<p>Enter the number of fish by species reported as released alive by the boat</p> <p>Fish must have been landed or have been intentionally released.</p> <p>Probe for catch that may not be remembered, such as bait species.</p> <p>If no fish of a species are</p>	<p>Fish appeared alive with no mortal injuries upon release</p> <p>No= zero</p> <p>Refused: code the Sample # box with "R" and terminate the interview</p>

Field Name	Instructions	Coding Examples and Formats
	reported as released alive record a zero.	
RELS alive (w/DD)	<p>Enter the number of rockfish by species that were released alive using a descending device.</p> <p>This field does not apply to non-rockfish species.</p>	<p>This field is only applicable for rockfish that are released alive.</p> <p>No rockfish catch = leave blank.</p> <p>Code this box for all rockfish species.</p> <p>If RELS alive total = 0 then (w/DD) = 0</p> <p>Refused = R Don't know = DK Sampler too busy = TB Sampler didn't ask = DA</p> <p>Note: RELS alive (w/DD) is a subset of RELS alive total, therefore RELS alive (w/DD) ≤ RELS alive total</p>
*RELS dead	<p>Enter the number of fish by species reported as released dead by the boat.</p> <p>If no fish of a species are reported as released dead, record a zero.</p> <p>Probe for catch that may not be remembered, such as bait species.</p>	<p>Refused: code the Sample # box with "R" and terminate the interview</p>
Seal take	<p>Enter the number of salmon reported taken by pinnipeds for the trip.</p> <p>The angler must have seen the pinniped take the fish.</p>	<p>This question is only asked if salmon catch is reported or observed.</p> <p>No salmon catch = leave blank</p> <p>Refused = R Don't know = DK Sampler too busy = TB Sampler didn't ask = DA</p>

Field Name	Instructions	Coding Examples and Formats
		No salmon lost = 0
SPECIES LOC	<p>Enter the location where the majority of the catch species were caught.</p> <p>If no catch, record the primary area of effort for the target(s).</p> <p>A separate location may be recorded for each species observed/reported.</p> <p>Refer to the manual for codes</p> <p>For trips with large areas of trolling for non-bottomfish species, record a general area.</p>	<p>Block- Box:</p> <p>Block – box +grid: BBB-bb+g or no grid: BBB-bb-bb-bb or inland BBB-bbb-bbb</p> <p>212-01+2 = block and one box (grid size = 2)</p> <p>718-106-107 718-108 = block and 3 boxes (inland)</p> <p>235-12-14-15 235-16 = block and 4 boxes</p> <p>252= block only</p> <p>Block-Box-Grid Size 212-01+3 = block and one box plus grid size (in nautical miles)</p> <p>Lat/Long: Latitude in upper box and longitude in the lower box. Only use whole degrees and minutes (no seconds or decimal degrees or minutes). Grid size can also be used.</p> <p>37,30+3/118,57=lat 37 degrees, 30 minutes and long 118 degrees and 57 minutes with a grid size of 3</p> <p>37,30/118,57=lat 37 degrees, 30 minutes and long 118 degrees and 57 minutes</p>

Field Name	Instructions	Coding Examples and Formats
		Refused = R Don't know = DK Sampler too busy = TB Sampler didn't ask = DA
DEPTH	<p>Enter the bottom depth in feet for the for the catch location. A single mean depth or depth range may be entered.</p> <p>The depth should be recorded by species when possible.</p> <p>This is not a mid-water depth of capture.</p>	100 feet 100 min/120 max Refused = R Don't know = DK Sampler too busy = TB Sampler didn't ask = DA
BIO DATA		
Fork Length/ Carapace Size (mm), Sex	<p>In the top row enter the fish's fork length or the carapace width for crab and length for lobster in mm.</p> <p>Add an M, F, or T after the length for sexed species.</p> <p>Never measure a salmon with an intact adipose fin.</p>	321= FL in mm F= Female M=Male T= Transitional (Ca Sheephead) 333F= female fish 333 mm FL
Weight/Head Tag #	<p>Below the length, enter the weight in kg of the fish or invertebrate.</p> <p>Do not weigh headed or gutted fish.</p> <p>For salmon and yelloweye rockfish, enter the head tag number below the length and circle the number.</p> <p>For salmon heads not recovered or lost, enter the head tag number and code NRS (non</p>	5.35 = weight in kg 12345 NRS = tagged head not recovered

Field Name	Instructions	Coding Examples and Formats
	recoverable specimen). Salmon head tag numbers are 5 digits. Never weigh a salmon	
Missed Boat onsite	Enter the number of boats that returned to the sample site that were not sampled since the last sampled boat	This is unsampled missed boats. Refusals are not missed boats. Language barriers are not missed boats. Non-fishing boats are not missed boats. Tally marks can be recorded in the box, then the total can be recorded when the next sampled boat comes in
Missed Boat offsite	Enter the number of boats that returned to another associated site since the last sampled boat.	In Northern California during salmon season you may be asked to record missed boat counts at alternate sites.
The footer contains the sum of the page totals for each category below:	Footer	
# Refuse	Sum of refusals and language barriers for the page	Count the number of Rs and Bs in the sample # column
Total Boats	Sum of intercepted boats on the page.	Total Boats=sampled finfish boats + invertebrate only boats+ non-fishing boats Does NOT include missed boats or refusals/language barriers
Salmon boats/angs	Sum of number of boats that targeted and/or caught salmon on the page/sum of anglers for these boats	A boat/anglers that caught salmon incidentally while targeting other species would be tallied as a salmon boat with salmon anglers
Kings kept/released	Sum of observed and	

Field Name	Instructions	Coding Examples and Formats
	reported kept and released alive and dead King (Chinook) salmon on the page	
Coho kept/released	Sum of observed and reported kept and released alive and dead Coho (Silver) salmon on the page	
# Head Tags	Sum of number of salmon head tags recorded on the page	
# Seal Take	Sum of salmon taken by pinnipeds on the page	
Yelloweye kept/released	Sum of observed and reported kept and released alive and dead yelloweye rockfish on the page	
Cowcod kept/released	Sum of observed and reported kept and released alive and dead cowcod rockfish on the page	
Missed boats on/off	Sum of missed onsite and offsite (NorCal) boats for the page	

PR1 Form Coding Tips

If a boat sample is continued onto another form write “CONT” (continued) in the bottom margin of the starting page and left margin of the next form next to the Sample number. The Sample Boat number should only appear once. Do not repeat any data on the second form to avoid double counting boats or catch. You can draw a line to separate boats.

Specific Editing Checks

1. Locations and depths are for the *catch* (not the gear or target).
2. Salmon head tag numbers go in the weight box.
3. NF boats *do* get a sample number.

4. Code only one depth per “catch depth” box. Can be an average (one depth recorded in top box) or a range (two depths; shallow depth in top box and deep depth in lower box).
5. Area fished must be coded for each target.
6. All targets must have a gear coded.
7. Number of anglers *without* a license is always equal to or less than the number of anglers.
8. Start and stop counts should be provided on page 1 only.
9. Missed boats are only coded on the first row of a boat, the row with the time (also called a valid boat row).
10. All fishing boats must have a location or have the correct code (RE, DK, etc).
11. If there are more than five fish of one species measured, go to the second row and repeat the species code in the species box. Do not repeat catch totals.
12. If no catch at all, write “No Catch” in the species box and code zeros in the catch boxes.
13. Refused boats do NOT get a sample number, and they are NOT included in total boats.
14. Number of fork lengths provided for a catch species is less than or equal to the recorded amount of fish caught
15. Only T, M, or B gear codes are recorded for boats targeting salmon

PR1 SCRIPT

2013 CRFS PR1 Questionnaire – v20130115

INTRODUCTION: Hello, my name is _____ and I represent CDFW. We are interviewing marine recreational anglers for the California Recreational Fisheries Survey. May I ask you a few questions?

PRIVACY ACT STATEMENT: This study is being conducted in accordance with the Privacy Act of 1974. You are not required to answer any question that you consider to be an invasion of your privacy.

HEADER ROW:

Page ___ of ___: The page number in sequence for this side of this sheet and the total number of pages for the assignment.

ASSN ID: Unique six digit code for this assignment (MMDNNN).

Date: The date of record for this assignment in MM/DD/YY format.

CNTY: The three digit numeric code for the California county the site is in.

SITE: The three digit numeric code for the site where the assignment is conducted.

OSP Port: The three letter Ocean Salmon Project code for this site.

Sampler #: The three digit code assigned to the sampler submitting this data sheet.

Sampler Last Name: The last name of the sampler submitting this data sheet.

Other Samplers: Name & # (w/data): The last name(s) and sampler # of additional sampler(s) who worked this assignment. Circle Y if additional sampler collected data, circle N if no data.

Time – Start: The time (in 24 hr format) that sampling began (immediately after the start count).

Time – Stop: The time (in 24 hr format) that sampling ended (immediately before the stop count).

Trailer Counts – Onsite – Start: The number of active boat trailers (excluding PWC, sailboat or rooftop carriers) in the trailer count area upon arrival.

Trailer Counts – Offsite – Start: The number of active boat trailers (excluding PWC, sailboat or rooftop carriers) in the trailer count area at another site conducted before arriving at the sample site.

Trailer Counts – Onsite – Stop: The number of active boat trailers in the trailer count area upon departure.

Trailer Counts – Offsite – Stop: The number of active boat trailers in the trailer count area at another site conducted after departing the sample site.

NOTE: All header fields must be completed on the first page for each assignment. Only header fields with an * need to be completed on following pages.

BOAT ROW, EFFORT COLUMNS:

Sample # [or R or B]: In sequence, the boat number for all boats returning to the site during the sample, including non-fishing boats, but excluding missed boats, initial refusals (R) and language barriers (B). Fishing boats that do not provide the minimum data elements (# anglers, # days fished, targets, gear, catch #s by species) are also coded with R and do not get a sample #.

Time: Enter the time in the 24 hr format when the vessel interview was started. Times are unique for each sampler's data.

SCREENING: **Did anyone on the boat do any sport fishing?**

YES:----- Go to next

NO:-----Record appropriate NF (non-fishing) code in target box, and conclude the interview

Refused:----- Code Sample # as R, terminate interview

NOTE: If the boat is going back out for more fishing skip till next return.

ANGS Total: **How many of you had gear in the water?** (on vessel)

Enter the total number of anglers on the vessel that fished (gear in the water)

Refused:----- Code Sample # as R, terminate interview

Unlicensed: **What type of sport fishing license does each of you have?**

Enter the number of the ANGS (above) who fished on the boat without a current California sport fishing license.

Refused:----- Code Sample # as R, terminate interview

PRIMARY TARGET: **What were you primarily after?** Code the taxon of the boat's primary target.

Anything:-----UNIFH

Not fishing:----- Appropriate NF code

Refused:----- Code Sample # as R, terminate interview

SECONDARY TARGET: **What were you secondarily after?** Code the taxon of the boat's secondary target.

Anything:-----Leave blank

Refused:----- Code Sample # as R, terminate interview

EFFORT AREA: **Was your <primary target> fishing in the ocean, river or bay?** If in the ocean ask: **Was that mostly within 3 miles of land?**

Nearshore (< 3 miles):----- N
 Offshore (> 3 miles):----- O
 Bay/Estuary/Harbor:----- B Be aware of freshwater cutoffs
 River:----- R Be aware of freshwater cutoffs
 Mexico:----- M
 Refused:----- Code Sample # as R, terminate interview
 Offshore islands have separate codes – see bottom of PR1 form

EFFORT AREA: **Was your <secondary target> fishing in the ocean, river or bay?** If in the ocean ask: **Was that mostly within 3 miles of land?**

Nearshore (< 3 miles):----- N
 Offshore (> 3 miles):----- O
 Bay/Estuary/Harbor:----- B Be aware of freshwater cutoffs
 River:----- R Be aware of freshwater cutoffs
 Mexico:----- M
 Refused:----- Code Sample # as R, terminate interview
 Offshore islands have separate codes – see bottom of PR1 form

GEAR: **What gear did you use for <primary target>?**

Finfish		Shellfish	
Hook & Line:-----	-----	H	Pot #:-----P _n
Spear:-----	S	Flat Hoop Net #:-----	F _n
Troll:-----	-----	T	Rigid Hoop Net #:-----
	R _n		
Bait Net:-----	-----	N	Snare:-----
	E		
Mooch:-----	M	SCUBA:-----	C
Both M & T (salmon only):-----	B	Free Diving:-----	D
Refused:-----Code Sample # as R, terminate interview			

GEAR: **What gear did you use for <secondary target>?**

Finfish		Shellfish	
Hook & Line:-----	-----	H	Pot #:-----P _n
Spear:-----	S	Flat Hoop Net #:-----	F _n
Troll:-----	-----	T	Rigid Hoop Net #:-----
	R _n		
Bait Net:-----	-----	N	Snare:-----
	E		
Mooch:-----	M	SCUBA:-----	C
Both M & T (salmon only):-----	B	Free Diving:-----	D
Refused:-----Code Sample # as R, terminate interview			

DAYS FISHED trip: **What time did you leave the ramp?** Record number of daylight DAYS the vessel fished without returning to port. Check the N box if any fishing was done at night.

Refused:-----Code Sample # as R, terminate interview

DAYS FISHED 12 mo: Ask a random angler on the vessel. **Not counting today, within the past 12 months, how many days have you gone saltwater sport fin fishing in this state or from a boat launched in this state?**

Refused:----- RE Don't know----- DK
Sampler too busy----- TB Sampler didn't ask---- DA

ZIP CODE: Ask a random angler on the vessel. **What is the ZIP code of your residence?** If ZIP unknown, ask **What city or town do you live in?**

Refused:----- RE Don't know----- DK
Sampler too busy----- TB Sampler didn't ask---- DA

BOAT ROW, CATCH COLUMNS:

SPECIES CODE: **Did the boat catch any fish today?**

Yes:----- Record code in Species Code and go to next
No:----- Record No Catch in Species Code box and zeros in KEPT

obs, KEPT unobs, RELS alive total and RELS dead. If salmon were targeted, record zero in seal take

Refused:----- Code Sample # as R, terminate interview

KEPT OBSERVED: **May I see the catch?**

Yes:----- Sampler will identify and count all fish by species
No:----- Enter zero and code numbers of Kept Unobserved
Fillets:----- Enter zero and code numbers of Kept Unobserved
Refused:----- If there is salmon catch, code Sample # as R, terminate interview. If no salmon catch, go to next

KEPT UNOBSERVED: **Did the boat retain any other fish?** Probe for any fish given away, filleted, used for bait or trashed.

Yes:----- Record species and number of fish
No:----- Enter zeros in Kept Unobserved boxes for species recorded

Kept Observed

Refused:----- If both Kept Observed and Kept Unobserved are refused, code Sample # as R, terminate interview

Don't Know:----- Code Sample # as R, terminate interview

RELEASED ALIVE TOTAL: **Were any fish released alive?** Probe for any fish that were purposely released alive.

Yes:----- Record species and number of fish
No:----- Enter zeros in Released Alive Total boxes for species recorded Kept Observed or Unobserved

Refused:----- Code Sample # as R, terminate interview
Don't Know:----- Code Sample # as R, terminate interview

RELEASED WITH DESCENDING DEVICE: Ask only if any species of rockfish were reported as Released Alive. **Of those <# released alive> <rockfish species> released alive, were any released using a descending device?**

Yes:----- Record number released using a descending device
in (w/DD)
No:----- Record zero in (w/DD)
Refused:----- RE Don't know----- DK
Sampler too busy----- TB Sampler didn't ask---- DA
No Rockfish Catch:--- Leave blank

RELEASED DEAD: **Were any fish released dead?** Probe for any fish that were thrown back dead.

Yes:----- Record species and number of fish
No:----- Enter zeros in Released Dead boxes for species
recorded Kept Observed or Unobserved
Refused:----- Code Sample # as R, terminate interview
Don't Know:----- Code Sample # as R, terminate interview

SEAL TAKE: Ask only if boat had salmon catch. **Did you see any seals or sea lions take your fish?**

Yes:----- Record number of fish lost to pinnipeds in the seal
take box in the same row with the salmon catch
No:----- Enter zero in seal take box in the same row with the
salmon catch
Refused:----- RE Don't know----- DK
Sampler too busy----- TB Sampler didn't ask---- DA
No Salmon Catch:--- Leave blank

CATCH LOCATION: **Where were most of the <species> caught?**

NO CATCH: **Where did the boat spend most of its time fishing today?**

The priority order of the location is for 1) landed fish, 2) reported fish, or 3) majority of fishing time. If the anglers report locations by species and time allows, record the location for each species observed or reported.

Refused:----- RE Don't know----- DK
Sampler too busy----- TB Sampler didn't ask---- DA
Block-Box:----- BBB-bb-bb-bb (up to three boxes for one block)
Lat & Lon:----- Enter the latitude above the longitude. 1) Degrees,
minutes and grid (DD.MM/DD.MM+GG) 2) Degrees, minutes
and seconds (DD.MM.SS/DD.MM.SS) where D=degrees,
M=minutes, S=seconds, G=area in minutes

NOTE: If the location is above a freshwater cutoff, the boat is not eligible and should be coded as NFOTH.

BOTTOM DEPTH: **What was the bottom depth at that location?** Record mean depth or depth range (minimum and maximum)

Depth in Feet:----- FFF

Refused:-----	RE	Don't know-----	DK
Sampler too busy	TB	Sampler didn't ask----	DA

BOAT ROW, CATCH COLUMNS LEN&WGT:

FORK LENGTH/CARAPACE SIZE (MM) SEX (M/F/T): Enter the fork length in millimeters of each fish measured above the dotted line. For crab and lobster enter the carapace size in mm. Add a suffix of M (male), F (female) or T (transitional) for each sexed fish.

WEIGHT (DECIMAL KG) OR HEAD TAG # (CIRCLE TAG #): Enter the weight in kilograms of the fish below the length. Do not record a weight without a length. Do not weigh salmon. Enter the head tag number for an adipose fin-clipped salmon with or without head, or the head tag number of a collected yelloweye rockfish, below the length in place of the weight. Circle salmon and yelloweye head tag numbers. If the salmon head is lost or refused write NRS after the tag number.

BOAT ROW, MISSED BOATS:

ONSITE: Enter the number of boats that returned to this ramp that you did not sample or determine NF activity of since the last sampled boat. If none were missed enter zero.

OFFSITE: Enter the number of boats that returned to another site since the last sampled boat. If none were missed enter zero.

FOOTER SECTION:

REFUSE: Enter the total number of Rs and Bs recorded in the Sample # box for the page.

TOTAL BOATS: Enter the total number of boats with a sample # for the page.

SALMON BOATS/ANGLERS: Enter the total number of boats/anglers that targeted or caught salmon for the page.

KINGS KEPT/RELEASED: Enter the total number of SALCK kept (both observed and unobserved) and released (both alive and dead) for the page.

COHO KEPT/RELEASED: Enter the total number of SALCO kept (both observed and unobserved) and released (both alive and dead) for the page.

HEAD TAGS: Enter the total number of salmon head tags recorded on the page.

SEAL TAKE: Enter the total number of salmon lost to pinnipeds for the page.

YELLOWWEYE KEPT/RELEASED: Enter the total number of RFYEY kept (both observed and unobserved) and released (both alive and dead) for the page.

COWCOD KEPT/RELEASED: Enter the total number of RFCOW kept (both observed and unobserved) and released (both alive and dead) for the page.

MISSED BOATS ONSITE/OFFSITE: Enter the total number of boats missed both onsite and offsite for the page.

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[illegible]

[illegible]

CPFV SURVEY PROCEDURES

The primary goal for PC sampling is to sample CPUE. CPUE is determined by counting numbers of fish species observed (landings) and asking about catch not observed (releases and other un-landed fish) for each angler. Other data relevant to the angler effort and catch, such as location, depth and fish measurements will be recorded. Catch estimates will be calculated for all PC sites in each CRFS District for each month. Estimated mean catch per angler will be calculated and multiplied by total effort to estimate total catch. **Since CPUE is not calculated for fishing in Mexican waters, no trips into Mexico will be sampled.**

A secondary goal for PC catch sampling is to ride onboard and collect discard fish lengths and detailed locations and depths. Fish that will be returned to the water are measured. Discard data is important for the calculation of the weight of catch thrown back alive and dead.

PC Definitions

Party and charter boats who take passengers to fish in saltwater must be permitted by the state as a CPFV and be Coast Guard inspected.

- *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 (CPFVs). Groups may arrange to pay as a group but additional anglers or other groups are able to pay to board for the trip.
- *Chartered boat* A passenger vessel which will allow itself to be “hired” by a group of anglers for exclusive use. The purpose of chartering a vessel is to gain privacy, increased deck space and/or control in the operation of the vessel’s fishing activity and fishing locations. Party boats operate 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. The terms “charter boat” and “party boat” can be used interchangeably in different parts of the Pacific coast.
- *Six-pack* – Small party or chartered boat that only carries six paying passengers. Due to limited passenger capacity, these trips will frequently need to be sampled dockside. Some six-pack vessels launch from public launch ramps, and may be encountered during PR mode assignments.

When to Ride or Sample Dockside

Ride the boat on all bottom fishing trips, especially rockfish and lingcod. If the boat changes species after leaving the dock, continue sampling the entire trip. Long range trips, such as for albacore north of Point Conception, you will need

to interview the anglers when they return due to overtime issues. Six-pack vessels are to be sampled dockside, unless special circumstances allow for you to sample onboard.

Salmon trips will be sampled dockside. You may encounter OSP Samplers; should this occur, work with the OSP Sampler and intercept as many boats as possible. Do not just interview anglers with adipose clipped fish. The OSP Sampler will focus on these anglers. Allow the OSP Sampler to apply the head tag to these fish. The heads in these cases should go with the OSP Sampler, if possible.

Your Lead may assign the type of boat trip to sample, such as ½ day, ¾ day, twilight, or overnight. Your Lead may also assign the target species, such as bottomfish, lingcod, salmon, or bass. Long range boats arrive at odd hours so you will need to check with the landing for the boat's arrival time to sample dockside. Vessel intercepts to sample dockside or onboard may occur anytime during daylight hours. (see Scheduling PC Trips in the Sampling Assignment Management Chapter).

Introduction to Onboard Sampling

Conduct of this Study

This onboard data collection program has been conducted since 1999. It is similar in some ways to previous studies carried out by CDFW's Central California Marine Sport Fish Project in Monterey (Reilly, P. N. et. al. Onboard Sampling of the Rockfish and Lingcod Commercial Passenger Fishing Vessel Industry in Northern and Central California [vars. eds. 1987-1995]).

Since many CPFVs fillet catch at sea, Samplers must ride the party or charter boats in order to collect important data on retained catch. Since we may ride the party boats, there is an opportunity to collect detailed information about all locations and depths fished. This data is used to assess depth-based mortality rates of encountered species.

Since most party and charter boats maintain an array of electronics onboard, we have the ability to collect information such as bottom depth and exact geographic coordinates. We also carry onboard our own GPS receiver (with the captain's permission). In addition to these data, we will be able to collect species composition, measure discards and determine species targeted and area fished for each fishing location.

Additional Data Collected Onboard

- Species targeted, area fished, and duration of each fishing stop
- Species kept and released for 'observed' anglers at each stop
- Measurement of returned fish by fishing stop
- Whether or not a descending device (DD) was used for each species

Unbiased Angler Sampling

Many potential biases are avoided by going onboard while some new potential biases are created. The behavior of the anglers and crew may be altered by the presence of the Sampler. For example, the Sampler may be perceived as an enforcement officer when dressed in a uniform. One study has shown that the returned catch rate of rockfish can decrease for observed trips. Due to these potential biases, the Sampler should avoid actions that alter fishing behavior at sea.

Some difficulties arise as the number of anglers on the boat increases beyond a reasonable number which can be observed. Therefore sampling of a subset of anglers is allowed. Generally, a subset greater than 10 is not advised. When observing fewer than the total anglers on the boat, the Sampler should vary the group of anglers by position on the boat and by composition of individual anglers. This is required so that the sample you take is random with respect to the position on the boat (e.g., stern, bow or side) and the skill of the anglers. This is especially important on trips utilizing live bait where the live bait is also chummed in the stern of the boat. High catch rate anglers tend to congregate near the bait box. Avoid continuous sampling of the stern area by sampling in proportion the 'numbers of anglers' not the amount of catch. The number of observed anglers must remain the same throughout an entire stop. In the event that the number of observed anglers changes mid-stop (i.e., sick angler), expand your subset to include an adjacent angler. If there isn't another angler, (e.g., observed angler count changes) start a new stop. Contact your Lead if there is any question or concern about how to sample or observe fewer than the total number of anglers on the boat.

Onboard Observer Rights

Under California law, you have the legal right to observe on board CPFV fishing trips. However, you must seek cooperation with the vessel and landing operators. Your goal as an observer is to have a cooperative relationship, avoiding adversity and defusing any hostility. Uncooperative relationships with landings and operators can lead to altered fishing behavior and biased sample data. You are there to observe normal fishing, not to enforce rules or alter angler behavior.

Title 14, California Code of Regulations Excerpts

COMMERCIAL PASSENGER FISHING VESSEL LICENSES

§105.5. Cooperation with State and Federal Fishery Observers. (a) Owners or operators of commercial fishing vessels permitted under regulations of the Commission, and commercial passenger fishing vessels licensed pursuant to Fish and Game Code Section 7920, will, as a condition of permit or license issuance, cooperate with Department or Federal fishery observers, or observers collecting data for the Department, when asked to carry and accommodate an observer on fishing trips at no charge to the sponsoring agency.

(b) If observer coverage of a trip is denied by the owner or operator of a vessel, the Department may require an explanation in writing from the owner or

operator. This explanation shall be received by the Department within 15 days of written request by the Department for an explanation.

(c) The Department may request revocation of fishing permits or licenses to the Commission for denials that it deems to be uncooperative in nature, after first allowing the owner or operator to meet with the Manager of Marine Region, or his representative, to provide an explanation for the denial.

(d) The Department or Federal agency requesting cooperation under subsection (a) shall not require the vessel operator or owner to provide an observer with meals or a subsistence allowance on observed fishing trips, but shall accommodate the observer with regard to reasonable eating and working conditions and access to pertinent fishing information and fishery data while aboard the vessel.

(e) Failure to provide reasonable eating and working conditions or access to pertinent fishing information or fishery data to observers, or actions taken by a vessel owner or operator against an observer that is prohibited pursuant to subsection (f), on observed fishing trips may lead to revocation of the vessel's fishing permits or licenses issued under regulations of the Commission following the procedure outlined in subsections (b) and (c) above.

(f) To ensure that observer objectives may be reasonably and safely achieved, consistent with federal groundfish observer rules, it is unlawful for any person to do any of the following:

- (1) forcibly assault, resist, oppose, impede, intimidate, sexually harass, bribe, or interfere with an observer,
- (2) interfere with or bias the sampling procedure employed by an observer, including physical, mechanical, or other sorting or discarding of any catch before sampling,
- (3) tamper with, destroy or discard an observer's collected samples, equipment, or personal gear, without the express consent of the observer,
- (4) prohibit or bar by command, impediment, threat, coercion, or refusal of reasonable assistance, an observer collecting samples, making observations, or otherwise performing the observers duties,
- (5) harass an observer by conduct that has sexual connotations, has the purpose or effect of interfering with the observer's work performance, or otherwise creates an intimidating, hostile or offensive environment,
- (6) require, pressure, coerce, or threaten an observer to perform duties normally performed by crew members

Sampling Chartered Trips

You should be able to sample chartered boat trips along with open party boat trips. Chartered trips can make up a large proportion of the total CPFV fishing trips, especially during the summer. It is very important for us sample chartered trips, as well as open party in order to accurately represent CPFV catch and effort. Make sure that you circle "charter" for PC Mode on the CPFV Onboard Angler Form or CPFV Dockside Form to indicate charter as the mode of fishing.

Our policy is to sample chartered trips with consent from the charter master (the charter master is the private party individual who has paid for a private group to charter the vessel for fishing). We have the authority to sample chartered trips that are not filled to Coast Guard rated maximum capacity.

When you call the landing to make a reservation, ask about **all scheduled trips** going out for your assigned trip type. Explain to the reservationist that you are a CRFS Sampler, and that we sample all trip types, including chartered. Confirm with the reservationist that you have also been informed on any chartered trips, and get the name of the individual that you spoke to. If there is no open party trip going out for your scheduled trip type, but there is a charter for that trip type, you should request to sample that trip with consent from the charter master.

You should ask the landing how you can contact the charter master regarding the trip, or if the charter master can call you. If you are unable to confirm with the charter master, you should show up an hour before the trip is scheduled to leave so that you can have the opportunity to explain what you are doing to the charter master, and request permission to sample onboard. You should also occasionally attempt to sample chartered trips (even though there is an open party trip available) when you have the opportunity to get on a boat that is rarely sampled.

Always keep an eye out for information on charter trips and charter vessels when you are in the field. Introduce yourself to crew and captains of vessels that we don't normally sample, and find out about their trips, and how they could be contacted for sampling. Some charter vessels may not book trips through the landing office, or may be overlooked by office personnel because they are not running the typical "open party" trip that we are usually placed on.

CPFV Refusals

Under section 105.5 (Title 14 CCR) Samplers have authority to access all PC boats. However, you may need to explain the survey and provide evidence that you are a CRFS Sampler. Always be prepared with copies of Title 14, section 105.5, your CDFW ID, a CRFS handout, and your Lead's business card so that you are prepared to demonstrate the legitimacy of the sampling program, and explain the survey. You should be familiar with the relevant sections in the CDFW regulation booklet on CRFS cooperation, and have a copy to show to charter masters and landing personnel.

Document all attempts, (successful or unsuccessful), to sample chartered trips on the Assignment Summary Form. This is very important. Make sure that you indicate that the trip was either a charter or a party boat in the comment section of the form. If the attempt to sample was not successful, explain in the comment section why.

If you are outright refused by landing personnel or encounter any hostility or difficulties, leave a copy of Title 14, section 105.5 with the landing manager and call your Lead. Please provide your Lead with detailed documentation (date, name of individuals and vessels concerned, details of refusal or problem and how you dealt with it). Provide this information the same day of the event. Your Lead will initiate procedures to follow-up with the vessel.

Chartered Trip Refusals

If the charter master of a chartered boat declines, it will be considered an acceptable 'unable to sample' event. If this occurs, try to sample an alternate trip or contact your Lead to reschedule. However, if the landing or captain of the chartered vessel refuses you or does not allow access to the charter master who should be asked directly by the Sampler for their decision, the act will be deemed an "illegal refusal". For illegal refusals, you are to contact your Lead as soon as possible. Document everything that occurred, who you spoke with, time, etc. Descriptive and precise documentation is essential.

Alternate PC Trips

Occasionally, your scheduled PC trip won't go out due to low effort, boat maintenance, Coast Guard capacity, etc. This is one reason why it is important to call ahead and show up at least a half an hour before the trip's scheduled departure. It is important to follow this hierarchy of steps when choosing an alternate trip and/or landing for your assignment:

1. Sample your assigned trip type at your assigned landing.
2. Sample a different trip type at your assigned landing.
3. Sample your assigned trip type at an adjacent landing. Landings are considered "adjacent" when they are close enough to be targeting the same fishing grounds.
4. Sample a different trip type at an adjacent landing.
5. Reschedule your assignment to another day within that week (weekday assignment) or weekend (weekend assignment). This move requires approval from the Lead.

Onboard Fishing Locations

Each "stop" the boat makes where the anglers are allowed to drop their lines into the water is a separate fishing location. Additionally, if the number of observed anglers changes within a stop, a new stop should be created, with the same location coordinates, and the new number of observed anglers.

When the boat is not anchored and the anglers drop their lines, the location is termed a "drift" if the engine(s) (running or not) are not engaged into gear to provide power. As the boat drifts along anglers continue to fish the "drift" and cover an area over the bottom dependent on currents and wind. Once the anglers are told by the captain or crew to pull up their lines the "drift" ends when all anglers have their gear out of the water.

Sometimes the boat will reposition or "station" over a productive fishing location. In this case, the anglers may or may not pull up their gear and the boat may be under power (gears engaged) in order to maintain or slowly move into a favorable location. In these cases, only one location need be applied to the fishing, even if the anglers needed to pull in their lines temporarily while the boat moved (usually relatively slowly) back into position. Often this "re-location" event is announced to the passengers in advance.

Since a fishing location may be a drift or troll with starting and ending points, two locations need to be recorded, one for when the anglers put their “lines down” and a second for when they pull their “lines up”. Each starting and ending location will have a set of geographic coordinates and a time (in 24-hour format) in order to map the extent of travel over the bottom and calculate direction and average speed. If the drift was only a very short distance and time (less than 3 minutes or 300 feet) then the ending location geographic coordinates need not be recorded. However, the ending time should always be recorded so that catch per unit of effort can be calculated.

Often the captain will be “prospecting” for fish when he asks the anglers to drop their lines into the water because there is some evidence of fish on the electronics. This may result in very short unproductive stops. Record these locations since all fishing time will be used in the calculation of catch per unit of effort. There is biological interest in locations where fish are unavailable or not catchable.

Onboard Catch by Location

For each fishing location, the Sampler will keep a count of species caught, kept or returned. The count need not be a count of all angler catches since it is often difficult to be everywhere on the boat at once. The Sampler should keep an accurate count of the number of fish caught, for a number of anglers being ‘observed’ for catch kept or returned at a location.

When the catch rates are very high, the Sampler may find it necessary to monitor fewer anglers for the catch count. It is acceptable to monitor different numbers of anglers at each location; however, the preference is to monitor the same number of anglers throughout the trip (generally 10 anglers).

Onboard Pinniped Observations

Historically, the Sampler has collected pinniped data for each fishing stop. We are no longer collecting this data; however, any excessive pinniped contact should be noted on the Assignment Summary Form. If you witness any illegal contact with pinnipeds, please contact your Lead after you have exited the CPFV and returned to your car.

Legal Pinniped Deterrence Defined

(a) Definitions. For the purposes of this paragraph, “catch” means an aquatic species that is attached, hooked, ensnared, netted or otherwise under the control of the owner or operator of that fishing gear.

(b) Deterrence measure authorization. (1) Except as provided in paragraph (d) of this section, measures consistent with the general guidelines in paragraph (c) of this section may be taken:

(i) By the owner of fishing gear or catch, either commercial or recreational, or an employee or agent of such owner to deter a marine mammal (other than species listed as endangered or threatened under the Endangered Species

Act) from damaging gear or catch so long as such measures do not result in the death or serious injury of a marine mammal.

(ii) By the owner of other private property, or an agent, bailee, or employee of such owner, to deter a marine mammal (other than species listed as endangered or threatened under the Endangered Species Act) from damaging private property so long as such measures do not result in the death or serious injury of a marine mammal.

(iii) By any person to deter a marine mammal from endangering personal safety so long as such measures do not result in the death or serious injury of a marine mammal. Furthermore, it shall not be a violation of the Act to take a marine mammal, even lethally, if such taking is imminently necessary in self-defense or to save the life of a person in immediate danger, provided such taking is reported to the Assistant Administrator within 48 hours.

(2) Federal, state or local government officials and employees may, consistent with Sec. 216.22 of this chapter, deter a marine mammal from damaging public or private property.

(c) Guidelines for safe deterrence. The following measures are acceptable for the deterrence of marine mammals.

(1) Passive deterrence measures that preclude a marine mammal from accessing or interacting with persons, property, or fishing gear or catch may be used in the immediate vicinity of those persons, property, or fishing gear or catch that is to be protected. Nets, fences, or other types of physical barriers may be used provided the potential for marine mammals to become entangled is not increased.

(2) Active deterrence measures (including both "preventive" and "reactive" deterrence measures) that dissuade a marine mammal from interacting with persons, property, fishing gear or catch or that cause a marine mammal to cease its interaction with persons, property, or fishing gear or catch should not:

- (i) Separate a female and its offspring;
- (ii) Break the skin of an animal;
- (iii) Be directed at the head or eyes of an animal; or

(iv) Be used on pinnipeds hauled out on unimproved private property. Active deterrence measures that may be used include, but are not limited to, mechanical or electrical noisemakers, water sprayed from a hose, blunt objects to prod animals, large shielding objects (wood, metal or fabric) to herd animals, and hazing actions by boat operators.

(d) Prohibited deterrence measures. The following forms of deterrence are prohibited from use for the deterrence of marine mammals:

(1) Use of any firearm, or other device used to propel an object resulting in, or possible to result in, injury including, without limitation, crossbows, [[Page 22348]] spearguns, bangsticks, archery gear, harpoons, javelins, and spears;

(2) Use of any explosive device for use on cetaceans (dolphins and whales), and any device of explosive power greater than that of a seal bomb (USDOT

- Explosive Pest Control Device 1.4E NA-0412, formerly Class C) for use on pinnipeds (seals and sea lions);
- (3) Translocation of any marine mammal;
- (4) Use of any tainted bait, poison, or any other object or substance intended for consumption by a marine mammal.
- (e) Acceptable measures for deterrence of ESA-listed species

Marine Mammal Protection Act of 1972

The MMPA established a moratorium, with certain exceptions, on the "taking" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and on the importing of marine mammals and marine mammal products into the United States. It also charged NMFS with providing guidelines for deterring marine mammals.

The term "take" is statutorily defined to mean "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal." Under the 1994 amendments, the Congress statutorily defined and divided the term "harassment" to mean any act of pursuit, torment, or annoyance which -- 1. (Level A Harassment) has the potential to injure a marine mammal or marine mammal stock in the wild; or 2. (Level B Harassment) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption or behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Section 101(a)(4) of the MMPA authorizes the intentional interaction of private citizens with marine mammals. Recreational fishers may now deter marine mammals from damaging fishing gear or catch; property owners or their agents may now deter marine mammals from damaging their property; and the general public may now deter marine mammals from endangering personal safety, provided such deterrence does not cause a marine mammal's death or serious injury. The proposed guidelines and prohibited measures set forth activities that are not likely to cause a marine mammal death or serious injury and specifically prohibit activities determined, using the best scientific information available, to have a significant adverse effect on marine mammals. Actions by the public to deter non-ESA listed marine mammals consistent with such guidelines would not be a violation of the MMPA.

Approved Deterrence Measures

NMFS Guidelines for Intentional Interaction (Marine Mammal Deterrence)

Samplers should be familiar with these guidelines in order to inform your Supervisor of any illegal or unusual actions taken by anglers.

The following list of "potential methods" and "deterrents to avoid" is not an exhaustive list of non-lethal methods or techniques. If you have questions about protecting your property and/or fishing gear and catch from nuisance Pacific harbor seals and California sea lions, please contact our marine

mammal specialists: Brent Norberg, 206-526-6733; Garth Griffin, 503-231-2005; Lynne Barre, 206-526-4745.

Note: Some of the methods listed (such as loud noise or pyrotechnics) may not be appropriate for use in some areas, or are subject to prohibition under federal, state or local ordinances. The presence of Endangered Species Act-listed species in some areas may advise against the use of certain methods. Please consult with appropriate authorities to determine if such prohibitions exist in your area, or if ESA-listed species may be encountered.

Potential methods for use by fishers to deter Pacific harbor seals and California seal lions from damaging gear or catch (anglers must be actively fishing with gear deployed).

Visual Repellents/Noise Makers:

- boat hazing, circling
- pounding on hull
- pyrotechnics (e.g., bird screamers, bangers, underwater firecrackers, cracker shells)
- starter pistols
- horns, bells, whistles

Physical Contact:

- slingshots
- non-toxic and water soluble paint ball guns
- non-lethal ammunition (e.g., rubber bullets, sabot rounds, game stingers)

Methods to Avoid – The following methods and techniques have an increased likelihood of causing injury or death and should be avoided.

- No Firearms with “live” (lethal) ammunition
- No Devices with Injurious Projectiles (e.g., archery gear, crossbows, spear guns, bangsticks)
- No Sharp/Pointed Objects (e.g., harpoons, spears, gaffs, nail studded bats/poles/clubs)
- No Entangling Devices (e.g., loose webbing, snares, concertina wire)
- No Aggressive Tactile Methods (e.g., striking animals with bats, hammers etc., impact with vehicles or boats)
- No Tainted Baits or Poisons

Act Responsibly and Use Common Sense! - Regardless of method or intent, the property owner or fisher may be subject to prosecution should a marine mammal be seriously injured or killed as a result of deterrence efforts for the protection of property, gear or catch.

More information: <http://www.nwr.noaa.gov/Marine-Mammals/Seals-and-Sea-Lions/upload/Deter-Pinnipeds.pdf>

Onboard the Boat Trip

The onboard observer has different procedures to follow before, during and after PC fishing. These procedures are designed to optimize your time and reduce potential bias. Samplers will use available time to collect intercept data from anglers in advance, since that is difficult once the fishing starts.

Arrival at a PC Site

Show up 1/2 hour before the boat is scheduled to leave. Sometimes party boats are full and you will be denied boarding, so you will try another boat. If the landing says that the boat is "chartered", ask if you can get permission from the charter trip leader (charter master) to ride the chartered trip. Be sure and get the captain's permission to board the boat and never board the boat without his permission. Good rapport with the captain will often result in increasing the cooperation of the party boat patrons.

The operator must allow you free boarding privileges, if not, inform your Lead immediately and attempt to board another boat. Refusals are illegal. Document these actions. 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. It may not be legal for them to take another passenger due to Coast Guard regulations. If you are told that the boat is at Coast Guard capacity, ask for the number of passengers and crew on the boat, so this claim can be verified by the Lead.

On the Way Out

Once the boat gets underway, the captain will give a speech about the life jackets, etc. Start counterclockwise and introduce yourself and your goals and collect as much data as possible on the CPFV Onboard Angler form. It is better to ask most questions in a pre-fishing interview as the anglers are in a good mood as opposed to asking on the way back when they may be sick and tired. Make sure to record good angler reference notes, as you will be revisiting these anglers after fishing has concluded. You can make a note of the angler's appearance, such as blue jacket, 49'er hat, etc.

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. Make sure to record these on the CPFV Angler form, and remember that there could be duplicate numbers with different colors.

Under optimum circumstances all anglers on the boat will be interviewed. However, some form of angler sub-sampling may be necessary if the boat holds a large number of anglers, there is a large number of fish or if the time required for travel back to the dock is minimal. As a general rule of thumb, shoot for 30 anglers in your subsample.

During Fishing

You will be monitoring each start and stop fishing location, time, and depth using the CPFV Onboard Location form. You will also be monitoring a subset of the anglers (observed anglers) for kept and released numbers of fish by species for each fishing location. You will also be taking measurements of returned fish on the CPFV Onboard Catch and Discard form when time allows. Details of this procedure and items to collect are in the detail section for those forms below.

CPFV crew members who fish with the intention of keeping their catch, or who are putting their catch in a separate “crew bag” are considered eligible anglers and can be interviewed. Conversely, crew members who are fishing to add catch to the bags of paid passengers are not considered eligible. The fish that the crew catches and gives to paid passengers belong in the receiving angler’s data as KEPT catch (as if the angler caught the fish). It can be too difficult to track fish that are distributed among anglers by the crew, so always follow this procedure.

If you see anglers doing illegal activities, do nothing. Let the captain and the crew police the boat if they choose to. Your job is to sample, not to police illegal activity. Do not alter angler fishing behavior in any way. Do not act as a deck hand by helping passengers land fish or provide advice to increase the catch rate. Our workmen's compensation insurance does not cover you if you are injured while doing any deckhand duties. Stay out of the way as much as possible. Use your spare time to key out any unusual fish. Don't make comments about other party boats and the success at catching fish: keep a low profile.

On the Way Back

Allow plenty of time on PC trips to identify rockfish before the filleting process begins. This means you may have to stop observing a bit earlier on rockfish trips. Try to judge when the anglers will stop fishing (you can ask the captain) and ask the filleter which bags he will do first, also it is a good idea to ask the filleters if any bags or anglers are not having fish filleted as these can be left till last. Filleters may have preferential treatment of some anglers or bags. Count and measure fish in the bag that is associated with each angler # or bag # of your interviewed anglers. While the filleter is cutting, count and measure the next bag. Attempt to keep ahead of the filleter, and do not interfere with the filleting process. You may have to skip the measurements for some fish. For safety reasons, stand clear of the filleter and fillet knives.

Ask each interviewed angler about any released fish. You may have to remind anglers about fish you saw thrown back. For rockfish, try to probe to identify the released catch to the species level. You can use your field guides (time permitting) or reference catch that they kept and are in front of them. Do not attempt to record catch given-away to another angler, as these are now in another angler’s bag (and that angler may not even know it). We don't want to double count the catch.

Remember we want to foster a good working relationship between CRFS and the CPFV industry; having the cooperation of the crews and landings is important. Don't do anything to jeopardize the situation. Some of these boats have secret fishing spots or secret methods of catching fish. Don't reveal any boat secrets to others. It is best not to discuss your party boat trips with anyone. If anyone asks you questions about where you fished, what kinds of fish were caught, or how the fishing was, refer the person to the captain. Any cooperation problems with deck hands should be referred to the captain.

Boat Limits

With the CDFW Boat limit regulations, open party and chartered boats can continue to fish until limits have been caught for all authorized anglers onboard. Even seasick anglers who do not wet a line all day may leave the boat with a limit, provided they have a fishing license. The crew may be interviewed if they fished and kept fish. The crew might distribute their catch to other anglers.

Occasionally, the skipper or crew will want to include you when calculating the boat limit. This is not appropriate, as you will not be fishing and you are not allowed to accept gifted fish. If you find out that the crew is including you in their boat limit calculation, tactfully inform them that you will not be leaving the boat with any fish in your possession, which means, if you are included in the boat limit that the boat will be left with an over limit at the end of the day.

When the boat has exceeded boat limits, there will be unclaimed fish. If these fish are to be thrown overboard, the Sampler should obtain a total count (and any measurements, if possible), by species of all fish discarded after the kept 'boat fish' have been distributed amongst anglers. All extra fish that are left over, whether kept on board or thrown over the side should be coded on the Catch/Discard form.

Please see example at the end of the PC Onboard Catch and Discard form for how to code "Boat Fish".

Overnight Trips

You may occasionally be asked to sample a trip that departs at night. When filling in the ASF the date of the assignment will need to match the date of the interviews. The date of the trip is the day the trip ended (fishing concluded). Only record one row with one date for the boat trip on the ASF. If departing before midnight, record the actual departure time in the comments section and put down 0000 for the "departure time". Record your sampling hours under "HRS on site", not the hours you were on the boat. Sleeping hours are excluded.

Onboard Sampling Tips

1. Sick anglers may be eligible since wet gear hours include any 'rod time' provided by others and catch may be shared in groups which include the sick angler as an eligible licensed angler.
2. Include fish hooked, landed or caught by the skipper and/or deckhands and given to and kept by the customers.
3. Make sure you don't measure the same fish twice. Occasionally an angler may have more than the limit in his or her bag. If you measure all the fish and the person keeps the legal limit and gives away any extras, make sure those extras you have already measured don't go into someone else's bag that you have not measured, and potentially get measured a second time.
4. Fish filleted at sea count as KEPT unobs unless the fish are identified and counted by you.
5. Do not interfere with the filleting process. Try not to hold up the filleters. This is not appreciated by the crew.
6. All eligible anglers, with or without catch, should be interviewed. Do not just interview the anglers with catch.
7. Do not record fish to be released as KEPT records. Discarded fish measurements are recorded on the CPFV Onboard Catch and Discard form. These discards are also recorded as RELS fish by that particular angler (the angler should report this at the end of the trip).
8. If the sea conditions prevent accurate measurements, do not attempt to weigh the catch. Weigh especially unusual or important management species, when sea conditions allow.
9. Anglers who are too sea sick to fish but, due to boat limits, have catch can still be included on the CPFV Onboard Angler and Catch forms.
10. Do not take your friends along with you on the trip
11. Do not sleep on day trips.
12. Document, in detail, if you are refused access to a boat. Similarly, document any action by the crew that impedes your duties.
13. Thank the captain and crew.
14. Do not fish while onboard
15. Do not accept free trips to go fishing at a later date
16. Do not except any gifts while onboard this includes fish, food, drinks, etc.

THE CPFV ONBOARD LOCATION FORM

The CPFV Onboard Location form mainly collects the fishing locations and species counts for observed anglers onboard CPFV trips. Above sections discuss PC assignments as well as CPFV survey procedures which include the usage of other forms. We recommend a new Sampler read those sections before learning about the coding form.

The CPFV Onboard Location form has front and back sides to cover a number of fishing locations in columns, and species in rows. For trips that use additional sheets the Sampler will code the location number or species numbers for those observations beyond the capacity of the primary form. Information from the top of the additional sheet will be used to link the data with the primary sheet and other PC forms that contain data collected on that trip.

CPFV Onboard Location Form Layout

The form has three major areas for data on the boat trip, the locations fished in columns and the catch species in rows. The location columns have two sub-areas for coordinate and physical data.

[illegible]

- Boat assignment data (top left of form)
- Trip location data (top right columns)

- Species count data (bottom rows)

Boat Assignment Data

ASSN ID	Date (MM/DD/YY)	OSP Port
Sampler #	Sampler Last Name	
DFG Boat #	Boat Name	

There are 7 boat assignment data items, which are used both to link the data to the other PC forms and to provide some unique information about the CPFV trip. All of these items are required to be completed for the form to be acceptable.

Right justify these items and leave leading spaces blank. Do

not code leading zeros.

Fishing Location Data

There are 16 items for each location record. There are columns of location records on right side of the form on both sides of the sheet. Each fishing stop (with "lines down" in the water) will have a location record completed. Not all of the items are required at each stop.

Coordinate Data – latitude, longitude, geographic format, area fished, and start and end times. The time spent between locations is used to allocate the trip

	Stop #			ANGS		
START	Lat.					
	Lon. 1					
	Time/Depth	Time		Depth (ft)		
END	Lat.					
	Lon. 1					
	Time/Depth	Time		Depth (ft)		
	GFMT	AREA	FTyp	SmpLoc		
	TARGET					

effort and catch by latitude and distance from shore. Analysis of this data may be used to regulate geographic area and seasonal recreational fishery openings and closures. Longer fishing times gives more weight to the data collected at those locations. Time and location difference are used to estimate speed and heading which is checked for accuracy.

Physical Data – depths, observed anglers, fishing type, Sampler location and target. Depth is used to help allocate effort and catch into depth zones. Depth is also used to estimate mortality of released catch.

Depths may be obtained from the skipper. You, based on section 105.5, are allowed to view the depth finder. Should you think the depth information from skipper is inaccurate, record 9998 and inform your Lead.

Species Count Data

There are rows for species counts for each location column. There are 2 items for each species to record for the entire row: the common name and the 5-character alpha species code.

Common Name	SPECIES code	KEPT				RELS				KEPT				RELS			
		alive	dead	w/DD		alive	dead	w/DD		alive	dead	w/DD		alive	dead	w/DD	

For each location column there are 4 items to record for each species row: the number of fish kept, released alive, released dead and released with a descending device (DD). The numbers of fish must be for the number of observed anglers in the location column.

Recording Numbers Kept and Returned

dot-line system	
1	·
2	:
3	::
4	:::
5	1:
6	1:
7	11
8	11
9	11
10	11

The method used for recording the count for fish kept or returned is called the "dot-line system". The system allows for a count up to ten in less space than the more common "count-mark" (i.e. IIII) system does going to five. It is desirable when editing your forms for the day, to decode the dot line system by writing the actual number to the right. The key to this system is printed on the back of the CPFV Form.

Refused Items

The items that may be "refused" are depth and location. The captain may decide that a location is 'secret' and not want you to record it or the depth. Document all such refusals and contact your Lead.

All other items are dependent on the Sampler monitoring activity on the boat and may not be coded as 'refused' (i.e. fish counts). In cases where the Sampler is unable to determine Sampler-dependent information, the item(s) may be coded as "don't know" with an explanation on the Assignment Summary form. It is expected that Sampler-dependent data will rarely not be collected.

Items will be coded with all an 'R' for "refused" or with 'DK' for "don't know".

CPFV Onboard Location Form Item by Item Instructions

These item by item instructions have no item numbers printed on the form. The order followed will be by sections with element names for reference. The location form is in three main sections, assignment data and location records and species rows:

FIELD NAME	INSTRUCTIONS	CODES AND FORMATS
BOAT ASSIGNMENT		
Check box if ADDITIONAL SHEET	This is used to indicate whether this is the primary sheet, or an additional sheet.	Box checked if this is not the first sheet used for this assignment.
Page __ of __	This is used to indicate total number of pages. Each side of the form is considered a page. The assignment data must be the same on all forms.	"1 of 2" on the first page "2 of 2" on the second page.
ASSN ID	This is the same as on the Assignment Summary Form and is used for data tracking.	042010
Date	This is the same as on the Assignment Summary and is used to classify and track the data.	MM/DD/YY 01/01/12 = New Years Day
OSP Port	Enter the 3-letter alpha code used by the Ocean Salmon Project for this port.	FTB = Fort Bragg
Sampler #	Use your 3 digit Sampler ID code	100 = Joe Sampler
Sampler Last Name	Print your last name to the right of your code.	'SAMPLER LAST NAME'
CDFW Boat #	This is CDFW vessel id number of the boat (permit number)	12345 = 'Fish Hoover'
Boat Name	Name of the boat	'FISH HOOVER'
FISHING LOCATION		
Stop #	Record the Stop # that is associated with the location data in this column.	1= First fishing stop for this trip
ANGS	Record the number of anglers observed for the catch counts at this location. When feasible, 10 anglers should be the target number of observed anglers, and a different set of anglers should be observed at each stop.	10 = ten anglers observed for catch at this location.

FIELD NAME	INSTRUCTIONS	CODES AND FORMATS
Start Latitude	North latitude in one of the valid formats at the start fishing time.	<u>Valid Formats</u> 1 = Degrees, xx.01 min 3 = Degrees, minutes, seconds - DDMMSS 323055 = 32 degrees 30 minutes and 55 seconds north latitude.(gformat=3) R = Captain refusal DK = Don't know
Q. What if the batteries on my GPS fail? A. Put in your spare batteries. If your GPS fails, record locations as 'DK'— obtain locations from the captain and keep recording all other items including start and end time. Note on the ASF.		
Start Longitude	West longitude in one of the valid formats at the start fishing time. The hundreds place is pre-coded to 100 with a "1".	<u>Valid Formats</u> 1 = Degrees, xx.01 min 3 = Degrees, minutes, seconds - DDMMSS 274501 = 127 degrees 45 minutes and 1 second east longitude (gformat=3) R = Captain refusal DK = Don't know
Q. What if the captain does not want this location recorded? A. Ask if we can record the location without the seconds (e.g., within one mile, 3232__1910__), otherwise code the location as 'R' but record all		

FIELD NAME	INSTRUCTIONS	CODES AND FORMATS
other items, including times.		
Start Time	This is "lines down" time. Record the time in 24-hour format when fishing started at a new location.	2400 = midnight 0001 = one minute after midnight
Start Depth	Record the start bottom depth in feet. DO NOT LEAVE BLANK	6= six feet. DK= Don't know R= Captain refused 1 fathom= 6 feet
End Latitude	North latitude in one of the valid formats at the end fishing time. An ending location is not necessary if the boat did not travel more than 300 feet or fish for more than 3 minutes.	Valid Formats 1= Degrees, xx.01 min 3= Degrees, minutes, seconds - DDMSS 323091 = 32 degrees 30.91 minutes north latitude. (gformat=1) R = Captain refusal DK = Don't know
End Longitude	West longitude in one of the valid formats at the end fishing time. The hundreds place is pre-coded to 100 with a "1". An ending location is not necessary if the boat did not travel more than 300 feet or fish for more than 3 minutes.	Valid Formats 1= Degrees, xx.01 min 3= Degrees, minutes, seconds - DDMSS 323138 = 32 degrees 31.38 minutes east longitude (gformat=1) R = Captain refusal DK = Don't know
End Time	This is "lines up" time. Record the time in 24-hour format when fishing ended for this location, troll or drift.	0500 = 5am 1800 = 7pm
End Bottom Depth	Record the end bottom depth in feet.	50= fifty feet R= Captain refused <blank>=same as start (i.e., anchored stop).
Q. What if my GPS dies? A. Ask the captain for locations from the vessel GPS, if refused, code the location as 'R' but record all other items, including times. If there is no GPS on the vessel, code		

FIELD NAME	INSTRUCTIONS	CODES AND FORMATS
location as 'DK': Write a comment about what happened.		
GFMT	Geographic Format – The measurement units used to record the latitude and longitude coordinates at the start and end fishing times. All four position records must be in the same units. For longitude all fishing locations the hundreds place has been pre-coded with a “1”.	The two geographic formats (GFormat) expected to be read from boat GPS equipment (with proper punctuation): 1= Degrees, xx.01 min 3= Degrees, minutes, seconds - DDMMSS DK= unknown R= refused
AREA	Distance from shore or Mexican waters where the majority of fishing occurred	N= Nearshore; US<3mi – Trips within 3 miles of a shore in US waters O= Offshore; US>3mi – Trips beyond 3 miles of a shore in US waters B= enclosed bay/estuary/harbor R= River M= Mexico – Trips into Mexican waters. Island Codes: F=Farrallones 1 =Coronados 2 San Clemente 3=Santa Catalina 4=Santa Barbara 5= San Nicolas 6=Anacapa 7=Santa Cruz 8=Santa Rosa 9=San Miguel
FType	Fishing Type- This is one of the four predefined types of boat movement used for the fishing activity.	D = Free drift (engine not in gear) S = Stationed (engine in/out of gear to maintain position) A = Anchored (boat attached to the bottom) T = Troll (engine in gear and powered to trolling speed)
SmpLoc	It is important to observe anglers from different parts of the vessel, as catch rates can differ. Record where your observed anglers are.	B= Bow S= Stern D= Side

FIELD NAME	INSTRUCTIONS	CODES AND FORMATS
TARGET	Record the 5 digit alpha code for the target species for this stop.	HALCA= California Halibut
SPECIES CATCH		
Common Name	This is the approved AFS common name.	'BROWN ROCKFISH'
Q. Do I need to write the name of all the species on every page? A. No, but it may be easier to keep track of species if the order is maintained.		
SPECIES Code	Use the 5 letter CRFS alpha code or, if not listed, use the 3 digit RecFIN code write the common name in the margin and notify your Lead.	RFBRN = brown rockfish 537=yellow bobo
KEPT	Record the number of fish of species <i>kept</i> at this location by the observed anglers.	2= two kept <blank> = None kept.
Q. Should I write zeros in all the location where none of a species was caught? A. No, it is not necessary and doing so slows down data entry for that form.		
RELS alive	Record the number of fish of species <i>released alive</i> at this location by the observed anglers.	" . 1 " = one released alive <blank> = None released.
RELS dead	Record the number of fish of species <i>released dead</i> at this location by the observed anglers. Fish that are alive but are obviously not going to survive (due to severe wounding or inability to swim down) may be coded as dead.	" <input type="checkbox"/> 10 " = ten released dead <blank> = None released.

FIELD NAME	INSTRUCTIONS	CODES AND FORMATS
RELS w/DD	Record the number of fish of each species that were released with the aid of a descending device.	" . 1 " = one released w/DD <blank> = None released.
Q. If a fish is returned alive with a DD, do I tally it in both the RELS alive and RELS w/DD fields? A. No. The RELS w/DD field is not a subset of the other RELS fields.		
Additional Sheet?	Indicate here if you require another sheet to capture all species for this stop.	Y(circled)= YES N(circled)= NO

CPFV Onboard Location Form Coding Tips

Trolling between Locations

Trolling is common for tuna and salmon. The boat will troll until a 'hook-up' occurs and then stop to have anglers reel in their fish. On the boat location form, you should be recording a new "stop" for every drift and troll. When the boat stops, this is the end position of the troll. Make sure that you bring extra data forms to record locations. For trolled locations, the number of observed anglers is the number of trolling rods you can observe.

Non Stop trolling

For an entire trip of trolling continuously, the Sampler may record starts and stops hourly or when the boat makes a major change in heading, such as when reversing direction along a stretch of coast

Specific Editing Checks

1. Species and names must be listed on first page.
2. Make sure the gformat matches the location in 'seconds' (or '100th minute'). Coordinates in deg.min.sec format can't end in a number greater than '60'. **NEVER leave blank if there is a lat/long recorded.**
3. Starting time and depth should not be left blank.
4. Starting and ending coordinates and times must be provided for all troll and drift trips.
5. If no fish were caught, leave field blank. Do not code as "0".

6. Fill in stop numbers on any additional sheets.
7. Boat name and CDFW Boat # cannot be left blank.
8. Do not leave location fields blank.

CRFS PC (CPFV) ONBOARD LOCATION FORM - Check box if this is an ADDITIONAL SHEET

ASSN ID 11198	Date (MM/DD/YYYY) 12/12/12	OSP Port SBA	Stop # 3	ANGS 4	10
Sample # 173	Jones	Time 0845	Lat. Lon.	Depth (ft) 145	
DFO Boat # 39022	Boat Name Stardust	Time 0950	Lat. Lon.	Depth (ft)	

Depth (BOTTOM)/# feet, Refused, Unknown
GEMT: 3=deg,min,sec 1=deg, xx 01 min
Flag/Fishing Type: Drift, Stat., Anchor, Troll
Single/Sampler Location: Bow, Stern, Side
w/DD: # RELS widescanning device

Common Name	SPECIES code	KEPT		RELS		AREA	FType	SimLoc
		alive	dead	w/DD				
Vermillion RF	RVER	12	1	1			A	
Lingcod	LNGCD	3	1				B	
Rosy RF	RFRCS	5	3				C	
Cowcod	RCOW						D	
							E	
							F	
							G	
							H	
							I	

ONLY 1 PAGE, SO BACK OF FORM SHOULD BE BLANK

Page 1 of 1

STOP CONTINUED ON ADDITIONAL SHEET

Area Water Area & Island: Watershed (<3mi), Offshore (>3mi), enclosed Bay/shore/harbor, River, Mexico
Island: 1-Coronado, 2-San Clemente, 3-Catalina, 4-Santa Barbara, 5-San Nicolas, 6-Anacapa, 7-Santa Cruz, 8-Santa Rosa, 9-San Miguel, F-Farallones

Onboard Location Form – Multiple Sheets

MORE STOPS →

MORE FISH →

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																														
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THE CPFV ONBOARD ANGLER FORM

The CPFV Onboard Angler form is used to collect the PC trip details, as well as angler reference, demographic and avidity information. This is the form that will be utilized at the beginning of the trip, before any fishing occurs. The CPFV Onboard Angler form has front and back sides which can capture data for 38 anglers, so only one form is needed per assignment.

CPFV Onboard Angler form Layout

The form has two major areas for data from the PC assignment: Boat trip data, and angler information.

Boat Trip Data

There are 25 boat trip data items, which are used both to link the data to the other PC forms and to provide some unique information about the CPFV trip. All of these items are required to be completed for the form to be acceptable.

CRFS PC (CPFV) ONBOARD ANGLER FORM V13 02/22/12											Page ____ of ____	
ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #							
Sampler Last Name												
DFG Boat #	Boat Name		Duration Type	PC Mode	Departure & Return Date (MM/DD/YY)		Time	DAYS fished	BOAT ANGS	TARGET	ANGLED	DD?
				Party Charter	Depart.					1st		Y
					Return					2nd		N

Catch Recorded obs reported	ANGLER #	BAG #	Angler REFERENCE (angler name, description, etc.)	DAYS fished (12 mo)
obs				
unobs & RELS				12 mos
				Zip

Angler Data

There are 7 items for each angler record. All data except for the Catch Recorded column can be collected on the way

to the fishing grounds and prior to fishing activity. The Catch Recorded fields will be used after fishing has stopped and catch is being recorded. This will help ensure that each type of catch is recorded for each angler.

CPFV Onboard Angler form Item by Item Instructions

Field Name	Instructions	Coding Examples and Formats
	HEADING	
Page _ of _	Enter, in sequence, the page number of the form and the total number of pages with data.	Example: Page 2 of 7
ASSN ID	Enter the six digit assignment ID number on all pages	Assignment ID in the format MMDNNN where MM is the month ranging from 01-12, D is the geographic district from 1 to 6 and NNN is the sequence number from 001 to 999.
Date	Enter the numeric date as 2 digit month, 2 digit day, 2 digit year	01/01/12 = January 1, 2012
CNTY	Enter the 3 digit numeric county code	037= Los Angeles County
SITE	Enter the 3 digit numeric site code	103 = Ventura Sportfishing
OSP port	Enter the 3 letter alpha code used by the Ocean Salmon Project for this port	FTB = Fort Bragg
Sampler #	Enter your 3 digit Sampler identification number	3 digit numeric code = 132
Sampler Last Name	Write out your last name completely	
CDFW Boat #	This is the CDFW vessel ID number of the boat (permit number)	12345 = 'Fish Hoover'
Boat Name	Name of the boat	'Fish Hoover'
Duration Type	Record the trip duration type	½ = half day trip ¾ = ¾ or full day trip T= twilight O = overnight trip
PC Mode	Circle the PC mode	(Charter) = chartered trip (Party) = open party trip
Departure & Return Date = (MM/DD/YY) Time = Military hours	Record the date and time of the departure and return of the CPFV	Depart 10/26/12 0700 Return 10/26/12 1700
DAYS Fished	Enter the days fished	1 = all fishing within one day

	for this trip	
BOAT ANGS	Enter the total # of anglers on the sampled trip	25 = 25 eligible anglers
Target 1 st = primary target 2 nd = secondary target	Record both the primary and secondary targets of that PC trip. If the angler states "any" as a target then record the targets of the boat. Targets will be recorded using the 5-digit alpha codes.	HALCA = targeting California halibut
AREA	Record the water area code where the majority of fishing effort (fishing time) occurred for each primary and secondary target.	N=(< 3 mi) O=(> 3 mi) B= enclosed bay R= river M=Mexico Island Codes: F=Farrallones 1=Coronados 2=San Clemente 3=Santa Catalina 4=Santa Barbara 5=San Nicolas 6=Anacapa 7=Santa Cruz 8=Santa Rosa 9=San Miguel
GEAR	Enter single letter code for the fishing gear used by the boat for the target. The gear should be determined and recorded for each primary and secondary target identified	H= Hook and Line S= Spear T= Troll M= Mooch (salmon only) B = Both M and T (salmon only) N = Bait Net
DD?	If the boat used a descending device of any kind to release discarded fish, record a Y; otherwise, record N. Descending devices can increase the survival rate of fish that are suffering from barotrauma, by	Y_ = descending device was used on this trip N = descending device was not used on this trip

	returning them to the proper depth. Examples of descending devices include inverted/weighted milk crates and specially designed quick-release hooks.	
	ANGLER	
Catch Recorded obs= observed reported= unobs & RELS	Indicate here when you have confirmed that the obs and unobs/RELS catch has been recorded on the Catch and Discard Form for this angler.	1=Yes, type of catch occurred and was recorded 0=No, type of catch did not occur DK=Don't know (didn't examine catch or didn't interview angler)
Angler #	Record a number in consecutive order (starting with 1) for every angler interviewed (except refusals).	REFUSALS/LANGUAGE BARRIERS: do NOT issue sample number. Record an "R" (refusal) or "B" (language barrier) in the Angler # box.
Bag #	Enter the bag # used by this angler, if one is issued	32 Blue = bag number of the angler
Anger REFERENCE	Use this space to record any notes that may help you identify the angler. This field will not be used by data entry, so the format is open.	'Bob' 'Father with son' 'Kid with cowboy hat'
DAYS fished (12 mo)	Ask how many saltwater fishing days he/she has fished within the last 12 months that occurred in/departed from California.	52 days = fishing 1 day/wk over the last 12 months

Zip Code	Record the angler's permanent residence zip code.	90210 = Beverly Hills 9=refused 8=don't know Foreign country = 3 letter country code e.g. Ireland = FIE
The footer contains the sum of the page totals for each category below:	FOOTER	
Yelloweye Kept/Rels	Sum of kept and released yelloweye rockfish on the page	
Cowcod Kept/Rels	Sum of kept and released cowcod rockfish on the page	

Specific Editing Checks

1. Make sure each angler who is interviewed is assigned an angler # and has their own separate row.
2. Make sure to fill out both the observed and unobserved/released boxes for each angler. If these boxes are not both filled out it is considered an incomplete interview and will be discarded.
3. Check the onboard catch form to make sure the catch recorded on the onboard angler form matches up.
4. Refusals and language barriers do not get an angler #. An "R" or "B" should be put in the angler # box.

Example of Onboard Angler Form

CRFS PC (CPFV) ONBOARD ANGLER FORM V15 01/17/13

Page 1 of 1

ASSN ID	Date (MM/DD/YY)	CNTY	SITE	OSP Port	Sampler #	Sampler Last Name					
11253	11/01/13	59	101	WAR	102	Smith					
DFG Boat #	Boat Name	Duration Type	PC Mode	Departure & Return Date (MM/DD/YY)		DAYS fished	BOAT ANGS	TARGET	AREA	GEAR	DD?
10532	Seeker	1/2	Party	Depart	11/1/2013	905	1	8	SBKLP	N	H
			Charter	Return	11/1/2013	1500					
Catch Recorded obs	ANGLER #	BAG #	Angler REFERENCE (angler name, description, etc.)	DAYS fished (12 mos)	Zip Code	Catch Recorded obs	ANGLER #	BAG #	Angler REFERENCE (angler name, description, etc.)	DAYS fished (12 mos)	Zip Code
1	1	7	Bob, black hat	10	90210						
1	2	4	Lisa, red jacket	0	91213						
1	3	3	Jeff, deck boots	5	15463						
1	4	8	Lucy, pony tail	2	90803						
1	5	1	Mike, cowboy hat	52	92130						
0	6	5	Jen, grey shirt	0	54863						
1	7	2	Ken, blue cap	20	34862						
1	8	6	Mary, pink scarf	8	90720						

Each interviewed angler is assigned an individual Angler #.

Observed and Unobserved/Released fields should always be filled in.

No catch at all for angler; otherwise, would have recorded on Catch and Discard form.

Duration Type: 1/2 day, 3/4-1 day, Twilight, Overnight, Other-describe

AREA (Water Area & Island): Water Area: Nearshore (<3mi), Offshore (>3mi), enclosed Bay/estuary/harbor, River, Mexico.

Island: 1-Coronado, 2-San Clemente, 3-Catalina, 4-Santa Barbara, 5-San Nicolas, 6-Anacapa, 7-Santa Cruz, 8-Santa Rosa, 9-San Miguel, F-Farallones

GEAR: Hook & line, Spear, Bait Net, Troll, Mooch, Both (mooch & troll).

Invert gear only: Pot #, Flat # or Rigid # hoop net, snare, sCuba, free Diving

DD? = Was a descending device used on this trip? Yes or No

Catch Recorded: 1 = Yes, type of catch (obs or unobs/RELS) occurred and was recorded, 0 = Type of catch did not occur,

DK = Don't know (didn't examine catch or didn't interview angler)

Angler #: Number or Refusal or Language Barrier. Angler # Flag: Crew

THE CPFV ONBOARD CATCH AND DISCARD FORM

The CPFV Onboard Catch and Discard form collects all of the biological data from the PC trip. Effort, length and weight of obtained catch and reported catch are all captured on this form. Discarded fish that are opportunistically measured will also be recorded here.

The CPFV Onboard Catch and Discard form has front and back sides to capture a number of species records. For trips that use additional sides and/or sheets the Sampler will utilize the Page ___ of ___ fields at the top of each form. Information from the top of each additional sheet will also be used to link the data with the primary sheet and other PC forms that contain data collected on that trip.

CPFV Onboard Catch and Discard form Layout

The form has four major areas for data on the boat trip: Boat assignment data, effort, discard fish data and catch/biological data.

Boat Assignment Data

There are 7 boat assignment data items, which are used both to link the data to the other PC forms and to provide some unique information about the CPFV trip. All of these items are required to be completed for the form to be acceptable.

CRFS PC (CPFV) ONBOARD CATCH AND DISCARD FORM V9 11/10/12					Page ____ of ____	
ASSN ID	Date (MM/DD/YY)	OSP Port	Sampler #	Sampler Last Name	DFG Boat #	Boat Name

EFFORT		
ANGLER #(s) from Angler Form	ANGS Total	BAG # (Sample #)

Effort Data

There are 3 effort data items, which are used in calculation of catch per unit effort (CPUE). The unit of effort used in this calculation is the angler bag, but the angler # field is also used as a point of reference.

Discard Fish Data

DISCARDS
Stop #

The primary purpose of this measurement data collection is to estimate the total metric tons of fish *discarded*. In the past, the mean weights of kept fish were used to calculate all weight estimates. However, the size of discarded fish may differ from retained catch, leading to a potential bias if only kept fish sizes are used to estimate discarded catch.

Location of discard onboard CPFV trips ('stop #' on the form) is collected because management methods include latitude, distance from shore and depth criteria. The CPFV stop number links the fish size to these criteria for management analysis. For example, bottom depth may be used to apply additional mortality to the rockfish released alive that are susceptible to barotrauma.

To capture this data, the goal for onboard CPFV discard measurement is to get a number of measurements that is at least equal to 20% of the counts of 'observed' returned catch, per stop, on the CPFV Form. Discard lengths from unobserved anglers count towards this goal as well, so consider all anglers equally when measuring discards. You will find it easier to get your discarded fish measurements by mentioning your intention to anglers during the pre-fishing interview.

Handling Live Fish

Do not allow live fish to remain aboard waiting to be measured, as this may give the impression that we are allowing fish to sustain trauma or die needlessly. We don't want to increase the chance of mortality of released fish by obtaining our discard measurements. Here are some tips that will minimize the stress on the fish:

1. Handle fish with a wet rag or a glove
2. Avoid sticking fingers in the gill chamber
3. Avoid touching the eyes
4. Make sure hands and measuring board are cool and wet
5. Return the fish to the water as soon as possible

Discard Data Coding Tips

1. Lengths are required for discard fish records, but weights should only be collected on fish that are already dead.
2. Unusually small or large size fish should not affect your decision to measure the discard. Keep it random.
3. 100% of discarded non-retention species should be measured.
4. Discarded fish can also be recorded as RELS by an angler, but never as KEPT. Double counting can only happen when the measurement is recorded twice.
5. Fish that are cut up for bait, filleted, taken home or given to others are NOT discarded fish.

6. Discarded fish are not connected to individual anglers. For each row, if the Discard field has a value, then the Effort fields should be blank, and vice versa.

Catch and Bio Data

This section will include the catch type, number and biological data for each species encountered. Multiple rows may be used to capture the numbers of different types of catch for the same species in a bag.

CATCH			BIO DATA				
SPECIES	KEPT	RELS	Fork length / Carapace size (mm), sex (M/F/T)				
	obs	alive	Weight (decimal kg) or tag # (circle tag #)				
	unobs	dead	1	2	3	4	5
	obs	alive					
	unobs	dead					

Total Items

At the bottom of each page, tally the number of yelloweye and cowcod encounters. Don't forget to notify your Lead on the same day of these encounters.

KEPT	RELS	KEPT	RELS
Yelloweye		Cowcod	

PC Onboard Catch and Discard form Item by Item Instructions

Field Name	Instructions	Coding Examples and Formats
	HEADING	
Page _ of _	Enter, in sequence, the page number of the form and the total number of pages with data.	Example: Page 2 of 7
ASSN ID	Enter the six digit assignment ID number on all pages	Assignment ID in the format MMDNNN where MM is the month ranging from 01-12, D is the geographic district from 1 to 6 and NNN is the sequence number from 001 to 999.
Date	Enter the numeric date as 2 digit month, 2 digit day, 2 digit year	01/01/12 = January 1, 2012
OSP port	Enter the 3 letter alpha code used by the Ocean Salmon Project for this port	FTB = Fort Bragg
Sampler #	Enter your 3 digit Sampler identification number	
Sampler Last Name	Write out your last name completely	
CDFW Boat #	This is the CDFW vessel ID number of the boat (permit number)	12345 = 'Fish Hoover'
Boat Name	Name of the boat	'Fish Hoover'
	EFFORT	
Angler #(s)	Enter the Angler # from the Onboard Angler Form of the angler(s) who are responsible for the catch	1 = Angler # 1 from the Angler Form 1,3 = Angler #s 1 and 3 from the Angler Form 2-5 = Angler #s 2, 3, 4 and 5 from the Angler Form

		BLANK = discard measurement; EFFORT column left blank
ANGS total	Enter the total number of anglers associated with this catch (licensed anglers+ unlicensed anglers). This number should correspond with the number of ANGLER #(s).	3= three total anglers associated with this catch BLANK = discard measurement; EFFORT column left blank
BAG #	Enter the bag #(s) used by the Angler who are associated with this catch	32 Blue = bag number of the angler 14 Red, 15 Red = bag numbers of the anglers BLANK = discard measurement; EFFORT column left blank
	DISCARDS	
Stop #	Enter the stop # from the Onboard Location Form where the fish was discarded. If measured discards were released alive and dead for the same species, record the fish released alive in one row and the fish released dead in another row.	5 = stop number '5' EFFORT column left blank Obs and unobs fields=0
	CATCH	
SPECIES	Enter the alpha code for each species or taxon of all fish examined or reported by the angler(s). Additional rows are used for anglers with multiple species catch. NOTE: If the angler is unavailable at this time to report type 2 catch, this data can be	No catch: enter zeros for numbers of fish and leave species blank Refused: This is a refusal, terminate interview

	collected later on the PC Onboard Angler Form	
<p>KEPT</p> <p>obs= observed/verifiable by the Sampler</p> <p>unobs= retained but not verifiable/available for the Sampler (example: fillets)</p>	<p>Kept Observed: Enter the number of fish examined for this angler(s). Sampler will identify and count each species retained by the angler(s). May include fillets with identifiable skin. Bags of unidentifiable fillets, fish not seen, or fish not counted by the Sampler get recorded as "kept unobserved" here.</p>	<p>Includes fished used for bait, thrown away, given away, and fillets that are not identifiable.</p> <p>0 = None N = KEPT catch recorded on different line</p> <p>Refused/don't know: interview is incomplete and should be terminated.</p>
<p>RELS</p> <p>Alive= fish appeared alive with no mortal injuries upon release</p> <p>Dead= fish was thrown back dead/dying</p>	<p>List the species discarded and measured at each stop. Enter the total number of fish reported as released alive or dead by the angler(s). Fish must have been landed or have been intentionally released. If measured discards were released alive and dead for the same species, record the fish released alive in one row and the fish released dead in another row. Probe for catch that may not be remembered, such as bait species.</p>	<p>Record species and number of fish ALIVE and/or DEAD.</p> <p>0 = None N = RELS catch recorded on different line</p> <p>Refused / don't know = the interview is incomplete and should be terminated.</p>
	BIO DATA	
<p>Fork Length/ Carapace Size (mm), Sex</p>	<p>List the fork length and/or weight for each fish measured. In the top row enter the fish's fork length or the carapace length for crab and lobster in mm.</p>	<p>321= FL in mm</p> <p>F= Female M=Male T= Transitional (Ca Sheephead)</p> <p>333F= female fish 333 mm FL</p>

	<p>Only measured fish should be recorded as discards on this form.</p> <p>Add an M, F, or T after the length for sexed species.</p>	
Weight/Head Tag #	<p>Below the length, enter the weight in Kg of the fish or invertebrate.</p> <p>Do not weigh headed or gutted fish.</p> <p>For salmon and other relevant species, enter the head tag number below the length. Circle the tag number. For salmon heads not recovered or lost, enter the head tag number and code NRS (non recoverable specimen). Salmon head tag numbers are 5 digits.</p>	<p>5. 35= weight in kg</p> <p>12345NRS= tagged head not recovered</p>
The footer contains the sum of the page totals for each category below:	FOOTER	
Yelloweye Kept/Rels	Sum of kept and released yelloweye rockfish on the page	
Cowcod Kept/Rels	Sum of kept and released cowcod rockfish on the page	

Specific Editing Checks

1. Make sure all boxes are filled out in the catch section (including zeros).
2. Stop # is used for discard measurements only. When obtaining discard measurements leave the effort section blank.
3. Make sure the yelloweye/cowcod boxes (bottom of the page) are filled out on each sheet.
4. Make sure all tag #s are circled.

Example of Onboard Catch & Discard Form

CRFS PC (CPFV) ONBOARD CATCH AND DISCARD FORM V10 01/16/13

Page 1 of 5

ASSN ID	Date (MM/DD/YY)	OSP Port	Sampler #	Sampler Last Name	DFG Boat #	Boat Name
11253	11/01/13	WAR	102	Smith	10532	Seeker

EFFORT			DISCARDS	CATCH			BIO DATA				
ANGLER #(s) from Angler Form	ANGS Total	BAG # (Sample #)		SPECIES	KEPT	RELS	Fork length / Carapace size (mm), sex (M/F/T)				
					obs	alive	Weight (decimal kg) or (tag #)				
			Stop #		unobs	dead	1	2	3	4	5
A.		BLANK	1	SBKLP	0	3		268	311	159	
B.			1	SBKLP	0	0		309	315		
C.	2	1		RFBRN	2	0		309	320		
D.	1, 3	2		SCRCA	3	2		302	322	330	
E.	4	1		SBKLP	2	N		359	314		
F.	5, 6	2		OCWHT	2	0		309	304		
G.				RFKLP	2	1		310	315		
H.				SBKLP	3	1		310	315	313	
I.	4	1		SBKLP	N	4					
J.	7	1		SCRCA	3	1		309	322	315	
K.											
L.											
M.											

ANGLER #(s) List the Angler # or #s from the Angler Form for all anglers contributing to the bag.

ANGS Total = Number of anglers associated with this bag.

Bag (=Sample): Record the bag number.

Boat Fish: Leave ANGLER # and ANGTS Total blank; write *Boat Fish* for BAG #.

DISCARDS: Record the Stop # for measured discards; leave EFFORT columns blank; complete CATCH & BIO DATA columns.

KEPT & RELS: Either (1) Record sampler-observed (obs) and angler-reported (unobs, alive, dead) catch for the bag and species in the same row, or (2) If sampler-observed and angler-reported catch are recorded separately (i.e., on different rows), then write an **N** in the unobs, alive and dead boxes of the rows where the observed catch is reported, and write an **N** in the obs boxes of the rows where the angler-reported catch is reported.

0	0	0	0
KEPT	RELS	KEPT	RELS
Yelloweye	Cowcod		

How to code "Boat Fish" on the PC Onboard Catch & Discard Form:

- ANGS Total is equal to the number of eligible anglers (i.e., the BOAT ANGS). This will include the crew and captain if they are keeping fish.
- The bag # will be the "Boat Fish"
- List the species and the number as kept-observed. The computer program will distribute the fish appropriately.
- If the Sampler has time, the fish should be measured and recorded in the BIO DATA section of the form. If the Sampler doesn't have time to measure the fish, then the species and number should be recorded.

EFFORT			DISCARDS	CATCH			BIO DATA						
ANGLER #(s) from Angler Form	ANGS Total	BAG # (Sample #)		Stop #	SPECIES	KEPT		RELS	Fork length / Carapace size (mm), sex (M/F/T)				
						obs	alive		Weight (decimal kg) or tag # (circle tag #)				
									unobs	dead	1	2	3
	42	Boat Fish		RFSQS	obs	4	0		215	231	240	215	
					unobs	0	0						
				RFGRN	obs	2	0		259	207			
					unobs	0	0						
				RFSTA	obs	3	0						
					unobs	0	0						

How to code crab using the PC Onboard Catch & Discard Form:

- The Sampler records the crab as "boat fish". Released crab, kept-observed crab (Sampler counted the crab) and kept-reported crab (captain or crew told the Sampler the number of crab) are reported as boat fish.
- The total number of anglers (ANGS Total) for the "boat fish crab" would be either the total number of anglers receiving crab or the total number of eligible anglers on the boat. If the Sampler knows the number of anglers who will be receiving crab, then the total anglers (ANGS Total) for the crab is the number of anglers receiving crab. If the angler does not know the exact number of anglers who will receive the crab or if all eligible anglers on the boat will receive crab, then the total anglers (ANGS Total) is the number of eligible anglers on the boat.
- Measured, weighed or sexed crab will be reported in the BIO DATA section of the form.

Sampler counted the kept crab											
EFFORT			DISCARDS	CATCH			BIO DATA				
ANGLER #(s) from Angler Form	ANGS Total	BAG # (Sample #)		SPECIES	KEPT	RELS	Fork length / Carapace size (mm), sex (M/F/T)				
			Stop #		obs	alive	Weight (decimal kg) or tag # (circle tag #)				
					unobs	dead	1	2	3	4	5
	25	Boat Fish		obs	alive						
				54	13	176	159	173	169	172	
				0	0						

Crew told the sampler how many crab were kept											
EFFORT			DISCARDS	CATCH			BIO DATA				
ANGLER #(s) from Angler Form	ANGS Total	BAG # (Sample #)		SPECIES	KEPT	RELS	Fork length / Carapace size (mm), sex (M/F/T)				
			Stop #		obs	alive	Weight (decimal kg) or tag # (circle tag #)				
					unobs	dead	1	2	3	4	5
	25	Boat Fish		obs	alive						
				0	13						
				unobs	dead						
				54	0						

CPFV SALMON DOCKSIDE SAMPLING

The CPFV salmon dockside form (PCS) collects catch and effort data that will be used to create in-season and post-season estimates of the recreational salmon harvest. This is done by examining at least 20% of the CPFV salmon trips in each port area during each bimonthly sampling period and collecting the heads from all adipose fin-clipped fish. There are two sampling periods each month: 1st to the 15th and the 16th to the end of the month.

Sampling Unit

All data must be collected in the sample unit to be a valid sample:

- The sampling unit for the commercial passenger fishing vessels (CPFVs) is all catch and effort from a CPFV salmon trip.

Data Collection

In the CPFV fishery, information collected beyond the header information includes: number of anglers, number of salmon landed by species, fishing method, number of salmon released by species, number of salmon taken by pinnipeds, length of adipose fin-clipped fish in mm, and assigned OSP headtag number for adipose fin-clipped fish. Also, CPFV names, CPFV numbers and sample time are collected in the course of sampling.

The most important items to collect are the catch and effort numbers, and the heads of all adipose fin-clipped salmon. You must count and visually inspect every salmon landed by the CPFV for an adipose fin clip for the sample to count. It is important that you also report to your Lead any harbor closures, launch ramp closures, road closures or other incidents that prevent you from sampling or restrict or prevent fishing effort.

Sampling Guidelines and Procedures

In the CPFV fishery, each salmon CPFV trip constitutes a sample. Each port will have a CRFS Sampler in charge of making sure the sampling goals are met. The port lead Sampler must ensure that a minimum of 20 percent of all salmon CPFV trips made in their assigned port during each bimonthly sampling period are sampled. Sampling days are not usually assigned and Samplers will have to determine when they need to be at their assigned port to sample boats. Try to distribute your samples throughout the sampling period. Do not leave your samples until the end of the period; weather can be unpredictable and can prevent boats from going out causing you to miss the minimum 20% sample rate. Aiming for a 25-30% sampling rate protects against activity towards the end of the period. There is also the possibility that there may be unknown activity from the launch ramp or by a transient CPFV in a berth. These both count toward the number of CPFV trips. Other CRFS/OSP Samplers may be sampling CPFVs at the port throughout the season. Coordinate with these other Samplers to obtain information about port activity, sampled boats, etc.

Plan to arrive at the port with adequate time to meet the first charter boats. You can estimate the time boats are going to return by looking at the previous day's report. It will not always be 100% accurate, but it is the best way to anticipate the landing time. Most boats tend to return around the same time every day. These times are influenced by catch and weather. As you work in the port you will get a feel for the typical routine of the boats.

As the charter boat pulls up to the dock, identify yourself as a Sampler for the CRFS and Department of Fish and Wildlife. Count the anglers and fish as they pass by you on the dock. Look at each person's catch for adipose fin-clipped salmon. You must visually inspect every salmon landed by the CPFV for an adipose fin clip for the sample to count. If found, ask those anglers to wait aside and explain that you need to measure the fish and remove the head. Work quickly to attach the headtag, record the length of each fish and remove the head. Using your headtags in order will speed up data recording, but do not make the assumption that you are using your headtags in order. Verify that the correct salmon length is recorded with the correct headtag number on your data sheet. Once you have processed all fish and talked to each passenger, ask the deckhand and captain if they have any fish; if they do, process those fish and count them as anglers. Then ask the captain or deckhand the questions required to fill out your daily data form.

Sample all the fish on one boat even if you have to miss another boat to do so. Try to sample as many boats as you can. When you are finished, make sure all heads are in your possession and noted on your data sheets. Check your data for any errors while at the dock.

When sampling a PC Salmon dockside:

1. Get to the landing site in time to sample the CPFVs. The specific time will vary depending on the weather and effort. Use your best judgment; the pattern of the CPFVs from the last few days should give you an idea of when to arrive.
2. Wear the proper, clean uniform. Clean gear after each boat if time allows.
3. When you approach the deckhand or captain identify that you work for CRFS and CDFW. Let them know you intend to sample the boat. After a short period, your presence will be routine to them. You must observe and count every salmon, checking for species, as well as counting the anglers.
4. Try not to miss any boats. If two salmon CPFVs come into port at the same time, be random about which boat you choose to sample. If you are working with another Sampler, divide and conquer!
5. Record all header information; Date, OSP Port, Sampler #, Sampler Last Name, Other Samplers, and the page #.
6. Determine how many salmon were caught and retrieve salmon heads. As each angler disembarks observe their fish. Count the fish, checking to see whether the fish are Chinook or coho and whether the salmon are missing their adipose fins. Record the number of Chinook and coho on the data sheet.

If any fish are missing the adipose fin, explain to the angler that their fish contains a Coded wire tag (CWT) and that you need to remove the head. Securely fasten a headtag through the lower jaw of the fish. Measure the fish, record the length in millimeters and headtag number on your salmon dockside form and then remove the head. Cut the head so the cut ends approximately two inches behind the eyes. Do not take the gills, collar or any flesh. Put the head in a plastic bag with the number on the tag facing out.

If the angler does not allow you to take the head, explain the importance of CWTs to salmon management. If they persist in refusing to relinquish the head, remind them that the law requires tagged salmon heads to be relinquished upon request by an authorized agent or employee of the Department. Show them FG Code 8226. If you still cannot retrieve the head, attempt to get a length and attach a headtag to the fish. Explain that the angler may return the head to the address listed on the headtag. Record this Non-recovered Species (NRS) on the data sheet. If attaching a headtag to a salmon is not possible, the head is still assigned a headtag. Place the headtag (with no head) in a plastic bag. Record this information on your data sheet and put "NRS" on the back of the corresponding headtag, and on the headtag report form. Be sure to correctly complete the NRS column on your data sheet. Lastly, inform your supervisor about the refusal and they will take the appropriate action. If a Wildlife Officer confiscates any adipose fin-clipped salmon make sure that you put a headtag on the head and note any information that will help us retrieve the head at a later date, such as the Officer's name and contact information.

7. Ask the anglers if they would like to receive information about their fish. Write the tag number (or series of tag numbers) on a courtesy card. Summarize the information about returning the card to OSP before giving the angler the card.
8. Ask the captain or deckhand how many Chinook salmon were caught and released ("shakers") and if they released any coho salmon. Record the appropriate information in the correct box. Verify that the number of fish the captain told you were landed equals the number of fish you counted coming off the boat. Unknown shakers are recorded in the "Released Kings" column. Ask the captain or deckhand how many people were actually fishing on the boat, including the boat crew.
9. Count the number of people on the boat. The deckhand or captain can clarify if all were fishing (including the deckhand and the captain). Record the number of anglers in the appropriate column.
10. Ask the captain or deckhand if they mooched or trolled. Usually larger boats mooch and smaller boats troll. Circle the appropriate letter, "M" = mooch, "T" = troll. If both methods were used, circle both "M" and "T".

11. Ask the captain or deckhand how many fish were lost to sea lions. Record the number of salmon actually taken by sea lions.
12. Be sure to record the vessel name and Fish and Wildlife number ("boat number") of the CPFV as well as time of return. The boat number should be displayed on the wheel house, if you cannot locate it, ask the captain or deckhand.
13. Add up the totals at the bottom of the page.
14. Go over your data sheets as time permits and at the end of your sampling day. The captain should have most of the information in a log book if a data field was missed.
15. Fill out your headtag report sheet with the date, port and sampling mode of the headtags collected. **Make sure that the headtags in your bag match the headtags written on the datasheets and the headtag report sheet.**
16. Inventory the heads before you put them in the freezer.

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CRFS-OSP SALMON CPFV DOCKSIDE FORM Item by Item Instructions

Field Name	Instructions	Coding Examples and Formats
HEADING		
Page _ of _	Enter, in sequence, the page number of the form and the total number of pages with data.	Page 1 of 2
Date	Enter the numeric date as 2 digit month, 2 digit day, 2 digit year	05/10/13 = May 10, 2013
OSP Port	Enter the 3 letter alpha code used by the Ocean Salmon Project for this port	SCR = Santa Cruz
Sampler ID	Enter your 3 digit Sampler identification number	3 digit numeric code = 207
Sampler Last Name	Write out your last name completely	"DaSilva"
Other Samplers, ID (w/data)	Write the last name of the Sampler(s) you worked with and their Sampler IDs, if known. Circle "Y" or "N" if other Sampler(s) have datasheets.	Example: Phillips 302 (N) = James Phillips, Sampler 302 also has datasheets for this PCS assignment. If you sampled alone, leave blank.
EFFORT		
Boat Name	Name of the boat	Becky Ann
Boat #	This is the CDFW vessel ID number of the boat (permit number)	32965 = 'Becky Ann' Never leave blank.
Time Sampled	Enter a time stamp for <u>every CPFV boat</u> that is intercepted at the dock. This includes boats that were nonfishing, or docked when you arrived.	Use 24 hour format: 1700 hours = 5:00 PM Never leave blank. Each returning boat should have a time stamp
Gear	Circle "T" if the boat trolled for salmon. Circle "M" if the boat mooched for salmon. Circle both "T" and "M" if the boat used both types of gear.	(T) = Troll (lines in the water and actively moving through the water) (M) = Mooch (lines in the water, no power) <blank> if non-

		applicable
Total Angs	Enter the total number of anglers on the boat regardless of license status (licensed anglers+ unlicensed anglers).	30 = there were thirty people fishing on this boat. <blank> if non-applicable
CATCH		
Kings Kept	Enter the sum of king salmon kept for each boat trip.	0 = No kings kept # = Number of kings kept <blank> if non-applicable
Kings Rels	Enter the sum of king salmon released for each boat trip.	0 = No kings released # = Number of kings released <blank> if non-applicable
Coho Kept	Enter the sum of coho salmon kept for each boat trip.	0 = No Coho kept # = Number of Coho kept <blank> if non-applicable
Coho Rels	Enter the sum of coho salmon released for each boat trip.	0 = No Coho released # = Number of Coho released <blank> if non-applicable
Sea Lion Take	Enter the number of salmon reported taken by pinnipeds for the trip. The angler, deckhand, or skipper must have seen the pinniped take the fish.	0 = No salmon lost # = Number of salmon lost <blank> if non-applicable
BIO DATA		
Headtag # 1, 2, 3...	Enter the headtag number assigned to ad-clipped fish #1, #2, #3... (for each boat). Use additional rows for multiple ad-clipped fish from each boat	Example: 50001 = the headtag number assigned
FL (mm)	Enter the fork length (in mm) of ad-clipped fish #1, #2, #3...corresponding to the headtag number.	Example: 695 = the fork length of the ad-clipped salmon corresponding to headtag 50001
NRS*	Check this box when you are unable to recover the	<input type="checkbox"/> = This head was recovered.

	head of an ad-clipped salmon. NRS heads should have a headtag number assigned to them. Try to attach the headtag to the NRS salmon but if you are unable to, put the headtag by itself in a baggie and process as usual.	<input checked="" type="checkbox"/> = This head was not recovered. Note: write "NRS" on the back of the assigned headtag if unable to attach to the NRS salmon. Write "NRS" next to this headtag number of your Headtag report.
FOOTER		
Comments	Use this section to write any important comments	Example: Doble and Becky Ann came in at the same time; so I randomly chose Becky Ann. Doble was missed.
Page Totals - # Boats	Report the number of salmon boats sampled	Example: 3 = three salmon boats were sampled
Page Totals - # Anglers	Report the number of salmon anglers sampled	Example: 35 = thirty-five salmon anglers were sampled
Page Totals - # Kings Kept	Report the number of king salmon kept	Example: 20 = twenty king salmon were kept
Page Totals - # Kings Rels	Report the number of king salmon released	Example: 9 = nine king salmon were released
Page Totals - # Coho Kept	Report the number of coho salmon kept	Example: 0 = no coho salmon were kept
Page Totals - # Coho Rels	Report the number of coho salmon released	Example: 4 = four coho salmon were released
Page Totals - SL Take	Report the number of salmon taken by pinnipeds	Example: 5 = five salmon were taken by pinnipeds
Page Totals - # ad-clips	Report the number of ad-clipped salmon sampled	Example: 7 = seven salmon were adipose fin clipped
Page Totals - # sal heads	Report the number of salmon heads recovered	Example: 6 = six salmon heads were recovered
Page Totals - # NRS	Report the number of salmon heads that were non-recovered specimens	Example: 1 = one head was not recovered and received an "NRS" status

Specific Editing Checks

1. Make sure each boat that is sampled has the boat name and number recorded on the form.
2. Try to use headtag numbers in order. If not possible, use the margin of the form or the comment section for any helpful notes.
3. Double check that the headtag number given to each fish matches the length measurement for that fish.
4. Do not assume you are pulling your headtags out in order; actually look at the number on the headtag as you attach it to a salmon head.
5. Be sure to check the "NRS" box if a salmon head is not recovered.
6. Always circle a gear: Mooch, Troll, or Mooch AND Troll.
7. Please report who worked with you and if they have data or not.

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Example of CRFS-OSP SALMON CPFV Dockside Form

CRFS-OSP SALMON CPFV DOCKSIDE FORM												Page <u>1</u> of <u>1</u>	
Date (MM/DD/YY)		OSP Port		Sampler ID		Sampler Last Name		Other Samplers, ID (w/data)					
<u>05/10/13</u>		<u>SCR</u>		<u>207</u>		<u>DaSilva</u>		Phillips (900) (Y <u>N</u>) (Y N)					
EFFORT			CATCH					BIO DATA					
Boat Name Boat # time sampled	Gear (circle)	Total Angs	King		Coho		Sea Lion Take # Salm	Salmon					
			# Kept	# Rels	# Kept	# Rels		Headtag #	FL(mm)	NRS*			
Boat Name: <u>Becky Ann</u> Boat #: <u>32965</u> time: <u>1350</u>	<u>T</u>	6	8	2	0	1	1	<u>50001</u>	<u>695</u>				
Boat Name:	<u>M</u>							<u>50002</u>	<u>589</u>				
Boat #:	<u>T</u>							<u>50003</u>	<u>714</u>				
time:	<u>M</u>							<u>50004</u>	<u>707</u>				
Boat Name: <u>Doble</u>	<u>T</u>		Boat was salmon fishing - missed										
Boat #: <u>908</u>	<u>M</u>												
time: <u>1351</u>													
Boat Name: <u>Velocity</u>	<u>T</u>	23	6	1	0	0	1	<u>50005</u>	<u>712</u>				
Boat #: <u>5364</u>	<u>M</u>							<u>50006</u>	<u>804</u>				
time: <u>1450</u>													
Boat Name:	<u>T</u>							<u>50007</u>	<u>759</u>	X			
Boat #:	<u>M</u>												
time:													
Boat Name: <u>MegaBite</u>	<u>T</u>		Boat was pulling out for dry dock										
Boat #: <u>31409</u>	<u>M</u>												
time: <u>1500</u>													
Boat Name: <u>Irish</u>	<u>T</u>		Boat went for RFGEN, sampled with PCN form										
Boat #: <u>5952</u>	<u>M</u>												
time: <u>1530</u>													
Boat Name: <u>Taylor Gene</u>	<u>T</u>		Boat went for RFGEN and crab, sampled with PCN form										
Boat #: <u>32368</u>	<u>M</u>												
time: <u>1540</u>													
Boat Name: <u>Connie T.</u>	<u>T</u>		Boat went for RFGEN, sampled with PCN form										
Boat #: <u>7192</u>	<u>M</u>												
time: <u>1600</u>													
Boat Name: <u>Sara Bella</u>	<u>T</u>	6	6	6	0	3	3						
Boat #: <u>5368</u>	<u>M</u>												
time: <u>1612</u>													
Boat Name:	<u>T</u>												
Boat #:	<u>M</u>												
time:													

Comments: Doble and Becky Ann came in at the same time; so I randomly chose Becky Ann. Doble was missed. Sara Bella's fish were not ad-clipped!

TOTAL SAMPLED CATCH & EFFORT FOR THE DAY:

King						Coho					
3	35	20	9	0	4	5	7	6	1		
# Boats	# Anglers	# Kept	# Rels	# Kept	# Rels	SL take	# ad-clips	# sal heads	# NRS		

* NRS (non-recovered species): check when unable to recover head from adipose-fin clipped salmon. Record headtag # on this sheet & write NRS in LARGE BOLD letters across the back of headtag if unable to attach to salmon.

1/4 1/14/13

CPFV NON-SALMON DOCKSIDE SAMPLING

The CRFS PC (CPFV) dockside form collects catch and effort data from non-salmon trips (PCN) that will be used to supplement data from onboard trips (PCO). The goal of this sampling is to supplement onboard data with data from boat trips the Sampler usually cannot ride. Some examples are trips that target California or Pacific halibut, albacore tuna, white seabass, Dungeness crab-sanddab combo trips, and trips conducted by six-pack vessels where there is no room for an onboard observer.

PCNs can be assigned on the monthly CRFS schedule, or they may be done opportunistically during other assignments, if you happen to see PC boats come in to port. Opportunistic PCNs are encouraged; however, do not miss interviews from your target mode in order to sample a PCN opportunistically. For opportunistic PCNs, leave the ASSN ID blank (on both the ASF and PCN forms).

Sampling Unit

All data must be collected in the sample unit to be a valid sample:

- The sampling unit for the commercial passenger fishing vessels (CPFVs) is all catch and effort from as many anglers as possible from a CPFV non-salmon trip.

Data Collection

In the PC non-salmon dockside assignment, information collected includes: boat name and number, trip type and duration, departure and return times, number of anglers, targets with area and gear, descending device usage, avidity and zip code from as many anglers as possible and the anglers' corresponding catch and fish bio data. It is important to note that there is no "minimum" sample, meaning the Sampler should try to interview as many boats and anglers as possible at the landing; however, one "sample" of one angler-bag from one PC boat will fulfill the assignment.

The most important items to collect are the catch and effort data. It is important that you also report to your Lead any harbor closures, launch ramp closures, road closures or other incidents that prevent you from sampling or restrict or prevent fishing effort.

Sampling Guidelines and Procedures

Plan to arrive at the port with adequate time to meet the first boat. You can estimate the time boats are going to return by looking at the previous day's report or calling the shop or booking agent. It will not always be 100% accurate, but it is the best way to anticipate the landing time. Most landings have set times that boats intend to return, depending on the duration type of the trip. Return times are also influenced by catch and weather. As you work in the port you will get a feel for the typical routine of the boats.

As the boat pulls up to the dock, identify yourself as a Department employee working on the CRFS project. Count the number of anglers on the boat and verify this number with the crew before you leave. Also, ask the crew and captain if they were fishing. Crew are also counted in the Boat Anglers field on the header of the data sheet. Try and intercept as many anglers (angler-bags) as possible as they leave the boat, and ask if you can get some information on what they caught and released. Some of the information on your datasheet will have to be provided by the captain or crew, such as numbers of released crab, if any. To save time and maximize the number of interviews, you can get the boat and trip information from the captain or landing agent after you have interviewed as many anglers as possible.

Try to sample as many boats as you can, and check your data for any errors while at the dock.

When sampling a PC Non-salmon dockside:

1. Record all data on the CRFS PC (CPFV) Dockside Form.
2. Complete an ASF for both scheduled and opportunistic PCNs.
3. Interview all anglers, if possible, even if they did not catch any fish.
4. For opportunistic PCNs during a PR1 assignment, list the CPFV as a NFPC6 boat on the PR1 form and conduct interviews with the CRFS PC (CPFV) Dockside Form. Write a comment on the ASF listing any dockside sampled PC boats.
5. If the PC boat is not listed on your PEC form or its information has changed, get the boat name, boat number (if present), a vessel contact name (landing office, captain or owner) and telephone number for the phone survey. If all the fish on the vessel are filleted, try to count fillets and, if possible, ID the species of fish based on attached skins.
6. For fish that are reported to you, or fillets that you did not count or ID, the fish should be recorded under "kept unobserved".
7. Make sure to ask if the boat used a descending device on their trip.
8. Do not measure 'trophy fish' landed whole when the angler had all the small fish of the same species filleted. Doing so can bias the average size of the landed catch. Code the trophy fish as "kept observed" omitting the length. Code the fillets separately as "kept unobserved" with the number reported by the angler (unless they can be identified and counted, then they would be "kept observed").
9. Gifts of fish are not to be accepted. Enforcement may find that you are either contributing to or helping the boat avoid an over-limit.

CRFS PC (CPFV) Dockside form Item by Item Instructions

Field	Instructions	Example
	HEADER	
OSP Form also completed	Check this box if there is a PC Salmon Dockside form that also has data from this boat.	This may happen if the boat did a combo Rockfish/Salmon trip and the salmon data was put on the OSP Salmon dockside form.
Page_of _	Enter, in sequence, the page number of the form and total number of pages with boats.	Example: Page 2 of 7
ASSN ID	Enter the six digit assignment ID number on all pages. (Refer to your schedule)	Enter assignment ID in the format MMDNNN where MM is the month ranging from 01-12, D is the geographic district from 1 to 6 and NNN is the sequence from 001 to 999.
Date (MM/DD/YY)	Enter the numeric date as 2 digit month/2 digit day/2 digit year	01/01/12 = January 1, 2012
CNTY	Enter the 3 digit numeric county code	037= Los Angeles
SITE	Enter the 3 digit numeric site code	014 = 22 nd Street Landing Sportfishing
OSP Port	Enter the 3 letter alpha code used by the Ocean Salmon Project for this port	FTB = Fort Bragg
Sampler #	Enter your 3 digit Sampler identification number	3 digit numeric code = 132
Sampler Last Name	Write out your last name	
	TRIP INFORMATION	Obtain trip information by interviewing the captain of the vessel
CDFW Boat #	Enter the Fish and Wildlife CPFV Permit number for the vessel. Refer to the list provided by your Lead, and verify by observing the number that is posted on the vessel.	CDFW Boat # =22776
Boat Name	Write out the name of the	Vessel Name = Monte

	vessel. Observe the name that is painted on the vessel and refer to the list provided by your Lead.	Carlo
Duration Type	Use the coding at the bottom of the sheet to categorize the length of trip or provide a description of the trip type	$\frac{1}{2}$ = half day $\frac{3}{4}$ = $\frac{3}{4}$ - full day T = twilight O = overnight Other = write in a description
PC Mode	Determine if the trip was open party or chartered to a private group. Circle the appropriate designation.	Party = open party trip Charter = boat was chartered to a private party
Depart and Return Time and Date	Record the time and date that the vessel departed and returned to the dock for this trip.	14:00 = 2 pm Date=MM/DD/YY Most trips will have the same depart and return date. Overnight trips are the exception
DAYS fished	Record the number of calendar days in which fishing effort occurred on the trip	1 day = fishing occurred from 3 am to 7 pm within 1 calendar day
BOAT ANGS	Record the number of anglers, including crew, who would qualify for a CRFS interview.	30 = thirty eligible anglers Include the crew in the total if they fished
TARGET	Record the primary and secondary target for the trip.	RFGEN = Rockfish
AREA	Record the water area code where the majority of fishing effort (fishing time) occurred	N = (< 3 mi) O = (> 3 mi) B = enclosed bay R = river M = Mexico Island codes: F = Farallones 1 = Coronados 2 = San Clemente 3 = Santa Catalina 4 = Santa Barbara 5 = San Nicolas 6 = Anacapa 7 = Santa Cruz 8 = Santa Rosa 9 = San Miguel
GEAR	Enter the single letter code	H = Hook and Line

	for the fishing gear used by the boat. Codes can be referenced at the bottom of the page.	
DD?	Determine if any descending device was <u>used</u> to release fish on this trip. Record the appropriate designation.	Y = Yes N = No
LOCATION	Determine the general location of where the majority of the fish were caught. If no catch, code the primary location of the boat effort. Samplers should use their maps and have the captain show where fishing took place. If GPS coordinates are given, then Sampler should later use maps to find out the Block-Box(s) and use those on the datasheet.	Block-Box method is preferred: 212-01 (block & one box) 235-12-14-15 (block & up to 3 boxes or two three digit boxes for inland marine waters bbb-bbb) 252 (block only)
DEPTH	Enter the bottom depth in feet for the catch location. A single mean depth or depth range may be entered.	100 (feet) or <u>100 = min</u> 120 = max
	EFFORT	Interview anglers to obtain this data
Sample #	Record a Sampler number for this individual angler or group interview record. If the angler refuses to be interviewed or refused key data (catch and effort information) then an "R" should be recorded in the box with no sample number. A language barrier that prevents an interview should be recorded as a "B" with no sample number.	1 = first interview R = refusal B = language barrier
ANGS	Record the number of individuals who fished for	2 = 2 anglers fished for this sample #

	this interview record.	
DAYS	Randomly select one angler for this interview record (sample). For this angler, record the number of days this individual has been saltwater sportfishing in California (or on trips departing from California) within the last 12 months not including today's trip.	12 = angler fished 12 days within the last 12 months Refused = R Don't know = DK Sampler too busy = TB Sampler didn't ask = DA
Zip Code	Determine the residential zip code for the randomly selected angler for this interview record.	90720 = angler resides in Los Alamitos, CA Refused = R Don't know = DK Sampler too busy = TB Sampler didn't ask = DA Foreign country = 3 letter country code e.g. Ireland = FIE
	CATCH	Interview anglers to obtain this data
SPECIES	Use the 5 letter alpha code to record the catch species	HALCA = California Halibut
KEPT obs/unobs	Enter the number of fish landed and retained for this interview record. Examined catch is tallied under "obs" (observed), while unavailable catch such as fish used for bait is tallied under "unobs (unobserved)".	Includes whole fish examined by the Sampler, fish used for bait, thrown away, given away, and fillets. No catch = zero Refused/don't know: interview is incomplete and should be terminated.
RELS alive/dead	Enter the total number of fish reported as released alive or dead by the angler(s) for this interview. Fish must have been landed or have been intentionally released. Probe for catch that may not be remembered, such as bait species.	Record by species the number of fish released alive and/or dead. No catch = zero Refused/don't know = the interview is incomplete and should be terminated.
	BIO DATA	
Fork	In the top row enter the	321 = FL in mm

length/carapace size (mm), Sex (M/F/T)	fish's fork length or the carapace length for crab/lobster in mm. Add an M, F, or T after the length for sexed species.	F=Female M=Male T= Transitional (Ca sheephead) 333F=female fish 333 mm FL
Weight (decimal kg) or tag#	Below the length, enter the weight in kg of the fish or invertebrate. Do not weigh headed or gutted fish. For salmon and other relevant species, enter the head tag number below the length, For salmon heads not recovered or lost, enter the head tag number and code NRS (Non-Recovered Species). Salmon head tag numbers are 5 digits.	5.35 = weight in kg 12345NRS=tagged head not recovered
ROCKFISH FOOTER		
Yelloweye	Sum the number of kept and released yelloweye rockfish from the page	
Cowcod	Sum the number of kept and released cowcod from the page	

Specific Editing Checks

1. You are not done with an angler or group of anglers until you have asked about what was discarded. Data are unusable unless BOTH Catch and discard(s) are recorded
2. If there are more than five fish of one species measured, go to the second row and repeat the species code in the species box, but do not repeat catch totals. All catch and discard info for a species should go on the first line only.
3. If doing an opportunistic sample (6-pack PC trip at PR1 site, for example), leave the assignment ID blank on the PC Dockside form.
4. Fillets that you see but can't identify the number of fish nor species, are considered unobserved, even if you looked at them.
5. If there are salmon aboard a PC boat, please also fill out an OSP Salmon Dockside form with that info on it and check the "OSP Form Also Completed" box at the top of the CRFS PC Dockside form. It will count as

a sample for OSP; even if it was a combo trip (RF/Salmon trip, for example).

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Example of PC Non-Salmon Dockside Form

CRFS PC (CPFV) DOCKSIDE FORM**										V12 12/06/12		OSP Form also completed <input type="checkbox"/>		Page 1 of 1	
ASSN ID	Date (MMDDYY)	CITY	SITE	OSP Port	Sampler #	Sampler Last Name									
11415	1/10/2013	1	400	BER	232	Lucas									
DFG Boat #	Boat Name	Duration Type	PC Mode	Departure & Return Date (MMDDYY)		Time	DAYS fished	BOAT AIGS	TARGET	AREA	GEAR	DD?			
30401	Tigerfish	1/2	Party	1/10/2013	600	1515	1	20	lit HALCA	N	H	Y			
			Charter	1/10/2013					2nd SBWHT	N	T	(N)			
SPECIFIC LOCATION & DEPTH INFO:				LOCATION (block, box or Lat/Lon)				DEPTH BOTTOM (ft)							
Location and depth where most of the fish caught the effort if no catch.				Circle One				478-22-32-42 60							
								478-33-43-53 30							
EFFORT			CATCH			BIO DATA									
Sample #	AIGS	DAYS FISHED	SPECIES	KEPT	RELS	Fork length/Carapace size (mm), Sex (M/F/T)									
or R.R. Boat Fish	Total	12 months		obs	alive	Weight (decimal kg) or tag #									
		Zip Code		unobs	dead	1	2	3	4	5					
1	1	0	HALCA	1	2	Refused to Wait									
A		95085		0	0	Include crew in count, if they fished									
			SHBSM	0	0										
2	1	49	HALCA	2	1	696	598								
C		95126		0	0	6.0	5.4								
			DABPA	0	2	Always fill in zeroes... Do not leave catch boxes blank for zeroes									
3	3	74	RYBAT	0	1										
E		95628		0	0										
			HALCA	2	4	550	596	(1 already filleted)							
F				1	0	4.9	5.2								
			DABPA	6	10	201	199	215	204	169					
G				10	0										
			DABPA	0	0	177	When entering more than 5 fish of a species, enter the species name in the next row and leave the catch boxes blank								
H				0	0										
4	1	24	HALCA	1	1	704									
I		95125		0	0	6.1									
			FLRST	1	1	412									
J				0	0	1.9									

** This form is for non-salmon trips. Use CRFS-OSP SALMON CPFV DOCKSIDE SAMPLE FORM for salmon trips.

Duration Type: 1/2 day, 3/4-1 day, Twilight, Overnight, Other-describe

DD? = Was a descending device used on this trip?

AREA (Water Area & Island):

Water Area: Nearshore (<3mi), Offshore (>3mi), enclosed Bay/estuary/harbor, River, Mexico.

Island: 1-Coronado, 2-San Clemente, 3-Catalina, 4-Santa Barbara, 5-San Nicolas, 6-Anacapa, 7-Santa Cruz, 8-Santa Rosa, 9-San Miguel, F-Farallones

GEAR: Hook & line, Spear, Troll, Bait Net, Mooch, Both (mooch & troll), Invert gear only, Pot #, Flat # or Rigid # hoop net, snare, sCuba, free Diving

Sample # # of interview, OR Refusal, Language Barrier, or Boat Fish. **Sample # Flag:** Crew

* Complete these fields on every page.

How to code crab using the Non-Salmon PC Dockside Form:

- The Sampler records the crab as “boat fish”. Released crab, kept-observed crab (Sampler counted the crab) and kept-reported crab (captain or crew told the Sampler the number of crab) are reported as boat fish.
- The total number of anglers (ANGS Total) for the “boat fish crab” would be either the total number of anglers receiving crab or the total number of eligible anglers on the boat. If the Sampler knows the number of anglers who will be receiving crab, then the total anglers (ANGS Total) for the crab is the number of anglers receiving crab. If the angler does not know the exact number of anglers who will receive the crab or if all eligible anglers on the boat will receive crab, then the total anglers (ANGS Total) is the number of eligible anglers on the boat.
- Measured, weighed or sexed crab will be reported in the BIO DATA section of the form.

Sampler counted the kept crab										
EFFORT			CATCH		BIO DATA					
Sample # or R, B, Boat Fish	ANGS Total	DAYS FISHED 12 months	SPECIES	KEPT	RELS	Fork length/Carapace size (mm), Sex (M/F/T)				
		obs		alive	Weight (decimal kg) or (tag #)					
		Zip Code		unobs	dead	1	2	3	4	5
BOAT FISH	25	12 mo	CRBDG	54	13	176 M	159 M	173 F	169 M	172 F
		Zip		0	0					
		12 mo		obs	alive	167 F	200 F	171 M	165 M	177 F
		Zip		unobs	dead					

Crew told the sampler how many crab were kept										
EFFORT			CATCH		BIO DATA					
Sample # or R, B, Boat Fish	ANGS Total	DAYS FISHED 12 months	SPECIES	KEPT	RELS	Fork length/Carapace size (mm), Sex (M/F/T)				
		obs		alive	Weight (decimal kg) or (tag #)					
		Zip Code		unobs	dead	1	2	3	4	5
BOAT FISH	25	12 mo	CRBDG	0	13	176 M	159 M	173 F	169 M	172 F
		Zip		54	0					
		12 mo		obs	alive	167 F	200 F	171 M	165 M	177 F
		Zip		unobs	dead					

PC EFFORT CHECKS

Need and Purpose

The PC effort checks (PECs) are needed to produce monthly estimates of PC catch and effort. The purpose of the PEC is to determine whether a PC boat fished on a particular day. These data will be used to validate logbook information submitted by each CPFV. PEC data are used along with the logs to estimate fishing effort for the PC mode in California. All PC owner/operators in California are required by law to submit to the Department an activity record, or log, for each fishing trip. However, compliance is less than 100 percent for the fleet overall and not all logs are submitted on time. CRFS uses the PEC to verify fishing trips and estimate the fraction of CPFV logs submitted by the time we make the monthly estimates. In addition, during salmon season the PEC data are used to track all salmon effort to make sure we are sampling at a minimum of 20%.

An estimate of effort is needed to estimate catch: $\text{Effort} \times \text{CPUE} = \text{Catch}$. The PECs are as important as the dockside and onboard PC sampling for CPUE; both are needed to estimate catch.

Methods

There are two methods for conducting PC effort checks, based on the ocean salmon fishery in California.

1) During salmon season in Districts 3-6 and when salmon is open and present in District 2: **activity for every PC boat should be recorded for every day.** During this time, a CRFS Sampler will be designated in each port to collect effort information for all PC vessels in the port (i.e. the port lead Sampler). The best way to get an accurate number of salmon trips is to contact the vessel owners directly, but the bait shops/landings that book the trips may also have this information. The lead port Sampler must keep track of all PC effort to maintain the required minimum salmon PC sampling rate of 20 percent per 15-day period by port. The lead port Sampler will conduct most of the salmon PC dockside assignments. The CRFS-OSP PC (CPFV) Effort Check Form should be filled out by the lead port Sampler every week. Get info on these vessels whenever you are at the docks. This is a good time to collect effort information from previous days when effort was not checked. It's advised that effort is checked at least three times a week to adequately capture all PC effort. If you wait longer than a few days, you may not be able to collect all of the effort information needed. The lead port Sampler should also look for transient boats that may use a slip for a short period or use the launch ramps in the port (e.g. trailered 6-packs). Samplers conducting PR1 samples should be able to collect effort information as they encounter these boats at the PR1s. If you are not the lead port Sampler, please report all sampled or otherwise known PC effort to the lead port Sampler as soon as possible.

2) For District 1 and when salmon season is closed in the all other Districts, PECs are scheduled based the minimum sample number needed per District. Use the PEC form for your District's Subregion (either Cen/Nor Cal PEC Form or So Cal PEC Form). Within each District a sufficient number of confirmed PC trips are needed to compare with the logs for each landing with an active PC. The table below shows the minimum number of PECs that must be scheduled for each landing in a District by month. If it has been confirmed that all PCs at a landing or in a District have stopped fishing, then no PECs are needed at that landing or in that District. However, the landing/District should still be monitored to confirm no trips are taking place.

*Minimum Number of PC Effort Checks at **Each Landing** by District and Month*

Month	District					
	1	2	3*	4*	5*	6*
1	5	5	5	5	5	5
2	6	6	6	6	6	6
3	3	3	3	3	3	3
4	3	3	3	3	3	3
5	2	2	2	2	2	2
6	2	2	2	2	2	2
7	2	2	2	2	2	2
8	2	2	2	2	2	2
9	2	2	2	2	2	2
10	2	2	2	2	2	2
11	3	3	3	3	3	3
12	5	5	5	5	5	5

*No additional PC effort checks are needed if daily PC effort checks are being conducted for salmon at a landing.

Type of Assignments

A PC effort check assignment must be scheduled as a part of each PC onboard or dockside assignment. The Sampler uses the *CRFS PC (CPFV) Effort Check Form* (Central/Northern California version or Southern California version) to gather information about the daily activities of all (or as many as possible) of the PC boats that use that landing.

Additional PC Assignments

The additional assignments that are needed to meet the minimum number of PC effort checks per landing (see table, above) may be scheduled by the Lead in the following ways:

- Specific PC Effort Check Assignments: Samplers are given an assignment to check on the activity at a number of PC landings. Checks can be conducted either by going to the landing or calling the landing. The Sampler uses the *CRFS-OSP PC (CPFV) Effort*

Check Form (Central/Northern California version or Southern California version).

- PC Effort Check Assignments as Part of a Non-PC Assignment:
Samplers are assigned to go to a specific PC landing in conjunction with an MMPR2, BB, PC or PR1 assignment. The Sampler uses the *CRFS PC (CPFV) Effort Check Form* (Central/Northern California version or Southern California version).

The Lead will show all PC effort check assignments (specific PEC assignments as well as those done in combination with a PC onboard/dockside, BB, MMPR2 or PR1 assignment) on the monthly schedule. PC effort assignments do not have an assignment ID. Do not report PC effort checks on the Assignment Summary Form (ASF) as a row. However, time spent doing PECs can be included in the "edit" hours on an ASF if the PEC is done in conjunction with a CRFS assignment. PECs should also be recoded on the Weekly Report.

CRFS-OSP PC (CPFV) Effort Check Form Item by Item Instructions

Field Name	Instructions	Coding Examples and Formats
Page _ of _	Fill in the consecutive number of pages used to document all the PC boats that use that landing.	Page 1 of 1
OSP Port	Fill in (or make sure you are using the correct pre-filled form) for the landing you are documenting	AVI = Avila
Sampler ID	Enter your 3 digit Sampler identification number	Example: 207 = DaSilva
Sampler Last Name	Write out your last name	"Smith"
CNTY	Fill in (or make sure you are using the correct pre-filled form) for the 3 digit numeric county code	079= San Luis Obispo County
SITE	Enter the 3 digit numeric site code	101 = Patriot's Landing
Site Name/CDFW Port	Enter (or make sure you are using the correct pre-filled form) for the port name and CDFW port number	Avila (602)
Week Starting Mon.	Enter the date (MM/DD/YY) of the Monday starting the sample week	10/21/13 = October 21, 2013
ASSN ID	Enter the six digit assignment ID number if the PEC is in conjunction with a BB/MMPR2/PR1/PC assignment. Leave blank otherwise	Assignment ID in the format MMDNNN where MM is the month ranging from 01-12, D is the CRFS district from 1 to 6 and NNN is the sequence number from 001 to 999.
Fishable Day	Circle the "Y" or "N" letter that corresponds to ocean conditions being fishable for each day in the sample week. If the boats could not go out because of poor weather, circle "N". If the weather was NOT a	(<u>Y</u>) = Yes, a fishable day (<u>N</u>) = No, not a fishable day

	deterrent to fishing, circle "Y". Do not leave blank.	
Date	Enter the MM/DD of the date that corresponds to Monday, Tuesday, etc. for the sample week	10/21 = MON 10/22 = TUES, etc.
CPFV Boat Name	Name of the boat	'Patriot'
CDFW Boat #	This is the 5-digit Fish and Wildlife vessel ID number (permit number)	02214 = 'Patriot'
Field Name	Instructions	Coding Examples and Formats
Target or Status	Determine the target (fishing) or status (non-fishing) from the list of codes at the bottom of the form and record it for each boat. A maximum of two fishing targets can be recorded. If a boat targets salmon and rockfish for example, record "SR". If the boat was targeting salmon circle troll or mooch. If both types of gear were used circle both.	<p><u>Fishing Target:</u> A = Pacific Halibut S = Salmon R = Rockfish L = Lingcod Z = Striped Bass T = Tuna N = Sturgeon H = CA Halibut K = Shark P = Potluck (anything) B = Misc Bay D = Crab C = Misc Coastal O = Misc Offshore Y = Lobster Q = Squid U = Unknown target</p> <p><u>Non-Fishing Status:</u> 1 = boat docked (no activity) 2 = non-fishing trip 3 = non-CPFV fishing trip 4 = Dive trip 5 = Boat in dry dock 6 = Boat relocated 7 = Other (use comments) 8 = unknown activity (not at dock)</p> <p><u>Salmon Gear:</u> T = Troll M = Mooch</p>

Source	Record your source for the information you recorded	S = Observed and sampled P = Personal Observation C = Captain/deckhand O = Office contact W = Website
Init'l	Record the Sampler's initials who sampled the boat in the instance of a Source of "S" = sampled. If the boat was not sampled, leave blank.	Example: JD = Jayna DaSilva
Total salmon CPFVs sampled per day	Record the number of salmon trips sampled out of the total salmon trips by day. This will make it easier to tally the weekly totals at the bottom of the form.	Example: "1/2"
Notes:	Each landing or port has a list of PC boats that the Samplers should lookout for. Notes about those boats should go here. This info is already listed on the pre-filled form. Use additional space as needed to record relocations of CPFVs.	Example: "While you are checking CPFV activity, check for these boats: BBQ (7404), Liberty (11635), RG Spot 2 (5392). Look out for any "new" trailered 6-packs."
Comments	Provide any necessary comments	Example: "Patriot is in expected to be in dry dock for 1 month"
Total Salmon CPFVs	Report the total number of trips for salmon for the sample week	10 = ten trips where salmon were targeted or caught
Salmon CPFVs Sampled	Report the number of salmon trips sampled by CRFS and/or OSP for the sample week	5 = five trip were sampled
% Salmon CPFVs Samp	Report the percentage of salmon trips sampled for the sample week	50.0% = Fifty percent of the trips were sampled

Note: District 2-6, use additional rows on the PEC form as needed to document when boats do additional trips in the same day.

Specific Editing Checks

1. Make sure the ASSN ID is filled out if the PEC was done in conjunction with another CRFS Assignment. Leave blank otherwise.
2. Make sure to circle “Y” or “N” to denote if the weather/ocean conditions that day were conducive to fishing.
3. If a new boat has started using a particular landing, hand-write in the new boat’s name and number and the daily information. Just because the boat is not listed on the form does not mean that we shouldn’t be tracking it.
4. Make sure to fill in the boat numbers! We track the vessels activities by their boat numbers; so make sure that information is always filled in
5. Multiple days’ worth of information can go on one PEC form provided those days fall within the same sample week.

|

Examples of PEC Forms

PEC Form- Central/Northern California:

CRFS-OSP PC (CPFV) EFFORT CHECK - Cen/Nor Cal														Page	of	OSP Port:	FTB
Sampler ID	Sampler Last Name	CNTY	SITE	Site name (DFG port)	Week starting Mon.												
300	Roberts	45	400	Fort Bragg	(233)	8/6/2012											
ASSH ID																	
Fishable Day		Y (N)	Y (N)	Y (N)	Y (N)	Y (N)	Y (N)	Y (N)	Y (N)	Y (N)	Y (N)	Y (N)	Y (N)				
Date (MM/DD)		08/06	08/07	08/08	08/09	08/10	08/11	08/12									
		MON	TUES	WED	THUR	FRI	SAT	SUN									
CPFV Boat Name	DFG Boat #	Target /Status	So /Init'l	Target /Status	So /Init'l	Target /Status	So /Init'l	Target /Status	So /Init'l	Target /Status	So /Init'l	Target /Status	So /Init'l				
1 Telstar	38561	1 O T M	1 O T M	S P T M	1 O T M	S S T M	S S T M	2 O T M	2 O T M								
2 Sea Hawk	5978	1 O T M	1 O T M	1 P T M	S O T M	R P T M	2 O T M	S S T M	S S T M								
3 Profishnt	52525	1 O T M	1 O T M	S S T M	1 O T M	1 P T M	S O T M	1 P T M	1 P T M								
4 Fish On	34482	5 O T M	5 O T M	5 P T M	5 O T M	5 P T M	S O T M	S O T M	S O T M								
5 Trek II	37811	1 O T M	1 O T M	R P T M	R O T M	1 P T M	S O T M	S O T M	S O T M								
6 Bragg N	4942	1 O T M	1 O T M	1 P T M	1 O T M	1 P T M	1 O T M	1 O T M	1 O T M								
7 Beatem N Eatem II	29774	1 O T M	1 O T M	3 P T M	1 O T M	S S T M	1 O T M	2 O T M	2 O T M								
8		T M	T M	T M	T M	T M	T M	T M	T M								
9		T M	T M	T M	T M	T M	T M	T M	T M								
10		T M	T M	T M	T M	T M	T M	T M	T M								
Total salmon CPFVs sampled per day:		0/0	0/0	1/2	0/1	2/2	0/4	3/3									
Notes: Beatem N Eatem II is in Albion; Fish On may no longer be acting as a CPFV; Profishnt usually in Bodega/Princeton during crab season; Watch for Miami Rice 6720. Look out for any "new" trailered 6-packs.																	
Comments: Bad Weather on Mon-Tuesday. Fish On was in dry dock until 8/11. Watched for Miami Rice 6720 -did not see it.																	
						6 Total Salmon CPFVs		9 Salmon CPFVs sampled		67 % Salmon CPFVs samp							
Fishing Target				Non-Fishing Status				Effort Source (So)									
S = Salmon (circle Troll or Moch)		H = CA Halibut		1 = boat docked				S = Sampled by DFG staff (record sampler initials)									
R = Rockfish		K = Shark		2 = non-fishing trip				P = Personal observation									
L = Lingcod		P = Potluck		3 = non CPFV fishing trip				C = Captain / deckhand									
Z = Striped bass		B = Misc Bay		4 = Dive trip				O = Office contact									
T = Tuna		D = Crab		5 = Boat in Dry Dock				W = Website									
N = Sturgeon		A = PA Halibut		6 = Boat relocated													
U = Unknown target				7 = Other (explain in comments)													
				8 = unknown activity (not at dock)								Dec-12					

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CRFS-OSP PC (CPFV) EFFORT CHECK - So Cal													Page 1 of 1		OSP Port: SBA	
Sampler ID		Sampler Last Name		CNTY		SITE		Site name (DFG port)				Week starting Mon.				
111		Harman		83		400		Santa Barbara/ Sea Landing				(611) 8/20/2012				
		ASSH ID		82083				82085				82089				
Fishable Day		(Y) N (Y) N (Y) N (Y) N (Y) N (Y) N (Y) N														
Date (MM/DD)		8/20 8/21		8/22 8/23		8/24 8/25		8/26								
		MON TUES		WED THUR		FRI SAT		SUN								
CPFV Boat Name		DFG Boat #		Target /Status So Init'l		Target /Status So Init'l		Target /Status So Init'l		Target /Status So Init'l		Target /Status So Init'l				
1 Stardust		39022		1 P R O T M		R O T M		R P T M		R O T M		R O T M				
2 Apollo		28881		5 O 1 O T M		5 O 5 O T M		5 O 5 O T M		R O T M		R P T M				
3 Condor Express		2861		2 P 2 O T M		2 O 2 P T M		2 O 2 P T M		2 O 2 O T M		2 P T M				
4 Vision		39084		4 P 4 O T M		4 O 4 P T M		4 P 4 O T M		4 O 4 O T M		4 P T M				
5 Truth		23559		2 P 1 O T M		1 O 1 P T M		4 O 4 O T M		4 O 1 P T M						
6 Conception		36098		1 P 1 O T M		1 O 1 P T M		2 O 2 O T M		2 O 4 P T M						
7 Milagro		43413														
8																
9																
10																
Total salmon CPFVs sampled per day:		/ /		/ /		/ /		/ /		/ /		/ /				
Notes: Look out for any "new" trailered 6-packs;																
Apollo only seen on 8/26; said his boat has been in shop since 8/24 Milagro has not been seen this week- office has not returned calls										Total Salmon CPFVs		Salmon CPFVs sampled		% Salmon CPFVs samp		
Fishing Target				Non-Fishing Status				Effort Source (So)								
S = Salmon (circle Troll or Mooh)				H = CA Halibut				S = Sampled by DFG staff (record sampler initials)								
R = Rockfish				K = Shark				P = Personal observation								
L = Lingcod				P = Potluck				C = Captain / deckhand								
Z = Striped bass				B = Misc Bay				O = Office contact								
T = Tuna				D = Crab				W = Website								
N = Sturgeon																
U = Unknown target				7 = Other (explain in comments)												
				8 = unknown activity (not at dock)												

Dec-12

SPECIES CODES

Sorted by Species Code

SP CODE COMMON NAME

ABALO	abalone
ANCDB	anchovy, deepbody
ANCFM	anchovy family
ANCGN	anchovy genus
ANCNO	anchovy, northern
ARGNT	argentine, Pacific
BARPA	barracuda, Pacific
BFFFM	butterflyfish family
BIVAL	bivalves
BLKSJ	skipjack, black
BLKSM	blacksmith
BLNBY	blenny, bay
BLNRP	blenny, rockpool
BOGBY	goby, bay
BOGYL	goby, yellowfin
BONEF	bonefish
BONPA	bonito, Pacific
BOTOM	bottomfish (groundfish)
BOXSP	boxfish, spiny
BULBR	bullhead, brown
BUTFM	butterfish family
CARPC	carp, common
CASTG	smoohtongue, California
CATCN	catfish, channel
CBFLS	combfish, longspine
CBFSS	combfish, shortspine
CLNGN	clingfish, northern
CODFM	cod family
CODPA	cod, Pacific
CODTC	tomcod, Pacific
COROM	corvina, orangemouth
CORSF	corvina, shortfin
CRABS	crab tribe, true
CRBCA	corbina, California
CRBBR	crab, brown rock
CRBDG	crab, Dungeness
CRBGN	crab genus, cancer
CRBGR	crab, graceful rock
CRBRR	crab, red rock
CRBYR	crab, yellow rock
CRKBK	croaker, black
CRKSF	croaker, spotfin
CRKYF	croaker, yellowfin
CROWT	croaker, white

SCIENTIFIC NAME

Haliotis
Anchoa compressa
Engraulidae
Anchoa spp.
Engraulis mordax
Argentina sialis
Sphyrna argentea
Chaetodontidae
Bivalvia
Euthynnus lineatus
Chromis punctipinnis
Hypsoblennius gentilis
Hypsoblennius gilberti
Lepidogobius lepidus
Acanthogobius flavimanus
Albula vulpes
Sarda chiliensis
Ostracion diaphanum
Ictalurus nebulosus
Stromateidae
Cyprinus carpio
Leuroglossus stilbuis
Ictalurus punctatus
Zaniolepis latipinnis
Zaniolepis frenata
Gobiesox maeandricus
Gadidae
Gadus macrocephalus
Microgadus proximus
Cynoscion xanthulus
Cynoscion parvipinnis
Brachyuratribe
Menticirrhus undulatus
Cancer antennarius
Metacarcinus magister
Cancer
Cancer gracilis
Cancer productus
Cancer anthonyi
Cheilotrema saturnum
Roncador stearnsi
Umbrina roncador
Genyonemus lineatus

CRUST	crustaceans	Crustacea
CSHFM	shark family, cow	Hexanchidae
CSKFM	eel family, cusk	Ophidiidae
CTFPE	catalufa, popeye	Pristigenys serrula
CTSFM	shark family, cat	Scyliorhinidae
CUCUM	sea cucumbers	Holothuroidea
CUTLP	cutlassfish, Pacific	Trichiurus nitens
DABGN	sanddab genus	Citharichthys
DABLF	sanddab, longfin	Citharichthys xanthostigma
DABPA	sanddab, Pacific	Citharichthys sordidus
DABSP	sanddab, speckled	Citharichthys stigmaeus
DAMFM	damselfish family	Pomacentridae
DRADO	dolphinfish	Coryphaena hippurus
DRGFM	dragonfish family	Stomiidae
DRMFM	drum family	Sciaenidae
DSSFM	smelt family, deepsea	Bathylagidae
EELOR	eel order	Anguilliformes
ELPFM	eelpout family	Zoarcidae
ERYPA	ray, Pacific electric	Torpedo californica
FLLFN	flounder family, lefteye	Bothidae
FLNFM	blenny family, combtooth	Blenniidae
FLRAR	flounder, arrowtooth	Atheresthes stomias
FLRFM	flounder family, righteye	Pleuronectidae
FLRKM	flounder, Kamchatka	Atheresthes evermanni
FLRST	flounder, starry	Platichthys stellatus
FLTOR	flatfish order	Pleuronectiformes
FLYCA	flyingfish, California	Cypselurus californicus
FLYFM	flyingfish family	Exocoetidae
FRSFM	shark family, frill	Chlamydoselachidae
FTRIG	triggerfish, finescale	Balistes polylepis
GARIB	garibaldi	Hypsypops rubicundus
GNTFM	grunt family	Haemulidae
GNTSB	seabass, giant	Stereolepis gigas
GOBAR	goby, arrow	Clevelandia ios
GOBBE	goby, blackeye	Coryphopterus nicholsi
GOBFM	goby family	Gobiidae
GRNFM	greenling family	Hexagrammidae
GRNGN	greenling genus	Hexagrammos
GRNKP	greenling, kelp	Hexagrammos decagrammus
GRNMA	greenling, masked	Hexagrammos octogrammus
GRNPT	greenling, painted	Oxylebius pictus
GRNRK	greenling, rock	Hexagrammos lagocephalus
GRNWT	greenling, whitespotted	Hexagrammos stelleri
GRPBT	grouper, broomtail	Mycteroperca xenarcha
GRPGF	grouper, gulf	Mycteroperca jordani
GRUCA	grunion, California	Leuresthes tenuis
GUIBD	guitarfish, banded	Zapteryx exasperata
GUIFM	guitarfish family	Rhinobatidae
GUISN	guitarfish, shovelnose	Rhinobatos productus
GUNCR	gunnel, crescent	Pholis laeta
GUNFM	gunnel family	Pholidae

GUNPP	gunnel, penpoint	Apodichthys flavidus
GUNSB	gunnel, saddleback	Pholis ornata
HAGBK	hagfish, black	Eptatretus deani
HAGFM	hagfish order	Myxinidae
HAGPA	hagfish, Pacific	Eptatretus stouti
HALCA	halibut, California	Paralichthys californicus
HALFM	halfmoon	Medialuna californiensis
HALGL	halibut, Greenland	Reinhardtius hippoglossoides
HALPA	halibut, Pacific	Hippoglossus stenolepis
HERFM	herring family	Clupeidae
HERPA	herring, Pacific	Clupea pallasii
HERRD	herring, round	Etrumeus teres
JACFM	jack family	Carangidae
JACMK	mackerel, jack	Trachurus symmetricus
KAWAK	kawakawa	Euthynnus affinis
KLFCF	killifish, California	Fundulus parvipinnis
KLPCR	kelpfish, crevice	Gibbonsia montereyensis
KLPFM	clinid family	Clinidae
KLPGT	kelpfish, giant	Heterostichus rostratus
KLPOF	fringehead, onepot	Neoclinus urinotatus
KLPRB	blenny, reef	Paraclinus integripinnis
KLPSF	fringehead, sarcastic	Neoclinus blanchardi
KLPSF	kelpfish, spotted	Gibbonsia elegans
KLPST	kelpfish, striped	Gibbonsia metzi
KOSAL	king-of-the-salmon	Trachipterus altivelis
LANLN	lancetfish, longnose	Alepisaurus ferox
LJMUD	mudsucker, longjaw	Gillichthys mirabilis
LMPAR	lamprey, Arctic	Lampetra japonica
LMPFM	lamprey family	Petromyzontidae
LMPPA	lamprey, Pacific	Entosphenus tridentatus
LNGCD	lingcod	Ophiodon elongatus
LOBSP	lobster, spiny	Panulirus interruptus
LUVAR	louvar	Luvarus imperialis
LZDCA	lizardfish, California	Synodus lunioceps
LZDFM	lizardfish family	Synodontidae
MACBL	mackerel, bullet	Auxis rochei
MACFM	mackerel family	Scombridae
MACFR	mackerel, frigate	Auxis thazard
MACPA	mackerel, chub (Pacific)	Scomber japonicus
MANTA	manta	Manta birostris
MARBK	marlin, black	Makaira indica
MARBL	marlin, blue	Makaira nigricans
MARFM	billfish family	Istiophoridae
MARST	marlin, striped	Tetrapturus audax
MIDGN	midshipman genus	Porichthys
MIDPF	midshipman, plainfin	Porichthys notatus
MIDSP	midshipman, specklefin	Porichthys myriaster
MOJFM	mojarra family	Gerreidae
MOLLU	mollusks	Mollusca
MORAY	moray, California	Gymnothorax mordax
MSCAD	scad, Mexican	Decapterus scombrinus

NEDCA	needlefish, California	Strongylura exilis
OCTOP	octopods	Octopoda
OCWHT	whitefish, ocean	Caulolatilus princeps
OPAHS	opah	Lampris guttatus
OPALE	opaleye	Girella nigricans
PERFM	perch family	Percidae
PERZB	perch, zebra	Hermosilla azurea
PHAKE	hake, Pacific	Merluccius productus
PILTF	pilotfish	Naucrates ductor
PIPEB	pipefish, bay	Syngnathus leptorhynchus
POLWE	pollock, walleye	Theragra chalcogramma
POMDO	dolphin, pompano	Coryphaena equisetis
POMFM	pomfret family	Bramidae
POMPA	pompano, Pacific (butterfish)	Peprilus simillimus
PRKBK	prickleback, black	Xiphister atropurpureus
PRKFM	prickleback family	Stichaeidae
PRKMK	prickleback, monkeyface	Cebidichthys violaceus
PRKRK	prickleback, rock	Xiphister mucosus
PRKSN	prickleback, snake	Lumpenus sagitta
PUFFM	puffer family	Tetraodontidae
QUEEN	queenfish	Seriphus politus
RAGFS	ragfish	Icosteus aenigmaticus
RAJOR	order, skate and ray	Rajiformes
RATFS	ratfish, spotted	Hydrolagus colliei
REMFM	remora family	Echeneidae
REMWS	whalesucker	Remora australis
RFAUR	rockfish, aurora	Sebastes aurora
RFBAY	rockfish, black and yellow	Sebastes chrysomelas
RFBKG	rockfish, blackgill	Sebastes melanostomus
RFBLK	rockfish, black	Sebastes melanops
RFBLU	rockfish, blue	Sebastes mystinus
RFBNK	rockfish, bank	Sebastes rufus
RFOBC	rockfish, (bocaccio)	Sebastes paucispinis
RFBRN	rockfish, brown	Sebastes auriculatus
RFBSP	rockfish, bronzespotted	Sebastes gilli
RFCAN	rockfish, canary	Sebastes pinniger
RFCHN	rockfish, China	Sebastes nebulosus
RFCLO	rockfish, calico	Sebastes dalli
RFCMA	rockfish, chameleon	Sebastes phillipsi
RFCOP	rockfish, copper	Sebastes caurinus
RFCOW	rockfish, (cowcod)	Sebastes levis
RFDBL	rockfish, darkblotched	Sebastes crameri
RFDUS	rockfish, dusky	Sebastes ciliatus
RFFLG	rockfish, flag	Sebastes rubrivinctus
RFFRK	rockfish, freckled	Sebastes lentiginosus
RFGBL	rockfish, greenblotched	Sebastes rosenblatti
RFGEN	rockfish genus	Sebastes
RFGOP	rockfish, gopher	Sebastes carnatus
RFGRN	rockfish, greenspotted	Sebastes chlorostictus
RFGRS	rockfish, grass	Sebastes rastrelliger
RFGST	rockfish, greenstriped	Sebastes elongatus

RFHBD	rockfish, halfbanded	Sebastes semicinctus
RFHNC	rockfish, honeycomb	Sebastes umbrosus
RFKLP	rockfish, kelp	Sebastes atrovirens
RFLST	thornyhead, longspine	Sebastolobus altivelis
RFMEX	rockfish, Mexican	Sebastes macdonaldi
RFOLV	rockfish, olive	Sebastes serranoides
RFPEP	rockfish, (chilipepper)	Sebastes goodei
RFPNK	rockfish, pink	Sebastes eos
RFPOP	perch, Pacific ocean	Sebastes alutus
RFPRS	rockfish, pinkrose	Sebastes simulator
RFPSD	rockfish, Puget Sound	Sebastes emphaeus
RFPYG	rockfish, pygmy	Sebastes wilsoni
RFQIL	rockfish, quillback	Sebastes maliger
RFRBD	rockfish, redbanded	Sebastes babcocki
RFRGH	rockfish, roughey	Sebastes aleutianus
RFROS	rockfish, rosy	Sebastes rosaceus
RFRST	rockfish, redstripe	Sebastes proriger
RFRTN	rockfish, rosethorn	Sebastes helvomaculatus
RFSCN	rockfish, sharpchin	Sebastes zacentrus
RFSDS	rockfish, swordspine	Sebastes ensifer
RFSHB	rockfish, shortbelly	Sebastes jordani
RFSLG	rockfish, silvergray	Sebastes brevispinis
RFSNS	rockfish, splitnose	Sebastes diploproa
RFSPK	rockfish, speckled	Sebastes ovalis
RFSQS	rockfish, squarespotted	Sebastes hopkinsi
RFSRK	rockfish, shortraker	Sebastes borealis
RFSSST	thornyhead, shortspine	Sebastolobus alascanus
RFSTA	rockfish, starry	Sebastes constellatus
RFSTR	rockfish, stripetail	Sebastes saxicola
RFTIG	rockfish, tiger	Sebastes nigrocinctus
RFTRE	rockfish, (treefish)	Sebastes serripes
RFVER	rockfish, vermilion	Sebastes miniatus
RFWID	rockfish, widow	Sebastes entomelas
RFWTB	rockfish, whitebelly	Sebastes vexillaris
RFYFY	rockfish, yelloweye	Sebastes ruberrimus
RFYMN	rockfish, yellowmouth	Sebastes reedi
RFYTL	rockfish, yellowtail	Sebastes flavidus
RNQBB	ronquil, bluebanded	Rathbunella hypoplecta
RNQFM	ronquil family	Bathymasteridae
RNQNO	ronquil, northern	Ronquilus jordani
ROCKH	rockhead	Bothragonus swani
RYBAT	ray, bat	Myliobatis californica
RYFLY	butterflyray, California	Gymnura marmorata
SABFM	sablefish family	Anoplopomatidae
SABLE	sablefish	Anoplopoma fimbria
SAILF	sailfish	Istiophorus platypterus
SALAC	trout, Arctic char	Salvelinus alpinus
SALAT	salmon, Atlantic	Salmo salar
SALCK	salmon, chinook	Oncorhynchus tshawytscha
SALCM	salmon, chum	Oncorhynchus keta
SALCO	salmon, coho	Oncorhynchus kisutch

SALCT	trout, cutthroat	Oncorhynchus clarki
SALDV	Varden, Dolly	Salvelinus malma
SALEM	salema	Xenistius californiensis
SALFM	salmon family	Salmonidae
SALGN	salmon genus	Oncorhynchus spp.
SALPK	salmon, pink	Oncorhynchus gorbuscha
SALRB	trout, rainbow	Oncorhynchus mykiss
SALSE	salmon, sockeye	Oncorhynchus nerka
SALTR	trouts, sea run	
SARGO	sargo	Anisotremus davidsoni
SARPA	sardine, Pacific	Sardinops sagax
SAUPA	saury, Pacific	Cololabis saira
SBBAR	sandbass, barred	Paralabrax nebulifer
SBFAM	bass family, sea	Serranidae
SBGEN	sandbass genus	Paralabrax
SBKLP	bass, kelp	Paralabrax clathratus
SBSPT	sandbass, spotted	Paralabrax maculatofascia
SBTHF	bass, threadfin	Pronotogrammus multifasciatus
SBWHT	seabass, white	Atractoscion nobilis
SCANT	sculpin, antlered	Enophrys diceraus
SCASH	sculpin, Arctic staghorn	Gymnocanthus tricuspis
SCBFM	chub family, sea	Kyphosidae
SCBIL	lord, brown Irish	Hemilepidotus spinosus
SCBKF	sculpin, blackfin	Malacocottus kincaidi
SCBLD	sculpin, bald	Clinocottus recalvus
SCBNH	sculpin, bonehead	Artedius notospilotus
SCBRZ	scabbardfish, razorback	Assurger anzac
SCBUF	sculpin, buffalo	Enophrys bison
SCBUL	sculpin, bull	Enophrys taurina
SCCAB	cabezon	Scorpaenichthys marmoratus
SCCRG	sculpin, coastrange	Cottus aleuticus
SCDSK	sculpin, dusky	Icelinus burchani
SCFAM	sculpin family	Cottidae
SCGRT	sculpin, great	Myoxocephalus polyacanthoceph
SCGRU	sculpin, grunt	Rhamphocottus richardsoni
SCILG	lord genus, Irish	Hemilepidotus
SCLST	sculpin, leister	Enophrys lucasi
SCNTH	sculpin, northern	Icelinus borealis
SCPAD	sculpin, padded	Artedius fenestralis
SCPRK	sculpin, prickly	Cottus asper
SCPSH	sculpin, Pacific staghorn	Leptocottus armatus
SCRCA	scorpionfish, California	Scorpaena guttata
SCRFM	scorpionfish family	Scorpaenidae
SCRIL	lord, red Irish	Hemilepidotus hemilepidotus
SCRRB	scorpionfish, rainbow	Scorpaenodes xyris
SCRSL	sculpin, rosylip	Ascelichthys rhodorus
SCSCL	sculpin, scaled	Archaulus biserialatus
SCSCT	sculpin, scissortail	Triglops forficata
SCSFN	sculpin, sailfin	Nautichthys oculofasciatus
SCSHN	sculpin, sharpnose	Clinocottus acuticeps
SCSLH	sculpin, scalyhead	Artedius harringtoni

SCSPT	sculpin, spotfin	Icelinus tenuis
SCTDP	sculpin, tidepool	Oligocottus maculosus
SCTRF	sculpin, threadfin	Icelinus filamentosus
SCWOL	sculpin, wolly	Clinocottus analis
SELFM	eel family, snake	Ophichthidae
SELYL	eel, yellow snake	Ophichthus zophochir
SENOT	senorita	Oxyjulis californica
SERLT	searobin, limptail	Prionotus stephanophrys
SGDIA	stingray, diamond	Dasyatis dipterura
SGFAM	stingray family	Dasyatidae
SGGEN	stingray genus	Dasyatis spp.
SGPEL	stingray, pelagic	Dasyatis violacea
SGRND	stingray, round	Urolophus halleri
SHADA	shad, American	Alosa sapidissima
SHANG	shark, Pacific angel	Squatina californica
SHBCS	shark, brown cat	Apristurus brunneus
SHBLU	shark, blue	Prionace glauca
SHBNH	shark, bonnethead	Sphyrna tiburo
SHBSM	smoothhound, brown	Mustelus henlei
SHBUL	shark, bull	Carcharhinus leucas
SHDFM	shark family, dogfish	Squalidae
SHDKY	shark, dusky	Carcharhinus obscurus
SHEEP	sheephead, California	Semicossyphus pulcher
SHFIN	shark, soupfin	Galeorhinus zyopterus
SHGSM	smoothhound, gray	Mustelus californicus
SHHRN	shark, horn	Heterodontus francisci
SHLEP	shark, leopard	Triakis semifasciata
SHMFM	shark family, mackerel	Lamnidae
SHNTH	shark, narrowtooth	Carcharhinus brachyurus
SHRFM	shark family, requiem	Carcharhinidae
SHSAL	shark, salmon	Lamna ditropis
SHSDG	shark, spiny dogfish	Squalus acanthias
SHSEV	shark, seven gill	Notorynchus maculatus
SHSGN	smoothhound genus	Mustelus
SHSIX	shark, six gill	Hexanchus griseus
SHSLP	shark, Pacific sleeper	Somniosus pacificus
SHSMK	shark, shortfin mako	Isurus oxyrinchus
SHSSM	smoothhound, sicklefin	Mustelus lunulatus
SHSWL	shark, swell	Cephaloscyllium ventriosum
SHTHR	shark, thresher	Alopias vulpinus
SHTIG	shark, tiger	Galeocerdo cuvieri
SHUNI	unidentified (sharks)	
SHWHT	shark, white	Carcharodon carcharias
SKALT	skate, Aleutian	Bathyraja aleutica
SKBFM	stickleback family	Gasterosteidae
SKBGN	skipback genus	Euthynnus
SKBIG	skate, big	Raja binoculata
SKBTS	stickleback, threespine	Gasterosteus aculeatus
SKFAM	skate family	Rajidae
SKLGN	skate, longnose	Raja rhina
SKSTY	skate, starry	Raja stellulata

SKTCA	skate, California	Raja inornata
SMCAP	capelin	Mallotus villosus
SMEUL	eulachon	Thaleichthys pacificus
SMFAM	smelt family	Osmeridae
SMJAK	smelt, (jacksmelt)	Atherinopsis californiensis
SMLGF	smelt, longfin	Spirinchus thlaeichthys
SMNGT	smelt, night	Spirinchus starksi
SMSUR	smelt, surf	Hypomesus pretiosus
SMTOP	smelt, (topsmelt)	Atherinops affinis
SMWTB	smelt, whitebait	Allosmerus elongatus
SNDFM	sandfish family	Trichodontidae
SNDPA	sandfish, Pacific	Trichodon trichodon
SNFFM	sunfish family	Centrarchidae
SOLAF	flounder, Arctic	Pleuronectes glacialis
SOLBF	flounder, Bering	Hippoglossoides robustus
SOLBG	sole, bigmouth	Hippoglossina stomata
SOLBT	sole, butter	Isopsetta isolepis
SOLCF	sole, curlfin	Pleuronichthys decurrens
SOLCO	sole, C-O	Pleuronichthys coenosus
SOLDS	sole, deepsea	Embassichthys bathybius
SOLDT	turbot, diamond	Pleuronichthys guttulatus
SOLDV	sole, Dover	Microstomus pacificus
SOLEG	sole, English	Parophrys vetulus
SOLFH	sole, flathead	Hippoglossoides elassodon
SOLFT	sole, fantail	Xystreurus liolepis
SOLHT	turbot, hornyhead	Pleuronichthys verticalis
SOLPA	lance, Pacific sand	Ammodytes hexapterus
SOLPL	plaice, Alaska	Pleuronectes quadrituberculatus
SOLPT	sole, petrale	Eopsetta jordani
SOLRK	sole, rock	Lepidopsetta bilineatus
SOLRX	sole, rex	Glyptocephalus zachirus
SOLSD	sole, sand	Psettichthys melanostictus
SOLSL	sole, slender	Lyopsetta exilis
SOLST	turbot, spotted	Pleuronichthys ritteri
SOLYF	sole, yellowfin	Limanda aspera
SPBAR	surfperch, barred	Amphistichus argenteus
SPBLK	perch, black	Embiotoca jacksoni
SPCAL	surfperch, calico	Amphistichus koelzi
SPDPA	spadefish, Pacific	Chaetodipterus zonatus
SPDWF	perch, dwarf	Micrometrus minimus
SPFAM	surfperch family	Embiotocidae
SPKLP	perch, kelp	Brachyistius frenatus
SPPIL	perch, pile	Rhacochilus vacca
SPPNK	seaperch, pink	Zalembius rosaceus
SPRBW	seaperch, rainbow	Hypsurus caryi
SPREF	perch, reef	Micrometrus aurora
SPRTL	surfperch, redtail	Amphistichus rhodoterus
SPRUB	seaperch, rubberlip	Rhacochilus toxotes
SPSHN	seaperch, sharpnose	Phanerodon atripes
SPSHR	perch, shiner	Cymatogaster aggregata
SPSIL	surfperch, silver	Hyperprosopon ellipticum

SPSPF	surfperch, spotfin	Hyperprosopon anale
SPSTR	seaperch, striped	Embiotoca lateralis
SPWAL	surfperch, walleye	Hyperprosopon argenteum
SPWHT	seaperch, white	Phanerodon furcatus
SQTSE	squaretail, smalleye	Tetragonurus cuvieri
SQUID	squid	Cephalopoda
SRAGU	sierra, gulf	Scomberomorus concolor
SRAPA	sierra, Pacific	Scomberomorus sierra
SRDFS	swordfish	Xiphias gladius
STBAS	bass, striped	Morone saxatilis
STGEN	sturgeon genus	Acipenser
STGRN	sturgeon, green	Acipenser medirostris
STMUL	mullet, striped	Mugil cephalus
STWHT	sturgeon, white	Acipenser transmontanus
SUNFM	mola family	Molidae
SUNOC	sunfish, ocean	Mola mola
SVRFM	silverside family	Atherinidae
TBESN	snout, tube	Aulorhynchus flavidus
THRBK	thornback	Platyrrhinoidis triseriata
TNAAB	tuna, (albacore)	Thunnus alalunga
TNABE	tuna, bigeye	Thunnus obesus
TNABF	tuna, bluefin	Thunnus thynnus
TNASG	tunas (non-mackerel)	
TNASJ	tuna, skipjack	Katsuwonus pelamis
TNASL	tuna, slender	Allothunnus fallai
TNAYF	tuna, yellowfin	Thunnus albacares
TNGCA	touguefish, California	Symphurus atricauda
UNIFH	unidentified fish	
UNISF	unidentified (surface fish)	
URCHN	sea urchins	Diadematidae
WAHOO	wahoo	Acanthocybium solandri
WEKFS	weakfishes	Cynoscion
WOLFE	wolf-eel	Anarrhichthys ocellatus
WRAFM	wrasse family	Labridae
WRARK	wrasse, rock	Halichoeres semicinctus
YELTL	yellowtail	Seriola lalandi
18	shark, frill	Chlamydoselachus arguineus
22	shark, whale	Rhincodon typus
23	shark, ragged tooth	Odontaspis ferox
26	shark, basking	Cetorhinus maximus
29	shark, bigeye thresher	Alopias superciliosus
33	shark, longnose cat	Apristurus kampae
35	shark, filetail cat	Parmatyris xaniurus
39	shark, Pacific sharpnose	Rhizoprionodon longurio
44	shark genus, gray	Carcharhinus
50	shark family, hammerhead	Sphyrnidae
52	shark, smooth hammerhead	Sphyrna zygaena
56	shark, prickly	Echinorhinus cookei
68	skate, sandpaper	Bathyrhaja interrupta
69	skate, black	Bathyrhaja trachura
70	skate, Alaska	Bathyrhaja parmifera

72	skate, flathead	<i>Bathyraja rosispinis</i>
74	skate, rougtail	<i>Raja trachura</i>
82	manta family	Mobulidae
84	mobula, spinetail	<i>Mobula japanica</i>
85	mobula, smoothtail	<i>Mobula thurstoni</i>
90	machete	<i>Elops affinis</i>
94	conger, Catalina	<i>Gnathophis catalinensis</i>
96	eel, Pacific worm	<i>Myrophis vafer</i>
97	eel, Pacific snake	<i>Ophichthus triserialis</i>
99	eel family, snipe	Nemichthyidae
100	eel, slender snake	<i>Nemichthys scolopaceus</i>
106	herring, middling thread	<i>Opisthonema medirastre</i>
107	herring, flatiron	<i>Harengula thrissina</i>
112	anchovy, slough	<i>Anchoa delicatissima</i>
113	anchoveta	<i>Cetengraulis mysticetus</i>
129	smelt, delta	<i>Hypomesus transpacificus</i>
131	smelt, rainbow	<i>Osmerus mordax</i>
139	spookfish family	Opisthoproctidae
140	barreleye	<i>Macropinna microstoma</i>
142	dragonfish, longfin	<i>Tactostoma macropus</i>
143	viperfish, Pacific	<i>Chauliodus macouni</i>
146	lancetfish family	Alepisauridae
148	daggertooth family	Anotopteridae
149	pearleye family	Scopelarchidae
150	pearleye, northern	<i>Benthalbella dentata</i>
151	lanternfish family	Myctophidae
152	lampfish, dogtooth	<i>Ceratoscopelus townsendi</i>
153	headlightfish, California	<i>Diaphus theta</i>
154	lampfish, pinpoint	<i>Lampanyctus regalis</i>
155	lampfish, patchwork	<i>Notoscopelus resplendens</i>
156	lampfish, northern	<i>Stenobrachius leucopsarus</i>
157	lanternfish, blue	<i>Tarletonbeania crenularis</i>
158	lampfish, diogenes	<i>Diogenys lanternatus</i>
159	flashlightfish	<i>Protomyctophum crockeri</i>
160	lampfish, Mexican	<i>Triphoturus mexicanus</i>
163	chihuil	<i>Bagre panamensis</i>
167	clingfish family	Gobiesocidae
169	clingfish, lined	<i>Gobiesox eugrammus</i>
170	clingfish, bearded	<i>Gobiesox papillifer</i>
171	clingfish, California	<i>Gobiesox rhessondon</i>
172	clingfish, kelp	<i>Rimicola muscarum</i>
173	clingfish, slender	<i>Rimicola eigenmanni</i>
174	frogfish, roughjaw	<i>Antennarius avalonis</i>
175	batfish, spotted	<i>Zalieutes elater</i>
176	seadevil, triplewart	<i>Cryptopsaras couesi</i>
183	brotnula, red	<i>Brosomphycis marginata</i>
184	eel, spotted cusk	<i>Chilara taylori</i>
185	eel, basketweave cusk	<i>Otophidium scrippsae</i>
187	eelpout, bigfin	<i>Lycodes cortezianus</i>
188	eelpout, Alaska	<i>Bothrocara pusillum</i>
189	eelpout, pallid	<i>Lycodapus mandibularis</i>

190	eelpout, shortfin	<i>Lycodes brevipes</i>
191	eelpout, black	<i>Lycodes diapterus</i>
192	eelpout, wattled	<i>Lycodes palearis</i>
193	eelpout, Canadian	<i>Lycodes polaris</i>
194	eelpout, polar	<i>Lycodes turneri</i>
195	shulupaoluk	<i>Lycodes jugoricus</i>
196	eelpout, pale	<i>Lycodes pallidus</i>
197	eelpout, blackbelly	<i>Lycodopsis pacifica</i>
198	eelpout, bearded	<i>Lyconema barbatum</i>
201	halfbeak, longfin	<i>Hemiramphus saltator</i>
202	halfbeak	<i>Hyporhamphus unifasciatus</i>
203	halfbeak	<i>Hyporhamphus rosae</i>
204	halfbeak, ribbon	<i>Euleptorhamphus viridis</i>
205	flyingshark, sharpchin	<i>Fodiator acutus</i>
206	flyingshark, blackwing	<i>Hirundichthys rondeleti</i>
214	dory, mirror	<i>Zenopsis nebulosa</i>
216	crestfish	<i>Lophotus lacepedei</i>
217	ribbonfish family	Trachipteridae
219	ribbonfish, tapertail	<i>Trachipterus fukuzaki</i>
220	ribbonfish, scalloped	<i>Zu cristatus</i>
221	oarfish	<i>Regalecus glesne</i>
224	stickleback, ninespine	<i>Pungitius pungitius</i>
226	snipefish, slender	<i>Macrorhamphosus gracilis</i>
227	pipefish family	Syngnathidae
229	pipefish, barred	<i>Syngnathus auliscus</i>
230	pipefish, kelp	<i>Syngnathus californiensis</i>
231	seahorse, Pacific	<i>Hippocampus ingens</i>
293	rockfish, dwarf red	<i>Sebastes rofinatus</i>
298	searobin family	Triglidae
300	searobin, splitnose	<i>Bellator xenisma</i>
311	mackerel, Atka	<i>Pleurogrammus monopterygius</i>
314	skiffish	<i>Erilepis zonifer</i>
315	greenling, painted	<i>Oxylebius pictus</i>
316	sculpin, twohorn	<i>Icelus bicornis</i>
317	sculpin, spatulate	<i>Icelus spatula</i>
320	hamecon	<i>Artediellus scaber</i>
323	sculpin, smoothhead	<i>Artedius lateralis</i>
324	sculpin, puget sound	<i>Ruscarius manyi</i>
326	sculpin, coralline	<i>Artedius corallinus</i>
327	sculpin, roughcheek	<i>Ruscarius creaseri</i>
329	sculpin, crested	<i>Blepsias bilobus</i>
330	sculpin, silver spotted	<i>Blepsias cirrhosus</i>
332	sculpin, calico	<i>Clinocottus embryum</i>
333	sculpin, mosshead	<i>Clinocottus glopiceps</i>
338	sculpin, spinyhead	<i>Dasycottus setiger</i>
343	sculpin, armorhead	<i>Gymnocanthus galeatus</i>
347	lord, yellow Irish	<i>Hemilepidotus jordani</i>
349	sculpin, bigmouth	<i>Hemitripterus bolini</i>
354	sculpin, frogmouth	<i>Icelinus oculatus</i>
355	sculpin, pit head	<i>Icelinus cavifrons</i>
356	sculpin, fringed	<i>Icelinus fimbriatus</i>

357	sculpin, yellowchin	<i>Icelinus quadriseriatus</i>
360	sculpin, belligerent	<i>Megalocottus platycephalus</i>
361	sculpin, brightbelly	<i>Microcottus sellaris</i>
362	sculpin, plain	<i>Myoxocephalus jaok</i>
363	sculpin, warthead	<i>Myoxocephalus niger</i>
365	sculpin, fourhorn	<i>Myoxocephalus quadricornis</i>
366	sculpin, Arctic	<i>Myoxocephalus scorpioides</i>
367	sculpin, shorthorn	<i>Myoxocephalus scorpius</i>
369	sculpin, eyeshode	<i>Nautichthys pribilovius</i>
371	sculpin, saddleback	<i>Oligocottus rimensis</i>
372	sculpin, fluffy	<i>Oligocottus snyderi</i>
373	sculpin, thornback	<i>Paricelinus hopliticus</i>
374	sculpin, spineless	<i>Phallocottus obtusus</i>
375	sculpin, slim	<i>Radulinus asprellus</i>
376	sculpin, darter	<i>Radulinus boleoides</i>
377	sculpin, smoothgum	<i>Radulinus vinculus</i>
380	sculpin, kelp	<i>Sigmistes caulias</i>
381	sculpin, smithi	<i>Sigmistes smithi</i>
382	sculpin, monacled	<i>Synchirus gilli</i>
384	sculpin, roughspine	<i>Triglops macellus</i>
385	sculpin, ribbed	<i>Triglops pingeli</i>
386	sculpin, spectacled	<i>Triglops scepticus</i>
387	sculpin, roughback	<i>Chitonotus pugettensis</i>
388	sculpin, spinynose	<i>Asemichthys taylori</i>
389	sculpin, longfin	<i>Jordani zonope</i>
390	sculpin, lavender	<i>Leiocottus hirundo</i>
391	sculpin, butterfly	<i>Hemilepidotus papilio</i>
392	sculpin, snubnose	<i>Orthoropias triacis</i>
393	sculpin, tadpole	<i>Psychrolutes paradoxus</i>
394	sculpin, blob	<i>Psychrolutes phrictus</i>
395	sculpin, soft	<i>Psychrolutes sigalutes</i>
396	poacher family	<i>Agonidae</i>
397	poacher, northern spearnose	<i>Agonopsis vulsa</i>
398	poacher, southern spearnose	<i>Agonopsis sterletus</i>
399	alligatorfish, smooth	<i>Anoplagonus inermis</i>
400	alligatorfish, Aleutian	<i>Aspidophoroides bartoni</i>
401	alligatorfish, Arctic	<i>Aspidophoroides olriki</i>
402	starsnout, gray	<i>BathYGONUS alascanus</i>
403	starsnout, spinycheck	<i>BathYGONUS infraspinatus</i>
404	poacher, bigeye	<i>BathYGONUS pentacanthus</i>
405	poacher, blackfin	<i>BathYGONUS nigripinnis</i>
407	poacher, fourhorn	<i>Hypsagonus quadricornis</i>
408	poacher, Bering	<i>Occella dodecaedron</i>
409	poacher, warty	<i>Occella verrucosa</i>
410	poacher, pygmy	<i>Odontopyxis trispinosa</i>
411	poacher, tubenose	<i>Pallasina barbata</i>
412	poacher, blacktip	<i>Xeneretmus latifrons</i>
413	poacher, bluespotted	<i>Xeneretmus triacanthus</i>
414	poacher, pricklebreast	<i>Stellerina xyosterna</i>
415	snailfish family	<i>Cyclopteridae</i>
416	lumpsucker, smooth	<i>Aptocyclus ventricosus</i>

417	snailfish, blacktail	Careproctus melanurus
418	snailfish, blotched	Crystallichthys cyclopilus
419	lumpsucker, leatherfin	Eumicrotremus derjugini
420	lumpsucker, Pacific spiny	Eumicrotremus orbis
421	snailfish, spotted	Liparis callyodon
422	snailfish, ribbon	Liparis cyclopus
423	snailfish, polkadot	Liparis cyclostigma
424	snailfish, marbled	Liparis dennyi
425	snailfish, tidepool	Liparis florum
426	snailfish, slipskin	Liparis fucensis
427	seasnail, gelatinous	Liparis fabricii
428	snailfish, spiny	Liparis mucosus
429	snailfish, showy	Liparis pulchellus
430	snailfish, ringtail	Liparis rutteri
431	snailfish, tadpole	Nectoliparis pelagicus
432	snailfish, prickly	Paraliparis deani
433	snailfish, Bering	Liparis beringianus
434	snailfish, lobefin	Liparis greeni
437	grouper genus (epinephelus)	Epinephelus
438	cabrilla, spotted	Epinephelus analogus
439	grouper, snowy	Epinephelus niveatus
442	bass, splittail	Hemanthias peruanus
448	seabass, pygmy	Serraniculus pumilio
451	bigeye family	Priacanthidae
453	cardinalfish, Guadalupe	Apogon guadalupensis
458	sucker, marlin	Remora osteochir
459	remora	Remora remora
460	remora, spearfish	Remora brachyptera
463	jack, green	Caranx caballus
464	bumper, Pacific	Chloroscombrus orqueta
465	leatherjacket	Oligoplites saurus
466	amberjack, Pacific	Seriola colburni
468	pompano, paloma	Trachinotus paitensis
469	pompano, gafftopsail	Trachinotus rhodopus
470	moonfish, Pacific	Selene peruviana
473	roosterfish	Nematistius pectoralis
474	dolphin family	Coryphaenidae
478	mojarra, spotfin	Eucinostomus argenteus
479	mojarra, Pacific flagfin	Eucinostomus gracilis
483	porgy, Pacific	Calamus brachysomus
495	goatfish, Mexican	Mulloidichthys dentatus
502	butterflyfish, threeband	Chaetodon humeralis
503	butterflyfish, scythe	Chaetodon falcifer
504	armorhead, pelagic	Pentaceros richardsoni
528	pomfret, Pacific	Brama japonica
529	pomfret, bigtooth	Brama orcini
530	pomfret, rough	Teractes asper
531	fanfish, Pacific	Pteraclis aesticola
532	pomfret, sickle	Taractichthys steindachneri
535	threadfin family	Polynemidae
536	bobo, blue	Polydactylus approximans

537	bobo, yellow	<i>Polydactylus opercularis</i>
543	sandfish, sailfin	<i>Arctoscopus japonicus</i>
548	searcher	<i>Bathymaster signatus</i>
550	stargazer, smooth	<i>Kathetostoma avertuncus</i>
554	blenny, mussel	<i>Hypsoblennius jenkinsi</i>
560	kelpfish, scarlet	<i>Gibbonsia erythra</i>
562	kelpfish, island	<i>Alloclinus holderi</i>
563	pikeblenny, orangethroat	<i>Chaenopsis alepidota</i>
564	blenny, deepwater	<i>Cryptotrema corallinum</i>
566	fringehead, yellowfin	<i>Neoclinus stephensae</i>
569	quillfish	<i>Ptilichthys goodei</i>
571	prickleback, pighead	<i>Acantholumpenus mackayi</i>
572	prickleback, lesser	<i>Alectridium aurantiacum</i>
573	prickleback, Y	<i>Allolumpenus hypochromus</i>
574	cockscorn, slender	<i>Anoplarchus insignis</i>
575	cockscorn, high	<i>Anoplarchus purpureus</i>
576	warbonnet, matchneck	<i>Chirolophis tarsodes</i>
577	warbonnet, mosshead	<i>Chirolophis nugator</i>
578	warbonnet, decorated	<i>Chirolophis decoratus</i>
579	prickleback, nutcracker	<i>Bryozoichthys lysimus</i>
580	prickleback, trident	<i>Gymnoclinus cristulatus</i>
581	prickleback, longsnout	<i>Lumpenella longirostris</i>
582	eelblenny, slender	<i>Lumpenus fabricii</i>
584	shanny, daubed	<i>Lumpenus maculatus</i>
585	eelblenny, stout	<i>Lumpenus medius</i>
586	prickleback, ribbon	<i>Phytichthys chirus</i>
587	prickleback, bluebarred	<i>Plectobanchus evides</i>
588	prickleback, whitebarred	<i>Poroclinus rothrocki</i>
589	shanny, Arctic	<i>Stichaeus punctatus</i>
592	wrymouth, giant	<i>Cryptacanthodes giganteus</i>
593	wrymouth, dwarf	<i>Cryptacanthodes aleutensis</i>
594	snakeblenny, fourline	<i>Eumesogrammus praecisus</i>
595	cockscorn, stone	<i>Alectrias alectrolophus</i>
599	gunnel, longfin	<i>Pholis clemensi</i>
600	gunnel, stippled	<i>Rhodymenichthys dolichogaster</i>
601	gunnel, Bering	<i>Pholis gilli</i>
604	gunnel, red	<i>Pholis schultzi</i>
605	gunnel, rockweed	<i>Apodichthys fucorum</i>
606	gunnel, kelp	<i>Ulvicola santaerosa</i>
607	graveldiver	<i>Scytalina cerdale</i>
608	prowfish	<i>Zaprora silenus</i>
616	goby, cheekspot	<i>Ilypnus gilberti</i>
617	goby, halfblind	<i>Lethops connetens</i>
618	goby, zebra	<i>Lythrypnus zebra</i>
619	goby, shadow	<i>Quietula ycauda</i>
620	goby, trident	<i>Tridentiger trigonocephalus</i>
621	goby, blind	<i>Typhlogobius californiensis</i>
622	goby, tidewater	<i>Eucyclogobius newberryi</i>
623	sleepers, Pacific fat	<i>Dormitator latifrons</i>
625	mackerel family, snake	<i>Trichiuridae</i>
626	mackerel, snake	<i>Gempylus serpens</i>

627	escolar	<i>Lepidocybium flavobrunneum</i>
628	oilfish	<i>Ruvettus pretiosus</i>
630	scabbardfish, Pacific	<i>Lepidopus fitchi</i>
654	spearfish, shortbill	<i>Tetrapturus angustirostris</i>
656	cigarfish, longfin	<i>Cubiceps paradoxus</i>
680	dab, longhead	<i>Pleuronectes proboscideus</i>
699	puffer, oceanic	<i>Lagocephalus lagocephalus</i>
700	puffer, bullseye	<i>Sphoeroides annulatus</i>
701	burrfish, Pacific	<i>Chilomycterus affinis</i>
702	porcupinefish	<i>Diodon hystrix</i>
705	mola, slender	<i>Ranzania laevis</i>
706	gerenadier, Pacific	<i>Coryphaenoides acrolepis</i>
707	rockfish, harlequin	<i>Sebastes variegatus</i>
708	rockfish, semaphore	<i>Sebastes melanosema</i>
709	flatnose, Pacific	<i>Antimora microlepis</i>
712	bass, hookthroat	<i>Hemanthias signifer</i>
715	gerenadier family	<i>Macrouridae</i>
716	sole, hybrids	<i>Isopsetta</i>
718	slickhead, California	<i>Alepocephalus tenebrosus</i>
719	gerenadier, giant	<i>Albatrossia pectoralis</i>

Sorted by Common Name

SP CODE	COMMON NAME	SCIENTIFIC NAME
ABALO	abalone	Haliotis
400	alligatorfish, Aleutian	Aspidophoroides bartoni
401	alligatorfish, Arctic	Aspidophoroides olriki
399	alligatorfish, smooth	Anoplagonus inermis
466	amberjack, Pacific	Seriola colburni
113	anchoveta	Cetengraulis mysticetus
ANCFM	anchovy family	Engraulidae
ANCGN	anchovy genus	Anchoa spp.
ANCDB	anchovy, deepbody	Anchoa compressa
ANCNO	anchovy, northern	Engraulis mordax
112	anchovy, slough	Anchoa delicatissima
ARGNT	argentine, Pacific	Argentina sialis
504	armorhead, pelagic	Pentaceros richardsoni
BARPA	barracuda, Pacific	Sphyræna argentea
140	barreleye	Macropinna microstoma
SBFAM	bass family, sea	Serranidae
712	bass, hookthroat	Hemanthias signifer
SBKLP	bass, kelp	Paralabrax clathratus
442	bass, splittail	Hemanthias peruanus
STBAS	bass, striped	Morone saxatilis
SBTHF	bass, threadfin	Pronotogrammus multifasciatus
175	batfish, spotted	Zalieutes elater
451	bigeye family	Priacanthidae
MARFM	billfish family	Istiophoridae
BIVAL	bivalves	Bivalvia
BLKSM	blacksmith	Chromis punctipinnis
FLNFM	blenny family, combtooth	Blenniidae
BLNBY	blenny, bay	Hypsoblennius gentilis
564	blenny, deepwater	Cryptotrema corallinum
554	blenny, mussel	Hypsoblennius jenkinsi
KLPRB	blenny, reef	Paraclinus integripinnis
BLNRP	blenny, rockpool	Hypsoblennius gilberti
536	bobo, blue	Polydactylus approximans
537	bobo, yellow	Polydactylus opercularis
BONEF	bonefish	Albula vulpes
BONPA	bonito, Pacific	Sarda chiliensis
BOTOM	bottomfish (groundfish)	
BOXSP	boxfish, spiny	Ostracion diaphanum
183	brotula, red	Brosmophycis marginata
BULBR	bullhead, brown	Ictalurus nebulosus
464	bumper, Pacific	Chloroscombrus orqueta
701	burrfish, Pacific	Chilomycterus affinis
BUTFM	butterfish family	Stromateidae
BFFFM	butterflyfish family	Chaetodontidae
503	butterflyfish, scythe	Chaetodon falcifer
502	butterflyfish, threeband	Chaetodon humeralis

RYFLY	butterflyray, California	Gymnura marmorata
SCCAB	cabezon	Scorpaenichthys marmoratus
438	cabrilla, spotted	Epinephelus analogus
SMCAP	capelin	Mallotus villosus
453	cardinalfish, Guadalupe	Apogon guadalupensis
CARPC	carp, common	Cyprinus carpio
CTFPE	catalufa, popeye	Pristiglenys serrula
CATCN	catfish, channel	Ictalurus punctatus
163	chihuail	Bagre panamensis
SCBFM	chub family, sea	Kyphosidae
656	cigarfish, longfin	Cubiceps paradoxus
167	clingfish family	Gobiesocidae
170	clingfish, bearded	Gobiesox papillifer
171	clingfish, California	Gobiesox rhessondon
172	clingfish, kelp	Rimicola muscarum
169	clingfish, lined	Gobiesox eugrammus
CLNGN	clingfish, nothern	Gobiesox maeandricus
173	clingfish, slender	Rimicola eigenmanni
KLPFM	clinid family	Clinidae
575	cockscorb, high	Anoplarchus purpureus
574	cockscorb, slender	Anoplarchus insignis
595	cockscorb, stone	Alectrias alectrolophus
CODFM	cod family	Gadidae
CODPA	cod, Pacific	Gadus macrocephalus
CBFLS	combfish, longspine	Zaniolepis latipinnis
CBFSS	combfish, shortspine	Zaniolepis frenata
94	conger, Catalina	Gnathophis catalinensis
CRBCA	corbina, California	Menticirrhus undulatus
COROM	corvina, orangemouth	Cynoscion xanthulus
CORSF	corvina, shortfin	Cynoscion parvipinnis
CRBGN	crab genus, cancer	Cancer
CRABS	crab tribe, true	Brachyuratribe
CRBBR	crab, brown rock	Cancer antennarius
CRBDG	crab, Dungeness	Metacarcinus magister
CRBGR	crab, graceful rock	Cancer gracilis
CRBRR	crab, red rock	Cancer productus
CRBYR	crab, yellow rock	Cancer anthonyi
216	crestfish	Lophotus lacepedei
CRKBK	croaker, black	Cheilotrema saturnum
CRKSF	croaker, spotfin	Roncador stearnsi
CROWT	croaker, white	Genyonemus lineatus
CRKYF	croaker, yellowfin	Umbrina roncador
CRUST	crustaceans	Crustacea
CUTLP	cutlassfish, Pacific	Trichiurus nitens
680	dab, longhead	Pleuronectes proboscideus
148	daggertooth family	Anotopteridae
DAMFM	damsel fish family	Pomacentridae
474	dolphin family	Coryphaenidae
POMDO	dolphin, pompano	Coryphaena equisetis
DRADO	dolphinfish	Coryphaena hippurus
214	dory, mirror	Zenopsis nebulosa

DRGFM	dragonfish family	Stomiidae
142	dragonfish, longfin	Tactostoma macropus
DRMFM	drum family	Sciaenidae
CSKFM	eel family, cusk	Ophidiidae
SELF	eel family, snake	Ophichthidae
99	eel family, snipe	Nemichthyidae
EELOR	eel order	Anguilliformes
185	eel, basketweave cusk	Otophidium scrippsae
97	eel, Pacific snake	Ophichthus triserialis
96	eel, Pacific worm	Myrophis vafer
100	eel, slender snake	Nemichthys scolopaceus
184	eel, spotted cusk	Chilara taylori
SELYL	eel, yellow snake	Ophichthus zophochir
582	eelblenny, slender	Lumpenus fabricii
585	eelblenny, stout	Lumpenus medius
ELPFM	eelpout family	Zoarcidae
188	eelpout, Alaska	Bothrocara pusillum
198	eelpout, bearded	Lyconema barbatum
187	eelpout, bigfin	Lycodes cortezianus
191	eelpout, black	Lycodes diapterus
197	eelpout, blackbelly	Lycodopsis pacifica
193	eelpout, Canadian	Lycodes polaris
196	eelpout, pale	Lycodes pallidus
189	eelpout, pallid	Lycodapus mandibularis
194	eelpout, polar	Lycodes turneri
190	eelpout, shortfin	Lycodes brevipes
192	eelpout, wattled	Lycodes palearis
627	escolar	Lepidocybium flavobrunneum
SMEUL	eulachon	Thaleichthys pacificus
531	fanfish, Pacific	Pteraclis aesticola
159	flashlightfish	Protomyctophum crockeri
FLTOR	flatfish order	Pleuronectiformes
709	flatnose, Pacific	Antimora microlepis
FLLFN	flounder family, lefteye	Bothidae
FLRFM	flounder family, righteye	Pleuronectidae
SOLAF	flounder, Arctic	Pleuronectes glacialis
FLRAR	flounder, arrowtooth	Atheresthes stomias
SOLBF	flounder, Bering	Hippoglossoides robustus
FLRKM	flounder, Kamchatka	Atheresthes evermanni
FLRST	flounder, starry	Platichthys stellatus
FLYFM	flyingfish family	Exocoetidae
206	flyingfish, blackwing	Hirundichthys rondeleti
FLYCA	flyingfish, California	Cypselurus californicus
205	flyingfish, sharpchin	Fodiator acutus
KLPOF	fringehead, onespots	Neoclinus urinotatus
KLPSF	fringehead, sarcastic	Neoclinus blanchardi
566	fringehead, yellowfin	Neoclinus stephensae
174	frogfish, roughjaw	Antennarius avalonis
GARIB	garibaldi	Hypsypops rubicundus
715	gerenadier family	Macrouridae
719	gerenadier, giant	Albatrossia pectoralis

706	gerenadier, Pacific	Coryphaenoides acrolepis
495	goatfish, Mexican	Mulloidichthys dentatus
GOBFM	goby family	Gobiidae
GOBAR	goby, arrow	Clevelandia ios
BOGBY	goby, bay	Lepidogobius lepidus
GOBBE	goby, blackeye	Coryphopterus nicholsi
621	goby, blind	Typhlogobius californiensis
616	goby, cheekspot	Ilypnus gilberti
617	goby, halfblind	Lethops connetens
619	goby, shadow	Quietula ycauda
622	goby, tidewater	Eucyclogobius newberryi
620	goby, trident	Tridentiger trigonocephalus
BOGYL	goby, yellowfin	Acanthogobius flavimanus
618	goby, zebra	Lythrypnus zebra
607	graveldiver	Scytalina cerdale
GRNFM	greenling family	Hexagrammidae
GRNGN	greenling genus	Hexagrammos
GRNKP	greenling, kelp	Hexagrammos decagrammus
GRNMA	greenling, masked	Hexagrammos octogrammus
GRNPT	greenling, painted	Oxylebius pictus
315	greenling, painted	Oxylebius pictus
GRNRK	greenling, rock	Hexagrammos lagocephalus
GRNWT	greenling, whitespotted	Hexagrammos stelleri
437	grouper genus (epinephelus)	Epinephelus
GRPBT	grouper, broomtail	Mycteroperca xenarcha
GRPGF	grouper, gulf	Mycteroperca jordani
439	grouper, snowy	Epinephelus niveatus
GRUCA	grunion, California	Leuresthes tenuis
GNTFM	grunt family	Haemulidae
GUIFM	guitarfish family	Rhinobatidae
GUIBD	guitarfish, banded	Zapteryx exasperata
GUISN	guitarfish, shovelnose	Rhinobatos productus
GUNFM	gunnel family	Pholidae
601	gunnel, Bering	Pholis gilli
GUNCR	gunnel, crescent	Pholis laeta
606	gunnel, kelp	Ulvicola santaerosa
599	gunnel, longfin	Pholis clemensi
GUNPP	gunnel, penpoint	Apodichthys flavidus
604	gunnel, red	Pholis schultzi
605	gunnel, rockweed	Apodichthys fucorum
GUNSB	gunnel, saddleback	Pholis ornata
600	gunnel, stippled	Rhodymenichthys dolichogaster
HAGFM	hagfish order	Myxinidae
HAGBK	hagfish, black	Eptatretus deani
HAGPA	hagfish, Pacific	Eptatretus stouti
PHAKE	hake, Pacific	Merluccius productus
202	halfbeak	Hyporhamphus unifasciatus
203	halfbeak	Hyporhamphus rosae
201	halfbeak, longfin	Hemiramphus saltator
204	halfbeak, ribbon	Euleptorhamphus viridis
HALFM	halfmoon	Medialuna californiensis

HALCA	halibut, California	Paralichthys californicus
HALGL	halibut, Greenland	Reinhardtius hippoglossoides
HALPA	halibut, Pacific	Hippoglossus stenolepis
320	hamecon	Artediellus scaber
153	headlightfish, California	Diaphus theta
HERFM	herring family	Clupeidae
107	herring, flatiron	Harengula thrissina
106	herring, middling thread	Opisthonema medirastre
HERPA	herring, Pacific	Clupea pallasii
HERRD	herring, round	Etrumeus teres
JACFM	jack family	Carangidae
463	jack, green	Caranx caballus
KAWAK	kawakawa	Euthynnus affinis
KLPCR	kelpfish, crevice	Gibbonsia montereyensis
KLPGT	kelpfish, giant	Heterostichus rostratus
562	kelpfish, island	Alloclinus holderi
560	kelpfish, scarlet	Gibbonsia erythra
KLPSP	kelpfish, spotted	Gibbonsia elegans
KLPST	kelpfish, striped	Gibbonsia metzi
KLFCA	killifish, California	Fundulus parvipinnis
KOSAL	king-of-the-salmon	Trachipterus altivelis
158	lampfish, diogenes	Diogenys lanternatus
152	lampfish, dogtooth	Ceratoscopelus townsendi
160	lampfish, Mexican	Triphoturus mexicanus
156	lampfish, northern	Stenobranchius leucopsarus
155	lampfish, patchwork	Notoscopelus resplendens
154	lampfish, pinpoint	Lampanyctus regalis
LMPFM	lamprey family	Petromyzontidae
LMPAR	lamprey, Arctic	Lampetra japonica
LMPPA	lamprey, Pacific	Entosphenus tridentatus
SOLPA	lance, Pacific sand	Ammodytes hexapterus
146	lancetfish family	Alepisauridae
LANLN	lancetfish, longnose	Alepisaurus ferox
151	lanternfish family	Myctophidae
157	lanternfish, blue	Tarletonbeania crenularis
465	leatherjacket	Oligoplites saurus
LNGCD	lingcod	Ophiodon elongatus
LZDFM	lizardfish family	Synodontidae
LZDCA	lizardfish, California	Synodus lunioceps
LOBSP	lobster, spiny	Panulirus interruptus
SCILG	lord genus, Irish	Hemilepidotus
SCBIL	lord, brown Irish	Hemilepidotus spinosus
SCRIL	lord, red Irish	Hemilepidotus hemilepidotus
347	lord, yellow Irish	Hemilepidotus jordani
LUVAR	louvar	Luvarus imperialis
419	lumpsucker, leatherfin	Eumicrotremus derjugini
420	lumpsucker, Pacific spiny	Eumicrotremus orbis
416	lumpsucker, smooth	Aptocyclus ventricosus
90	machete	Elops affinis
MACFM	mackerel family	Scombridae
625	mackerel family, snake	Trichiuridae

311	mackerel, Atka	Pleurogrammus monopterygius
MACBL	mackerel, bullet	Auxis rochei
MACPA	mackerel, chub (Pacific)	Scomber japonicus
MACFR	mackerel, frigate	Auxis thazard
JACMK	mackerel, jack	Trachurus symmetricus
626	mackerel, snake	Gempylus serpens
MANTA	manta	Manta birostris
82	manta family	Mobulidae
MARBK	marlin, black	Makaira indica
MARBL	marlin, blue	Makaira nigricans
MARST	marlin, striped	Tetrapturus audax
MIDGN	midshipman genus	Porichthys
MIDPF	midshipman, plainfin	Porichthys notatus
MIDSP	midshipman, specklefin	Porichthys myriaster
85	mobula, smoothtail	Mobula thurstoni
84	mobula, spinetail	Mobula japanica
MOJFM	mojarra family	Gerreidae
479	mojarra, Pacific flagfin	Eucinostomus gracilis
478	mojarra, spotfin	Eucinostomus argenteus
SUNFM	mola family	Molidae
705	mola, slender	Ranzanic laevis
MOLLU	mollusks	Mollusca
470	moonfish, Pacific	Selene peruviana
MORAY	moray, California	Gymnothorax mordax
LJMUD	mudsucker, longjaw	Gillichthus mirabilis
STMUL	mullet, striped	Mugil cephalus
NEDCA	needlefish, California	Strongylura exilis
221	oarfish	Regalecus glesne
OCTOP	octopods	Octopoda
628	oilfish	Ruvettus pretiosus
OPAHS	opah	Lampris guttatus
OPALE	opaleye	Girella nigricans
RAJOR	order, skate and ray	Rajiformes
149	pearleye family	Scopelarchidae
150	pearleye, northern	Benthalbella dentata
PERFM	perch family	Percidae
SPBLK	perch, black	Embiotoca jacksoni
SPDWF	perch, dwarf	Micrometrus minimus
SPKLP	perch, kelp	Brachyistius frenatus
RFPOP	perch, Pacific ocean	Sebastes alutus
SPFIL	perch, pile	Rhacochilus vacca
SPREF	perch, reef	Micrometrus aurora
SPSHR	perch, shiner	Cymatogaster aggregata
PERZB	perch, zebra	Hermosilla azurea
563	pikeblenny, orangethroat	Chaenopsis alepidota
PILTF	pilotfish	Naucrates ductor
227	pipefish family	Syngnathidae
229	pipefish, barred	Syngnathus auliscus
PIPEB	pipefish, bay	Syngnathus leptorhynchus
230	pipefish, kelp	Syngnathus californiensis
SOLPL	plaice, Alaska	Pleuronectes quadrituberculatus

396	poacher family	Agonidae
408	poacher, Bering	Occella dodecaedron
404	poacher, bigeye	BathYGONUS pentacanthus
405	poacher, blackfin	BathYGONUS nigripinnis
412	poacher, blacktip	Xeneretmus latifrons
413	poacher, bluespotted	Xeneretmus triacanthus
407	poacher, fourhorn	Hypsagonus quadricornis
397	poacher, northern spearnose	Agonopsis vulsa
414	poacher, pricklebreast	Stellerina xyosterna
410	poacher, pygmy	Odontopyxis trispinosa
398	poacher, southern spearnose	Agonopsis sterletus
411	poacher, tubenose	Pallasina barbata
409	poacher, warty	Occella verrucosa
POLWE	pollock, walleye	Theragra chalcogramma
POMFM	pomfret family	Bramidae
529	pomfret, bigtooth	Brama orcin
528	pomfret, Pacific	Brama japonica
530	pomfret, rough	Teractes asper
532	pomfret, sickle	Taractichthys steindachneri
469	pompano, gafftopsail	Trachinotus rhodopus
POMPA	pompano, Pacific (butterfish)	Pepilus simillimus
468	pompano, paloma	Trachinotus paitensis
702	porcupinefish	Diodon hystrix
483	porgy, Pacific	Calamus brachysomus
PRKFM	prickleback family	Stichaeidae
PRKBK	prickleback, black	Xiphister atropurpureus
587	prickleback, bluebarred	Plectobanchus evides
572	prickleback, lesser	Alectridium aurantiacum
581	prickleback, longsnout	Lumpenella longirostris
PRKMK	prickleback, monkeyface	Cebidichthys violaceus
579	prickleback, nutcracker	Bryozoichthys lysimus
571	prickleback, pighead	Acantholumpenus mackayi
586	prickleback, ribbon	Phytichthys chirus
PRKRK	prickleback, rock	Xiphister mucosus
PRKSN	prickleback, snake	Lumpenus sagitta
580	prickleback, trident	Gymnoclinus cristulatus
588	prickleback, whitebarred	Poroclinus rothrocki
573	prickleback, Y	Allolumpenus hypochrcmus
608	prowfish	Zaprora silenus
PUFFM	puffer family	Tetraodontidae
700	puffer, bullseye	Sphoeroides annulatus
699	puffer, oceanic	Lagocephalus lagocephalus
QUEEN	queenfish	Seriphus politus
569	quillfish	Ptilichthys goodei
RAGFS	ragfish	Icosteus aenigmaticus
RATFS	ratfish, spotted	Hydrolagus colliei
RYBAT	ray, bat	Myliobatis californica
ERYPA	ray, Pacific electric	Torpedo californica
459	remora	Remora remora
REMFM	remora family	Echeneidae
460	remora, spearfish	Remora brachyptera

217	ribbonfish family	Trachipteridae
220	ribbonfish, scalloped	Zu cristatus
219	ribbonfish, tapertail	Trachipterus fukuzaki
RFGEN	rockfish genus	Sebastes
RFBQC	rockfish, (bocaccio)	Sebastes paucispinis
RFPEP	rockfish, (chilipepper)	Sebastes goodei
RFCOW	rockfish, (cowcod)	Sebastes levis
RFTRE	rockfish, (treefish)	Sebastes serriceps
RFAUR	rockfish, aurora	Sebastes aurora
RFBNK	rockfish, bank	Sebastes rufus
RFBK	rockfish, black	Sebastes melanops
RFBAY	rockfish, black and yellow	Sebastes chrysomelas
RFBKG	rockfish, blackgill	Sebastes melanostomus
RFBLU	rockfish, blue	Sebastes mystinus
RFBSP	rockfish, bronzespotted	Sebastes gilli
RFBRN	rockfish, brown	Sebastes auriculatus
RFCLO	rockfish, calico	Sebastes dalli
RFCAN	rockfish, canary	Sebastes pinniger
RFCMA	rockfish, chameleon	Sebastes phillipsi
RFCHN	rockfish, China	Sebastes nebulosus
RFCOP	rockfish, copper	Sebastes caurinus
RFDBL	rockfish, darkblotched	Sebastes crameri
RFDUS	rockfish, dusky	Sebastes ciliatus
293	rockfish, dwarf red	Sebastes rofinanus
RFFLG	rockfish, flag	Sebastes rubrivinctus
RFFRK	rockfish, freckled	Sebastes lentiginosus
RFGOP	rockfish, gopher	Sebastes carnatus
RFGRS	rockfish, grass	Sebastes rastrelliger
RFGBL	rockfish, greenblotched	Sebastes rosenblatti
RFGRN	rockfish, greenspotted	Sebastes chlorostictus
RFGST	rockfish, greenstriped	Sebastes elongatus
RFHBD	rockfish, halfbanded	Sebastes semicinctus
707	rockfish, harlequin	Sebastes variegatus
RFHNC	rockfish, honeycomb	Sebastes umbrosus
RFKLP	rockfish, kelp	Sebastes atrovirens
RFMEX	rockfish, Mexican	Sebastes macdonaldi
RFOLV	rockfish, olive	Sebastes serranoides
RFPNK	rockfish, pink	Sebastes eos
RFPRS	rockfish, pinkrose	Sebastes simulator
RFPSD	rockfish, Puget Sound	Sebastes emphaeus
RFPGY	rockfish, pygmy	Sebastes wilsoni
RFQIL	rockfish, quillback	Sebastes maliger
RFRBD	rockfish, redbanded	Sebastes babcocki
RFRST	rockfish, redstripe	Sebastes proriger
RFRTN	rockfish, rosethorn	Sebastes helvomaculatus
RFROS	rockfish, rosy	Sebastes rosaceus
RFRGH	rockfish, rougheye	Sebastes aleutianus
708	rockfish, semaphore	Sebastes melanosema
RFSCN	rockfish, sharpchin	Sebastes zacentrus
RFSHB	rockfish, shortbelly	Sebastes jordani
RFSRK	rockfish, shortraker	Sebastes borealis

RFSLG	rockfish, silvergray	Sebastes brevispinis
RFSPK	rockfish, speckled	Sebastes ovalis
RFSNS	rockfish, splitnose	Sebastes diploproa
RFSQS	rockfish, squarespotted	Sebastes hopkinsi
RFSTA	rockfish, starry	Sebastes constellatus
RFSTR	rockfish, stripetail	Sebastes saxicola
RFSDS	rockfish, swordspine	Sebastes ensifer
RFTIG	rockfish, tiger	Sebastes nigrocinctus
RFVER	rockfish, vermilion	Sebastes miniatus
RFWTB	rockfish, whitebelly	Sebastes vexillaris
RFWID	rockfish, widow	Sebastes entomelas
RFYFY	rockfish, yelloweye	Sebastes ruberrimus
RFYMN	rockfish, yellowmouth	Sebastes reedi
RFYTL	rockfish, yellowtail	Sebastes flavidus
ROCKH	rockhead	Bothragonus swani
RNQFM	ronquill family	Bathymasteridae
RNQBB	ronquill, bluebanded	Rathbunella hypoplecta
RNQNO	ronquill, northern	Ronquilus jordani
473	roosterfish	Nematistius pectoralis
SABLE	sablefish	Anoplopoma fimbria
SABFM	sablefish family	Anoplopomatidae
SAILF	sailfish	Istiophorus platypterus
SALEM	salema	Xenistius californiensis
SALFM	salmon family	Salmonidae
SALGN	salmon genus	Oncorhynchus spp.
SALAT	salmon, Atlantic	Salmo salar
SALCK	salmon, chinook	Oncorhynchus tshawytscha
SALCM	salmon, chum	Oncorhynchus keta
SALCO	salmon, coho	Oncorhynchus kisutch
SALPK	salmon, pink	Oncorhynchus gorbuscha
SALSE	salmon, sockeye	Oncorhynchus nerka
SBGEN	sandbass genus	Paralabrax
SBBAR	sandbass, barred	Paralabrax nebulifer
SBSPT	sandbass, spotted	Paralabrax maculatofascia
DABGN	sanddab genus	Citharichthys
DABLF	sanddab, longfin	Citharichthys xanthostigma
DABPA	sanddab, Pacific	Citharichthys sordidus
DABSP	sanddab, speckled	Citharichthys stigmaeus
SNDFM	sandfish family	Trichodontidae
SNDEA	sandfish, Pacific	Trichodon trichodon
543	sandfish, sailfin	Arctoscopus japonicus
SARPA	sardine, Pacific	Sardinops sagax
SARGO	sargo	Anisotremus davidsoni
SAUPA	saury, Pacific	Cololabis saira
630	scabbardfish, Pacific	Lepidopus fitchi
SCBRZ	scabbardfish, razorback	Assurger anzac
MSCAD	scad, Mexican	Decapterus scombrinus
SCRFM	scorpionfish family	Scorpaenidae
SCRCA	scorpionfish, California	Scorpaena guttata
SCRRB	scorpionfish, rainbow	Scorpaenodes xyris
SCFAM	sculpin family	Cottidae

SCANT	sculpin, antlered	Enophrys diceraus
366	sculpin, Arctic	Myoxocephalus scorpioides
SCASH	sculpin, Arctic staghorn	Gymnocanthus tricuspidis
343	sculpin, armorhead	Gymnocanthus galeatus
SCBLD	sculpin, bald	Clinocottus recalvus
360	sculpin, belligerent	Megalocottus platycephalus
349	sculpin, bigmouth	Hemitripterus bolini
SCBKF	sculpin, blackfin	Malacocottus kincaidii
394	sculpin, blob	Phychrolutes phrictus
SCBNH	sculpin, bonehead	Artedius notospilotus
361	sculpin, brightbelly	Microcottus sellaris
SCBUF	sculpin, buffalo	Enophrys bison
SCBUL	sculpin, bull	Enophrys taurina
391	sculpin, butterfly	Hemilepidotus papilio
332	sculpin, calico	Clinocottus embryum
SCCRG	sculpin, coastrange	Cottus aleuticus
326	sculpin, coralline	Artedius corallinus
329	sculpin, crested	Blepsias bilobus
376	sculpin, darter	Radulinus boleoides
SCDSK	sculpin, dusky	Icelinus burchani
369	sculpin, eyeshode	Nautichthys pribilovius
372	sculpin, fluffy	Oligocottus snyderi
365	sculpin, fourhorn	Myoxocephalus quadricornis
356	sculpin, fringed	Icelinus fimbriatus
354	sculpin, frogmouth	Icelinus oculatus
SCGRT	sculpin, great	Myoxocephalus polyacanthoceph
SCGRU	sculpin, grunt	Rhamphocottus richardsoni
380	sculpin, kelp	Sigmistes caulias
390	sculpin, lavender	Leiocottus hirundo
SCLST	sculpin, leister	Enophrys lucasi
389	sculpin, longfin	Jordani zonope
382	sculpin, monacled	Synchirus gilli
333	sculpin, mosshead	Clinocottus glipiceps
SCNTH	sculpin, northern	Icelinus borealis
SCPSH	sculpin, Pacific staghorn	Leptocottus armatus
SCPAD	sculpin, padded	Artedius fenestralis
355	sculpin, pit head	Icelinus cavifrons
362	sculpin, plain	Myoxocephalus jaok
SCPRK	sculpin, prickly	Cottus asper
324	sculpin, puget sound	Ruscarius manyi
385	sculpin, ribbed	Triglops pingeli
SCRSL	sculpin, rosytip	Ascelichthys rhodorus
387	sculpin, roughback	Chitonotus pugettensis
327	sculpin, roughcheek	Ruscarius creaseri
384	sculpin, roughspine	Triglops macellus
371	sculpin, saddleback	Oligocottus rimensis
SCSFN	sculpin, sailfin	Nautichthys oculo-fasciatus
SCSCL	sculpin, scaled	Archaulus biserialis
SCSLH	sculpin, scalyhead	Artedius harringtoni
SCSCT	sculpin, scissortail	Triglops forficata
SCSHN	sculpin, sharpnose	Clinocottus acuticeps

367	sculpin, shorthorn	<i>Myoxocephalus scorpius</i>
330	sculpin, silver spotted	<i>Blepsias cirrhosus</i>
375	sculpin, slim	<i>Radulinus asprellus</i>
381	sculpin, smithi	<i>Sigmistes smithi</i>
377	sculpin, smoothgum	<i>Radulinus vinculus</i>
323	sculpin, smoothhead	<i>Artedius lateralis</i>
392	sculpin, snubnose	<i>Orthoropias triacis</i>
395	sculpin, soft	<i>Psychrolutes sigalutes</i>
317	sculpin, spatulate	<i>Icelus spatula</i>
386	sculpin, spectacled	<i>Triglops scepticus</i>
374	sculpin, spineless	<i>Phallocottus obtusus</i>
338	sculpin, spinyhead	<i>Dasycottus setiger</i>
388	sculpin, spinynose	<i>Asemichthys taylori</i>
SCSPT	sculpin, spotfin	<i>Icelinus tenuis</i>
393	sculpin, tadpole	<i>Psychrolutes paradoxus</i>
373	sculpin, thornback	<i>Paricelinus hopliticus</i>
SCTRF	sculpin, threadfin	<i>Icelinus filamentosus</i>
SCTDP	sculpin, tidepool	<i>Oligocottus maculosus</i>
316	sculpin, twohorn	<i>Icelus bicornis</i>
363	sculpin, warthead	<i>Myoxocephalus niger</i>
SCWOL	sculpin, wolly	<i>Clinocottus analis</i>
357	sculpin, yellowchin	<i>Icelinus quadriseriatus</i>
CUCUM	sea cucumbers	<i>Holothuroidea</i>
URCHN	sea urchins	<i>Diadematidae</i>
GNTSB	seabass, giant	<i>Stereolepis gigas</i>
448	seabass, pygmy	<i>Serraniculus pumilio</i>
SBWHT	seabass, white	<i>Atractoscion nobilis</i>
176	seadevil, triplewart	<i>Cryptopsaras couesi</i>
231	seahorse, Pacific	<i>Hippocampus ingens</i>
SPPNK	seaperch, pink	<i>Zalembeus rosaceus</i>
SPRBW	seaperch, rainbow	<i>Hypsurus caryi</i>
SPRUB	seaperch, rubberlip	<i>Rhacochilus toxotes</i>
SPSHN	seaperch, sharpnose	<i>Phanerodon atripes</i>
SPSTR	seaperch, striped	<i>Embiotoca lateralis</i>
SPWHT	seaperch, white	<i>Phanerodon furcatus</i>
548	searcher	<i>Bathymaster signatus</i>
298	searobin family	<i>Triglidae</i>
SERLT	searobin, limptail	<i>Prionotus stephanophrys</i>
300	searobin, splitnose	<i>Bellator xenisma</i>
427	seasnail, gelatinous	<i>Liparis fabricii</i>
SEHOR	senorita	<i>Oxyjulis californica</i>
SHADA	shad, American	<i>Alosa sapidissima</i>
589	shanny, Arctic	<i>Stichaeus punctatus</i>
584	shanny, daubed	<i>Lumpenus maculatus</i>
CTSFM	shark family, cat	<i>Scyliorhinidae</i>
CSHFM	shark family, cow	<i>Hexanchidae</i>
SHDFM	shark family, dogfish	<i>Squalidae</i>
FRSFM	shark family, frill	<i>Chlamydoselachidae</i>
50	shark family, hammerhead	<i>Sphyrnidae</i>
SHMFM	shark family, mackerel	<i>Lamnidae</i>
SHRFM	shark family, requiem	<i>Carcharhinidae</i>

44	shark genus, gray	Carcharhinus
26	shark, basking	Cetorhinus maximus
29	shark, bigeye thresher	Alopias superciliosus
SHBLU	shark, blue	Prionace glauca
SHBNH	shark, bonnethead	Sphyrna tiburo
SHBCS	shark, brown cat	Apristurus brunneus
SHBUL	shark, bull	Carcharhinus leucas
SHDKY	shark, dusky	Carcharhinus obscurus
35	shark, filetail cat	Parmatyrus xaniurus
18	shark, frill	Chlamydoselachus arguineus
SHHRN	shark, horn	Heterodontus francisci
SHLEP	shark, leopard	Triakis semifasciata
33	shark, longnose cat	Apristurus kampae
SHNTH	shark, narrowtooth	Carcharhinus brachyurus
SHANG	shark, Pacific angel	Squatina californica
39	shark, Pacific sharpnose	Rhizoprionodon longurio
SHSLP	shark, Pacific sleeper	Somniosus pacificus
56	shark, prickly	Echinorhinus cookei
23	shark, ragged tooth	Odontaspis ferox
SHSAL	shark, salmon	Lamna ditropis
SHSEV	shark, seven gill	Notorynchus maculatus
SHSMK	shark, shortfin mako	Isurus oxyrinchus
SHSIX	shark, six gill	Hexanchus griseus
52	shark, smooth hammerhead	Sphyrna zygaena
SHFIN	shark, soupfin	Galeorhinus zyopterus
SHSDG	shark, spiny dogfish	Squalus acanthias
SHSWL	shark, swell	Cephaloscyllium ventriosum
SHTHR	shark, thresher	Alopias vulpinus
SHTIG	shark, tiger	Galeocerdo cuvieri
22	shark, whale	Rhincodon typus
SHWHT	shark, white	Carcharodon carcharias
SHEEP	sheephead, California	Semicossyphus pulcher
195	shulupaoluk	Lycodes jugoricus
SRAGU	sierra, gulf	Scomberomorus concolor
SRAPA	sierra, Pacific	Scomberomorus sierra
SVRFM	silverside family	Atherinidae
SKFAM	skate family	Rajidae
70	skate, Alaska	Bathyraja parmifera
SKALT	skate, Aleutian	Bathyraja aleutica
SKBIG	skate, big	Raja binoculata
69	skate, black	Bathyraja trachura
SKTCA	skate, California	Raja inornata
72	skate, flathead	Bathyraja rosispinis
SKLGN	skate, longnose	Raja rhina
74	skate, rougtail	Raja trachura
68	skate, sandpaper	Bathyraja interrupta
SKSTY	skate, starry	Raja stellulata
314	skilfish	Erilepis zonifer
SKBGN	skipback genus	Euthynnus
BLKSJ	skipjack, black	Euthynnus lineatus
623	sleeper, Pacific fat	Dormitator latifrons

718	slickhead, California	Alepocephalus tenebrosus
SMFAM	smelt family	Osmeridae
DSSFM	smelt family, deepsea	Bathylagidae
SMJAK	smelt, (jacksmelt)	Atherinopsis californiensis
SMTOP	smelt, (topsmelt)	Atherinops affinis
129	smelt, delta	Hypomesus transpacificus
SMLGF	smelt, longfin	Spirinchus thlaeichthys
SMNGT	smelt, night	Spirinchus starksi
131	smelt, rainbow	Osmerus mordax
SMSUR	smelt, surf	Hypomesus pretiosus
SMWTB	smelt, whitebait	Allosmerus elongatus
SHSGN	smoothhound genus	Mustelus
SHBSM	smoothhound, brown	Mustelus henlei
SHGSM	smoothhound, gray	Mustelus californicus
SHSSM	smoothhound, sicklefin	Mustelus lunulatus
CASTG	smoohtongue, California	Leuroglossus stilbius
415	snailfish family	Cyclopteridae
433	snailfish, Bering	Liparis beringianus
417	snailfish, blacktail	Careproctus melanurus
418	snailfish, blotched	Crystallichthys cyclopilus
434	snailfish, lobefin	Liparis greeni
424	snailfish, marbled	Liparis dennyi
423	snailfish, polkadot	Liparis cyclostigma
432	snailfish, prickly	Paraliparis deani
422	snailfish, ribbon	Liparis cyclopus
430	snailfish, ringtail	Liparis rutteri
429	snailfish, showy	Liparis pulchellus
426	snailfish, slipskin	Liparis fucensis
428	snailfish, spiny	Liparis mucosus
421	snailfish, spotted	Liparis callyodon
431	snailfish, tadpole	Nectoliparis pelagicus
425	snailfish, tidepool	Liparis florum
594	snakeblenny, fourline	Eumesogrammus praecisus
226	snipefish, slender	Macrorhamphosus gracilis
TBESN	snout, tube	Aulorhynchus flavidus
SOLBG	sole, bigmouth	Hippoglossina stomata
SOLBT	sole, butter	Isopsetta isolepis
SOLCO	sole, C-O	Pleuronichthys coenosus
SOLCF	sole, curlfin	Pleuronichthys decurrens
SOLDS	sole, deepsea	Embassichthys bathybius
SOLDV	sole, Dover	Microstomus pacificus
SOLEG	sole, English	Parophrys vetulus
SOLFT	sole, fantail	Xystreurus liolepis
SOLFH	sole, flathead	Hippoglossoides elassodon
716	sole, hybrids	Isopsetta
SOLPT	sole, petrale	Eopsetta jordani
SOLRX	sole, rex	Glyptocephalus zachirus
SOLRK	sole, rock	Lepidopsetta bilineatus
SOLSD	sole, sand	Psettichthys melanostictus
SOLSL	sole, slender	Lyopsetta exilis
SOLYF	sole, yellowfin	Limanda aspera

SPDPA	spadefish, Pacific	Chaetodipterus zonatus
654	spearfish, shortbill	Tetrapturus angustirostris
139	spookfish family	Opisthoproctidae
SQTSE	squaretail, smalleye	Tetragonurus cuvieri
SQUID	squid	Cephalopoda
550	stargazer, smooth	Kathetostoma averruncus
402	starsnout, gray	Bathylagonus alascanus
403	starsnout, spinycheck	Bathylagonus infraspinus
SKBFM	stickleback family	Gasterosteidae
224	stickleback, ninespine	Pungitius pungitius
SKBTS	stickleback, threespine	Gasterosteus aculeatus
SGFAM	stingray family	Dasyatidae
SGGEN	stingray genus	Dasyatis spp.
SGDIA	stingray, diamond	Dasyatis dipterura
SGPEL	stingray, pelagic	Dasyatis violacea
SGRND	stingray, round	Urolophus halleri
STGEN	sturgeon genus	Acipenser
STGRN	sturgeon, green	Acipenser medirostris
STWHT	sturgeon, white	Acipenser transmontanus
458	sucker, marlin	Remora osteochir
SNFFM	sunfish family	Centrarchidae
SUNOC	sunfish, ocean	Mola mola
SPFAM	surfperch family	Embiotocidae
SPBAR	surfperch, barred	Amphistichus argenteus
SPCAL	surfperch, calico	Amphistichus koelzi
SPRTL	surfperch, redtail	Amphistichus rhodotus
SPSIL	surfperch, silver	Hyperprosopon ellipticum
SPSPF	surfperch, spotfin	Hyperprosopon anale
SPWAL	surfperch, walleye	Hyperprosopon argenteum
SRDFS	swordfish	Xiphias gladius
THRBK	thornback	Platyrrhinoidis triseriata
RFLST	thornyhead, longspine	Sebastolobus altivelis
RFSSST	thornyhead, shortspine	Sebastolobus alascanus
535	threadfin family	Polynemidae
CODTC	tomcod, Pacific	Microgadus proximus
TNGCA	tougefish, California	Symphurus atricauda
FTRIG	triggerfish, finescale	Balistes polylepis
SALAC	trout, Arctic char	Salvelinus alpinus
SALCT	trout, cutthroat	Oncorhynchus clarki
SALRB	trout, rainbow	Oncorhynchus mykiss
SALTR	trouts, sea run	
TNAAB	tuna, (albacore)	Thunnus alalunga
TNABE	tuna, bigeye	Thunnus obesus
TNABF	tuna, bluefin	Thunnus thynnus
TNASJ	tuna, skipjack	Katsuwonus pelamis
TNASL	tuna, slender	Allothunnus fallai
TNAYF	tuna, yellowfin	Thunnus albacares
TNASG	tunas (non-mackerel)	
SOLDT	turbot, diamond	Pleuronichthys guttulatus
SOLHT	turbot, hornyhead	Pleuronichthys verticalis
SOLST	turbot, spotted	Pleuronichthys ritteri

SHUNI	unidentified (sharks)	
UNISF	unidentified (surface fish)	
UNIFH	unidentified fish	
SALDV	Varden, Dolly	Salvelinus malma
143	viperfish, Pacific	Chauliodus macouni
WAHOO	wahoo	Acanthocybium solandri
578	warbonnet, decorated	Chirolophis decoratus
576	warbonnet, matcheck	Chirolophis tarsodes
577	warbonnet, mosshead	Chirolophis nugator
WEKFS	weakfishes	Cynoscion
REMWS	whalesucker	Remora australis
OCWHT	whitefish, ocean	Caulolatilus princeps
WOLFE	wolf-eel	Anarrhichthys ocellatus
WRAFM	wrasse family	Labridae
WRARK	wrasse, rock	Halichoeres semicinctus
593	wrymouth, dwarf	Cryptacanthodes aleutensis
592	wrymouth, giant	Cryptacanthodes giganteus
YELTL	yellowtail	Seriola

Sorted by AFS Common Name

SP CODE	AFS COMMON NAME	SCIENTIFIC NAME
ABALO	abalone genus	Haliotis
188	Alaska eelpout	Bothrocara pusillum
SOLPL	Alaska plaice	Pleuronectes quadrituberculatus
70	Alaska skate	Bathyraja parmifera
TNAAB	albacore	Thunnus alalunga
400	Aleutian alligatorfish	Aspidophoroides bartoni
SKALT	Aleutian skate	Bathyraja aleutica
SHADA	American shad	Alosa sapidissima
113	anchoveta	Cetengraulis mysticetus
ANCFM	anchovy family	Engraulidae
ANCGN	anchovy genus	Anchoa spp.
SCANT	antlered sculpin	Enophrys dicerca
401	Arctic alligatorfish	Aspidophoroides olriki
SALAC	Arctic char	Salvelinus alpinus
SOLAF	Arctic flounder	Pleuronectes glacialis
LMPAR	Arctic lamprey	Lampetra japonica
366	Arctic sculpin	Myoxocephalus scorpioides
589	Arctic shanny	Stichaeus punctatus
SCASH	Arctic staghorn sculpin	Gymnocanthus tricusps
343	armorhead sculpin	Gymnocanthus galeatus
GOBAR	arrow goby	Clevelandia ios
FLRAR	arrowtooth flounder	Atheresthes stomias
311	Atka mackerel	Pleurogrammus monopterygius
SALAT	Atlantic salmon	Salmo salar
RFAUR	aurora rockfish	Sebastes aurora
SCBLD	bald sculpin	Clinocottus recalvus
GUIBD	banded guitarfish	Zapteryx exasperata
RFBNK	bank rockfish	Sebastes rufus
229	barred pipefish	Syngnathus auliscus
SBBAR	barred sandbass	Paralabrax nebulifer
SPBAR	barred surfperch	Amphistichus argenteus
140	barreleye	Macropinna microstoma
185	basketweave cusk eel	Otophidium scrippsae
26	basking shark	Cetorhinus maximus
RYBAT	bat ray	Myliobatis californica
BLNBY	bay blenny	Hypsoblennius gentilis
BOGBY	bay goby	Lepidogobius lepidus
PIPEB	bay pipefish	Syngnathus leptorhynchus
170	bearded clingfish	Gobiesox papillifer
198	bearded eelpout	Lyconema barbatum
360	belligerent sculpin	Megalocottus platycephalus
SOLBF	Bering flounder	Hippoglossoides robustus
601	Bering gunnel	Pholis gilli
408	Bering poacher	Ocella dodecaedron
433	Bering snailfish	Liparis beringianus
SKBIG	big skate	Raja binoculata

451	bigeye family	Priacanthidae
404	bigeye poacher	Bathyagonus pentacanthus
29	bigeye thresher shark	Alopias superciliosus
TNABE	bigeye tuna	Thunnus obesus
187	bigfin eelpout	Lycodes cortezianus
349	bigmouth sculpin	Hemitripterus bolini
SOLBG	bigmouth sole	Hippoglossina stomata
529	bigtooth pomfret	Brama orcini
MARFM	billfish family	Istiophoridae
BIVAL	bivalve class	Bivalvia
RFBAY	black and yellow rockfish	Sebastes chrysomelas
CRKBK	black croaker	Cheilotrema saturnum
191	black eelpout	Lycodes diapterus
HAGBK	black hagfish	Eptatretus deani
MARBK	black marlin	Makaira indica
SPBLK	black perch	Embiotoca jacksoni
PRKBK	black prickleback	Xiphister atropurpureus
RFBLK	black rockfish	Sebastes melanops
69	black skate	Bathyraja trachura
BLKSJ	black skipjack	Euthynnus lineatus
197	blackbelly eelpout	Lycodopsis pacifica
GOBBE	blackeye goby	Coryphopterus nicholsi
405	blackfin poacher	Bathyagonus nigripinnis
SCBKF	blackfin sculpin	Malacocottus kincaidi
RFBKG	blackgill rockfish	Sebastes melanostomus
BLKSM	blacksmith	Chromis punctipinnis
417	blacktail snailfish	Careproctus melanurus
412	blacktip poacher	Xeneretmus latifrons
206	blackwing flyingfish	Hirundichthys rondeleti
621	blind goby	Typhlogobius californiensis
394	blob sculpin	Phychrolutes phrictus
418	blotched snailfish	Crystallichthys cyclopilus
536	blue bobo	Polydactylus approximans
157	blue lanternfish	Tarletonbeania crenularis
MARBL	blue marlin	Makaira nigricans
RFBLU	blue rockfish	Sebastes mystinus
SHBLU	blue shark	Prionace glauca
RNQBB	bluebanded ronquil	Rathbunella hypoplecta
587	bluebarred prickleback	Plectobranhus evides
TNABF	bluefin tuna	Thunnus thynnus
413	bluespotted poacher	Xeneretmus triacanthus
SHSIX	bluntnose sixgill shark	Hexanchus griseus
RFBOS	bocaccio	Sebastes paucispinis
BONEF	bonefish	Albula vulpes
SCBNH	bonehead sculpin	Artedius notospilotus
SHBNH	bonnethead shark	Sphyrna tiburo
BOTOM	bottomfish (groundfish)	
361	brightbelly sculpin	Microcottus sellaris
RFBSP	bronzespotted rockfish	Sebastes gilli
GRPBT	broomtail grouper	Mycteroperca xenarcha
BULBR	brown bullhead	Ictalurus nebulosus

SHBCS	brown cat shark	Apristurus brunneus
SCBIL	brown Irish lord	Hemilepidotus spinosus
CRBBR	brown rock crab	Cancer antennarius
RFBRN	brown rockfish	Sebastes auriculatus
SHBSM	brown smoothhound	Mustelus henlei
SCBUF	buffalo sculpin	Enophrys bison
SCBUL	bull sculpin	Enophrys taurina
SHBUL	bull shark	Carcharhinus leucas
MACBL	bullet mackerel	Auxis rochei
700	bullseye puffer	Sphoeroides annulatus
SOLBT	butter sole	Isopsetta isolepis
BUTFM	butterfish family	Stromateidae
391	butterfly sculpin	Hemilepidotus papilio
BFFFM	butterflyfish family	Chaetodontidae
SCCAB	cabezon	Scorpaenichthys marmoratus
RFCLO	calico rockfish	Sebastes dalli
332	calico sculpin	Clinocottus embryum
SPCAL	calico surfperch	Amphistichus koelzi
RYFLY	California butterflyray	Gymnura marmorata
171	California clingfish	Gobiesox rhessodon
CRBCA	California corbina	Menticirrhus undulatus
FLYCA	California flyingfish	Cypselurus californicus
GRUCA	California grunion	Leuresthes tenuis
HALCA	California halibut	Paralichthys californicus
153	California headlightfish	Diaphus theta
KLFCAL	California killifish	Fundulus parvipinnis
LZDCA	California lizardfish	Synodus lunioceps
MORAY	California moray	Gymnothorax mordax
NEDCA	California needlefish	Strongylura exilis
SCRCA	California scorpionfish	Scorpaena guttata
SHEEP	California sheephead	Semicossyphus pulcher
SKTCA	California skate	Raja inornata
718	California slickhead	Alepocephalus tenebrosus
CASTG	California smoothtongue	Leuroglossus stilbius
TNGCA	California touguefish	Symphurus atricauda
193	Canadian eelpout	Lycodes polaris
RFCAN	canary rockfish	Sebastes pinniger
CRBGN	cancer genus	Cancer
SMCAP	capelin	Mallotus villosus
CTSMF	cat shark family	Scyliorhinidae
94	Catalina conger	Gnathopis catalinensis
620	chameleon goby	Tridentiger trigonocephalus
RFCMA	chameleon rockfish	Sebastes phillipsi
CATCN	channel catfish	Ictalurus punctatus
616	cheekspot goby	Ilypnus gilberti
163	chihuail	Bagre panamensis
RFPEP	chilipepper	Sebastes goodei
RFCHN	China rockfish	Sebastes nebulosus
SALCK	chinook salmon	Oncorhynchus tshawytscha
MACPA	chub (Pacific) mackerel	Scomber japonicus
SALCM	chum salmon	Oncorhynchus keta

167	clingfish family	Gobiesocidae
KLPFM	clinid family	Clinidae
SOLCO	C-O sole	Pleuronichthys coenosus
SCCRG	coastrange sculpin	Cottus aleuticus
CODFM	cod family	Gadidae
SALCO	coho salmon	Oncorhynchus kisutch
FLNFM	combtooth blenny family	Blenniidae
CARPC	common carp	Cyprinus carpio
RFCOP	copper rockfish	Sebastes caurinus
326	corralline sculpin	Artedius corallinus
CSHFM	cow shark family	Hexanchidae
RFCOW	cowcod	Sebastes levis
GUNCR	crescent gunnel	Pholis laeta
329	crested sculpin	Blepsias bilobus
216	crestfish	Lophotus lacepedei
KLPCR	crevice kelpfish	Gibbonsia montereyensis
CRUST	crustacean subphylum	Crustacea
SOLCF	curlfin sole	Pleuronichthys decurrens
CSKFM	cusk eel family	Ophidiidae
SALCT	cutthroat trout	Oncorhynchus clarki
148	daggertooth family	Anotopteridae
DAMFM	damselfish family	Pomacentridae
RFDBL	darkblotched rockfish	Sebastes crameri
376	darter sculpin	Radulinus boleoides
584	daubed shanny	Lumpenus maculatus
578	decorated warbonnet	Chirolophis decoratus
ANCDB	deepbody anchovy	Anchoa compressa
DSSFm	deepsea smelt family	Bathylagidae
SOLDS	deepsea sole	Embassichthys bathybius
564	deepwater blenny	Cryptotrema corallinum
129	delta smelt	Hypomesus transpacificus
SGDIA	diamond stingray	Dasyatis dipterura
SOLDT	diamond turbot	Pleuronichthys guttulatus
158	diogenes lampfish	Diogenys lanternatus
SHDFM	dogfish shark family	Squalidae
152	dogtooth lampfish	Ceratoscopelus townsendi
SALDV	Dolly Varden	Salvelinus malma
474	dolphin family	Coryphaenidae
DRADO	dolphinfish	Coryphaena hippurus
SOLDV	Dover sole	Microstomus pacificus
DRGFM	dragonfish family	Stomiidae
DRMFM	drum family	Sciaenidae
CRBDG	Dungeness crab	Metacarcinus magister
RFDUS	dusky rockfish	Sebastes ciliatus
SCDSK	dusky sculpin	Icelinus burchani
SHDKY	dusky shark	Carcharhinus obscurus
SPDWF	dwarf perch	Micrometrus minimus
293	dwarf red rockfish	Sebastes rufinanus
593	dwarf wrymouth	Cryptacanthodes aleutensis
EELOR	eel order	Anguilliformes
ELPFM	eelpout family	Zoarcidae

SOLEG	English sole	Parophrys vetulus
627	escolar	Lepidocybium flavobrunneum
SMEUL	eulachon	Thaleichthys pacificus
369	eyeshode sculpin	Nautichthys pribilovius
SOLFT	fantail sole	Xystreurus liolepis
35	filetail cat shark	Parmatyrus xaniurus
FTRIG	finescale triggerfish	Balistes polylepis
RFFLG	flag rockfish	Sebastes rubrivinctus
159	flashlightfish	Protomyctophum crockeri
FLTOR	flatfish order	Pleuronectiformes
72	flathead skate	Bathyrja rosispinis
SOLFH	flathead sole	Hippoglossoides elassodon
107	flatiron herring	Harengula thrissina
372	fluffy sculpin	Oligocottus snyderi
FLYFM	flyingfish family	Exocoetidae
407	fourhorn poacher	Hypsagonus quadricornis
365	fourhorn sculpin	Myoxocephalus quadricornis
594	fourline snakeblenny	Eumesogrammus praecisus
RFFRK	freckled rockfish	Sebastes lentiginosus
MACFR	frigate mackerel	Auxis thazard
18	frill shark	Chlamydoselachus arguineus
FRSFM	frill shark family	Chlamydoselachidae
356	fringed sculpin	Icelinus fimbriatus
354	frogmouth sculpin	Icelinus oculatus
469	gafftopsail pompano	Trachinotus rhodopus
GARIB	garibaldi	Hypsypops rubicundus
427	gelatinous seasnail	Liparis fabricii
719	giant grenadier	Albatrossia pectoralis
KLPGT	giant kelpfish	Heterostichus rostratus
GNTSB	giant seabass	Stereolepis gigas
592	giant wrymouth	Cryptacanthodes giganteus
GOBFM	goby family	Gobiidae
RFGOP	gopher rockfish	Sebastes carnatus
CRBGR	graceful rock crab	Cancer gracilis
RFGRS	grass rockfish	Sebastes rastrelliger
607	graveldiver	Scytalina cerdale
44	gray shark genus	Carcharhinus
SHGSM	gray smoothhound	Mustelus californicus
402	gray starsnout	Bathyagonus alascanus
SCGRT	great sculpin	Myoxocephalus polyacanthoceph
463	green jack	Caranx caballus
STGRN	green sturgeon	Acipenser medirostris
RFGBL	greenblotched rockfish	Sebastes rosenblatti
HALGL	Greenland halibut	Reinhardtius hippoglossoides
GRNFM	greenling family	Hexagrammidae
GRNGN	greenling genus	Hexagrammos
RFGRN	greenspotted rockfish	Sebastes chlorostictus
RFGST	greenstriped rockfish	Sebastes elongatus
715	grenadier family	Macrouridae
437	grouper genus (epinephelus)	Epinephelus
GNTFM	grunt family	Haemulidae

SCGRU	grunt sculpin	Rhamphocottus richardsoni
453	Guadalupe cardinalfish	Apogon guadalupensis
GUIFM	guitarfish family	Rhinobatidae
GRPGF	gulf grouper	Mycteroperca jordani
SRAGU	gulf sierra	Scomberomorus concolor
GUNFM	gunnel family	Pholidae
HAGFM	hagfish order	Myxinidae
RFHBD	halfbanded rockfish	Sebastes semicinctus
202	halfbeak	Hyporhamphus unifasciatus
203	halfbeak	Hyporhamphus rosae
617	halfblind goby	Lethops connetens
HALFM	halfmoon	Medialuna californiensis
320	hamecon	Artediellus scaber
50	hammerhead shark family	Sphyrnidae
707	harlequin rockfish	Sebastes variegatus
HERFM	herring family	Clupeidae
575	high cockscomb	Anoplarchus purpurescens
RFHNC	honeycomb rockfish	Sebastes umbrosus
712	hookthroat bass	Hemanthias signifer
SHHRN	horn shark	Heterodontus francisci
SOLHT	hornyhead turbot	Pleuronichthys verticalis
716	hybrid soles	Isopsetta
SCILG	Irish lord genus	Hemilepidotus
562	island kelpfish	Alloclinus holderi
JACFM	jack family	Carangidae
JACMK	jack mackerel	Trachurus symmetricus
SMJAK	jacksnail	Atherinopsis californiensis
FLRKM	Kamchatka flounder	Atheresthes evermanni
KAWAK	kawakawa	Euthynnus affinis
SBKLP	kelp bass	Paralabrax clathratus
172	kelp clingfish	Rimicola muscarum
GRNKP	kelp greenling	Hexagrammos decagrammus
606	kelp gunnel	Ulvicola santaerossea
SPKLP	kelp perch	Brachyistius frenatus
230	kelp pipefish	Syngnathus californiensis
RFKLP	kelp rockfish	Sebastes atrovirens
380	kelp sculpin	Sigmistes caulias
KOSAL	king-of-the-salmon	Trachipterus altivelis
LMPFM	lamprey family	Petromyzontidae
146	lancetfish family	Alepisauridae
151	lanternfish family	Myctophidae
390	lavender sculpin	Leiocottus hirundo
419	leatherfin lumpsucker	Eumicrotremus derjugini
465	leatherjacket	Oligoplites saurus
FLLFN	lefteye flounder family	Bothidae
SCLST	leister sculpin	Enophrys lucasi
SHLEP	leopard shark	Triakis semifasciata
572	lesser prickleback	Alectridium aurantiacum
169	lined clingfish	Gobiesox eugrammus
LNGCD	lingcod	Ophiodon elongatus
LZDFM	lizardfish family	Synodontidae

434	lobefin snailfish	Liparis greeni
656	longfin cigarfish	Cubiceps paradoxus
142	longfin dragonfish	Tactostoma macropus
599	longfin gunnel	Pholis clemensi
201	longfin halfbeak	Hemiramphus saltator
DABLF	longfin sanddab	Citharichthys xanhostigma
389	longfin sculpin	Jordani zonope
SMLGF	longfin smelt	Spirinchus thlaeichthys
680	longhead dab	Pleuronectes proboscideus
LJMUD	longjaw mudsucker	Gillichthys mirabilis
33	longnose cat shark	Apristurus kampae
LANLN	longnose lancetfish	Alepisaurus ferox
SKLGN	longnose skate	Raja rhina
581	longsnout prickleback	Lumpenella longirostris
CBFLS	longspine combfish	Zaniolepis latipinnis
RFLST	longspine thornyhead	Sebastolobus altivelis
LUVAR	louvar	Luvarus imperialis
SERLT	lumptail searobin	Prionotus stephanophrys
90	machete	Elops affinis
MACFM	mackerel family	Scombridae
SHMFM	mackerel shark family	Lamnidae
MANTA	manta	Manta birostris
82	manta family	Mobulidae
424	marbled snailfish	Liparis dennyi
458	marlin sucker	Remora osteochir
GRNMA	masked greenling	Hexagrammos octogrammus
576	matcheck warbonnet	Chirolophis tarsodes
495	Mexican goatfish	Mulloidichthys dentatus
160	Mexican lampfish	Triphoturus mexicanus
RFMEX	Mexican rockfish	Sebastes macdonaldi
MSCAD	Mexican scad	Decapterus scombrinus
106	middling thread herring	Opisthonema medirastre
MIDGN	midshipman genus	Porichthys
214	mirror dory	Zenopsis nebulosa
MOJFM	mojarra family	Gerreidae
SUNFM	mola family	Molidae
MOLLU	mollusk phylum	Mollusca
382	monacled sculpin	Synchirus gilli
PRKMK	monkeyface prickleback	Cebidichthys violaceus
333	mosshead sculpin	Clinocottus glopiceps
577	mosshead warbonnet	Chirolophis nugator
554	mussel blenny	Hypsoblennius jenkinsi
SHNTH	narrowtooth shark	Carcharhinus brachyurus
SMNGT	night smelt	Spirinchus starksi
224	ninespine stickleback	Pungitius pungitius
ANCNO	northern anchovy	Engraulis mordax
156	northern lampfish	Stenobrachius leucopsarus
150	northern pearleye	Benthalbella dentata
RNQNO	northern ronquil	Rongilus jordani
SCNTH	northern sculpin	Icelinus borealis
397	northern spearnose poacher	Agonopsis vulsa

CLNGN	nothern clingfish	Gobiesox maeandricus
579	nutcracker prickleback	Bryozoichthys lysimus
221	oarfish	Regalecus glesne
SUNOC	ocean sunfish	Mola mola
OCWHT	ocean whitefish	Caulolatilus princeps
699	oceanic puffer	Lagocephalus lagocephalus
OCTOP	octopus order	Octopoda
628	oilfish	Ruvettus pretiosus
RFOLV	olive rockfish	Sebastes serranoides
KLPOF	onespot fringehead	Neoclinus urinotatus
OPAHS	opah	Lampris guttatus
OPALE	opaleye	Girella nigricans
COROM	orangemouth corvina	Cynoscion xanthulus
563	orangethroat pikeblenny	Chaenopsis alepidota
466	Pacific amberjack	Seriola colburni
SHANG	Pacific angel shark	Squatina californica
ARGNT	Pacific argentine	Argentina sialis
BARPA	Pacific barracuda	Sphyræna argentea
BONPA	Pacific bonito	Sarda chiliensis
464	Pacific bumper	Chloroscombrus orqueta
701	Pacific burrfish	Chilomycterus affinis
CODPA	Pacific cod	Gadus macrocephalus
CUTLP	Pacific cutlassfish	Trichiurus nitens
ERYPA	Pacific electric ray	Torpedo californica
531	Pacific fanfish	Pteraclis aesticola
623	Pacific fat sleeper	Dormitator latifrons
479	Pacific flagfin mojarra	Eucinostomus gracilis
709	Pacific flatnose	Antimora microlepis
706	Pacific grenadier	Coryphaenoides acrolepis
HAGPA	Pacific hagfish	Eptatretus stouti
PHAKE	Pacific hake	Merluccius productus
HALPA	Pacific halibut	Hippoglossus stenolepis
HERPA	Pacific herring	Clupea pallasii
LMPPA	Pacific lamprey	Entosphenus tridentatus
470	Pacific moonfish	Selene peruviana
RFPOP	Pacific ocean perch	Sebastes alutus
528	Pacific pomfret	Brama japonica
POMPA	Pacific pompano (butterfish)	Peprilus simillimus
483	Pacific porgy	Calamus brachysomus
SOLPA	Pacific sand lance	Ammodytes hexapterus
DABPA	Pacific sanddab	Citharichthys sordidus
SNDPA	Pacific sandfish	Trichodon trichodon
SARPA	Pacific sardine	Sardinops sagax
SAUPA	Pacific saury	Cololabis saira
630	Pacific scabbardfish	Lepidopus fitchi
231	Pacific seahorse	Hippocampus ingens
39	Pacific sharpnose shark	Rhizoprionodon longurio
SRAPA	Pacific sierra	Scomberomorus sierra
SHSLP	Pacific sleeper shark	Somniosus pacificus
97	Pacific snake eel	Ophichthus triserialis
SPDPA	Pacific spadefish	Chaetodipterus zonatus

420	Pacific spiny lumpsucker	Eumicrotremus orbis
SCPSH	Pacific staghorn sculpin	Leptocottus armatus
CODTC	Pacific tomcod	Microgadus proximus
143	Pacific viperfish	Chauliodus macouni
96	Pacific worm eel	Myrophis vafer
SCPAD	padded sculpin	Artedius fenestralis
GRNPT	painted greenling	Oxylebius pictus
315	painted greenling	Oxylebius pictus
196	pale eelpout	Lycodes pallidus
189	pallid eelpout	Lycodapus mandibularis
468	paloma pompano	Trachinotus paitensis
155	patchwork lampfish	Notoscopelus resplendens
149	pearleye family	Scopelarchidae
504	pelagic armorhead	Pentaceros richardsoni
SGPEL	pelagic stingray	Dasyatis violacea
GUNPP	penpoint gunnel	Apodichthys flavidus
PERFM	perch family	Percidae
SOLPT	petrale sole	Eopsetta jordani
571	pighead pricklyback	Acantholumpenus mackayi
SPPIL	pile perch	Rhacochilus vacca
PILTF	pilotfish	Naucrates ductor
RFPNK	pink rockfish	Sebastes eos
SALPK	pink salmon	Oncorhynchus gorbuscha
SPPNK	pink seaperch	Zalembeus rosaceus
RFPRS	pinkrose rockfish	Sebastes simulator
154	pinpoint lampfish	Lampanyctus regalis
227	pipefish family	Sygnathidae
355	pit head sculpin	Icelinus cavifrons
362	plain sculpin	Myoxocephalus jaok
MIDPF	plainfin midshipman	Porichthys notatus
396	poacher family	Agonidae
194	polar eelpout	Lycodes turneri
423	polkadot snailfish	Liparis cyclostigma
POMFM	pomfret family	Bramidae
POMDO	pompano dolphin	Coryphaena equisetis
CTFPE	popeye catalufa	Pristigenys serrula
702	porcupinefish	Diodon hystrix
PRKFM	prickleback family	Stichaeidae
414	pricklebreast poacher	Stellerina xyosterna
SCPRK	prickly sculpin	Cottus asper
56	prickly shark	Echinorhinus cookei
432	prickly snailfish	Paraliparis deani
608	prowfish	Zaprora silenus
PUFFM	puffer family	Tetraodontidae
RFPSD	Puget Sound rockfish	Sebastes emphaeus
324	Puget Sound sculpin	Ruscarius meanyi
410	pygmy poacher	Odontopyxis trispinosa
RFPYG	pygmy rockfish	Sebastes wilsoni
448	pygmy seabass	Serraniculus pumilio
QUEEN	queenfish	Seriphus politus
RFQIL	quillback rockfish	Sebastes maliger

569	quillfish	Ptilichthys goodei
RAGFS	ragfish	Icosteus aenigmaticus
23	ragged tooth shark	Odontaspis ferox
SCRRB	rainbow scorpionfish	Scorpaenodes xyris
SPRBW	rainbow seaperch	Hypsurus caryi
131	rainbow smelt	Osmerus mordax
SALRB	rainbow trout	Oncorhynchus mykiss
SCBRZ	razorback scabbardfish	Assurger anzac
183	red brotula	Brosomphycis marginata
604	red gunnel	Pholis schultzi
SCRIL	red Irish lord	Hemilepidotus hemilepidotus
CRBRR	red rock crab	Cancer productus
RFRBD	redbanded rockfish	Sebastes babcocki
RFRST	redstripe rockfish	Sebastes proriger
SPRTL	redtail surfperch	Amphistichus rhodoterus
KLPRB	reef blenny	Paraclinus integripinnis
SPREF	reef perch	Micrometrus aurora
459	remora	Remora remora
REMFM	remora family	Echeneidae
SHRFM	requiem shark family	Carcharhinidae
SOLRX	rex sole	Glyptocephalus zachirus
385	ribbed sculpin	Triglops pingeli
204	ribbon halfbeak	Euleptorhamphus viridis
586	ribbon prickleback	Phytichthys chirus
422	ribbon snailfish	Liparis cyclopus
217	ribbonfish family	Trachipteridae
FLRFM	righteye flounder family	Pleuronectidae
430	ringtail snailfish	Liparis rutteri
GRNRK	rock greenling	Hexagrammos lagocephalus
PRKRK	rock prickleback	Xiphister mucosus
SOLRK	rock sole	Lepidopsetta bilineatus
WRARK	rock wrasse	Halichoeres semicinctus
RFGEN	rockfish genus	Sebastes
ROCKH	rockhead	Bothragonus swani
BLNRP	rockpool blenny	Hypsoblennius gilberti
605	rockweed gunnel	Apodichthys fucorum
RNQFM	ronquil family	Bathymasteridae
473	roosterfish	Nematistius pectoralis
RFRTN	rosethorn rockfish	Sebastes helvomaculatus
RFROS	rosy rockfish	Sebastes rosaceus
SCRSL	rosylip sculpin	Ascelichthys rhodorus
530	rough pomfret	Teractes asper
387	roughback sculpin	Chitonotus pugettensis
327	roughcheek sculpin	Ruscarius creaseri
RFRGH	roughey rockfish	Sebastes aleutianus
174	roughjaw frogfish	Antennarius avalonis
384	roughspine sculpin	Triglops macellus
74	rougtail skate	Raja trachura
HERRD	round herring	Etrumeus teres
SGRND	round stingray	Urolophus halleri
SPRUB	rubberlip seaperch	Rhacochilus toxotes

SABLE	sablefish	Anoplopoma fimbria
SABFM	sablefish family	Anoplopomatidae
GUNSB	saddleback gunnel	Pholis ornata
371	saddleback sculpin	Oligocottus rimensis
543	sailfin sandfish	Arctoscopus japonicus
SCSFN	sailfin sculpin	Nautichthys oculofasciatus
SAILF	sailfish	Istiophorus platypterus
SALEM	salema	Xenistius californiensis
SALFM	salmon family	Salmonidae
SALGN	salmon genus	Oncorhynchus spp.
SHSAL	salmon shark	Lamna ditropis
SOLSD	sand sole	Psettichthys melanostictus
SBGEN	sandbass genus	Paralabrax
DABGN	sanddab genus	Citharichthys
SNDFM	sandfish family	Trichodontidae
68	sandpaper skate	Bathyraja interrupta
KLPSF	sarcastic fringehead	Neoclinus blanchardi
SARGO	sargo	Anisotremus davidsoni
SCSCL	scaled sculpin	Archaulus biseriatus
220	scaloped ribbonfish	Zu cristatus
SCSLH	scalyhead sculpin	Artedius harringtoni
560	scarlet kelpfish	Gibbonsia erythra
SCSCT	scissortail sculpin	Triglops forficata
SCRFM	scorpionfish family	Scorpaenidae
SCFAM	sculpin family	Cottidae
503	scythe butterflyfish	Chaetodon falcifer
SBFAM	sea bass family	Serranidae
SCBFM	sea chub family	Kyphosidae
CUCUM	sea cucumber class	Holothuroidea
SALTR	sea run trouts	
URCHN	sea urchin family	Diadematidae
548	searcher	Bathymaster signatus
298	searobin family	Triglidae
708	semaphore rockfish	Sebastes melanosema
SEHOR	senorita	Oxyjulis californica
SHSEV	seven gill shark	Notorynchus maculatus
619	shadow goby	Quietula ycauda
205	sharpchin flyingfish	Fodiator acutus
RFSCN	sharpchin rockfish	Sebastes zacentrus
SCSHN	sharpnose sculpin	Clinocottus acuticeps
SPSHN	sharpnose seaperch	Phanerodon atripes
SPSHR	shiner perch	Cymatogaster aggregata
RFSHB	shortbelly rockfish	Sebastes jordani
654	shortbill spearfish	Tetrapturus angustirostris
CORSF	shortfin corvina	Cynoscion parvipinnis
190	shortfin eelpout	Lycodes brevipes
SHSMK	shortfin mako shark	Isurus oxyrinchus
367	shorthorn sculpin	Myoxocephalus scorpius
RFSRK	shortraker rockfish	Sebastes borealis
CBFSS	shortspine combfish	Zaniolepis frenata
RFSST	shortspine thornyhead	Sebastolobus alascanus

GUISN	shovelnose guitarfish	Rhinobatos productus
429	showy snailfish	Liparis pulchellus
195	shulupaoluk	Lycodes jugoricus
532	sickle pomfret	Taractichthys steindachneri
SHSSM	sicklefin smoothhound	Mustelus lunulatus
330	silver spotted sculpin	Blepsias cirrhosus
SPSIL	silver surfperch	Hyperprosopon ellipticum
RFSLG	silvergray rockfish	Sebastes brevispinis
SVRFM	silverside family	Atherinidae
RAJOR	skate and ray order	Rajiformes
SKFAM	skate family	Rajidae
314	skilfish	Erilepis zonifer
SKBGN	skipback genus	Euthynnus
TNASJ	skipjack tuna	Katsuwonus pelamis
173	slender clingfish	Rimicola eigenmanni
574	slender cockscomb	Anoplarchus insignis
582	slender eelblenny	Lumpenus fabricii
705	slender mola	Ranzanic laevis
CRBGR	slender rock crab	Cancer gracilis
100	slender snake eel	Nemichthys scolopaceus
226	slender snipefish	Macrorhamphosus gracilis
SOLSL	slender sole	Lyopsetta exilis
TNASL	slender tuna	Allothunnus fallai
375	slim sculpin	Radulinus asprellus
426	slipskin snailfish	Liparis fucensis
112	slough anchovy	Anchoa delicatissima
SQTSE	smalleye squaretail	Tetragonurus cuvieri
SMFAM	smelt family	Osmeridae
381	smithi sculpin	Sigmistes smithi
399	smooth alligatorfish	Anoplagonus inermis
52	smooth hammerhead shark	Sphyrna zygaena
416	smooth lumpsucker	Aptocyclus ventricosus
550	smooth stargazer	Kathetostoma avertuncus
377	smoothgum sculpin	Radulinus vinculus
323	smoothhead sculpin	Artedius lateralis
SHSGN	smoothhound genus	Mustelus
85	smoohtail mobula	Mobula thurstoni
415	snailfish family	Cyclopteridae
SELFM	snake eel family	Ophichthidae
626	snake mackerel	Gempylus serpens
625	snake mackerel family	Trichiuridae
PRKSN	snake prickleback	Lumpenus sagitta
99	snipe eel family	Nemichthyidae
439	snowy grouper	Epinephelus niveatus
392	snubnose sculpin	Orthoropias triacis
SALSE	sockeye salmon	Oncorhynchus nerka
395	soft sculpin	Psychrolutes sigalutes
SHFIN	soupfin shark	Galeorhinus zyopterus
398	southern spearnose poacher	Agonopsis sterletus
317	spatulate sculpin	Icelus spatula
460	spearfish remora	Remora brachyptera

RFSPK	speckled rockfish	Sebastes ovalis
DABSP	speckled sanddab	Citharichthys stigmaeus
MIDSP	specklefin midshipman	Porichthys myriaster
386	spectacled sculpin	Triglops scepticus
374	spineless sculpin	Phalloctotus obtusus
84	spinetail mobula	Mobula japonica
BOXSP	spiny boxfish	Ostracion diaphanum
SHSDG	spiny dogfish shark	Squalus acanthias
LOBSP	spiny lobster	Panulirus interruptus
428	spiny snailfish	Liparis mucosus
403	spinycheck starsnout	Bathyagonus infraspinalis
338	spinyhead sculpin	Dasyctotus setiger
388	spinynose sculpin	Asemichthys taylori
RFSNS	splitnose rockfish	Sebastes diploproa
300	splitnose searobin	Bellator xenisma
442	splittail bass	Hemanthias peruanus
139	spookfish family	Opisthoproctidae
CRKSF	spotfin croaker	Roncador stearnsi
478	spotfin mojarra	Eucinostomus argenteus
SCSPT	spotfin sculpin	Icelinus tenuis
SPSPF	spotfin surfperch	Hyperprosopon anale
175	spotted batfish	Zalieutes elater
438	spotted cabrilla	Epinephelus analogus
184	spotted cusk eel	Chilara taylori
KLPSP	spotted kelpfish	Gibbonsia elegans
RATFS	spotted ratfish	Hydrolagus colieii
SBSPT	spotted sandbass	Paralabrax maculatofascia
421	spotted snailfish	Liparis callyodon
SOLST	spotted turbot	Pleuronichthys ritteri
RFSQS	squarespot rockfish	Sebastes hopkinsi
SQUID	squid class	Cephalopoda
FLRST	starry flounder	Platichthys stellatus
RFSTA	starry rockfish	Sebastes constellatus
SKSTY	starry skate	Raja stellulata
SKBFM	stickleback family	Gasterosteidae
SGFAM	stingray family	Dasyatidae
SGGEN	stingray genus	Dasyatis spp.
600	stippled gunnel	Rhodymenichthys dolichogaster
595	stone cockscomb	Alectrias alectrolophus
585	stout eelblenny	Lumpenus medius
STBAS	striped bass	Morone saxatilis
KLPST	striped kelpfish	Gibbonsia metzi
MARST	striped marlin	Tetrapturus audax
STMUL	striped mullet	Mugil cephalus
SPSTR	striped seaperch	Embiotoca lateralis
RFSTR	stripetail rockfish	Sebastes saxicola
STGEN	sturgeon genus	Acipenser
SNFFM	sunfish family	Centrarchidae
SMSUR	surf smelt	Hypomesus pretiosus
SPFAM	surfperch family	Embiotocidae
SHSWL	swell shark	Cephaloscyllium ventriosum

SRDFS	swordfish	Xiphias gladius
RFSDS	swordspine rockfish	Sebastes ensifer
393	tadpole sculpin	Psychrolutes paradoxus
431	tadpole snailfish	Nectoliparis pelagicus
219	tapertail ribbonfish	Trachipterus fukuzaki
THRBK	thornback	Platyrrhinoidis triseriata
373	thornback sculpin	Paricelinus hopliticus
SBTHF	threadfin bass	Pronotoqrammus multifasciatus
535	threadfin family	Polynemidae
SCTRF	threadfin sculpin	Icelinus filamentosus
502	threeband butterflyfish	Chaetodon humeralis
SKBTS	threespine stickleback	Gasterosteus aculeatus
SHTHR	thresher shark	Alopias vulpinus
SCTDP	tidepool sculpin	Oligocottus maculosus
425	tidepool snailfish	Liparis flarae
622	tidewater goby	Eucyclogobius newberryi
RFTIG	tiger rockfish	Sebastes nigrocinctus
SHTIG	tiger shark	Galeocерdo cuvieri
SMTOP	topsmelt	Atherinops affinis
RFTRE	treefish	Sebastes sericeus
580	trident prickleback	Gymnoclinus cristulatus
176	triplewart seadevil	Cryptopsaras couesi
CRABS	true crabs	Brachyuratribe
TBESN	tube snout	Aulorhynchus flavidus
411	tubenose poacher	Pallasina barbata
TNASG	tunas (non-mackerel)	
316	twohorn sculpin	Icelus bicornis
SHUNI	unidentified (sharks)	
UNISF	unidentified (surface fish)	
UNIFH	unidentified fish	
RFVER	vermilion rockfish	Sebastes miniatus
WAHOO	wahoo	Acanthocybium solandri
POLWE	walleye pollock	Theragra chalcogramma
SPWAL	walleye surfperch	Hyperprosopon argenteum
363	warthead sculpin	Myoxocephalus niger
409	warty poacher	Ocella verrucosa
192	wattled eelpout	Lycodes palearis
WEKFS	weakfishes	Cynoscion
22	whale shark	Rhincodon typus
REMWS	whalesucker	Remora australis
CROWT	white croaker	Genyonemus lineatus
SBWHT	white seabass	Atractoscion nobilis
SPWHT	white seaperch	Phanerodon furcatus
SHWHT	white shark	Carcharodon carcharias
STWHT	white sturgeon	Acipenser transmontanus
SMWTB	whitebait smelt	Allosmerus elongatus
588	whitebarred prickleback	Poroclinus rothrocki
RFWTB	whitebelly rockfish	Sebastes vexillaris
GRNWT	whitespotted greenling	Hexagrammos stelleri
RFWID	widow rockfish	Sebastes entomelas
WOLFE	wolf-eel	Anarrhichthys ocellatus

SCWOL	wolly sculpin	Clinocottus analis
WRAFM	wrasse family	Labridae
573	Y prickleback	Allolumpenus hypochrcmus
537	yellow bobo	Polydactylus opercularis
347	yellow Irish lord	Hemilepidotus jordani
CRBYR	yellow rock crab	Cancer anthonyi
SELYL	yellow snake eel	Ophichthus zophochir
357	yellowchin sculpin	Icelinus quadriseriatus
RFYFY	yelloweye rockfish	Sebastes ruberrimus
CRKYF	yellowfin croaker	Umbrina roncadore
566	yellowfin fringehead	Neoclinus stephensae
BOGYL	yellowfin goby	Acanthogobius flavimanus
SOLYF	yellowfin sole	Limanda aspera
TNAYF	yellowfin tuna	Thunnus albacares
RFYMN	yellowmouth rockfish	Sebastes reedi
YELTL	yellowtail	Seriola lalandi
RFYTL	yellowtail rockfish	Sebastes flavidus
618	zebra goby	Lythrypnus zebra
PERZB	zebra perch	Hermosilla

OTHER CODES

PR1 Non-Fishing Codes

Target Activity
 NFCCOM NF commercial fishing (does not include CPFVs)
 NFPC6 NF Commercial Passenger Fishing Vessels (includes open party, charter and "6 pack" vessels)
 NFOTH NF other (all other boating activity)

California Island Codes / Saltwater Cutoffs

NAME	ISLAND
Coronado	1
San Clemente	2
Catalina	3
Snata Barbara	4
San Nicolas	5
Anacapa	6
Santa Cruz	7
Santa Rosa	8
San Miguel	9
Farallon	10

County	River	Saltwater Cutoff Point
Del Norte	Smith River	1/4 way between mouth and US 101
	Klamath	1/4 way between mouth and US 101
Humboldt	Mad River	1/4 way between mouth and US 101
	Eel River	Upper end Cockrobin Island
	Redwood Creek	1/4 way between mouth and US 101
Mendocino	Ten Mile River	Old dock, 100 yds. up from US 101
	Noyo River	End of Dolphin Cove Marina
	Big River	Mid - 2nd turn upstream
	Albion River	Upper dock
	Navarro River	Highway 1 Bridge
Sonoma	Petaluma River	Highway 37 Bridge
	Coastal Rivers	Highway 1 bridges
Napa	Napa River	Highway 37 Bridge
Solano	Sacramento River	Carquinez Bridge
Contra Costa	Sacramento River	Carquinez Bridge

San Mateo	Coastal Rivers	Highway 1 bridges
Districts: Central Channel South	Coastal Rivers	Pacific Coast Highway bridges

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PR1 Port Codes

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubMjPort
6	15	301	PR1	CRD	Crescent City Inner Boat Basin Docks	CR	CR
6	15	400	PR1	CRL	Crescent City Harbor Launch Ramp	CR	CR
6	23	102	PR1	TRH	Trinidad Hoist	EU	EU
6	23	103	PR1	FLD	Fields Landing Launch Ramp	EU	EU
6	23	120	PR1	EUR	Eureka Marina Launch Ramp	EU	EU
6	23	307	PR1	TRD	Trinidad Docks (water taxi)	EU	EU
5	23	106	PR1	SHC	Shelter Cove Launch	FB	SH
5	45	100	PR1	FTB	Noyo River Launch Ramp	FB	FB
4	1	100	PR1	BER	Berkeley Marina Launch Ramp	SF	SF
4	41	100	PR1	SAU	Sausalito Clipper Launch Ramp	SF	SF
4	81	100	PR1	PRI	Princeton-Pillar Point Launch Ramp	SF	SF
4	97	100	PR1	BOD	Bodega Westside Launch Ramp	SF	SF
3	87	101	PR1	SCR	Santa Cruz Marina Launch Ramp	MO	SM
3	53	104	PR1	MOS	Moss Landing Launch Ramp	MO	SM
3	53	107	PR1	MOH	Monterey Marina Launch Ramp	MO	SM
3	79	100	PR1	MOR	Morro Bay Launch Ramp	MO	MA
3	79	101	PR1	AVI	Avila Boat Sling	MO	MA
2	83	400	PR1	SBA	Santa Barbara Launch Ramp	SB	SB
2	111	103	PR1	VEN	Ventura Launch Ramp	SB	VN
2	111	104	PR1	OXN	Channel Islands Launch Ramp	SB	VN
1	37	10	PR1	MDR	Marina Del Rey Launch Ramp	LA	LA
1	37	105	PR1	DLR	Dave's Launch Ramp	LA	LA
1	37	110	PR1	CLR	Cabrillo Launch Ramp	LA	LA
1	37	201	PR1	SSL	South Shores Launch Ramp	LA	LA
1	59	101	PR1	WAR	Dana Point Launch Ramp	LA	OR
1	59	104	PR1	SUN	Sunset Aquatic Launch Ramp	LA	OR
1	59	106	PR1	NEW	Newport Dunes Launch Ramp	LA	OR
1	73	104	PR1	SHL	Shelter Island Launch Ramp	LA	SD
1	73	112	PR1	GLO	Glorietta Launch Ramp	LA	SD
1	73	113	PR1	OCN	Oceanside Launch Ramp	LA	SD
1	73	204	PR1	DBN	Dana Basin Launch Ramp	LA	SD
1	73	205	PR1	SSH	South Shores Launch Ramp	LA	SD

PC Port Codes

District	Cnty	Site	Mode	Port	Site Name	MjPort	SubMjPort
6	15	301	PC	CRC	Inner Boat Basin	CR	CR
6	23	121	PC	EUR	Woodley Isl Marina	EU	EU
6	23	307	PC	TRD	Trinidad Pier	EU	EU
5	23	106	PC	SHC	Shelter Cove	FB	SH
5	45	400	PC	FTB	North Noyo Harbor	FB	FB
4	1	400	PC	BER	Berkeley PC	SF	SF
4	1	401	PC	EME	Emeryville PC	SF	SF
4	13	400	PC	CKT	Crockett PC	SF	SF
4	13	403	PC	SPB	San Pablo PC	SF	SF
4	41	400	PC	SAU	Sausalito PC	SF	SF
4	41	402	PC	LMD	Loch Lomond PC	SF	SF
4	75	400	PC	SNF	SF Fisherman's Wharf PC	SF	SF
4	81	400	PC	PRI	Princeton-Pillar Point PC	SF	SF
4	97	400	PC	BOD	Porto Bodega PC	SF	SF
3	53	104	PC	MOS	Moss Landing PC	MO	SM
3	87	101	PC	SCR	Santa Cruz PC	MO	SM
3	53	402	PC	MOH	Randy's Sportfishing	MO	SM
3	53	403	PC	MOH	Chris' Sportfishing	MO	SM
3	79	100	PC	MOR	Morro Bay PC	MO	MA
3	79	101	PC	AVI	Patriot's Landing	MO	MA
2	83	400	PC	SBA	Sea Landing	SB	SB
2	111	43	PC	CIS	Channel Island/Ciscos	SB	VN
2	111	45	PC	CAP	Hook's Sportfishing	SB	VN
2	111	103	PC	VEN	Ventura Sportfishing	SB	VN
1	37	10	PC	MDR	Marina Del Rey Sportfishing	LA	LA

1	37	13	PC	LBS	Long Beach Sportfishing	LA	LA
1	37	14	PC	TWE	22nd Street Sportfishing	LA	LA
1	37	15	PC	LAH	LA Harbor Sportfishing	LA	LA
1	37	17	PC	LBM	Long Beach Marina Sportfishing	LA	LA
1	37	202	PC	PPT	Pier Point Landing	LA	LA
1	37	303	PC	RED	Redondo Beach Sportfishing	LA	LA
1	37	401	PC	MAL	Malibu Sportfishing	LA	LA
1	37	405	PC	ROC	Rocky Point Charters	LA	LA
1	59	101	PC	WAR	Dana Wharf Sportfishing	LA	OR
1	59	106	PC	NEW	Newport Sportfishing	LA	OR
1	59	111	PC	LOC	Davey's Locker Sportfishing	LA	OR
1	73	18	PC	SEA	Seaforth Sportfishing	LA	SD
1	73	19	PC	HMS	H&M Sportfishing	LA	SD
1	73	20	PC	LOM	Point Loma Sportfishing	LA	SD
1	73	21	PC	FIS	Fisherman's Landing	LA	SD
1	73	113	PC	OCN	Helgren's Sportfishing	LA	SD
1	73	119	PC	DAN	Dana Landing Charters	LA	SD

CRFS Priority Species

HIGHEST PRIORITY	
Non-retention Species with Harvest Limits and Adipose Fin Clipped Salmon	
bronzespotted rockfish	cowcod
canary rockfish	yelloweye rockfish
Ad-clipped salmon (both Chinook (king) and Coho (silver))(length only)	
HIGH PRIORITY	
Species with Harvest Limits	
cabezon	black, black and yellow, blue, bocaccio, brown, copper, calico, China, gopher, grass, kelp, olive, quillback, treefish, widow, yellowtail rockfish
California sheephead	
California scorpionfish	
greenlings (<i>Hexagrammos</i> spp)	
lingcod	
Pacific halibut	

California Saltwater Angling Records 2012

Species Common Name	Species Scientific Name	Weight	County	Date
<u>Barracuda, California</u>	<i>Sphyræna argentea</i>	15 lb 15 oz	San Diego	8/24/1957
<u>Bass, Barred Sand</u>	<i>Paralabrax nebulifer</i>	13 lb 3 oz	Orange	8/29/1988
<u>Bass, Giant Sea*</u>	<i>Stereolepis gigas</i>	563 lb 8 oz	Ventura	8/20/1968
<u>Bass, Kelp</u>	<i>Paralabrax clathratus</i>	14 lb 7 oz	Los Angeles	7/30/1958
<u>Bass, Spotted Sand</u>	<i>Paralabrax maculatofasciatus</i>	6 lb 12 oz	Orange	10/1/1994
<u>Bonito, Pacific</u>	<i>Sarda chiliensis</i>	21 lb 5 oz	San Diego	10/19/2003
<u>Cabezon</u>	<i>Scorpaenichthys marmoratus</i>	23 lb 4 oz	Los Angeles	4/20/1958
<u>Corbina, California</u>	<i>Menticirrhus undulatus</i>	7 lb 1 oz	Orange	5/30/2005
<u>Croaker, Spotfin</u>	<i>Roncador steamsii</i>	14 lb 0 oz	Los Angeles	9/24/1951
<u>Croaker, Yellowfin</u>	<i>Umbrina roncadore</i>	3 lb 14 oz	Los Angeles	10/8/2000
<u>Dolphinfish</u>	<i>Coryphaena hippurus</i>	66 lb 0 oz	Orange	9/9/1990
<u>Flounder, Starry</u>	<i>Platichthys stellatus</i>	11 lb 4 oz	San Luis Obispo	8/29/1993
<u>Greenling, Kelp</u>	<i>Hexagrammos decagrammus</i>	3 lb 2 oz	Humboldt	6/6/2009
<u>Halibut, California</u>	<i>Paralichthys californicus</i>	67 lb 4 oz	Santa Barbara	7/1/2011

Species Common Name	Species Scientific Name	Weight	County	Date
<u>Jacksmelt</u>	<i>Atherinopsis californiensis</i>	1 lb 8 oz	Ventura	6/12/1998
<u>Lingcod</u>	<i>Ophiodon elongatus</i>	56 lb 0 oz	Del Norte	7/12/1992
<u>Mackerel, Jack</u>	<i>Trachurus symmetricus</i>	5 lb 8 oz	Orange	9/1/1988
<u>Mackerel, Pacific (Chub)</u>	<i>Scomber japonicus</i>	2 lb 8 oz	Los Angeles	11/5/1995
<u>Mackerel, Pacific (Chub)</u>	<i>Scomber japonicus</i>	2 lb 8 oz	San Diego	11/11/2005
<u>Marlin, Blue</u>	<i>Makaira nigricans</i>	692 lb 0 oz	Orange	8/18/1931
<u>Marlin, Striped</u>	<i>Tetrapturus audax</i>	339 lb 0 oz	Los Angeles	7/4/1985
<u>Opah</u>	<i>Lampris guttatus</i>	163 lb 0 oz	San Luis Obispo	10/8/1998
<u>Opaleye</u>	<i>Girella nigricans</i>	6 lb 4 oz		5/13/1956
<u>Perch, Black</u>	<i>Embiotoca jacksoni</i>	2 lb 9 oz	Monterey	2/20/2011
<u>Perch, Pile</u>	<i>Rhacochilus vacca</i>	1 lb 15 oz	Los Angeles	2/26/2007
<u>Prickleback, Monkeyface</u>	<i>Cebidichthys violaceus</i>	6 lb 1 oz	San Mateo	2/7/2005
<u>Ray, Bat</u>	<i>Myliobatis californica</i>	181 lb 0 oz	Orange	7/24/1978
<u>Rockfish, Black</u>	<i>Sebastes melanops</i>	9 lb 2 oz	San Francisco	9/3/1988
<u>Rockfish, Blue</u>	<i>Sebastes mystinus</i>	3 lb 14 oz	San Luis Obispo	10/14/1993
<u>(Rockfish), Bocaccio</u>	<i>Sebastes paucispinis</i>	17 lb 8 oz	Del Norte	10/25/1987
<u>Rockfish, Bronzespotted*</u>	<i>Sebastes gilli</i>	14 lb 8 oz	Los Angeles	2/22/1997
<u>Rockfish, Brown</u>	<i>Sebastes auriculatus</i>	6 lb 15 oz	San Mateo	9/29/2008
<u>Rockfish, Canary*</u>	<i>Sebastes pinniger</i>	6 lb 15 oz	Mendocino	9/30/2001
<u>Rockfish, China</u>	<i>Sebastes nebulosus</i>	3 lb 4 oz	Sonoma	7/24/1998
<u>Rockfish, Copper</u>	<i>Sebastes caurinus</i>	8 lb 5 oz	Monterey	8/18/1985
<u>Rockfish, Cowcod*</u>	<i>Sebastes levis</i>	21 lb 14 oz	Ventura	8/10/1998
<u>Rockfish, Grass</u>	<i>Sebastes rastrelliger</i>	5 lb 8 oz	Santa Cruz	9/29/2011
<u>Rockfish, Greenspotted</u>	<i>Sebastes chlorostictus</i>	2 lb 5 oz	San Luis Obispo	6/24/2005
<u>Rockfish, Olive</u>	<i>Sebastes serranoides</i>	5 lb 14 oz	Santa Barbara	11/21/1991
<u>Rockfish, Treefish</u>	<i>Sebastes serriceps</i>	4 lb 3 oz	Los Angeles	8/9/2003
<u>Rockfish, Vermilion</u>	<i>Sebastes miniatus</i>	14 lb 9 oz	San Luis Obispo	7/31/1996
<u>Rockfish, Yelloweye*</u>	<i>Sebastes ruberrimus</i>	18 lb 3 oz	San Luis Obispo	4/15/1994
<u>Rockfish, Yellowtail</u>	<i>Sebastes flavidus</i>	5 lb 8 oz	Monterey	8/4/1991
<u>Salmon, Chinook (King)</u>	<i>Oncorhynchus tshawytscha</i>	65 lb 4 oz	Del Norte	8/21/2002

Species Common Name	Species Name	Scientific	Weight	County	Date
<u>Sargo</u>	<i>Anisotremus davidsonii</i>		3 lb 3 oz	Los Angeles	12/28/2010
<u>Scorpionfish, California</u>	<i>Scorpaena guttata</i>		3 lb 0 oz	San Diego	12/26/1997
<u>Seabass, White</u>	<i>Atractoscion nobilis</i>		79 lb 0 oz	Santa Cruz	10/14/2011
<u>Seaperch, Rubberlip</u>	<i>Rhacochilus toxotes</i>		5 lb 0 oz	Monterey	6/18/2009
<u>Seaperch, Striped</u>	<i>Embiotoca lateralis</i>		2 lb 6 oz	Monterey	1/20/2011
<u>Shark, Blue</u>	<i>Prionace glauca</i>		258 lb 8 oz	Santa Barbara	8/29/2008
<u>Shark, Leopard</u>	<i>Triakis semifasciata</i>		47 lb 1 oz	Los Angeles	7/18/2007
<u>Shark, Sevengill</u>	<i>Notorynchus cepedianus</i>		276 lb 0 oz	Humboldt	10/17/1996
<u>Shark, Shortfin Mako</u>	<i>Isurus oxyrinchus</i>		1,098 lb 12 oz	Ventura	7/24/2010
<u>Shark, Thresher</u>	<i>Alopias vulpinus</i>		575 lb 0 oz	San Diego	5/26/2007
<u>Sheephead, California</u>	<i>Semicossyphus pulcher</i>		30 lb 8 oz	Orange	8/29/2009
<u>Sole, Fantail</u>	<i>Xystreus lyolepis</i>		8 lb 8 oz	Los Angeles	6/6/2001
<u>Squid, Humboldt</u>	<i>Dosidicus gigas</i>		OPEN – Minimum Size Requirement: 40 pounds		
<u>Surfperch, Barred</u>	<i>Amphistichus argenteus</i>		4 lb 2 oz	San Luis Obispo	11/8/1995
<u>Surfperch, Barred</u>	<i>Amphistichus argenteus</i>		4 lb 2 oz	Ventura	3/30/1996
<u>Surfperch, Calico</u>	<i>Amphistichus koelzi</i>		OPEN – Minimum Size Requirement: 1 pound		
<u>Surfperch, Rainbow</u>	<i>Hypsurus caryi</i>		OPEN – Minimum Size Requirement: 1 pound		
<u>Surfperch, Redtail</u>	<i>Amphistichus rhodotus</i>		3 lb 4 oz	Del Norte	8/11/2010
<u>Surfperch, Walleye</u>	<i>Hyperprosopon argenteum</i>		OPEN – Minimum Size Requirement: 1 pound		
<u>Swordfish</u>	<i>Xiphias gladius</i>		452 lb 8 oz	Los Angeles	9/30/2003
<u>Tuna, Albacore</u>	<i>Thunnus alalunga</i>		90 lb 0 oz	Santa Cruz	10/21/1997
<u>Tuna, Bigeye</u>	<i>Thunnus obesus</i>		240 lb 0 oz	San Diego	8/1/1987
<u>Tuna, Bluefin</u>	<i>Thunnus thynnus</i>		243 lb 11 oz		9/8/1990
<u>Tuna, Skipjack</u>	<i>Katsuwonus pelamis</i>		26 lb 0 oz	San Diego	8/28/1970
<u>Tuna, Yellowfin</u>	<i>Thunnus albacares</i>		239 lb 0 oz	Los Angeles	11/24/1984
<u>Whitefish, Ocean</u>	<i>Caulolatilus princeps</i>		13 lb 12 oz	San Diego	4/23/1988
<u>Whitefish, Ocean</u>	<i>Caulolatilus princeps</i>		13 lb 12 oz	Ventura	7/3/2010
<u>Yellowtail</u>	<i>Seriola lalandi</i>		63 lb 1 oz	Santa Barbara	6/18/2000

Species Common Name	Species Name	Scientific	Weight	County	Date
* State law presently prohibits the take of giant (black) sea bass, and canary, cowcod, and yelloweye rockfish off California, Section 28.10 and 28.55 (b), Title 14, California Administrative code.					

County Codes

County	Code	Coastal	SF bay
Alameda	ALA		X
Alpine	ALP		
Amador	AMA		
Butte	BUT		
Calaveras	CAL		
Colusa	COL		
Contra Costa	CON		X
Del Norte	DEL	X	
El Dorado	ELD		
Fresno	FRE		
Glenn	GLE		
Humboldt	HUM	X	
Imperial	IMP		
Inyo	INY		
Kern	KER		
Kings	KIN		
Lake	LAK		
Lassen	LAS		
Los Angeles	LOS	X	
Madera	MAD		
Marin	MAR	X	X
Mariposa	MRP		
Mendocino	MEN	X	
Merced	MER		
Modoc	MOD		
Mono	MNO		
Monterey	MON	X	
Napa	NAP		X
Nevada	NEV		
Orange	ORA	X	
Placer	PLA		
Plumas	PLU		
Riverside	RIV		
Sacramento	SAC		
San Benito	SBT		
San Bernardino	SBD		

County	Code	Coastal	SF bay
San Diego	SDG	X	
San Francisco	SNF	X	X
San Joaquin	SJO		
San Luis Obispo	SLO	X	
San Mateo	SMA	X	X
Santa Barbara	SBR	X	
Santa Clara	SCL		X
Santa Cruz	SCR	X	
Shasta	SHA		
Sierra	SIE		
Siskiyou	SIS		
Solano	SOL		X
Sonoma	SON	X	
Stanislaus	STA		
Sutter	SUT		
Tehama	THE		
Trinity	TRI		
Tulare	TUL		
Tuolumne	TUO		
Ventura	VEN	X	
Yolo	YOL		
Yuba	YUB		

Out of state - record state postal code, i.e. AZ = Arizona.

Don't know - record state postal code

State Postal Codes

State	Postal Code
ALABAMA	AL
ALASKA	AK
AMERICAN SAMOA	AS
ARIZONA	AZ
ARKANSAS	AR
CALIFORNIA	CA
COLORADO	CO
CONNECTICUT	CT
DELAWARE	DE
DISTRICT OF COLUMBIA	DC
MICRONESIA	FM
FLORIDA	FL
GEORGIA	GA
GUAM	GU
HAWAII	HI
IDAHO	ID
ILLINOIS	IL
INDIANA	IN
IOWA	IA
KANSAS	KS
KENTUCKY	KY
LOUISIANA	LA
MAINE	ME
MARSHALL ISLANDS	MH
MARYLAND	MD
MASSACHUSETTS	MA
MICHIGAN	MI
MINNESOTA	MN
MISSISSIPPI	MS
MISSOURI	MO
MONTANA	MT
NEBRASKA	NE
NEVADA	NV
NEW HAMPSHIRE	NH
NEW JERSEY	NJ
NEW MEXICO	NM
NEW YORK	NY
NORTH CAROLINA	NC
NORTH DAKOTA	ND
N. MARIANA ISLANDS	MP
OHIO	OH
OKLAHOMA	OK
OREGON	OR
PALAU	PW
PENNSYLVANIA	PA
PUERTO RICO	PR
RHODE ISLAND	RI
SOUTH CAROLINA	SC
SOUTH DAKOTA	SD
TENNESSEE	TN
TEXAS	TX

UTAH
VERMONT
VIRGIN ISLANDS
VIRGINIA
WASHINGTON
WEST VIRGINIA
WISCONSIN
WYOMING

UT
VT
VI
VA
WA
WV
WI
WY

Alpha Foreign Country Codes

Code	Foreign Country
FAF	Afghanistan
FAL	Albania
FDZ	Algeria
FAS	American Samoa
FAD	Andorra
FAO	Angola
FAI	Anguilla
FAQ	Antarctica
FAG	Antigua and Barbuda
FAR	Argentina
FAM	Armenia
FAW	Aruba
FAC	Ascension Island
FAU	Australia
FAT	Austria
FAZ	Azerbaijan
FBS	Bahamas
FBH	Bahrain
FBD	Bangladesh
FBG	Barbados
FBY	Belarus
FBE	Belgium
FBZ	Belize
FBJ	Benin
FBM	Bermuda
FBT	Bhutan
FBO	Bolivia
FBA	Bosnia and Herzegovina
FBW	Botswana
FBV	Bouvet Island
FBR	Brazil
FIO	British Indian Ocean Territory
FBN	Brunei Darussalam
FBG	Bulgaria
FBF	Burkina Faso
FBI	Burundi
FKH	Cambodia
FCM	Cameroon
FCA	Canada
FCV	Cap Verde
FKY	Cayman Islands
FCF	Central African Republic
FTD	Chad
FCL	Chile
FCN	China
FCX	Christmas Island
FCC	Cocos (Keeling) Islands
FCO	Colombia
FKM	Comoros
FCK	Cook Islands
FCR	Costa Rica

FCI	Cote d'Ivoire
FHR	Croatia/Hrvatska
FCU	Cuba
FCY	Cyprus
FCZ	Czech Republic
FCD	Democratic Republic of the Congo
FDK	Denmark
FDJ	Djibouti
FDM	Dominica
FDO	Dominican Republic
FTP	East Timor
FEC	Ecuador
FEG	Egypt
FSV	El Salvador
FGQ	Equatorial Guinea
FER	Eritrea
FEE	Estonia
FET	Ethiopia
FFK	Falkland Islands (Malvinas)
FFO	Faroe Islands
FFM	Federal State of Micronesia
FFJ	Fiji
FFI	Finland
FMK	Former Yugoslav Republic Macedonia
FFR	France
FGF	French Guiana
FPF	French Polynesia
FTF	French Southern Territories
FGA	Gabon
FGM	Gambia
FGE	Georgia
FDE	Germany
FGH	Ghana
FGI	Gibraltar
FGR	Greece
FGL	Greenland
FGD	Grenada
FGP	Guadeloupe
FGU	Guam
FGT	Guatemala
FGG	Guernsey
FGN	Guinea
FGW	Guinea-Bissau
FGY	Guyana
FHT	Haiti
FHM	Heard and McDonald Islands
FVA	Holy See (City Vatican State)
FHN	Honduras
FHK	Hong Kong
FHU	Hungary
FIS	Iceland
FIN	India
FID	Indonesia
FIR	Iran (Islamic Republic of)
FIQ	Iraq

FIE	Ireland
FIM	Isle of Man
FIL	Israel
FIT	Italy
FJM	Jamaica
FJP	Japan
FJE	Jersey
FJO	Jordan
FKZ	Kazakhstan
FKE	Kenya
FKI	Kiribati
FKP	Korea, North
FKR	Korea, South
FKW	Kuwait
FKG	Kyrgyzstan
FLA	Lao People's Democratic Republic
FLV	Latvia
FLB	Lebanon
FLS	Lesotho
FLR	Liberia
FLY	Libyan Arab Jamahiriya
FLI	Liechtenstein
FLT	Lithuania
FLU	Luxembourg
FMO	Macau
FMG	Madagascar
FMW	Malawi
FMY	Malaysia
FMV	Maldives
FML	Mali
FMT	Malta
FMH	Marshall Islands
FMQ	Martinique
FMR	Mauritania
FMU	Mauritius
FYT	Mayotte
FMX	Mexico
FMC	Monaco
FMN	Mongolia
FMS	Montserrat
FMA	Morocco
FMZ	Mozambique
FMM	Myanmar
FNA	Namibia
FNR	Nauru
FNP	Nepal
FNL	Netherlands
FAN	Netherlands Antilles
FNC	New Caledonia
FNZ	New Zealand
FNI	Nicaragua
FNE	Niger
FNG	Nigeria
FNU	Niue
FNF	Norfolk Island

FMP	Northern Mariana Islands
FNO	Norway
FOM	Oman
FPK	Pakistan
FPW	Palau
FPS	Palestinian Territories
FPA	Panama
FPG	Papua New Guinea
FPY	Paraguay
FPE	Peru
FPH	Philippines
FPN	Pitcairn Island
FPL	Poland
FPT	Portugal
FPR	Puerto Rico
FQA	Qatar
FCG	Republic of Congo
FMD	Republic of Moldova
FRE	Reunion Island
FRO	Romania
FRU	Russian Federation
FRW	Rwanda
FKN	Saint Kitts and Nevis
FLC	Saint Lucia
FVC	Saint Vincent and the Grenadines
FSM	San Marino
FST	Sao Tome and Principe
FSA	Saudi Arabia
FSN	Senegal
FSC	Seychelles
FSL	Sierra Leone
FSG	Singapore
FSK	Slovak Republic
FSI	Slovenia
FSB	Solomon Islands
FSO	Somalia
FZA	South Africa
FGS	South Georgia and the South Sandwich Islands
FES	Spain
FLK	Sri Lanka
FSH	St. Helena
FPM	St. Pierre and Miquelon
FSD	Sudan
FSR	Suriname
FSJ	Svalbard and Jan Mayen Islands
FSZ	Swaziland
FSE	Sweden
FCH	Switzerland
FSY	Syrian Arab Republic
FTW	Taiwan
FTJ	Tajikistan
FTZ	Tanzania
FTH	Thailand
FTG	Togo
FTK	Tokelau

FTO	Tonga
FTT	Trinidad and Tobago
FTN	Tunisia
FTR	Turkey
FTM	Turkmenistan
FTC	Turks and Caicos Islands
FTV	Tuvalu
FUG	Uganda
FUA	Ukraine
FAE	United Arab Emirates
FUK	United Kingdom
FUS	United States
FUY	Uruguay
FUM	US Minor Outlying Islands
FUZ	Uzbekistan
FVU	Vanuatu
FVE	Venezuela
FVN	Vietnam
FVG	Virgin Islands (British)
FVI	Virgin Islands (USA)
FWF	Wallis and Futuna Islands
FEH	Western Sahara
FWS	Western Samoa
FYE	Yemen
FYU	Yugoslavia
FZM	Zambia
FZW	Zimbabwe

Angler Slang Names

common	sci_name	slang
Pacific mackerel	Scomber japonicus	American mackerel
bronzespotted rockfish	Sebastes gilli	Arkansas red
Pacific pompano	Peprilus simillimus	BC
Pacific pompano	Peprilus simillimus	Baja CA to Fraser River
speckled rockfish	Sebastes ovalis	Belinda cod (So. of Santa Moni
Pacific mackerel	Scomber japonicus	Big Mac
bonito	Sarda chiliensis	Bone head
northern anchovy	Engraulis mordax	CA anchoveta
northern anchovy	Engraulis mordax	CA anchovy
Pacific bonito	Sarda chilensis	CA bonito
Pacific hake	Merluccius productus	CA hake
calico surfperch	Amphistichus koelzi	CA porgie
tomcod	Microgadus proximus	CA tomcod
Pacific angel shark	Squantina californica	California angel shark
giant sea bass	Stereolepis gigas	California black sea bass
spiny dogfish shark	Squalus acanthias	California dogfish
California Halibut	Paralichthys californicus	California flounder
starry flounder	Platichthys stellatus	California flounder
halfmoon	Medialuna californiensis	California halfmoon
horn shark	Heterodontus francisci	California horn shark
giant sea bass	Stereolepis gigas	California jewfish
corbina	Menticirrhus undulatus	California king croaker
monkeyface pricklyback	Cebidichthys violaceus	California monkeyface eel
opaleye	Girella nigricans	California opaleye
sheephead	Semicossyphus pulcher	California redfish
barred sand bass	Paralabrax nebulifer	California rock bass
salema	Xenistius californiensis	California salema
barred sand bass	Paralabrax nebulifer	California sandbass
sargo	Anisotremus davidsoni	California sargo
white croaker	Genyonemus lineatus	California silver bass
petrale sole	Eopsetta jordani	California sole
swell shark	Cephaloscyllium ventriosum	California swell shark
thornback	Platyrrhinoidis triseriata	California thornback
corbina	Menticirrhus undulatus	California whiting
rock wrasse	Halichoeres semicinctus	California wrasse
yellowtail	Seriola lalandi	California yellowtail
halfmoon	Medialuna californiensis	Catalina blue
halfmoon	Medialuna californiensis	Catalina blue perch
yellowfin croaker	Umbrina roncadior	Catalina croaker
opaleye	Girella nigricans	Catalina perch
halfmoon	Medialuna californiensis	Catalina perch blue bass
speckled sandddab	Citharichthys stigmaeus	Catalina sanddab
Pacific sanddab	Citharichthys sordidus	Catalina sanddab sand dab
sargo	Anisotremus davidsoni	China croaker
walleye surfperch	Hyperprosopon argenteum	China pompano
black croaker	Cheilotrema saturnum	Chinese croaker
Chinook salmon	Oncorhynchus tshawytscha	Columbia river salmon
white sturgeon	Acipenser transmontanus	Columbia sturgeon
Pacific herring	Clupea pallasii	Easter herring
Pacific bonito	Sarda chilensis	Eastern Pacific bonito
petrale sole	Eopsetta jordani	English sole

bank rockfish	Sebastes rufus	Florida
bank rockfish	Sebastes rufus	Florida red
albacore	Thunnus alalunga	German
speckled rockfish	Sebastes ovalis	J.W. (No. of Pt. Hueneme)
opah	Lampris regius	Jerusalem haddock
petrale sole	Eopsetta jordani	Jordan's flounder
bank rockfish	Sebastes rufus	Louisiana ridge runner
Pacific mackerel	Scomber japonicus	Mac
Pacific mackerel	Scomber japonicus	Mac Attack or Mac Trash
Pacific pompano	Peprilus simillimus	Magdalena Bay
ocean sunfish	Mola Mola	Mola
California Halibut	Paralichthys californicus	Monterey halibut
California Halibut	Paralichthys californicus	Monterey halibut
redtail surfperch	Amphistichus rhodotus	OR porgie
white sturgeon	Acipenser transmontanus	Oregon sturgeon
northern anchovy	Engraulis mordax	Pacific anchovy
rock greenling	Hexagrammos lagocephalus	Pacific red rock trout
Coho salmon	Oncorhynchus kisutch	Pacific salmon
white sturgeon	Acipenser transmontanus	Pacific sturgeon
surfmelt	Hypomesus pretiosus	Pacific surf smelt
white surfperch	Phanerodon furcatus	Pacific white perch
Pacific hake	Merluccius productus	Pacific whiting
yellowfin tuna	Thunnus albacares	Pacific yellowfin
white croaker	Genyonemus lineatus	Pasadena
white croaker	Genyonemus lineatus	Pasadena trout
horn shark	Heterodontus francisci	Port Jackson shark
Chinook salmon	Oncorhynchus tshawytscha	Sacramento river salmon
white sturgeon	Acipenser transmontanus	Sacramento sturgeon
topsmelt	Atherinops affinis	San Francisco topsmelt
bigmouth sole	Hippoglossina stomata	Southern CA
jack mackerel	Trachurus symmetricus	Spaniard
jack mackerel	Trachurus symmetricus	Spanish mackerel
pygmy rockfish	Sebastes wilsoni	Wilson's rockfish
albacore	Thunnus alalunga	abrego
yellowtail	Seriola lalandi	ahi
California Halibut	Paralichthys californicus	alabato
dusky rockfish	Sebastes ciliatus	alaska black rockfish
bigeye tuna	Thunnus obesus	albacore
swordfish	Xiphus gladius	billfish
albacore	Thunnus alalunga	albie
rubberlip seaperch	Rhacochilus toxotes	alfione
albacore	Thunnus alalunga	aliconghi
California barracuda	Sphyrna argenta	alligator gar
yellowfin tuna	Thunnus albacares	allison tuna
yellowtail	Seriola lalandi	amber fish
yellowtail	Seriola lalandi	amberjack
bocaccio	Sebastes paucispinis	andygumps
longspine thornyhead	Sebastolobus altivelis	anglefin rockfish
skipjack	Katsuwonus pelamis	arctic bonito
Mexican rockfish	Sebastes macdonaldi	arkansas black. coral cod
Mexican rockfish	Sebastes macdonaldi	arkansas red
bronzespotted rockfish	Sebastes gilli	arkansas traveler
Mexican rockfish	Sebastes macdonaldi	arkansas traveler
Coho salmon	Oncorhynchus kisutch	artic trout
yellowfin tuna	Thunnus albacares	autumn albacore

rosy rockfish	Sebastes rosaceus	avacado rockfish
speckled rockfish	Sebastes ovalis	b j.w. widow
starry rockfish	Sebastes constellatus	bagre (span=catfish)
swell shark	Cephaloscyllium ventriosum	balloon shark
redbanded rockfish	Sebastes babcocki	bandit
redbanded rockfish	Sebastes babcocki	bandit
splitnose rockfish	Sebastes diploproa	banjo
thornback	Platyrrhinoidis triseriata	banjo shark
bank rockfish	Sebastes rufus	bank perch
speckled rockfish	Sebastes ovalis	bank perch
speckled rockfish	Sebastes ovalis	bank perch
white croaker	Genyonemus lineatus	bank perch
flag rockfish	Sebastes rubrivinctus	barber pole
redbanded rockfish	Sebastes babcocki	barber pole
treefish	Sebastes serriceps	barber pole convict bass
copper rockfish	Sebastes caurinus	bariaga branca
Pacific halibut	Hippoglossus stenolepis	barn door
California Halibut	Paralichthys californicus	barn door (large)
California barracuda	Sphyræna argenta	barracuda
California lizardfish	Synodus lucioceps	barracuda
barred surfperch	Amphistichus argenteus	barred perch
tiger rockfish	Sebastes nigrocinctus	barred rockfish
California barracuda	Sphyræna argenta	barry
olive rockfish	Sebastes serranoides	bass rockfish
California Halibut	Paralichthys californicus	bastard halibut
California batray	Myliobatis californica	bat sting ray
California batray	Myliobatis californica	batfish
spotted sand bass	Paralabrax maculatofasciatus	bay bass
spotted sand bass	Paralabrax maculatofasciatus	bay bass
black surfperch	Embiotoca jacksoni	bay black perch
black surfperch	Embiotoca jacksoni	bay perch
shiner surfperch	Cymatogaster aggregata	bay perch
topsmelt	Atherinops affinis	bay smelt
speckled rockfish	Sebastes ovalis	beccafico
widow rockfish	Sebastes entomelas	beccafico
greenstriped rockfish	Sebastes elongatus	belinda bass
squarespot rockfish	Sebastes hopkinsi	belinda bass
widow rockfish	Sebastes entomelas	belinda bass
speckled rockfish	Sebastes ovalis	belinda cod
Coho salmon	Oncorhynchus kisutch	bielaya ryba
California batray	Myliobatis californica	big black
stripetail rockfish	Sebastes saxicola	big-eye rockfish
bigeye tuna	Thunnus obesus	bigeye
salema	Xenistius californiensis	bigeye bass
pygmy rockfish	Sebastes wilsoni	bigeye rockfish
sharpchin rockfish	Sebastes zacentrus	bigeye rockfish
cabezon	Scorpaenichthys marmoratus	biggyhead
rubberlip seaperch	Rhacochilus toxotes	bigmouth surf-fish
sheephead	Semicossyphus pulcher	billygoats (large)
China rockfish	Sebastes nebulosus	black and yellow rockcod
black croaker	Cheilotrema saturnum	black bass
black rockfish	Sebastes melanops	black bass
sablefish	Anoplopoma fimbria	black candlefish
sargo	Anisotremus davidsoni	black croaker
spotfin croaker	Roncador stearnsi	black croaker

blacksmith	Chromis punctipinnis	black garibaldi
Chinook salmon	Oncorhynchus tshawytscha	black jaw
Chinook salmon	Oncorhynchus tshawytscha	black mouth
black croaker	Cheilotrema saturnum	black perch
black surfperch	Embiotoca jacksoni	black perch
blacksmith	Chromis punctipinnis	black perch
halfmoon	Medialuna californiensis	black perch
opaleye	Girella nigricans	black perch
black rockfish	Sebastes melanops	black sea bass
giant sea bass	Stereolepis gigas	black sea bass
giant sea bass	Stereolepis gigas	black sea bass
black surfperch	Embiotoca jacksoni	black seaperch
black rockfish	Sebastes melanops	black snapper
tiger rockfish	Sebastes nigrocinctus	blackbanded
darkblotched rockfish	Sebastes crameri	blackblotched rockfish
sablefish	Anoplopoma fimbria	blackcod
blackgill rockfish	Sebastes melanostomus	blackmouth rockfish
darkblotched rockfish	Sebastes crameri	blackmouth rockfish
roughey rockfish	Sebastes aleutianus	blackthroat rockfish
shortraker rockfish	Sebastes borealis	blackthroated rockfish
roughey rockfish	Sebastes aleutianus	blacktip rockfish
monkeyface prickleback	Cebidichthys violaceus	blenny eel
halfmoon	Medialuna californiensis	blooper
darkblotched rockfish	Sebastes crameri	blotchie
black croaker	Cheilotrema saturnum	blue bass
blue rockfish	Sebastes mystinus	blue bass
opaleye	Girella nigricans	blue bass
sargo	Anisotremus davidsoni	blue bass
cabezon	Scorpaenichthys marmoratus	blue cod
lingcod	Ophiodon elongatus	blue cod
blue shark	Prionace glauca	blue dog
blue rockfish	Sebastes mystinus	blue fish
lingcod	Ophiodon elongatus	blue fish
cabezon	Scorpaenichthys marmoratus	blue garnet
Pacific mackerel	Scomber japonicus	blue mackerel
blacksmith	Chromis punctipinnis	blue perch
halfmoon	Medialuna californiensis	blue perch
rainbow surfperch	Hypsurus caryi	blue perch
striped surfperch	Embiotoca lateralis	blue perch
blue shark	Prionace glauca	blue pointer
shortfin mako shark	Isurus oxyrinchus	blue pointer
white shark	Carcharodon carcharias	blue pointer
striped surfperch	Embiotoca lateralis	blue surfperch
common thresher shark	Alopias vulpinus	blue thresher
blue shark	Prionace glauca	blue whaler
halfmoon	Medialuna californiensis	blue wizard
opaleye	Girella nigricans	blue-eye
opaleye	Girella nigricans	blue-eyed perch
Coho salmon	Oncorhynchus kisutch	blueback
Coho salmon	Oncorhynchus kisutch	blueback salmon
sablefish	Anoplopoma fimbria	bluecod
black rockfish	Sebastes melanops	bluefish
kelp greenling	Hexagrammos decagrammus	bluefish
opaleye	Girella nigricans	bluefish
sablefish	Anoplopoma fimbria	bluefish

sevengill shark	Notorynchus cepedianus	bluntnose sevengill shark
sixgill shark	Hexanchus griseus	bluntnose sixgill shark
kelp greenling	Hexagrammos decagrammus	bodieron
brown rockfish	Sebastes auriculatus	bolina
greenspotted rockfish	Sebastes chlorostictus	bolina
Pacific bonito	Sarda chilensis	bone
Pacific bonito	Sarda chilensis	bonefish
longspine thornyhead	Sebastolobus altivelis	bonehead
Pacific bonito	Sarda chilensis	bonehead
shortspine thornyhead	Sebastolobus alascanus	bonehead
Pacific bonito	Sarda chilensis	boner
Pacific bonito	Sarda chilensis	bongo
Pacific bonito	Sarda chilensis	bonita
shortfin mako shark	Isurus oxyrinchus	bonito
kelp greenling	Hexagrammos decagrammus	boregat
vermillion rockfish	Sebastes miniatus	borracho
vermillion rockfish	Sebastes miniatus	borrachon
greenblotched rockfish	Sebastes rosenblatti	bosco
greenspotted rockfish	Sebastes chlorostictus	bosco
greenspotted rockfish	Sebastes chlorostictus	bosco
pink rockfish	Sebastes eos	bosco
pink rockfish	Sebastes eos	bosco
greenblotched rockfish	Sebastes rosenblatti	boscob
petrale sole	Eopsetta jordani	brill
swordfish	Xiphus gladius	broadbill
swordfish	Xiphus gladius	broadbill swordfish
rock sole	Lepidopsetta bilineata	broadfin sole
sevengill shark	Notorynchus cepedianus	broadnose sevengill shark
sevengill shark	Notorynchus cepedianus	broadsnouted shark
queenfish	Seriphus politus	brown bait
brown rockfish	Sebastes auriculatus	brown bass
bocaccio	Sebastes paucispinis	brown bomber
brown rockfish	Sebastes auriculatus	brown bomber
dusky rockfish	Sebastes ciliatus	brown bomber
widow rockfish	Sebastes entomelas	brown bombers
redstripe rockfish	Sebastes proriger	brown striped rockfish
widow rockfish	Sebastes entomelas	brownies
widow rockfish	Sebastes entomelas	buda
lingcod	Ophiodon elongatus	buffalo
lingcod	Ophiodon elongatus	buffalo cod
Pac staghorn Sculpin	Leptocottus armatus	buffalo sculpin
rainbow surfperch	Hypsurus caryi	bugara
olive rockfish	Sebastes serranoides	bulera bass
kelp bass	Paralabrax clathratus	bull bass (large)
cabezon	Scorpaenichthys marmoratus	bull cod
white sea bass	Atractoscion nobilis	bull tomcod
white sea bass	Atractoscion nobilis	bull tomcod
sixgill shark	Hexanchus griseus	bulldog
brown Irish lord	Hemilepidotus spinosus	bullhead
cabezon	Scorpaenichthys marmoratus	bullhead
Pac staghorn sculpin	Leptocottus armatus	bullhead
plainfin midshipman	Porichthys notatus	bullhead
red Irish lord	Hemilepidotus hemilepidotus	bullhead
horn shark	Heterodontus francisci	bullhead shark
sixgill shark	Hexanchus griseus	bullshark

rougeye rockfish	Sebastes aleutianus	buoy keg
shortraker rockfish	Sebastes borealis	buoy keg
gopher rockfish	Sebastes carnatus	butter bass
white croaker	Genyonemus lineatus	butter bass
California Halibut	Paralichthys californicus	butter fish
gopher rockfish	Sebastes carnatus	butterball
giant kelpfish	Heterostichus rostratus	butterfish
Pacific butterfly	Peprilus simillimus	butterfish
Pacific hake	Merluccius productus	butterfish
sablefish	Anoplopoma fimbria	butterfish
senorita	Oxyjulis californica	butterfish
rubberlip seaperch	Rhacochilus toxotes	buttermouth
black surfperch	Embiotoca jacksoni	buttermouth perch
opaleye	Girella nigricans	button perch
opaleye	Girella nigricans	button-back bass
Pacific herring	Clupea pallasii	ca herring
cabezon	Scorpaenichthys marmoratus	cab
cabezon	Scorpaenichthys marmoratus	cabby
kelp bass	Paralabrax clathratus	cabrilla
sixgill shark	Hexanchus griseus	caffa bota
cowcod	Sebastes levis	calf
kelp bass	Paralabrax clathratus	calico
kelp bass	Paralabrax clathratus	calico
spotted sand bass	Paralabrax maculatofasciatus	calico
kelp bass	Paralabrax clathratus	calico bass
canary rockfish	Sebastes pinniger	canary
redbanded rockfish	Sebastes babcocki	canary
California lizardfish	Synodus lucioceps	candlefish
eulachon	Thaleichthys pacificus	candlefish
sablefish	Anoplopoma fimbria	candlefish
tiger rockfish	Sebastes nigrocinctus	candystripe
petrale sole	Eopsetta jordani	cape sole
topsmelt	Atherinops affinis	capron
white croaker	Genyonemus lineatus	carbinette
lingcod	Ophiodon elongatus	card
leopard shark	Triakis semifasciata	cat shark
bronzespotted rockfish	Sebastes gilli	catalina
bronzespotted rockfish	Sebastes gilli	catalina bass
bronzespotted rockfish	Sebastes gilli	catalina salmon
black and yellow rockfish	Sebastes chrysomelas	cefalutano
China rockfish	Sebastes nebulosus	cefalutano
China rockfish	Sebastes nebulosus	cerod
splitnose rockfish	Sebastes diploproa	channel cod
longspine thornyhead	Sebastolobus altivelis	channel rockfish
shortspine thornyhead	Sebastolobus alascanus	channel rockfish
kelp bass	Paralabrax clathratus	checkerboard bass
cowcod	Sebastes levis	chefra
white croaker	Genyonemus lineatus	chenfish
black rockfish	Sebastes melanops	cherne
yellowtail rockfish	Sebastes flavidus	cherne
Pacific halibut	Hippoglossus stenolepis	chicken
California Halibut	Paralichthys californicus	chicken halibut
chilipepper	Sebastes goodei	chili
greenstriped rockfish	Sebastes elongatus	chilipepper
redstripe rockfish	Sebastes proriger	chilipepper

black and yellow rockfish	Sebastes chrysomelas	china cod
China rockfish	Sebastes nebulosus	china cod
gopher rockfish	Sebastes carnatus	china cod
black croaker	Cheilotrema saturnum	china croaker
giant kelpfish	Heterostichus rostratus	china croaker
greenspotted rockfish	Sebastes chlorostictus	china fish
white surfperch	Phanerodon furcatus	china pompano
China rockfish	Sebastes nebulosus	chinafish
starry rockfish	Sebastes constellatus	chinafish
China rockfish	Sebastes nebulosus	chinese rockfish
Chinook salmon	Oncorhynchus tshawytscha	chinook salmon
kelp greenling	Hexagrammos decagrammus	chirus
brown rockfish	Sebastes auriculatus	chocolate bass
Pacific mackerel	Scomber japonicus	chub mackerel
Chinook salmon	Oncorhynchus tshawytscha	chub salmon
copper rockfish	Sebastes caurinus	chucklehead
greenblotched rockfish	Sebastes rosenblatti	chucklehead
greenspotted rockfish	Sebastes chlorostictus	chucklehead
pink rockfish	Sebastes eos	chucklehead
speckled rockfish	Sebastes ovalis	cinnamon
widow rockfish	Sebastes entomelas	cinnamon
brown rockfish	Sebastes auriculatus	cinnamon bass
speckled rockfish	Sebastes ovalis	ciuva
sablefish	Anoplopoma fimbria	coal cod
canary rockfish	Sebastes pinniger	coal mine codalarga
sablefish	Anoplopoma fimbria	coalfish
black rockfish	Sebastes melanops	coastal black rockfish
gopher rockfish	Sebastes carnatus	cod
lingcod	Ophiodon elongatus	codfish
white croaker	Genyonemus lineatus	cognard
black rockfish	Sebastes melanops	columbia river rockfish
dolphin	Coryphaena hippurus	common dolphinfish
black surfperch	Embiotoca jacksoni	common surf-fish
moray eel	Gymnothorax mordax	conger eel
treefish	Sebastes sericeus	convict bass
zebra perch	Hermosilla azurea	convict fish
flag rockfish	Sebastes rubrivinctus	convictfish
Mexican rockfish	Sebastes macdonaldi	coral red
Pacific mackerel	Scomber japonicus	cornfed
rosy rockfish	Sebastes rosaceus	corsair
redbanded rockfish	Sebastes babcocki	covict
cowcod	Sebastes levis	cow
cowcod	Sebastes levis	cow rockfish
sevengill shark	Notorynchus cepedianus	cow shark
sixgill shark	Hexanchus griseus	cow shark
cowcod	Sebastes levis	cowfish
yelloweye rockfish	Sebastes ruberrimus	cowfish
drum family	Sciaenidae	croakers
rockfish genus	Sebastes spp.	crotch cricket (small)
striped surfperch	Embiotoca lateralis	crugnoli
greenstriped rockfish	Sebastes elongatus	cucumber
California barracuda	Sphyraena argenta	cuda
lingcod	Ophiodon elongatus	cultus cod
Mexican rockfish	Sebastes macdonaldi	dark chili
pink rockfish	Sebastes eos	dawn rockfish

surfsmelt	Hypomesus pretiosus	day smelt
surfsmelt	Hypomesus pretiosus	dayfish
sablefish	Anoplopoma fimbria	deep sea trout
blackgill rockfish	Sebastes melanostomus	deepsea rockfish
rosethorn rockfish	Sebastes helvomaculatus	deepwater scacciatole
rosethorn rockfish	Sebastes helvomaculatus	deepwater scratch tail
starry flounder	Platichthys stellatus	diamond flounder
spiny dogfish shark	Squalus acanthias	dog shark
grey smoothhound shark	Mustelus californicus	dogfish
dolphin	Coryphaena hippurus	dolphinfish
California Halibut	Paralichthys californicus	door mat
dolphin	Coryphaena hippurus	dorado
rock sole	Lepidopsetta bilineata	double-lined flounder
dolphin	Coryphaena hippurus	dourade
lingcod	Ophiodon elongatus	dragon fish
yelloweye rockfish	Sebastes ruberrimus	drum
drum family	Sciaenidae	drums
rosy rockfish	Sebastes rosaceus	dude
kelp rockfish	Sebastes atrovirens	dumb bass
pile surfperch	Rhacochilus vacca	dusky perch
honeycomb rockfish	Sebastes umbrosus	dusky rockfish
pygmy rockfish	Sebastes wilsoni	dwarf rockfish
California batray	Myliobatis californica	eagle ray
giant kelpfish	Heterostichus rostratus	eel
monkeyface prickleback	Cebidichthys violaceus	eel
starry flounder	Platichthys stellatus	emery flounder
starry flounder	Platichthys stellatus	emerywheel
fantail sole	Xystreureys liolepis	entire range
eulachon	Thaleichthys pacificus	eurachon
longspine thornyhead	Sebastolobus altivelis	fagiano
shortspine thornyhead	Sebastolobus alascanus	fagiano
canary rockfish	Sebastes pinniger	fantail
sheephead	Semicossyphus pulcher	fathead
copper rockfish	Sebastes caurinus	fighting bob
Pacific sardine	Sardinops sagax	fire crackers
California barracuda	Sphyræna argenta	fire hose
redbanded rockfish	Sebastes babcocki	flag
California batray	Myliobatis californica	flapper
Pacific bonito	Sarda chilensis	flasher
California Halibut	Paralichthys californicus	flatty
Pacific halibut	Hippoglossus stenolepis	flatty
canary rockfish	Sebastes pinniger	fliaum
rock sole	Lepidopsetta bilineata	flounder
sand sole	Psettichthys melanostictus	flounder
California Halibut	Paralichthys californicus	fly swatter (small)
swordspine rockfish	Sebastes ensifer	flyfish
bluefin tuna	Thunnus orientalis	footballs
yellowtail	Seriola lalandi	forktail
pile surfperch	Rhacochilus vacca	forktail perch
white surfperch	Phanerodon furcatus	forktail perch
common thresher shark	Alopias vulpinus	fox shark
quillback rockfish	Sebastes maliger	frecklebelly
giant sea bass	Stereolepis gigas	freight train
sand sole	Psettichthys melanostictus	fringe sole
rock greenling	Hexagrammos lagocephalus	fringed greenling

Pacific mackerel	Scomber japonicus	frog
cowcod	Sebastes levis	gallo
California lizardfish	Synodus lucioceps	gar
greenstriped rockfish	Sebastes elongatus	garnet
black rockfish	Sebastes melanops	garrupa
China rockfish	Sebastes nebulosus	garrupa
copper rockfish	Sebastes caurinus	garrupa
gopher rockfish	Sebastes carnatus	garrupa
grass rockfish	Sebastes rastrelliger	garrupa
kelp rockfish	Sebastes atrovirens	garrupa
treefish	Sebastes serriceps	garrupa
lingcod	Ophiodon elongatus	gator
vermilion rockfish	Sebastes miniatus	genuine red
yellowtail rockfish	Sebastes flavidus	gialota
giant sea bass	Stereolepis gigas	giant bass
monkeyface pricklyback	Cebidichthys violaceus	giant monkeyface eel
cabezon	Scorpaenichthys marmoratus	giant sculpin
giant sea bass	Stereolepis gigas	giant sea bass
yellowtail rockfish	Sebastes flavidus	giola
sheephead	Semicossyphus pulcher	goat
spotfin croaker	Roncador stearnsi	golden croaker
yellowfin croaker	Umbrina roncadore	golden croaker
green sturgeon	Acipenser medirostris	golden sturgeon
yelloweye rockfish	Sebastes ruberrimus	goldeneye
garibaldi	Hypsypops rubicundus	goldfish
black and yellow rockfish	Sebastes chrysomelas	gopher
China rockfish	Sebastes nebulosus	gopher
copper rockfish	Sebastes caurinus	gopher
gopher rockfish	Sebastes carnatus	gopher
kelp rockfish	Sebastes atrovirens	gopher
treefish	Sebastes serriceps	gopher
kelp rockfish	Sebastes atrovirens	gopher bass
black and yellow rockfish	Sebastes chrysomelas	gopher cod
quillback rockfish	Sebastes maliger	gophers
bigeye tuna	Thunnus obesus	gorilla
grass rockfish	Sebastes rastrelliger	grass bass
kelp rockfish	Sebastes atrovirens	grass bass
rock sole	Lepidopsetta bilineata	gravel sole
black rockfish	Sebastes melanops	gray rockfish
grey smoothhound shark	Mustelus californicus	gray shark
spiny dogfish shark	Squalus acanthias	grayfish
bluefin tuna	Thunnus orientalis	great albacore
blue shark	Prionace glauca	great blue shark
starry flounder	Platichthys stellatus	great flounder
white shark	Carcharodon carcharias	great white shark
grass rockfish	Sebastes rastrelliger	green bomber
lingcod	Ophiodon elongatus	green cod
grass rockfish	Sebastes rastrelliger	green garrupa
kelp rockfish	Sebastes atrovirens	green garrupa
opaleye	Girella nigricans	green perch
Pacific mackerel	Scomber japonicus	green racer
kelp rockfish	Sebastes atrovirens	green rockfish
yellowtail rockfish	Sebastes flavidus	green rockfish
yellowtail rockfish	Sebastes flavidus	green snapper
common thresher shark	Alopias vulpinus	green thresher

Pacific mackerel	Scomber japonicus	greenback
Pacific mackerel	Scomber japonicus	greenback jack
Pacific mackerel	Scomber japonicus	greenback mackerel
spiny dogfish shark	Squalus acanthias	greeneyed grinner
opaleye	Girella nigricans	greenfish
striped bass	Morone saxatilis	greenhead
olive rockfish	Sebastes serranoides	greenie
silvergray rockfish	Sebastes brevispinis	greenie
yellowtail rockfish	Sebastes flavidus	greenies
kelp greenling	Hexagrammos decagrammus	greenling sea trout
rock greenling	Hexagrammos lagocephalus	greenling sea trout
lingcod	Ophiodon elongatus	greenlinger
albacore	Thunnus alalunga	gremon
sixgill shark	Hexanchus griseus	grey shark
starry flounder	Platichthys stellatus	grindstone
sixgill shark	Hexanchus griseus	griset
barred sand bass	Paralabrax nebulifer	ground bass
brown rockfish	Sebastes auriculatus	ground owl
bocaccio	Sebastes paucispinis	grouper
spotted sand bass	Paralabrax maculatofasciatus	grumpy
barred sand bass	Paralabrax nebulifer	grumpy (large)
sargo	Anisotremus davidsoni	grunt
plainfin midshipman	Porichthys notatus	grunter
shovelnose guitarfish	Rhinobatos productus	guitarfish
longspine thornyhead	Sebastolobus altivelis	gurnard
shortspine thornyhead	Sebastolobus alascanus	gurnard
longspine thornyhead	Sebastolobus altivelis	gurnet
shortspine thornyhead	Sebastolobus alascanus	gurnet
Pacific hake	Merluccius productus	haddock
California Halibut	Paralichthys californicus	hali
swordspine rockfish	Sebastes ensifer	hanky panky
spiny dogfish shark	Squalus acanthias	harbor halibut
longspine thornyhead	Sebastolobus altivelis	hardhead
shortspine thornyhead	Sebastolobus alascanus	hardhead
Pacific herring	Clupea pallasii	hareng
Pacific herring	Clupea pallasii	herring
queenfish	Seriphus politus	herring
white croaker	Genyonemus lineatus	herring
queenfish	Seriphus politus	herring croaker
spiny dogfish shark	Squalus acanthias	ho
flag rockfish	Sebastes rubrivinctus	hollywood
redbanded rockfish	Sebastes babcocki	hollywood
Chinook salmon	Oncorhynchus tshawytscha	hookbill
Coho salmon	Oncorhynchus kisutch	hookbill
eulachon	Thaleichthys pacificus	hooligan
longspine thornyhead	Sebastolobus altivelis	hooligan
shortspine thornyhead	Sebastolobus alascanus	hooligan
Coho salmon	Oncorhynchus kisutch	hoopid
horn shark	Heterodontus francisci	horned shark
spiny dogfish shark	Squalus acanthias	horned shark
calico surfperch	Amphistichus koelzi	humpback perch
sheephead	Semicossyphus pulcher	humpy
longspine thornyhead	Sebastolobus altivelis	idiot
shortspine thornyhead	Sebastolobus alascanus	idiot
longspine thornyhead	Sebastolobus altivelis	idiot fish

shortspine thornyhead	Sebastolobus alascanus	idiot fish
halfbanded rockfish	Sebastes semicinctus	inspector
giant kelpfish	Heterostichus rostratus	iodine fish
rock wrasse	Halichoeres semicinctus	iodine fish
senorita	Oxyjulis californica	iodine fish
bocaccio	Sebastes paucispinis	jack
topsmelt	Atherinops affinis	jack
yellowtail	Seriola lalandi	jack
opaleye	Girella nigricans	jack benny
bocaccio	Sebastes paucispinis	jack grouper
bocaccio	Sebastes paucispinis	jackfish
olive rockfish	Sebastes serranoides	johnnathans
chilipepper	Sebastes goodei	johnnies
olive rockfish	Sebastes serranoides	johnny bass
yellowtail rockfish	Sebastes flavidus	johnny bass
chilipepper	Sebastes goodei	johnny cod
barred sand bass	Paralabrax nebulifer	johnny verde
yellowtail rockfish	Sebastes flavidus	jonathan's
sand sole	Psettichthys melanostictus	karui-rui
barred sand bass	Paralabrax nebulifer	kelp bass
grass rockfish	Sebastes rastrelliger	kelp bass
olive rockfish	Sebastes serranoides	kelp bass
giant kelpfish	Heterostichus rostratus	kelp blenny
kelp greenling	Hexagrammos decagrammus	kelp cod
rock greenling	Hexagrammos lagocephalus	kelp cod
blacksmith	Chromis punctipinnis	kelp perch
grass rockfish	Sebastes rastrelliger	kelp rockfish
kelp bass	Paralabrax clathratus	kelp salmon
olive rockfish	Sebastes serranoides	kelp salmon
kelp greenling	Hexagrammos decagrammus	kelp trout
rock greenling	Hexagrammos lagocephalus	kelp trout
senorita	Oxyjulis californica	kelp wrasse
olive rockfish	Sebastes serranoides	kelp yellowtail
giant kelpfish	Heterostichus rostratus	kelpfish
senorita	Oxyjulis californica	kelpfish
white sea bass	Atractoscion nobilis	king croaker
Chinook salmon	Oncorhynchus tshawytscha	king salmon
queenfish	Seriphus politus	kingfish
white croaker	Genyonemus lineatus	kingfish
Coho salmon	Oncorhynchus kisutch	kitsutch
Pacific bonito	Sarda chilensis	laguna tuna
bluefin tuna	Thunnus orientalis	leaping tuna
topsmelt	Atherinops affinis	least smelt
lingcod	Ophiodon elongatus	leopard cod
skipjack	Katsuwonus pelamis	lesser tuna
lingcod	Ophiodon elongatus	ling
reefish	Sebastes serriceps	lipstick bass
reefish	Sebastes serriceps	lipstick fish
white croaker	Genyonemus lineatus	little bass
topsmelt	Atherinops affinis	little smelt
Pacific bonito	Sarda chilensis	little tuna
rubberlip seaperch	Rhacochilus toxotes	liverlip
California lizardfish	Synodus lucioceps	lizardfish
longspine thornyhead	Sebastolobus altivelis	lobe-finned rockfish
shortspine thornyhead	Sebastolobus alascanus	lobe-finned rockfish

splitnose rockfish	Sebastes diploproa	lobe-jawed rockfish
kelp bass	Paralabrax clathratus	lockee cod
California barracuda	Sphyræna argenta	log
California barracuda	Sphyræna argenta	log barracuda
albacore	Thunnus alalunga	long fin tuna
albacore	Thunnus alalunga	longfin
bocaccio	Sebastes paucispinis	longjaw
silvergray rockfish	Sebastes brevispinis	longjaw
Pacific ocean perch	Sebastes alutus	longjaw rockfish
common thresher shark	Alopias vulpinus	longtail shark
bank rockfish	Sebastes rufus	lucky fish
shortfin mako shark	Isurus oxyrinchus	mackerel shark
Pacific bonito	Sarda chilensis	magneto
dolphin	Coryphaena hippurus	mahi mahi
shortfin mako shark	Isurus oxyrinchus	mako
white shark	Carcharodon carcharias	maneater shark
cabezon	Scorpaenichthys marmoratus	marble sculpin
striped marlin	Tetrapturus audax	marlin
Pacific sanddab	Citharichthys sordidus	megrim
speckled sandddab	Citharichthys stigmaeus	megrim
bocaccio	Sebastes paucispinis	merou
Pacific bonito	Sarda chilensis	micronito
bonito	Sarda chiliensis	micronito or mini-striper (sma
plainfin midshipman	Porichthys notatus	midshipman
bocaccio	Sebastes paucispinis	mini-grouper (juveniles)
Pacific bonito	Sarda chilensis	mini-striper
rainbow surfperch	Hypsurus caryi	moharra
mola	Mola mola	mola
monkeyface prickleback	Cebidichthys violaceus	monkey face eel
California batray	Myliobatis californica	monkey face ray
monkeyface prickleback	Cebidichthys violaceus	monkeyface blenny
Pacific angel shark	Squantina californica	monkfish
cowcod	Sebastes levis	moo's
canary rockfish	Sebastes pinniger	moondog
opah	Lampris regius	moonfish
moray eel	Gymnothorax mordax	moray
wolf eel	Anarrhichthys ocellatus	moray eel
yellowtail	Seriola lalandi	mossback
copper rockfish	Sebastes caurinus	mother-in-law
Pacific sanddab	Citharichthys sordidus	mottled sanddab
speckled sandddab	Citharichthys stigmaeus	mottled sanddab
California batray	Myliobatis californica	mud marlin
sixgill shark	Hexanchus griseus	mud shark
spiny dogfish shark	Squalus acanthias	mud shark
Pacific ocean perch	Sebastes alutus	muddy bass
squarespot rockfish	Sebastes hopkinsi	mustard perch
petrale sole	Eopsetta jordani	nameta
starry flounder	Platichthys stellatus	nattaaznak
black rockfish	Sebastes melanops	neri
blue rockfish	Sebastes mystinus	neri
blue rockfish	Sebastes mystinus	nervi
copper rockfish	Sebastes caurinus	never die
night smelt	Spirinchus starksi	nightfish
Pacific angel shark	Squantina californica	northern angel shark
plainfin midshipman	Porichthys notatus	northern midshipman

copper rockfish	Sebastes caurinus	northern rockfish
spiny dogfish shark	Squalus acanthias	northern shark
starry flounder	Platichthys stellatus	northern starry flounder
hake	Merluccius productus	oatmeal fish
Pacific hake	Merluccius productus	oatmeal fish
stripetail rockfish	Sebastes saxicola	occhio-grande
Pacific bonito	Sarda chilensis	ocean bonito
northern anchovy	Engraulis mordax	ocean northern anchovy
Pacific ocean perch	Sebastes alutus	ocean perch
mola	Mola mola	ocean sunfish
ocean whitefish	Caulolatilus princeps	ocean tilefish
Pacific hake	Merluccius productus	ocean whitefish
skipjack	Katsuwonus pelamis	oceanic bonito
soupfin shark	Galeorhinus zyopterus	oil shark
stripetail rockfish	Sebastes saxicola	oliveback rockfish
kelp rockfish	Sebastes atrovirens	oogly-googly
kelp rockfish	Sebastes atrovirens	oogly-googly
opaleye	Girella nigricans	opaleye perch
canary rockfish	Sebastes pinniger	orange rockfish
chameleon rockfish	Sebastes phillipsi	orange rockfish
rosethorn rockfish	Sebastes helvomaculatus	orange-red rockfish
quillback rockfish	Sebastes maliger	orangespotted
bluefin tuna	Thunnus orientalis	oriental tuna
brown rockfish	Sebastes auriculatus	p.d. bass
albacore	Thunnus alalunga	pacific albacore
California barracuda	Sphyræna argenta	pacific barracuda
spiny dogfish shark	Squalus acanthias	pacific grayfish
shortfin mako shark	Isurus oxyrinchus	pacific mako
striped marlin	Tetrapturus audax	pacific marlin
bocaccio	Sebastes paucispinis	pacific red snapper
copper rockfish	Sebastes caurinus	paler montana
grey smoothhound shark	Mustelus californicus	paloma
topsmelt	Atherinops affinis	panzarotti
rock wrasse	Halichoeres semicinctus	parrot fish
China rockfish	Sebastes nebulosus	pelican
California barracuda	Sphyræna argenta	pencils
grass rockfish	Sebastes rastrelliger	pepper bass
blacksmith	Chromis punctipinnis	perch
Pacific ocean perch	Sebastes alutus	perch
sargo	Anisotremus davidsoni	perch
shiner surfperch	Cymatogaster aggregata	perch
striped surfperch	Embiotoca lateralis	perch
zebra perch	Hermosilla azurea	perch
surfmelt	Hypomesus pretiosus	perlin
black rockfish	Sebastes melanops	pesce prete
blue rockfish	Sebastes mystinus	pesce prete
greenspotted rockfish	Sebastes chlorostictus	pesce vermiglia
petrale sole	Eopsetta jordani	petorau
tomcod	Microgadus proximus	piciata
spiny dogfish shark	Squalus acanthias	picked or piked dogfish
albacore	Thunnus alalunga	pigfish
Pacific sardine	Sardinops sagax	pilchards
rubberlip seaperch	Rhacochilus toxotes	pile perch
spiny dogfish shark	Squalus acanthias	pinback
northern anchovy	Engraulis mordax	pinheads

California barracuda	Sphyræna argenta	pinks
spiny dogfish shark	Squalus acanthias	pinole
northern anchovy	Engraulis mordax	plain anchovy
greenstriped rockfish	Sebastes elongatus	poinsettias
shovelnose guitarfish	Rhinobatos productus	pointed nosed guitarfish
kelp bass	Paralabrax clathratus	police car
Pacific butterfly	Pepilus simillimus	pompano
ocean whitefish	Caulolatilus princeps	poor man's yellowtail
Pacific ocean perch	Sebastes alutus	pop and sebastes
Pacific hake	Merluccius productus	popeye
stripetail rockfish	Sebastes saxicola	popeye rockfish
shortfin mako shark	Isurus oxyrinchus	porbeagle
rubberlip seaperch	Rhacochilus toxotes	porgee
calico surfperch	Amphistichus koelzi	porgie
black surfperch	Embiotoca jacksoni	porgy
pile surfperch	Rhacochilus vacca	porgy
redtail surfperch	Amphistichus rhodotus	porgy
silver surfperch	Hyperprosopon ellipticum	porgy
yelloweye rockfish	Sebastes ruberrimus	potbelly
blue rockfish	Sebastes mystinus	priestfish
swell shark	Cephaloscyllium ventriosum	puffer shark
Chinook salmon	Oncorhynchus tshawytscha	quinnat
Coho salmon	Oncorhynchus kisutch	quisutch
rainbow surfperch	Hypsurus caryi	rainbow perch
striped surfperch	Embiotoca lateralis	rainbow perch
topsmelt	Atherinops affinis	rainbow smelt
vermillion rockfish	Sebastes miniatus	rasciera
vermillion rockfish	Sebastes miniatus	rasher
yelloweye rockfish	Sebastes ruberrimus	rasp head
California scorpionfish	Scorpaena guttata	rattlesnake
California batray	Myliobatis californica	ray
yellowtail rockfish	Sebastes flavidus	real yellowtail
redbanded rockfish	Sebastes babcocki	red bandit
sheephead	Semicossyphus pulcher	red fish
greenspotted rockfish	Sebastes chlorostictus	red rock cod
splitnose rockfish	Sebastes diploproa	red rock cod
starry rockfish	Sebastes constellatus	red rock cod
vermillion rockfish	Sebastes miniatus	red rock cod
yelloweye rockfish	Sebastes ruberrimus	red rock cod/fish
canary rockfish	Sebastes pinniger	red rockfish
vermillion rockfish	Sebastes miniatus	red rockfish
black croaker	Cheilotrema saturnum	red roncador
spotfin croaker	Roncador stearnsi	red roncador
red Irish lord	Hemilepidotus hemilepidotus	red sculpin
rock greenling	Hexagrammos lagocephalus	red sea trout
black rockfish	Sebastes melanops	red snapper
bocaccio	Sebastes paucispinis	red snapper
canary rockfish	Sebastes pinniger	red snapper
chilipepper	Sebastes goodei	red snapper
cowcod	Sebastes levis	red snapper
rockfish genus	Sebastes spp.	red snapper
shortraker rockfish	Sebastes borealis	red snapper
vermillion rockfish	Sebastes miniatus	red snapper
vermillion rockfish	Sebastes miniatus	red snapper
widow rockfish	Sebastes entomelas	red snapper

yelloweye rockfish	Sebastes ruberrimus	red snapper
yellowtail rockfish	Sebastes flavidus	red snapper
kelp bass	Paralabrax clathratus	red spotted rock bass
spotted sand bass	Paralabrax maculatofasciatus	red spotted rock bass
bank rockfish	Sebastes rufus	red widow
yellowmouth rockfish	Sebastes reedi	redeye
bocaccio	Sebastes paucispinis	redfish
Pacific ocean perch	Sebastes alutus	redfish
splitnose rockfish	Sebastes diploproa	redfish
canary rockfish	Sebastes pinniger	reds
vermillion rockfish	Sebastes miniatus	reds
redtail surfperch	Amphistichus rhodoterus	redtail seaperch
redtail surfperch	Amphistichus rhodoterus	redtail seaperch
yellowmouth rockfish	Sebastes reedi	reedi
blue rockfish	Sebastes mystinus	reef perch
greenstriped rockfish	Sebastes elongatus	reina
rosy rockfish	Sebastes rosaceus	rinky dink
barred sand bass	Paralabrax nebulifer	rock bass
blacksmith	Chromis punctipinnis	rock bass
gopher rockfish	Sebastes carnatus	rock bass
grass rockfish	Sebastes rastrelliger	rock bass
kelp bass	Paralabrax clathratus	rock bass
striped bass	Morone saxatilis	rock bass
grass rockfish	Sebastes rastrelliger	rock cod
rock sole	Lepidopsetta bilineata	rock flounder
rock sole	Lepidopsetta bilineata	rock flounder
silvergray rockfish	Sebastes brevispinis	rock grouper
blacksmith	Chromis punctipinnis	rock perch
bocaccio	Sebastes paucispinis	rock salmon
olive rockfish	Sebastes serranoides	rock salmon
silvergray rockfish	Sebastes brevispinis	rock salmon
kelp greenling	Hexagrammos decagrammus	rock trout
rock greenling	Hexagrammos lagocephalus	rock trout
rockfish genus	Sebastes spp.	rockcod
kelp greenling	Hexagrammos decagrammus	rockfish
spotfin croaker	Roncador stearnsi	roncador
white croaker	Genyonemus lineatus	roncador
drum family	Sciaenidae	roncadores
white croaker	Genyonemus lineatus	ronkie
drum family	Sciaenidae	ronkies
cowcod	Sebastes levis	rooster
cowcod	Sebastes levis	roosterfish
shortraker rockfish	Sebastes borealis	rose rockfish
Pacific ocean perch	Sebastes alutus	rosefish
splitnose rockfish	Sebastes diploproa	rosefish
rosethorn rockfish	Sebastes helvomaculatus	rosies
redtail surfperch	Amphistichus rhodoterus	rosy surf fish
starry flounder	Platichthys stellatus	rough jacket
rock sole	Lepidopsetta bilineata	roughback sole
longspine thornyhead	Sebastolobus altivelis	round rockfish
shortspine thornyhead	Sebastolobus alascanus	round rockfish
thornback	Platyrhinoidis triseriata	round skate
petrale sole	Eopsetta jordani	round-nosed sole
sevengill shark	Notorynchus cepedianus	roundsnout shark
rock sole	Lepidopsetta bilineata	rubber sole

rubberlip seaperch	Rhacochilus toxotes	rubberlip seaperch
rubberlip seaperch	Rhacochilus toxotes	rubberlip surfperch
sablefish	Anoplopoma fimbria	sable
copper rockfish	Sebastes caurinus	sailfin
bocaccio	Sebastes paucispinis	salmon grouper
Mexican rockfish	Sebastes macdonaldi	salmon grouper
bocaccio	Sebastes paucispinis	salmon rockfish
shortfin mako shark	Isurus oxyrinchus	salmon shark
spiny dogfish shark	Squalus acanthias	salmon shark
cabezon	Scorpaenichthys marmoratus	salpa
barred sand bass	Paralabrax nebulifer	sand bass
brown rockfish	Sebastes auriculatus	sand bass
kelp bass	Paralabrax clathratus	sand bass
spotted sand bass	Paralabrax maculatofasciatus	sand bass
speckled sanddab	Citharichthys stigmaeus	sand dab
sand sole	Psettichthys melanostictus	sand flounder
starry flounder	Platichthys stellatus	sand paper flounder
starry flounder	Platichthys stellatus	sand paper flounder
barred surfperch	Amphistichus argenteus	sand perch
brown smoothhound	Mustelus henlei	sand shark
gray smoothhound	Mustelus californicus	sand shark
gray smoothhound shark	Mustelus californicus	sand shark
shovelnose guitarfish	Rhinobatos productus	sand shark
spiny dogfish shark	Squalus acanthias	sand shark
night smelt	Spirinchus starksi	sand smelt
barred sand bass	Paralabrax nebulifer	sandy
greenblotched rockfish	Sebastes rosenblatti	santa maria
greenspotted rockfish	Sebastes chlorostictus	santa maria
pink rockfish	Sebastes eos	santa maria
Pacific herring	Clupea pallasii	sardine
rosethorn rockfish	Sebastes helvomaculatus	scacciatale
rosy rockfish	Sebastes rosaceus	scacciatale
starry rockfish	Sebastes constellatus	scacciatale
cabezon	Scorpaenichthys marmoratus	scaleless sculpin
rosy rockfish	Sebastes rosaceus	schizo
grass rockfish	Sebastes rastrelliger	schmo
soupin shark	Galeorhinus zyopterus	school shark
grass rockfish	Sebastes rastrelliger	scomoda
California barracuda	Sphyræna argenta	scoot
California barracuda	Sphyræna argenta	scooter
cabezon	Scorpaenichthys marmoratus	scorpion
California scorpionfish	Scorpaena guttata	scorpion
longspine thornyhead	Sebastolobus altivelis	scorpion
shortspine thornyhead	Sebastolobus alascanus	scorpion
rosy rockfish	Sebastes rosaceus	scratchtail
greenspotted rockfish	Sebastes chlorostictus	scrub
rockfish genus	Sebastes spp.	scrub (small)
cabezon	Scorpaenichthys marmoratus	sculpin
California scorpionfish	Scorpaena guttata	sculpin
yellowtail rockfish	Sebastes flavidus	sea bass
California batray	Myliobatis californica	sea bird
common thresher shark	Alopias vulpinus	sea fox
California batray	Myliobatis californica	sea ray
Coho salmon	Oncorhynchus kisutch	sea trout
queenfish	Seriphus politus	sea trout

sablefish	Anoplopoma fimbria	sea trout
white sea bass	Atractoscion nobilis	sea trout
white sea bass	Atractoscion nobilis	sea trout (juvenile)
Pacific herring	Clupea pallasii	seld
greenstriped rockfish	Sebastes elongatus	serena
shiner surfperch	Cymatogaster aggregata	seven-eleven perch
bocaccio	Sebastes paucispinis	sewer salmon
white croaker	Genyonemus lineatus	sewer trout
olive rockfish	Sebastes serranoides	shallow water yellowtail
grey smoothhound shark	Mustelus californicus	shark
shortfin mako shark	Isurus oxyrinchus	sharp-nosed mackerel shark
sheephead	Semicossyphus pulcher	sheephead
sheephead	Semicossyphus pulcher	sheepie
queenfish	Seriphus politus	shiner
shiner surfperch	Cymatogaster aggregata	shiner
silver surfperch	Hyperprosopon ellipticum	shiner
silver surfperch	Hyperprosopon ellipticum	shiner
white croaker	Genyonemus lineatus	shiner
white surfperch	Phanerodon furcatus	shiner
shiner surfperch	Cymatogaster aggregata	shiner perch
shiner surfperch	Cymatogaster aggregata	shiner seaperch
flag rockfish	Sebastes rubrivinctus	shoflies
rock sole	Lepidopsetta bilineata	short-finned sole
shortfin mako shark	Isurus oxyrinchus	shortfin mako
bluefin tuna	Thunnus orientalis	shortfin tuna
silvergray rockfish	Sebastes brevispinis	shortspine rockfish
thornback	Platyrrhinoidis triseriata	shovelnose
shovelnose guitarfish	Rhinobatos productus	shovelnose shark
sixgill shark	Hexanchus griseus	shovelnose shark
redstripe rockfish	Sebastes proriger	sidestripe rockfish
Pacific hake	Merluccius productus	silver hake
barred surfperch	Amphistichus argenteus	silver perch
pile surfperch	Rhacochilus vacca	silver perch
silver surfperch	Hyperprosopon ellipticum	silver perch
walleye surfperch	Hyperprosopon argenteum	silver perch
Chinook salmon	Oncorhynchus tshawytscha	silver salmon
Coho salmon	Oncorhynchus kisutch	silver salmon
surfmelt	Hypomesus pretiosus	silver smelt
barred surfperch	Amphistichus argenteus	silver surf fish
silvergray rockfish	Sebastes brevispinis	silverbelly
silvergray rockfish	Sebastes brevispinis	silverside
Coho salmon	Oncorhynchus kisutch	silversides
plainfin midshipman	Porichthys notatus	singing fish
black rockfish	Sebastes melanops	sitka black bass
sixgill shark	Hexanchus griseus	sixgill cow shark
lingcod	Ophiodon elongatus	skilfish
sablefish	Anoplopoma fimbria	skilfish
sablefish	Anoplopoma fimbria	skill
California barracuda	Sphyræna argenta	skinny
skipjack	Katsuwonus pelamis	skippies
rosy rockfish	Sebastes rosaceus	skits
rosy rockfish	Sebastes rosaceus	skitsadelly
Coho salmon	Oncorhynchus kisutch	skowitz
pygmy rockfish	Sebastes wilsoni	slender rockfish
shortbelly rockfish	Sebastes jordani	slender rockfish

shortbelly rockfish	Sebastes jordani	slim rockfish
longspine thornyhead	Sebastolobus altivelis	slim thornyhead
shortspine thornyhead	Sebastolobus alascanus	slim thornyhead
rock sole	Lepidopsetta bilineata	slime sole
bocaccio	Sebastes paucispinis	slimey
lingcod	Ophiodon elongatus	slinky linky
eulachon	Thaleichthys pacificus	smallfish Pacific smelt
squarespot rockfish	Sebastes hopkinsi	smallmouth rockfish
rock sole	Lepidopsetta bilineata	smear dab
surfsmelt	Hypomesus pretiosus	smelt
Pacific staghorn sculpin	Leptocottus armatus	smooth cabezon
Pacific staghorn sculpin	Leptocottus armatus	smooth sculpin
brown smoothhound	Mustelus henlei	smoothhound shark
gray smoothhound	Mustelus californicus	smoothhound shark
grey smoothhound shark	Mustelus californicus	smoothhound shark
California barracuda	Sphyrna argenta	snake
California lizardfish	Synodus luciocephalus	snakefish
shortraker rockfish	Sebastes borealis	snapper
silvergray rockfish	Sebastes brevispinis	snapper
widow rockfish	Sebastes entomelas	soft brown
Pacific sanddab	Citharichthys sordidus	soft flounder
speckled sanddab	Citharichthys stigmaeus	soft flounder
petrale sole	Eopsetta jordani	soglia
Pacific sanddab	Citharichthys sordidus	sole
petrale sole	Eopsetta jordani	sole
rock sole	Lepidopsetta bilineata	sole
sand sole	Psettichthys melanostictus	sole
speckled sanddab	Citharichthys stigmaeus	sole
soupfin shark	Galeorhinus zyopterus	soupfin
California Halibut	Paralichthys californicus	southern halibut
flag rockfish	Sebastes rubrivinctus	spanish flag
shiner surfperch	Cymatogaster aggregata	sparada
striped marlin	Tetrapturus audax	spearfish
China rockfish	Sebastes nebulosus	speckled garrupa
honeycomb rockfish	Sebastes umbrosus	speckled rockfish
quillback rockfish	Sebastes maliger	speckled rockfish
kelp greenling	Hexagrammos decagrammus	speckled sea trout
striped marlin	Tetrapturus audax	spikefish
spiny dogfish shark	Squalus acanthias	spikey jack
spiny dogfish shark	Squalus acanthias	spinarola
longspine thornyhead	Sebastolobus altivelis	spinycheeked rockfish
shortspine thornyhead	Sebastolobus alascanus	spinycheeked rockfish
splitnose rockfish	Sebastes diploproa	splittips
pile surfperch	Rhacochilus vacca	splittail perch
white surfperch	Phanerodon furcatus	splittail perch
spotfin croaker	Roncador stearnsi	spot
spotfin croaker	Roncador stearnsi	spotfin drum
spotted sand bass	Paralabrax maculatofasciatus	spotted
red Irish lord	Hemilepidotus hemilepidotus	spotted Irish lord
spotted sand bass	Paralabrax maculatofasciatus	spotted bass
spotted sand bass	Paralabrax maculatofasciatus	spotted bay bass
black rockfish	Sebastes melanops	spotted black rockfish
spotted sand bass	Paralabrax maculatofasciatus	spotted cabrilla
starry rockfish	Sebastes constellatus	spotted corsair
sevengill shark	Notorynchus cepedianus	spotted cow shark

sand sole	Psettichthys melanostictus	spotted flounder
gopher rockfish	Sebastes carnatus	spotted rock bass
kelp greenling	Hexagrammos decagrammus	spotted rock trout
rock greenling	Hexagrammos lagocephalus	spotted rock trout
squarespot rockfish	Sebastes hopkinsi	spotted rockfish
starry rockfish	Sebastes constellatus	spotted rockfish
spotfin croaker	Roncador stearnsi	spotty
spotted sand bass	Paralabrax maculatofasciatus	spotty
rubberlip seaperch	Rhacochilus toxotes	sprat
shortfin mako shark	Isurus oxyrinchus	spriglio
spiny dogfish shark	Squalus acanthias	spring dogfish
Chinook salmon	Oncorhynchus tshawytscha	spring salmon
spiny dogfish shark	Squalus acanthias	spur dog
Pacific angel shark	Squantina californica	squat
Pacific angel shark	Squantina californica	squato
rainbow surfperch	Hypsurus caryi	squawfish
striped surfperch	Embiotoca lateralis	squawfish
striped bass	Morone saxatilis	squidhound
Pacific staghorn sculpin	Leptocottus armatus	staghorn sculpin
pink rockfish	Sebastes eos	starry eye
greenblotched rockfish	Sebastes rosenblatti	starry eyes
greenspotted rockfish	Sebastes chlorostictus	starry eyes
lingcod	Ophiodon elongatus	steamer cod
shortbelly rockfish	Sebastes jordani	steamer rockcod
rainbow trout	Salmo gairdnerii	steelhead trout
California batray	Myliobatis californica	sting ray
California batray	Myliobatis californica	stingaree
California barracuda	Sphyræna argenta	stovepipe
greenstriped rockfish	Sebastes elongatus	strawberry
rosy rockfish	Sebastes rosaceus	strawberry
striped bass	Morone saxatilis	streaked bass
salema	Xenistius californiensis	striped bass
tiger rockfish	Sebastes nigrocinctus	striped bass
Pacific mackerel	Scomber japonicus	striped mackerel
greenstriped rockfish	Sebastes elongatus	striped rockfish
rainbow surfperch	Hypsurus caryi	striped seaperch
rainbow surfperch	Hypsurus caryi	striped surf fish
Pacific bonito	Sarda chilensis	striped tuna
skipjack	Katsuwonus pelamis	striped tuna
striped bass	Morone saxatilis	striper
striped marlin	Tetrapturus audax	striper
corbina	Menticirrhus undulatus	sucker
barred sand bass	Paralabrax nebulifer	sugar bass
black rockfish	Sebastes melanops	sugar bass
grass rockfish	Sebastes rastrelliger	sugar bass
kelp rockfish	Sebastes atrovirens	sugar bass
olive rockfish	Sebastes serranoides	sugar bass
olive rockfish	Sebastes serranoides	sugarfish
mola	Mola mola	sunfish
ocean sunfish	Mola Mola	sunfish
barred surfperch	Amphistichus argenteus	surf fish
corbina	Menticirrhus undulatus	surf fish
surfmelt	Hypomesus pretiosus	surf fish
barred surfperch	Amphistichus argenteus	surf perch
calico surfperch	Amphistichus koelzi	surf perch

canary rockfish	Sebastes pinniger	swallowtail
starry flounder	Platichthys stellatus	swamp flounder
common thresher shark	Alopias vulpinus	swingtail shark
common thresher shark	Alopias vulpinus	swiveltail
yellowtail	Seriola lalandi	tail
yelloweye rockfish	Sebastes ruberrimus	tambor
yelloweye rockfish	Sebastes ruberrimus	tambor drum
Chinook salmon	Oncorhynchus tshawytscha	tchaviche
common thresher shark	Alopias vulpinus	thintail shark
longspine thornyhead	Sebastolobus altivelis	thornhead
shortspine thornyhead	Sebastolobus alascanus	thornhead
common thresher shark	Alopias vulpinus	thresher
flag rockfish	Sebastes rubrivinctus	tiger
leopard shark	Triakis semifasciata	tiger shark
Pacific mackerel	Scomber japonicus	tiny tuna
Pacific mackerel	Scomber japonicus	tiny tuna
plainfin midshipman	Porichthys notatus	toad fish
albacore	Thunnus alalunga	tombo
tomcod	Microgadus proximus	tomcod
white croaker	Genyonemus lineatus	tomcod
bocaccio	Sebastes paucispinis	tomcod(yoy)
white croaker	Genyonemus lineatus	tommy
kelp greenling	Hexagrammos decagrammus	tommy cod
white croaker	Genyonemus lineatus	tommy croaker
soupin shark	Galeorhinus zyopterus	tope shark
Chinook salmon	Oncorhynchus tshawytscha	tshawytscha
petrale sole	Eopsetta jordani	tsubame garei
bigeye tuna	Thunnus obesus	tuna
bluefin tuna	Thunnus orientalis	tuna
bluefin tuna	Thunnus orientalis	tunny
yelloweye rockfish	Sebastes ruberrimus	turkey red
yelloweye rockfish	Sebastes ruberrimus	turkey rockfish
rock sole	Lepidopsetta bilineata	two-lined dab
rock sole	Lepidopsetta bilineata	two-lined flounder
Chinook salmon	Oncorhynchus tshawytscha	tyee
yelloweye rockfish	Sebastes ruberrimus	vecchia
Mexican rockfish	Sebastes macdonaldi	vernon
Mexican rockfish	Sebastes macdonaldi	vernon (Dana Pt.)
black rockfish	Sebastes melanops	vervi
skipjack	Katsuwonus pelamis	victor fish
speckled rockfish	Sebastes ovalis	viura
widow rockfish	Sebastes entomelas	viuva
tomcod	Microgadus proximus	wachna
walleye surfperch	Hyperprosopon argenteum	walleye seaperch
walleye surfperch	Hyperprosopon argenteum	walleye surf fish
bronzespotted rockfish	Sebastes gilli	warthog
pink rockfish	Sebastes eos	warthog
greenblotched rockfish	Sebastes rosenblatti	warthogs
greenspotted rockfish	Sebastes chlorostictus	warthogs
greenstriped rockfish	Sebastes elongatus	watermelon
skipjack	Katsuwonus pelamis	watermelon
white sea bass	Atractoscion nobilis	weakfish
common thresher shark	Alopias vulpinus	whiptail shark
white sea bass	Atractoscion nobilis	white
lingcod	Ophiodon elongatus	white cod

white sea bass	Atractoscion nobilis	white croaker
copper rockfish	Sebastes caurinus	white gopher
copper rockfish	Sebastes caurinus	white grouper
pile surfperch	Rhacochilus vacca	white perch
walleye surfperch	Hyperprosopon argenteum	white perch
white surfperch	Phanerodon furcatus	white perch
white shark	Carcharodon carcharias	white pointer
Coho salmon	Oncorhynchus kisutch	white salmon
yellowtail	Seriola lalandi	white salmon
skipjack	Katsuwonus pelamis	white skip jack
white surfperch	Phanerodon furcatus	white surf perch
skipjack	Katsuwonus pelamis	white tuna
night smelt	Spirinchus starksi	whitebait
rock sole	Lepidopsetta bilineata	whitebellied flounder
copper rockfish	Sebastes caurinus	whitebelly
ocean whitefish	Caulolatilus princeps	whitefish
Pacific hake	Merluccius productus	whitefish, whiting
Pacific halibut	Hippoglossus stenolepis	whitesided paltus
starry rockfish	Sebastes constellatus	whitespotted rockfish
bank rockfish	Sebastes rufus	widow
speckled rockfish	Sebastes ovalis	widow rockfish
widow rockfish	Sebastes entomelas	widowfish
bocaccio	Sebastes paucispinis	wormbags
bocaccio	Sebastes paucispinis	wormy
rock wrasse	Halichoeres semicinctus	wrasse
yellowtail	Seriola lalandi	yellow
quillback rockfish	Sebastes maliger	yellow back
yelloweye rockfish	Sebastes ruberrimus	yellow belly
yellowtail	Seriola lalandi	yellow jack
China rockfish	Sebastes nebulosus	yellow rockfish
honeycomb rockfish	Sebastes umbrosus	yellow rockfish
shiner surfperch	Cymatogaster aggregata	yellow shiner
quillback rockfish	Sebastes maliger	yellow-backed rockfish
copper rockfish	Sebastes caurinus	yellowbacked rockfish
yellowfin croaker	Umbrina roncadore	yellowfinned roncadore
China rockfish	Sebastes nebulosus	yellowspotted rockfish
China rockfish	Sebastes nebulosus	yellowstripe rockfish
olive rockfish	Sebastes serranoides	yellowtail rockfish
yellowtail	Seriola lalandi	yellowtail tuna
yellowfin croaker	Umbrina roncadore	yellowtailed croaker
Pacific mackerel	Scomber japonicus	zebra mackerel
sablefish	Anoplopoma fimbria	zipperfish
speckled rockfish	Sebastes ovalis	zippola
black and yellow rockfish	Sebastes chrysomelas	zurndicky

GLOSSARY

Ad Clip	A salmon with its adipose fin missing, signifying the fish has a coded-wire tag (CWT) inserted in its head.
Adipose fin (Ad-fin)	A fleshy, dorsal fin without rays, located toward the caudal fin. Found most notably in Salmonids.
AFS	American Fisheries Society
ALDS	Automated License Data System. A list of licensed anglers used for sampling.
Alternate mode	Intercepting anglers or boats not in the assigned fishing mode of sampling for a sampling assignment when the assigned site is not productive.
Alternate site	Intercepting anglers or boats at a site not assigned to be sampled when the assigned site is not productive.
Anaphylactic shock	Hypersensitivity reaction to foreign proteins or drugs, such as may occur when jabbed by spines on fish.
Angler license survey (ALDS)	Telephone survey based on contact information (ALDS) provided on cover page of sport fishing license sale books. Designed to identify effort data needed to estimate total number of marine recreational fishing trips taken by license holders.
Angler	A person fishing for finned fish or who has caught finfish, includes persons releasing their catch.
Angler Form	The form used to interview individual anglers on Cluster assignments.
Angler eligibility	Determination of whether a person is eligible (as an angler) to be interviewed by the Sampler.
Arrival Time	When the Sampler arrives on site (a specific time coded to the nearest minute)
ASF	Assignment Summary Form, the cover page used to track sampled assignments.
Assignment	An appointment scheduled and issued to a Sampler to collect data.
Assignment ID	The specific six digit code used to identify all sample assignments issued in a given month.
Avidity	How often an angler fishes in a 12 month period, in CA ocean waters, not including today.
Bad angler	An angler for which an interview cannot be obtained because of refusals or language barriers.
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.
Beach	An expanse of pebble, sand, or rock along a shore of an ocean that is affected by tidal action.
Beach and bank (BB)	A cluster assignment survey conducted on beaches and bank site primarily for catch data.
Bias	In statistics, a biased sample is a statistical sample in which members of the statistical population are not equally likely to be chosen.
Bio Data	Survey data such as catch counts, lengths, weights, scans, sex, and headtags
Boat Mode	A mode of fishing from a boat (skiff, vessel, kayak, etc.)

	Includes PR and PC modes.
California Code of Regulations (CCR)	The set of administrative rules issued by an agency such as Title 14 issued by CFDG for the management of fish and wildlife resources in the state.
CF Number	The CF number is a vessel registration number issued by the Department of Motor Vehicles. A CF number is required for every sail-powered vessel over eight feet in length and every motor-driven vessel (regardless of length) that is not documented by the U.S. Coast Guard which is used or on the waters of this state
California Fish and Game Code (FGC)	The set of laws (statutes) enacted by the California State Legislature and signed by the Governor that governs the management of fish and wildlife resources in the state.
CDFW permit #	In CRFS, the California Department of Fish & Wildlife's identification number for CPFVs. This number is usually found on the CPFVs wheel house in prominent lettering.
California Recreational Fisheries Survey (CRFS)	An integrated state and federally funded sampling program for California marine recreational fisheries. Conducted since January 2004.
Catch	Fish that are caught. Includes kept and released fish.
Catch estimate (see total catch estimate)	An expanded number based on a statistical sample with inference to the population.
Catch per unit of effort (CPUE)	The quantity of fish caught per unit of fishing effort, such as number of fish per angler day or pounds of released catch per boat hour.
Caudal fin	The terminal unpaired fin at the bottom rear end of the fish body which may be forked.
California Department of Fish and Wildlife (CDFW)	State natural resource agency that includes marine resource management.
Census	A complete accounting of the take of fish in a fishery.
Charter boat	A CPFV reserved for a specific group; usually means the boat is closed to anyone not in the group.
Cluster	A type of assignment where the Sampler visits a group of sites, considered together for man-made, beach-bank, and secondary (PR2) private/rental boat surveys.
Coded wire tag	Coded wire tags are small pieces of stainless steel wire that are injected into the snouts of juvenile salmon and steelhead. Each tag is etched with a binary code that identifies its release group.
Commercial fishing	Fishing in which the fish harvested, either whole or in part, are intended to enter commerce through sale, barter, or trade.
Commercial passenger fishing vessel (CPFV)	Commercially registered vessels which participate in recreational passenger trips.
County Code	A specific code for each California county. For sample sites it is numeric. For angler residence it is character.
Courtesy headtag (see headtag also)	A head tag that is prepared for a salmon head voluntarily brought to the Sampler, and is outside the sample.
CPFV	Commercial passenger fishing vessel (party or charter boat).
Catch survey (catch	A survey conducted by intercepting anglers upon

census)	completion of fishing to obtain catch and fishing effort information.
Complete interview	An interview that has all the necessary information to be used in the CRFS Estimates. For the Angler form, this is Status 1 forms.
CRFS	California Recreational Fisheries Survey
CWT	Coded wire tag
Deadhead (see also pinhead)	Non paying angler on a party/charter vessel.
Descending device	A device used to return rockfish to depth. Includes inverted crate, inverted hook, and commercially available devices. Does NOT include venting or "fizzing" the fish.
Departure time	When the Sampler physically leaves the site (a specific time coded to the nearest minute).
Depth	For boat modes, this is the total bottom depth in feet where fishing occurred.
Discard	Fish not retained by angler and returned to the ocean. Fish may be classified as released alive or dead. Location of catch, weight, and lengths are obtained if possible.
Disposition (Fish)	The fate of a caught fish: cut up for bait, filleted, or taken home. Does not include discarded fish.
Disposition (Assn)	On the ASF: Assignment disposition is either complete (1), Reassigned (2), or Canceled (6).
Disposition (Site)	On the ASF: Site disposition is either complete (1), Roving (7), pressure check (0), Low effort (4), or Other (5).
Directed harvest	Fishing that is directed at a certain species or group of species. This applies to both sport and commercial fishing.
District	The six geographical areas the CRFS divides California into for survey estimation purposes. District boundaries tend to follow certain county lines.
Diver	A person under water for a purpose using self contained breathing apparatus (SCUBA) or free diving (holding breath).
Dock	A floating platform with land access used primarily for boat moorage, loading, or fishing.
Dockside Sampling	Sampling of PCs at their birth or slip when they return from their fishing trip.
Effort	A way to assess the potential impact of fishing on the stock. Amount of time spent fishing. Number of boats or anglers that are fishing. And what type of fish and how they are targeting those fish.
Essential fish habitat (EFH)	Those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.
Estimate	An expanded number based on a statistical sample with inference to the population.
Estimated discard mortality	Estimates of discards can be made in a variety of ways, including samples from observers, anglers and logbook records. Fish (or parts of fish) can be discarded for a variety of reasons such as being a non target species for the trip, and compliance with management regulations like minimum size limits or quotas.
Examined catch	Catch that the CRFS Sampler was able to see, touch, count, ID and/or measure. Also called observed catch or Type 3 catch.

Fathom	Used chiefly in measuring marine depth. A fathom equals six feet.
Field check	Also called a Quality Control (QC) check, when a Lead or F/W Technician visits an assignment to evaluate Samplers, provide feedback, or train.
Finfish	Pertains to marine fish with fins for the purposes of CRFS. Does not include invertebrates (crustaceans and mollusks which are designated "shellfish").
Fish and Game Code	Legal form of California Law pertaining to fish and wildlife.
Fish and Game Commission	The Fish and Game Commission is a separate entity from the Department of Fish and Wildlife and has been involved in the management and use of California's fish and wildlife resources since 1870. It is composed of up to five members, appointed by the Governor and confirmed by the Senate. The Legislature delegated to the Commission a variety of powers, some general in nature and some very specific. A major responsibility is the formulation of general policies for the conduct of the Department of Fish and Wildlife and the interpretation of laws into regulations.
Fishery management council	A fisheries management body established by the Magnuson Stevens Act to manage fishery resources in designated regions of the United States. Membership varies in size depending on the number of states involved. There are eight regional Councils, including the Pacific Fisheries Management Council (PFMC).
Fishing AREA	The water area or island where the anglers fished
Fishing mode	The method of access to the fisheries. The major modes are man-made structures (MM), beach and bank fishing (BB), party and charter boat fishing (PC), and private and rental boat fishing (PR).
Fishing pressure	Number of anglers or boats at a fishing site; a gauge of effort
Fishing type	The type of fishing performed by CPFVs: Drift, Static, Anchored, Troll
Fork length	A measurement used frequently for fish length when the tail has a fork shape. Projected straight distance between the tip of the fish and the fork of the tail.
Gear	The fishing gear used to target fish, such as hook-and-line, pots, spear, etc.
Geographic information system (GIS)	A method of collecting and presenting data graphically by location or depth of fishing.
GPS Format	In reference to onboard sampling locations, the type of GPS format used to report latitude and longitude. Can be deg, min, sec OR deg and hundredth min.
Groundfish	There are 90+ species of groundfish managed through the policies of the Pacific Fishery Management Council's Groundfish Fishery Management Plan and under the Magnuson Stevens Fishery Conservation and Management Act and other Federal laws. The 90+ species include the rockfish, lingcod, greenlings, and other species somewhat closely associated with the ocean bottom.
Half-done interview	Also called Incomplete Angler Trips. An Angler Form interview (clusters) where the angler is 50% or more done

	with their fishing trip. 50% of the day's interviews must be "done". For BB, ½ done interviews can be completed anytime, but for MMPR2, the ½ done interviews MUST be after the stop time for that site.
Headtag (see also courtesy headtag)	An inventory tag that is attached to a salmon head which has been collected because an adipose fin clip indicated the presence of a coded wire tag.
Incomplete Angler Trips	Also called ½ done interviews. An Angler Form interview (clusters) where the angler is 50% or more done with their fishing trip. 50% of the day's interviews must be "done". For BB, ½ done interviews can be completed anytime, but for MMPR2, the ½ done interviews MUST be after the stop time for that site.
Ineligible angler	An angler who does not meet the criteria as an eligible angler for an interview. Anglers must: have wet gear hours, be 50% don with their trip, having fishd in CA ocean waters.
Initial refusal	An angler that refuses the CRFS interview from the beginning
Inland Marine Waters	A body of saltwater enclosed by land or barriers with a mouth that allows access to the ocean: e.g. San Francisco Bay, Morro Bay, Monterey Harbor, etc.
In season management	Regulatory changes that affect an ongoing fishery during its open season.
Intercept	To approach/Encounter an angler or a boat in the field to interview for the survey.
Invertebrate trips	Trips that target invertebrates. CRFS program interviews anglers/boats targeting crab, squid, lobster.
Jetty	A narrow man-made structure that projects into the water from land to reduce wave action in a waterway or harbor
Key refusal	An angler who refuses the CRFS interview by not answering a key question.
Key Questions	Usually marked with a (*). Key questions must be answered for the data to be used in the statistical programs to compute estimates.
KOD	Kind of day
Landing	Within a port there are one or more specific sites where anglers can fish. Landings tend to refer to where CPFVs and commercial boats dock.
Language Barrier	When the angler cannot speak adequate English that the interview must be terminated. A type of "bad angler".
Latitude	An angular distance north or south of the equator. These measurements are parallel to the equator
Launch ramp	A sloping roadway. Vehicles towing boats on trailers back the trailers down to the water until the boat can float off the trailer.
License type	The type of fishing lisencc issued by CDFW that the angler possesses: day, annual, or none. Resident, non-resident, free, lifetime, and reduced-fee fishing licenses fall under the "day" category.
Logbook	A log of each fishing trip is required by the CDFW to be completed and returned for each fishing trip. The log captures catch and effort information.
Longitude	An angular distance east or west of the prime meridian (in

	England). These measurements are perpendicular to the equator from pole to pole.
Magnuson Stevens Fishery Conservation and Management Act1	The MSFCMA, sometimes known as the "Magnuson Stevens Act," established the 200 mile fishery conservation zone, the regional fishery management council system, and other provisions of U.S. marine fishery law.
Marine Mammal Protection Act (MMPA)	The MMPA prohibits the harvest or harassment of marine mammals, although permits for incidental take of marine mammals while commercial fishing may be issued subject to regulation. (See "incidental take" for a definition of "take").
Marine Recreational Fisheries Statistical Survey (MRFSS)	A national survey developed in 1979 by the National Oceanic and Atmospheric Administration and conducted by National Marine Fisheries Service to estimate the impact of recreational fishing on marine resources.
Man-Made (MM)	A shore fishing mode. A structure built by humans that anglers can potentially fish from: jetty, pier, dock, wharf.
Missed boat	A boat, either in the PR1 or PR2 survey, fishing or not, that was observed at the site but not sampled. Can be on-site or off-site.
MMPR2	A cluster assignment. Man-made and secondary private/rental boat survey fishing modes
Mode (see Fishing mode)	Type of access to water for angling.
Mooring	And anchor station for boats to be stored in the harbor. A type of private access boat.
National Marine Fisheries Service (NMFS)	A division of the U.S. Department of Commerce, National Ocean and Atmospheric Administration (NOAA). NMFS is responsible for conservation and management of offshore fisheries (and inland salmon). The NMFS Regional Director is a voting member of the Council.
NMFS Economic survey	Some years, NMFS requests that CRFS interviews include additional questions (e.g. name, telephone, mail, home address) directed at shore-mode anglers and sometimes PC anglers.
National Oceanic & Atmospheric Administration (NOAA)	The parent agency of the National Marine Fisheries Service.
Non-fishing (NF) boat	Non-fishing (i.e. non-recreational fishing) boat. Examples include commercial fishing boats, dive boats, research boats, sail boats, enforcement boats, CPFVs, etc. There are 3 NF codes: NFOTH, NFCOM, and NFPC6
Non recovered species (NRS)	A coded-wire tagged salmon head which cannot be removed for some reason.
Ocean salmon project (OSP)	The Department of Fish and Wildlife's program to determine recreational and commercial catch, effort, and coded wire tag estimates for California's ocean salmon fisheries.
Onboard sampling	Sampling PC boats by riding the boat throughout the whole fishing trip.
Open bay	A wide bend or curve in a shoreline where wide unenclosed portion of the ocean is formed. Also known as a bight. California examples: Santa Monica Bay, Monterey

	Bay, etc. Not a true bay.
Opportunistic interviews	Interviews for party/charter trips completed outside of a regular assignment. Can be salmon or non-salmon trips.
Optimum yield (OY)	The amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems.
Overfished	Any stock or stock complex whose size is sufficiently small that a change in management practices is required to achieve an appropriate level and rate of rebuilding.
Pacific States Marine Fisheries Commission (PSMFC)	The PSMFC is a non regulatory agency that serves Alaska, California, Idaho, Oregon and Washington. The PSMFC provides information in the form of data services for various fisheries.
Party boat	A CPFV boat on which fishing space and privilege are provided for a fee per angler.
Party Charter phone survey (PCPS)	A weekly telephone survey of 10% to 50% of all party/charter boats to determine number of trips taken in previous week and number of anglers on each trip.
PC	Party and charter boats (see CPFV)
PC Effort check (PEC)	A sample of CPFV activity based on checking sites for docked status and type of activity if not docked.
PC Onboard Forms	Includes the Onboard Angler Form, Onboard Location Form, and Onboard Catch and Discard form.
Pacific Fisheries Management Council (PFMC)	A fisheries management body established by the Magnuson Stevens Act to manage fishery resources in designated regions of the United States. Membership varies in size depending on the number of states involved. There are eight regional Councils, including the Pacific Council.
Pier	A man-made structure made with pilings projecting from the bottom out of the water and covered with a platform on top so that waves may pass under the platform.
Pinhead (see deadhead also)	Non paying angler on a party/charter vessel.
Pinnipeds	Seals or sea lions.
Pooled weights	The technique of weighing 10 fish of one species together because measuring a single fish does not register on the small (1 kg) scale.
Port	A specific area where people fish; usually landings group together geographically. Ports are given 3-letter codes. Ports are made up of one or more landings.
Private and Rental boats (PR)	Private and rental boat mode of fishing. A type of Boat mode.
PR1 – Primary private boat survey	Primary private boat survey for sites with 90% of the catch of important species.
PR2 Secondary private boat survey	Secondary private boat survey for sites with 10% of the catch of important species.
Pressure check (see site check)	Site visit for the purpose of estimating angler effort (numbers of anglers and/or boats).
Private access fishery	The private or rental boats that access the water from marinas, moorings and slips (private areas not accessed by CRFS).
Private boat	A boat belonging to an individual not for rent or with paying

	passengers.
PWC	Personal water craft (e.g. jet ski)
Ramp (launch ramp)	Roadway leading down into the water for the purpose of launching a boat from a trailer.
Random	With no pattern. Occurring sporadically or intermittently in an unpredictable way.
Random Sampling	A method of selecting a sample from a population in such a way that every possible sample that could be selected has an equal probability of being selected.
Random digit dialing (RDD)	A method of dialing telephone numbers used in the MRFSS household telephone survey used to obtain participation and effort data, and information on proportion of fishing households in each county.
RecFIN	Recreational Fishery Information Network. A database managed by the Pacific States Marine Fisheries Commission that provides recreational fishery information for Washington, Oregon, and California.
Recreational fishery	Pursuit of fish for sport rather than for commercial or monetary purposes.
Refugia	An area in the water where living things or their habitat is controlled. May be a place where fishing is not allowed so that fish can reproduce, grow and migrate from.
Region	An area of interest. In CRFS, California is split into two subregions; North and South. The split occurs at San Luis Obispo/Santa Barbara county line. This is based on historical fishery related differences
Refusal	A denial on the part of the angler to be interviewed by the Sampler or to refuse a key item during the interview.
Rental boat	A boat that is rented but without crew or a guide.
Roving	In reference to cluster sampling, it's when the Sampler travels among multiple sites per assignment looking for recreational anglers to interview.
Sample boat	A returning boat in the PR1 survey for which a sequential number is given and specific data collected.
Sample Flags	On the PR1 form, this includes Kayaks (K), boats participating in a tournament (T), and refused boats (R).
Sampler Location	In reference to Onboard CPFV sampling, it is the location on the boat where the Sampler observed anglers during stops (e.g. bow, stern, side).
Seal take	Fish lost to seals/sea lions.
Shellfish	Animals with shells such as clams, lobsters, squid and abalone (crustaceans and mollusks).
Shore trip	A fishing trip conducted from the shore (BB and MM modes)
Site check	A visit to a fishing site to check for effort or CPFV boat status.
Site code	The numeric code used to distinguish specific fishing areas within a CRFS District.
Site disposition	The code on the ASF which indicates the status of the site visit and the reason for leaving the site.
Site name	The name of a fishing site
Site register/list	A complete list of sites with names, codes and descriptions for a given District.
Six pack	A commercial passenger fishing vessel which has a license

	to take not more than six paying passengers at a time.
Skipped Anglers	Anglers that were skipped for whatever reason while you were sampling. These anglers were NOT intercepted.
Sling	A sling or hoist is used to pull boats from the water.
State site code	A location on the water that has been issued a code to match a name so that map coordinates are automatically found in the database.
Special fishery	An interview in which specialized interview procedures were designated.
Special fishery code	The letter code which designates a special fishery interview.
Species Code	A specific five letter code used to record fish taxon on the survey forms.
Start time	A time after the arrival time onsite when the Sampler actually begins sampling (a specific time coded to the nearest minute).
Status	On the Angler Form, the status of the interview is either complete, non-key refusal, or status zero (see below).
Status zero	For Clusters. A non-angler (effort change only) coded on the Angler form for the purpose of recording a change in effort (e.g. a person who was not interviewed).
Stop time	A time when the Sampler actually stops sampling, but before they depart (a specific time coded to the nearest minute).
Systematic	A regular predictable pattern. Used in sampling when true randomness is not possible.
Systematic Sampling	Any sample drawn from a list using a random start and a fixed sampling interval (e.g. every Nth boat). An efficient and functional equivalent to random sampling.
Target (fishing)	Fishing for the primary purpose of catching a particular species or species group (the target species).
Target (mode)	The specific fishing mode(s) that the Sampler should be monitoring at a given site. Listed on the Site list.
Total catch estimate	An expanded number based on a statistical sample with inference to the population for all modes combined
Title 14	Regulations adopted by the Fish and Game Commission, through their regulatory powers function, are printed in the California Code of Regulations, Title 14, Natural Resources. There are 28 separate California Code of Regulations "Titles" containing regulations proposed by over 200 state agencies. Title 14 is the section of the California Code of Regulations concerning natural resources. Regulations are printed in the California Code of Regulations (a.k.a. CCR) after they are adopted by the rulemaking agency, approved by Office of Administrative Law and filed with the Secretary of State.
Tournament	A fishing contest for which participants register and compete.
Trailer Counts	Usually done at arrival and departure from boat-mode sites as a way to gauge effort.
Unavailale catch	Catch that is not available for the Sampler to observe. Includes fish used as bait, given away, thrown back alive or dead, filleted, or immediately consumed. This type of catch is angler-reported or Type 2 catch.

Unbiased	Free of non-random effects that tend to move an estimate higher or lower in prediction of the true population.
Validate	Independent verification, generally by field sampling, of information received through telephone surveys.
Vessel ID	A unique seven digit code used by the Party Charter Phone Survey (PCPS) to identify CPFV's. Used on the vessel lists and vessel check form in abbreviated three digit code.
Waking day	Normal hours of the day when people, in general, are active. Generally considered daylight hours.
Wand	A device which can detect the presence of a metallic object, such as an internal tag, when passed over the surface of the fish. Used for such species as White Seabass.
WD	Weekday
WE	Weekend and holidays
Weekly Report	Weekly Reports are Excel files sent to your Lead every Monday morning by 10 AM that show all the assignments workd the previous week.
Wet gear hours	The time spent fishing with line in the water (wet).
Wharf	A fixed platform that originates on land and projects into a harbor, ocean, etc., so that vessels may be moored alongside. See Pier.
Wildlife Officer	(Formerly titled Warden) An officer that represents the enforcement branch of CDFW.
X-effort	Changes in effort. Monitored at MMPR2 sits. Recorded at the top of the Angler Form for the target mode at a given site. Includes anglers/boats that start fishing, skipped anglers/boats, or NF boats that trailer while sampling. X-effort may be recorded on valid interviews or on status zero forms.

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